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REMEDIAL INVESTIGATION

Volume 2 - Appendices

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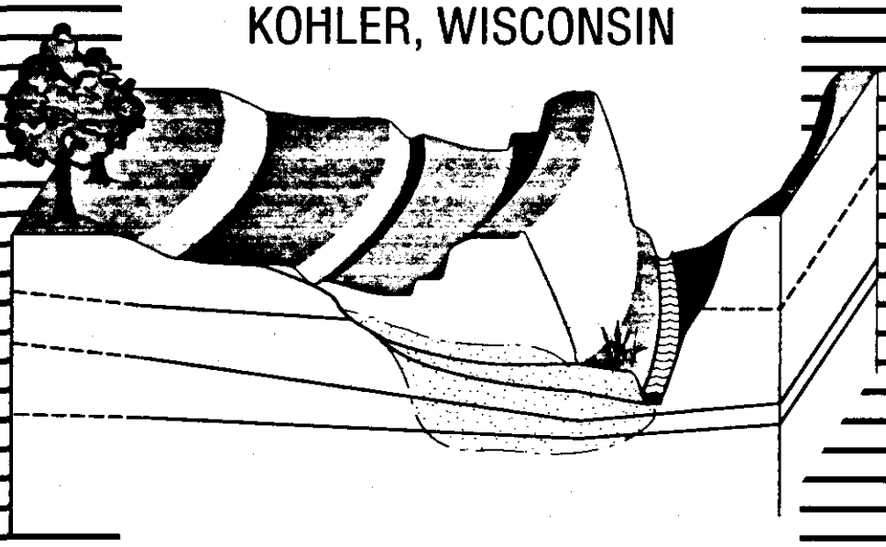
KOHLER

KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN



PREPARED BY

GERAGHTY & MILLER, INC.
Environmental Services

SEPTEMBER 1991

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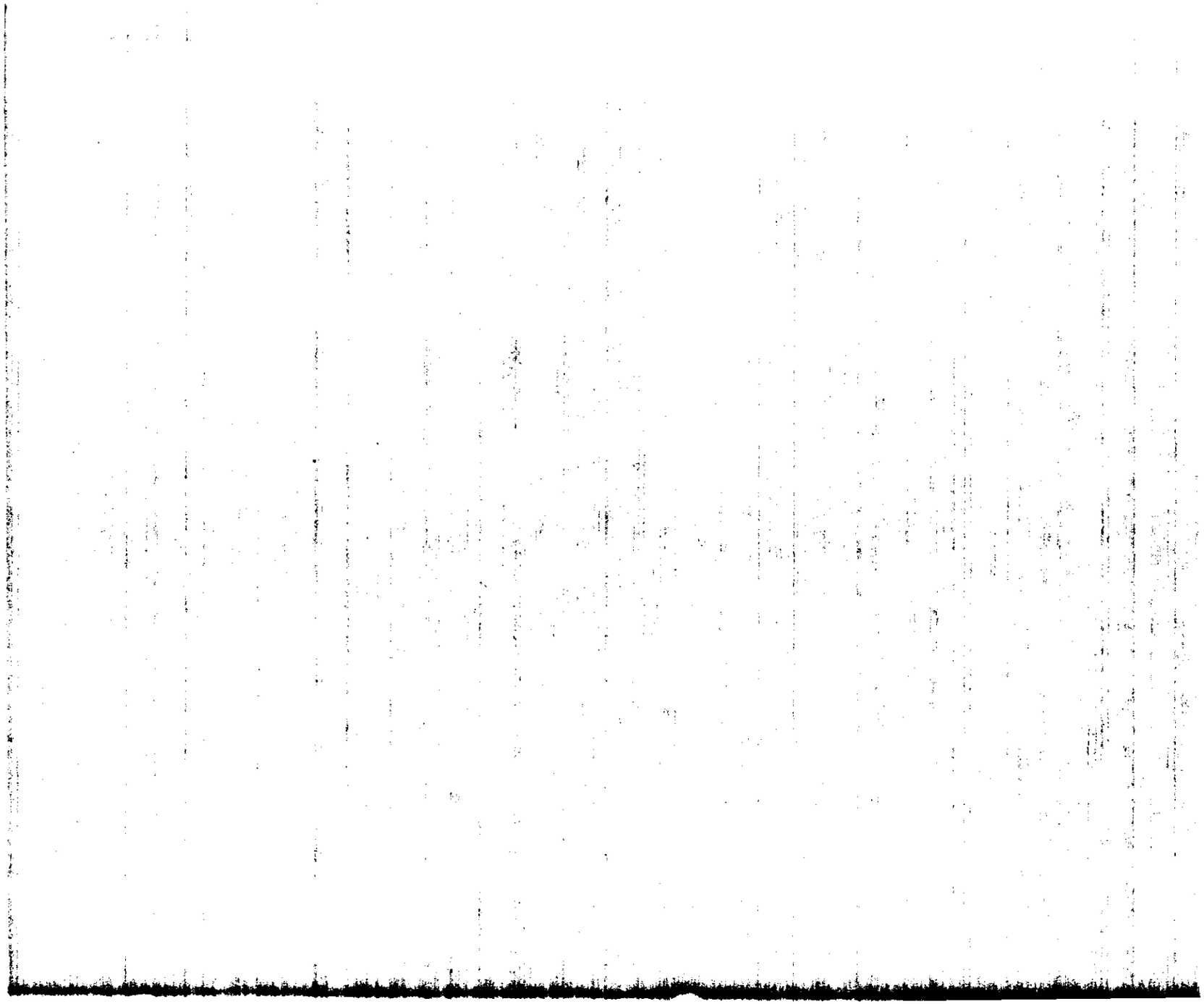
APPENDIX A



APPENDIX A

-DRAFT-

Appendix A is an excerpt from the Technical Memorandum for the Source Control Operable Unit Feasibility Study at the Kohler Company Landfill, Kohler, Wisconsin.

Submittal to U.S. Environmental Protection Agency on August 13, 1990.

-DRAFT-

TECHNICAL MEMORANDUM

for the
Source Control Operable Unit
Feasibility Study at the
Kohler Company Landfill
Kohler, Wisconsin

Prepared for:

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May 1, 1991

CONTENTS

TABLES

FIGURES

APPENDIX

1.0 INTRODUCTION

This Technical Memorandum (TM) has been prepared as part of an ongoing remedial investigation and feasibility study (RI/FS) at the Kohler Company Landfill, Kohler, Wisconsin. This study is being conducted pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA). The purpose of the RI is to characterize the nature and extent of any substances at the site which may be a threat to public health and the environment. The FS will present several alternatives for addressing the site conditions documented in the RI.

1.1 TECHNICAL MEMORANDUM OBJECTIVES

Remedial action (i.e., cleanup activities) at Superfund sites can be initiated prior to an agency decision on a final site-wide alternative. These "operable units" are discrete actions that move towards, and are consistent with a final remedy. A typical example of an operable unit is remediation of a known area with relatively high concentrations of contaminants (source control action). However, operable units may also address site-wide, multi-media problems, depending on the circumstances.

In the fall of 1989, at the request of USEPA, Kohler agreed to examine potential source control operable unit remedial actions for the landfill. Geraghty & Miller was retained in April 1990 to prepare an array of potential source control operable unit remedial actions consistent with the requirements of current Superfund guidance. This TM is the first step towards completion of that array. The primary objectives of the TM are:

- Determine the types, volumes, and location of waste materials disposed in the landfill.

- Integrate historical information with the current and future landfill operating procedures.

2.0 LANDFILL CHARACTERIZATION

A number of different sources of information were utilized in this TM in order to characterize the historical waste disposal practices at the landfill. Written documentation of the waste type, volume, and location in the landfill is lacking for most of the life of the landfill. Most of the information is in the form of reports and studies prepared after the waste had been disposed, and have had different objectives than this TM. For this TM, these sources of information were categorized as follows:

1. Kohler files with respect to licensing and regulatory information.

2. Aerial photographs taken from various sources.

3. Previous consultant studies on various manufacturing and waste disposal issues.

4. Available analytical data from ground-water monitoring wells and soil borings.

Each category of information listed above provided pieces of information towards meeting the overall objective of characterizing the waste type, volume, and its location in the landfill. Combined, this information helps provide a better understanding of historical waste disposal practices. The following sections discuss the results of the review of this information.

2.1 REGULATORY HISTORY

The site has been used for landfilling purposes since the early 1950s, and has operated under a Wisconsin Department of Natural Resources (WDNR) landfill license since the institution of licensing in 1969. The area used for waste disposal (approximately 50 acres) is licensed by WDNR. Kohler's original license allowed the disposal of municipal garbage, trash, industrial waste, and demolition waste.

In 1970 Kohler was granted a license which allowed continued disposal of municipal and industrial waste. Kohler submitted an initial description of the operating procedures for the landfill per the new regulations, NR 51 of the Wisconsin Administrative Code. Operating conditions of the license included:

- No public dumping;
- No open burning except when conducted under supervision, and with permission from the local fire prevention agency; and
- A prohibition on further expansion towards the Sheboygan River.

The license issued in 1972 was revised to include toxic wastes in addition to all wastes previously included in the license.

On February 19, 1975, a Pollution Abatement Order (No. 2A-75-928) was issued by WDNR which required the following:

- Cease open burning of solid waste at the facility;
- Cease disposal of toxic waste in the landfill;

- That no solid waste be deposited within 300 feet of the River, or in any portion of the floodplain which extends beyond 300 feet, until an analysis of upstream and downstream effects on velocities and elevations of river was submitted;

- Submittal of acceptable engineering plans for the abandonment of the toxic waste disposal operation;

- Submittal of a Hydrogeologic Study; and

- Submittal of engineering plans for the further utilization of the solid waste disposal facility.

On February 21, 1975 Kohler instituted new Landfill Operation Rules which specified the following conditions:

1. No open burning is allowed anywhere in the landfill area;

2. No paint wastes, plating sludges or waste oils can be dumped in the landfill;

3. No material can be dumped within 300 feet of the Sheboygan River for any reason; and

4. No material is to be dumped in or near the Old Waste Pit.

Kohler submitted a hydrogeologic report (Miller 1975) and a toxic waste abandonment plan[1] to WDNR. As part of the hydrogeologic study, seven monitoring wells numbered 1A, 1B, 1C, 2, 3, 4 and 5 were installed and sampled.

Engineering plans pursuant to Order No. 2A-75-928 detailed the plans for abandonment of the Old Waste Pit, including chemical analysis of the liquids, plans for treatment of the wastes, plans for disposal of wastes still being produced by Kohler, were finalized by April 1975.[2] These plans were accepted by WDNR with specified conditions regarding the disposal of water collected in the pit. At the time, WDNR was prepared to allow the spray irrigation of the water from the waste pit. These conditions were described in a letter to Kohler from WDNR dated May 22, 1975. However, it was later decided to discharge this water to the Sheboygan River. On December 9, 1975 Kohler prepared a report pursuant to WDNR Order No. 2A-75-928 which contained engineering plans for further landfill utilization.

On January 9, 1976, WDNR issued modified Orders extending the submittal dates for the engineering plans and the Plan of Operation, and at the same time requested additional information from Kohler. After the WDNR review of the plan submitted on January 15, 1976, WDNR issued another modified Order, again requesting additional information. Present and Future Use Plans were resubmitted by Kohler on May 14, 1976[3], pursuant to Order No. 2A-75-928B. Tentative approval of the Plan of Operation was granted on August 30, 1976, with the provision that additional information be submitted.

In 1978, the license was restricted to foundry waste and non-hazardous materials. Kohler was asked by the Village of Kohler to accept for disposal, sediments dredged from

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[1] May 2, 1975 letter from John Choren, Kohler Company, to David Hantz, WDNR.

[2] April 18, 1975 letter from John Choren, Kohler Company, to Andrew Damon, WDNR.

[3] May 14, 1976 letter from John Choren, Kohler Company, to David Hantz, WDNR. (Transmitted May 1976 Present and Future Use Plans.)

the Sheboygan River by the Village of Kohler for the installation of a water main. These sediments were analyzed for polychlorinated biphenyls (PCBs) prior to disposal. Analytical results showed that the sediments contained between 1.3 parts per million (ppm) and 37.5 ppm PCBs. After these data were received, Kohler requested permission from WDNR to dispose of these sediments in the landfill. In September 1978, WDNR determined that the sediments could be properly disposed in the landfill in accordance with Federal and State standards.[4]

In 1979, the license remained the same, although as part of the operations plan approval, a waste generation report was submitted to WDNR. Surface water runoff was sampled and showed elevated levels of cadmium, chromium, copper, lead, and zinc. Monitoring well data was also submitted. Kohler submitted the initial filling Operations Plan for Phase I.

In 1980, the license was reissued allowing continued disposal of the same types of waste. WDNR requested submittal of the landfill Phase I to Phase II transition report. On August 21, 1980, the modified Pollution Abatement Order that was issued in 1976 was dismissed. Kohler also submitted to WDNR, a ground-water study proposal, a report on the transition of Phase I to Phase II, and a site survey of horizontal and vertical controls.

In 1981, a license was issued which allowed continued disposal of the same type of wastes. Kohler received permission to dispose sludge in the landfill from the two polishing lagoons. Kohler contracted with Triad Engineering, Inc. (Triad) to examine alternatives for lagoon sludge disposal. EP Toxicity tests performed on the lagoon sludge showed that this sludge was non-hazardous.

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[4] September 25, 1978 letter from WDNR to John Choren, Kohler Company.

In 1982, the license allowed disposal of foundry and non-hazardous waste. Kohler submitted the report entitled, "Impacts of Lagoon Sludge Disposal at the Kohler Company Landfill" (Triad 1982), and subsequently received permission for disposal of lagoon sludge in the landfill by co-disposing with clay slurry.[5]

In 1982, meetings were held between Kohler and WDNR concerning the operation of the landfill. WDNR requested a waste characterization study and annual progress reports to which Kohler responded by providing an addendum to the Plan of Operation. The addendum included a resurvey of the properties, analytical procedures, and a waste characterization study dated July 1, 1983. Six additional monitoring wells were installed, and Monitoring Well 7 was replaced by Monitoring Well 9.

In 1983, USEPA conducted a preliminary assessment and assigned a Hazard Ranking Score (HRS) to the landfill site. The site was subsequently placed on the National Priorities List (NPL).

In 1984, the landfill was again issued a license to accept foundry sand and non-hazardous materials. Kohler submitted a report for corrective measures on leachate discharges. Kohler instituted waste minimization efforts by adding pottery slurry to dust collector waste instead of adding water. Kohler also began to use foundry waste to grade the landfill to a 2 percent slope.

In 1985, Kohler submitted a Lagoon Dredging Plan to WDNR. Kohler submitted a waste characterization study proposal to which WDNR responded with comments and subsequently approved. Kohler also submitted a Present and Future Use Plan. In March, USEPA advised Kohler of their intent to conduct an RI at the site and provided a draft

[5] August 3, 1982 letter from Robert Krill, WDNR, to LeRoy Euvrard, Kohler Company.

Administrative Order to Kohler. Kohler signed the Administrative Order to conduct the RI/FS in September and submitted a draft Work Plan to USEPA in October.

In 1986 and 1988, Kohler received a license renewal for the same types of wastes described above.

2.2 AERIAL PHOTOGRAPHS

Aerial photographs from as early as 1941 (prior to landfill development) were used extensively to characterize the site. They were a valuable source of information on the areal extent, and to a lesser degree, vertical extent of waste disposal, but did not provide detailed information on the exact waste types disposed in those areas. Table 1 lists the photographs reviewed for this TM. The figures developed for this TM depict the landfill development based on the aerial photograph interpretation. Section 3.0 discusses the results of the aerial photograph interpretation effort in detail.

2.3 WASTE TYPES

2.3.1 Plant Sources

Kohler has generated primarily non-hazardous wastes which may be categorized as manufacturing or non-manufacturing waste. The majority of the non-hazardous, non-manufacturing wastes are office wastes, including garbage and paper.

Kohler's manufacturing processes can be described by the following Standard Industrial Classifications:

3261 Vitreous China Plumbing Fixtures
3431 Enameled Iron and Metal Sanitary Ware

3432 Plumbing Fixtures, Fittings, and Trim

3519 Internal Combustion Engines

3631 Motors and Generators

3079 Miscellaneous Plastic Products

In 1981, Kohler performed an in-house waste characterization study which included sampling and analytical work throughout the plant. Laboratory leaching tests were performed using USEPA's EP Toxicity procedure. Leachate analyses for lead and cadmium were run (Table 2). Thirteen of the 55 samples contained concentrations of lead and/or cadmium high enough to be considered "hazardous" under RCRA.[6] Five of the hazardous samples were from the Brass Building, seven from the Enamel Shop/Mill Building, and one from the Die Cast Building.

During April-June 1986, E&K Hazardous Waste Services, Inc. (E&K) sampled waste streams within the Kohler plant in order to characterize both hazardous and non-hazardous waste streams. The results were documented in the Waste Characterization Report (Weston 1987). Fifty-five samples were collected at points in the plant where wastes were generated. Table 3 lists the plant sources, tested parameters, and analytical results of that effort. Waste samples were analyzed by a "Modified ASTM Leaching Procedure" (Weston 1987), which is roughly comparable to the EP Toxicity Test Procedure. Both methods use deionized water to extract the sample, and both employ pressure filtration for sample separation. One difference is that the modified ASTM procedure does not adjust for pH, as does the EP procedure. WDNR approved the modified ASTM procedure during their review of Kohler's proposal for a waste characterization study.[7]

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[6] A solid waste exhibited the characteristic of EP Toxicity if it exceeded the criteria given in Section 261.24 of RCRA. The limits for lead (D008) and cadmium (D006) were 5.0 mg/l and 1.0 mg/l, respectively. Note that the EP Toxicity procedure was amended by the Toxicity Characteristic Leaching Procedure by 55 FR 11862, March 29, 1990.

[7] May 2, 1985 letter from Richard Schuff, WDNR, to LeRoy Euvrard, Jr., Kohler Company.

Weston's Waste Characterization Report also documented the operations and processes generating wastes, which were as follows:

Iron Foundry

- Electric melt furnace (slag and dust from collectors);
- Clarifier sludge from air pollution control; and
- Waste sands from molds, and waste cores;

Pottery Building

- Clarifier sludge;
- Pottery cull;
- Waste slip;
- Waste plaster;
- Fiberglass clippings; and,
- Pottery grindings (dust).

Brass

- Foundry (used and reject sand and cores);[8]
- Casting/finishing (dust);
- Plastic shavings (celcon); and, lint.

Enamel Building

- Enamel shop (waste ground coat and sludge); and,
- Mill room (enamel frit).

Iron Casting and Finishing

- Dust from bins on "wheelabrators" and booths.

[8] This waste stream no longer generated.

The physical characteristics of these wastes as described by E&K appear in Appendix A. Because many of the wastes above are mixed in holding pits or piles at the plant prior to delivery to the landfill, their individual quantities could not be readily measured during Kohler's 1989 survey of estimated waste quantities. Table 4 lists the raw materials used which ultimately generate the solid wastes discussed above.

A variety of waste oils have also been disposed in the landfill. Table 5 lists specific types of oils which may have been placed in the landfill. There are no landfill records indicating the disposal of oils in the landfill containing PCBs.

Prior to 1975, a number of waste streams were routinely disposed on-site. The wastes included:

- Hydraulic and cutting oils;
- Spent aromatic and chlorinated solvents;
- Plating sludges (containing);
- Paint wastes;
- Enamel powder; and,
- Lint from brass polishing.

Little information is available as to how these wastes were managed at the landfill prior to construction of the Old Waste Pit in mid-1971. Based on employee interviews conducted in 1986,[9] wastes were disposed in 1961 as follows:

- Hydraulic and cutting oils were spread on roads.

[9] November 18, 1986 letter from LeRoy Euvrard, Kohler Company, to Richard Gnat, Roy F. Weston, Inc.

- Aromatic and possibly chlorinated solvents, lint from brass polishing, and paint wastes were disposed in a burn pit.
- Plating sludges and enamel powder were disposed in the municipal waste cell.

In early 1972, Kohler began using the Old Waste Pit for the disposal of liquids, including oil, solvents, and plating sludge.[11] After the Old Waste Pit was closed in mid-1974, these materials were either shipped off-site for disposal or recycled.[12] Enamel powder was disposed in the main fill until shortly before November 1980.[13]

2.3.2 Municipal Waste

Municipal waste was disposed in a portion of the main fill until at least April 1971.[14] During that time, wastes from the Village of Kohler, as well as most of the Kohler plant waste, were disposed in a common area in the northwestern portion of the lower lift of the Phase I landfill. Based on a review of aerial photographs from 1961 and 1967, the mixed waste pit was approximately 10 to 15 feet deep, with a capacity of 90,000 to 110,000 cubic yards (yd^3). The nature of wastes disposed here is unknown.

2.4 ENVIRONMENTAL SAMPLING DATA

In order to help substantiate the types of waste placed into various cells, previous background ground-water quality data were reviewed and compared with downgradient ground-water samples collected during the Phase I and Phase II remedial investigations.

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[11] May 2, 1975 letter from John Choren, Kohler Company, to David Hantz, WDNR.

[12] May 30, 1985 letter from LeRoy Euvrard, Kohler Company, to Catherine Nichols, USEPA.

[13] May 30, 1985 letter from LeRoy Euvrard, Kohler Company, to Catherine Nichols, USEPA.

[14] April 30, 1971 internal Kohler Company memorandum from R. Poupenhage to C. McComis.

Sampling data from landfill monitoring wells were then compared to samples taken of the actual waste materials prior to landfilling in an attempt to "fingerprint" where plant wastes may have been disposed.

2.4.1 Comparison of Background and Landfill Ground-Water Quality

Ground-water monitoring data from background wells 1B, 1C, 1D, and 6 are assembled in Table 6. Data from the December 1980 Stage I Waste Management Assessment Report (RMT 1982), Phase I Technical Memorandum (Weston 1988), and the draft Phase II Technical Memorandum (Radian 1989) were used in this analysis. It was assumed that background ground-water quality data are normally distributed. An arithmetic mean value and standard deviation (using N-1 weighting) was calculated for inorganic parameters. These data were then used to calculate an "upper bound" value, defined in this context as that concentration of a constituent which falls outside of a "normal" population at the 95% confidence level. In other words, if an upper bound value was detected in a given sample, one could then conclude at the 95% confidence level that it was significantly above the mean (e.g. background) value, and that ground-water quality had been affected. It is important to note that exceeding an upper bound does not necessarily mean that an unacceptable chemical concentration exists with respect to public health and environmental criteria.

Barium, cadmium, chromium, and lead were selected as indicator parameters for the comparison of background and downgradient (i.e. landfill) ground-water quality because Primary Drinking Water Standards the available for these parameters and these inorganics were consistently detected up and downgradient of the landfill. Downgradient Monitoring Wells 2, 2D, 3D, 5, 8, 10, 11, and 11D showed concentrations of one or more selected indicator parameters above the calculated upper bound. Table 7 summarizes the results of this comparison.

2.4.2 Comparison of Plant Waste Samples and Landfill Ground-Water Quality

In order to determine the potential waste sources for the statistically significant ground-water concentrations discussed above, plant waste sample data from the Waste Characterization report (Weston 1987) were also compared to the upper bound values, which are shown shaded in Table 3. Although ground-water monitoring and plant waste sample data were not from the same media, it was felt that they were comparable as a tool to help address questions regarding potential sources of detected constituents in ground-water. The results of this analysis suggest that the potential plant waste sources for indicator chemicals in ground water are:

Chemical	*Plant Source*
Barium	Enamel Shop
Cadmium	Enamel Shop, Casting Finishing, Brass Building, Iron Foundry, Bar Sink, Powerhouse and Acetylene, Mill Building, Pottery.
Chromium	Enamel Shop, Casting Finishing, Iron Foundry, Powerhouse and Acetylene, Pottery.
Lead	Enamel Shop, Casting Finishing, Brass Building, Iron Foundry, Mill Building, Incinerator, Pottery.

Due to the number of factors that affect this analysis, the fingerprinting approach was considered less reliable than written documentation or aerial photograph interpretation. Also, this analysis only considered inorganic constituents since very limited data on the organic chemical content of plant wastes were available.

2.5 WASTE VOLUMES

Accurate records of the volume of waste disposed in the landfill are unavailable for most of its operating history. However, estimates have been prepared at certain times, and are summarized below.

In October 1976, Kohler estimated the following yearly volumes of generated waste, based on a three week survey:

Material	Average Weekly Loads/Week	Volume, yd^3	Yearly Volume, yd^3
Foundry Sand	106	1,225	63,700
Pottery Cull	41	346	17,992
Clay Slurry	18	162	8,424
Total Annual Volume			90,116

Kohler performed additional waste volume estimates in October and November 1981 which calculated that the annual volume of waste disposal in the landfill was between 50,000 yd^3 and 70,000 yd^3. Another estimate of about 50,000 yd^3 of solid waste generated per year (Table 8) was made in 1990 (Kohler 1990). These waste volume figures are rough estimates due to the lack of information and assumed compaction factors for the various waste types. More precise estimates of the disposed volume are not possible given the available information.

In 1977 and again in 1982, Kohler received recommendations from WDNR regarding the disposal of non-hazardous sludge dredged from the two polishing lagoons located southwest

of the landfill.[14] A total of 35,860 yd^3 of lagoon sludge were placed in the landfill during these two events.[15] Lagoon dredging occurs on an annual or semi-annual basis.

2.6 WASTE LOCATION AND LANDFILL OPERATING PROCEDURES

During initial landfill operations in the 1950's, essentially all wastes from the Kohler manufacturing facility was disposed in the landfill. As early as 1961, flammable and some noncombustible wastes were segregated for disposal in burn pits.[16]

Foundry sand, clay slurries, pottery cull, slag, and similar materials account for the vast 2majority of wastes disposed in the main fill area prior to 1970 and make up essentially 100% of the present volume of waste disposed in the landfill. Efforts may have been made periodically to segregate one type of waste from another, but it is not known if such practice was consistently followed. As a result, the waste types may be thoroughly intermingled. For instance, the subsurface profile at Monitoring Well 10 (Triad 1982) showed a historical deposition of foundry sand followed by layers of pottery cull and foundry sand, polishing lagoon sludge, and pottery clay. Additional data from landfill borings to be conducted during the Phase III RI may help to refine waste deposition patterns.

Until mid-1974, predominantly all wastes generated by Kohler were disposed at the landfill. Prior to early 1972, oil, solvent and plating sludge wastes were either burned or disposed in a non-flammable liquids pit. From early 1972 through mid-1974, these wastes were disposed in the Old Waste Pit, and by mid-1974, their disposal in the landfill had ceased. Enamel powder was disposed of in the main fill until shortly before 1980.

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[14] August 3, 1982 letter from Robert Krill, WDNR, to LeRoy Euvrard, Jr., Kohler Company.

[15] May 30, 1985 letter from LeRoy Euvrard, Jr., Kohler Company, to Catherine Nichols, USEPA.

[16] November 18, 1986 letter from LeRoy Euvrard, Kohler Company, to Richard Gnat, Roy F. Weston, Inc.

Hazardous wastes presently generated by the manufacturing facility are disposed off-site in compliance with federal, state, and local regulations. Non-hazardous wastes which are no longer disposed in the landfill include garbage, which is taken to a municipal landfill, empty containers, and used tires, which are transported off-site for proper treatment and disposal. Some paper materials, manufacturing wastes, including scrap skids, cardboard, and other miscellaneous wooden materials are incinerated on-site.

3.0 HISTORICAL OF LANDFILL DEVELOPMENT

This section summarizes the results of the review of available background information on plant waste types, chemical characteristics, waste volumes, and landfill operating procedures discussed in Section 2.0.

3.1 AERIAL PHOTOGRAPH INTERPRETATION AND DOCUMENTATION REVIEW

A review of the referenced and footnoted file information combined with an analysis of the aerial photographs listed in Table 1 has led to the historical interpretation presented below. This historical interpretation is graphically depicted in Sheets 2 through 12. Each year highlighted below corresponds to one of these sheets.

1925

Sheet 2 depicts the site prior to any landfilling activity, based on a January 1925 topographic survey. The original topographic relief based on the 1925 topographic map ranged from about 652 ft above mean sea level (msl) at the western boundary of the landfill area, to about 587 msl at the eastern boundary. Although a Sheet was not developed, a photograph of the site from September 1941 shows that the site is still not being used for landfilling. Several areas of the land were used for agricultural purposes at that time.

1950

By October 1950 (Sheet 3), the landfill had just begun to be developed through the construction of bermed disposal cells. Few records are available for this time period, although it is known that municipal and industrial waste was co-disposed in this original section of the landfill. Landfilling extends about 600 feet southeast of Lower Falls Road.

Based on documentation of future operating practice, the disposal cell berms were likely built with solid waste materials, including pottery cull, cull pottery molds, foundry slag, core room waste, coke, foundry dirt hopper waste, foundry sand, cupola brick, frit and cinders, and foundry clarifier waste. Other materials such as black top, concrete, and farm land stones may also have been used for berm construction.[17]

1961

By September 1961, landfilling had progressed towards the south as a rectangular shaped area (Sheet 4). Fill has been extended approximately 1,800 feet south of Lower Falls Road.

Two active areas of filling are evident. The northern area (area 6 on Sheet 4) has been identified as the Village municipal waste disposal area, and also as the disposal area for non-burnable wastes (foundry sand, broken cores, enamel powder, pottery cull, and plating sludge) from the plant. The area south of the garbage dumping area has been identified as the "old burn pit" (area 7 on Sheet 4), which was reportedly used from 1961 until 1967, when it was converted to a disposal pit for non-flammable liquids (Weston 1987). Tree trunks, wooden pallets, brass polishing lint, solvents, paint waste, and copper wire insulation was burned in this pit.[18]

Coal furnace cinders and cupola slag were used to construct access roads, and engine oil, hydraulic fluid, and coolant were used as dust suppressants (area 9A on Sheet 4).[19]

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[17] April 30, 1971 internal Kohler Company memorandum from R. Poupenhage to C. McComis.

[18] November 18, 1986 letter from LeRoy Euvrard, Jr., Kohler Company, to Richard Gnat, Roy F. Weston, Inc.

[19] November 18, 1986 letter from LeRoy Euvrard, Jr., Kohler Company, to Richard Gnat, Roy F. Weston, Inc.

1967

The main rectangular body of the landfill has been extended further south to within 200 feet of the Sheboygan River. Two disposal pits are evident in the photograph. The northern pit (area 7 on Sheet 5) is in the location of the "old burn pit" described under "1961". Liquid has accumulated in the east end of this pit, which is now referred to as the non-flammable liquids pit.

The southern pit (area 10 on Sheet 5) has been identified as the new burn pit used for all subsequent burn activities at the Kohler landfill in accordance with the Operating Instructions in place at that time. Styrofoam, paper, wood, tree branches, brass lint, barrels, and copper wire insulation was burned in this area.[22] The Weston Waste Characterization Report (Weston, 1987) indicates that solvents, oils, and paint wastes were also disposed of in the two burn pits.

Between the two pits described above is a filled area (area 11 on Sheet 5), which contained a cement batch plant used for construction of State Highway 28.[23]

Filling activities (area 14 on Sheet 5) occurred to the west of the initial fill area (areas 1 through 5 on Sheet 3) between 1961 and 1967. The arrangement of the cells indicates that different fill materials may have been segregated.

Soil or some other cover material appears to have been placed over the municipal waste cell shortly before August 1967. No information was found regarding the construction details.

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[22] April 30, 1971 internal Kohler Company memorandum from R. Poupenhagen to C. McComis.

[23] November 18, 1986 letter from LeRoy Euvrard, Jr., Kohler Company, to Richard Gnat, Roy F. Weston, Inc.

1973

The Operating Instructions for the landfill were revised on January 1, 1972.[24] The revisions included the provision that four open pits were to be maintained at all times: one for dry materials, one for slurries, one for oils and liquids, and one burning pit. These instructions also indicated that the slurry pit was to be converted to a dry materials pit when filled.

The Old Waste Pit (area 20 on Sheet 6) was designed by Donohue and Associates, with a clay liner approximately 2 feet thick. Records indicate that this pit was in use between early 1972 and mid-1974. Approximately 450 gallons of soluble and insoluble chromium sludge, and a total of 20,900 gallons of waste oils were put into the hazardous waste pit in the first quarter of 1974.[25] The Old Waste Pit also received spent solvents, enamel powder, broken cores, etc. In mid-1974, the pit was taken out of service, and by September 1974, plans were being made to have oil in the Old Waste Pit pumped out and hauled off-site.[26] Since then, waste oils have been stored at the manufacturing facility and sold for recycling. Old Waste Pit abandonment activities consisted of treatment of the water in the pit with 0.03% NALCO 7723 polymer and 0.025% lime in order to reduce (through flocculation) the metal content of the water.[27] These activities were successfully implemented and completed by July 1975.[28]

The south burn pit (area 10 on Sheet 6) is still in operation in the March 1973 photograph, but the non-flammable liquid pit (old burn pit area) is completely filled in.

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[24] May 30, 1985 letter from LeRoy Euvrard, Jr., Kohler Company, to Catherine Nichols, USEPA. (Exhibit II of Attachment 6.)

[25] April 23, 1974 letter from W.A. Schilling, Kohler Company, to Gary Kulibert, WDNR.

[26] September 18, 1974 letter, Kohler Company to Gary Kulibert, WDNR.

[27] April 18, 1975 letter from John Choren, Kohler Company to Andrew Damon, WDNR.

[28] July 21, 1975 letter from John Choren, Kohler Company, to David Hantz, WDNR.

Three new disposal cells (areas 16, 17, and 18) have been developed east of the initial fill area. Area 16 may contain sludge; area 17 probably contains clay slurry; and area 18 is not completely bermed, although some solid material, possibly foundry sand and pottery wastes have been placed there.

A ditch runs along the western edge of the fill area in a southerly direction, towards the river. Another ditch runs down the center of the facility in a southerly direction, over the break in the slope and continues to the Sheboygan River.

1975

The Description of Operation, and Operating Instructions for the Landfill were revised by January 1, 1975. The revisions included the procedure that three open pits were to be maintained at all times: one for dry materials, one for slurries, and one (the location of which is never changed) burn pit.

In the May 1975 photograph (Sheet 7), area 16 has been divided roughly in half by a north-south berm. Foundry sand, pottery cull, and other Pottery Building wastes were likely disposed in areas 16, 17, and 18. In 1977, an estimated 11,500 yd^3 of material were dredged and placed in the original slurry pit in the landfill (area 17). This area was also used for Pottery Building clarifier waste and Iron Foundry dust collector waste (Triad 1982). Between May 1975 and July 1978, fill material was removed from the Sheboygan River floodplain (near the southeastern edge of the landfill).

1978

Based on photointerpretations completed by the USEPA Environmental Monitoring Systems Laboratory (EMSL), several features were noted on a June 1978 photograph, including two drains constructed along the southern landfill perimeter, and an area of

disturbed vegetation at the base of one of the outfalls. In addition, EMSL noted that the slurry pit had been filled in. In July 1978, most of the landfill activity was focused on the eastern half of the site. Area 16, described above, was almost filled in, with the exception of two areas along the eastern berm (Sheet 8). Area 17 was approximately 80% full, but apparently still receiving waste slurry. Fill material was apparently also placed along the entire southern and eastern edges of the landfilled area.

Kohler was asked by the Village of Kohler to dispose of PCB sediments in the landfill. As discussed in Section 2.1, Kohler received permission from WDNR[27] to dispose of these sediments after WDNR determined that they contained acceptable concentrations of PCBs for disposal.

1980

In the May 1980 photograph (Sheet 9), active landfilling of a dark grey and white material continued in Cell 17. Active surface disturbance is apparent in Area 28. By December 1982, an additional 21,413 yd^3 of lagoon sludge had been co-disposed with clay slurry in the landfill.[28]

1984

Based on photointerpretations completed by EMSL, a July 19, 1984 photograph shows dark area along the landfill access road to one of the sludge ponds. The source of the dark area was noted by EMSL as being from a moving vehicle; based on Kohler Company's knowledge of the operation it is expected that this feature is slurry from the foundry dust collectors. EMSL also noted the outfalls along the southern perimeter of the landfill and an

[27] September 25, 1978 letter from WDNR to John Choren, Kohler Company.

[28] December 23, 1982 letter from LeRoy Euvrard, Kohler Company, to Robert Krill, WDNR.

area of dead or damaged vegetation between the southern perimeter of the site and the Sheboygan River.

1985

By June 1985, seven new disposal cells (areas 32 through 38 on Sheet 10) had been established over the original fill area on the west side of the landfill. An aerial photograph from May 1984 (no Sheet was developed for this year), indicates that areas 32, 33, and 34 were the first to be developed. Areas 35 through 38 had not received any fill material by June 1985.

1989

By May 1989, two large waste disposal areas which include the non-flammable liquids disposal pit (areas 40 and 41 on Sheet 11) had been established over former disposal areas 16, 17, and 18. Area 40 was being used for all waste materials, and area 41 was covered with earthen clay from the Woodlake development project. Former disposal areas 32 through 38 were also covered with this material.

3.2 SUMMARY OF LANDFILL DEVELOPMENT

The landfill has been used for waste disposal since the 1950's. Although the site area as described in the original permit is about 82 acres, approximately 40 acres to the west of the landfilled area have never been used for waste disposal. Sheet 13 shows the estimated extent of disturbed and landfilled areas as of May 1990. Waste disposal first started at the northwest corner of the 50-acre landfill area, and proceeded in a south-southeast direction toward the Sheboygan River. Major disposal areas in this western half of the 50-acre landfill area include two burn pits and cells used for plant solid waste, sludge, and municipal waste. Both hazardous (by today's standards) and non-hazardous waste were disposed in these cells

and pits. These waste disposal areas, including cell berms, account for about 20 acres (50%) of the filled area at the site.

By mid-1971, the old waste pit had been constructed at the western boundary of the landfilled area. Waste liquids, including oils, solvents, and sludges were placed in the Old Waste Pit until mid-1974. As the western half of the landfilled area reached capacity, new disposal cells were developed to the east. By 1973, three cells had been started for the disposal of non-hazardous solid waste and slurry. A triangular area about 12 acres in size was employed for these wastes. The suspected pit was used for the disposal of liquid wastes in the mid-1970s.

By May 1984, seven additional non-hazardous waste disposal cells were in various stages of use, located over the original western half of the landfilled area. By May 1989, an additional disposal cell was in use in the northern portion of the eastern half of the site. Non-hazardous solid wastes and slurries were the primary types of wastes disposed in these areas.

Sheet 2 is a topographic map of the original (1925) land surface, and also contains the locations of cross-sections shown on Sheet 12. Topographic contours from September 1989 were laid over the 1925 topographic contours in section view on Sheet 12 in order to provide a visual interpretation of the fill height. Section A-A' cuts through the landfill from west to east near the southern end. A maximum of about 60 feet of fill has been placed along A-A'. Section B-B' (north to south) shows that about 50' of fill exists near the eastern boundary of the landfill. Section C-C' (north to south) cuts through the original waste disposal area (about 35 feet of fill) through the west slope of the western half of the landfill.

Sheet 12 also shows the location of several monitoring and observation wells and their estimated screened interval relative to the fill.

4.0 CURRENT AND FUTURE LANDFILL USE

In January 1990, Kohler prepared and submitted to WDNR for review, a Landfill Plan Modification, which is an addendum to the document entitled, "Present and Future Use Plans, Kohler Co. Landfill Site" approved on August 30, 1976. The Kohler landfill is currently regulated under the solid waste management requirements found in the Wisconsin Administrative Code, NR 500 series, which became effective in 1986. Modifications to the "Present and Future Use Plans" were made on March 10, 1981 and May 10, 1982. Further modifications are required by WDNR as discussed below. The "Present and Future Use Plans" were approved by the WDNR.

4.1 SLOPE STABILITY AND EROSION

Vertical development is in excess of 50 feet above original grade in several areas. Observation of the landfill slopes shows no evidence of movement or failure within the landfill. However, due to the current elevation of the existing slopes and the potential consequences of slope failure, slope stability will be monitored through surveying and frequent inspections. Permanent survey monuments will be placed on the eastern-most and southernmost slopes to monitor vertical and horizontal slope movement, pending plan approval.

Sheet flow drainage and a continuous vegetation cover for all inactive areas of the landfill has been established in an effort to minimize erosion. Areas where significant erosion occurs will be repaired, when weather conditions are favorable, using selected foundry waste, clay, and topsoil.

4.2 CURRENT AND FUTURE LANDFILL DEVELOPMENT

The landfill is currently and will in the future be used exclusively by Kohler. In order to reduce the amount of exposed fill, the active fill area will be minimized to the degree possible. The western slope of the landfill and the elevated plateau are currently utilized concurrently. Each area is discussed below.

4.2.1 Western Slope Development

All wastes, with the exception of slurries, are currently placed along the western slope of the landfill. Filling along the western slope proceeds from the south in a northerly direction, in such a manner as to reduce the slope from 1:1 to a maximum of three horizontal to one vertical. Sheet flow drainage will be maintained in the completed portions and ground cover established as outlined in this summary. The estimated volume of waste required to complete this phase is approximately 134,000 yd^3.

4.2.2 Elevated Fill Plateau

Beginning in July 1990, slurries were disposed on the elevated plateau in trenches. The elevated plateau consists of an area which covers most of the previously filled landfill area. A five percent grade is planned, and a crown will be created by selective filling. Approximately 405,000 yd^3 will be placed on the elevated plateau to develop a 5% slope.

4.3 CHARACTERIZATION OF WASTE MATERIALS

Since landfill operations began, several waste characterization studies have been performed. In addition, recent efforts by the Environmental Engineering and Safety Department at Kohler have provided information regarding waste generation and

characterization. Table 8 lists all departments which generate wastes disposed of at the landfill, and the type of and volume of wastes generated.

Approximately 60,000 yd^3 to 90,000 yd^3 of manufacturing waste is placed in the Kohler landfill annually. A daily log for both solid and slurry wastes is used for recording the volume of wastes leaving Kohler facilities for disposal at the landfill. The information includes date, shift, load number, collection point, and size of load. These records have been maintained since September 15, 1989. "Monthly Weight Logs" are also maintained for both slurry and solid wastes in order to ensure consistency when determining the size of each load.

The manufacturing area which generates the largest percentage of waste is the Foundry, which accounts for over 82 percent[31] of the total volume of waste placed in the landfill, the majority of which is used system sand. The second major source of waste is generated from the Pottery Department (13 percent[32]), which consists mainly of inert clay material. All of the other departments generate a small portion of the overall percentage of wastes. None of these wastes are hazardous according to the criteria set forth in 40 CFR Part 261. Each waste will be tested periodically, using approved analytical methods and procedures to ensure continued compliance. Any waste not already listed for disposal in the landfill must comply with all appropriate local, state and federal regulations before disposal will be approved.

Due to occasional excessive precipitation, ponding occurred within the landfill boundaries. This created transportation difficulties and promoted water infiltration through the landfill material. To alleviate these problems, sheet flow drainage was established. Sheet flow drainage will continue to be established on all drainage surfaces and exterior slopes within six months of ceasing filling operations in an area. Drainage surfaces will be developed with selected foundry wastes. The grade will be three to five percent when

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[31] Based on previously described log sheets from October 1989 to July 1990.

[32] Based on log sheets previously described from October 1989 to July 1990.

possible, but no less than one percent. Drainage patterns in inactive portions of the landfill will be directed away from active fill areas to minimize storm and surface water contact with fill material.

Additional measures being taken or considered are maximum reduction of moisture entering the landfill in waste form, slurry dewatering, and the mixing of dust collector wastes with waste slurries.

5.0 SUMMARY AND CONCLUSIONS

This TM was prepared to assist the ongoing RI/FS by providing a detailed characterization of the Kohler Landfill, and to provide a system to categorize areas of the landfill relative to source control remedial actions under the Superfund program. By examining the historical sources of information on landfill development and integrating that information with aerial photography, a chronology of waste-specific fill practices was achieved.

6.0 REFERENCES

1. Dunn Geoscience Corporation, 1990. Draft Source Control Operable Unit Feasibility Study, February 1990.

2. E&K Hazardous Waste Services, 1987. Kohler Company Waste Characterization Study, Sampling Site and Process Review, February 1987.

3. Geraghty & Miller, Inc. 1990. Phase III Remedial Investigation/Feasibility Study Work Plan, Kohler Company Landfill, March 1990.

4. Kohler Company. 1976. Present and Future Use Plans, Kohler Co. Landfill Site, May 1976.

5. Kohler Company. 1985. Answers to Request for Information (from USEPA), May 30, 1985.

6. Kohler Company. 1990. Landfill Plan Modification, Kohler Company, January 1990.

7. Radian Corporation. 1989. Draft Kohler Company Landfill RI/FS: Phase II Technical Memorandum, July 23, 1989.

8. Residuals Management Technology, Inc. 1982. Report on Stage I Waste management Assessment for Kohler Company, Kohler, Wisconsin. February 1982.

9. Roy F. Weston, Inc. 1987. Kohler Company Landfill Remedial Investigation/Waste Characterization Report, July 1987.

10. Roy F. Weston, Inc. 1988. Phase I Technical Memorandum, Kohler Company Landfill, Kohler, Wisconsin, February 1988.

11. Triad Engineering, Inc. 1982. Impacts of Lagoon Sludge Disposal at Kohler Company, May 1982.

TECHNICAL MEMORANDUM

TABLES

Table 1. Aerial Photographs Reviewed, SCOUFS Technical Memorandum, Kohler Company Landfill.

No.	*Date*	Months Between *Photos*	Photo *Size, in.*	*Type*	*Source*
1	09-Aug-37	---	9x9	B&W	USDA
2	18-Sep-41	50	20x24	B&W	USDA
3	18-Sep-41	0	9x9	B&W	USDA
4	18-Oct-50	111	9x9	B&W	USDA
5	18-Oct-50	0	20x24	B&W	USDA
6	26-Sep-61	133	9x9	B&W	USDA
7	26-Sep-61	0	20x24	B&W	USDA
8	31-Aug-67	72	9x9	B&W	USDA
9	31-Aug-67	0	20x24	B&W	USDA
10	14-Apr-71	44	10x10	B&W	Kohler
11	22-Mar-73	24	20x24	B&W	USGS
12	22-Mar-73	0	9x9	B&W	USGS
13	12-Jun-74	15	9x9	B&W	WI DOT
14	21-Oct-74	4	9x9	B&W	USDA
15	07-May-75	7	10x10	B&W	Kohler
16	19-Jun-78	38	9x9	B&W	WI DOT
17	11-Jul-78	1	20x24	B&W	WI DOT
18	11-Jul-78	0	9x9	B&W	WI DOT
19	03-May-80	22	10x10	Color	Kohler
20	14-May-84	49	10x10	Color	Kohler
21	19-Jul-84	2	9x9	Color	EMSL
22	24-Jun-85	11	20x24	B&W	EMSL
23	24-Jun-85	0	20x24	Color	EMSL
24	16-May-89	47	9x9	B&W	WI DOT

Key to Sources:

USDA - U.S. Department of Agriculture
Kohler - Kohler Company
USGS - U.S. Geological Survey
WI DOT - Wisconsin Department of Transportation
EMSL - U.S. EPA Environmental Monitoring Systems Laboratory

Table 2. EP Toxicity Results From Plant Processes, SCOUFS Technical Memorandum, Kohler Company Landfill.

Location	Process or Material	EP Toxicity, mg/L Lead	Cadmium
Engine plant	Dust collector	<0.18	<0.02
Foundry	Wheelabrator	<0.18	<0.02
Foundry	Clarifier 24'	<0.25	<0.02
Foundry	Brown clumpy sand	<0.18	<0.02
Foundry	Black	<0.18	<0.02
Foundry	Jet black powder	<0.18	<0.02
Foundry	Dry dull gray powdery sand	<0.18	<0.02
Foundry	Dry white sand	<0.18	<0.02
Foundry	Dark black sludge	<0.18	<0.02
Foundry	Orange sand clumps	<0.18	<0.02
Foundry	Dull gray sand	<0.18	<0.02
Foundry	Dry orange sand	<0.18	0.60
Foundry	Black wet sludge	<0.18	<0.02
Foundry	Conglomerate of sand	<0.18	<0.02
Foundry	Black dry clumps	<0.18	<0.02
Foundry	Damp beige sand	<0.18	<0.02
Foundry	Sparkly burnt sand	<0.18	<0.02
Foundry	Dust collector #4	<0.18	<0.02
Foundry	West side dust collector	<0.18	<0.02
Foundry	Dust collector #1	<0.18	<0.02
Foundry	Dust collector #2	<0.18	<0.02
Foundry	Dust collector #3	<0.18	<0.02
Foundry	Dust collector #4	<0.18	<0.02
Foundry	Dust collector #5	<0.18	<0.02
Foundry	Dust collector #6	<0.18	<0.02
Foundry	Dust collector #7	<0.18	<0.02
Foundry	Dust collector #8	<0.18	<0.02
Foundry	Water sample 1700-0002	<0.01	<0.01
Pottery Building	Pottery dust collector	0.75	<0.02
Pottery Building	Pottery dust collector blow-off	NR	NR
Pottery Building	Pottery dust collector bowl circle grind	<0.18	<0.02
Die Cast	Die cast dust collector	<0.18	<0.02
Die Cast	Hydromold limit die cast dust collector	<0.18	<0.02
Die Cast	Die cast - slag collector #2	350	1.7
Brass Building	Brass buff	5.72	<0.02
Brass Building	E. of Brass: Brown & gray conglomerate	<0.18	<0.02
Brass Building	E. of Brass: Sandy tan mud	1.00	0.22
Brass Building	E. of Brass: Brown & white wet clay	<0.18	<0.02
Brass Building	E. of Brass: Core sand	3.5	0.14
Brass Building	Brass mid.: Dust collector	10.75	0.19
Brass Building	Brass barrel waste - west dust collector	19.3	0.18

Table 2. EP Toxicity Results From Plant Processes, SCOUFS Technical Memorandum, Kohler Company Landfill.

Location	Process or Material	EP Toxicity, mg/L Lead	Cadmium
Brass Building	Brass west dust collector	10.8	<0.02
Brass Building	Brass east dust collector	1,963	0.26
Enamel Shop/Mill Bldg.	Shop waste hopper	1.64	1.66
Enamel Shop/Mill Bldg.	Vacuum blower, east end	0.73	3.66
Enamel Shop/Mill Bldg.	Enamel process	<0.18	2.60
Enamel Shop/Mill Bldg.	Dust collector, west end	32.3	8.02
Enamel Shop/Mill Bldg.	Waste enamel, south side Mill Bldg.	5.36	8.36
Enamel Shop/Mill Bldg.	Waste ground, south side Mill Bldg.	0.54	7.08
Enamel Shop/Mill Bldg.	Dust collector	14.2	<0.02
Enamel Shop/Mill Bldg.	Barrels Bluepouch Enamel, Mill Bldg.	<0.18	<0.02
Enamel Shop/Mill Bldg.	White enamel powder, Mill Bldg.	<0.18	<0.02
Enamel Shop/Mill Bldg.	Barrels of white frit, north	<0.18	<0.02
Enamel Shop/Mill Bldg.	Barrels of gray frit, north	<0.18	<0.02
Enamel Shop/Mill Bldg.	Barrels of clay frit, north	<0.18	<0.02
Pottery Building	Die cast - slag collector #2	350	1.7
Brass Building	Brass buff	5.72	<0.02
Brass Building	Brass mid.: Dust collector	10.75	0.19
Brass Building	Brass barrel waste - west dust collector	19.3	0.18
Brass Building	Brass west dust collector	10.8	<0.02
Brass Building	Brass east dust collector	1,963	0.26
Enamel Shop/Mill Bldg.	Shop waste hopper	1.64	1.66
Enamel Shop/Mill Bldg.	Vacuum blower, east end	0.73	3.66
Enamel Shop/Mill Bldg.	Enamel process	<0.18	2.60
Enamel Shop/Mill Bldg.	Dust collector, west end	32.3	8.02
Enamel Shop/Mill Bldg.	Waste enamel, south side Mill Bldg.	5.36	8.36
Enamel Shop/Mill Bldg.	Waste ground, south side Mill Bldg.	0.54	7.08
Enamel Shop/Mill Bldg.	Dust collector	14.2	<0.02

Notes:

1. NR - Not Reported
2. Source: Residuals Management Technology, February 1982
3. Samples analyzed by Kohler Company Laboratory
4. Shaded values are "hazardous" as defined by Section 261 of RCRA.

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Table 3. Analytical Data for 1987 Waste Streams, SCOUFS Technical Memorandum, Kohler Company Landfill.

PARAMETER	ES-1	ES-2	CF-1	CF-2	CF-3	CF-4	CF-5	CF-6	CF-7	CF-8	CF-9	CF-10	CF-11
pH (std. units)	6.56	9.23	9.2	8.93	9.78	9.77	10.52	10.13	9.38	8.12	11.56	10.14	10.32
SP. COND (umhos/cm)	283	2380	346	351	323	306	475	224	426	544	892	273	898
C.O.D.	7.00	1.30	21.4	14.6	32.7	45.4	113	45.4	32.2	20.3	65.2	50.2	36.4
T.O.C.	X	X	7.00	5.00	8.80	11.2	56.5	7.10	8.50	7.40	18.9	17.1	13.8
ALUMINUM	0.16	98.0	1.20	0.70	0.70	1.80	0.40	1.20	2.80	1.10	0.50	0.70	1.20
ANTIMONY	X	X	X	X	X	X	X	X	X	X	X	X	X
ARSENIC	0.10	ND	0.016	0.006	0.029	0.024	ND	0.018	0.044	0.003	ND	0.70	0.002
BARIUM	X	X	X	0.017	0.018	0.026	0.062	0.017	0.02	0.035	0.265	0.026	0.232
BORON	15.66	288.38	5.838	4.47	16.166	14.196	39.8	11.821	12.239	0.903	0.437	0.777	10.43
CADMIUM	0.10	0.034	0.009	0.012	ND	0.017	ND	0.019	0.005	ND	0.008	0.008	0.008
CALCIUM	X	X	5.00	29.3	1.60	0.90	4.6	1.20	1.20	55.7	44.2	8.10	8.30
CHLORINE	8.30	17.9	14.9	24.4	ND	ND	24.6	11.9	8.90	45.5	15.2	33.0	8.50
CHROMIUM	0.10	0.141	ND	ND	0.04	0.02	0.01	ND	0.01	0.02	0.02	0.02	0.02
COPPER	0.31	0.057	0.021	0.03	0.05	0.069	0.063	0.063	0.056	0.061	0.057	0.031	0.061
CYANIDE	X	X	X	X	X	X	X	X	X	X	X	X	X
FLUORINE	8.75	1.30	9.45	7.50	14.5	12.0	13.6	20.5	14.1	6.75	35.2	3.06	162
FORMALDEHYDE	X	X	X	X	X	X	X	X	X	X	X	X	X
IRON	0.10	17.615	0.04	0.01	4.13	10.92	0.32	2.07	1.74	0.62	0.08	0.05	0.04
LEAD	0.90	3.60	ND	ND	1.50	7.10	0.40	0.70	0.20	0.60	0.50	0.20	0.60
LITHIUM	X	X	X	X	X	X	X	X	X	X	X	X	X
MAGNESIUM	X	X	0.82	1.75	1.48	0.57	0.51	0.55	1.06	4.36	0.51	0.90	0.86
MANGANESE	X	X	ND	0.006	0.135	0.26	0.014	0.013	0.045	0.021	0.011	0.009	0.011
MERCURY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NICKEL	X	X	0.15	0.16	0.11	0.09	0.06	0.21	0.33	0.22	0.40	0.23	22.0
PHENOL	X	X	X	X	X	X	X	X	X	X	X	X	X
PHOSPHORUS	0.708	ND	X	X	X	X	X	X	X	X	X	X	X
POTASSIUM	4.20	42.75	16.4	3.20	2.00	2.20	44.5	7.50	7.50	2.60	116	11.3	20.52
SELENIUM	0.10	ND	0.006	0.004	0.003	0.002	ND	ND	ND	ND	ND	ND	ND
SILVER	0.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SODIUM	34.2	581	73.2	53.1	80.3	72.8	132.7	61.1	96.8	73.6	28.0	33.8	171.5
STRONTIUM	X	X	0.03	0.32	0.07	0.04	0.10	0.05	0.05	0.88	0.18	0.11	0.18
SULFATE	15.0	31.2	103	102	60.0	25.0	13.0	9.00	90.0	176	86	37.0	52.0
SULFUR	X	X	X	X	X	X	X	X	X	X	X	X	X
TIN	X	X	ND	ND	0.012	0.013	0.016	ND	0.007	ND	0.006	0.009	ND
TITANIUM	X	X	0.02	0.03	0.27	2.044	0.02	0.08	0.03	0.02	0.04	0.02	0.03
ZINC	X	X	ND	ND	0.021	0.253	ND	ND	ND	ND	ND	ND	ND

Notes:

1. Values are maximum detected concentrations (mg/L) from the Waste Characterization report (Weston, 1987).
2. Shaded values exceed the "upper bound" background ground-water concentration (barium, cadmium, chromium, and lead only).
3. Samples analyzed using modified ASTM Method.
4. See Table 4 for explanation of sample identification numbers.
5. ND - not detected
6. X - not analyzed

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Table 3. Analytical Data for 1987 Waste Streams, SCOUFS Technical Memorandum, Kohler Company Landfill.

PARAMETER	BR-7	BR-12A	BR-12B	BR-13A1	BR-13A2	BR-13B	BR-13C	BR-14	IF-1	IF-1A	IF-1B	IF-2	IF-3
pH (std. units)	8.00	8.85	7.33	6.30	6.38	9.80	6.94	7.25	7.45	7.15	6.89	7.42	7.26
SP. COND (umhos/cm)	483	263	72.9	27.4	27.5	279	219	242	87.0	1869	887	462	779
C.O.D.	7332	96.4	36.2	21.6	65.6	242	2518	90.2	45.0	484	263	408	28.7
T.O.C.	1130	26.0	2.90	5.80	8.40	471	899	8.30	16.0	138	80.0	90.0	9.20
ALUMINUM	X	0.20	0.50	X	X	X	X	0.30	0.41	0.30	0.15	33.0	0.10
ANTIMONY	X	0.02	0.009	X	X	X	X	0.016	X	X	X	X	X
ARSENIC	0.004	0.001	ND	0.002	0.001	ND	ND	0.006	0.10	0.10	0.10	1.30	0.10
BARIUM	X	X	X	X	X	X	X	X	X	X	X	0.10	0.12
BORON	X	X	X	X	X	X	X	X	0.737	16.25	5.273	0.42	0.542
CADMIUM	0.01	0.018	0.017	0.014	0.015	0.005	0.015	0.018	0.10	0.10	0.10	0.10	0.10
CALCIUM	X	X	X	X	X	X	X	X	X	X	X	17.8	85.8
CHLORINE	31.9	16.3	2.00	ND	ND	10.5	ND	5.30	ND	97.2	59.8	6.80	22.2
CHROMIUM	ND	0.01	0.01	0.01	0.01	0.01	0.01	ND	0.10	0.10	0.10	0.10	0.10
COPPER	2.793	0.0164	0.069	0.048	0.073	2.044	4.801	0.095	0.11	0.10	0.10	0.10	0.10
CYANIDE	X	X	X	ND	ND	ND	ND	ND	X	X	X	X	X
FLUORINE	11.4	472	12.2	3.80	1.36	1.80	1.58	8.10	17.8	170	100	102	14.0
FORMALDEHYDE	X	X	X	0.39	0.10	0.45	0.57	0.10	X	X	X	X	X
IRON	X	0.034	0.086	X	X	X	X	0.122	2.38	0.24	0.10	7.23	0.10
LEAD	X	0.40	0.20	X	X	X	X	0.10	0.10	ND	0.10	0.30	0.20
LITHIUM	X	X	X	X	X	X	X	X	X	X	X	X	X
MAGNESIUM	X	X	X	X	X	X	X	X	0.10	64.6	17.3	8.55	29.28
MANGANESE	X	X	X	X	X	X	X	X	1.24	0.87	1.05	0.10	0.60
MERCURY	0.0004	0.002	0.0002	0.0002	0.0002	ND	0.0003	0.0004	0.0002	ND	ND	ND	ND
NICKEL	X	0.06	0.07	X	X	X	X	0.04	0.18	0.11	0.10	0.10	0.10
PHENOL	X	0.129	ND	0.024	0.36	28.1	X	ND	X	X	X	X	X
PHOSPHORUS	X	ND	0.099	ND	0.011	X	X	ND	0.164	0.258	0.186	0.462	0.216
POTASSIUM	X	X	X	X	X	X	X	X	X	X	X	8.40	6.40
SELENIUM	ND	ND	ND	ND	ND	ND	ND	ND	0.10	0.10	0.10	0.40	0.10
SILVER	ND	ND	ND	ND	ND	ND	ND	ND	0.10	ND	0.10	0.10	0.10
SODIUM	115	28.0	13.8	1.12	1.35	2.04	17.8	53.2	12.13	240	58.5	103	86.5
STRONTIUM	X	X	X	X	X	X	X	X	X	X	X	0.54	1.92
SULFATE	56.7	34.5	12.8	2.30	1.80	3.20	7.40	71.4	16.0	505	155	92	10.0
SULFUR	X	11.5	4.30	X	X	X	X	23.9	X	X	X	X	X
TIN	X	0.007	0.005	X	X	X	X	0.005	3.50	0.20	0.10	3.40	0.10
TITANIUM	X	X	X	X	X	X	X	X	0.30	0.05	0.05	0.30	ND
ZINC	X	0.012	0.052	X	X	X	X	0.153	X	X	X	0.10	0.13

Notes:

1. Values are maximum detected concentrations (mg/L) from the Waste Characterization report (Weston, 1987).
2. Shaded values exceed the "upper bound" background ground-water concentration (barium, cadmium, chromium, and lead only).
3. Samples analyzed using modified ASTM Method.
4. See Table 4 for explanation of sample identification numbers.
5. ND - not detected
6. X - not analyzed

Table 3. Analytical Data for 1987 Waste Streams, SCOUFS Technical Memorandum, Kohler Company Landfill.

PARAMETER	IF-4	IF-5	IF-6	IF-8	IF-9	IF-11	IF-11A	IF-12	IF-13A	IF-13B	IF-13C	IF-13D	IF-15
pH (std. units)	6.86	6.80	7.11	6.01	8.30	8.79	8.07	6.68	5.40	9.06	5.69	6.86	6.49
SP. COND (umhos/ca)	705	316	634	24.3	980	69.1	102	84.4	17.8	425	22.3	93.2	153
C.O.D.	36.3	69.1	34	199	477	55.3	7.90	204	28.5	113	171	41.8	18.7
T.O.C.	5.30	19.5	5.60	51.0	1597	70.0	82.0	81.0	8.90	19.6	53.0	14.0	6.30
ALUMINUM	0.28	0.14	0.17	X	X	X	X	X	0.10	0.10	0.20	0.20	0.17
ANTIMONY	X	X	X	X	X	X	X	X	X	X	X	X	X
ARSENIC	0.10	0.10	0.10	0.003	0.11	0.13	0.10	0.002	0.002	0.10	0.004	0.004	0.10
BARIUM	0.10	ND	0.11	X	X	X	X	X	X	X	X	X	0.10
BORON	0.512	0.171	0.567	X	X	X	X	X	ND	0.005	ND	ND	0.261
CADMIUM	0.10	ND	0.10	ND	0.011	0.007	0.007	ND	ND	0.014	ND	ND	ND
CALCIUM	77.7	37.0	84.2	X	X	X	X	X	X	X	X	X	50.9
CHLORINE	10.2	15.1	12.0	2.10	10.0	3.70	2.80	1.10	1.20	1.50	2.50	6.30	41.5
CHROMIUM	0.10	0.10	0.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.10
COPPER	0.10	0.10	0.10	0.021	0.016	0.01	ND	0.016	0.028	20.01	0.024	0.031	0.10
CYANIDE	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X
FLUORINE	5.26	10.5	32.0	0.22	2.70	ND	0.40	0.19	ND	ND	ND	0.26	5.99
FORMALDEHYDE	X	X	X	0.16	1.12	0.11	0.19	6.97	ND	1.58	ND	ND	X
IRON	0.11	0.10	0.10	X	X	X	X	X	.0.045	0.031	0.264	0.033	0.10
LEAD	0.30	0.10	0.10	X	X	X	X	X	ND	ND	ND	ND	0.10
LITHIUM	X	X	X	X	X	X	X	X	X	X	X	X	X
MAGNESIUM	26.57	2.30	25.89	X	X	X	X	X	0.17	0.37	0.24	0.37	3.35
MANGANESE	2.45	0.10	0.46	X	X	X	X	X	0.008	0.057	0.01	0.033	0.11
MERCURY	ND	0.001	ND	0.0003	ND	ND	0.0002	0.0003	0.004	ND	0.0004	0.004	0.0004
NICKEL	0.16	0.10	0.10	X	X	X	X	X	ND	ND	0.05	0.03	3.35
PHENOL	X	X	X	1.82	X	7.50	X	4.38	0.055	0.01	9.29	0.086	X
PHOSPHORUS	0.776	0.144	0.164	X	X	X	X	X	0.16	0.384	0.297	0.028	0.167
POTASSIUM	4.26	13.4	7.20	X	X	X	X	X	X	X	X	X	10.5
SELENIUM	0.10	0.10	0.10	ND	0.002	0.002	ND	ND	ND	ND	ND	ND	0.10
SILVER	0.10	0.10	0.10	ND	0.01	ND	ND	ND	0.01	ND	ND	ND	0.10
SODIUM	12.3	10.8	55.9	1.92	3.66	6.83	21.0	1.92	2.72	2.70	2.13	2.01	3.86
STRONTIUM	1.38	0.17	1.21	X	X	X	X	X	X	X	X	X	0.22
SULFATE	29.0	92.0	24.0	1.50	23.2	4.00	4.30	10.7	4.60	2.50	1.30	9.80	90.0
SULFUR	X	X	X	X	X	X	X	X	X	X	X	X	X
TIN	ND	0.10	0.10	X	X	X	X	X	0.013	0.006	ND	0.005	0.10
TITANIUM	ND	0.03	ND	X	X	X	X	X	0.01	0.008	0.016	0.01	0.02
ZINC	0.23	0.10	0.10	X	X	X	X	X	X	X	X	X	0.10

Notes:

1. Values are maximum detected concentrations (mg/L) from the Waste Characterization report (Weston, 1987).
2. Shaded values exceed the "upper bound" background ground-water concentration (barium, cadmium, chromium, and lead only).
3. Samples analyzed using modified ASTM Method.
4. See Table 4 for explanation of sample identification numbers.
5. ND - not detected
6. X - not analyzed

Table 3. Analytical Data for 1987 Waste Streams, SCOUFS Technical Memorandum, Kohler Company Landfill.

PARAMETER	IF-16	IF-17	IF-18	IF-19	B-1	PII-1	A-1	M-1	M-2	I-1	P-1	P-2	P-3A
pH (std. units)	8.68	7.17	6.80	6.79	8.56	9.08	10.33	9.61	8.39	13.6	6.76	8.08	7.61
SP. COND (umhos/ca)	218	1110	532	181	287	30.3	7950	187	256	8380	595	2120	887
C.O.D.	446	204	38.8	23.7	37.6	4.80	99.3	9.20	14.9	4.40	33.8	17.0	68.0
T.O.C.	102	77.0	12.4	7.10	58.0	3.70	X	X	X	7.20	X	X	X
ALUMINUM	4.35	0.10	0.14	0.10	X	0.20	X	0.20	0.10	0.10	0.12	0.26	3.65
ANTIMONY	X	X	X	X	X	X	X	1.90	3.43	X	X	X	X
ARSENIC	0.10	0.10	0.10	0.10	ND	ND	0.10	0.10	0.10	0.10	0.10	ND	0.10
BARIUM	0.10	0.10	0.10	0.10	X	0.071	X	X	X	2.275	0.35	0.10	0.17
BORON	0.271	0.292	0.585	0.217	X	ND	X	4.755	6.987	2.391	0.617	0.005	0.123
CADMIUM	0.10	0.10	0.10	0.10	0.081	0.009	0.10	0.077	0.10	0.006	0.10	0.10	0.10
CALCIUM	13.0	60.9	88.4	40.8	X	1.20	857	19.3	4.70	920	104	908	19.0
CHLORINE	7.50	40.2	14.8	35.8	18.3	1.10	27.8	1.10	ND	12.8	6.50	48.1	20.7
CHROMIUM	0.10	0.10	0.10	0.10	0.023	0.01	0.10	0.023	ND	0.01	0.10	0.10	0.10
COPPER	0.32	0.17	0.10	0.10	0.155	0.056	0.10	0.023	0.10	0.02	0.16	0.49	0.10
CYANIDE	X	X	X	X	X	X	X	X	X	X	X	X	X
FLUORINE	30.0	8.75	5.50	15.8	1.30	0.50	5.60	4.10	46.3	1.80	14.0	0.60	15.5
FORMALDEHYDE	X	X	X	X	X	X	X	X	X	X	X	X	X
IRON	1.01	0.86	0.10	0.15	X	0.072	X	0.974	0.10	0.01	0.10	0.59	0.29
LEAD	0.30	0.10	0.10	0.10	X	ND	X	2.50	5.10	0.20	0.20	0.40	0.10
LITHIUM	X	X	X	X	X	X	X	2.50	4.60	X	0.06	0.08	0.17
MAGNESIUM	1.96	6.25	8.82	2.20	X	0.44	X	X	X	0.03	6.03	10.4	4.60
MANGANESE	0.10	0.19	2.00	0.10	X	1.273	X	X	X	0.009	0.10	0.10	0.10
MERCURY	0.0002	ND	ND	ND	0.0002	0.0002	0.0007	0.0002	0.0002	ND	ND	ND	0.0004
NICKEL	0.47	0.10	0.10	0.10	X	X	X	X	X	X	X	X	X
PHENOL	X	X	X	X	X	X	X	X	X	X	X	X	X
PHOSPHORUS	0.511	0.19	0.057	0.549	X	ND	X	X	X	ND	0.034	ND	0.06
POTASSIUM	3.00	10.6	15.2	4.36	X	0.10	X	0.49	0.31	114	5.60	4.60	5.20
SELENIUM	0.20	0.20	0.10	0.10	ND	ND	0.20	0.005	0.20	0.009	0.10	ND	ND
SILVER	0.20	0.10	0.10	0.10	ND	ND	0.10	ND	0.10	0.02	0.10	0.10	0.10
SODIUM	124	256	12.89	10.4	14.3	1.95	2.20	47.25	61.6	191	13.6	49.8	39.6
STRONTIUM	0.22	1.19	0.37	0.17	X	0.05	X	0.07	0.05	2.24	X	X	X
SULFATE	90.0	100	36.0	92.0	13.7	3.30	99.0	2.20	17.0	43.5	136	1930	570
SULFUR	X	X	X	X	X	X	X	X	X	X	X	X	X
TIN	0.20	0.70	0.10	0.10	X	X	X	X	X	X	0.10	0.30	0.10
TITANIUM	0.05	0.03	ND	0.02	X	X	X	0.974	1.64	X	ND	0.05	0.10
ZINC	0.41	0.16	0.15	0.10	X	0.155	X	0.282	0.43	0.012	15.67	1.78	0.10

Notes:

1. Values are maximum detected concentrations (mg/L) from the Waste Characterization report (Weston, 1987).
2. Shaded values exceed the "upper bound" background ground-water concentration (barium, cadmium, chromium, and lead only).
3. Samples analyzed using modified ASTM Method.
4. See Table 4 for explanation of sample identification numbers.
5. ND - not detected
6. X - not analyzed

Table 3. Analytical Data for 1987 Waste Streams, SCOUFS Technical Memorandum, Kohler Company Landfill.

PARAMETER	P-3B	P-4	P-5
pH (std. units)	8.13	7.88	8.52
SP. COND (umhos/ca)	2010	204	155
C.O.D.	38.0	92.0	38.0
T.O.C.	X	61.0	X
ALUMINUM	0.10	X	0.10
ANTIMONY	X	X	X
ARSENIC	0.10	0.20	0.10
BARIUM	0.10	X	0.10
BORON	0.071	X	0.03
CADMIUM	0.10	0.10	0.10
CALCIUM	804	X	86.9
CHLORINE	58.5	17.9	12.3
CHROMIUM	0.10	0.65	0.10
COPPER	0.10	0.10	0.10
CYANIDE	X	X	X
FLUORINE	1.40	25.0	17.8
FORMALDEHYDE	X	X	X
IRON	0.10	X	0.10
LEAD	0.10	X	0.10
LITHIUM	0.06	X	0.04
MAGNESIUM	8.30	X	20.4
MANGANESE	0.10	X	0.10
MERCURY	ND	ND	ND
NICKEL	X	X	X
PHENOL	X	X	X
PHOSPHORUS	ND	X	ND
POTASSIUM	5.60	X	13.2
SELENIUM	ND	ND	ND
SILVER	0.20	0.10	0.10
SODIUM	21.1	9.00	142
STRONTIUM	X	X	X
SULFATE	1820	77.0	85.0
SULFUR	X	X	X
TIN	0.10	X	0.10
TITANIUM	0.10	X	0.10
ZINC	0.23	X	0.10

Notes:

1. Values are maximum detected concentrations (mg/L) from the Waste Characterization report (Weston, 1987).
2. Shaded values exceed the "upper bound" background ground-water concentration (barium, cadmium, chromium, and lead only).
3. Samples analyzed using modified ASTM Method.
4. See Table 4 for explanation of sample identification numbers.
5. ND - not detected
6. X - not analyzed

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Table 4. 1987 Solid Wastes Generated by Kohler Company, SCOUFS Technical Memorandum, Kohler Company Landfill.

Sample	Source	Description	Raw Materials
ES-1	Enamel Shop	Ground Coat Water Sludge	Borax, Feldspar, Quartz, Lead
ES-2	Enamel Shop	Waste Ground Coat	Same as ES-1
CF-1	Casting Finishing	Dust from D.C. 1	Same as IF-2
CF-2	Casting Finishing	Dust from D.C. 2	Same as IF-2
CF-3	Casting Finishing	Dust from D.C. 3	Same as IF-2
CF-4	Casting Finishing	Dust from D.C. 4	Same as IF-2
CF-5	Casting Finishing	Dust from D.C. 5	Same as IF-2
CF-6	Casting Finishing	Dust from D.C. 6	Same as IF-2
CF-7	Casting Finishing	Dust from D.C. 7	Same as IF-2
CF-8	Casting Finishing	Dust from D.C. 8	Same as IF-2
CF-9	Casting Finishing	Dust - Engine Block Grinding	Same as IF-2
CF-10	Casting Finishing	Dust - Cabinet and Turnblast	Same as IF-2
CF-11	Casting Finishing	Dust - Edge and Floor Grinding	Same as IF-2
M-1	Mill Building	Resmelted Waste Enamel	Sodium Nitrate, Borax, Fluorospar,
M-2	Mill Building	Start-Up & Preheat Waste Frit	Same as M-1
BR-7	Brass Building	Plastic Shavings	Polypropylene Oxide, Acetal Resin,
BR-12	Brass Building	Dust Collector Dust	Cu, Sn, Pb, Zn, Fe, Sb, Ni, S, P,
BR-13A	Brass Building	Waste Resin Cores	Phenolic Novalak Resin
BR-13B	Brass Building	Waste Premix Cores	Organic Resins - Proprietary
BR-13C	Brass Building	Waste Oil Cores	Oil, Organic Resins - Proprietary
BR-14	Brass Building	Waste Sand	Same as BR-12
B-1	Bar Sink	Bar Sink Waste Acrylics & Fiberglass	Acrylics, Fiberglass
PH-1	Powerhouse and Acetylene	Powerhouse Filter	Cellulose, Filtered Impurities
A-1	Powerhouse and Acetylene	Gas House Acetylene Sludge	Calcium Carbide, Water
I-1	Incinerator	Incinerator Ashes	Cardboard, Paper & Wood
P-1	Pottery	Pottery Clarifier Sludge (Slip)	Various clays, SIlica, Nephaline
		Pottery Clarifier Sludge (Glazes)	Flint, Wollastonite, Aluminum
P-2	Pottery	Broken Ware	Same as P-1
P-3	Pottery	Waste Slip and Plaster	Same as P-1
P-4	Pottery	Fiberglass Clippings	Polyester Resin, Styrene
P-5	Pottery	Ware Grinding	Same as P-1, Grinding Wheel Grit
IF-1	Iron Foundry	Composite Slag (All Melts)	Fe, C, P, Si, Mn, Cr, Ni, Pb, Sn,
IF-1A	Iron Foundry	Weigh Hopper Dust, Collector Dust	Same as IF-1
IF-2	Iron Foundry	Osborn Spill Sand	Same as IF-1, Sand, Sr, K, Mg, Ca,
IF-3	Iron Foundry	Osborn Clarifier Sludge	Same as IF-2
IF-4	Iron Foundry	Turntable Clarifier Sludge	Same as IF-2
IF-5	Iron Foundry	Slinger & Hand Molding Wash Sand	Same as IF-2
IF-6	Iron Foundry	Herman Settling Tank Sludge	Same as IF-2
IF-7	Iron Foundry	Herman Waste Sand	Same as IF-2
IF-8	Iron Foundry	Reject Isocure Cores	Sand, Phenol, Formaldehyde,

Table 4. 1987 Solid Wastes Generated by Kohler Company, SCOUFS Technical Memorandum, Kohler Company Landfill.

Sample	Source	Description	Raw Materials
IF-9	Iron Foundry	Reject Oil Cores	Sand, Linseed Oil
IF-11	Iron Foundry	Reject Pepset Cores	Sand, Pyridine Derivative,
IF-11A	Iron Foundry	Waste Cores (Washed)	Trichloroethane
IF-12	Iron Foundry	Reject Phenolic Cores	Sand, Phenolic Resins, Formaldehyde
IF-13A	Iron Foundry	Spent Isocure Cores	Same as IF-1 and IF-8
IF-13B	Iron Foundry	Spent Pepset Cores	Same as IF-1 and IF-11
IF-13C	Iron Foundry	Spent Oil Cores	Same as IF-1 and IF-9
IF-13D	Iron Foundry	Spent Phenolic Cores	Same as IF-1 and IF-12
IF-14	Iron Foundry	Slinger & Hand Molding Clarifier Sludge	Same as IF-2
IF-15	Iron Foundry	Turntable Waste Sand	Same as IF-2
IF-16	Iron Foundry	Osborn Sand Lumps	Same as IF-2
IF-17	Iron Foundry	Merman Sand Lumps	Same as IF-2
IF-18	Iron Foundry	Slinger Sand Lumps	Same as IF-2
IF-19	Iron Foundry	Turntable Sand Lumps	Same as IF-2
IF-20	Iron Foundry	Slinger Clarifier Sludge	Same as IF-2

Source: Roy F. Weston, Inc., July 1987.

Table 5. Possible Components of Waste Oils Disposed in the Kohler Company Landfill, SCOUFS Technical Memorandum, Kohler Company Landfill.

Plant Source	Liquid	Yearly Volume, gal	Notes
E & EP	Induction Oil	500	
E & EP	Macoma 33	300	
E & EP	Macoma 71	300	
E & EP	Motor oil Shell Hd 30	1,200	
E & EP	Turbo #33	600	
E & EP	LEP Kwik Dri	3,300	
E & EP	301 Honing Oil Ker Base	150	
E & EP	Oil 20W	1,320	
E & EP	Oil 30W	--	w/above
E & EP	Petron break in oil	--	w/above
E & EP	Cimcool 5 star #30	7,920	Landfill
E & EP	Cool oil L	--	w/above
E & EP	White water soluble	10,800	Landfill
E & EP	Ciperial 10 EC	?	
Brass	Hydraulic Oil #25	28	
Brass	Hydraulic Oil #33	1,100	
Brass	Hydraulic Oil #71	55	
Brass	8962 Cutting Oil	110	
Brass	Macoma #1	55	
Brass	8962 Cutting Oil	2,640	
Brass	Speed Oil #115 (steel)	110	
Brass	Garcia #904 Oil	220	
Brass	Dromus A	1,320	Landfill
Brass	Solvac 800	1,320	Landfill
Herman	Mobil MC 634	990	
Herman	Mobil MC 632	330	
Herman	Mobil Velocit. 10	660	
Herman	Mobil MP47	660	
Herman	Hydraulic 71	660	
Pottery	Hydraulic Oil #33	1,100	
Pottery	Hydraulic Oil #41	--	w/above
Pottery	Mineral Spirits	--	w/above
Pottery	Motor Oil Hd 30	--	w/above
Pottery	Nassa Oil K-81	--	w/above
Power House	Cylrex #200 Oil	4,510	
Power House	Hydraulic Oil #27	--	w/above
Power House	Hydraulic Oil #41	--	w/above
Power House	Tellus 69	--	w/above
Power House	Turbo 33	--	w/above
Foundry	Hydraulic Oil #33	2,200	
Foundry	Hydraulic Oil #71	1,540	
Foundry	Macoma #71	2,200	
Garage	Motor Oil 20W	3,960	
Garage	Motor Oil 30W	--	w/above
Garage	Macoma #71	--	w/above
Garage	Transmission Fluid	--	w/above
Garage	303 John Deere Oil	--	w/above
Garage	308 Solvent	--	w/above
Tool Room/Maint.	Hydraulic Oil #33	825	
Tool Room/Maint.	Mobil Vaculine	55	
Tool Room/Maint.	Kerosene	28	
Tool Room/Maint.	Soap Water	220	Landfill
Total		31,705	

Source: 04/01/74 Kohler Memorandum

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Table 6. Ground-Water Data From Background Monitoring Wells, SCOUFS Technical Memorandum, Kohler Company Landfill.

PARAMETER	STAGE I WMA RPT. DECEMBER 1980 1B	6	PHASE I TECH MEMO FEBRUARY 1988 1B	1C	1D	6	PHASE II TECH MEMO DECEMBER 1988 1B	1C	1D	6	ARITH. MEAN	STD. DEV.	UPPER BOUND
ALUMINUM	0.91	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.29	0.62
ANTIMONY			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
BARIUM	0.00	0.00	0.01	0.01	0.17	0.04	0.02	0.02	0.21	0.06	0.05	0.07	0.19
BORON	0.44	0.18									0.31	0.18	1.45
CADMIUM			0.00	0.00	0.00	0.00					0.00	0.00	0.00
CALCIUM	34.00	34.00	62.00	65.00	13.20	88.40	56.40	56.10	139.00	84.60	63.27	35.19	127.67
CHROMIUM	0.04	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.029
COD	31.50	14.40									22.95	12.09	99.25
COPPER	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01
IRON	0.96	0.24	0.03	0.03	0.04	0.03	0.04	0.03	0.03	0.04	0.15	0.29	0.68
LEAD			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.0068
MAGNESIUM	33.50	38.00	29.10	29.80	87.60	40.70	25.80	25.80	75.90	40.60	42.68	21.49	82.00
MANGANESE	0.05	0.07	0.00	0.00	0.84	0.03	0.01	0.00	0.03	0.03	0.11	0.26	0.58
NICKEL			0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03
PHENOLICS	0.01	0.00									0.00	0.00	0.02
PHOSPHORUS	0.14	0.09									0.12	0.04	0.34
POTASSIUM	1.10	1.32	0.27	400.00	4.60	1.00	0.00	0.00	2.11	0.00	41.04	126.13	271.86
SODIUM	3.30	5.30	7.70	7.10	120.00	4.90	7.16	6.19	123.00	5.11	28.98	48.79	118.26
STRONTIUM	0.06	0.02									0.04	0.03	0.22
VANADIUM			0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02
ZINC	0.00	0.00	0.00	0.00	0.01	0.01	0.06	0.05	0.06	0.05	0.02	0.03	0.07

NOTES:

1. Blank space - not sampled

2. UPPER BOUND - The standard deviation times the t statistic plus the arithmetic mean where the t statistic is chosen based on a 95% confidence level.

Table 7. Summary of Ground-Water Monitoring Data Exceeding Upper Bound Background Concentrations, SCOUFS Technical Memorandum, Kohler Company Landfill.

Parameter	Upper Bound	Phase I Technical Memorandum										
		MW-2	MW-3D	MW-5	MW-8	MW-10	MW-11	MW-11D	-3D DUP.	MW-2D	MW-10	MW-11
Barium	0.19									0.45B		
Cadmium	0.00	0.011		0.005	0.01				0.005			
Chromium	0.03						0.208					0.086
Lead	0.01		0.007			0.008	0.158	0.037			0.0162	0.098

Notes:

1. Blank space - concentration did not exceed upper bound.
2. No samples from 4th quarter 1980 landfill monitoring exceeded upper bound.
3. All concentrations in mg/L.
4. Shaded values - exceeds Maximum Contaminant Level (MCL).

805KOHLERR1(tables)#2/UP_BOUND.wk1

Table 8. Estimated Volumes of Solid Waste Generated by Kohler Company, SCOUFS Technical Memorandum, Kohler Company Landfill.

Waste Source Department Name(s)	Waste Identification	Volume (yd3/year)	Percent of Total
Casting Finishing, Intergroup Cast Iron & Iron Foundry	Used system sand, scrap cores, slag, dust collector waste, refractory brick and blankets, wheelabrator waste (de-enameling), floor sweepings	41,872	82%
Mill Room & Enamel Shop	Waste enamel frit, groundcoat waste, dust collector waste, raw material bags, refractory brick, floor sweepings	1,161	2.3%
Pottery	Fired cull, waste clay, waste slip, waste glaze, clarifier slurry, dust collector waste, plaster molds, floor sweepings	6,650	13.1%
Brass Machine	Harper buffing lint, buffing wheels, celcon plastic, epoxy powder, floor sweepings	319	<1%
Injecton Molding	Scrap plastic, floor sweepings	<100	<1%
Die Cast	Used system sand, scrap cores, steel & glass shot, refractory brick, floor sweepings	<100	<1%
Acrylics Environment & Whirlpool Perma-wall Kohler Plastics	Scrap fiberglass, molds, fixtures	<10	<1%
Building Group	Incinerator ash, floor sweepings	<100	<1%
Maintenance	Demolition debris, floor sweepings	<100	<1%
Real Estate & Other	Earthen spoils	500	see Note
Other	Special waste		

Source: Kohler Co., August 1990.

Note: varies; in general < 1%

APPENDIX A

Description of Plant Waste Sources

Kohler Company Waste Characterization Study

Process Description

Ground Coat (2 samples)

Ground coat is a pink powder suspended in water and sprayed onto cast iron pieces. It forms a base coat between the iron and the porcelain enamel that finishes the piece.

Ground coat is applied to cast iron tubs & sinks in spray booths in the enamel shop. Two samples were collected from this process. Ground Coat Water Sludge (ES-1) is from the spray booth recirculating tank, which is pumped into the Kohler cement truck for disposal in the land-fill. The Waste Ground Coat (ES-2) is dry waste powder and floor sweepings from the ground coat production area that is put in the waste enamel bin on the south side of the Mill Building and then taken to the landfill.

Iron Casting Finishing (11 samples)

Casting finishing consists of Wheelabrator machines that blast ironware with steel shot and hand booths where workers use grinding wheels to smooth cast iron pieces.

Casting finishing prepares cast pieces for enameling by removing sand that may still be clinging to the surface and by creating a smoother surface. Tubs and sinks which have been rejected due to an unacceptable enamel finish are also put through the process to remove the enamel.

Samples CF-1 through CF-8 are from the wheelabrator dust collectors east of the foundry. The waste collected by the dust collectors is the fine portion of the dust and metal pieces from the process. Useable abrasive and larger pieces of metal are collected for reuse or salvage. The dust from the collector hoppers are collected in the Kohler cement truck and disposed of in the landfill. The three other samples from casting finishing, (CF-9, CF-10, and CF-11) are from smaller grinding booths. These samples were collected from the individual systems located at each of the booths.

Mill Room (2 samples)

In the Mill Room raw materials are mixed and melted together. The molten mixture leaves the furnace and is quenched in water, where it

forms a course frit. For production use, the frit is ground to a powder in ball mills and used in the Enamel Shop, where it is applied to sinks, lavs and tubs. Waste enamel powder is re-smelted (melted) and is disposed of as frit, without being milled into powder.

Both of the mill room samples (M-1, M-2) are waste enamel powder that has been smelted. This waste is dumped into the waste enamel bin on south side of the Mill Building and then hauled to the Kohler landfill. Unused enamel, floor sweepings and off spec enamel that cannot be used in making new enamel powder, is collected and fed in batches into a rotary kiln, smelted and quenched, producing frit. Whereas production frit would then be milled into a powder, the waste enamel is left in the coarser frit form for disposal. The initial charge into an automatic furnace (as with a color change), is discarded as waste frit.

Brass Machine (1 sample)

Many different types of machining operations are used to produce various brass, copper and plastic parts. Parts are machined dry, and also with water soluable coolants and oils. The brass turnings are salveged with a scrap dealer. Water soluable coolants are collected in drums and transported off-site to a treatment facility, and the oils are reclaimed. The only waste going to the landfill is plastic turnings, (BR-7).

Brass Foundry (5 samples)

Brass is melted and poured in the brass foundry on the fifth floor of the Brass Building. The brass parts are formed in molds that use sand and cores. Brass ingots are melted in furnaces. The molten brass is poured into sand molds to produce brass fixtures.

Waste from the brass foundry going to the landfill consists of cores and waste sand. Most of this waste is generated at the knock-out and shake-out areas at the end of the foundry production line. The used cores are removed from the castings and a certain amount of used sand is also discarded when the pieces are removed from the flasks, (BR-13A2, BR-13D and BR-14). Broken cores that cannot be used (BR-13A1) and waste premix sand (BR-13B) left over from core production. The premix sand is generated in the die cast area where the cores are produced.

Brass Casting Finishing (2 samples)

Cast brass pieces are run though a wheelabrator, which blasts the part with steel shot to remove sand and gives the part a smoother surface. There are also hand grinding operations that remove rough edges. The dust and metal particles are removed from the brass casting finishing area by dust collectors.

There are two dust collector cleanouts in brass, one on the fourth floor and one on the first floor. The fourth floor unit collects dust

from the grinding operations on the fourth floor Brass. The heavy grindings are collected for salvage; the lighter dust, made up mostly of sand, is disposed of in the landfill. The separation is accomplished in the dust collector. The sample collected from this unit (BR-12A) may not be representative of this practice and should be resampled. Only the portion that is disposed of in the landfill should be considered in the study. The first floor dust collector is connected to the fifth floor wheelabrators. All the waste from this process is landfilled (BR-12B).

Bar Sink (1 sample)

The bar sinks are formed by two pieces of plastic with foam in between. The pieces are over-sized, so after assembly, the excess flashing is cut away. This waste, (B-1) is collected in a rolloff and dumped in the landfill.

Power House (one sample)

A cellulose media was used to filter boiler water to remove impurities. The spent media was disposed of in the landfill (PH-1), but is no longer generated.

Acetylene Production (one sample)

Calcium carbide and water are mixed in a hydrolysis unit to produce acetylene. The waste product from this is a calcium hydroxide sludge, collected in an underground pit and pumped into the Kohler cement truck for disposal (A-1) in the landfill.

Incinerator (one sample)

The solid waste incinerator, located at the Engine Plant, burns waste wood and packaging that cannot be salvaged, generating an ash which is disposed of in the landfill (I-1).

Pottery (six samples)

In the Pottery, raw materials are mixed with water to make the various types of slips and glazes. Production processes include slip and glaze making, mold making from plaster, pouring, firing and glazing of ceramic products.

A clarifier is used to remove solids from the slip production wastewater. The effluent from the clarifier is discharged to the Kohler treatment lagoons. The clarifier sludge (P-1) is pumped from the clarifier in the pottery basements into the Kohler cement truck for disposal in the landfill. Pottery cull (P-2) is broken ware, glazed and

unglazed, that is hauled to the landfill. Waste slip (PA-3A), is the solid clay generated during the forming of the production units. It collects on the floor of the production area and is collected and disposed of in the landfill. Waste plaster (P-3), is from broken and discarded molds. It is discarded with pottery cull, and in fiber drums. Fiberglass fabric is used to reinforce molds. Fiberglass clippings (P-4) are cutoff ends from this process. Pottery ware grindings (P-5) are from the dust collectors attached to the ware grinders on the east end of the Pottery Building. The grinding is a finishing process. The dust collector is emptied during shut downs and the waste hauled to the landfill.

Iron Foundry (22 samples)

The Iron Foundry production classification includes several operations that generate waste that is disposed of in the Kohler landfill. For clarity, the iron foundry has been broken into three areas; electric melt, waste sand and waste cores.

1. Electric melt.

Different types of iron are used for various products in the Kohler foundries. In the electric melt different combinations of raw materials are smelted to create the molten iron which is transferred to the appropriate foundries.

Two waste products of smelting are slag and dust. The slag is fused impurities that rise to the surface of the molten iron and are raked off.

Slag (IF-1) is generated at different points in the foundry. It is removed from the foundry at the east end of the melt deck and collected with other foundry waste in the concrete bin east of the Herman foundry. Two dust collector samples (IF-1A, IF-1B), were collected from units that serve the electric melt. The fines are from a dust collector on the pre-heat exhaust and the heavier particles are from the dust collection system over the feed into the charge bucket.

2. Waste Sand

Sand from the Iron Foundries make up a significant portion of the waste disposed of in the landfill. Sand is used in forming the molds that the iron is cast in. Although the sand is collected and reused, a certain portion is wasted and disposed of. The sand handling systems are equipped with scrubbers which remove dust from the air. This dust is collected in clarifiers.

Sludge was collected from the clarifiers (mud tanks) on the Osborn line (IF-3), Turntable line, (IF-4), and Herman line, (IF-6). The sludges are collected in hoppers and disposed of in the landfill. Samples of waste sand were collected from the Osborn line (F-2) Slinger/ Hand Mold Line (IF-5) and Turntable line, (IF-15). Sand lumps were col-

lected from the Osborn line (IF-16), Herman line, (IF-17), Slinger line, (IF-18) and Turntable line, (IF-19). While both of these waste streams are made up of waste foundry sand, the lumps were treated separately because, if necessary, they could be screened and disposed of separately.

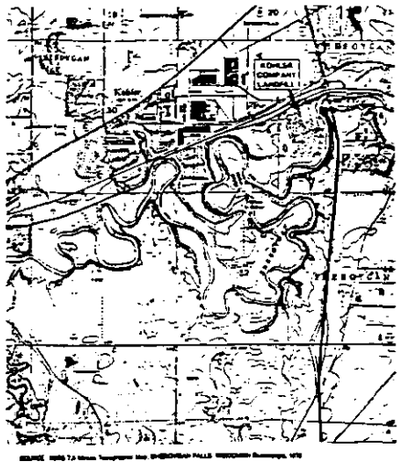
3. Waste Cores.

Several different types of cores are used in the Iron Foundry. Cores are used to shape or create voids in castings. There are two samples for each type of core; one sample of a reject core and one sample of a spent (used) core. The types of cores samples were: Isocure, (IF-8, IF-13A), Oil (IF-9), IF-13C), Pepset, (IF-11, IF-13B), Hot Box, (IF-12, IF-13D) and reject dipped cores (IF-11A). Waste cores are dumped in waste bins on the north and east yards of the foundry and disposed of in the landfill.

NO SCALE

SITE LOCATION MAP

INDEX OF SHEETS		
SHEET NO.	DRAWING NO.	SHEET TITLE
SHEET 1 OF 13	W16401-D01	TITLE SHEET
SHEET 2 OF 13	W16401-D02	TOPOGRAPHIC MAP-1925 AND CROSS-SECTION LOCATIONS
SHEET 3 OF 13	W16401-D03	LANDFILL DEVELOPMENT -OCTOBER 1950
SHEET 4 OF 13	W16401-D04	LANDFILL DEVELOPMENT -SEPTEMBER 1961
SHEET 5 OF 13	W16401-D05	LANDFILL DEVELOPMENT -AUGUST 1967
SHEET 6 OF 13	W16401-D06	LANDFILL DEVELOPMENT -MARCH 1973
SHEET 7 OF 13	W16401-D07	LANDFILL DEVELOPMENT-MAY 1975
SHEET 8 OF 13	W16401-D08	LANDFILL DEVELOPMENT-JULY 1978
SHEET 9 OF 13	W16401-D09	LANDFILL DEVELOPMENT-MAY 1980
SHEET 10 OF 13	W16401-D10	LANDFILL DEVELOPMENT-JUNE 1985
SHEET 11 OF 13	W16401-D11	LANDFILL DEVELOPMENT-MAY 1989
SHEET 12 OF 13	W16401-D12	CROSS-SECTIONS
SHEET 13 OF 13	W16401-D13	ADDRESSABLE AND NON-ADDRESSABLE UNITS



SITE VICINITY MAP

APPENDIX A

SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY TECHNICAL MEMORANDUM

KOHLER COMPANY LANDFILL

KOHLER, WISCONSIN

GERAGHTY & MILLER, INC. Environmental Services

SCALE VERIFICATION

CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
1	8/14/90	PLOTS TO SHEET 13 OF 13 TO SCALE	SG	

DRAWING NO: W16401 - D01

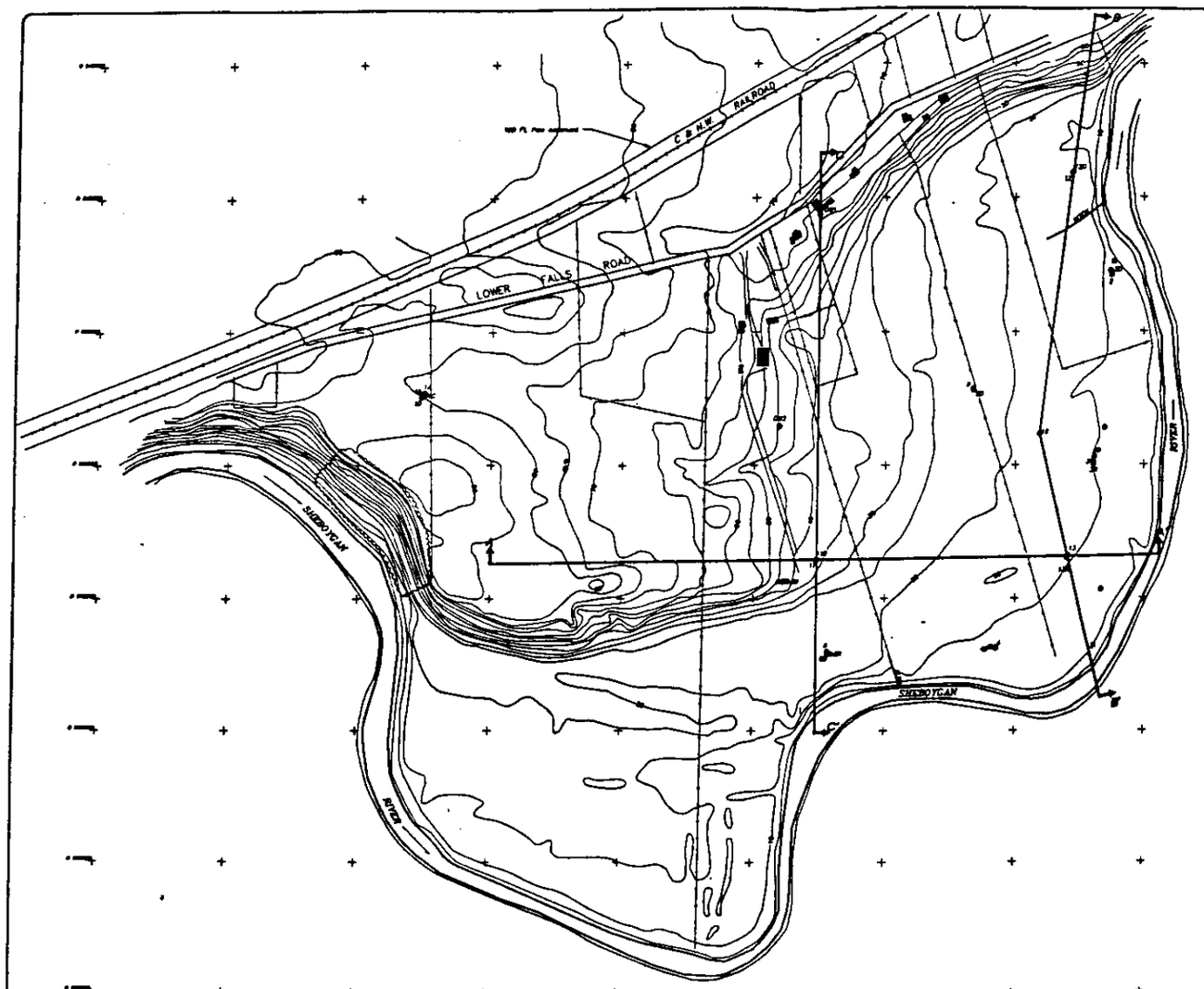
DRAWN BY: S. GOZNER DATE: 5/16/90

ENCKED BY: JCT DATE: 5/17/90

APPROVED BY: DATE:

TITLE SHEET
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SHEET NO. 1 OF 13



GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION

CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
1	9/10/90	REVISED LIMIT OF LANDFILL BOUNDARIES	SC III	
0	9/15/90		SC III	

DRAWING NO: W16401 - D02

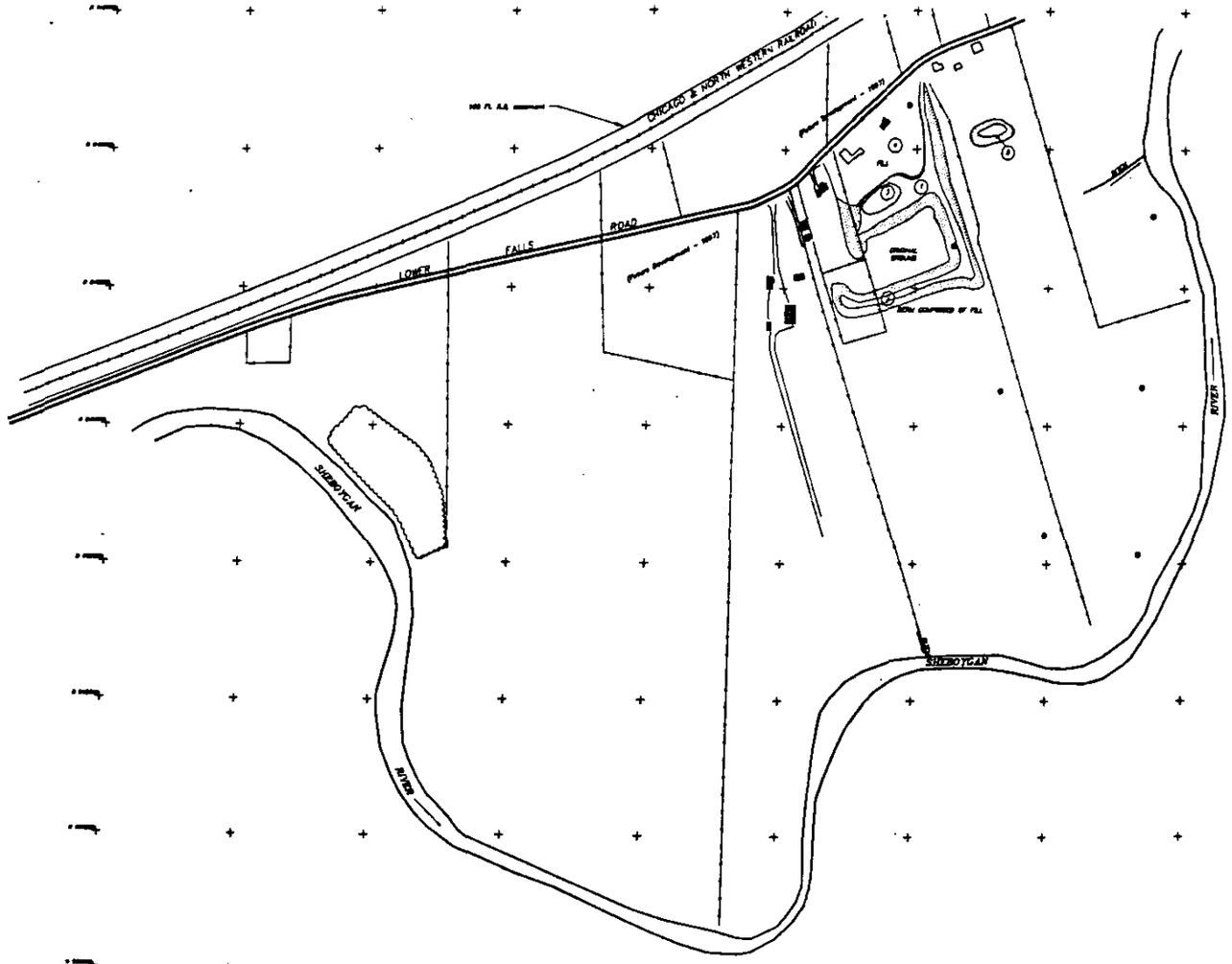
DRAWN BY: S GOZNER DATE: 9/15/90

CHECKED BY: JCT DATE: 9/17/90

APPROVED BY: DATE:

TOPOGRAPHIC MAP - JANUARY 1925
AND CROSS-SECTION LOCATIONS
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SHEET NO. 2 OF 13



AREA	DESCRIPTION
1	40' thick lower lift of landfill materials.
2	Extension of lower lift, forming a berm.
3	Ponded area on top of the lower lift.
4	20' thick upper lift on top of the lower lift that abuts area no.3.
5	Small segregated mound of fill.

LEGEND

NOTES

1) This map is not intended to be used for engineering or legal purposes.
2) This map compiled from aerial photograph dated 10, 1988
3) Water points approximately based on Landmark Properties Wetlands Delineation Survey.

SCALE IN FEET

0 100 200 400

GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION

CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
0	5/3/90		SC III	

DRAWING NO. W16401 - 003

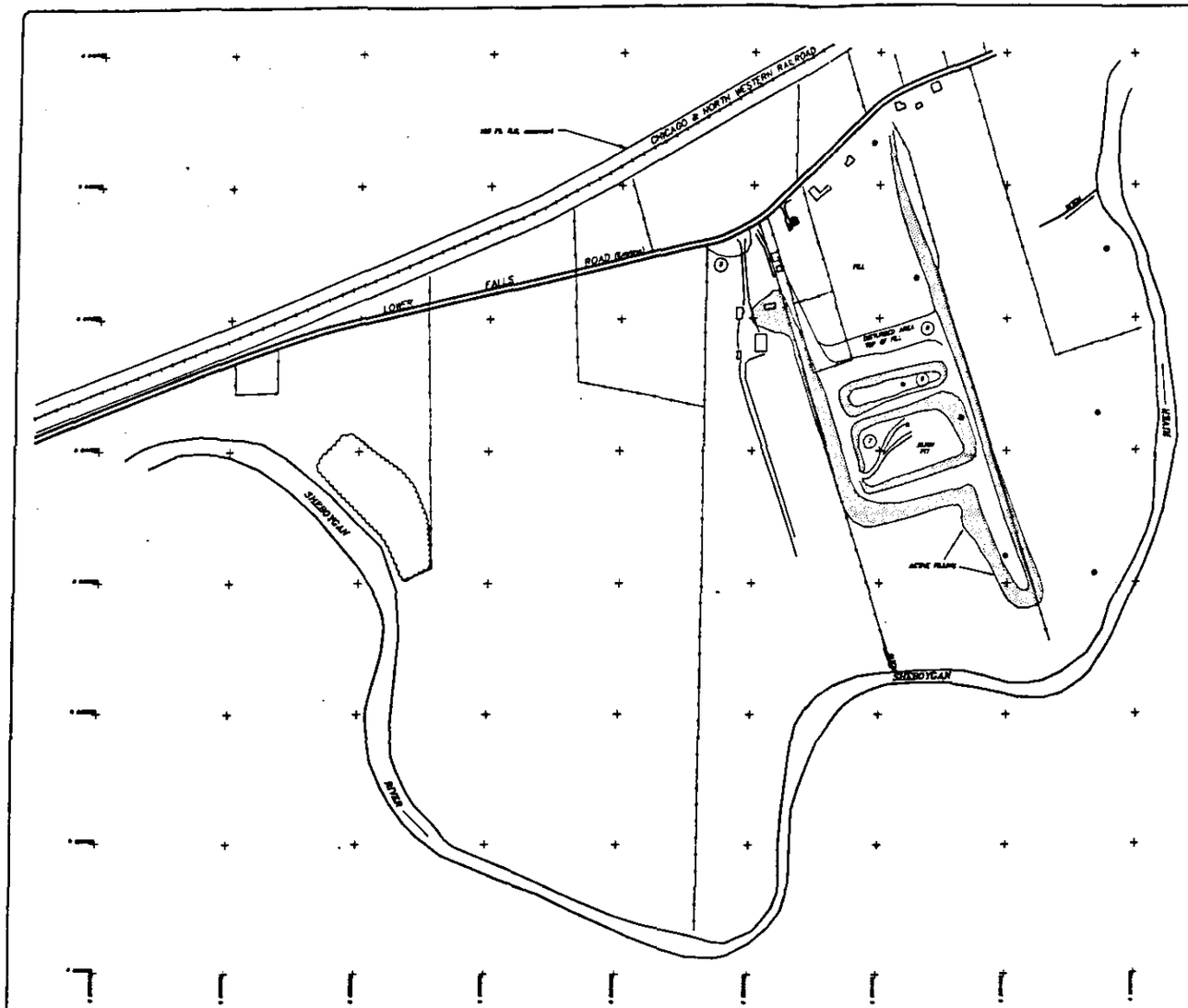
DRAWN BY: S. DOZNER DATE: 5/3/90

CHECKED BY: DATE: 5/17/90

APPROVED BY: DATE:

LANDFILL DEVELOPMENT - OCTOBER 1950
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SHEET NO 3 OF 13



AREA	DESCRIPTION
6	Active disposal cell with rectangular building within cell.
7	Active disposal cell with rectangular building within cell.
8	Bare ground which may represent grading in preparation for seeding for the fill surface
9	Miscellaneous fill activities west of main landfill area.

LEGEND

- Water
- Fences
- Power pole
- Power structure
- Railway crossbuck
- Trail or path

NOTES

1) This map is not intended to be used for engineering or survey purposes.
2) This map compiled from aerial photograph, September 20, 1988
3) Base photo information based on Lambert Projection Wisconsin, South Zone

SCALE IN FEET

0 250 500 1000

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SCALE VERIFICATION: THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING. IF BAR MEASURES MORE OR LESS, ADJUST SCALE ACCORDINGLY.

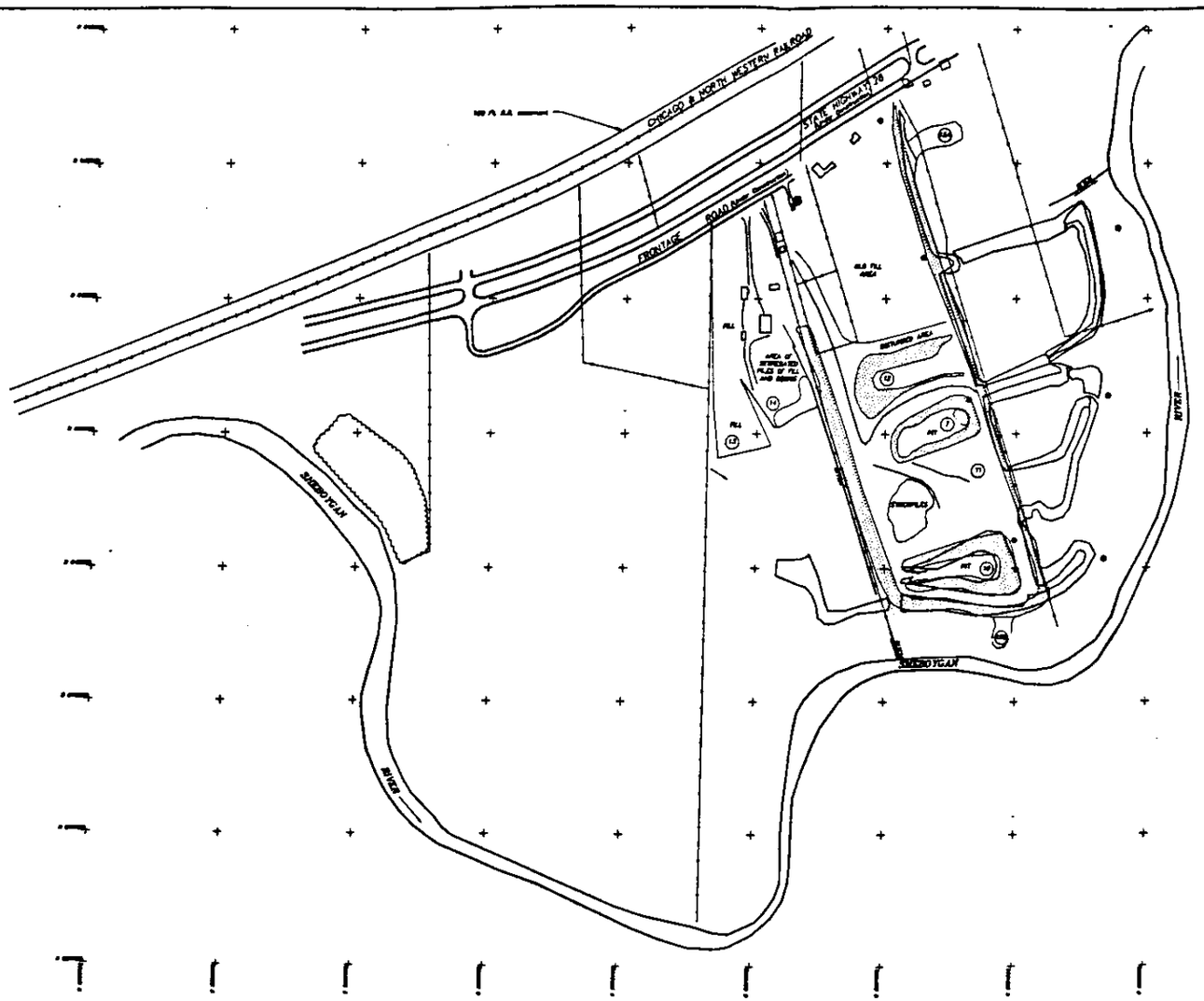
CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
0	5/10/90	SHOWN TO MEET CLIENT REQUIREMENTS	SG III	

DRAWING NO: 1816401 - 004

DRAWN BY: S. DOZIER	DATE:	5/10/90
CHECKED BY:	DATE:	5/10/90
APPROVED BY:	DATE:	

LANDFILL DEVELOPMENT - SEPTEMBER 1981
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN



AREA	DESCRIPTION
(7)	Disposal cell (same as on 08/81 plans).
(10)	Disposal cell.
(11)	Stockpiles, vehicles and equipment for concrete batch plant for construction of Route 28.
(12)	Stockpile of soil which may be related to highway construction.
(13)	Possible new disposal cell.
(14)	Miscellaneous disposal areas, possibly expropriated.
(17)	Sediment derived from landfill runoff.
(18)	Sediment derived from landfill runoff.

LEGEND

- Stream
- Fenceline
- Power pole
- Power manhole
- Existing monument
- Rail or path

NOTES

1. This map is not intended to be used for engineering or design purposes.
2. This map compiled from aerial photograph dated July 26, 1987.
3. Base photo reproduction based on Lakeland Photo Mapping, South Dakota.

Scale in feet

0 50 100 200 400

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CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
0	5/10/90	INCLUDES TCE AREAS, SLAG, REPROCESSED PILES OF FILL AND DEBRIS, CONTROL PT.	SG	TI

DRAWING NO: W15401 - 005

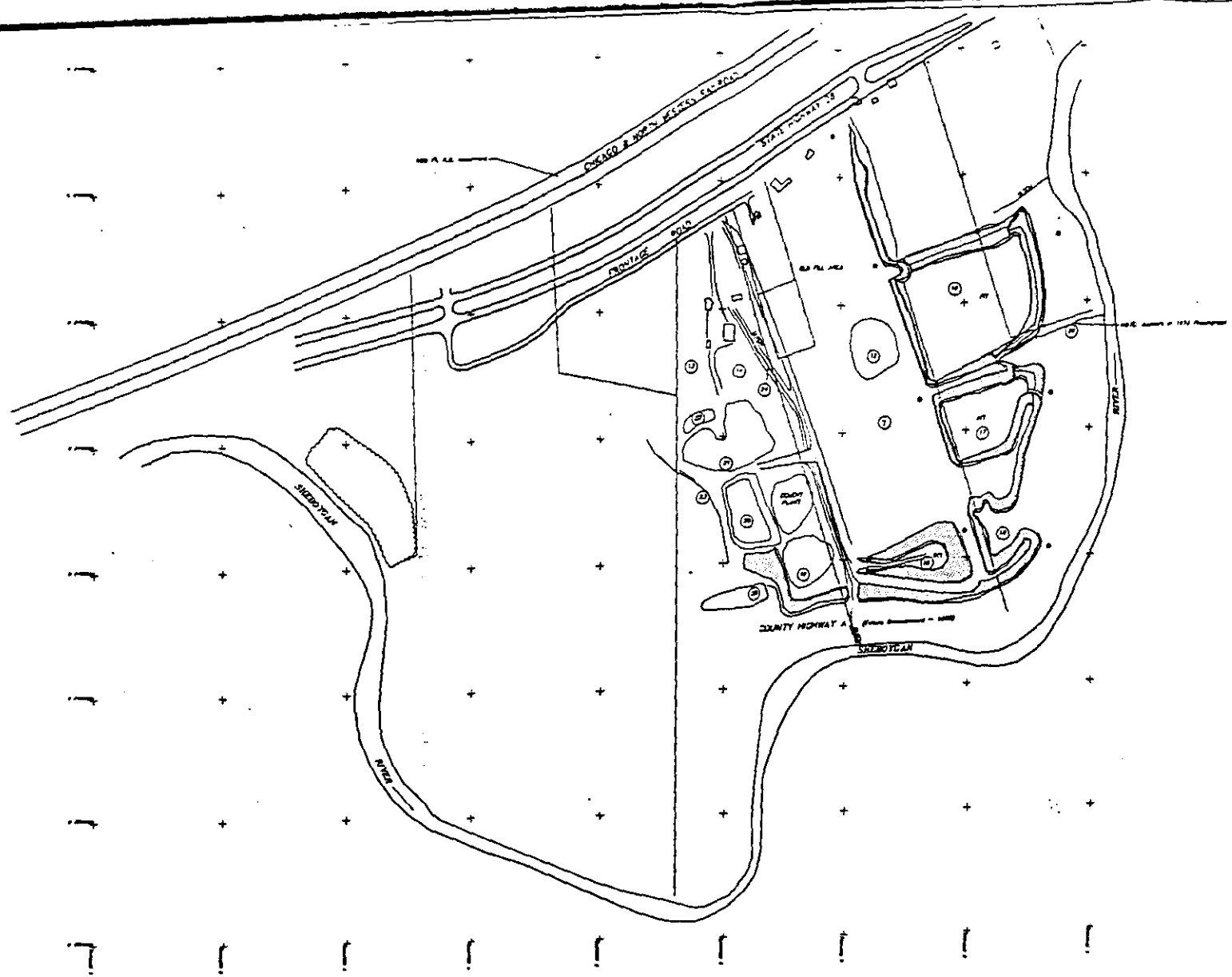
Drawn BY: S. GOZNER DATE: 5/10/90

CHECKED BY: DATE: 5/17/90

APPROVED BY: DATE:

LANDFILL DEVELOPMENT - AUGUST 1987
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SHEET NO. 5 OF 13



AREA — DESCRIPTION

1. Disposal cell completely filled and graded.
2. Continuation of active filling. Fire burning in northeast corner.
3. Previous unusable railroad to haul fly volume from 1967.
4. Fill area backfilled to grade.
5. Fill area backfilled to grade.
6. Development of new cell which contains a net groundwater mounding. Berm is taller than backfilled and improved landfill areas.
7. Disposal cell which contains liquid. Berms are constructed of a dry, medium dark gray and white mixture. Berm is at the same height of the previously filled and graded area, except for northerly corner, which is the same height as the northerly cell.
8. Disposal cell, about 30% complete. Active filling beginning along the northern wall.
9. Disposal cell almost filled to grade.
10. Disposal cell filled with liquid.
11. Large mounds of mixture.
12. Small partially backfilled pit with some liquid in northeast corner.
13. Ditch or road cut below grade.
14. Ditch or road cut below grade.
15. Flooding of the base of the natural drain.
16. Surface liquid from toe of slope to Sheboygan River

LEGEND

NOTES

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NO.	DATE	DESCRIPTION	BY	APPR.
0	3/15/90	SUBMITTED TO CLIENT FOR REVIEW	SC	

DRAWING NO: 891601 - 006

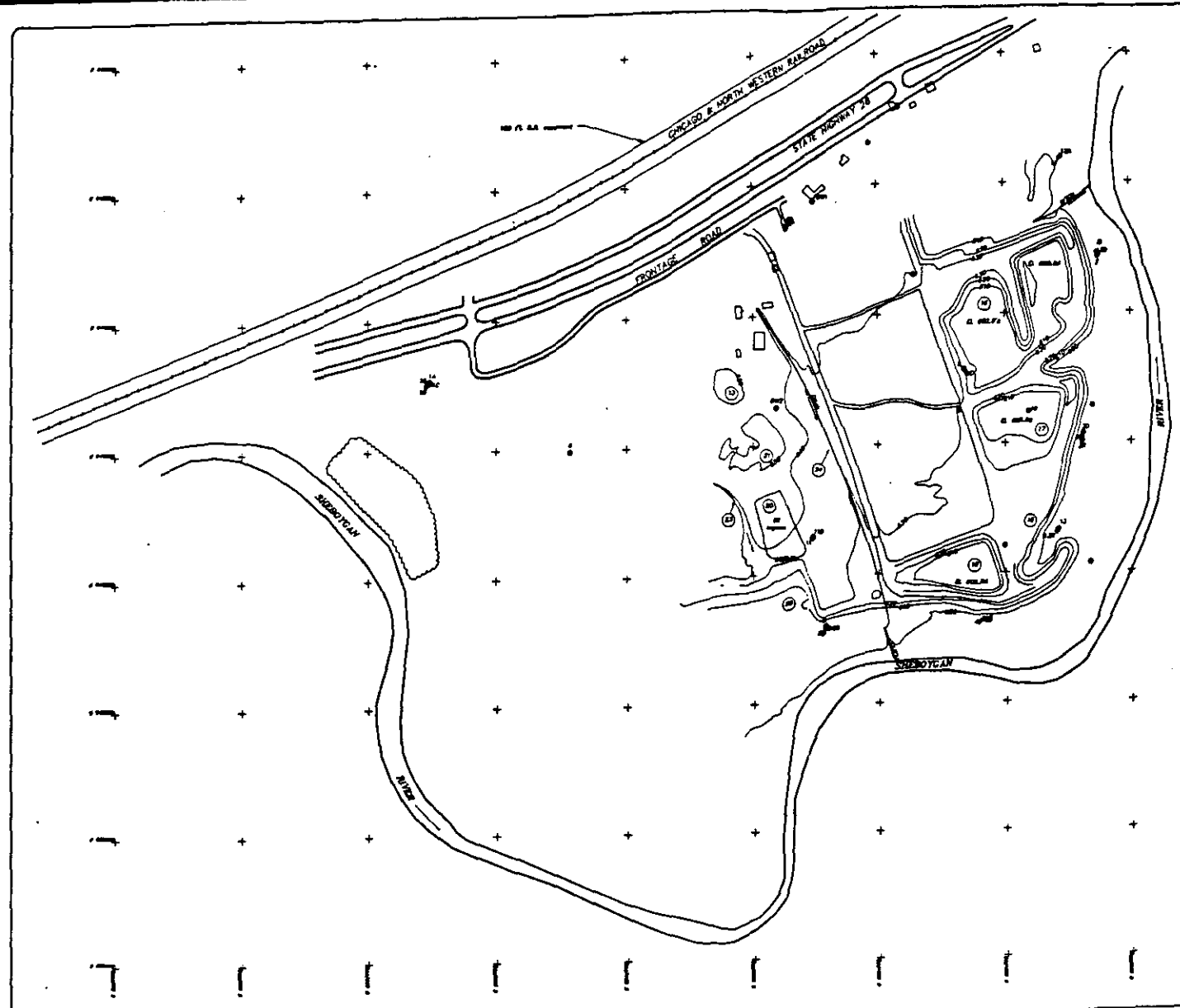
DRAWN BY S. OCLINCH DATE 3/15/90

DESIGNED BY CCT DATE 3/17/90

APPROVED BY DATE

LANDFILL DEVELOPMENT - MARCH 1973
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SHEET NO. 6 OF 13



AREA	DESCRIPTION
(10)	Active disposal cell.
(11)	Spoil pile on former fill area.
(12)	Disposal cell divided in half with a north–south berm. Solid material being disposed of in the northeast corner.
(13)	Active disposal cell.
(14)	Active disposal cell.
(15)	Disposal cell filled with liquid.
(16)	Stockpile of material.
(17)	Ditch or road cut below grade.
(18)	Ditch or road cut below grade.
(19)	Ponding at the base of the natural slope.

LEGEND

NOTES

GERAGHTY & MILLER, INC. Environmental Services

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SCALE VERIFICATION

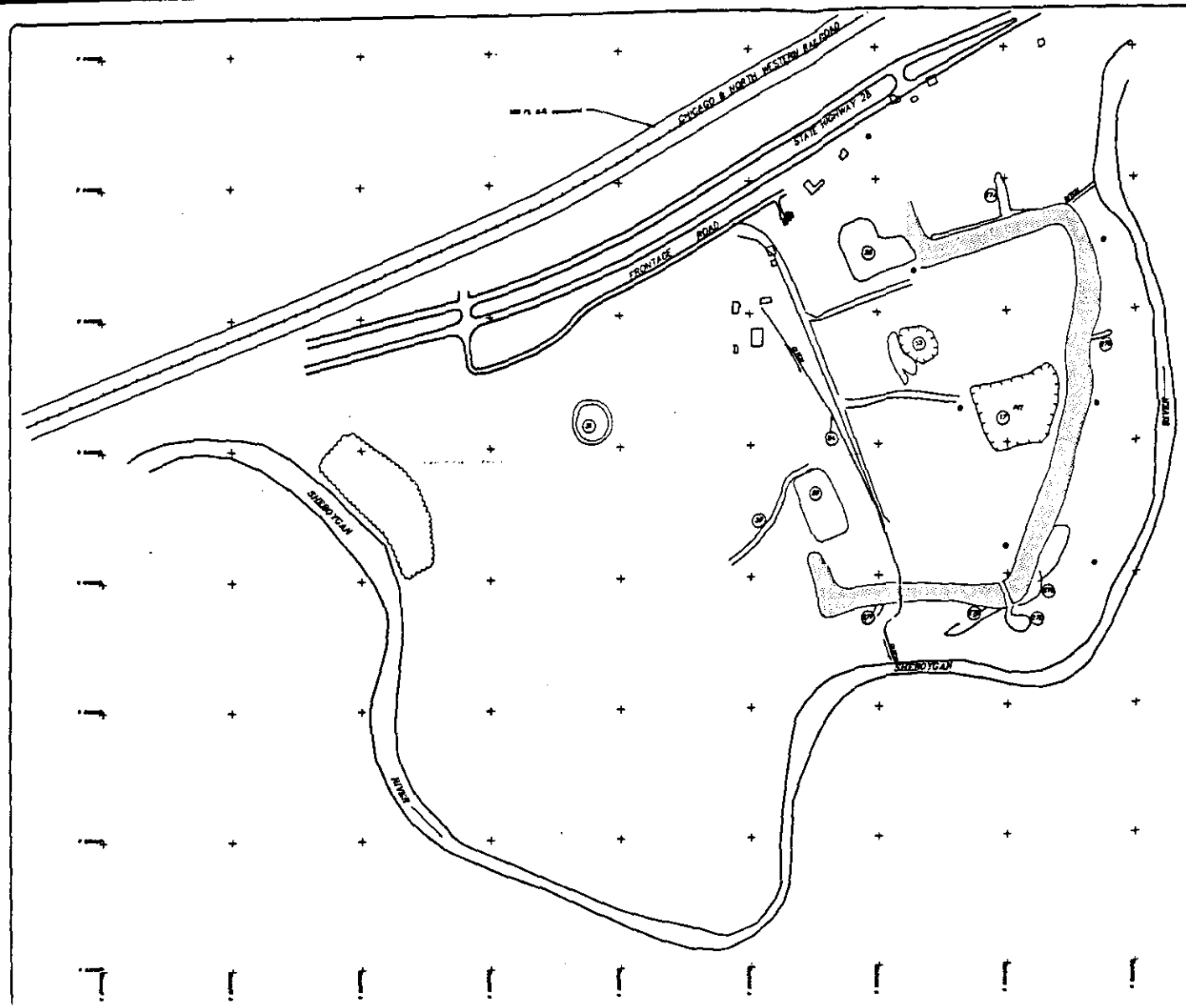
CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
0	9/14/90	ISSUED WITH LETTER DATED 9/14/90	SC	

DRAWING NO:	W16401 – D07	
DRAWN BY: S. GOZNER	DATE:	5/14/90
CHECKED BY:	DATE:	9/17/90
APPROVED BY:	DATE:	

LANDFILL DEVELOPMENT – MAY 1975
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SHEET NO. 7 OF 13



AREA — DESCRIPTION

- (12) Old sawdusts totally removed, and gravel depression backfilled. Some new material placed along the western edge. Individual loads of light colored industrial soil/debris.
- (1) Disposed soil about 60ft thick. Slurry-like industrial sludge pumped in the cell.
- (2) Dikes of mixed soil and/or gravel.
- (3)(4)(5)(6)(7)(8)(9) Slope from basin of the landfill slope.
- (10) Active surface disturbance near original landfill.
- (11) Stockpile area.
- (13) Slump soil from stockpile area 29 over the natural grade in place.
- (14) Unexposed disposed feature which appears to involve negative ground slump.

LEGEND

- Roads
- Power pole
- Power structure (Removed)
- Existing structure
- Top of bank

NOTES

1. This map is not intended to be used for measuring.
2. This map compiled from aerial photograph July 25, 1978 (Photo number 4-0-78).

GENERAL NOTE

Previous disposal cells 10, 11 and 12 were in the previous quarry south of the river area of these areas. Backfilling continued in area 12 but no previously filled in areas as this work was in an isolated part of the old quarry in the basin.

SCALE IN FEET

GERAGHTY & MILLER, INC. Environmental Services

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AS-BUILT VERIFICATION

CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
0	5/14/80	ISSUED TO NEW YORK FOR REVIEW	SG	WJ

DRAWING NO: W15401 - D08

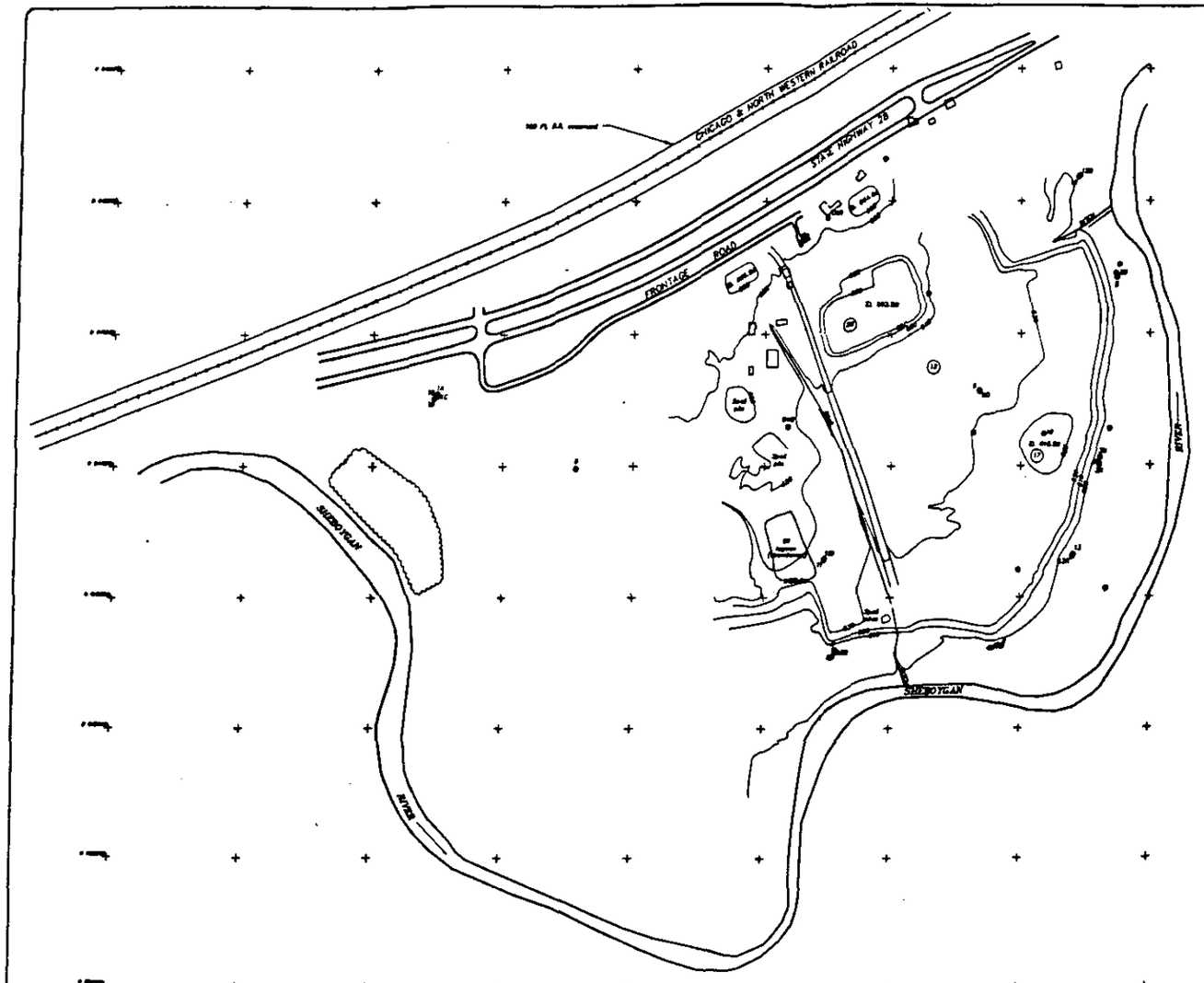
Drawn BY: S GOZNER DATE: 5/14/80

CHECKED BY: DATE: 6/17/80

APPROVED BY: DATE:

LANDFILL DEVELOPMENT - JULY 1978
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SHEET NO. 8 OF 13



AREA DESCRIPTION

(13) Temporary stockpiling activity. A small pond exists at the southern edge.

(17) Active filling with a dark gray and white slurry material.

(20) Active surface disturbance near original landfill.

LEGEND

- Soil cell
- Swales
- Power pole
- Power overhead (Phase)
- Existing structure
- Road or path

NOTES

1. This map is not intended to be used for engineering or survey purposes.
2. Base map compiled from aerial photograph May 2, 1988.
3. Some planimetrics based on Sanborn Maps, Seventh, Sheet Sixty.

GERAGHTY & MILLER, INC. Environmental Services

SCALE VERIFICATION

CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
0	5/14/90		SC III	

DRAWING NO: 1816401 - 008

DRAWN BY: S. GOZNER DATE: 5/14/90

CHECKED BY: DATE: 5/17/90

APPROVED BY: DATE:

LANDFILL DEVELOPMENT - MAY 1980

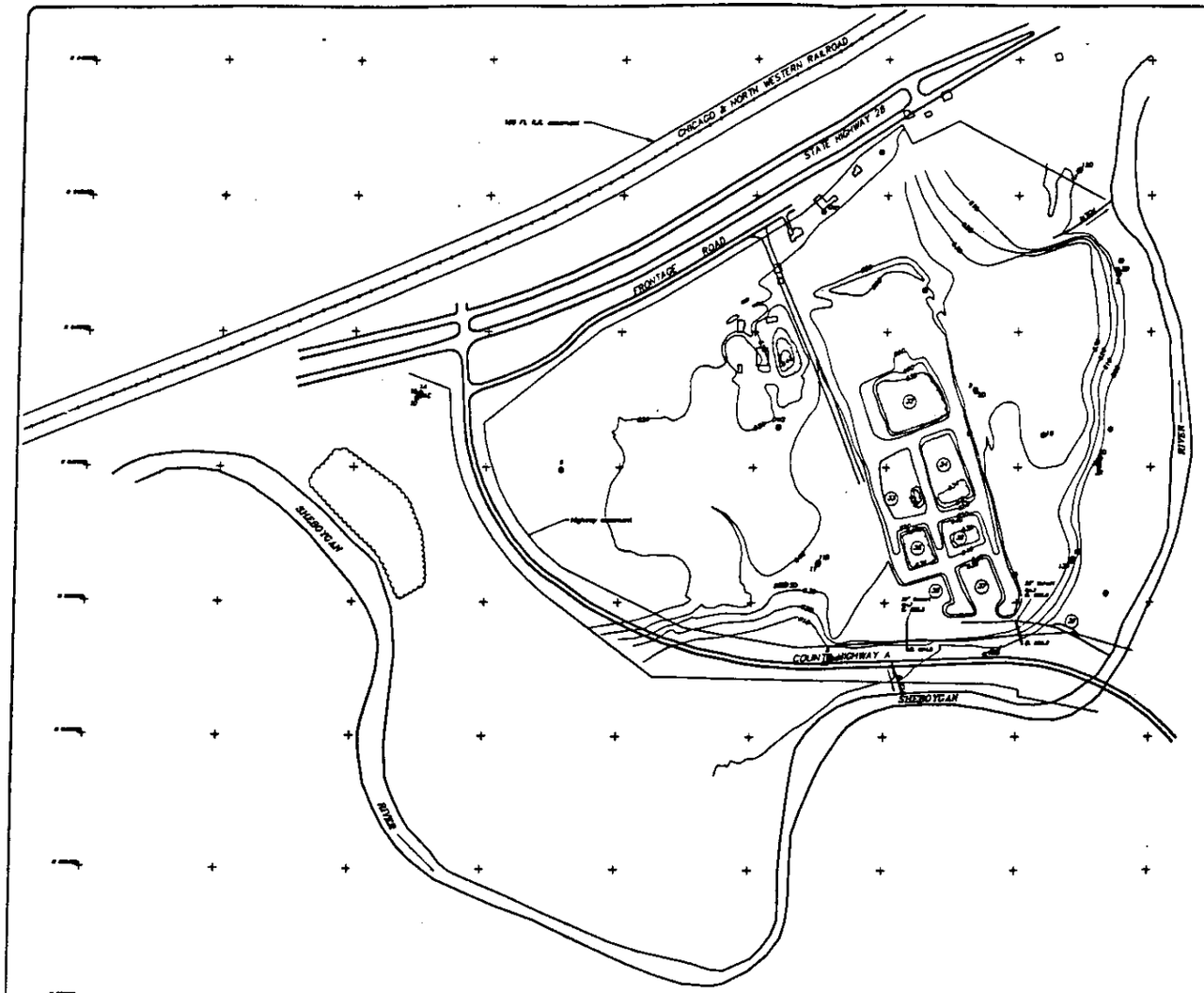
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY

TECHNICAL MEMORANDUM

KOHLER COMPANY LANDFILL

KOHLER, WISCONSIN

SHEET NO. 9 OF 13



AREA	DESCRIPTION
22	New disposal cell being backfilled with a white slurry-like material. Some active backfilling of amber material with less moisture content immediately west of this cell.
23	New disposal cell being backfilled with solid material. A small pool exists at the bottom of the cell.
24	New disposal cell receiving slurry-like material.
25	New disposal cell with no backfill material.
26	New disposal cell with no backfill material.
27	New disposal cell with incomplete berm.
28	New disposal cell with incomplete berm.
29	Settling pond constructed in the Sheboygan River floodplain.

LEGEND

- Test well
- Shoreline
- Power pole
- Former structure
- Existing structure
- Ball or park

NOTES

1. This map is not intended to be used for engineering or design purposes.
2. Contour interval 10 Feet
3. This map compiled from aerial photograph dated [illegible], 1985.
4. Grid zone coordinates based on Lambert Projection Wisconsin South Zone.

GENERAL NOTE

All previously discovered disposal areas have been identified, posted and inspected.

SCALE IN FEET

0 50 100 200 400

GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION

CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
0	5/15/90	[illegible] SC III		

DRAWING NO: 8815401 - 010

DRAWN BY: S. OZZNER DATE: 5/15/90

CHECKED BY: DATE: 5/17/90

APPROVED BY: DATE:

LANDFILL DEVELOPMENT - JUNE 1985
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SHEET NO. 10 OF 13

AREA DESCRIPTION

(B) Large area about 70% backfilled. Active stockpiling of sand or clay-like material. No more berm construction.

(A) Remaining open area being backfilled with a dark gray and white slurry-like material. Some standing liquid in the bottom of the cell.

(C) Large area approximately 70% backfilled. Stockpile of sand or clay-like material over backfilled area.

LEGEND

Boring
Test pit
Piezometer
Staff gauge
Surface elevation
Existing elevation

NOTES

GENERAL NOTE

SCALE IN FEET

0 200 400 600 800

GERAGHTY & MILLER, INC.
Environmental Services

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SCALE VERIFICATION

CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
0	8/15/89		SC	III

DRAWING NO.	W19-401 - 011	
DRAWN BY:	S. GOZNER	DATE: 8/15/89
CHECKED BY:		DATE:
APPROVED BY		DATE:

LANDFILL DEVELOPMENT - MAY 1989
SOURCE CONTROL OPERABLE UNIT FEASIBILITY STUDY
TECHNICAL MEMORANDUM
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SHEET NO. 11 OF 13

GERAGHTY & MILLER, INC.
Environmental Services

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SCALE VERIFICATION
THIS BAR MEASURES
ONE INCH ON ORIGINAL
IF NOT ONE INCH
ADJUST SCALE
ACCORDINGLY

CLIENT REVIEW

REV. NO.	DATE	DESCRIPTION	BY	APPR.
0	5/13/90	ADDED TOE DRAIN, ADDED SECTIONS	SC	JS

DRAWING NO. M19-01 - D12
DRAWN BY S. DOZIER DATE 5/13/90
CHECKED BY J.J. DATE 5/17/90
APPROVED BY DATE

CROSS-SECTIONS
SOURCE CONTROL ORIGINAL UNIT TASBILITY STUDY
TECHNICAL ADJUDICATION
KOHLER COMPANY LANDFILL
KOHLER, WISCONSIN

SCALE:
HORIZ. 1"= 100'
VERT. 1"= 50'

0 100' 200'
0 50' 100'

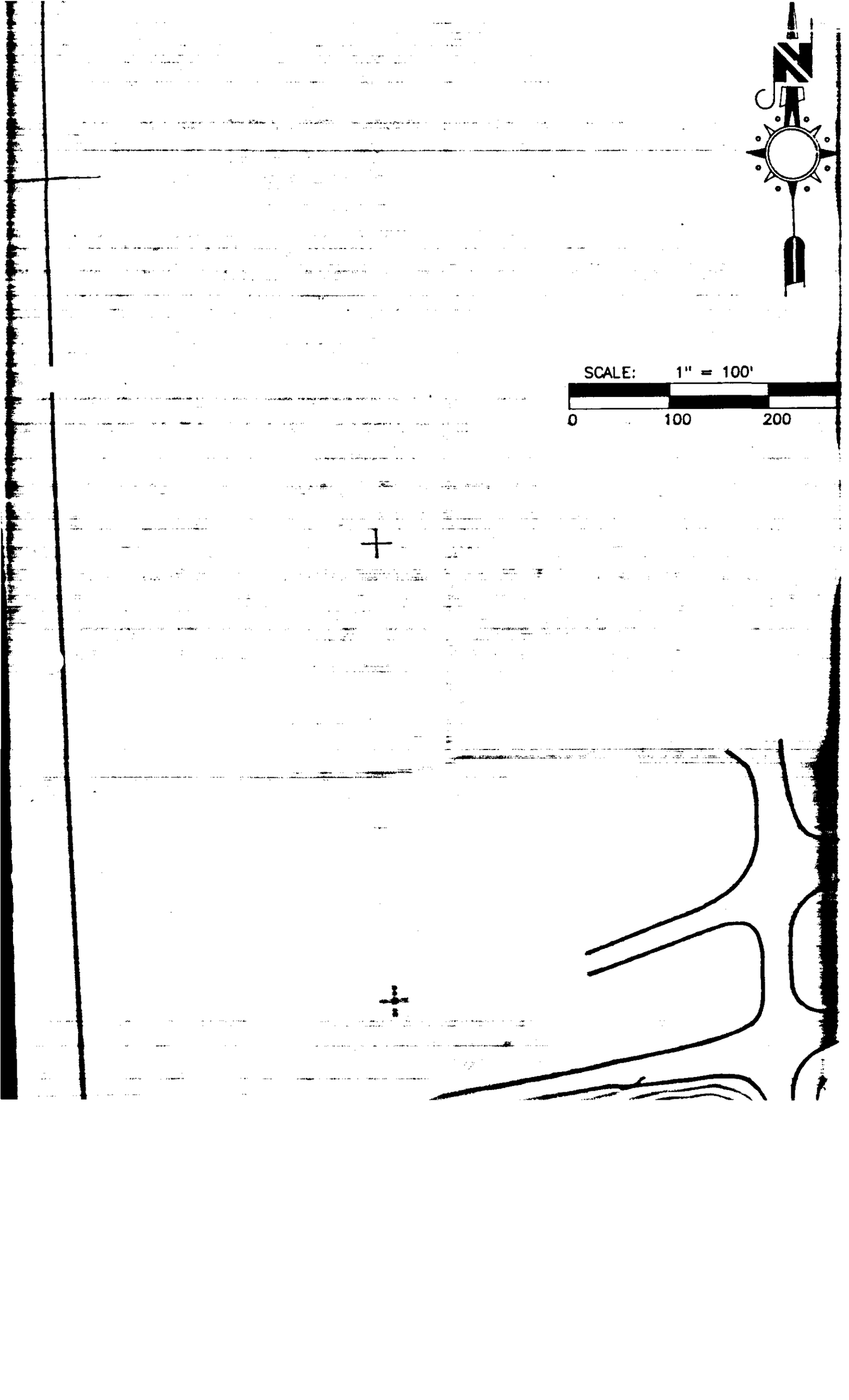
LEGEND

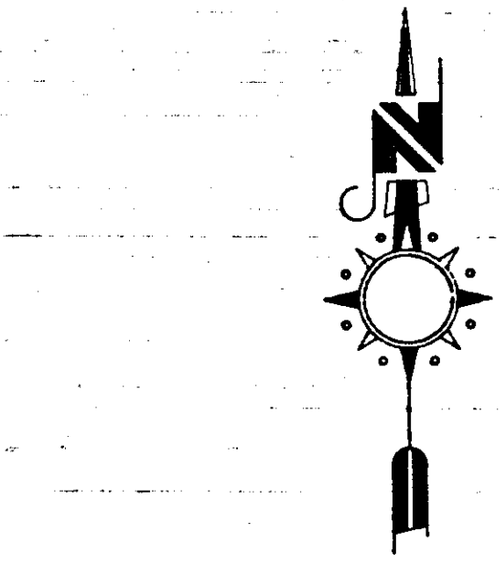
NOTES

C
NORTH
C'
SOUTH

B
NORTH
B'
SOUTH

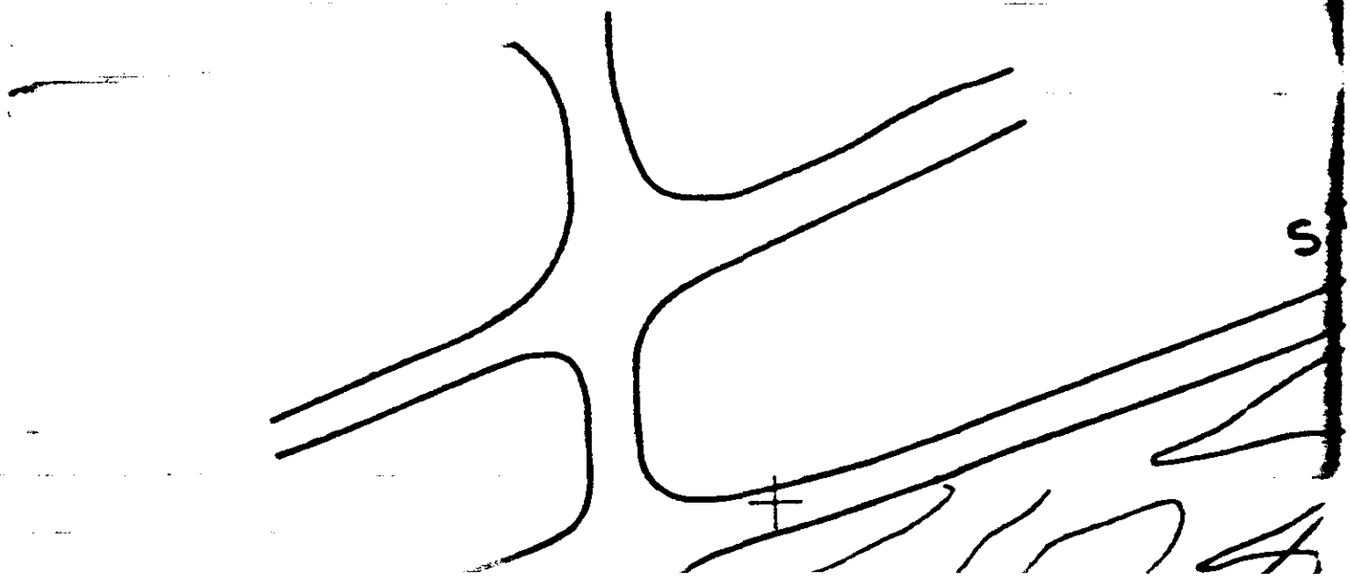
A
WEST
A'
EAST


SCALE: 1" = 100'
0
100
200



SCALE: 1" = 100'

0 100 200 400



LEGEND

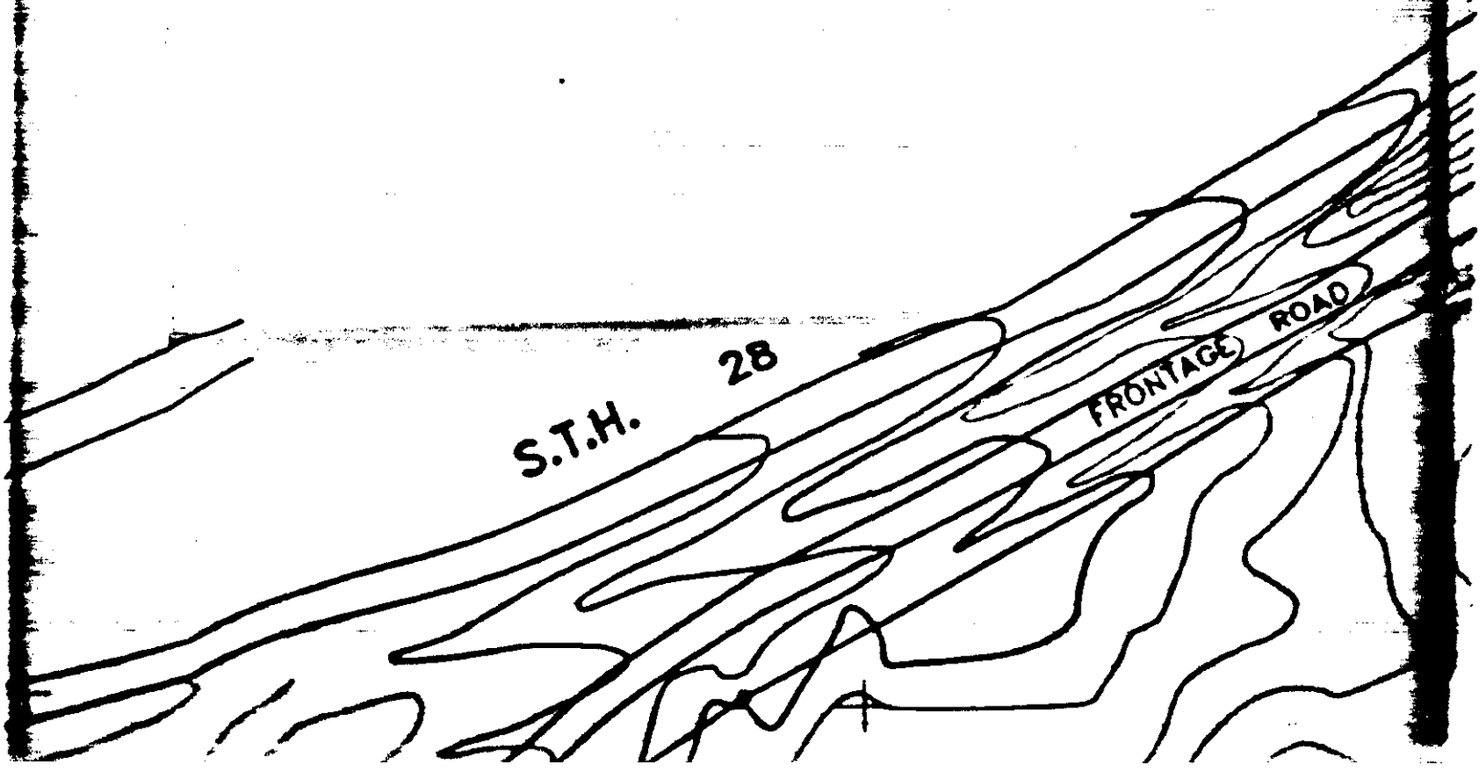
POWER POLE

TEST WELL

SURVEY MONUMENT

SURFACE TEST SITE

400



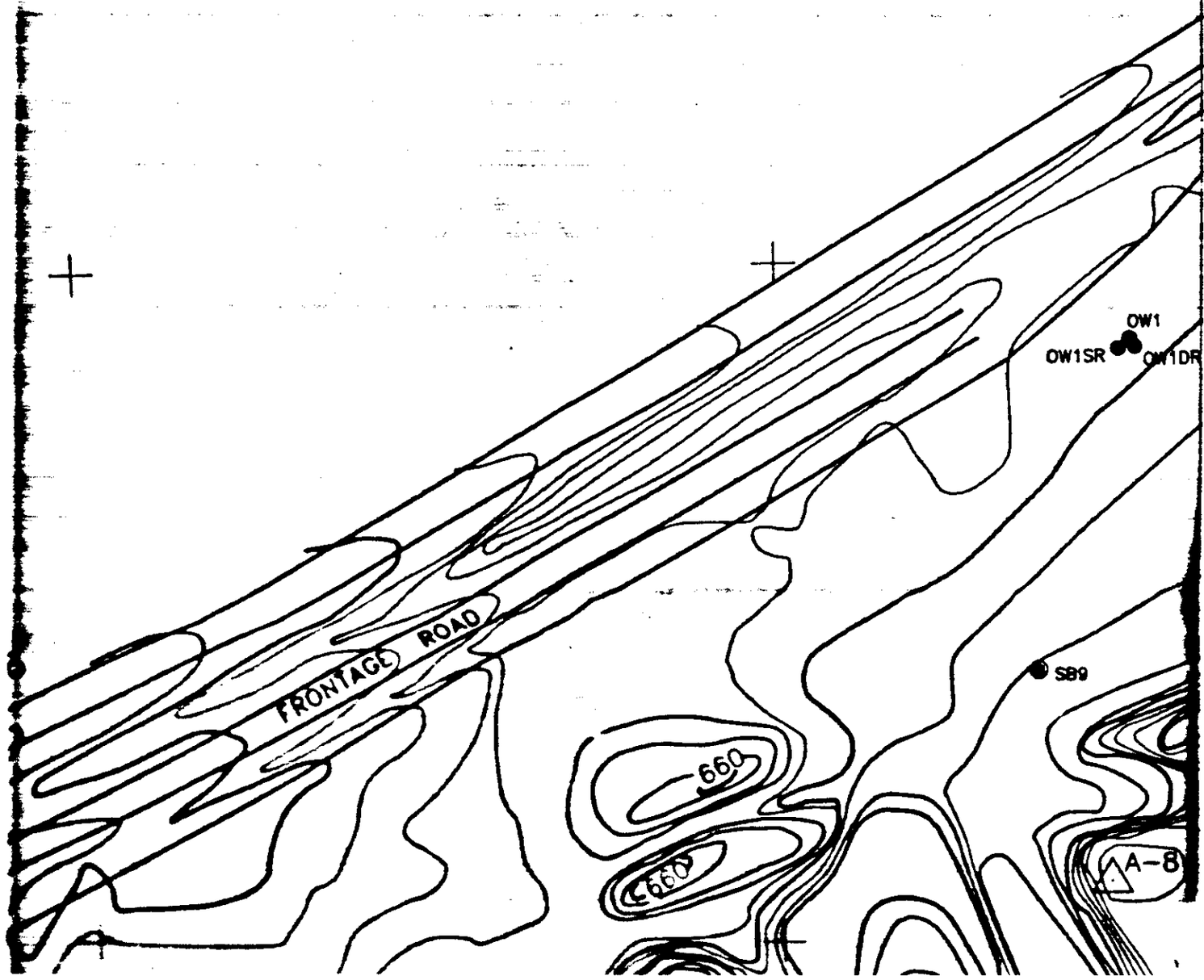
END

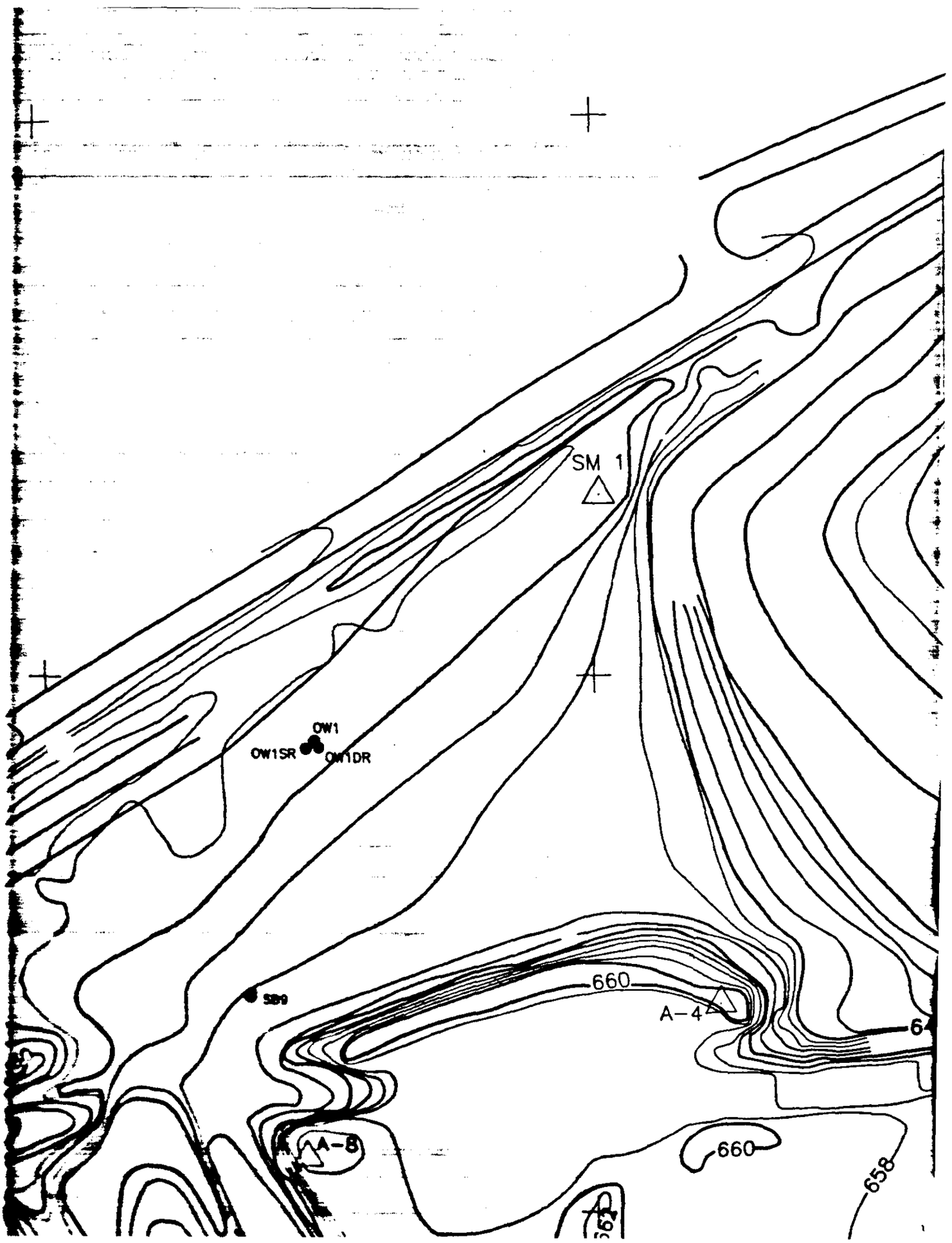
POWER POLE

TEST WELL

SURVEY MONUMENT

SURFACE TEST SITE




SM 1
OW1
OW1SR
OW1DR
660
A-4
A-8
660
658


SM 1
12D
12
600
610
620
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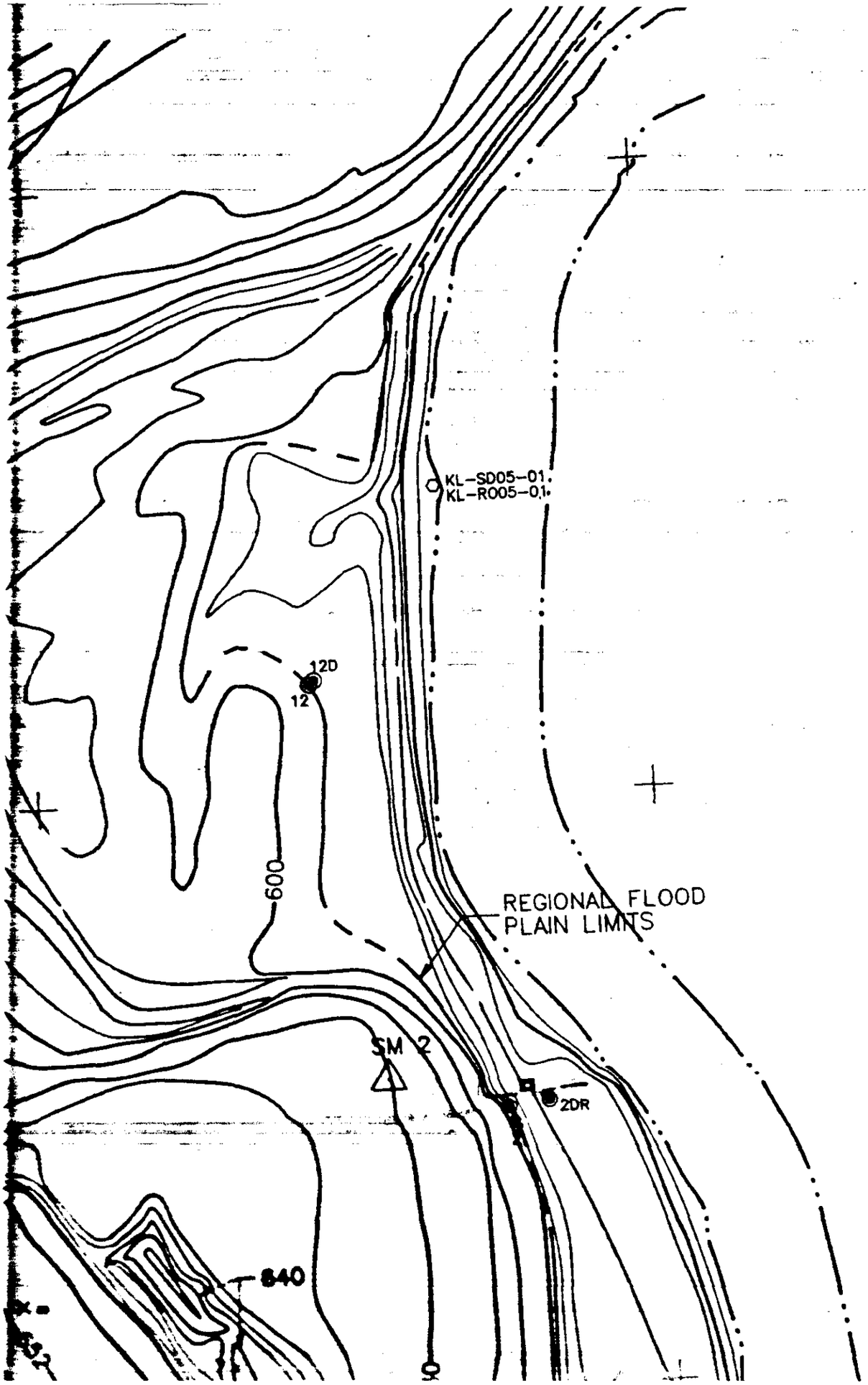
A-4
640
650
640
660
658
652


KL-SD05-01
KL-R005-01
12D
12
600
REGIONAL FLOOD
PLAIN LIMITS
SM 2
2DR
840

642,500

642,000

641,500

COMM. POINT NO.	MC NC
1	SI
2	S
3	S
4	S
5	S
6	S
7	A
11	A
12	A
13	A
14	A
15	A
16	A
17	
100	

SURVEY MONUMENTS

COMM. POINT NO.	MONU. NO.	NORTH	EAST	SEA LEVEL ELEV.
1	SM 1	642,161.50	2,591,006.00	650.88
2	SM 2	641,768.50	2,591,773.50	630.06
3	SM 3	641,026.90	2,591,723.20	628.44
4	SM 4	640,415.60	2,591,466.90	627.65
5	SM 5	640,583.10	2,590,711.90	637.69
6	SM 6	641,140.30	2,590,244.80	649.60
7	SM 7	641,071.80	2,589,304.40	668.47
11	A-4	641,696.32	2,591,113.82	660.22
12	A-5	640,660.40	2,591,468.72	663.83
13	A-6	640,992.67	2,591,642.25	650.37
14	A-7	640,489.38	2,591,041.59	653.86
15	A-8	641,544.53	2,590,733.37	660.68
16	A-9	639,969.83	2,592,181.60	669.06
17	A-10	639,833.89	2,591,647.63	659.28
100	REBAR AT A-7	640,502.40	2,591,013.44	656.66

WELL INFORMATION

WELL NO.	NORTH	EAST	SEA LEVEL ELEV.	PVC OR T/CAP
1A	641,273.85	2,589,249.35	664.16	PVC
1B	641,266.48	2,589,252.36	664.48	PVC
1C	641,267.71	2,589,243.84	664.54	PVC
1D	641,256.54	2,589,236.91	664.28	PVC
OW1	641,941.74	2,590,748.34	653.94	PVC
OW1DR	641,935.79	2,590,752.08	652.60	PVC
OW1SR	641,934.78	2,590,740.37	652.72	PVC
2	641,711.76	2,591,876.08	599.38	PVC
2D	641,727.25	2,591,872.02	600.18	PVC
2DR	641,732.91	2,591,906.53	597.20	PVC
2SR	641,745.97	2,591,905.84	597.06	PVC
OW2	641,149.13	2,590,592.37	650.24	PVC

10D	ABANDONED			
11	640,844.12	2,590,741.32	638.73	PVC
11D	640,848.98	2,590,743.74	638.26	PVC
12	642,090.83	2,591,725.64	602.29	PVC
12D	642,094.52	2,591,729.84	602.08	PVC
13	640,662.41	2,591,709.26	601.20	PVC
13A	640,643.92	2,591,693.71	602.27	PVC
13C	640,658.98	2,591,698.18	602.10	PVC
13C2	640,686.03	2,591,722.02	601.58	PVC
13P	640,662.87	2,591,701.30	601.85	PVC
13R	640,654.85	2,591,705.97	601.69	PVC
13SR	640,634.83	2,591,697.76	601.37	PVC
13SR2	640,702.74	2,591,736.41	601.35	PVC
14	641,318.62	2,591,931.25	596.61	PVC
14SR	641,305.54	2,591,933.40	596.91	PVC
15	640,011.53	2,592,271.15	673.08	PVC
15DR	640,017.15	2,592,292.94	674.40	PVC
15SR	640,014.33	2,592,282.18	673.77	PVC
16	639,778.35	2,591,567.17	658.40	PVC
16SR	639,783.98	2,591,559.14	658.15	PVC
17	640,088.90	2,590,656.94	605.65	PVC
17SR	640,091.86	2,590,669.60	605.86	PVC
SB2	640,597.31	2,590,640.14	640.51	PVC
SB3	640,718.79	2,590,577.11	643.58	PVC
SB4	640,995.85	2,591,196.33	659.46	PVC
SB9	641,694.47	2,590,682.75	648.39	PVC

ONSIN
EVEN R.
BOLL
-1217
BOYGAN,
WIS.
SURVEYOR

1-25-91

JAN 30 1991

2'-0" OF ELEVATION.

BASED ON LAMBERT PROJECTION,

RENCED TO U.S.G.S. DATUM.
N KOHLER DATUM.

1986
AND ASSOC.

JUNE 30, 1989
KOHLER CO.

KOHLER CO.

KOHLER, WIS., U.S.A.

SUBJECT

TOPOGRAPHIC SURVEY

11
11D
12
12D
13
13A
13C
13C2
13DR
13P
13R
13SR
13SR2
14
14SR
15DR
15SR
16
16SR
17
17SR
SB2
SB3
14
SB9

640,500

640,000

15 15DR 15SR

A-9

WISCONSIN
STEVEN R. BOLL S-1217 SHEBOYGAN, WIS.
LAND SURVEYOR
1-25-91

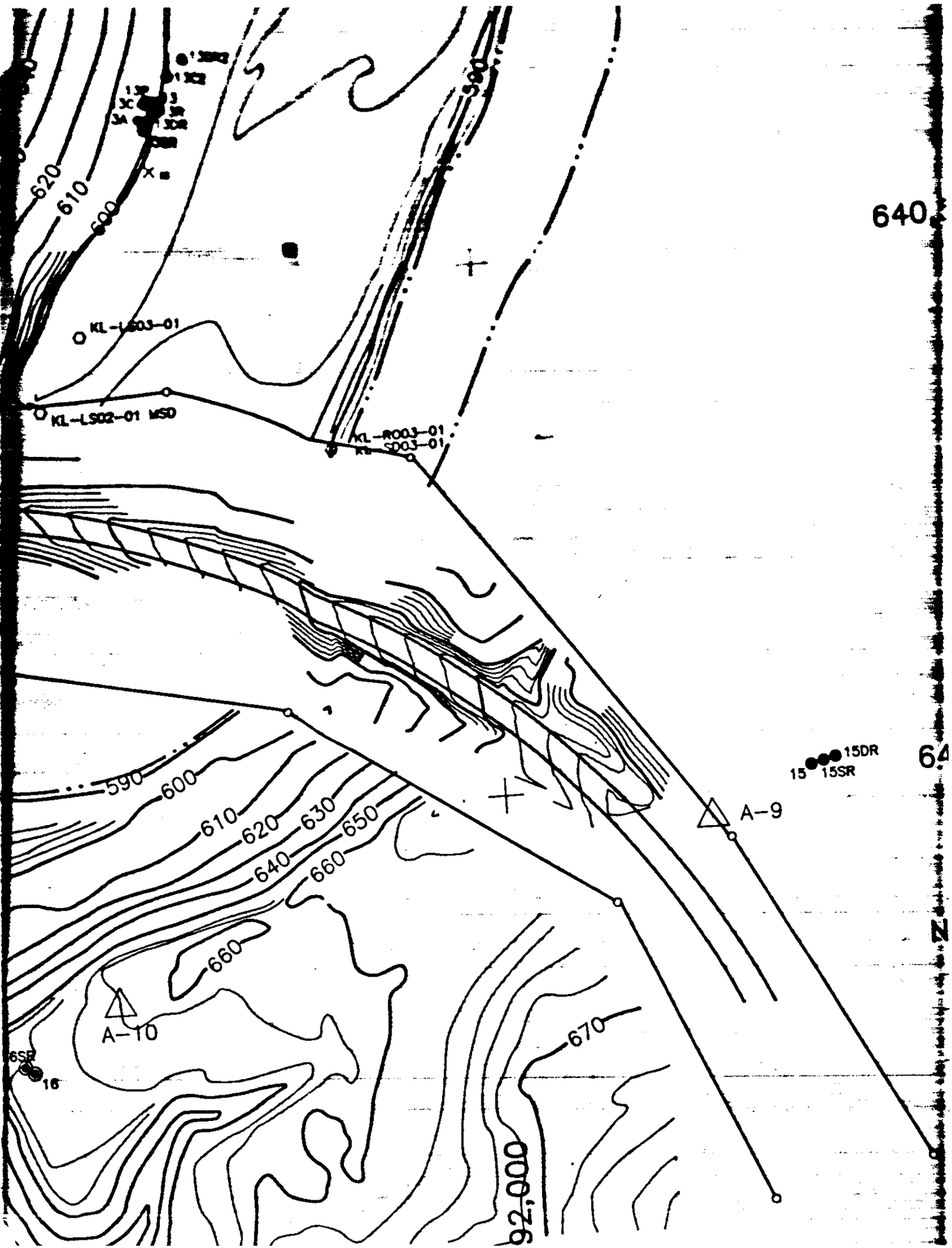
NOTE:

-CONTOUR LINE REPRESENTS 2'-0" OF ELEVATION.

-STATE PLANE COORDINATES BASED ON LAMBERT PROJECTION, WISCONSIN, SOUTH ZONE.

-ALL ELEVATIONS ARE REFERENCED TO U.S.G.S. DATUM. SUBTRACT 581.69 TO OBTAIN KOHLER DATUM.

-SURVEY DATES: JUNE 25, 1986 DONAHUE AND ASSOC.
JUNE 30, 1989 KOHLER CO.
SEPT. 21, 1989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590
640
KL-LS03-01
KL-LS02-01 MSD
KL-RS03-01
KL-SS03-01
15DR
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15SR
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600
610
620
630
650
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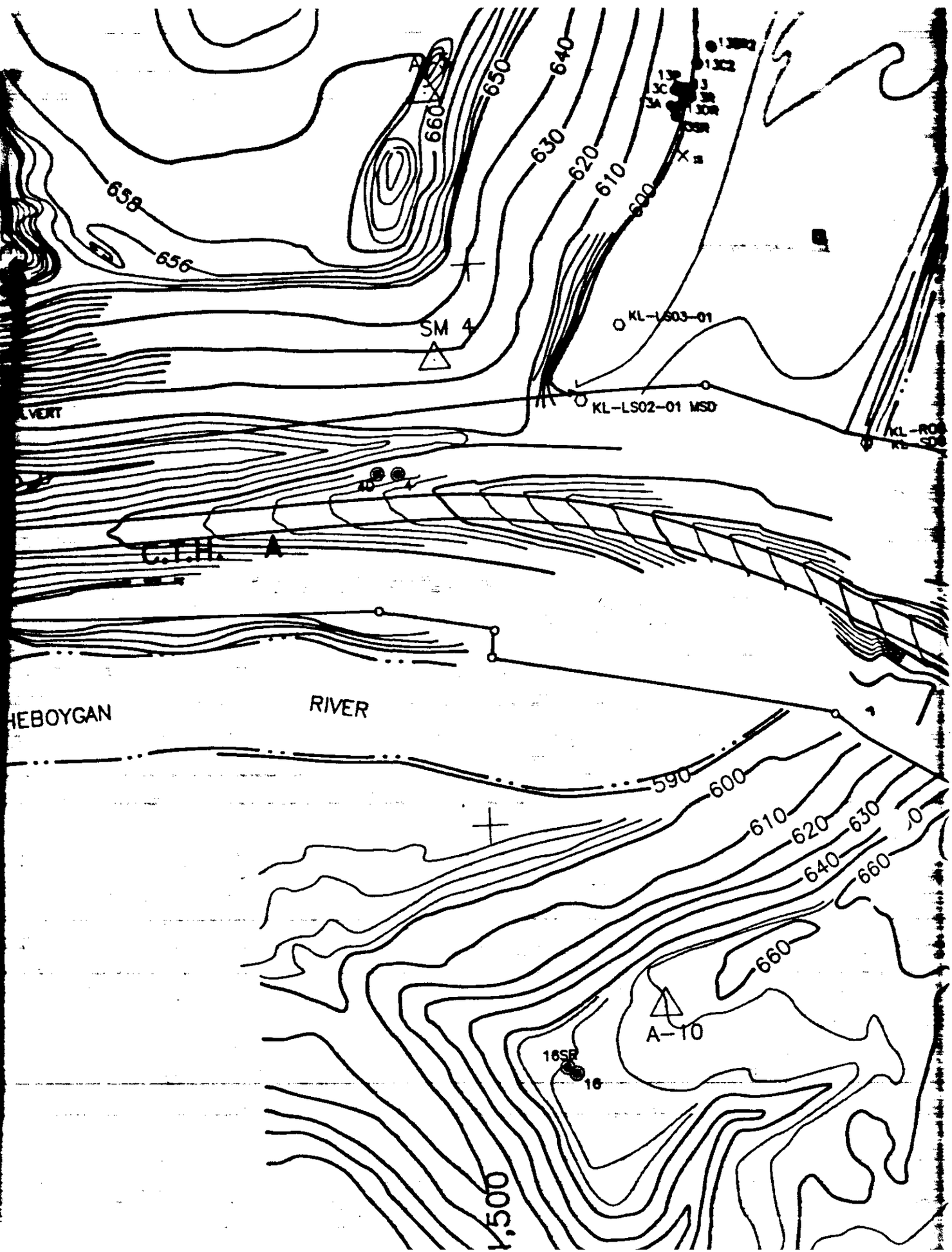
660
A-10
670
6SR
16
92000


650
640
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656
SM 4
KL-LS03-01
KL-LS02-01 MSD
RIVER
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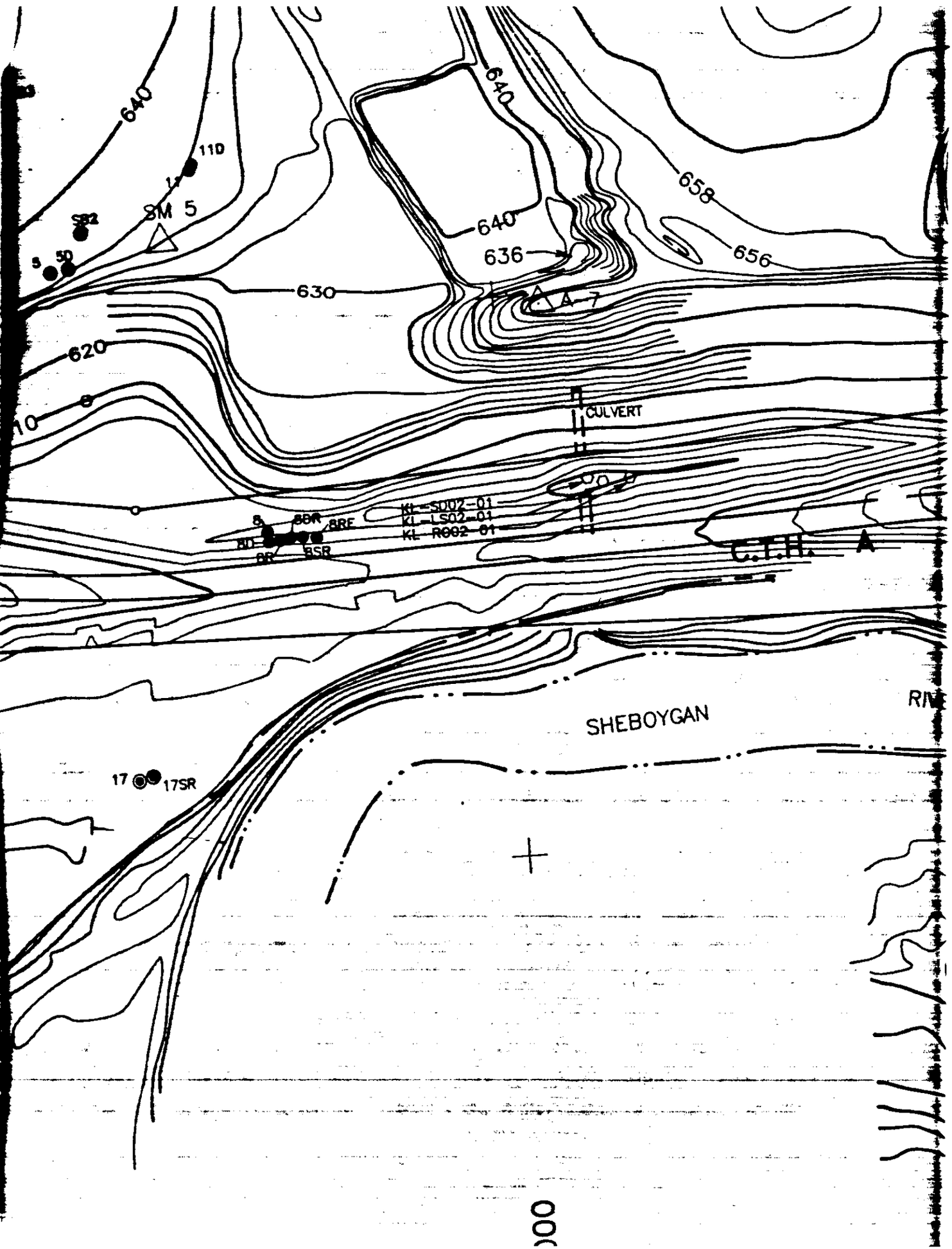
A-10
16SB
16
4,500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656
636
630
620
110
SM 5
SB2
5
5D
A-7
CULVERT
KL-SD02-01
KL-LS02-01
KL-RG02-01
5
5BR
5RE
5D
5R
5SR
C.T.H. A
SHEBOYGAN
17
17SR

590,500

REGIONAL FLOOD PLAIN
LIMITS REVISED 1-24-91.
LOCATION INTERPRETED FROM
FLOOD INSURANCE RATE MAP
NO. 550426 0005 C REV. 2/19/82

,589,500

,590,000

670
660
650
640
630
620
610
600
SHEBOYGAN RIVER
009
REGIONAL FLOOD PLAIN
LIMITS REVISED 1-24-9
LOCATION INTERPRETED
FLOOD INSURANCE RATE
NO. 550426 0005 C

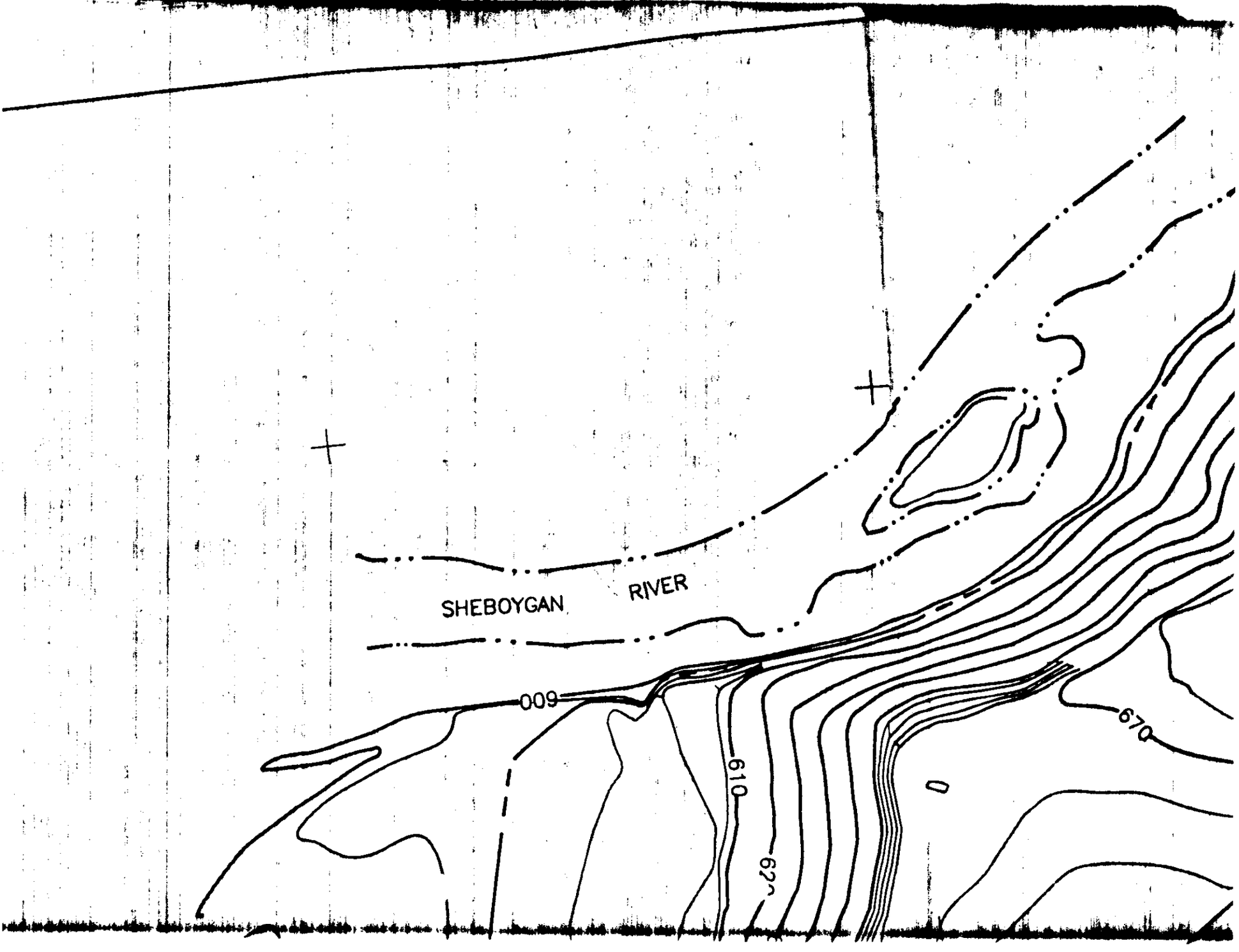
SHEBOYGAN RIVER
009
610
620
670

Table B-1. Horizontal Location and Vertical Elevation of Sampling Points.

I.D.	Northing	Easting	LS (MSL)	TOC (MSL)
1A	641274	2589249	661.7	664.16
1B	641266	2589252	661.7	664.48
1C	641268	2589244	661.8	664.54
1D	641257	2589237	661.8	664.28
OW1	641942	2590748	651.1	653.94
OW1SR	641935	2590740	650.9	652.72
OW1DR	641936	2590752	650.7	652.60
2	641712	2591876	596.8	599.38
2D	641727	2591872	597.3	600.18
2SR	641746	2591906	594.8	597.06
2DR(2)	641733	2591907	594.5	597.20
OW2	641149	2590592	647.6	650.24
3	641013	2591804	599.4	601.80
3D	641032	2591810	599.9	601.97
3R				
3R(RE)	641003	2591807	599.1	600.85
3SR	641009	2591820	598.2	600.88
3(DR)	641009	2591814	598.6	600.79
4	640314	2591429	614.8	618.15
4D	640317	2591412	613.4	617.40
5	640565	2590609	638.9	641.46
5D	640567	2590627	638.5	640.78
			658.5	
6	640990	2589785	658.2	661.07
6(RE)	641051	2589770	658.1	660.66
6SR	641062	2589764	657.8	660.56
6DR	641059	2589773		660.25
8	640301	2590789	605.1	607.42
8(RE)	640293	2590832	604.3	606.90
8D				

Table B-1. Horizontal Location and Vertical Elevation of Sampling Points.

I.D.	Northing	Easting	LS (MSL)	TOC (MSL)
8D(RE)	640292	2590789	605.7	608.70
8R	640293	2590800	604.8	607.23
8SR	640294	2590820	604.0	606.74
8DR	640294	2590809	604.1	606.87
9	641289	2591340	659.5	662.64
9D	641286	2591341	659.9	662.94
10	641120	2591596	659.3	661.47
11	640644	2590741	636.3	638.73
11D	640649	2590744	636.2	638.26
12	642091	2591726	600.1	602.29
12D	642095	2591730	599.9	602.08
13	640662	2591709	599.6	601.20
13A	640644	2591694	599.8	602.27
13C	640659	2591698	599.7	602.10
13C2	640686	2591722	599.3	601.58
13R	640655	2591706	599.4	601.69
13SR	640635	2591698	599.6	601.37
13SR2	640703	2591736	598.9	601.35
13DR	640645	2591703	599.3	601.62
13P	640663	2591701	600.0	601.85
14(SR)	641319	2591931	594.5	596.31
14SR(2)	641306	2591933	594.3	596.91
15	640012	2592271	670.9	673.08
15SR	640014	2592282	671.4	673.77
15DR	640017	2592293	672.0	674.40
16	639778	2591567	655.9	658.40
16SR	639784	2591559	655.9	658.15
17	640089	2590657	603.4	605.65
17SR	640092	2590670	603.6	605.86

Table B-1. Horizontal Location and Vertical Elevation of Sampling Points.

I.D.	Northing	Easting	LS (MSL)	TOC (MSL)
SB2	640597	2590640	638.1	640.51
SB3	640719	2590577	641.0	643.58
SB4	640996	2591196	657.3	659.46
SB9	641694	2590683	646.3	648.39
SB8	640556.	2591392	659.1	
SB5	641071.	2591299	655.4	
SB14	641062.	2590525	647.7	
SB13	641149.	2590631	645.5	
SB12	641139.	2590411	648.0	
SB11	641251.	2591495	653.7	
SB1	640712.	2590397	648.6	
MP 2R	641800.	2592057		
MP 2L	641766.	2591975		
MP 17R	639960.	2590828		
MP 17L	640004.	2590732		
MP 14R	641352.	2592175		
MP 14L	641350.	2592078		
MP 13R	640687.	2592035		
MP 13L	640655.	2592135		
MP 12R	642072.	2591919		
G&M STAFF	640640.	2592013		
L4S6SH5	640386.	2591738	595.9	
L4S6SH1	640713.	2592008	594.9	
L4S6G24	640422.	2591771	596.1	
L4S6G1	640615.	2591929	594.5	
L4S6CTR	640519.	2591849	595.2	
L4S5SH5	640485.	2591851	595.4	
L4S5G24	640600.	2591900	594.8	
L4S5G1	640835.	2591986	593.6	
L4S5CTR	640717.	2591942	593.4	
L4S4G24	640805.	2591984	593.8	
L4S4G1	641053.	2591996	594.9	
L4S4CTR	640929.	2591989	594.6	

Table B-1. Horizontal Location and Vertical Elevation of Sampling Points.

I.D.	Northing	Easting	LS (MSL)	TOC (MSL)
L4S3G24	641023.	2591995	594.8	
L4S3G1	641273.	2592003	594.7	
L4S3CTR	641148.	2592001	594.2	
L4S2SH5	641148.	2592001	594.2	
L4S2SH5	640680.	2591979	594.7	
L4S2SH1	641597.	2591982	594.4	
L4S2G24	641244.	2592003	594.5	
L4S2G1	641473.	2591990	594.5	
L4S1SH5	641413.	2592008	593.6	
L4S1SH1	641876.	2591818	598.4	
L4S1G24	641528.	2591960	594.7	
L4S1G1	641760.	2591866	596.9	
L4S1CTR	641644.	2591913	594.2	
L4S1CTR	641578.	2591940	594.6	
L3S2SH5	640376.	2591658	596.1	
L3S2SH1	640300.	2590931	603.6	
L3S2G24	640343.	2591459	606.5	
L3S2G24	640310.	2591131	604.4	
L3S2CTR	640324.	2591295	603.4	
L3S1SH5	640339.	2591379	604.2	
L3S1G24	640314.	2591181	604.5	
L3S1G1	640298.	2590851	602.5	
L3S1CTR	640304.	2591016	602.3	
L2S1SH1	641196.	2591905	594.9	
L1S2SH5	640585.	2591401	659.0	
L1S2G24	640729.	2591445	600.5	
L1S2G1	641056.	2591486	652.9	
L1S2CTR	640859.	2591471	655.2	
L1S1G24	641005.	2591483	653.2	
L1S1G1	641334.	2591509	652.6	

LS = Land Surface.

MSL = Mean Sea Level.

TOC = Top of Casing.

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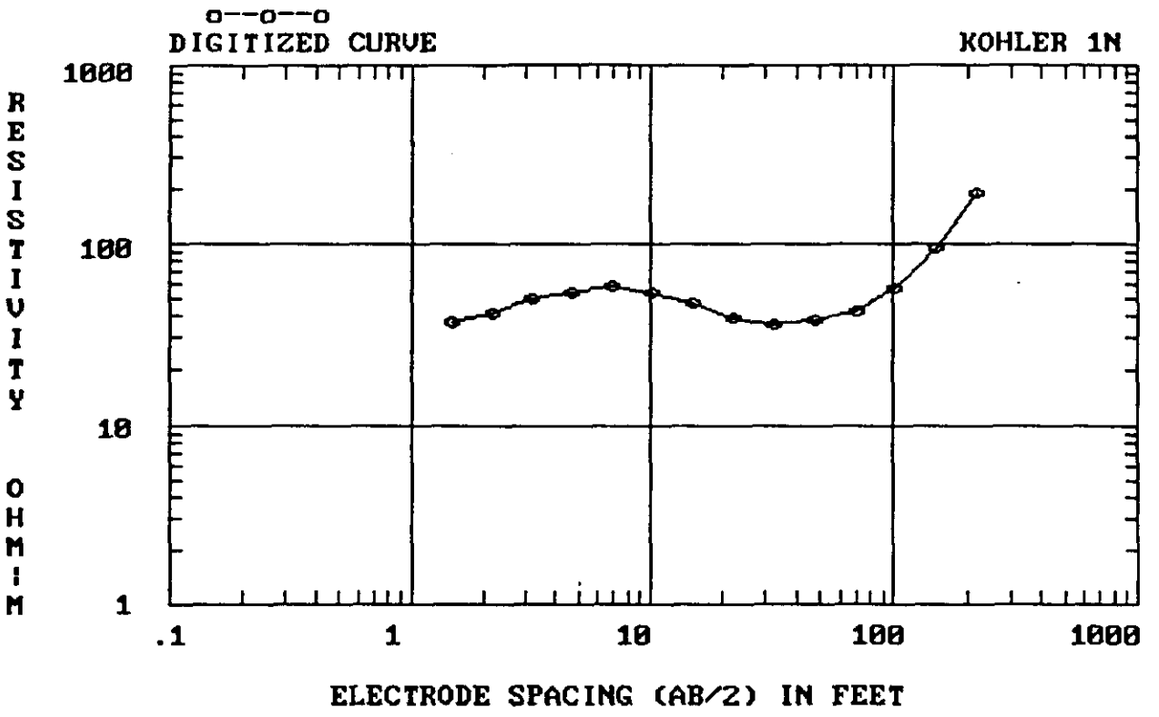
APPENDIX C



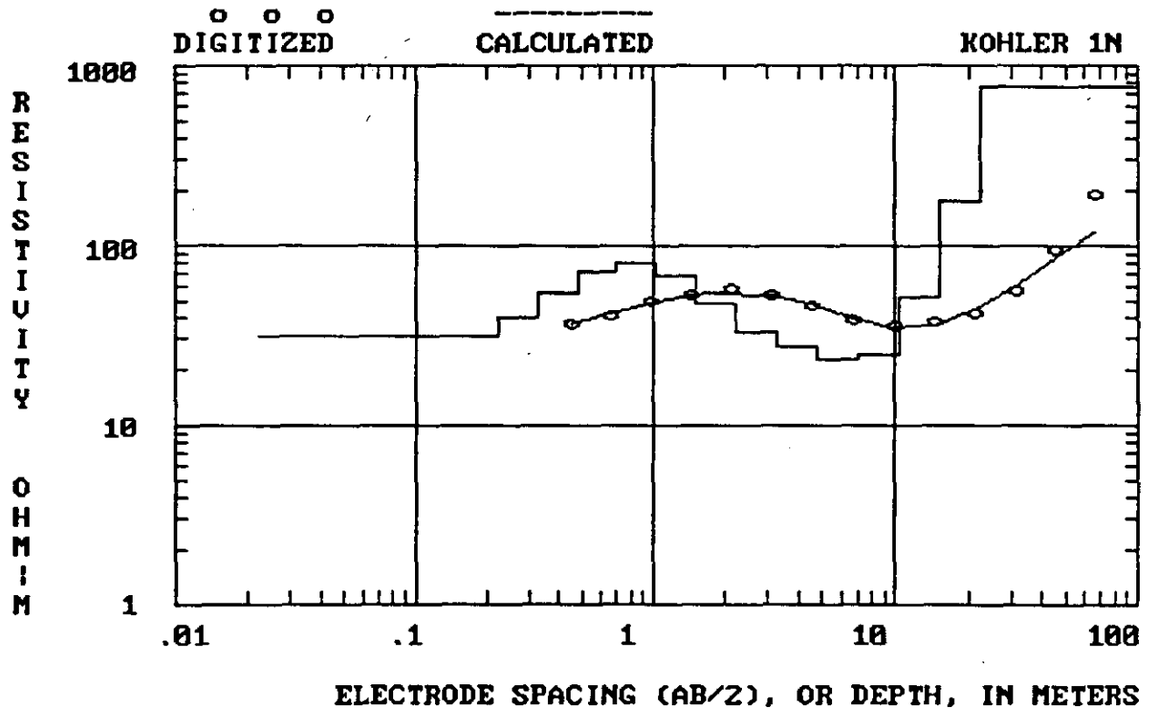


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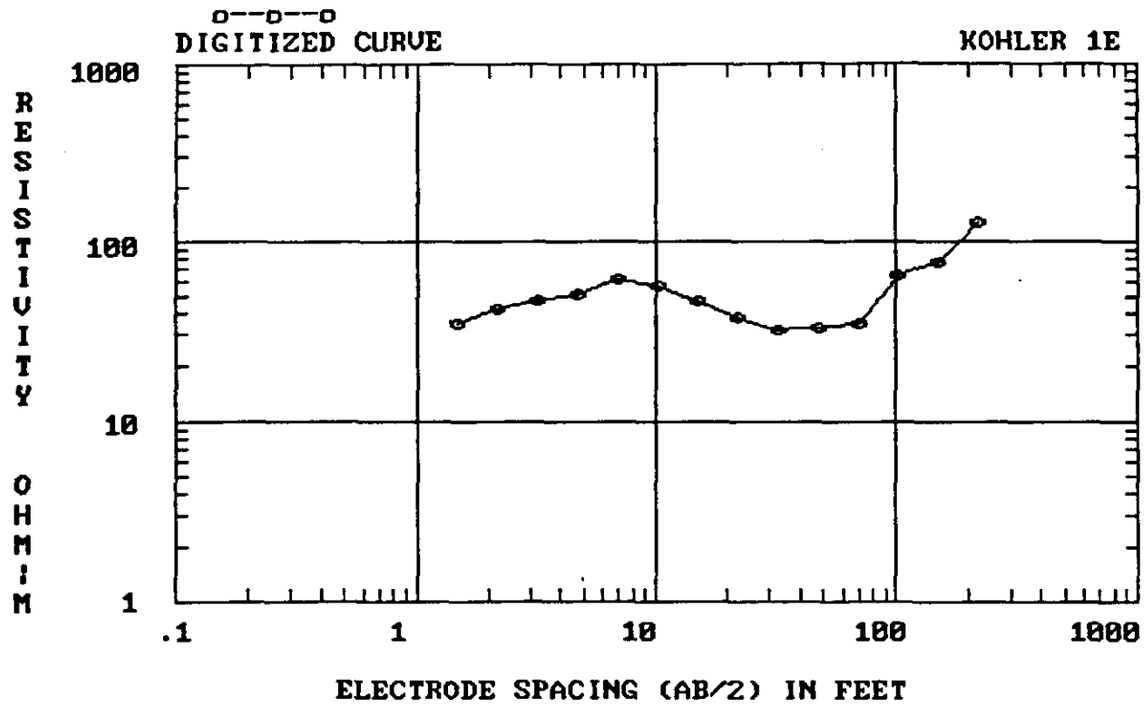
FIGURE 1



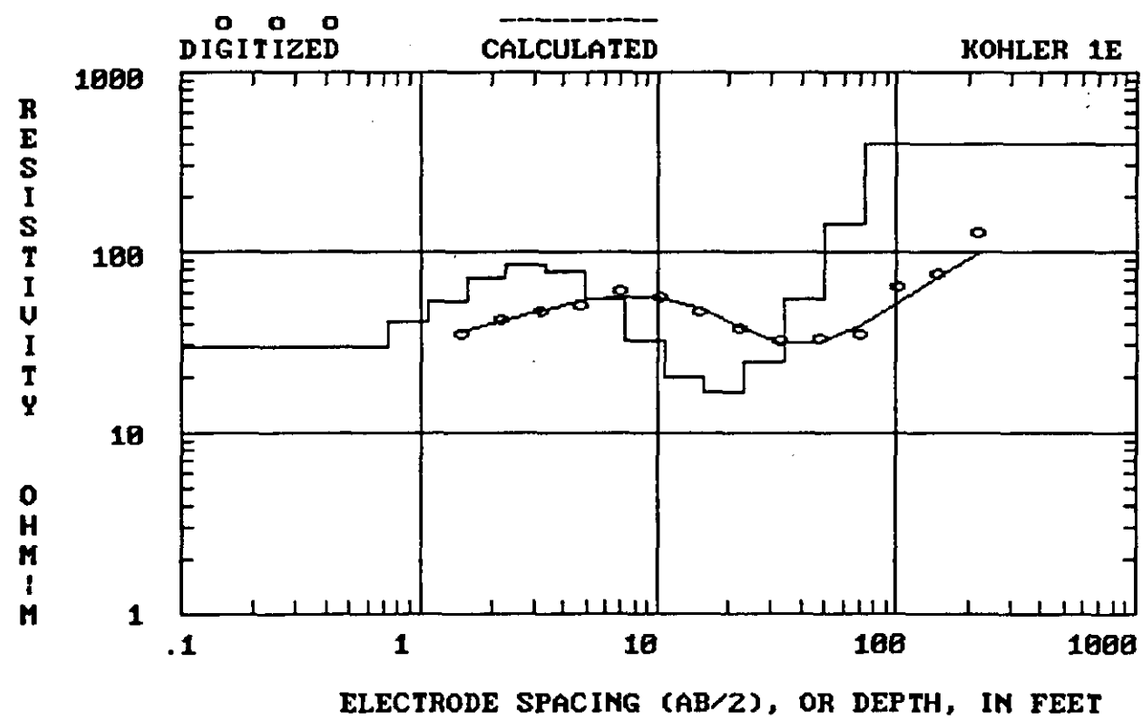


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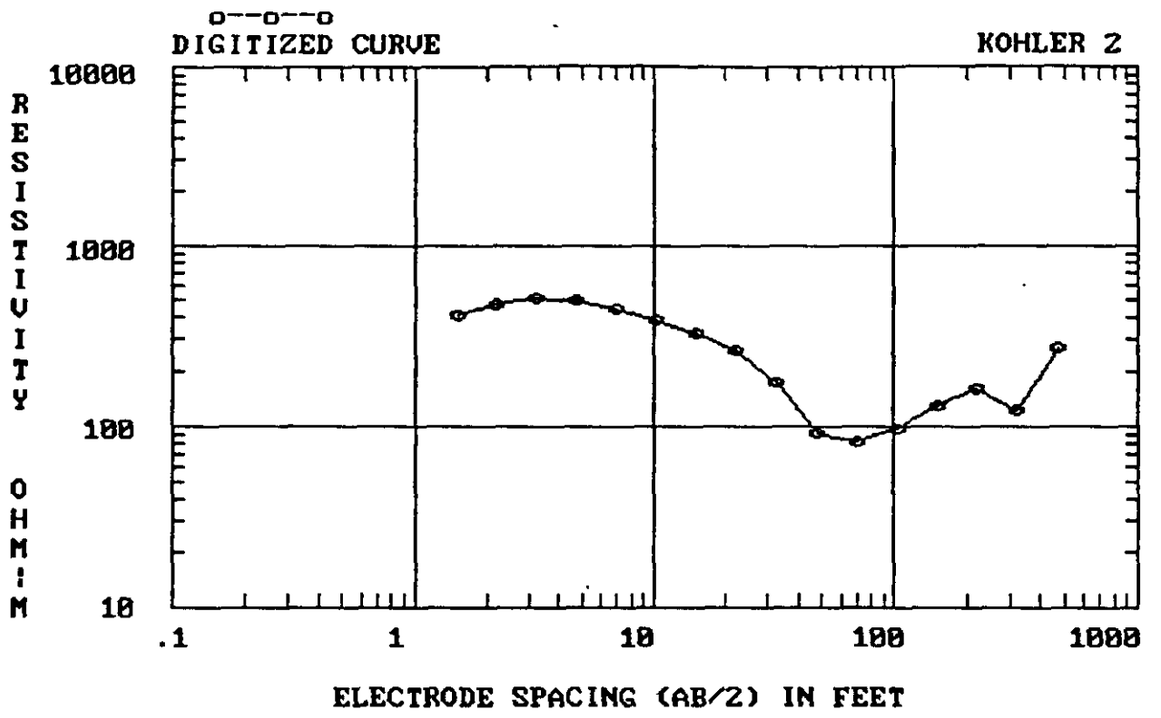
FIGURE 2



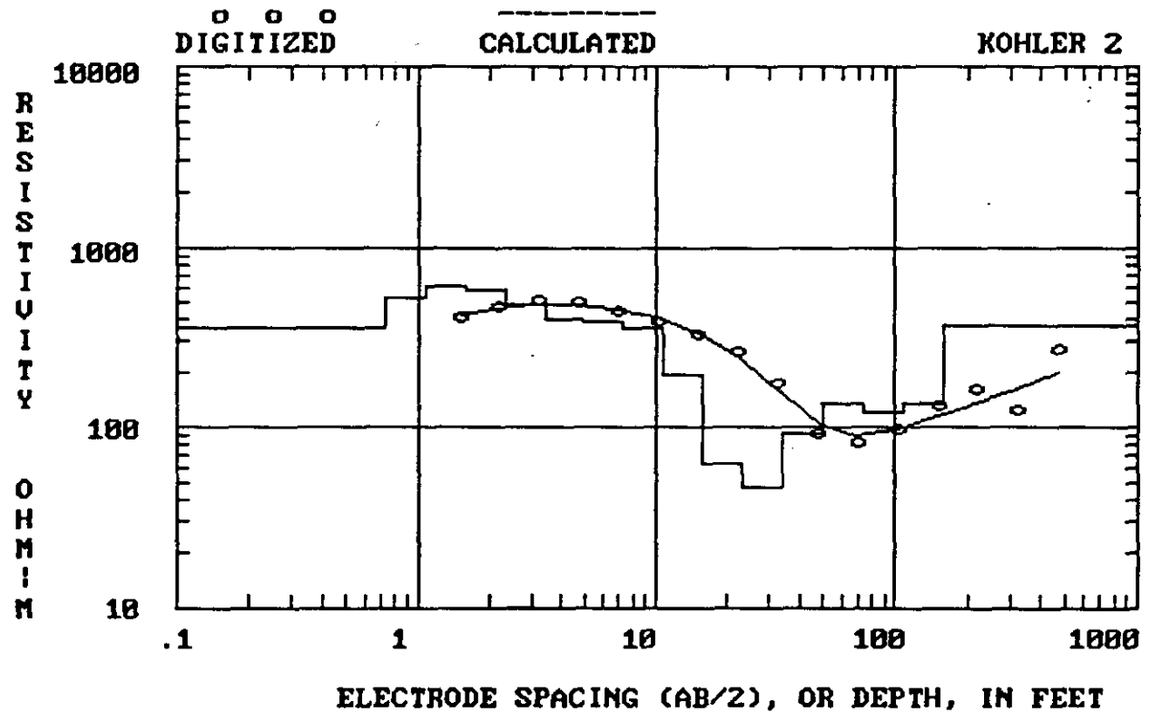


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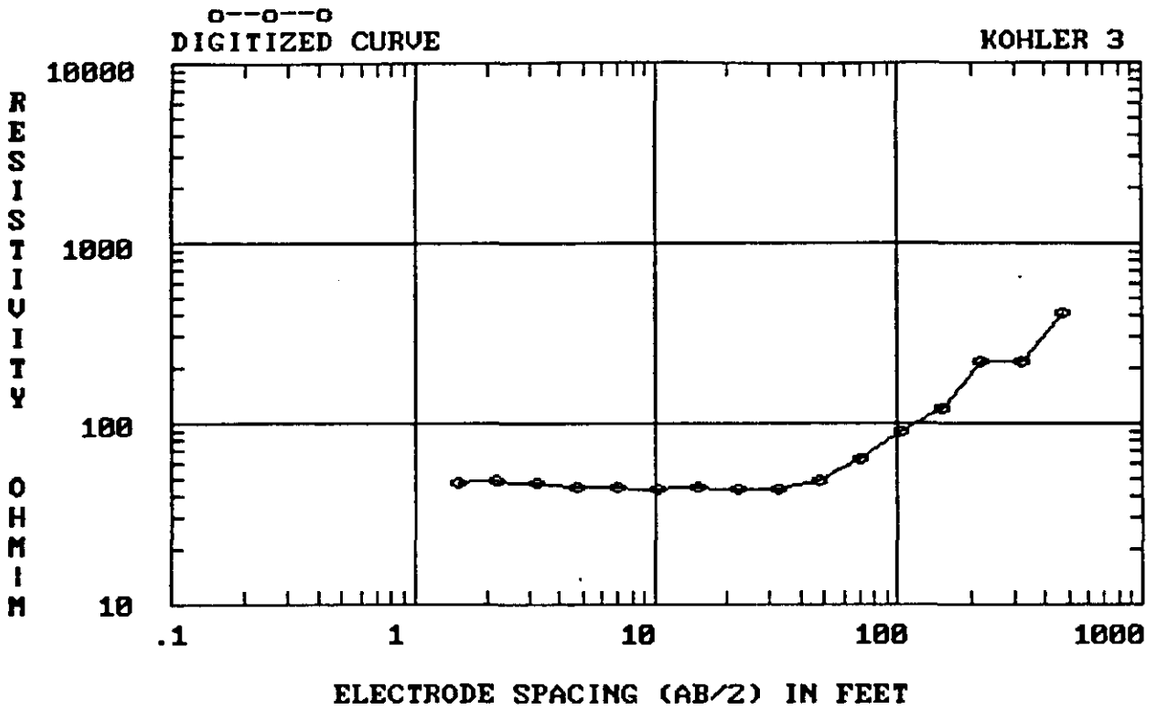
FIGURE 3



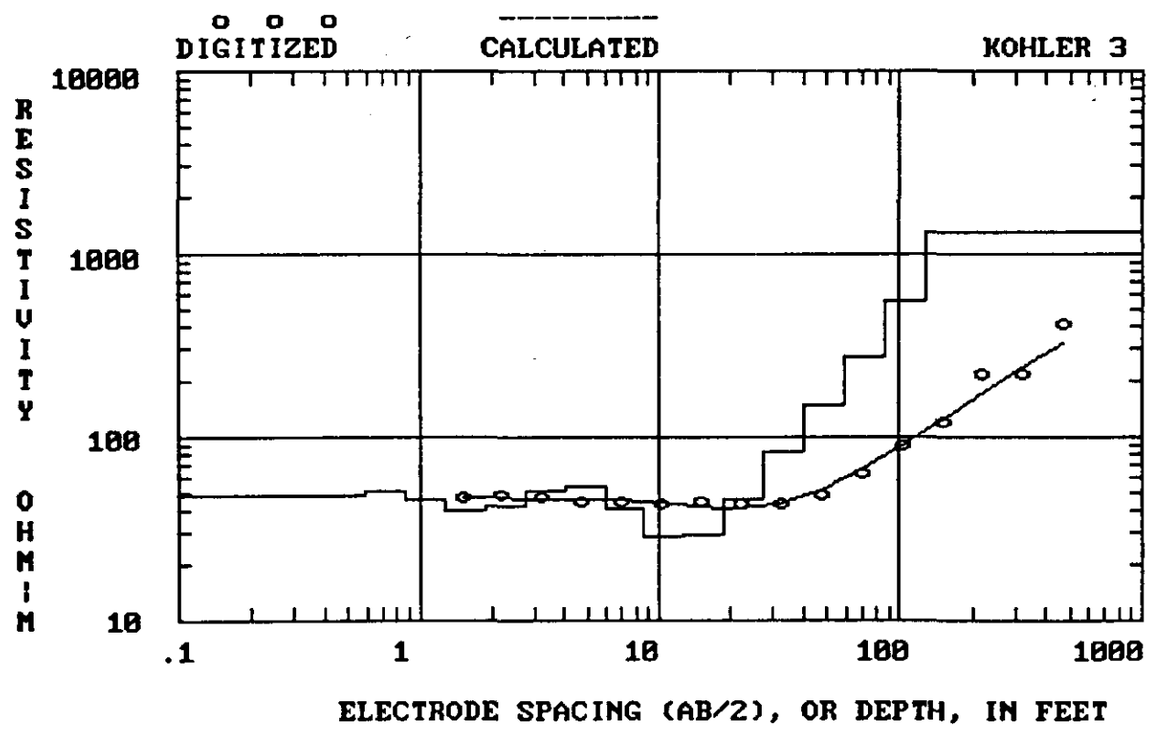


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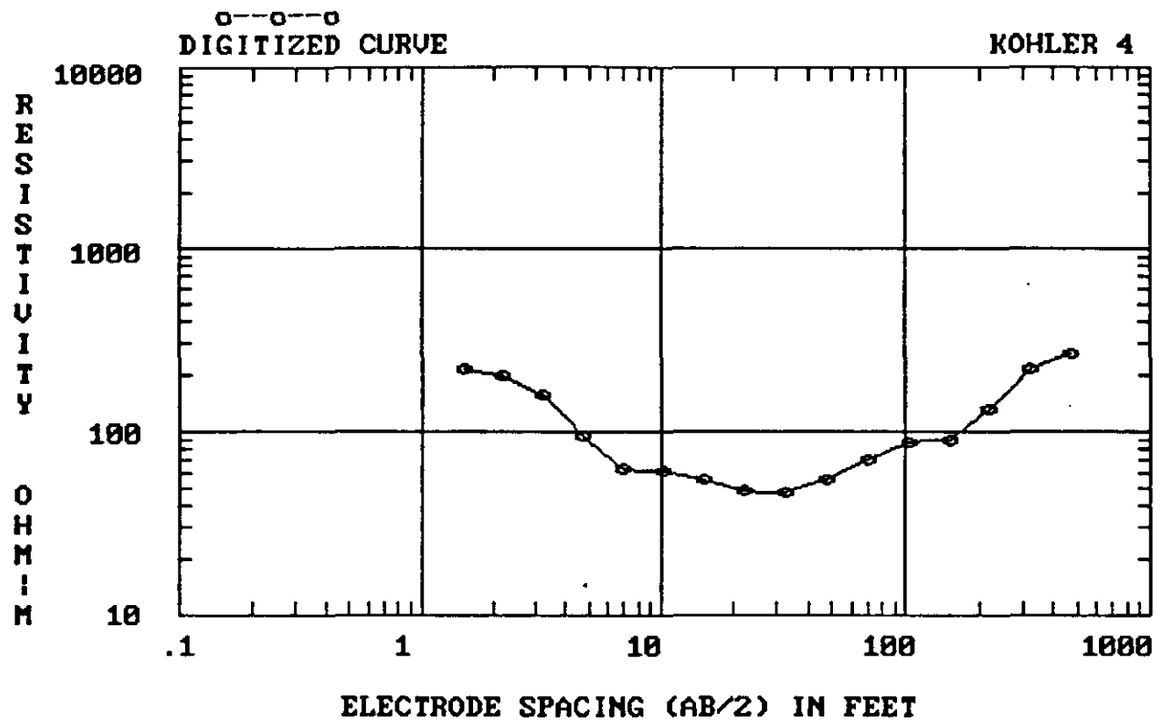
FIGURE 4



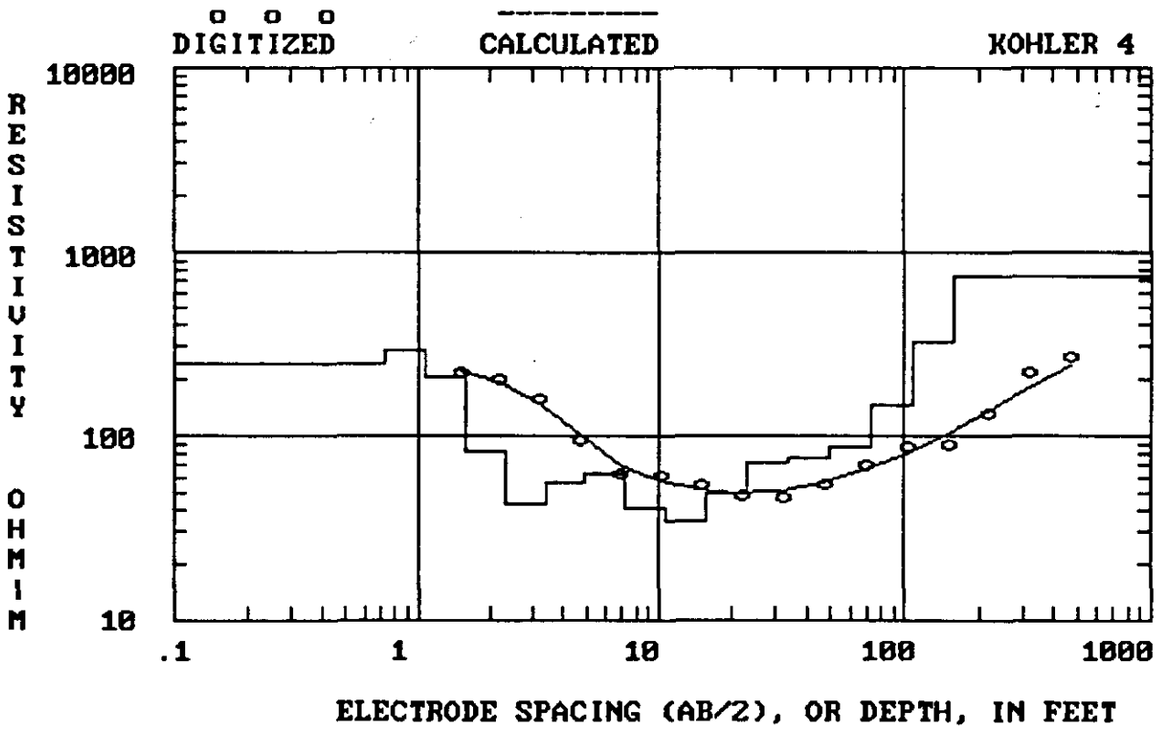


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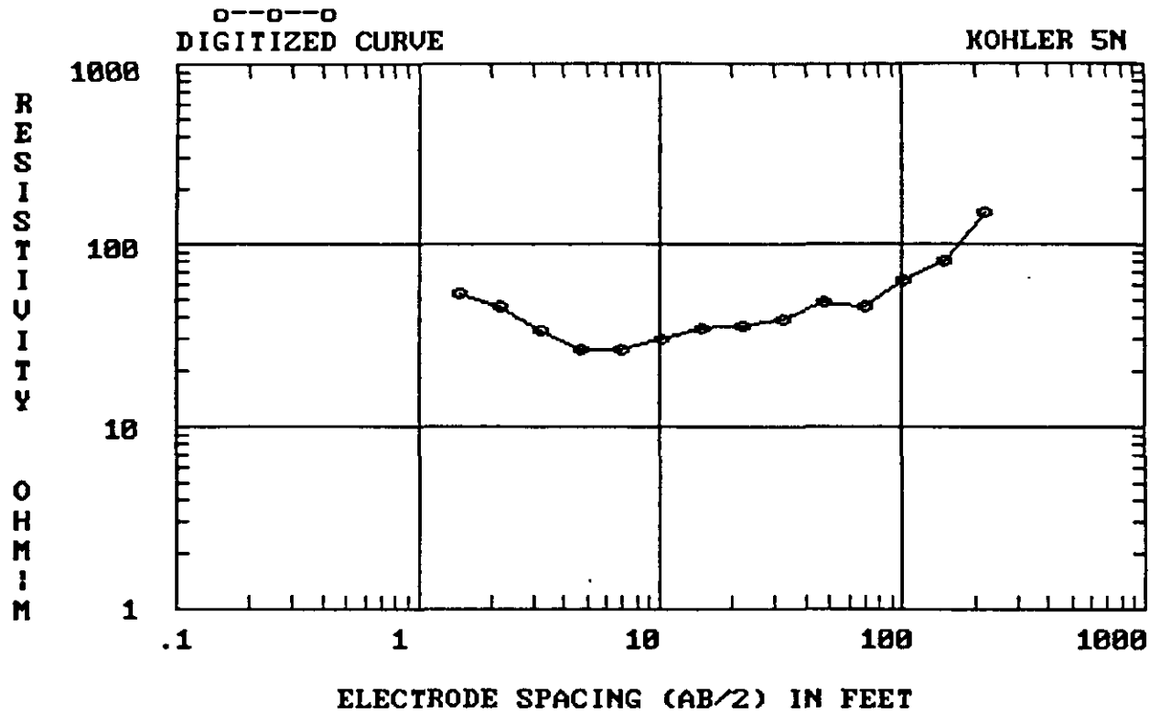
FIGURE 5



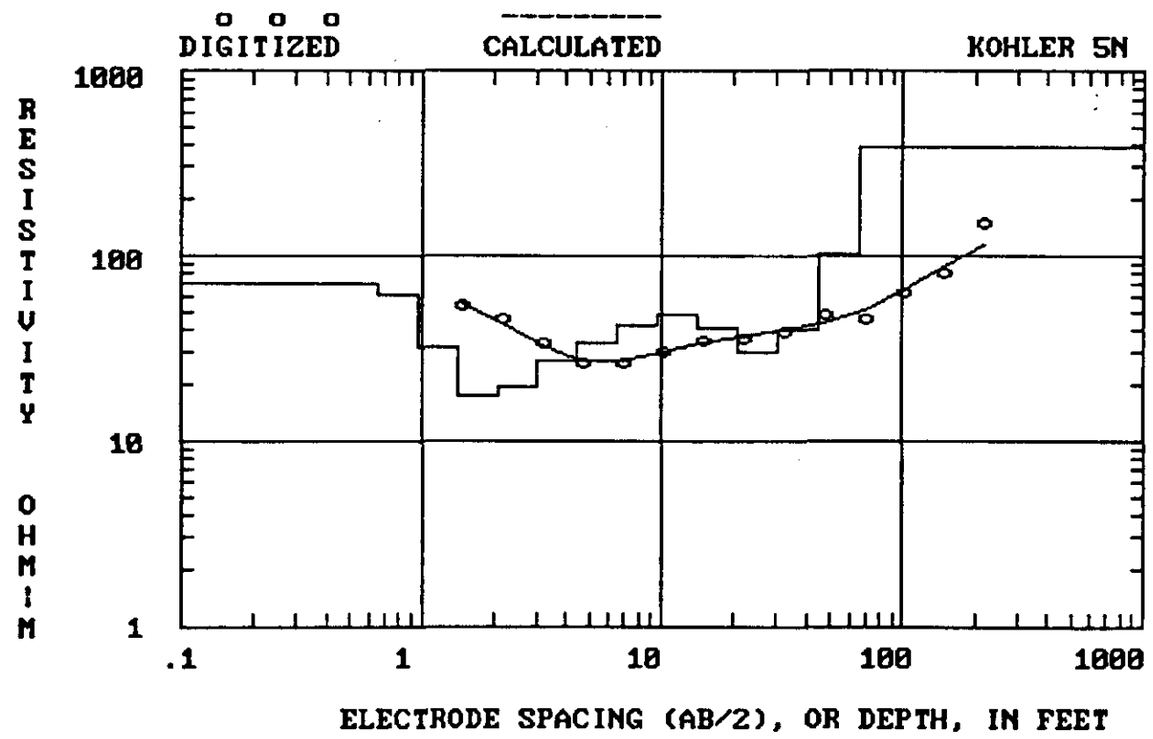


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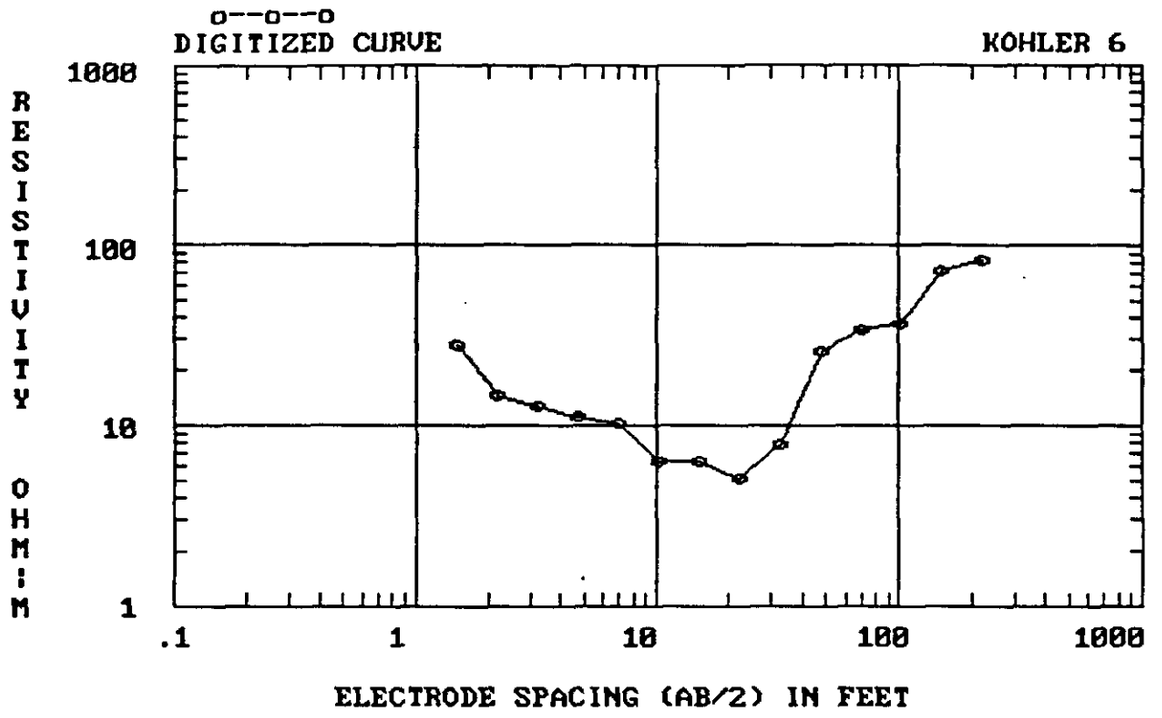
FIGURE 6



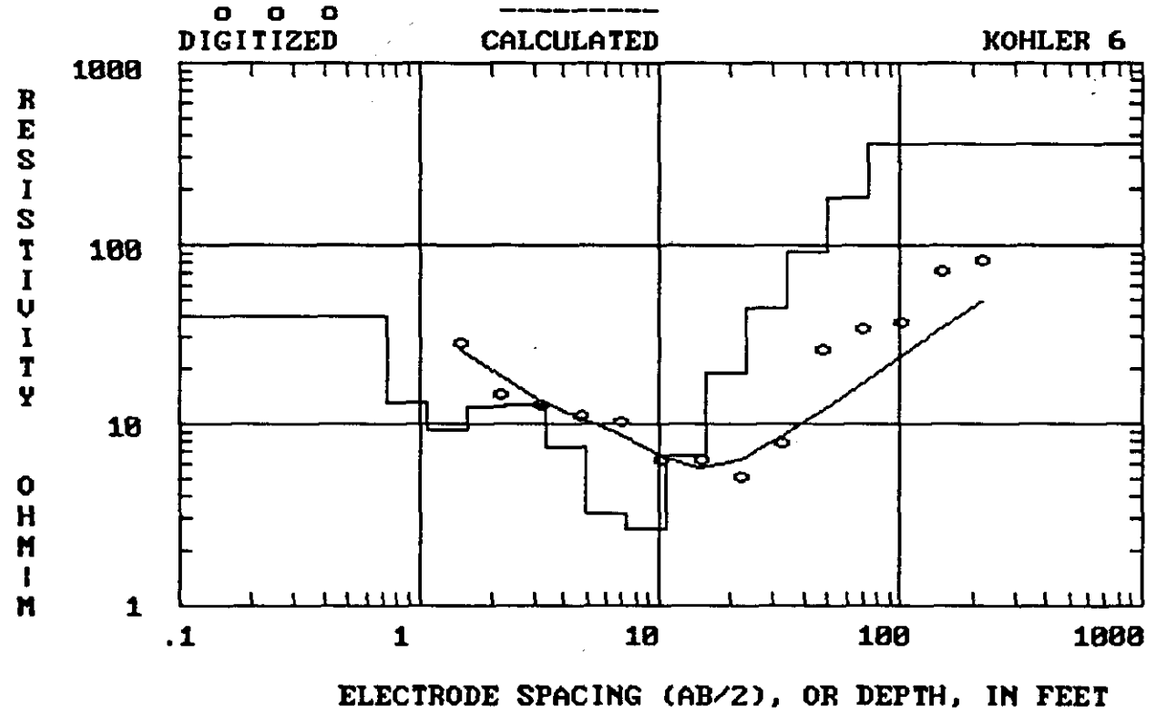


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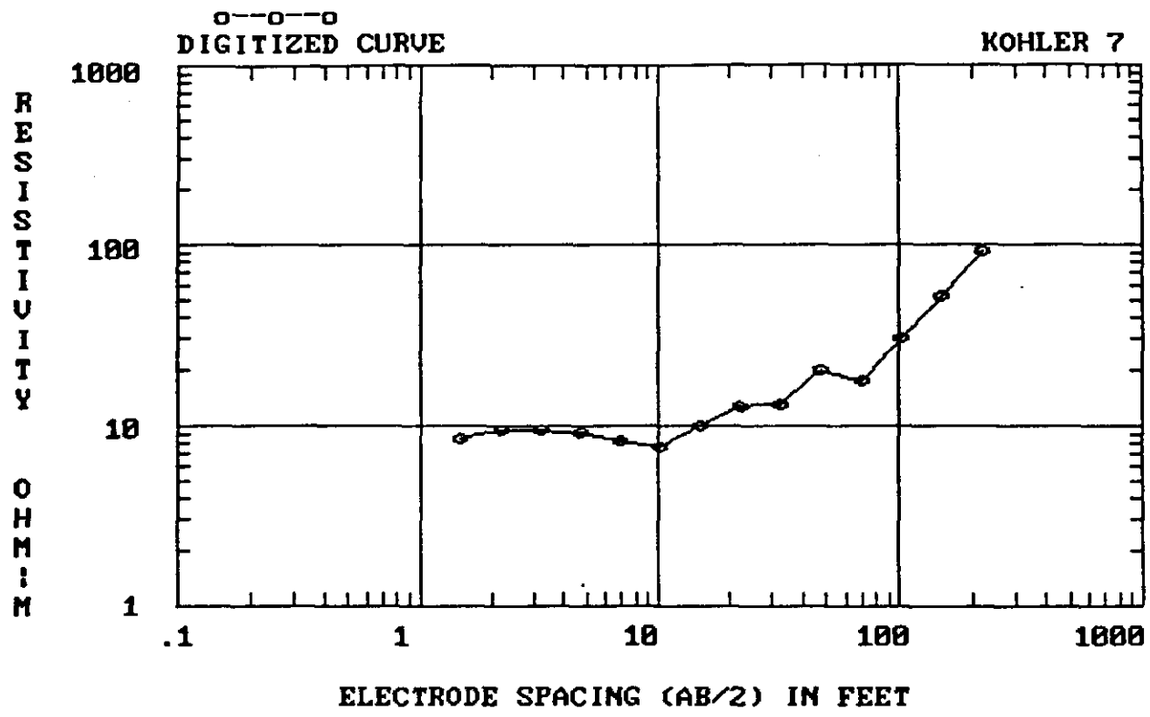
FIGURE 7



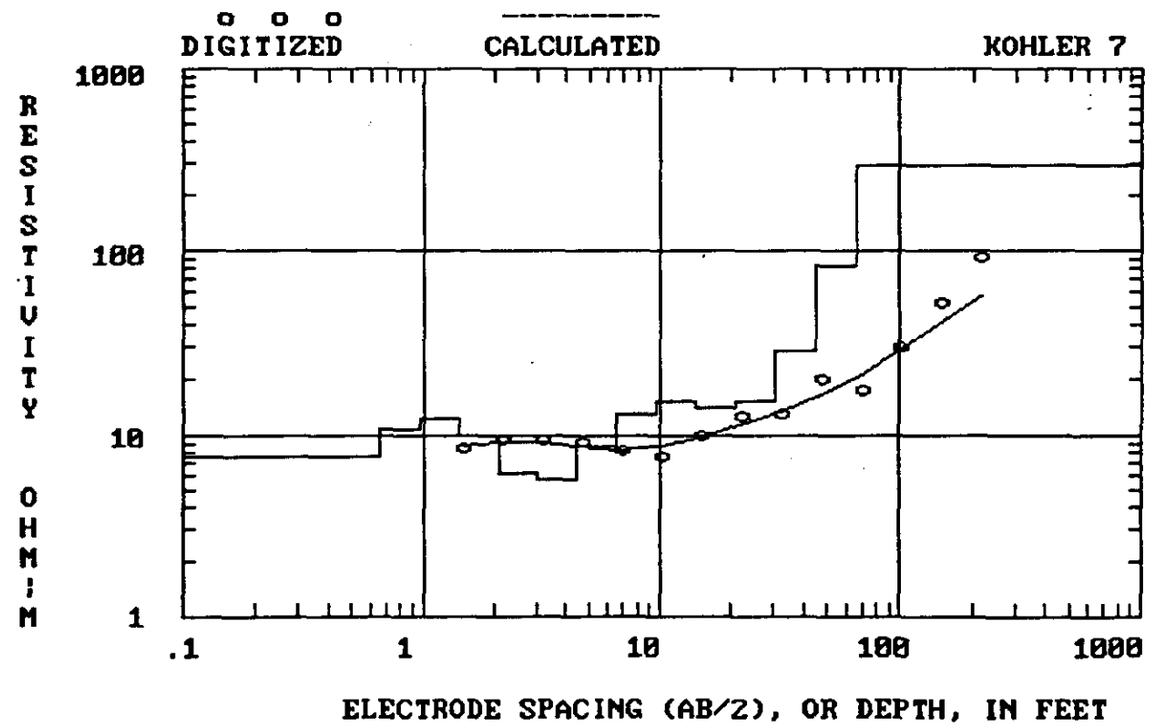


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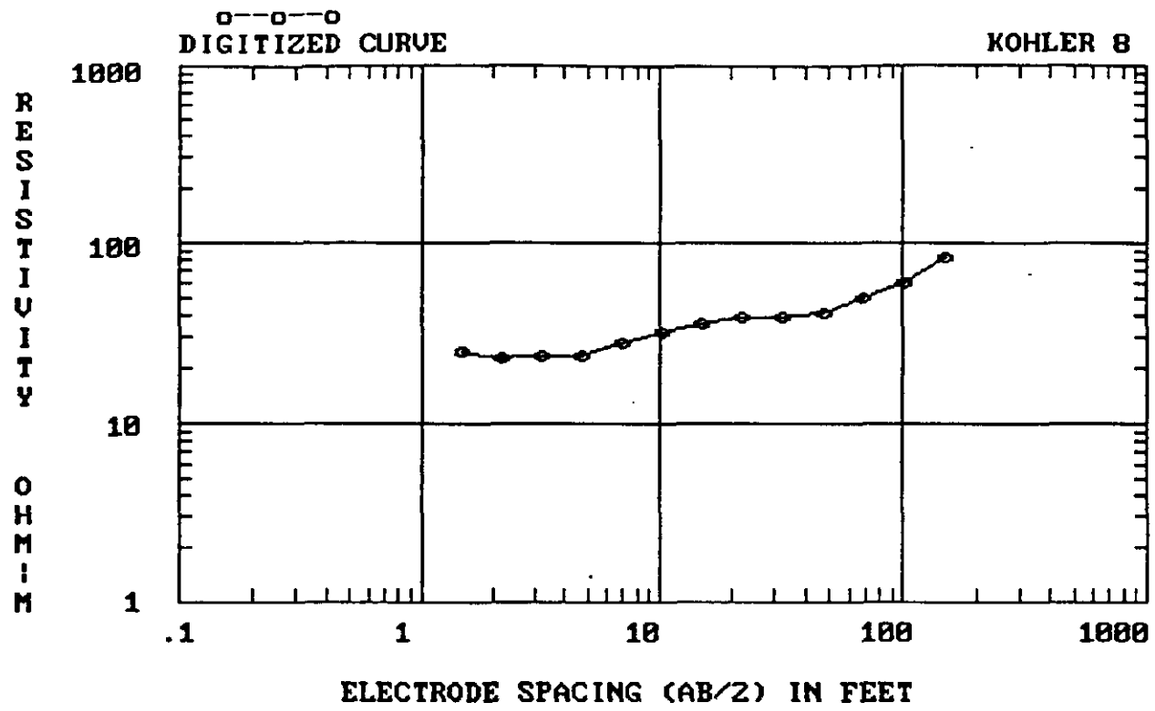
FIGURE 8



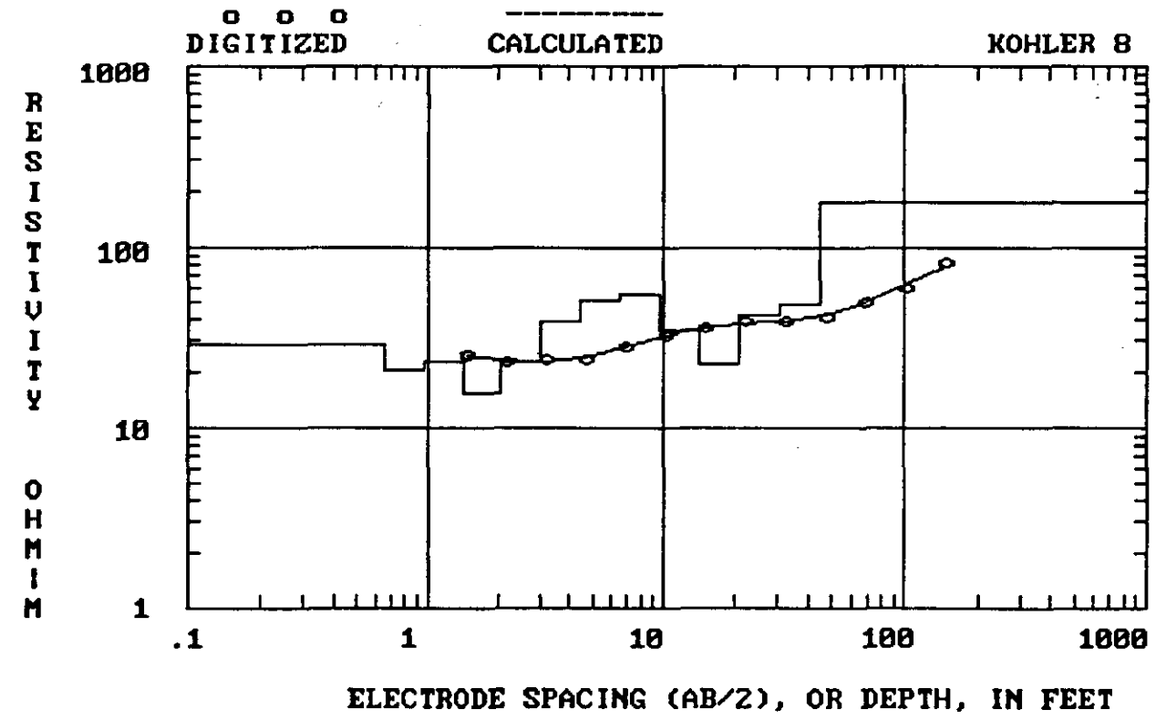


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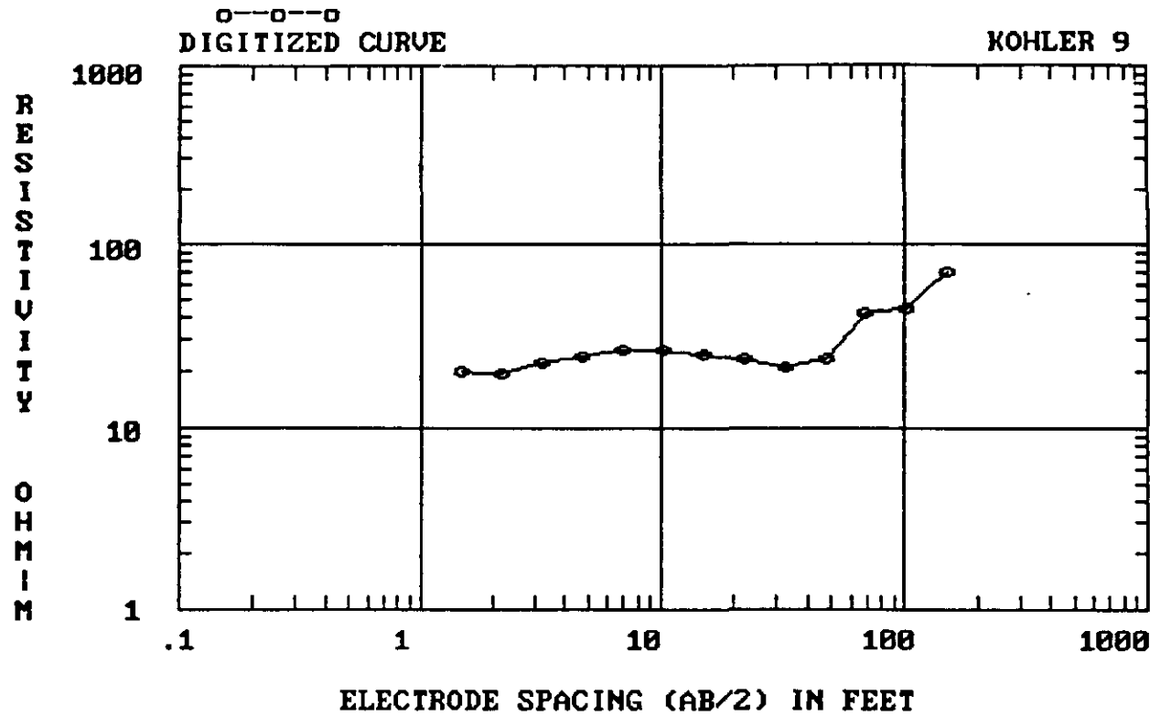
FIGURE 9



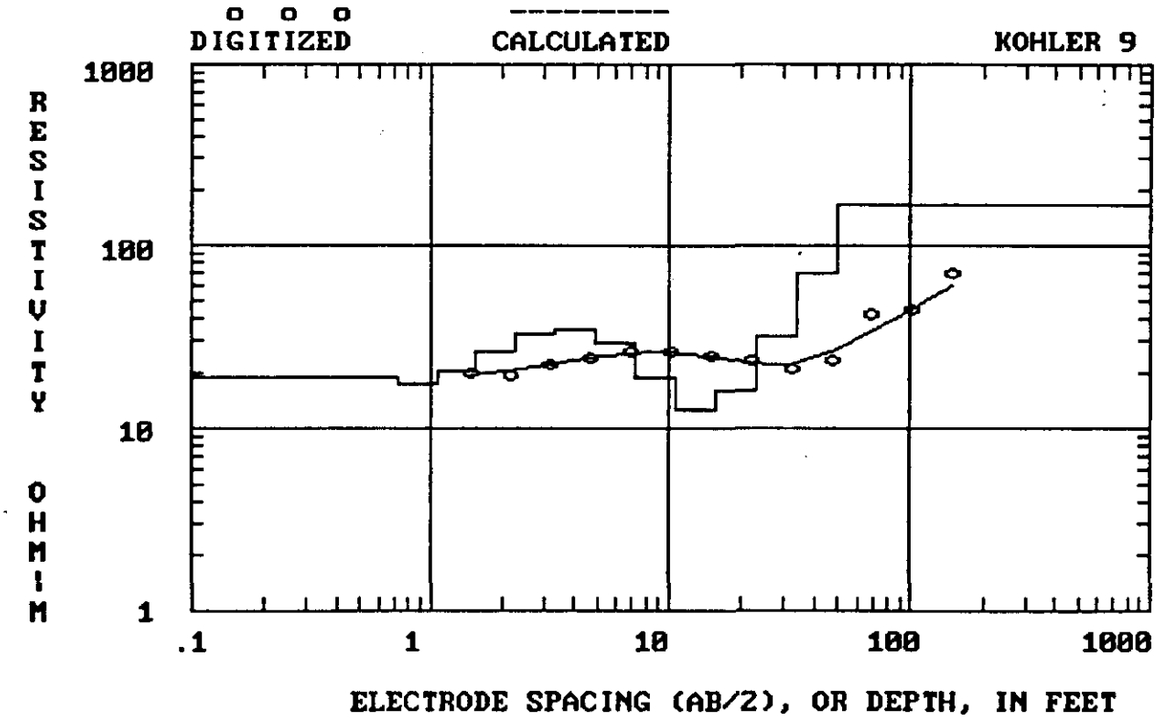


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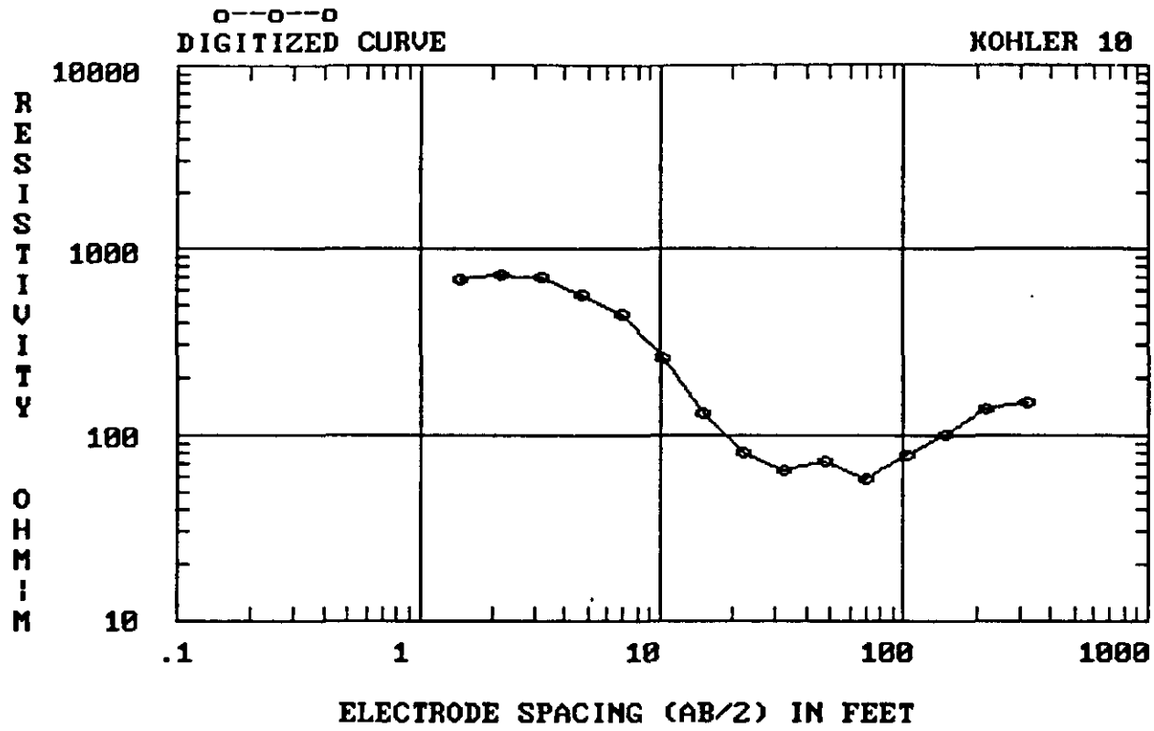
FIGURE 10



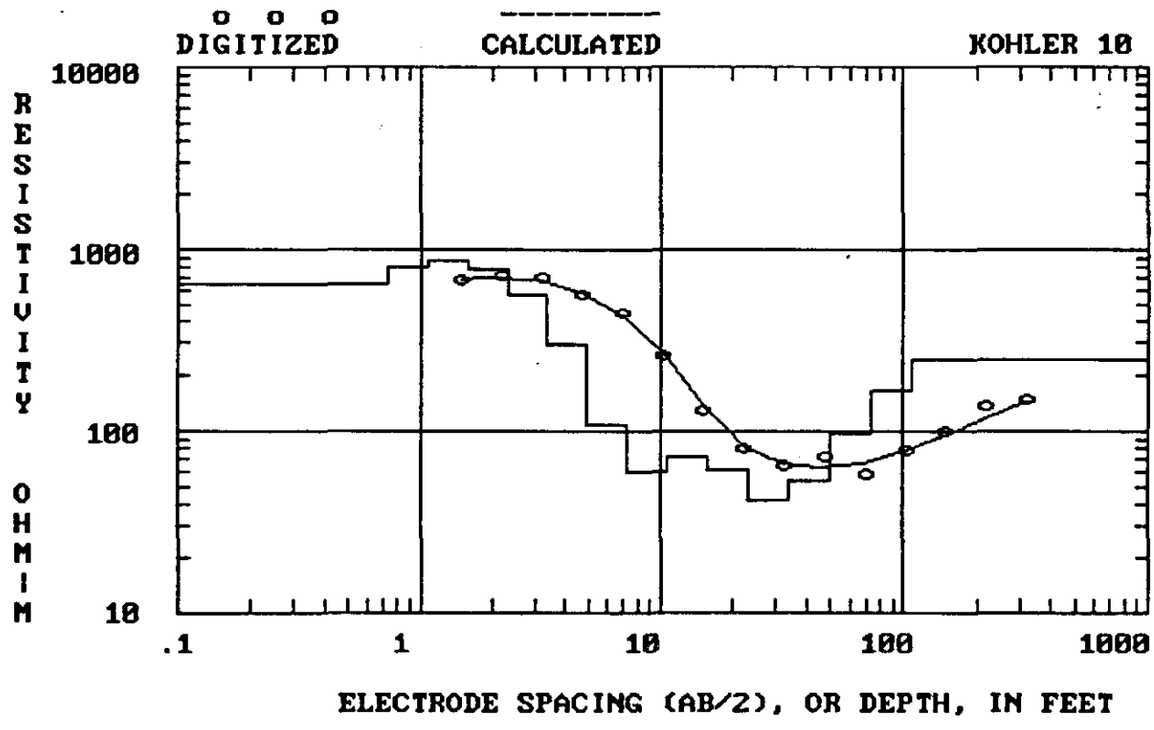


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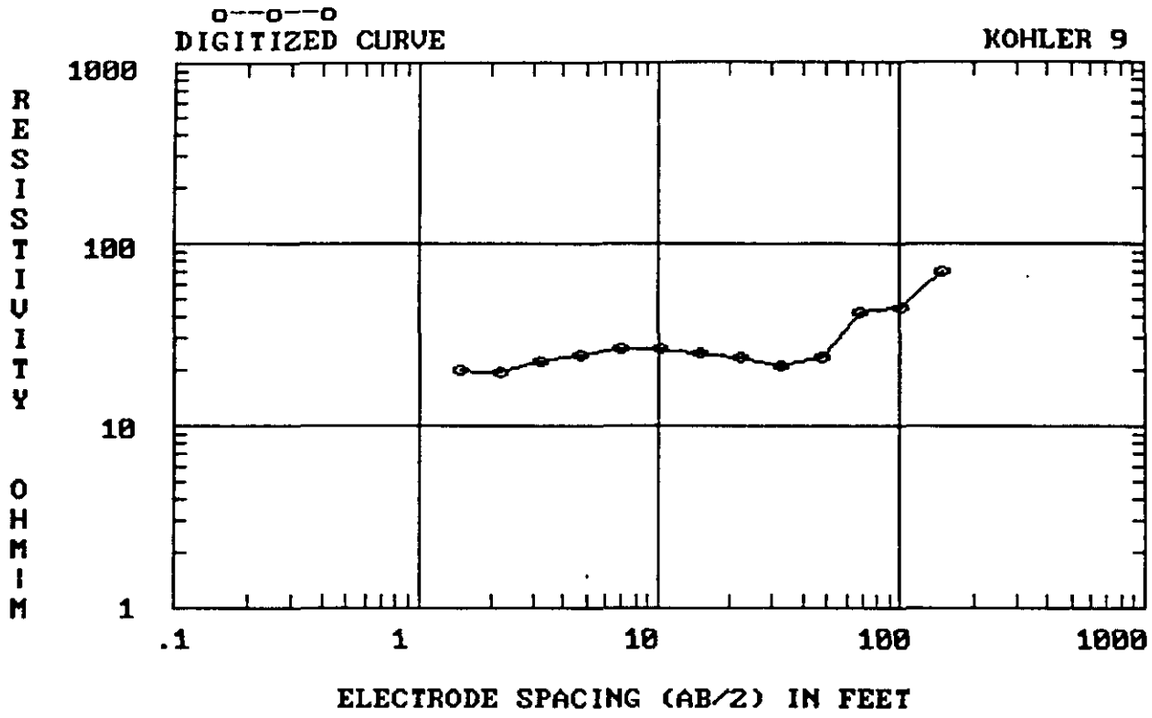
FIGURE 11



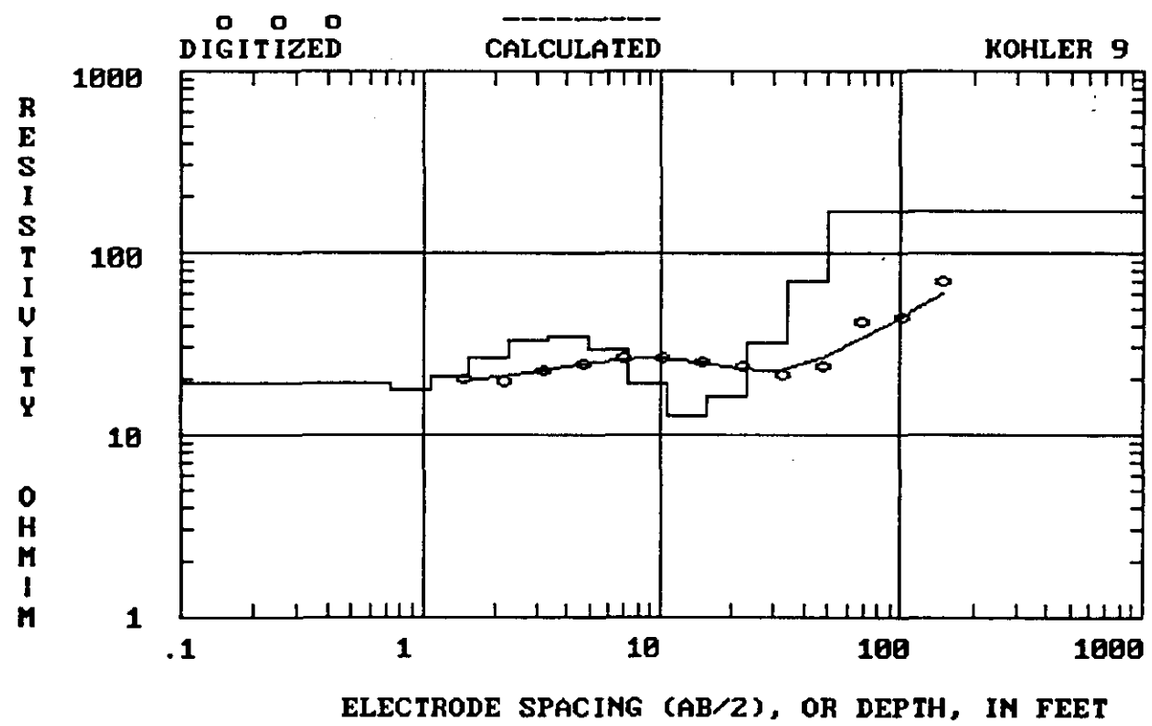


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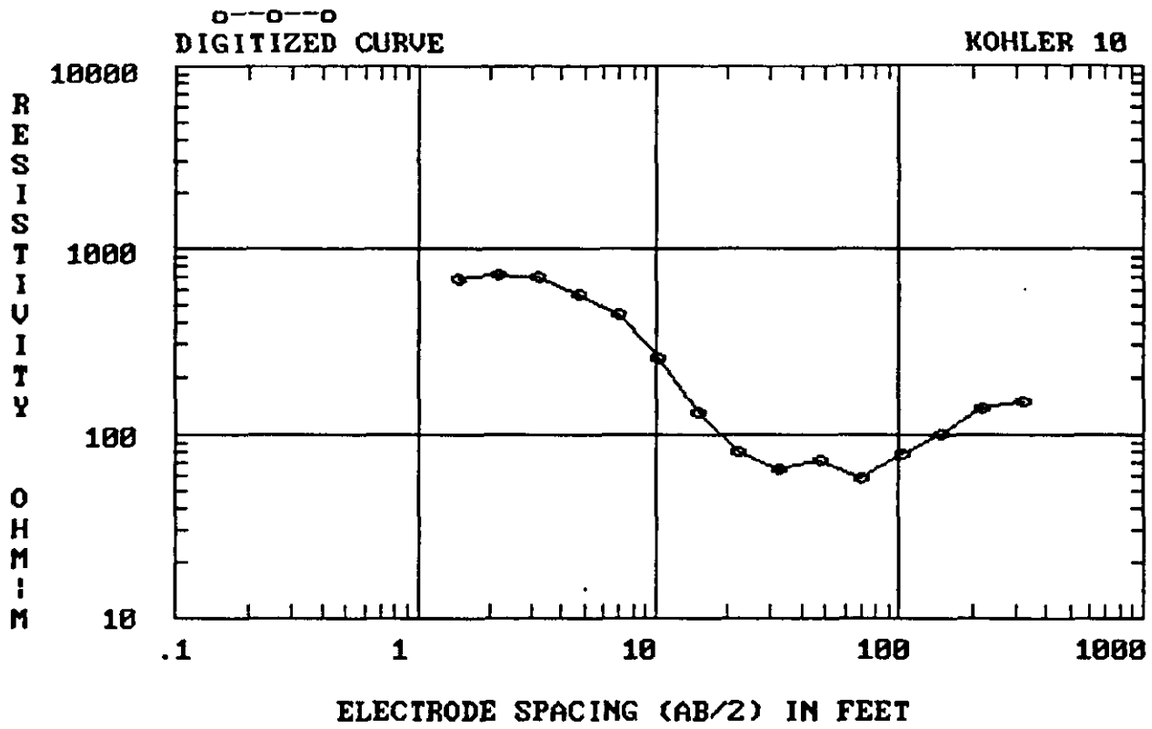
FIGURE 10



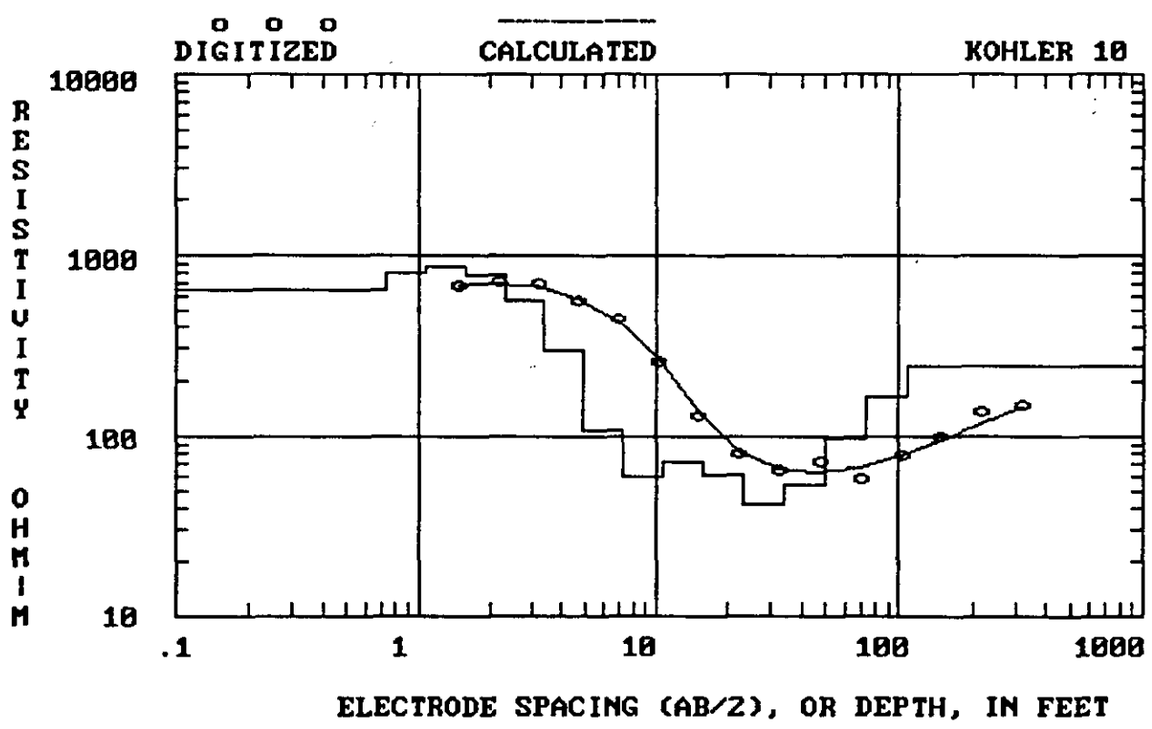


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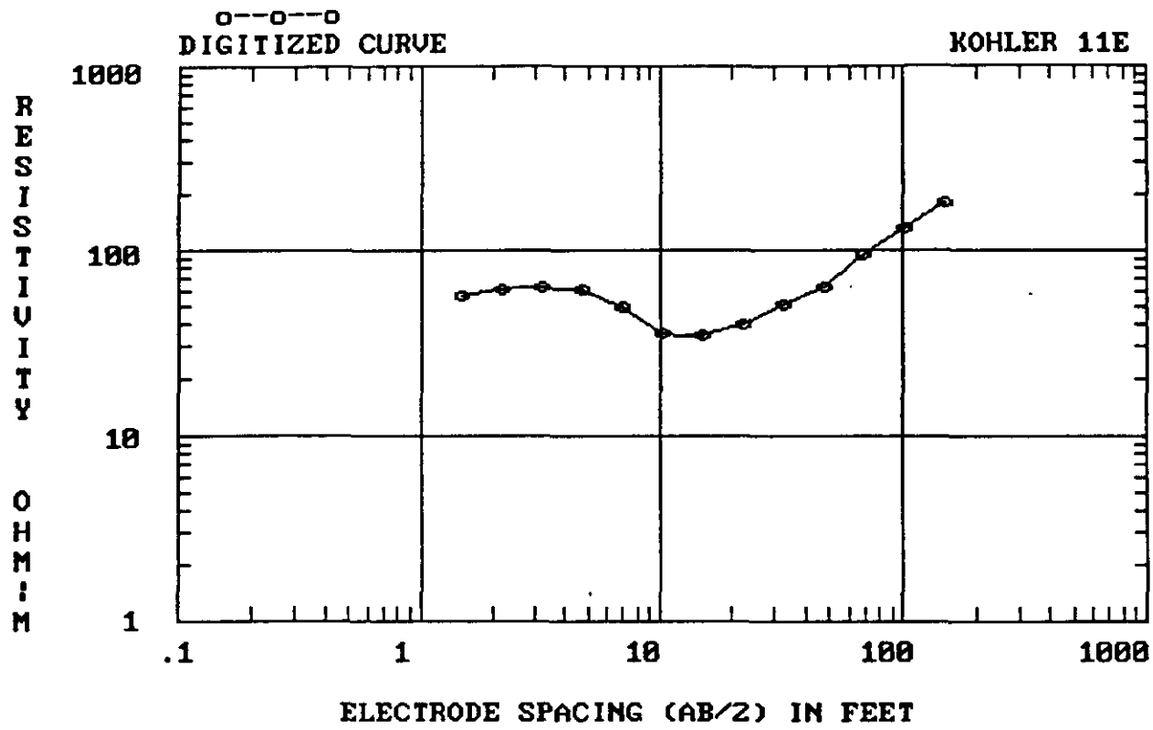
FIGURE 11



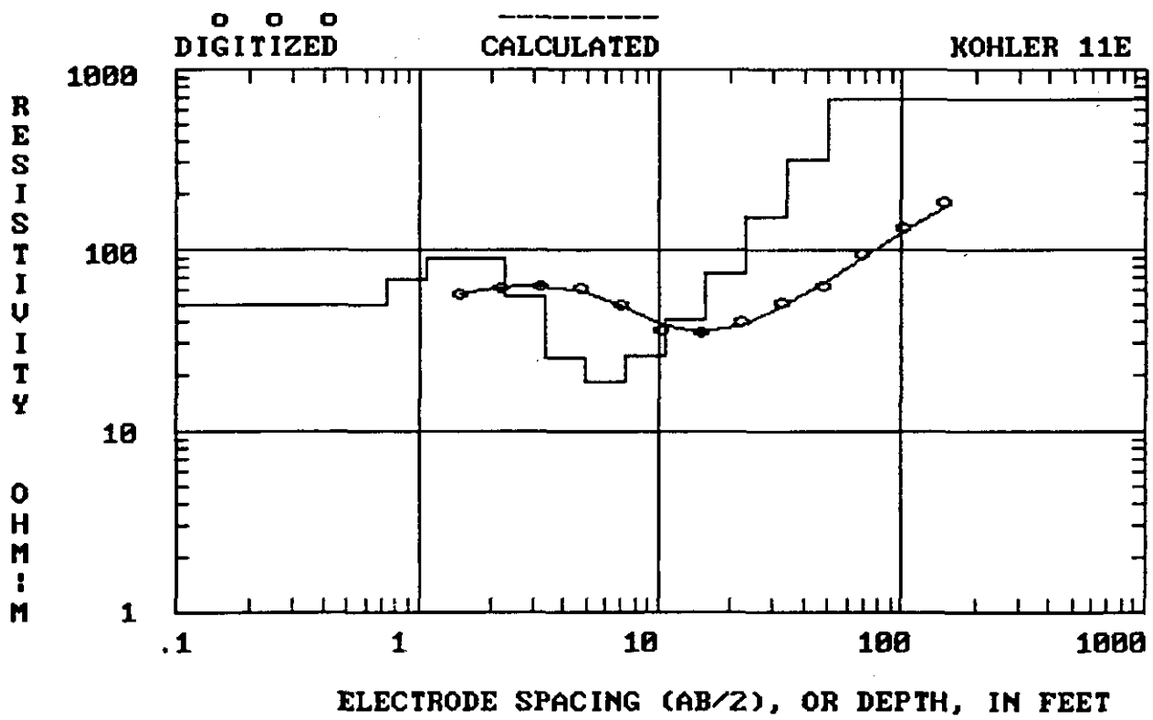


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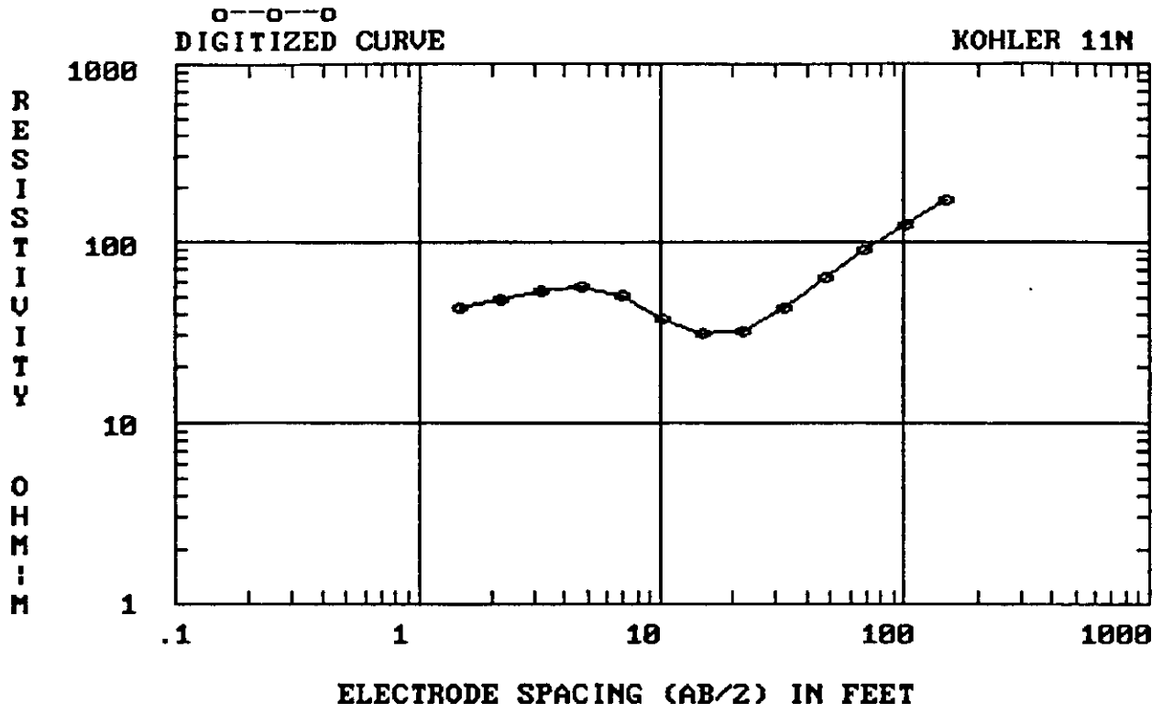
FIGURE 12



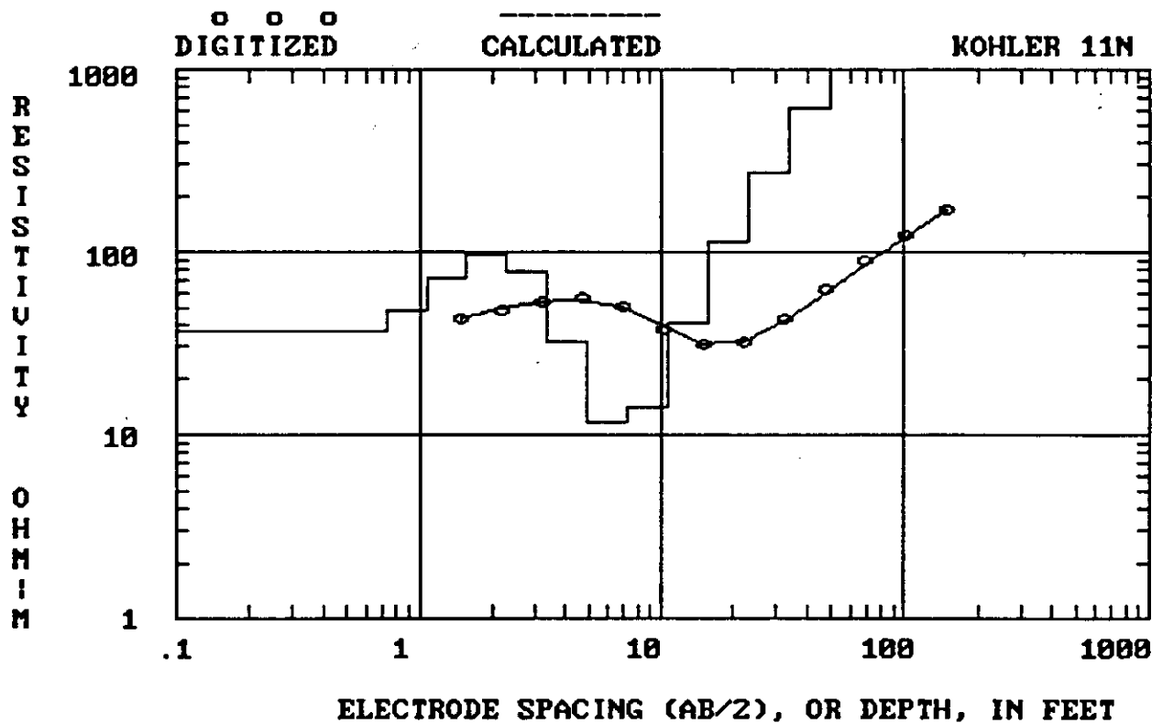


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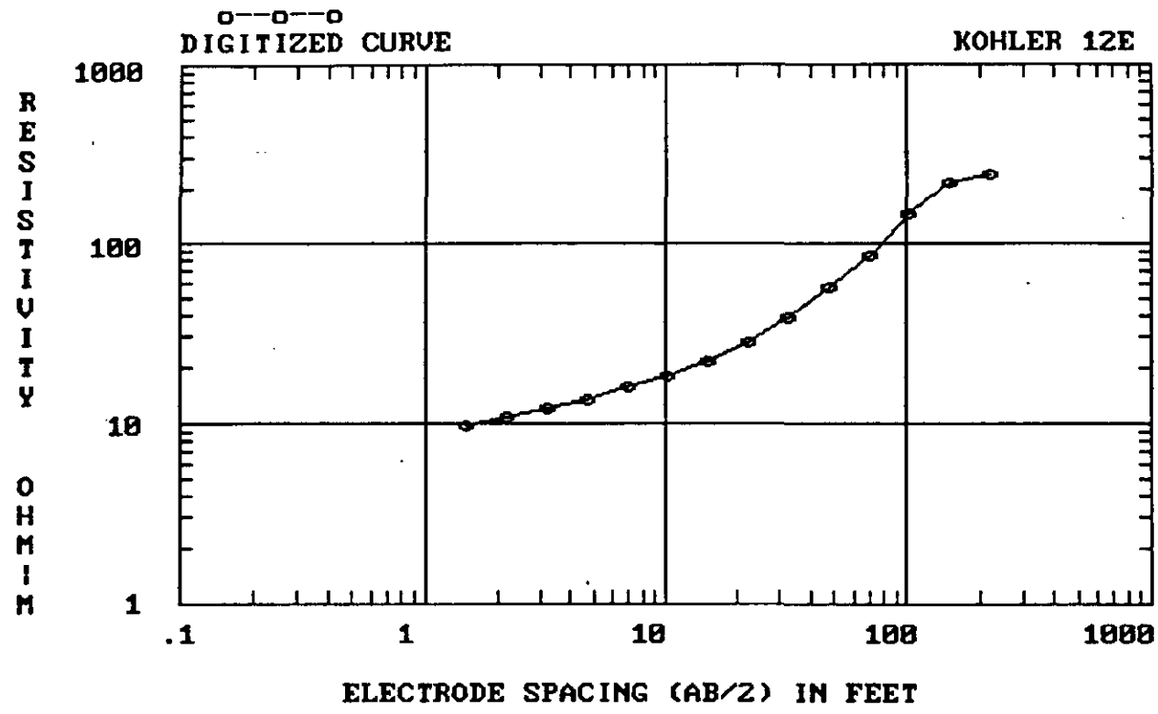
FIGURE 13



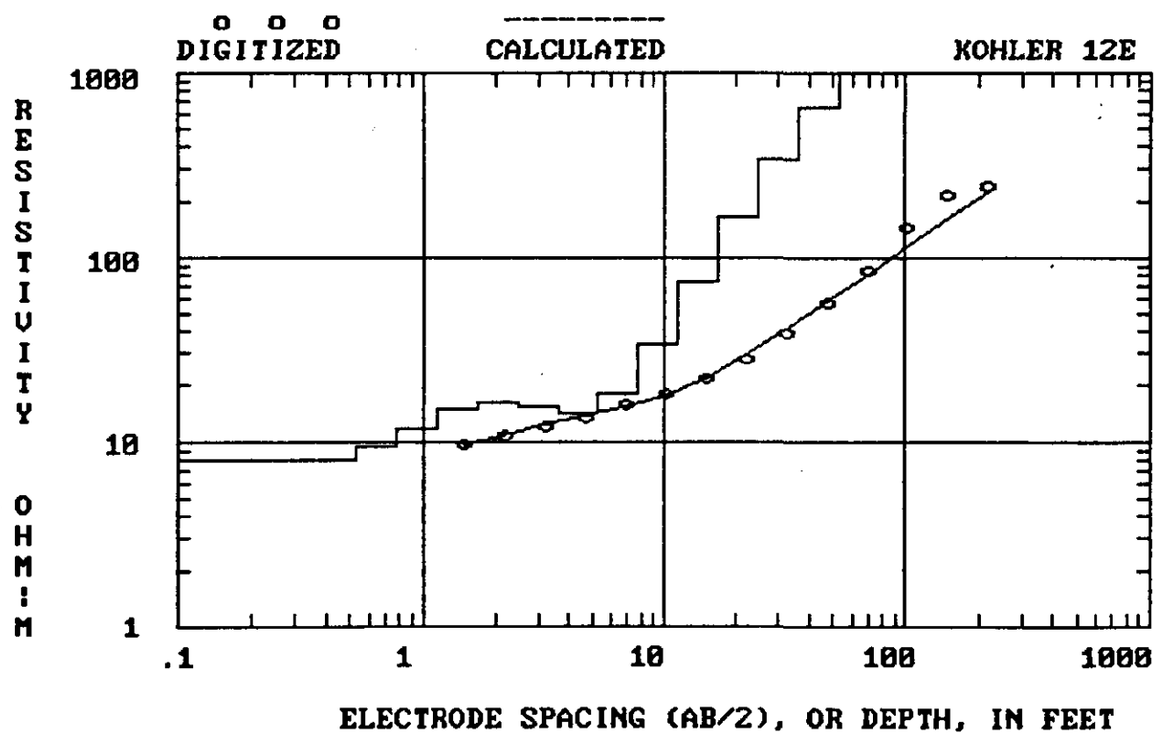


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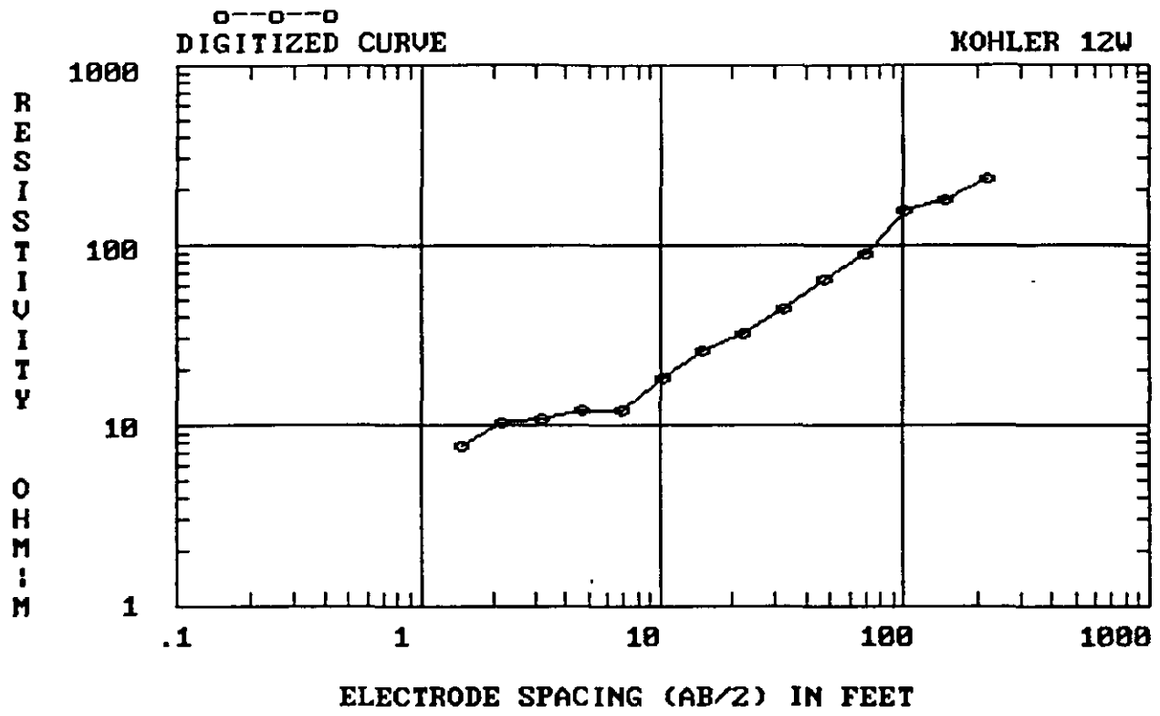
FIGURE 14



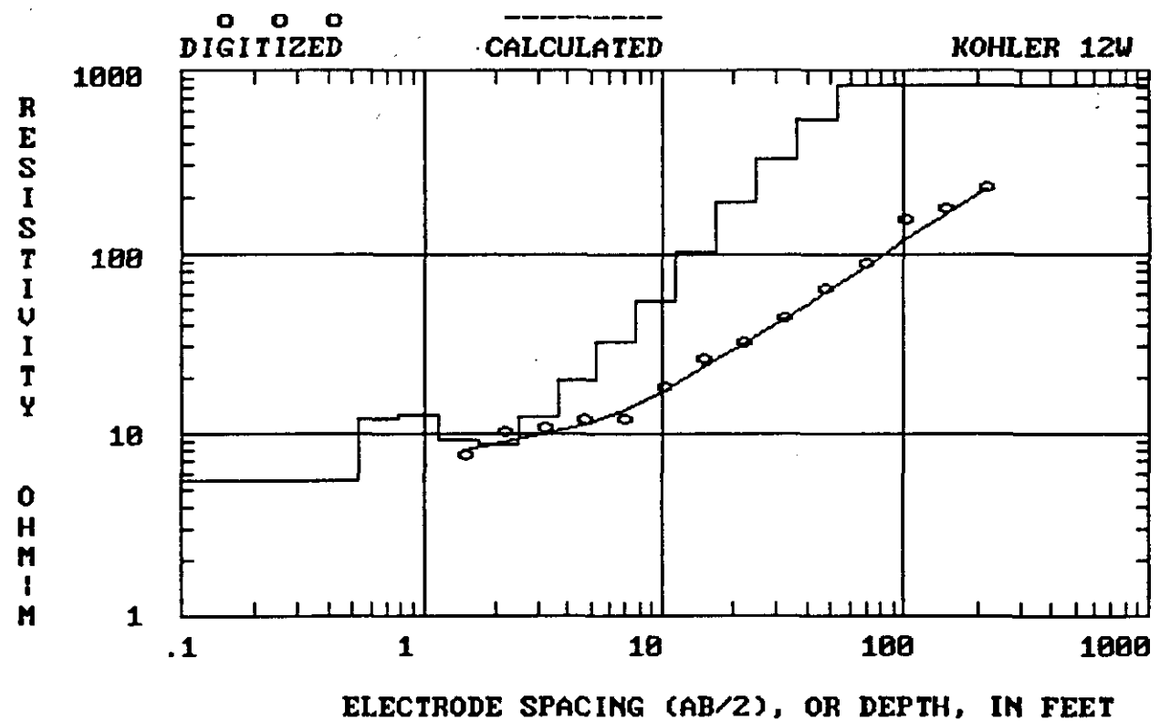


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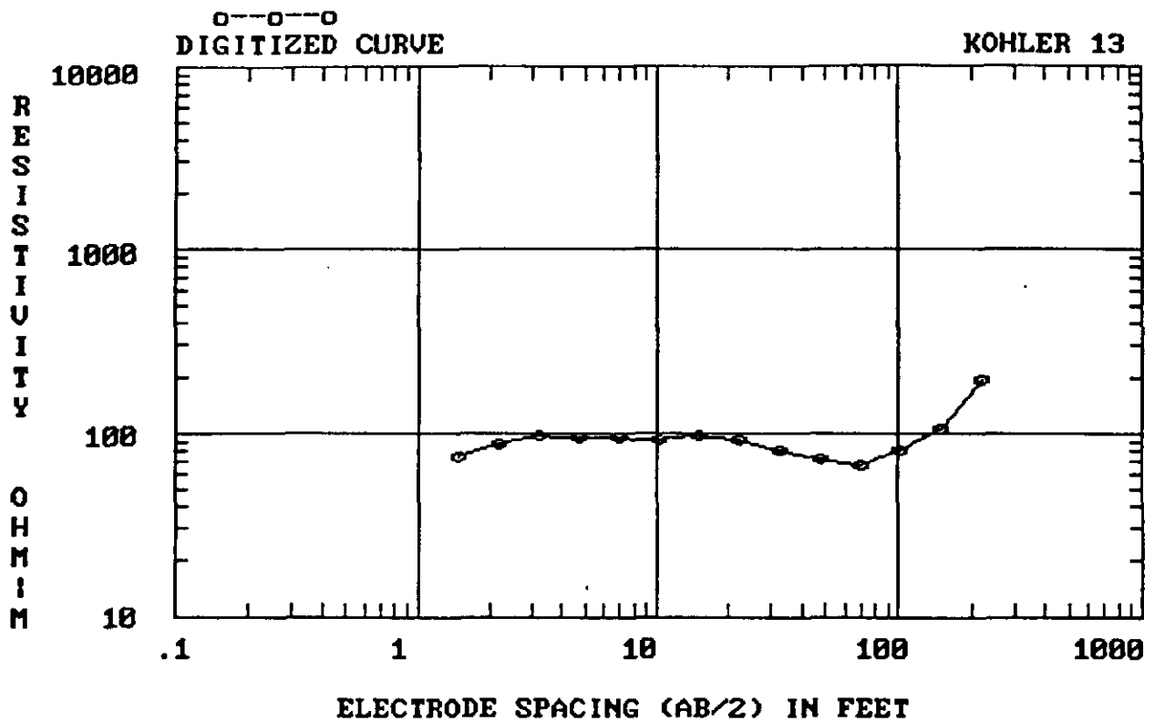
FIGURE 15



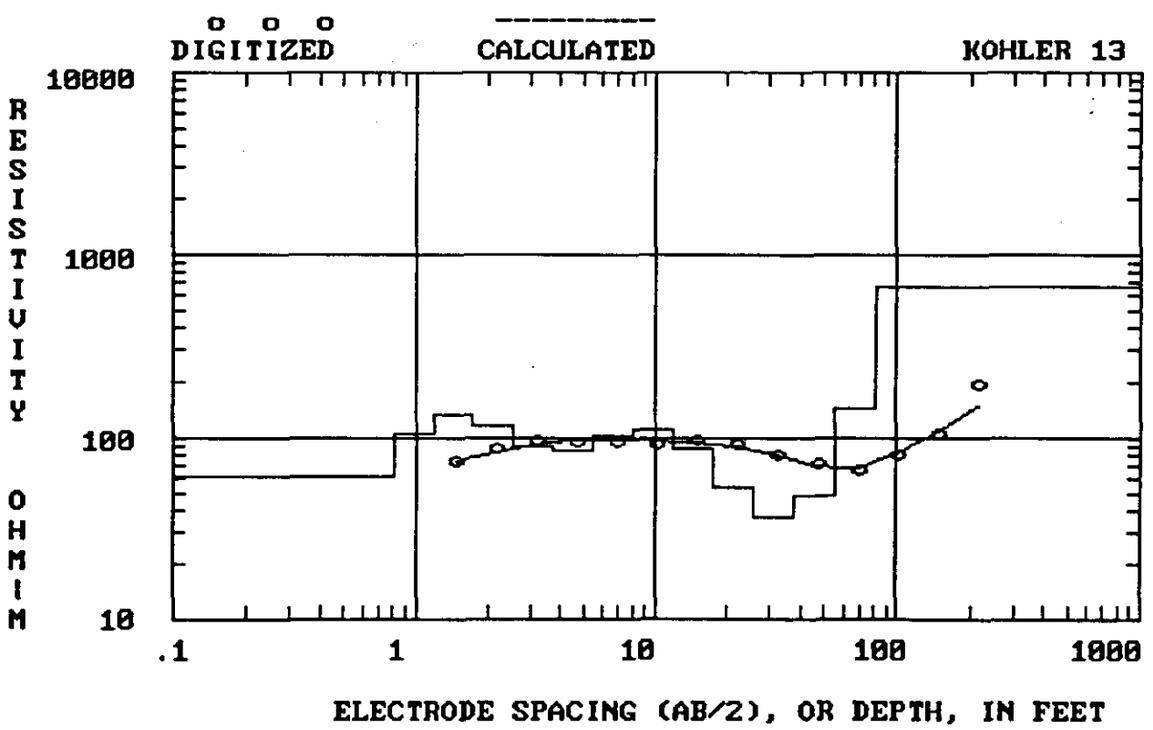


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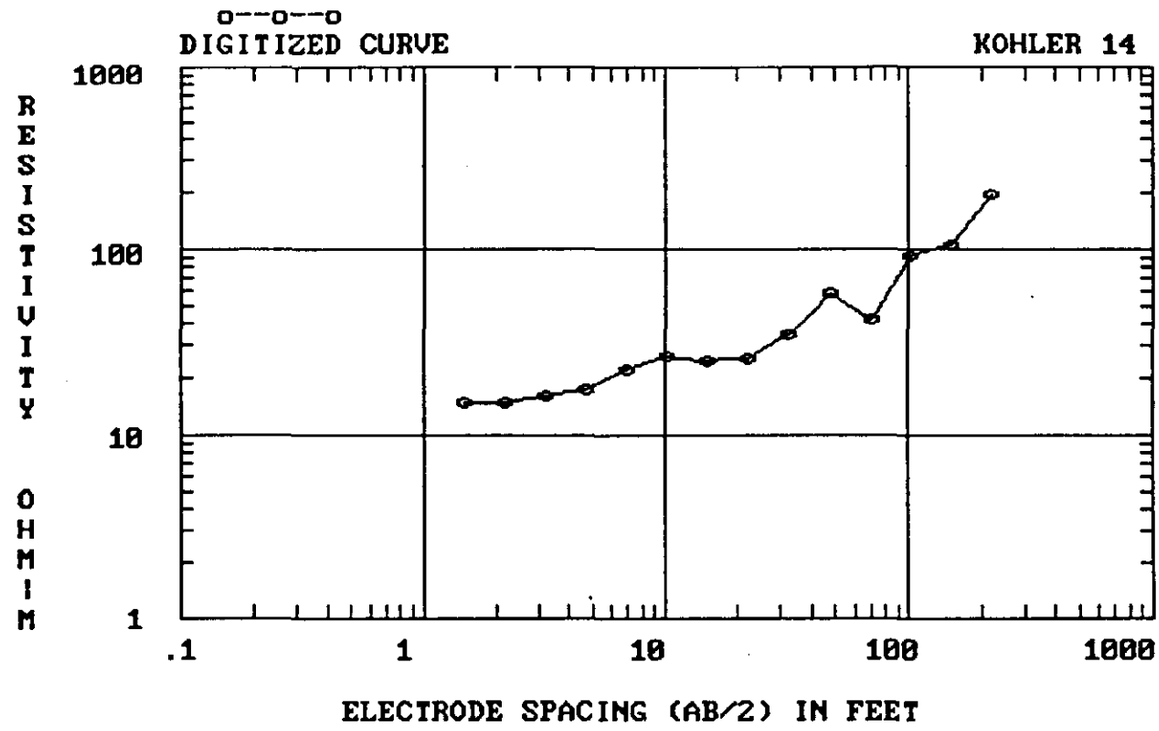
FIGURE 16



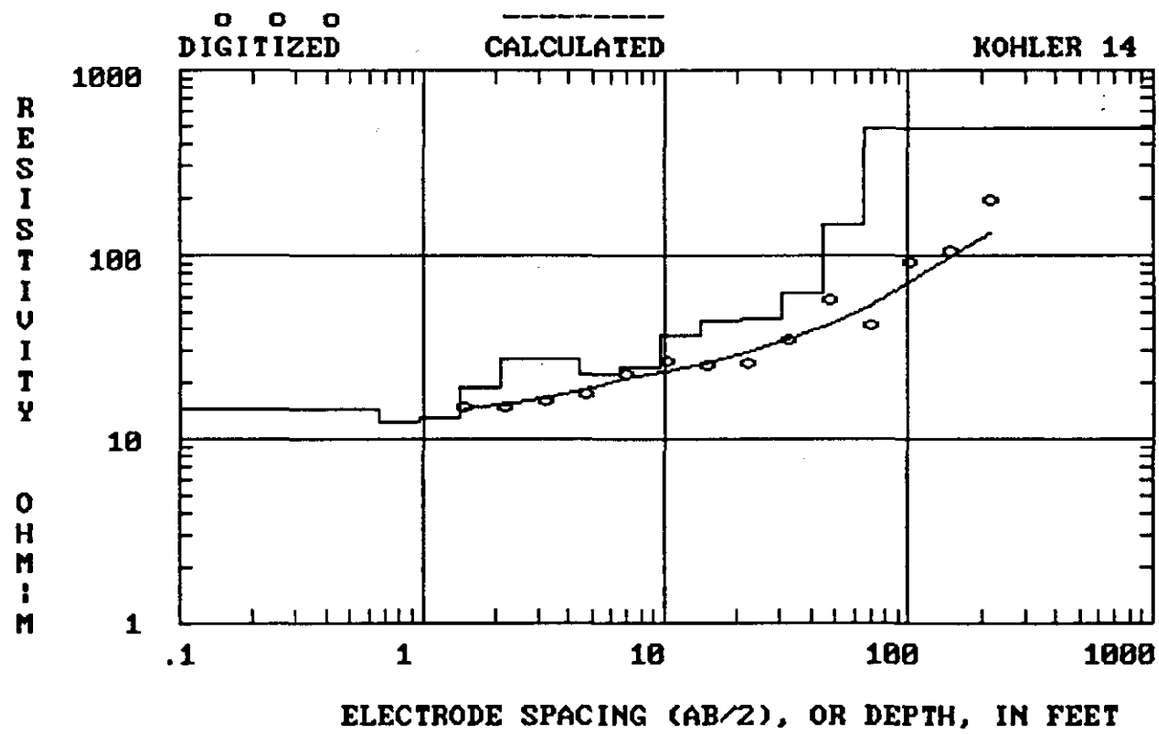


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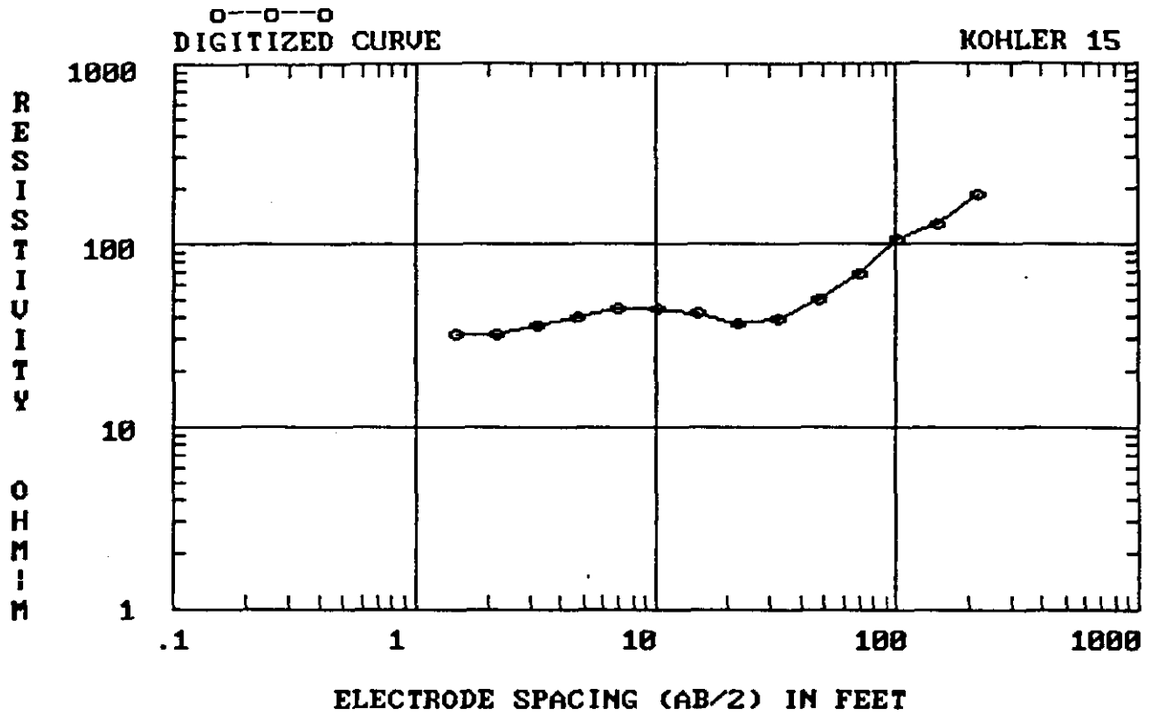
FIGURE 17



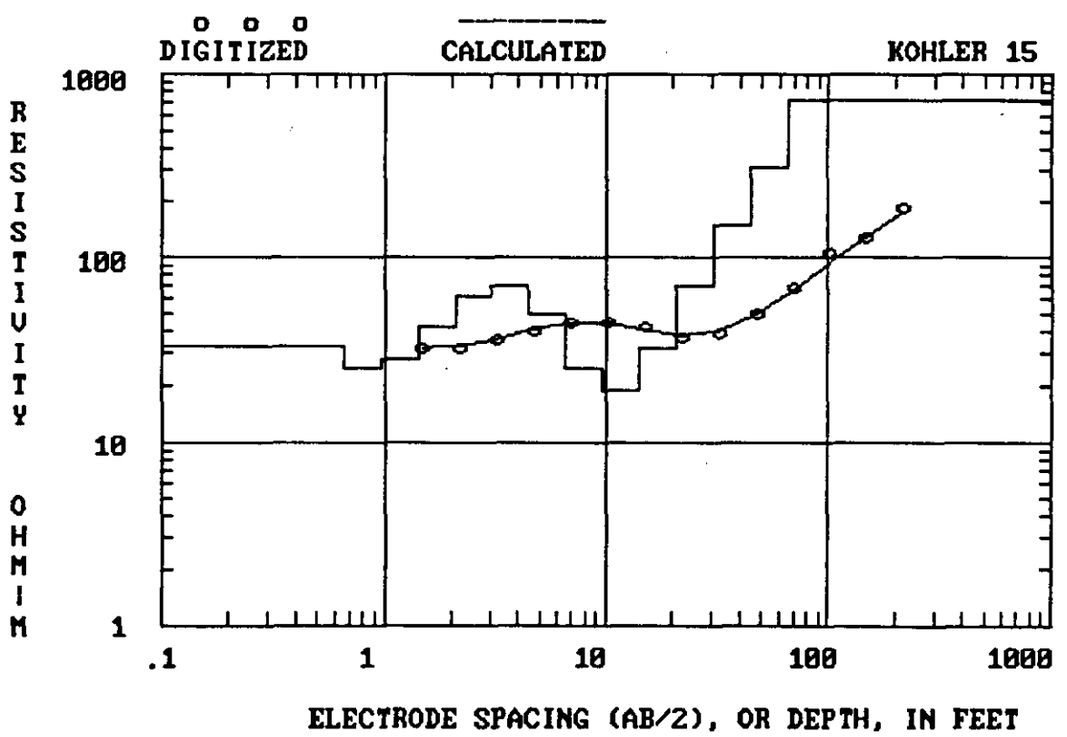


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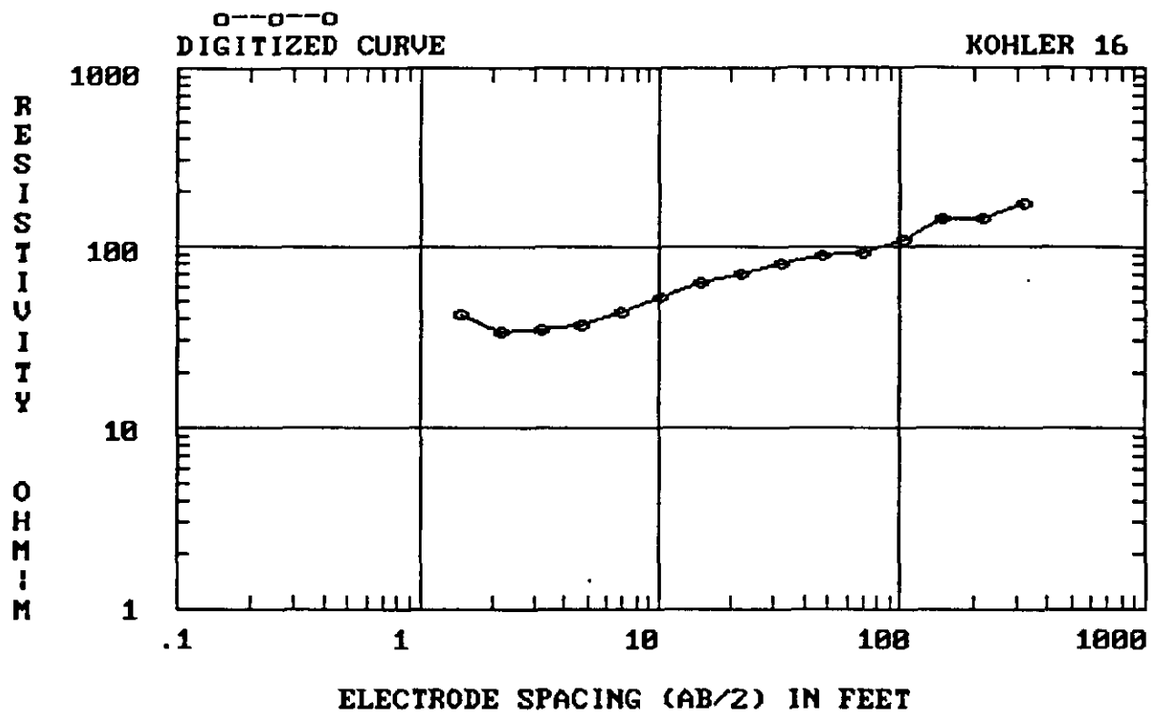
FIGURE 18



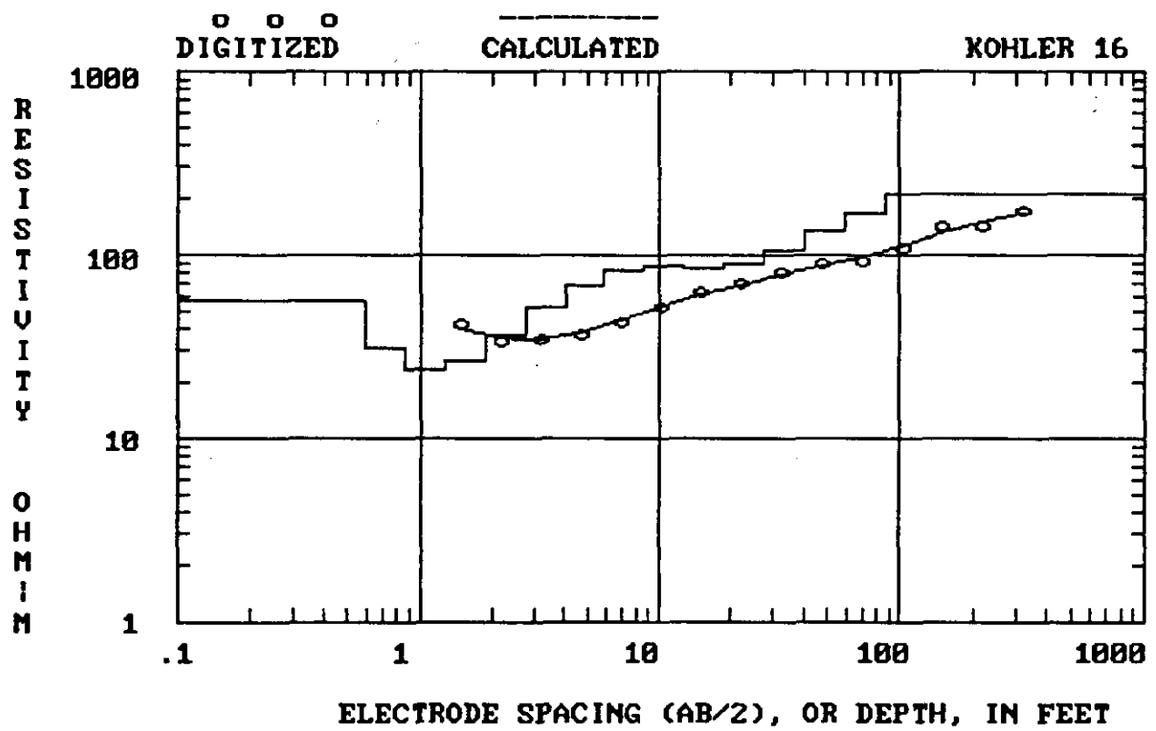


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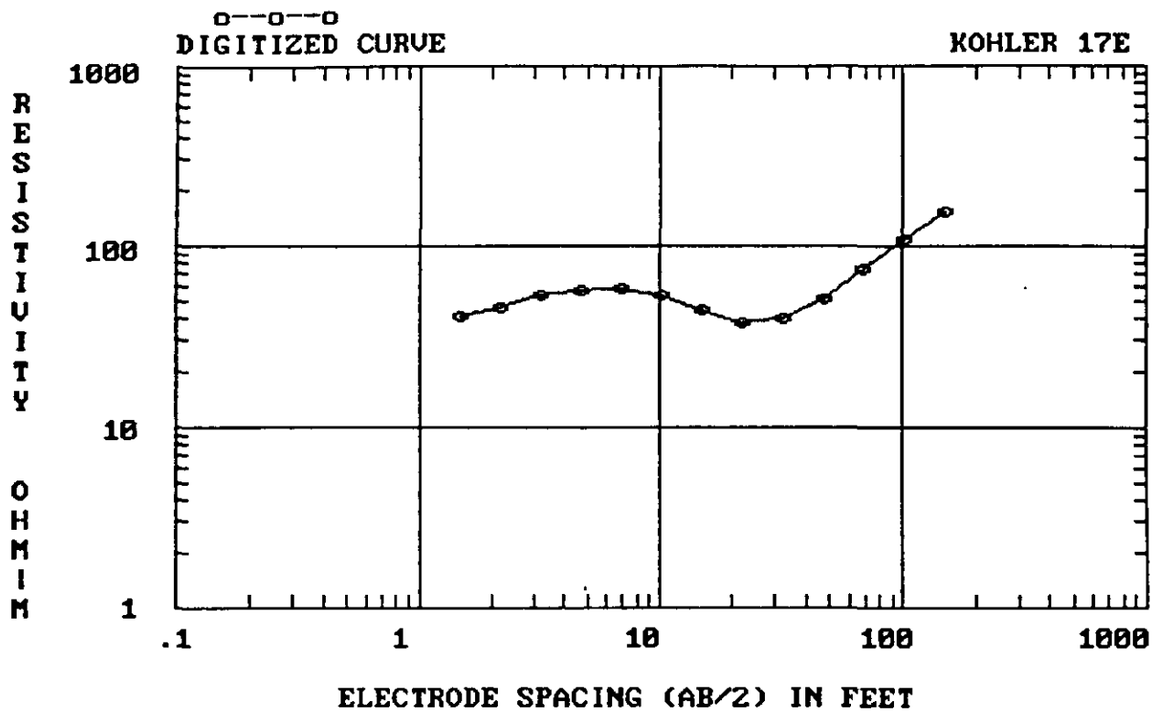
FIGURE 19



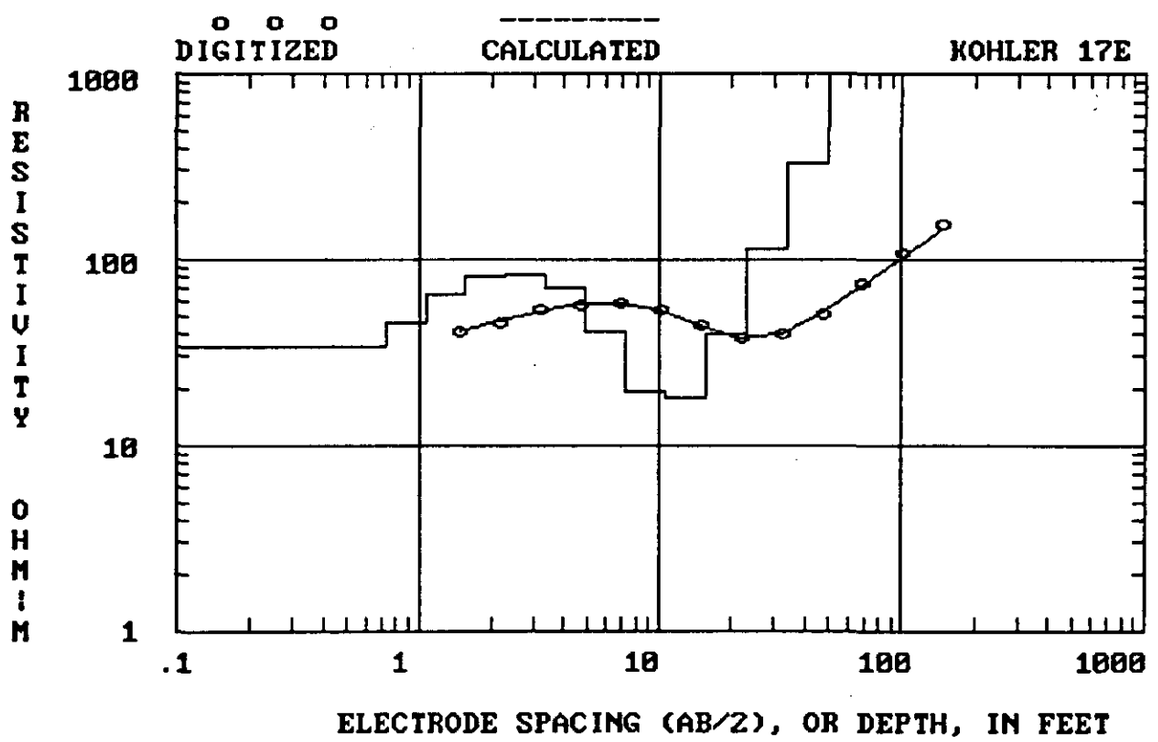


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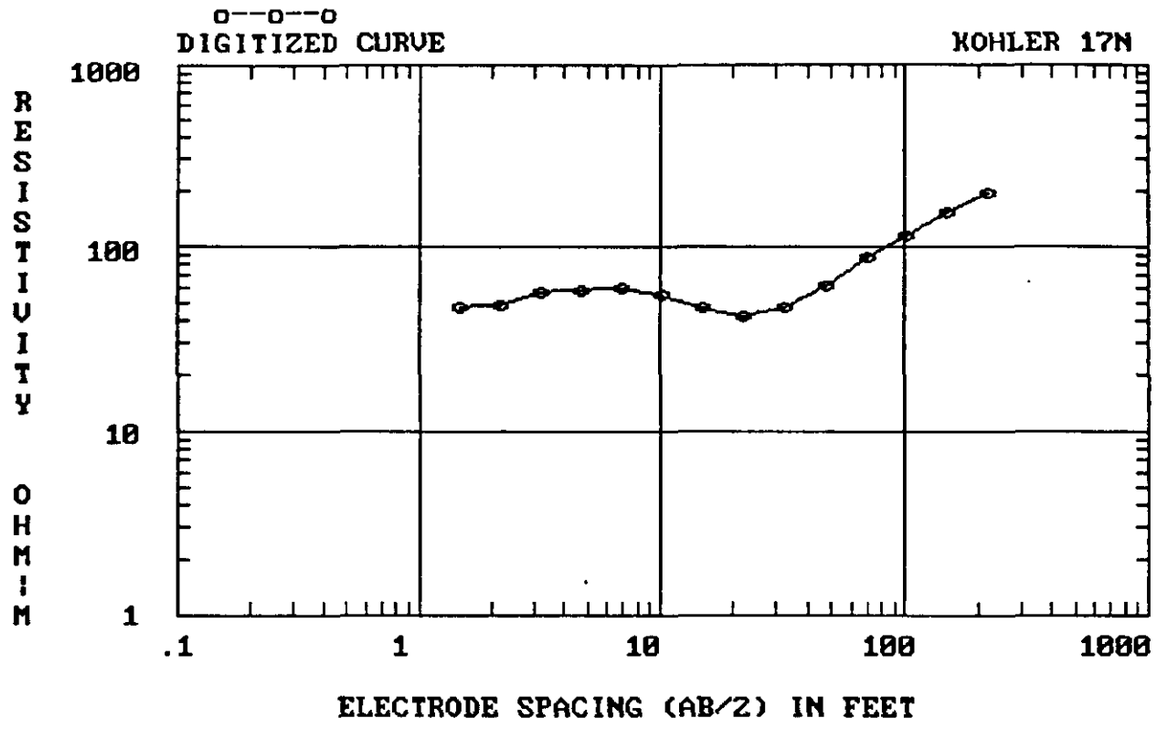
FIGURE 20



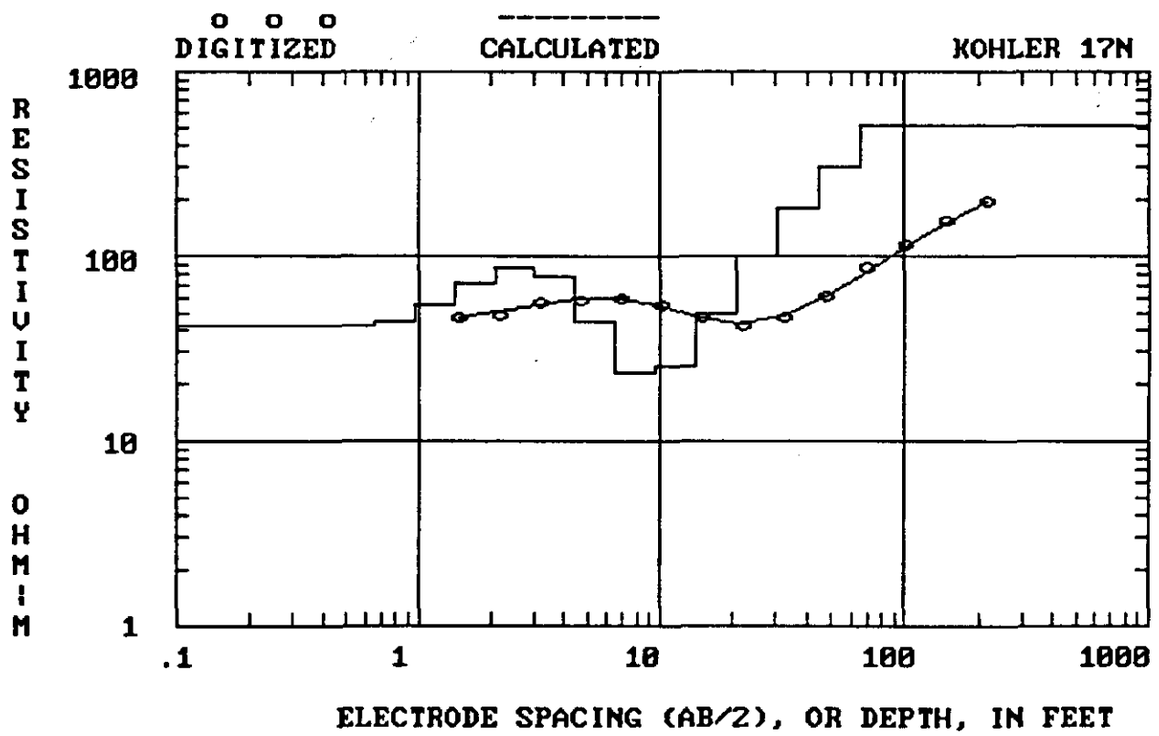


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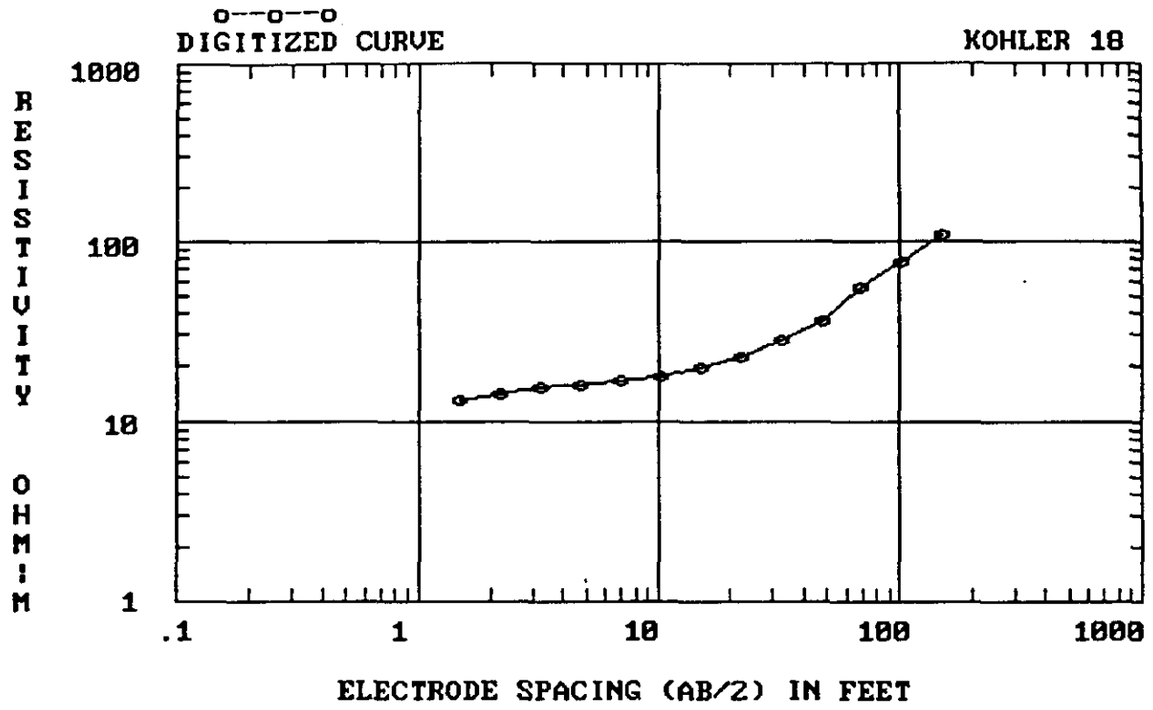
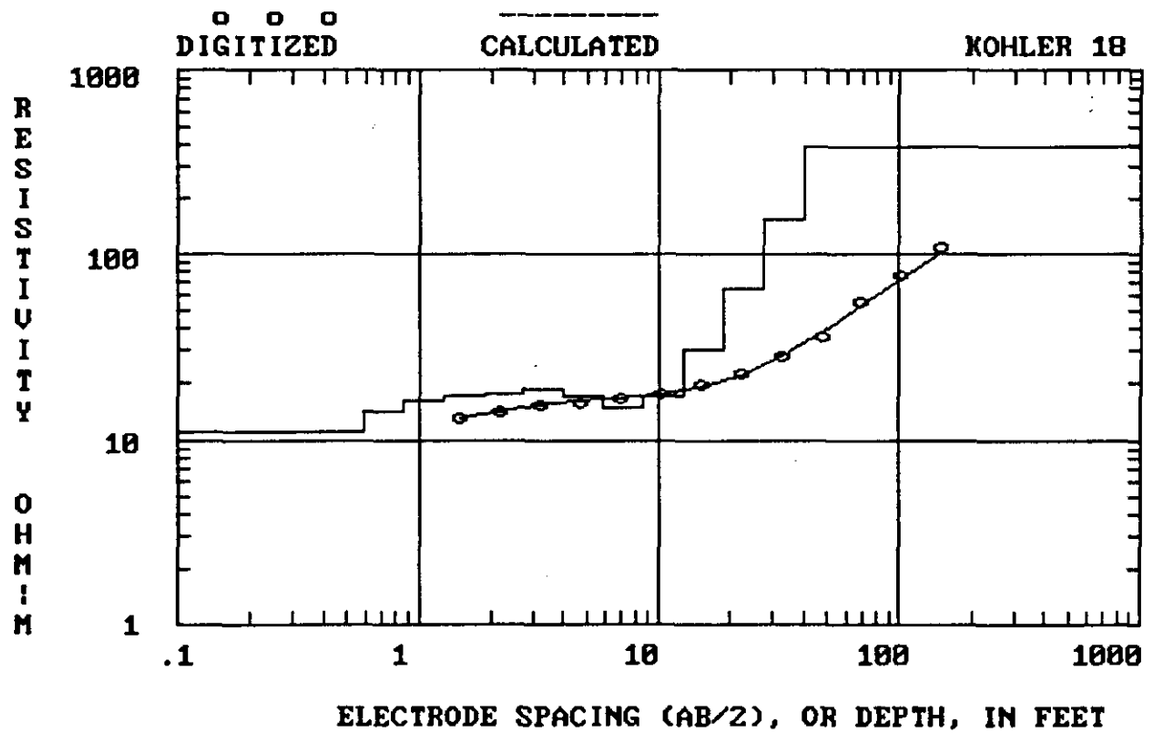
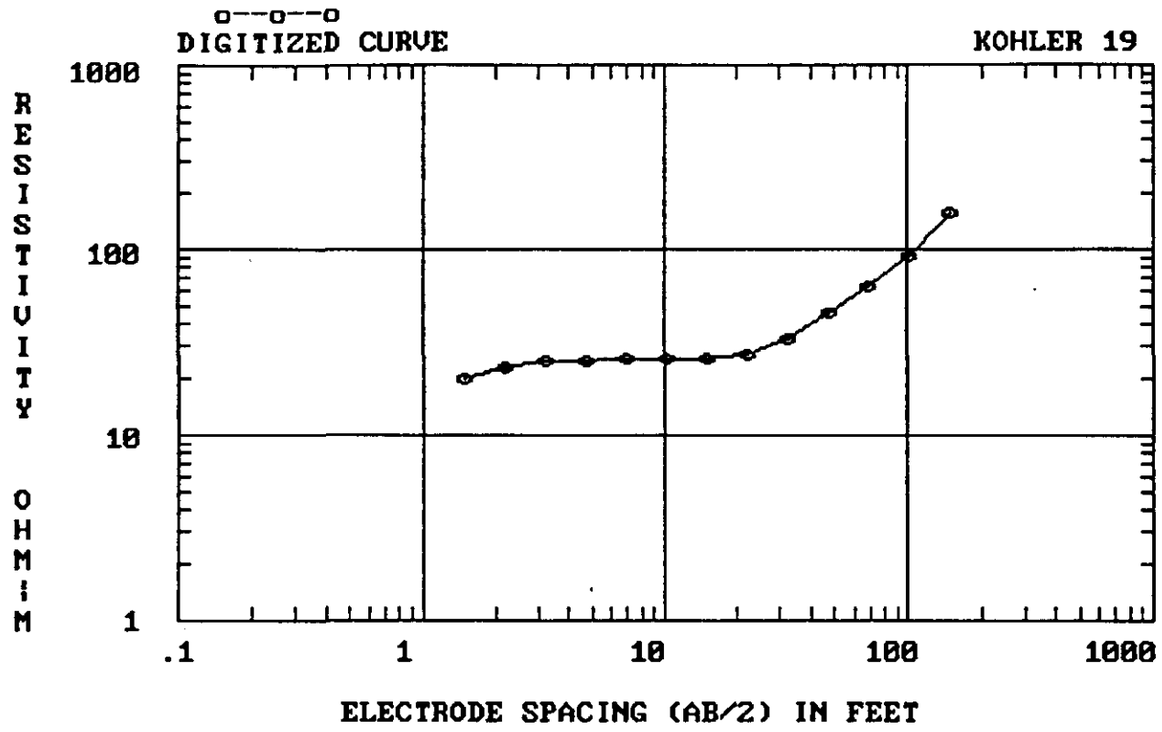
FIGURE 21

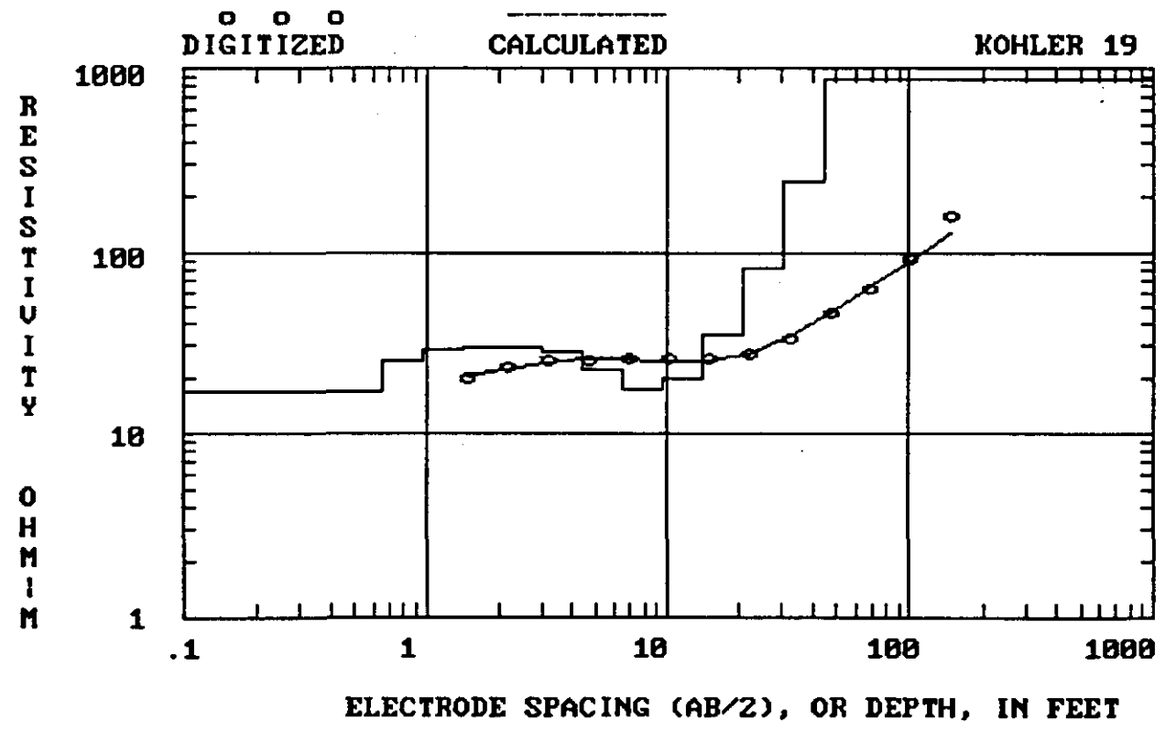




GERAGHTY & MILLER, INC.
Environmental Services

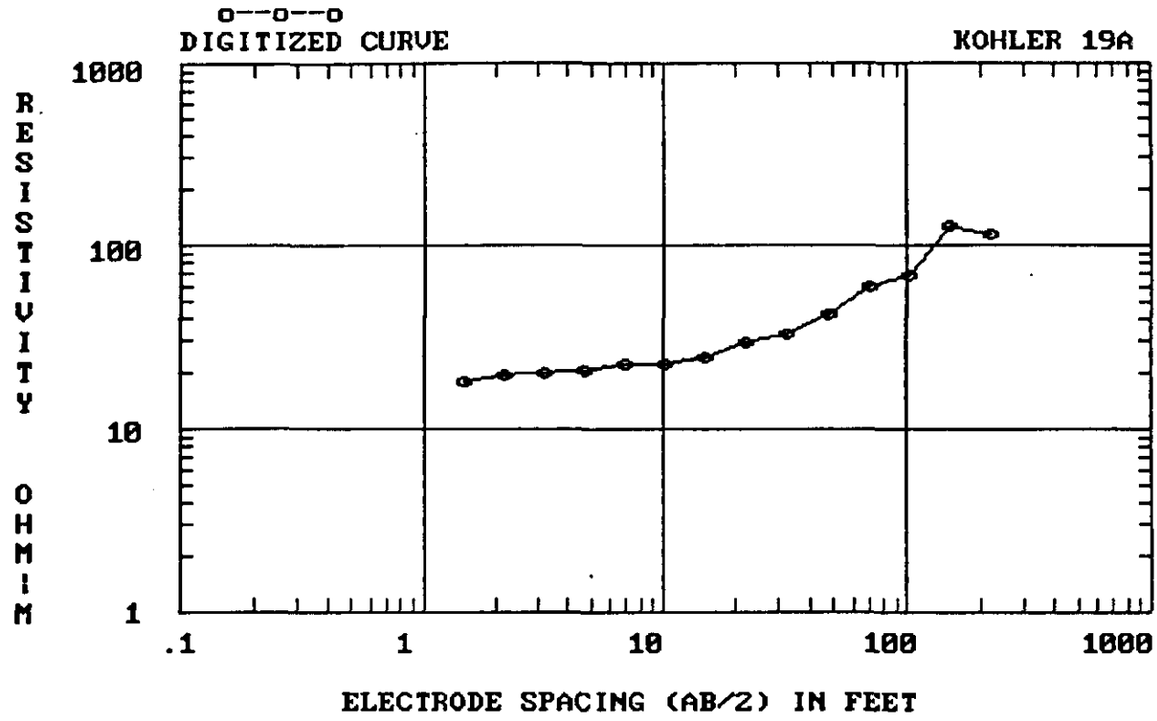
FIGURE 22





GERAGHTY & MILLER, INC.
Environmental Services

FIGURE 23



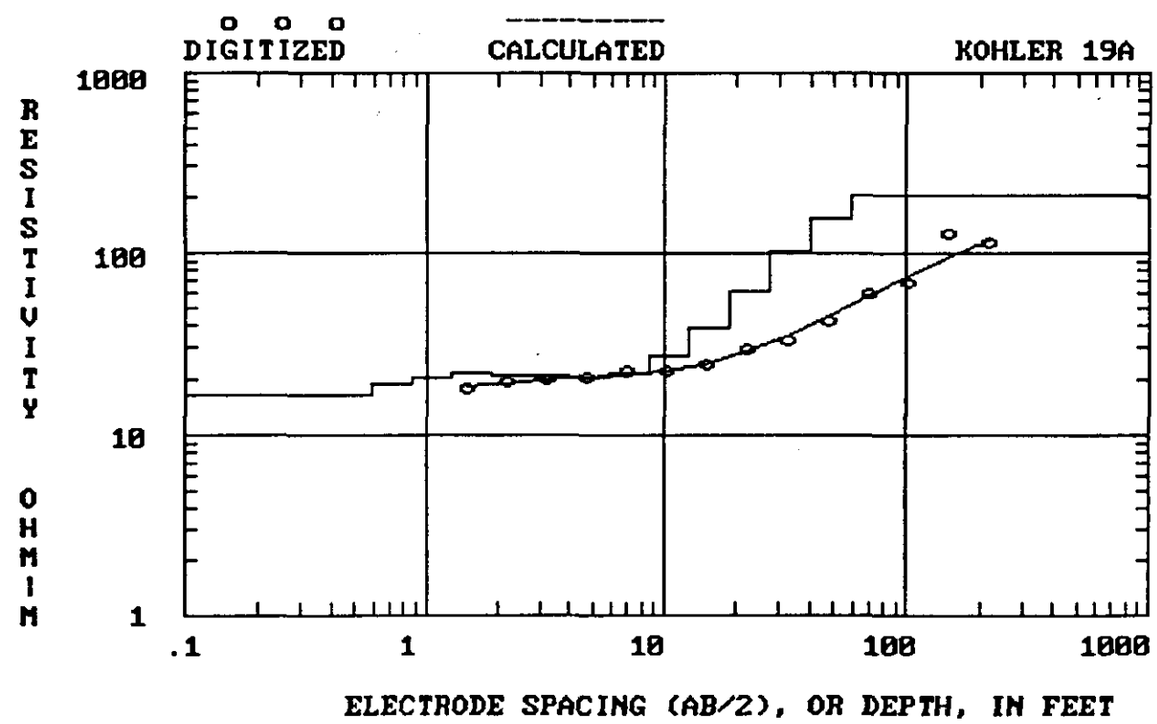


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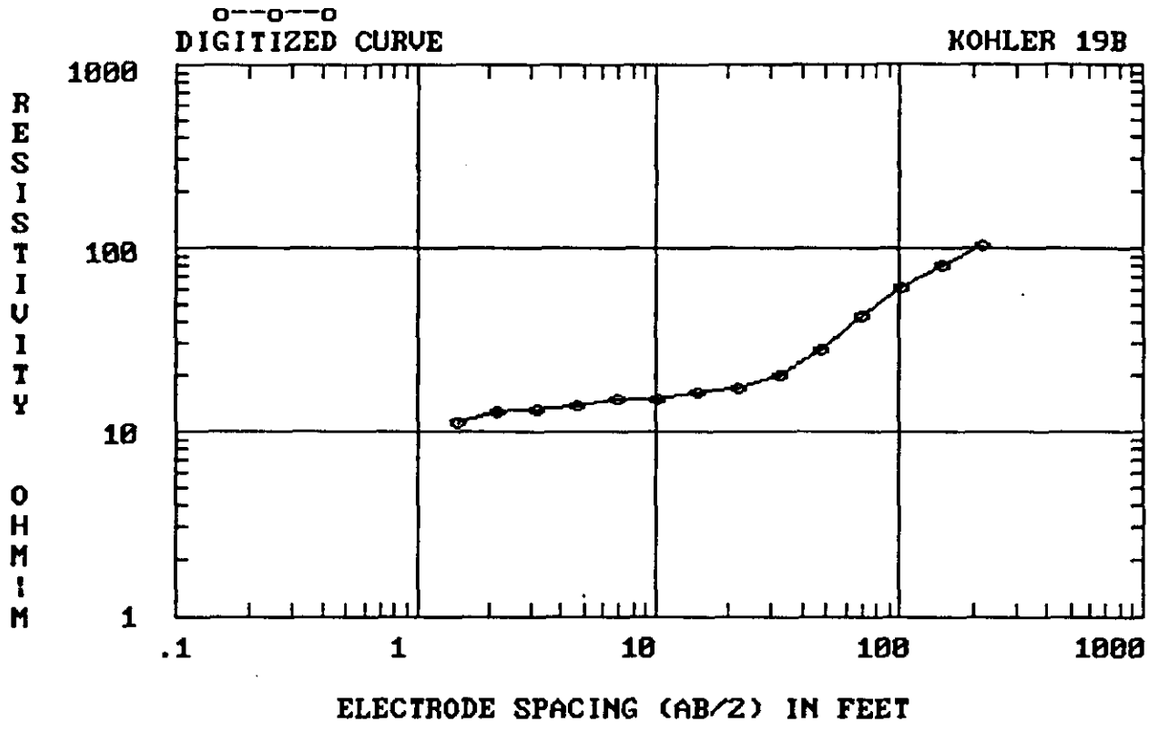
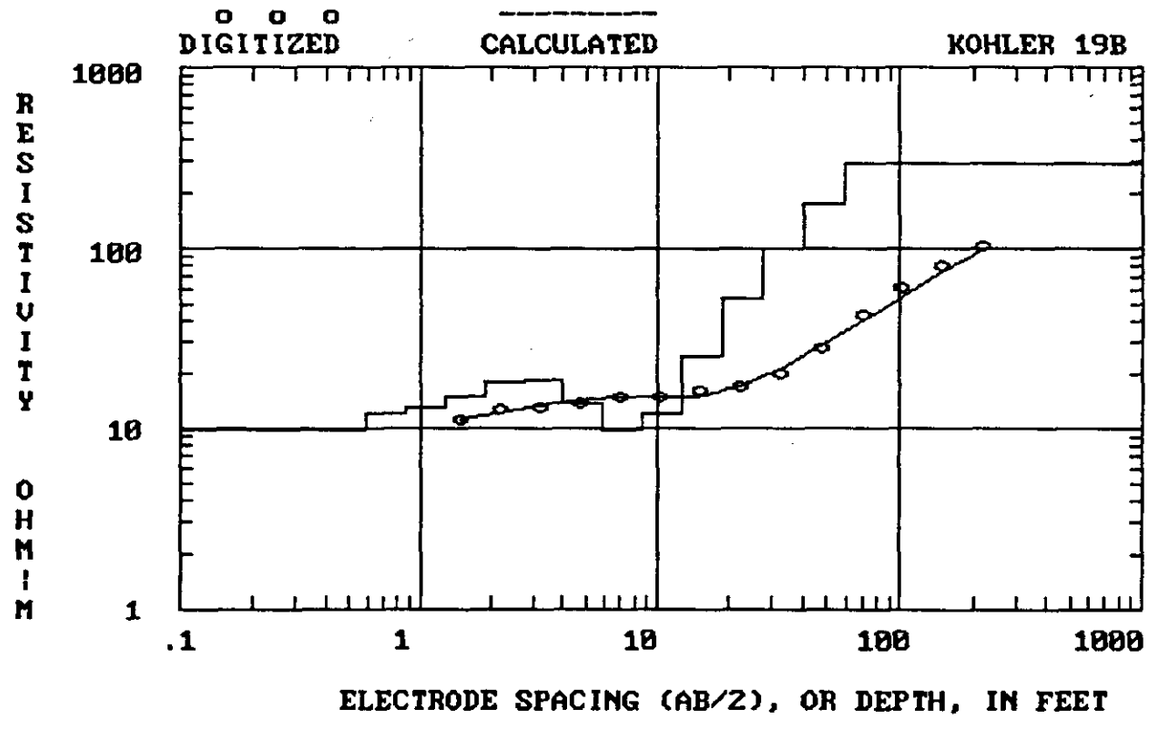
FIGURE 24





GERAGHTY & MILLER, INC.
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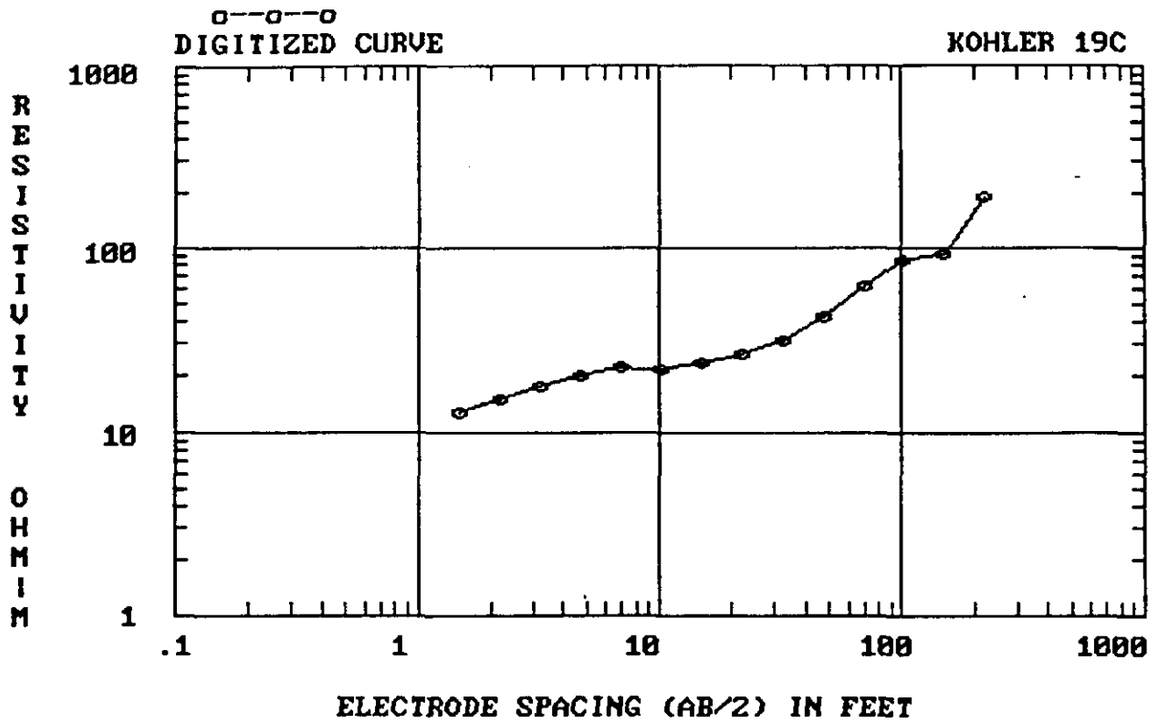
FIGURE 25



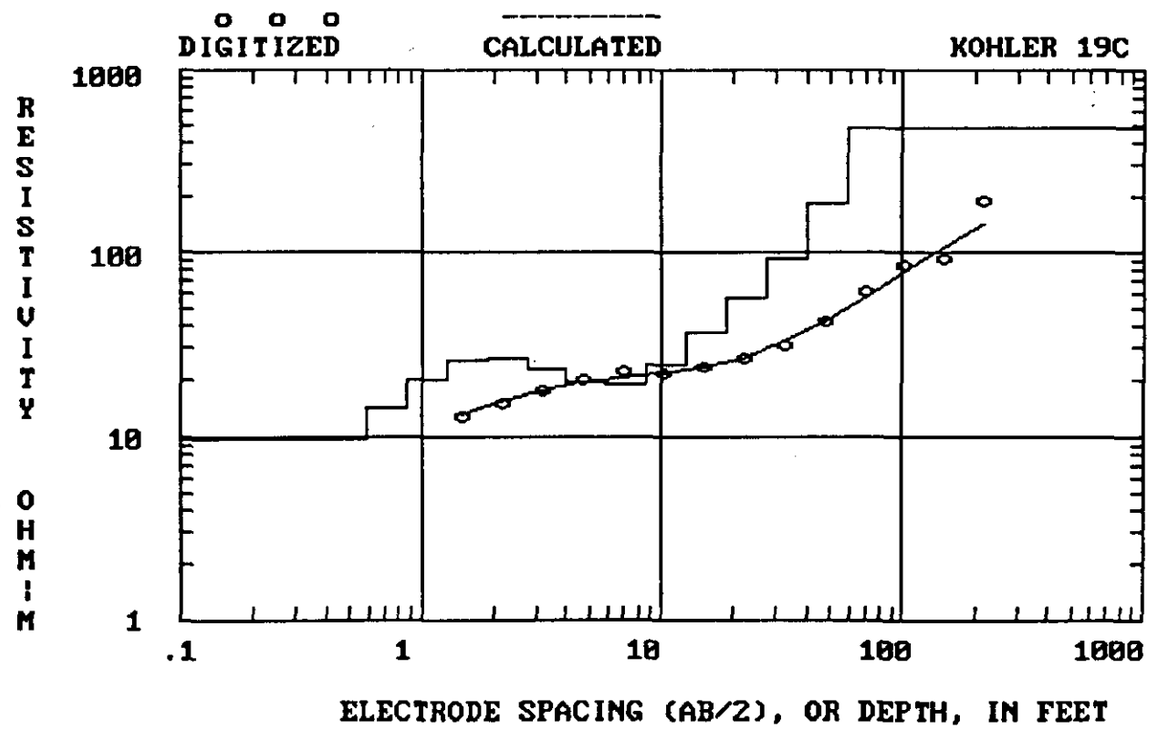


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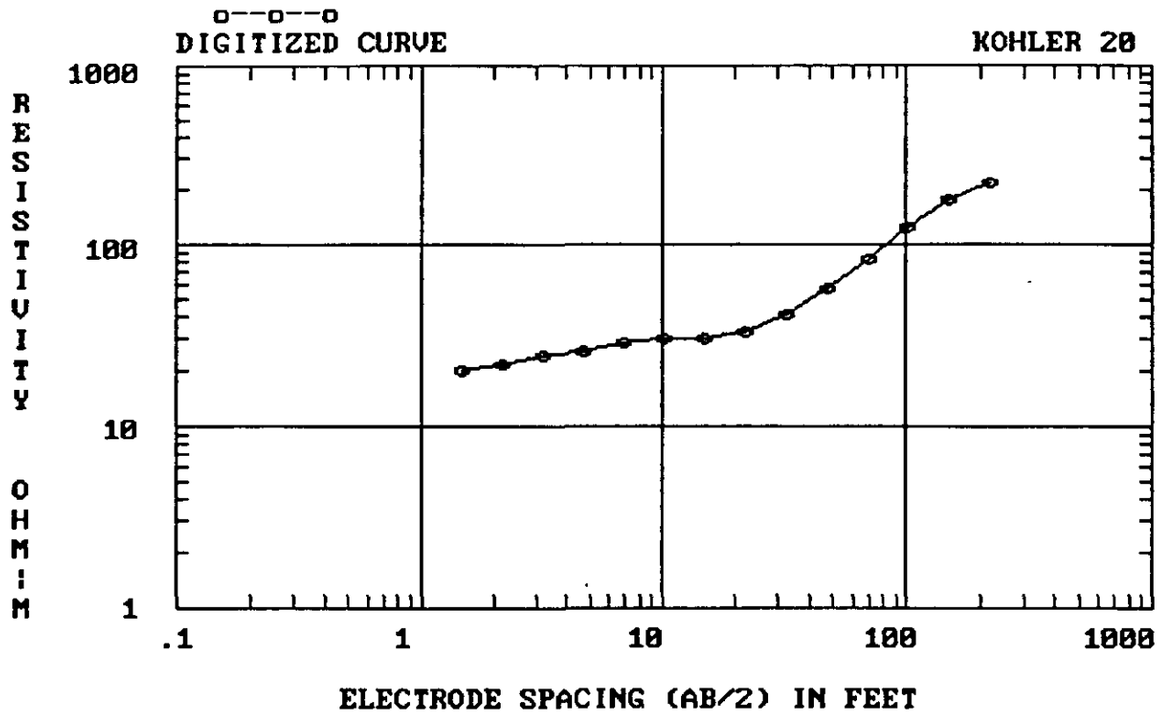
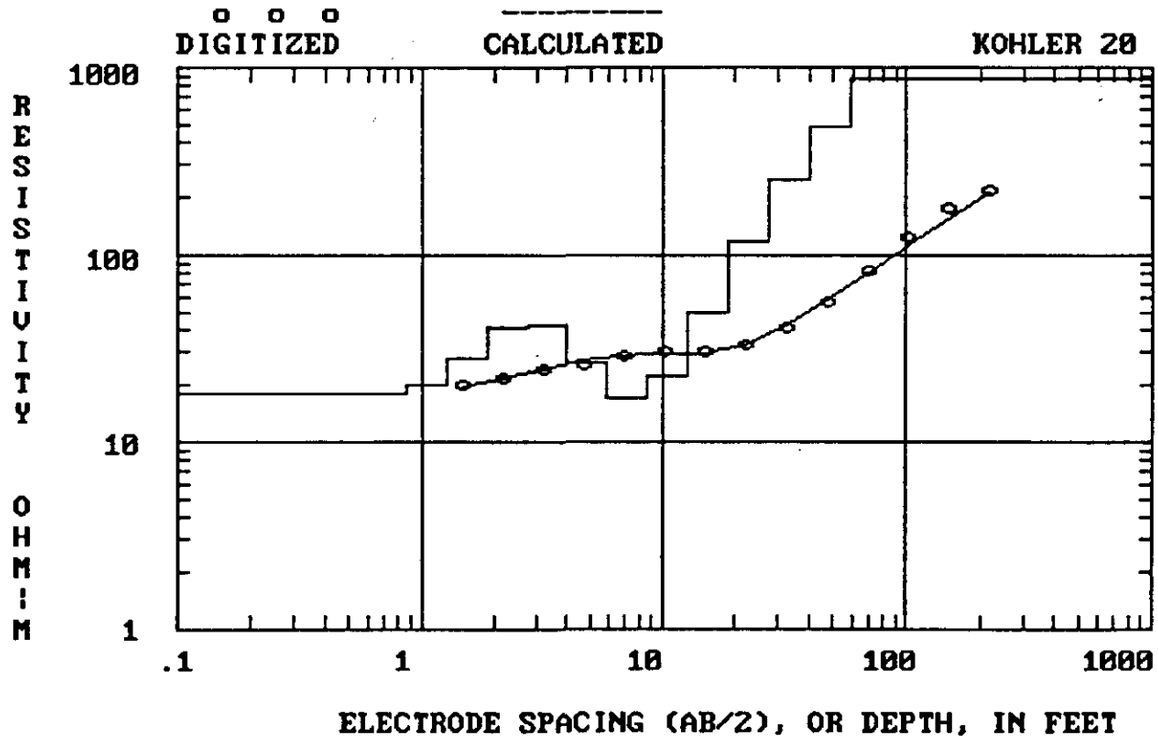
FIGURE 26





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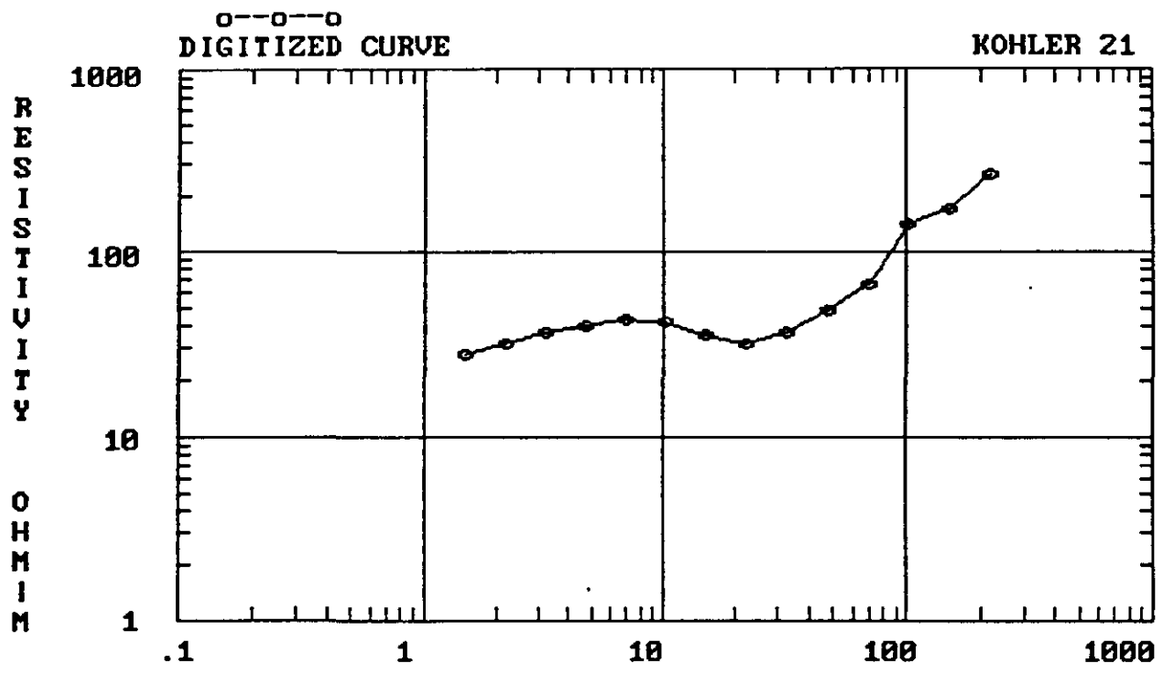
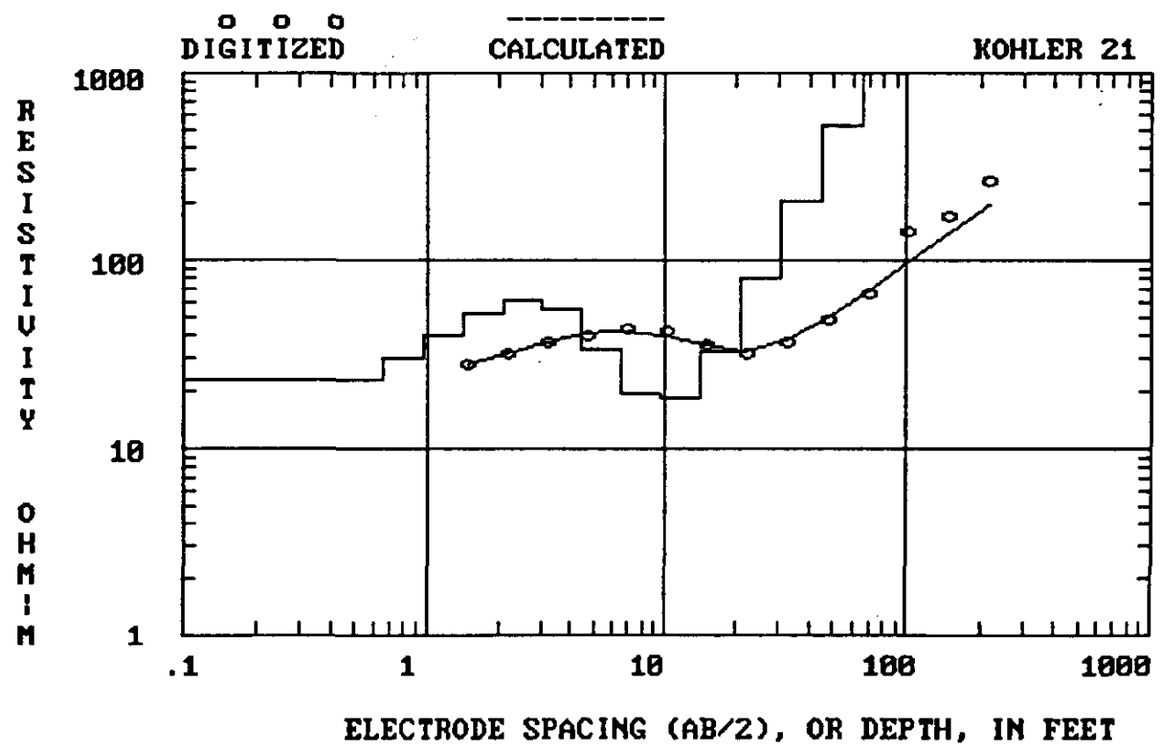
Environmental Services

FIGURE 27





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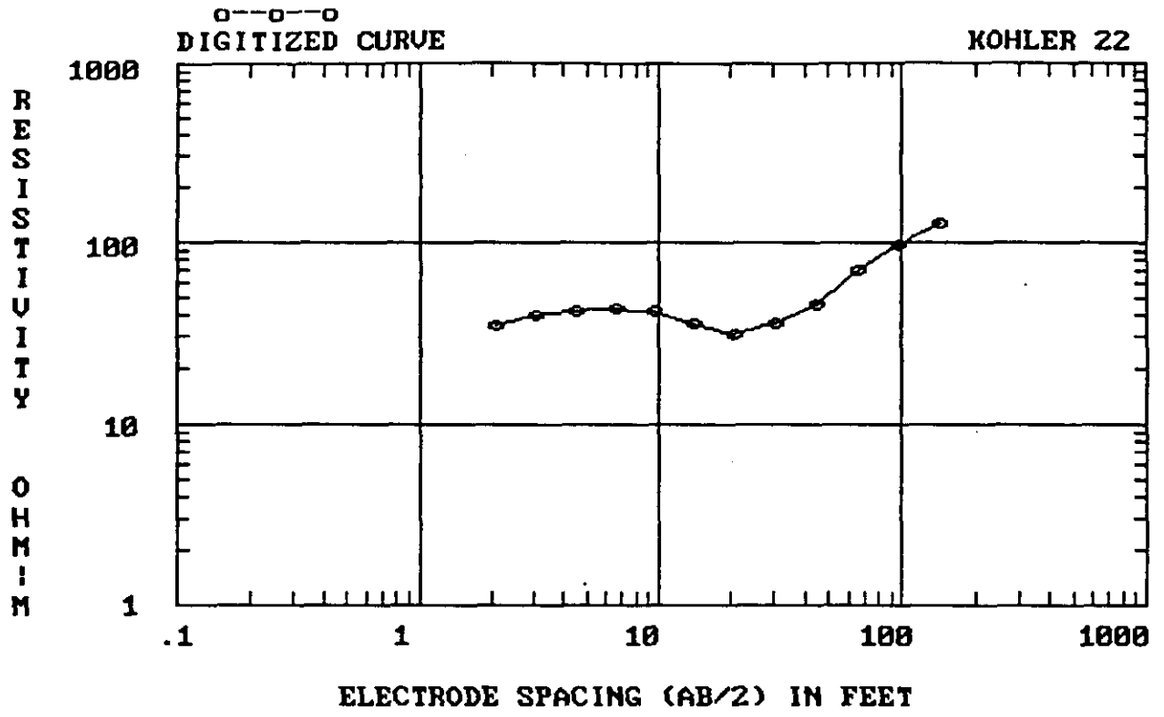
Environmental Services

FIGURE 28



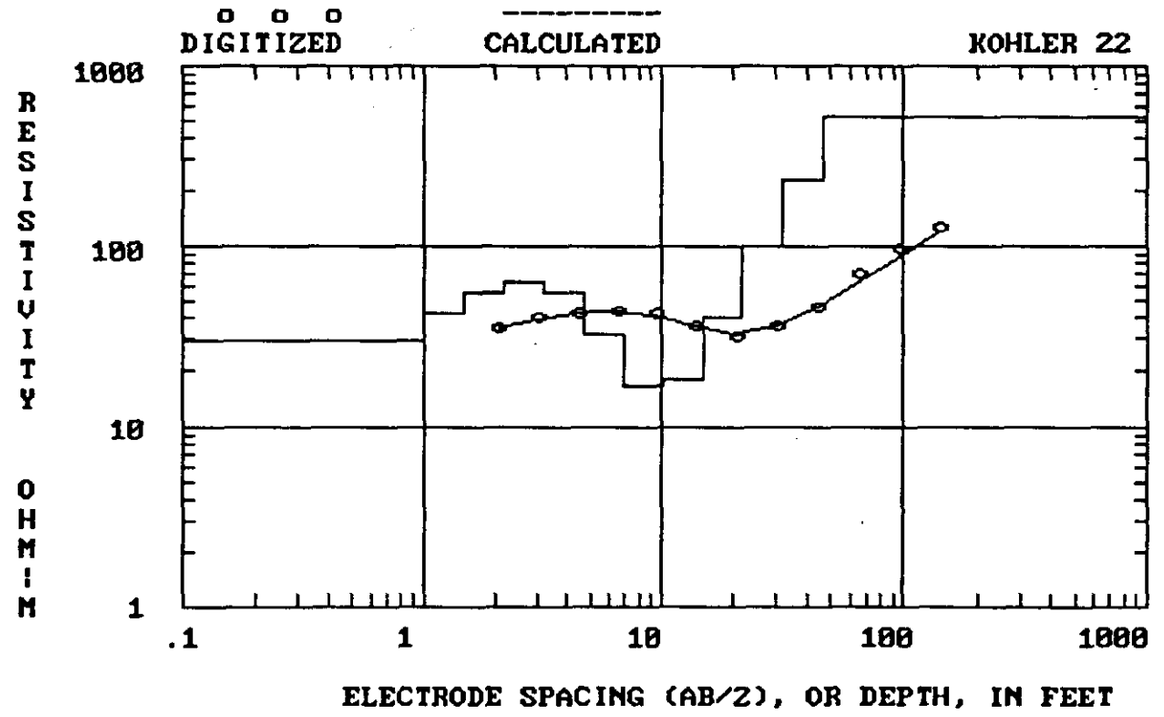


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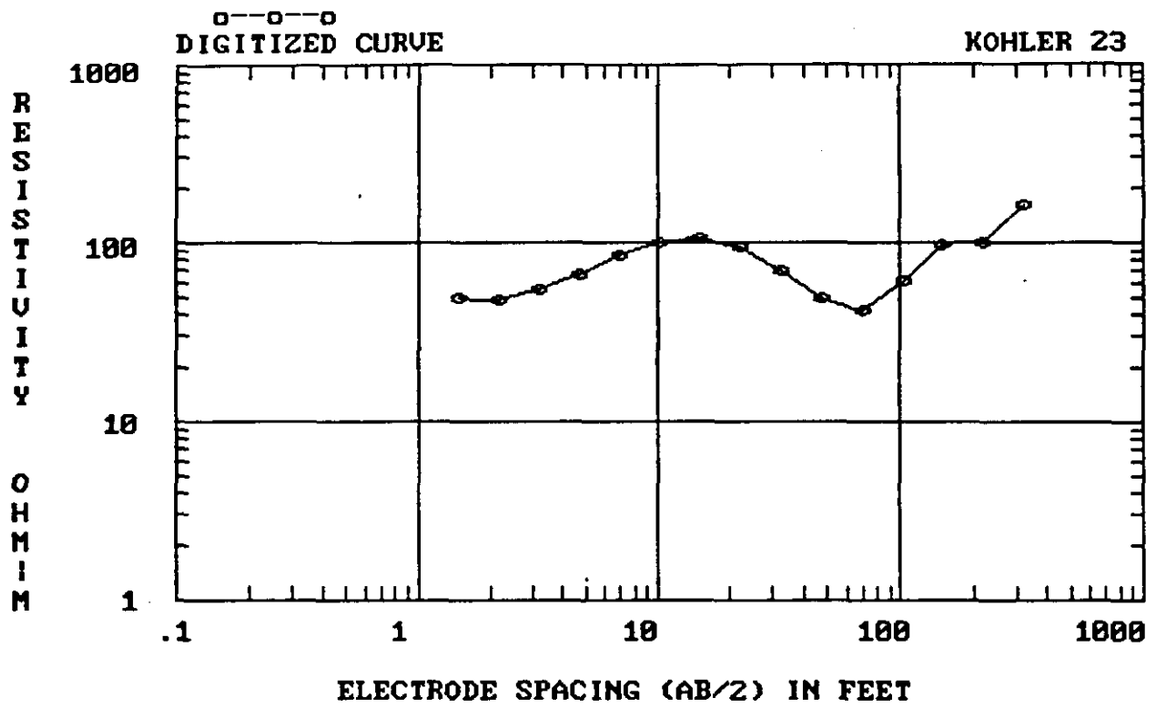
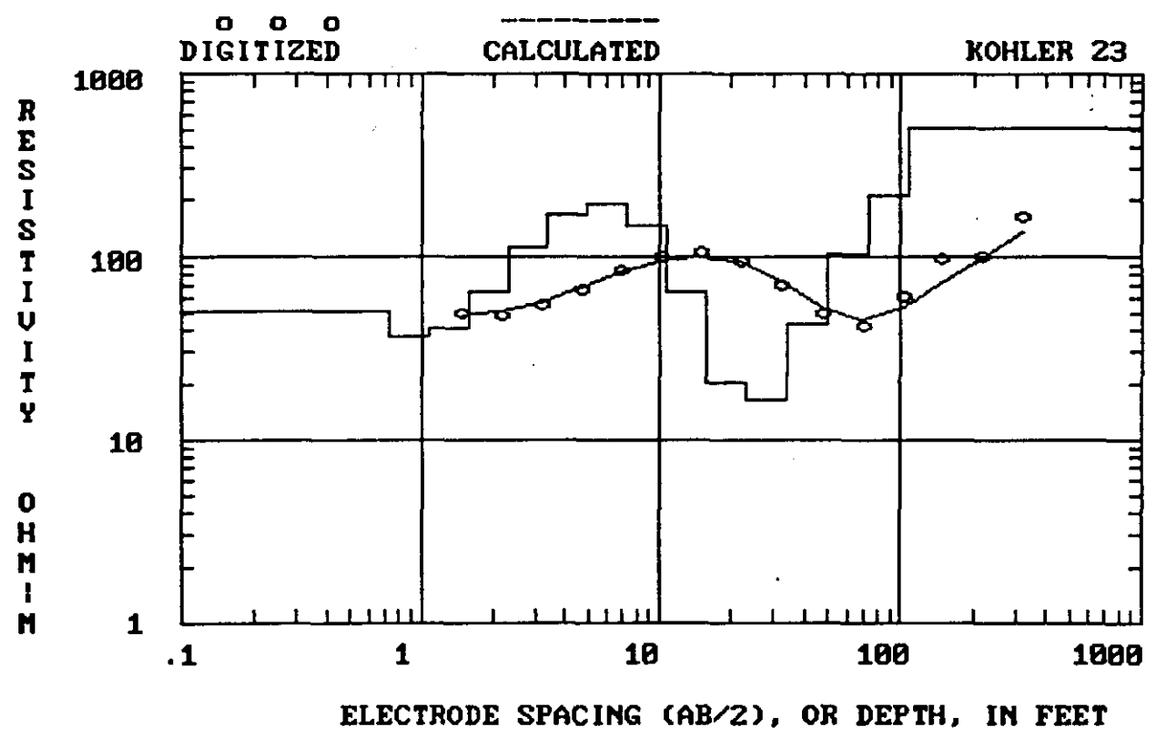
FIGURE 29





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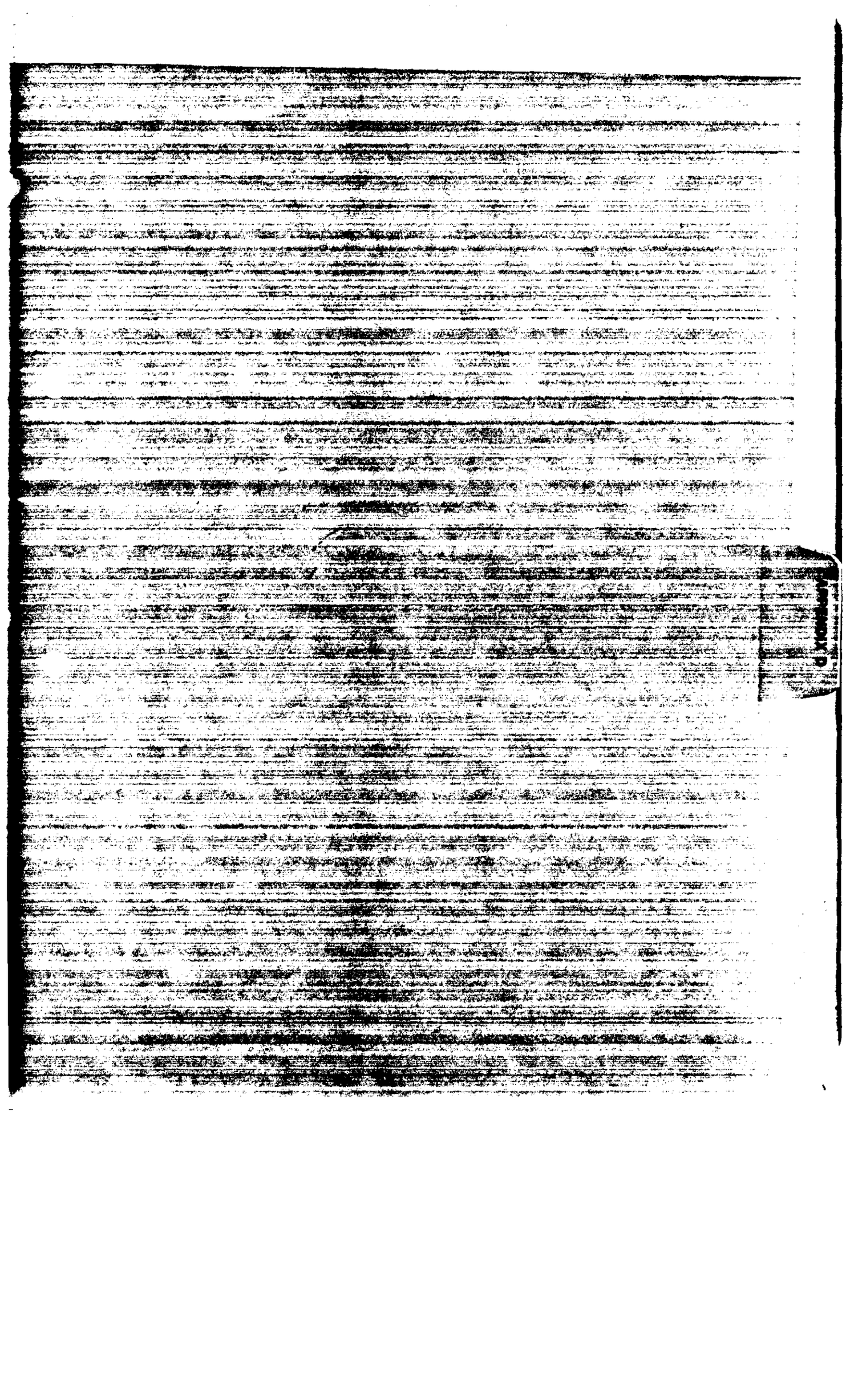
Environmental Services

FIGURE 30

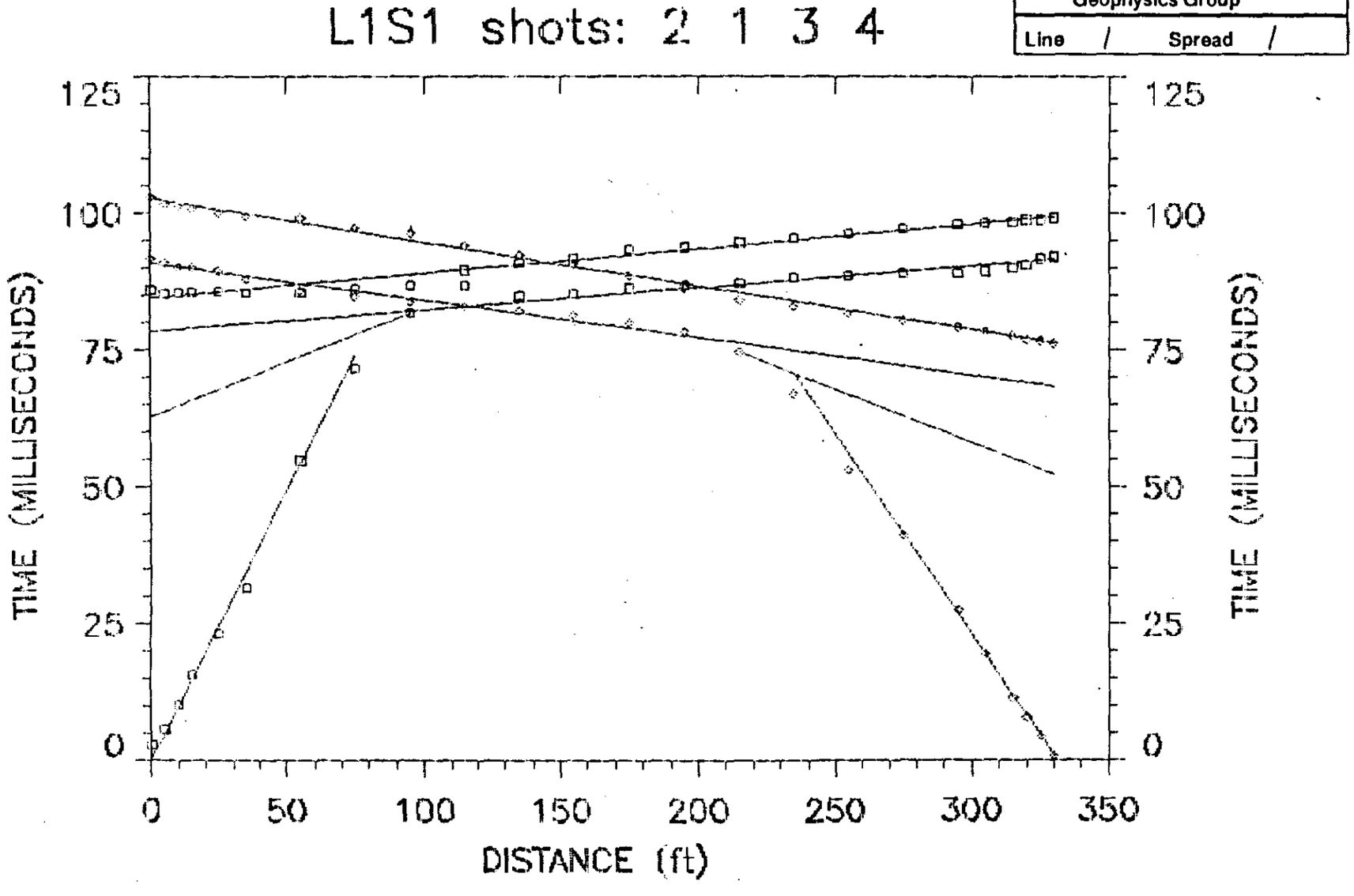


KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line / Spread /

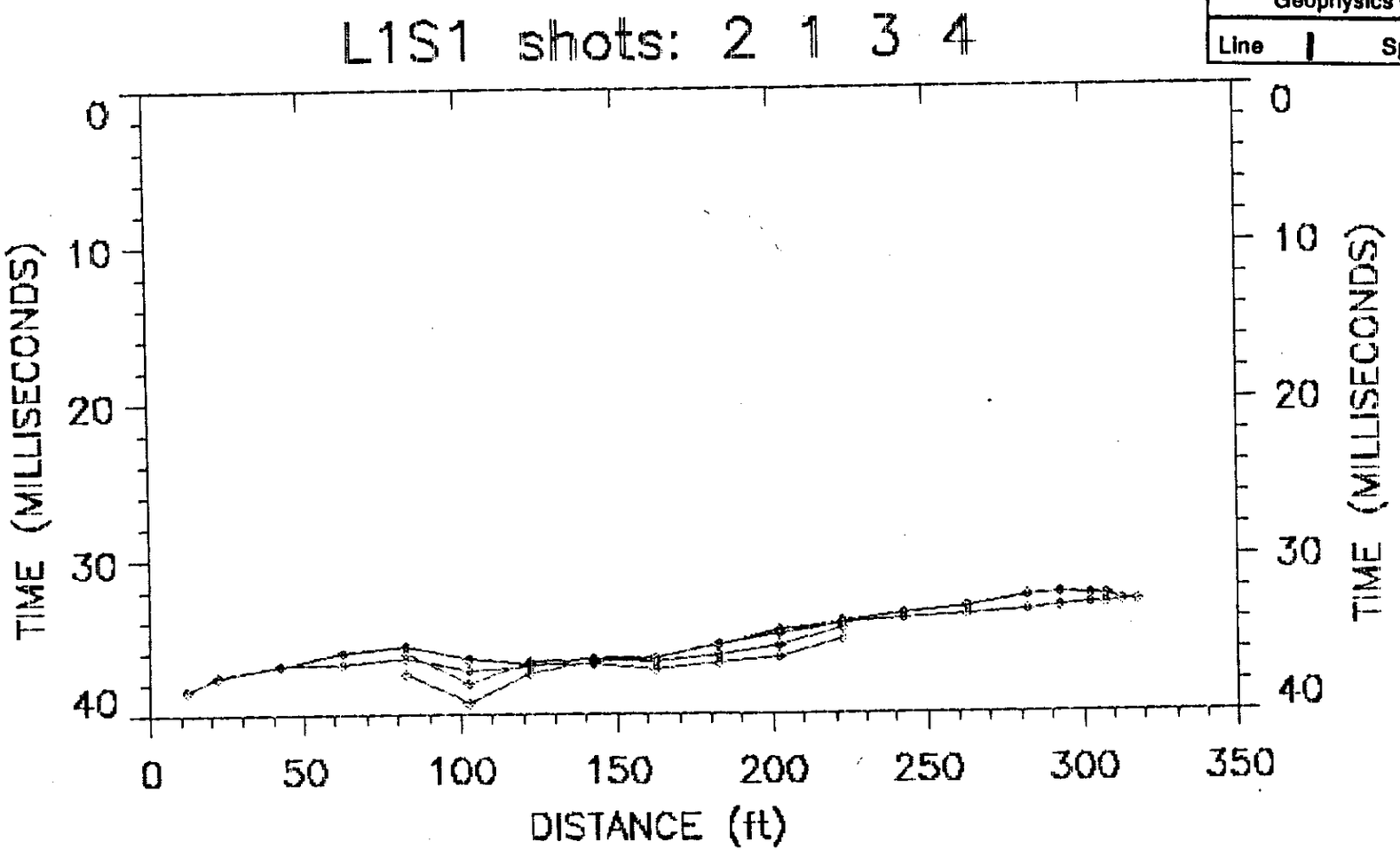


KOHLER LANDFILL

Refraction Seismic data
Time-depth plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line | Spread |

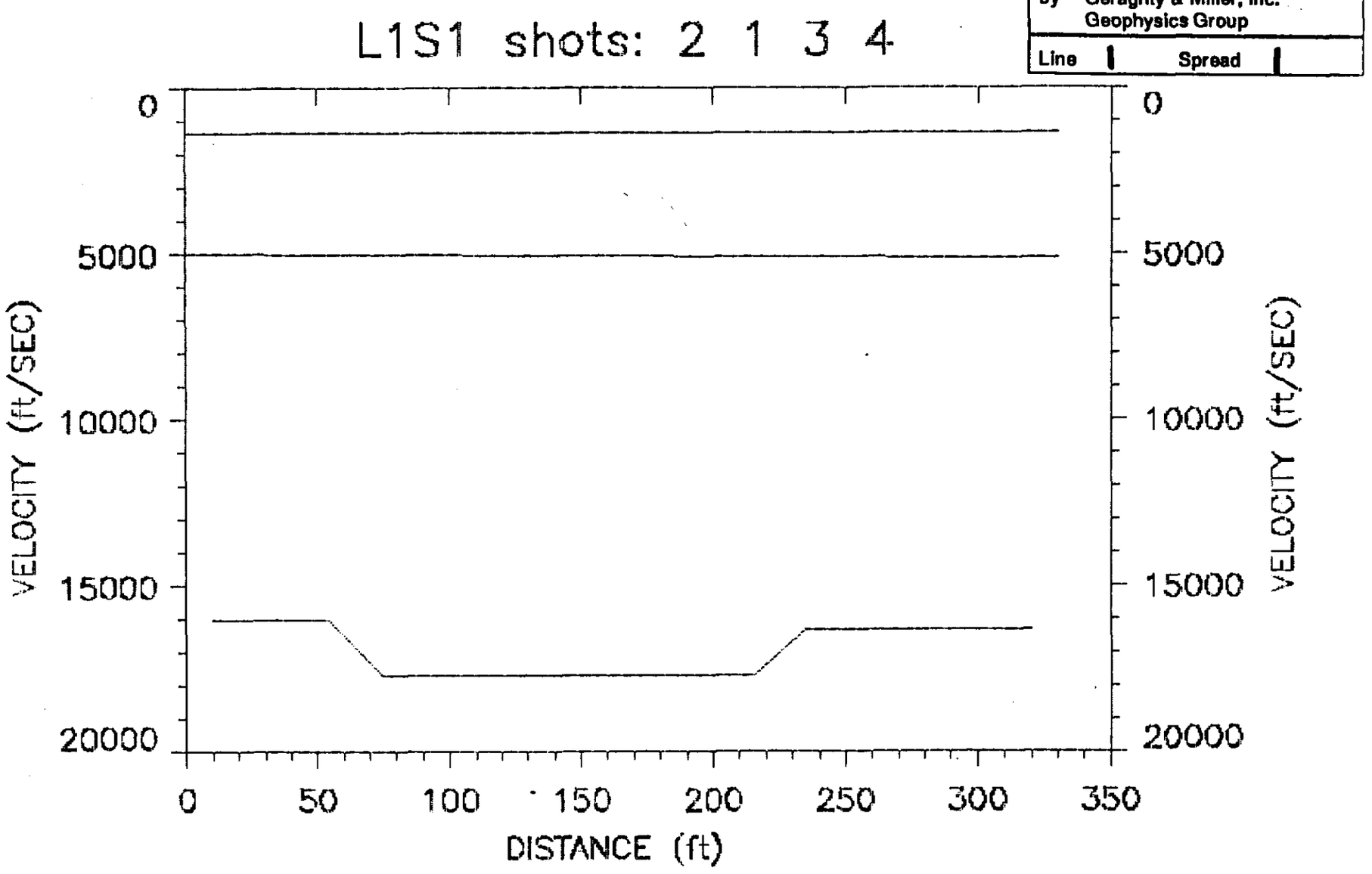


KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line | Spread |

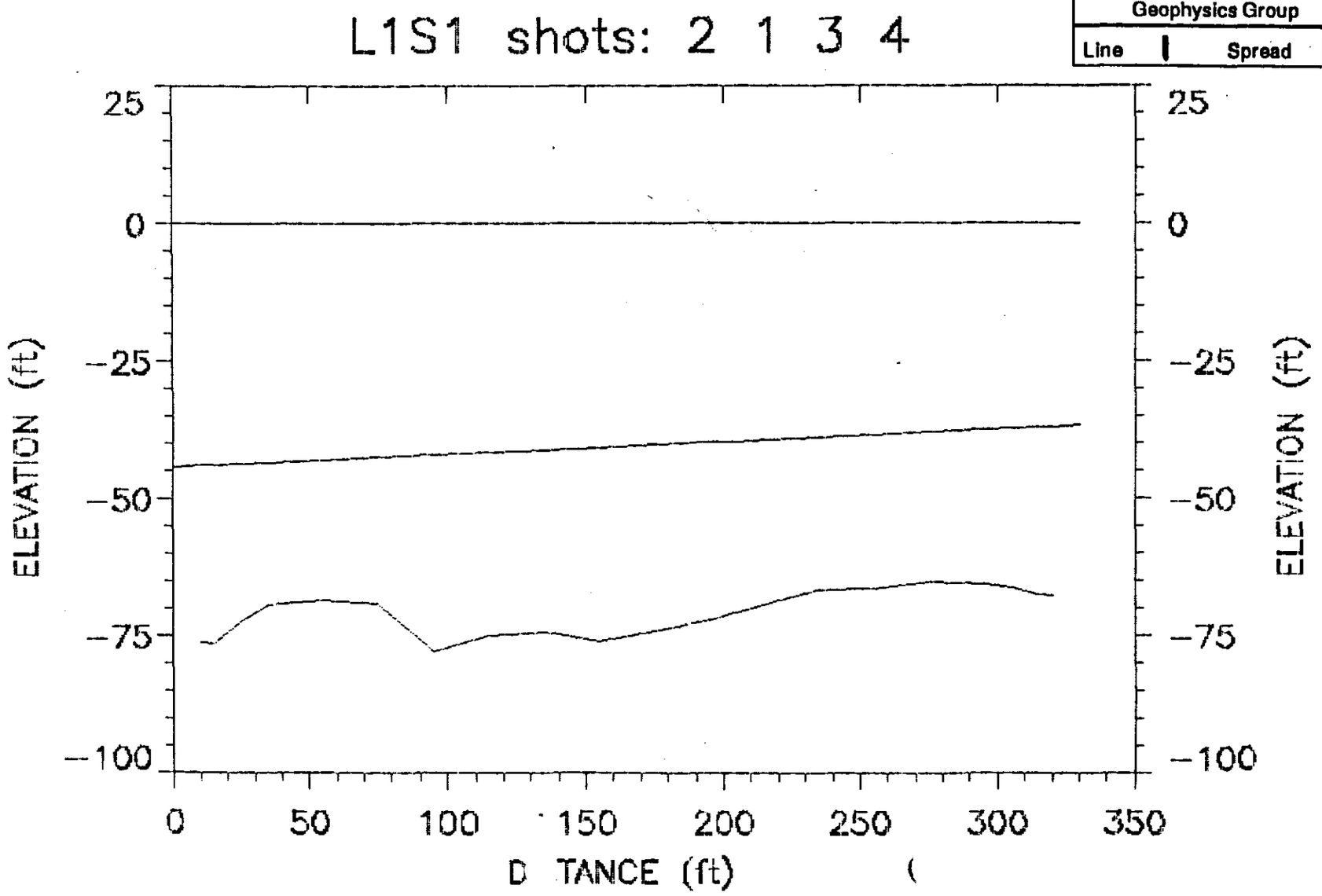


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line | Spread |

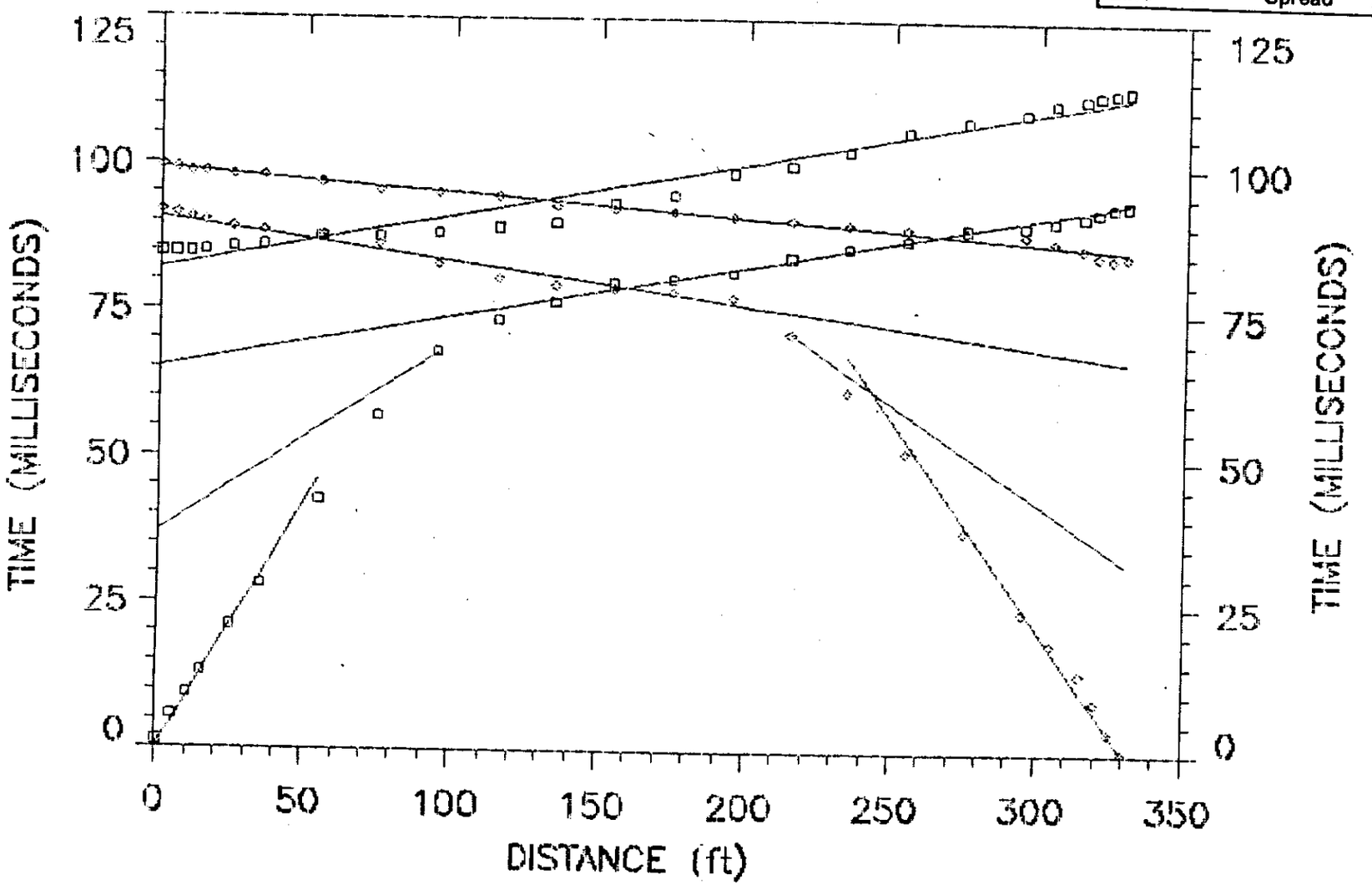


KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 1 Spread 2

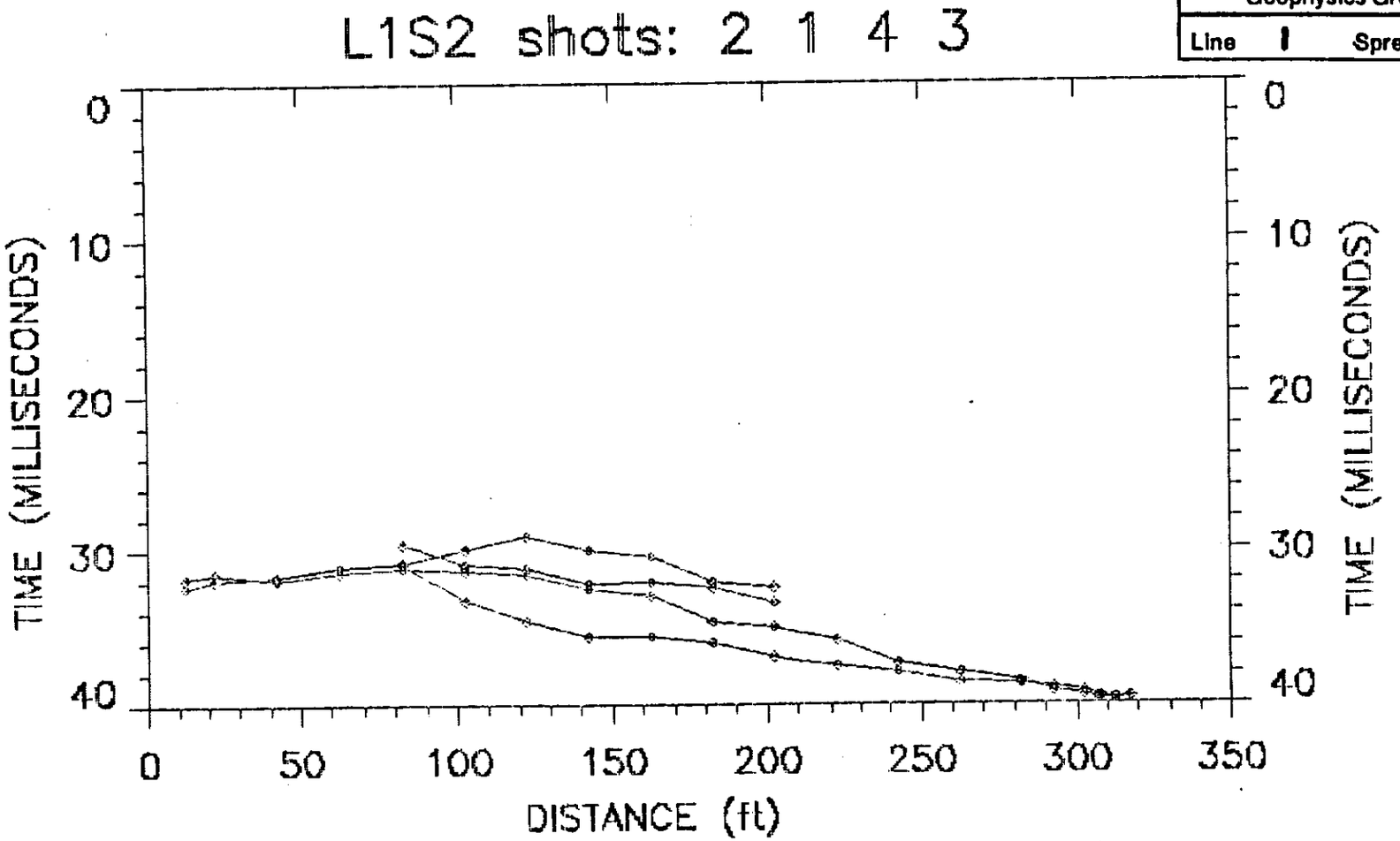


KOHLER LANDFILL

Refraction Seismic data
Time-depth plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 1 Spread 2

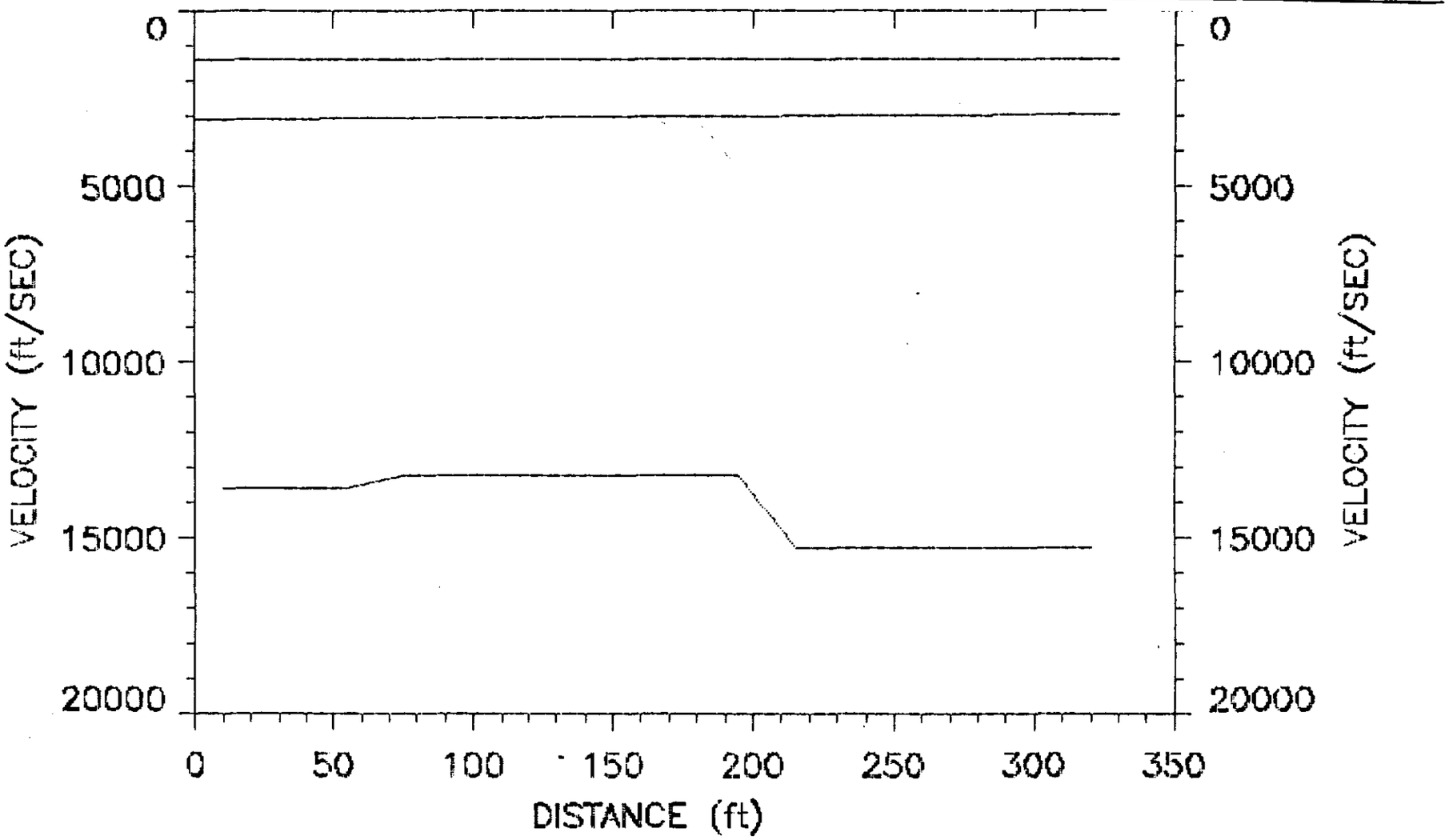


KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 1 Spread 2

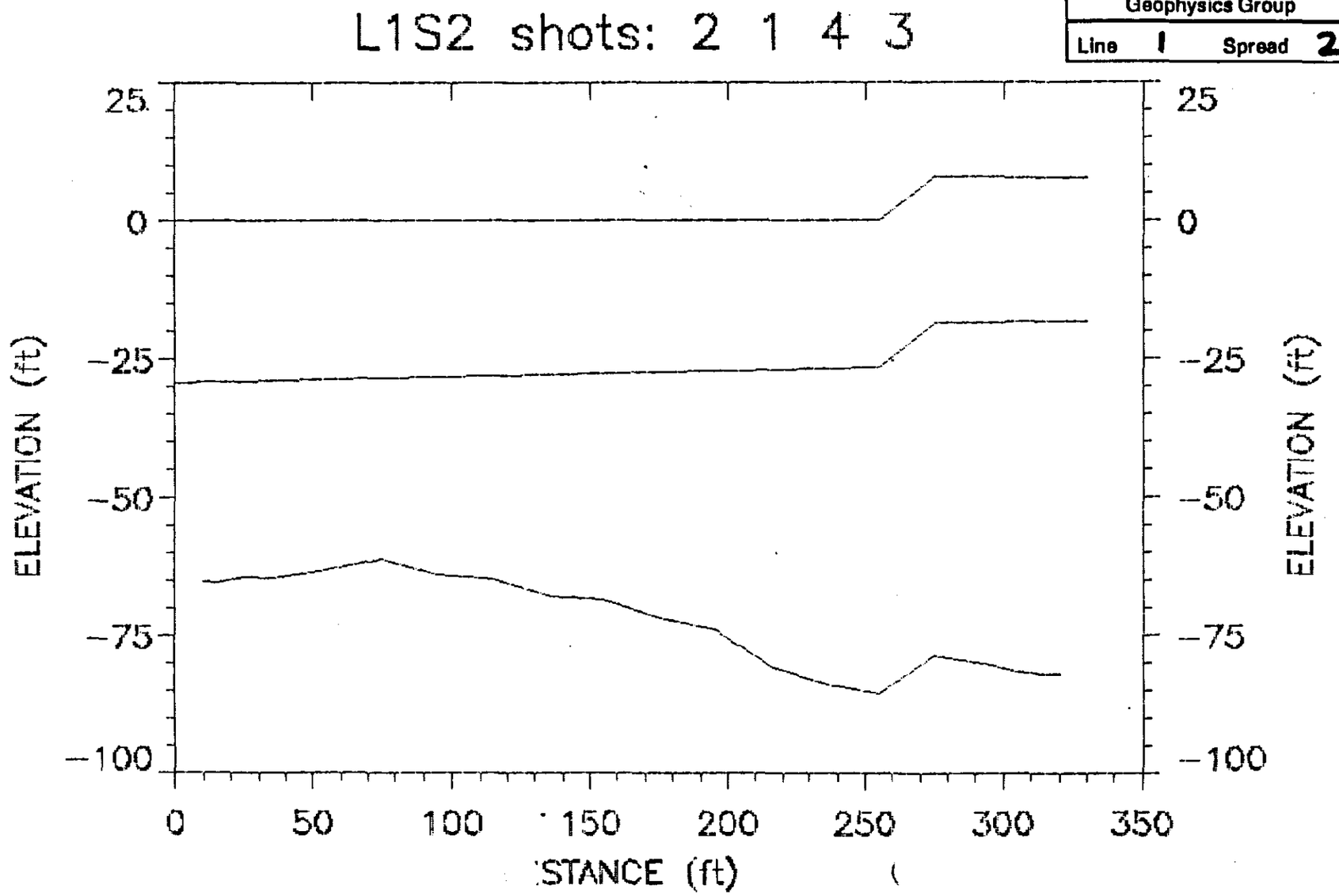


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 1 Spread 2

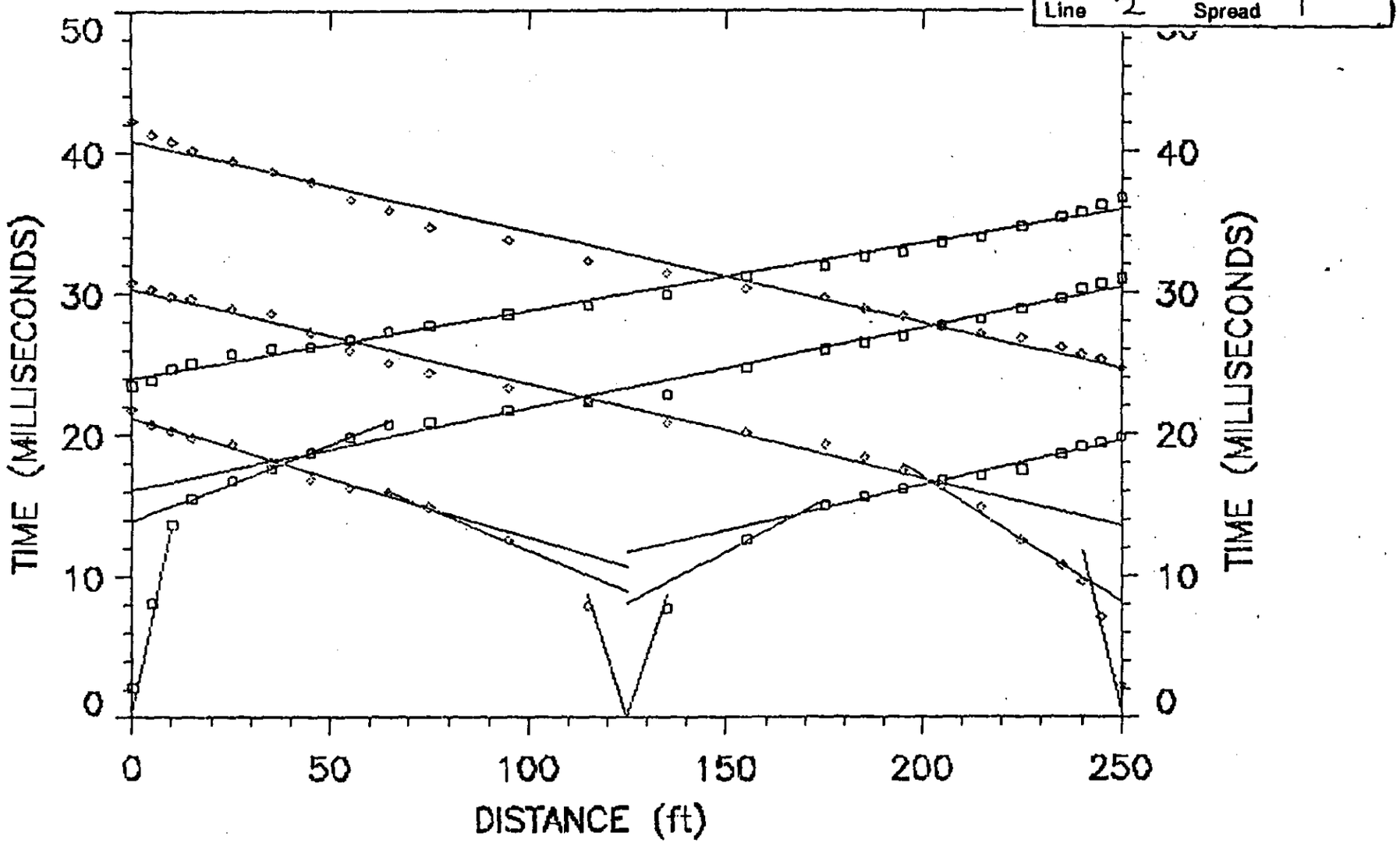


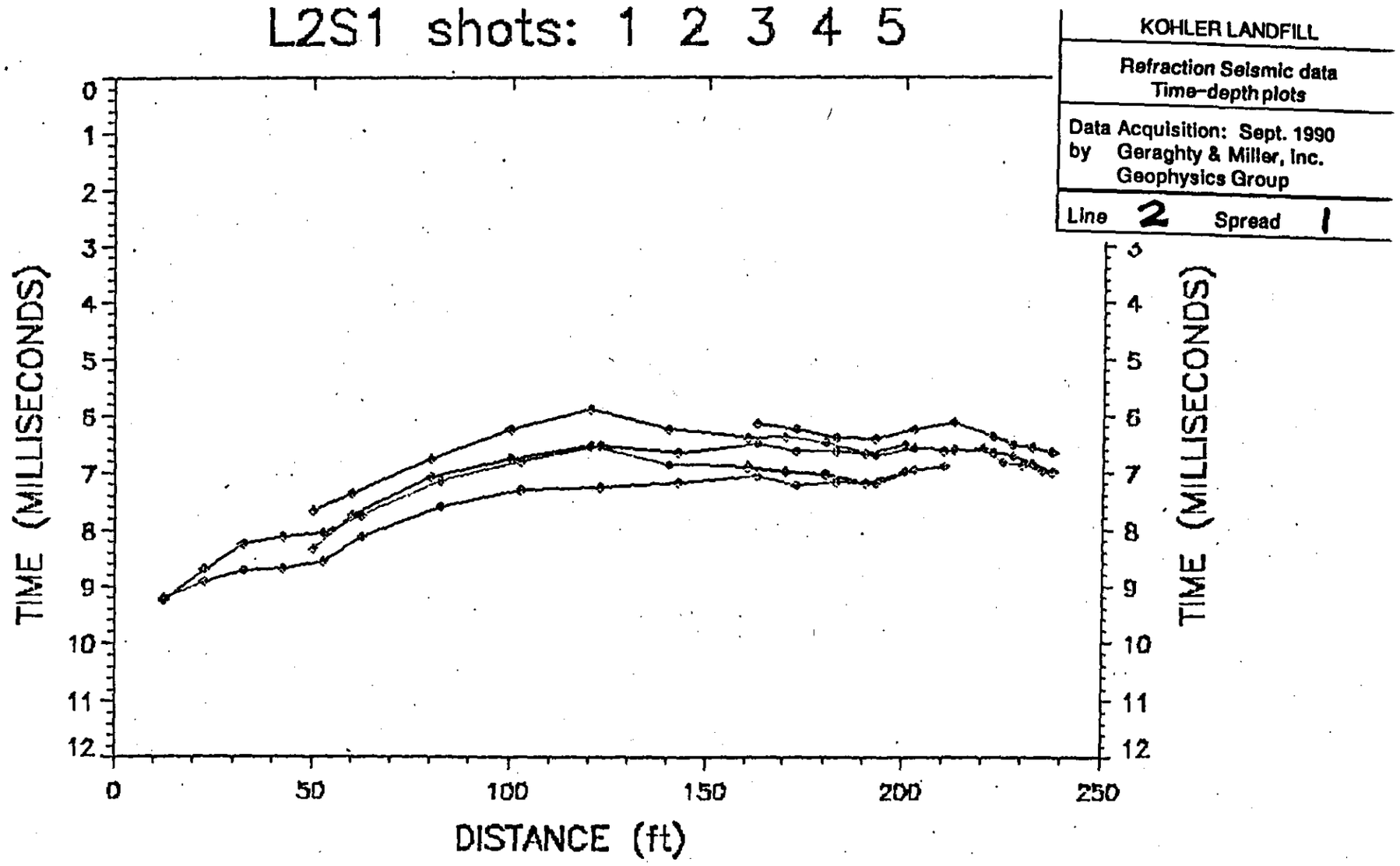
KOHLER LANDFILL

Refraction Seismic data
Time-distanceplots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 2 Spread 1





KOHLER LANDFILL

Refraction Seismic data
Time-depth plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

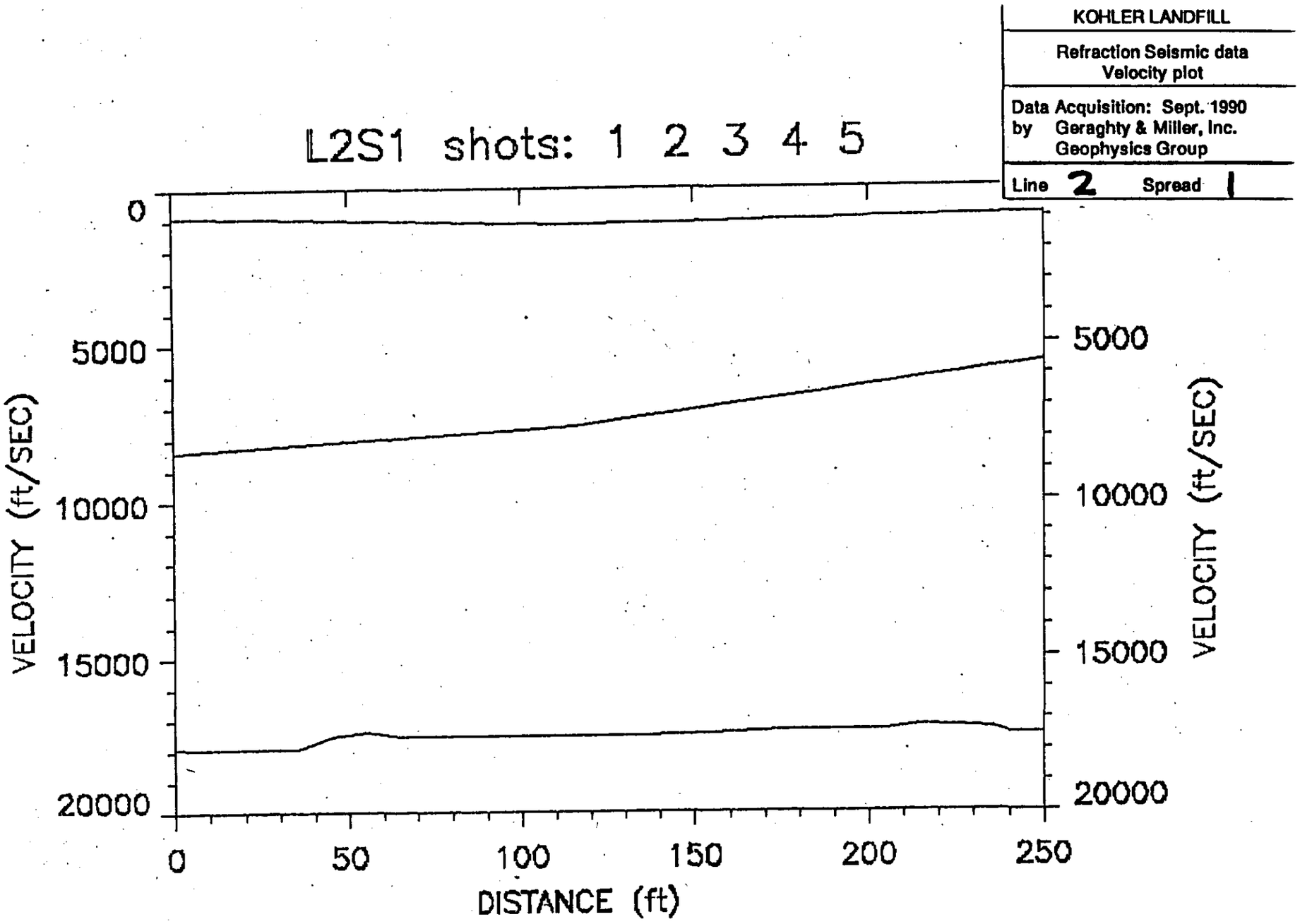
Line 2 Spread 1

KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 2 Spread 1

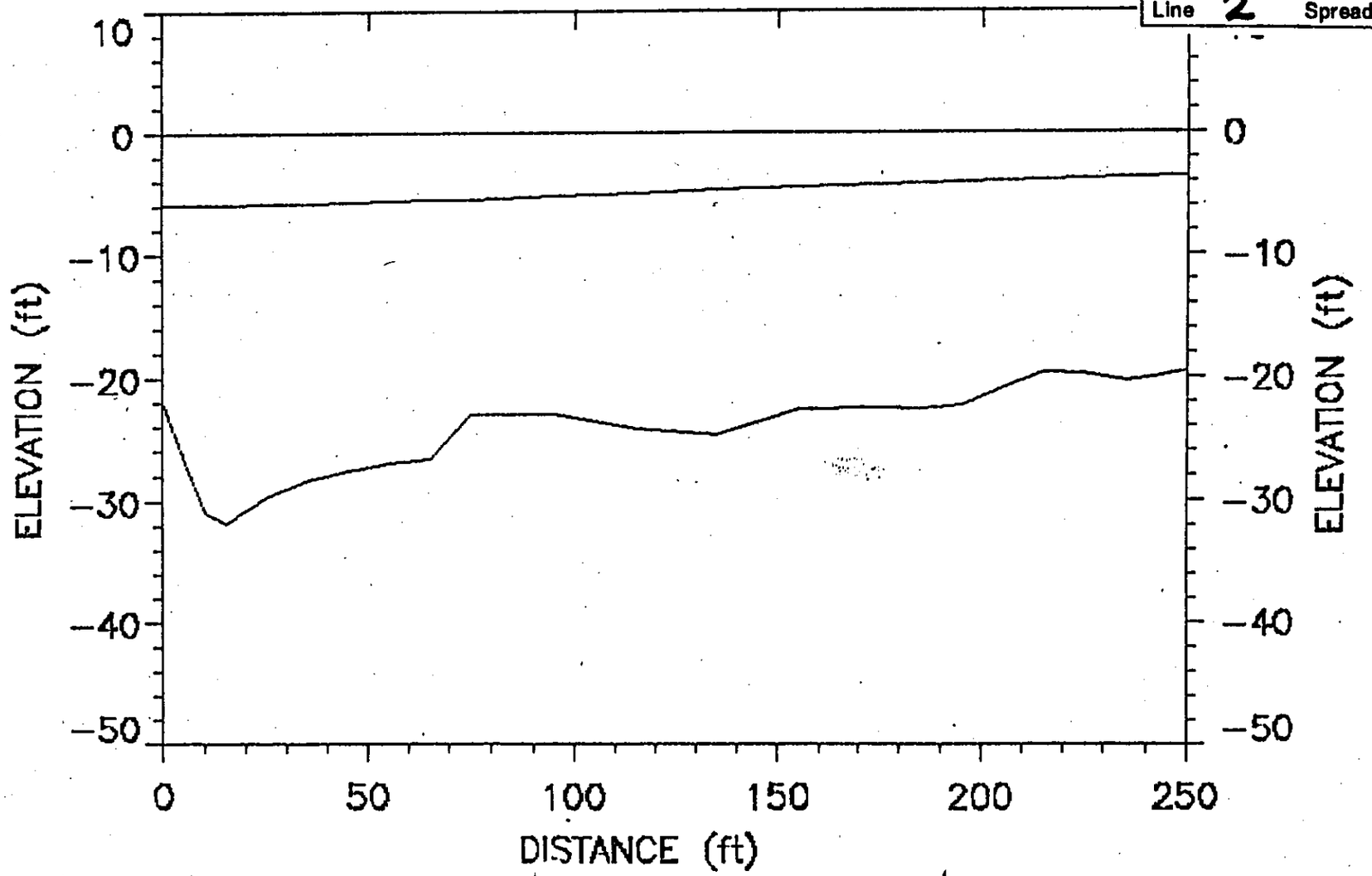


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 2 Spread 1

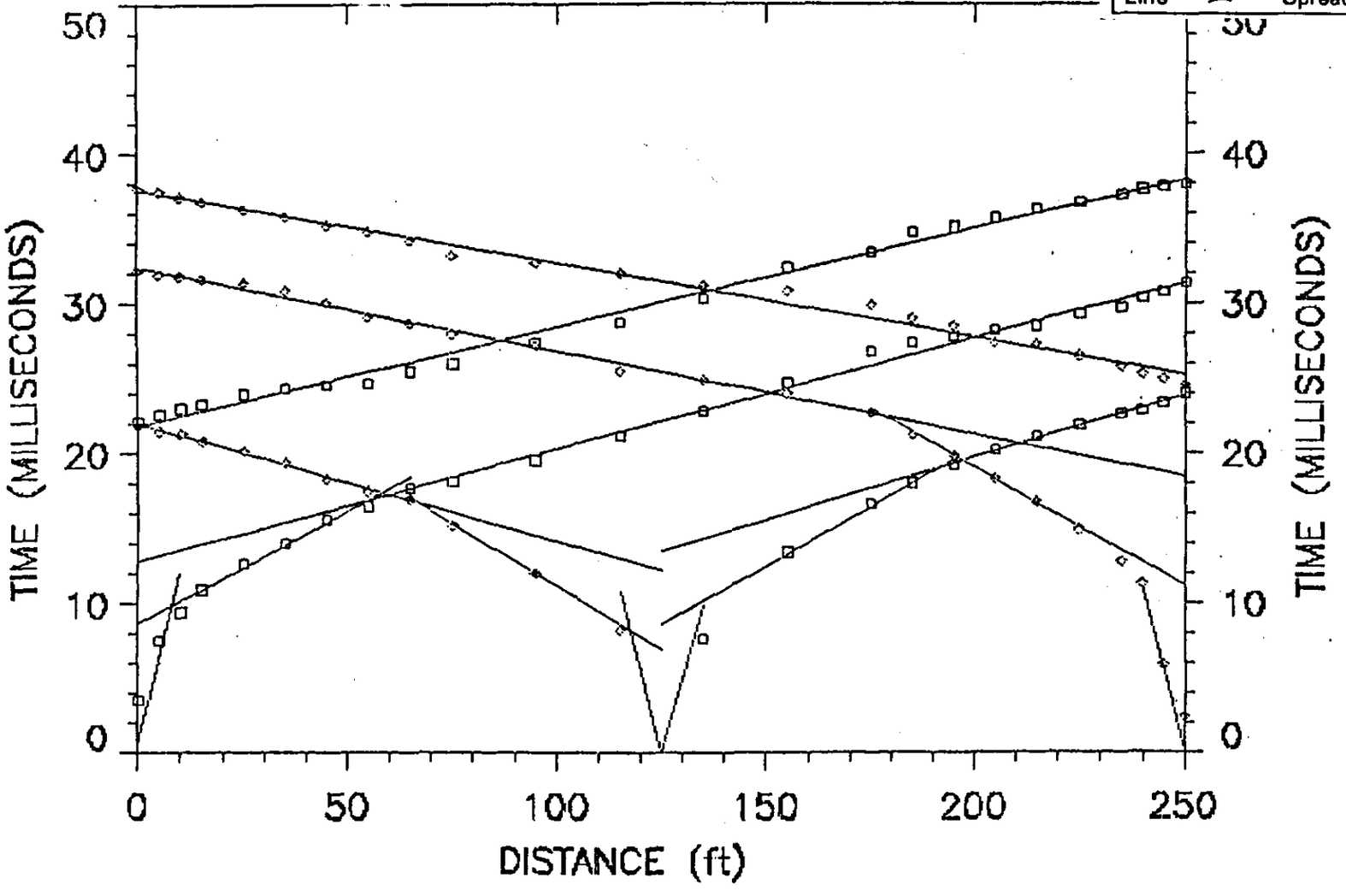


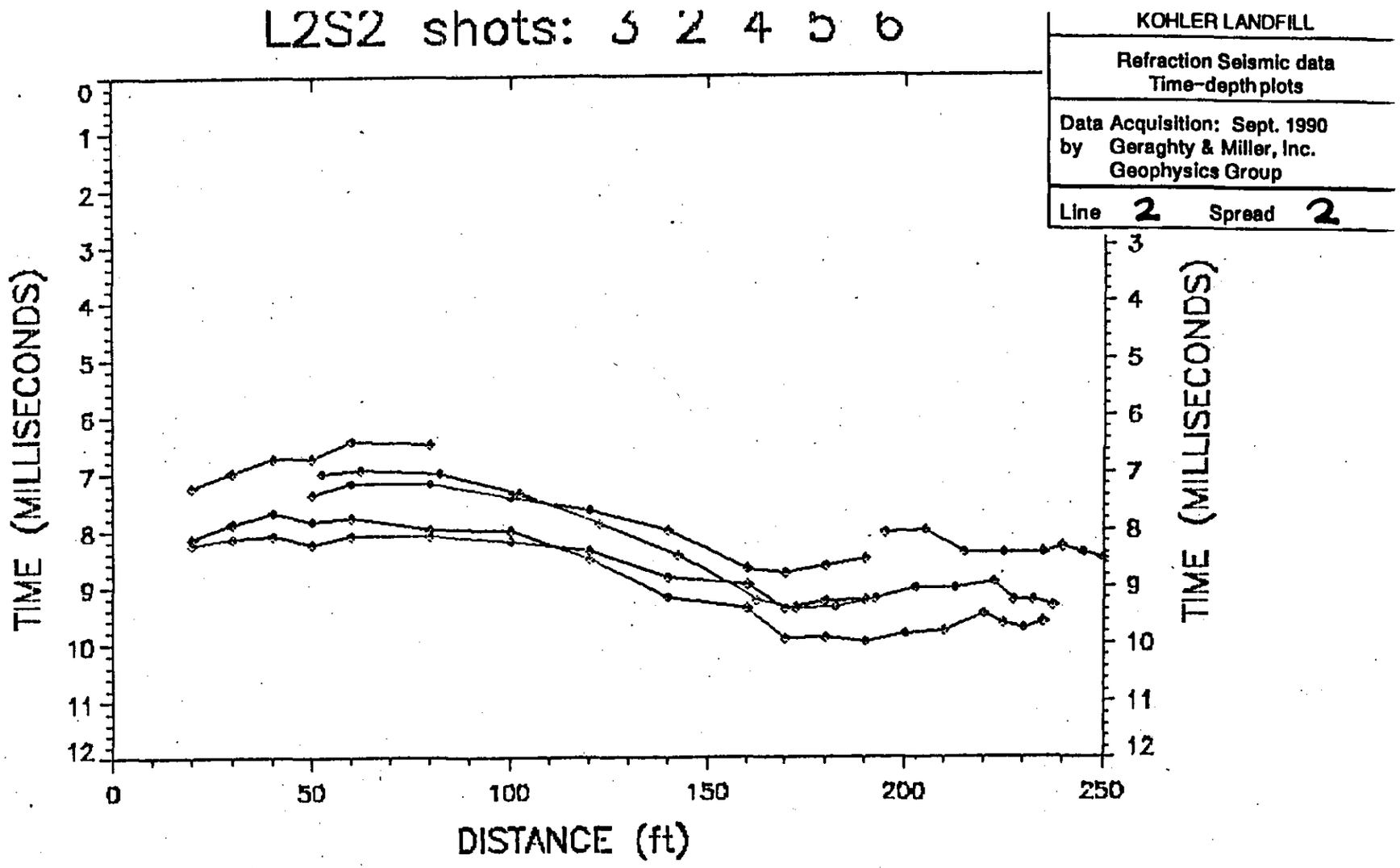
KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 2 Spread 2



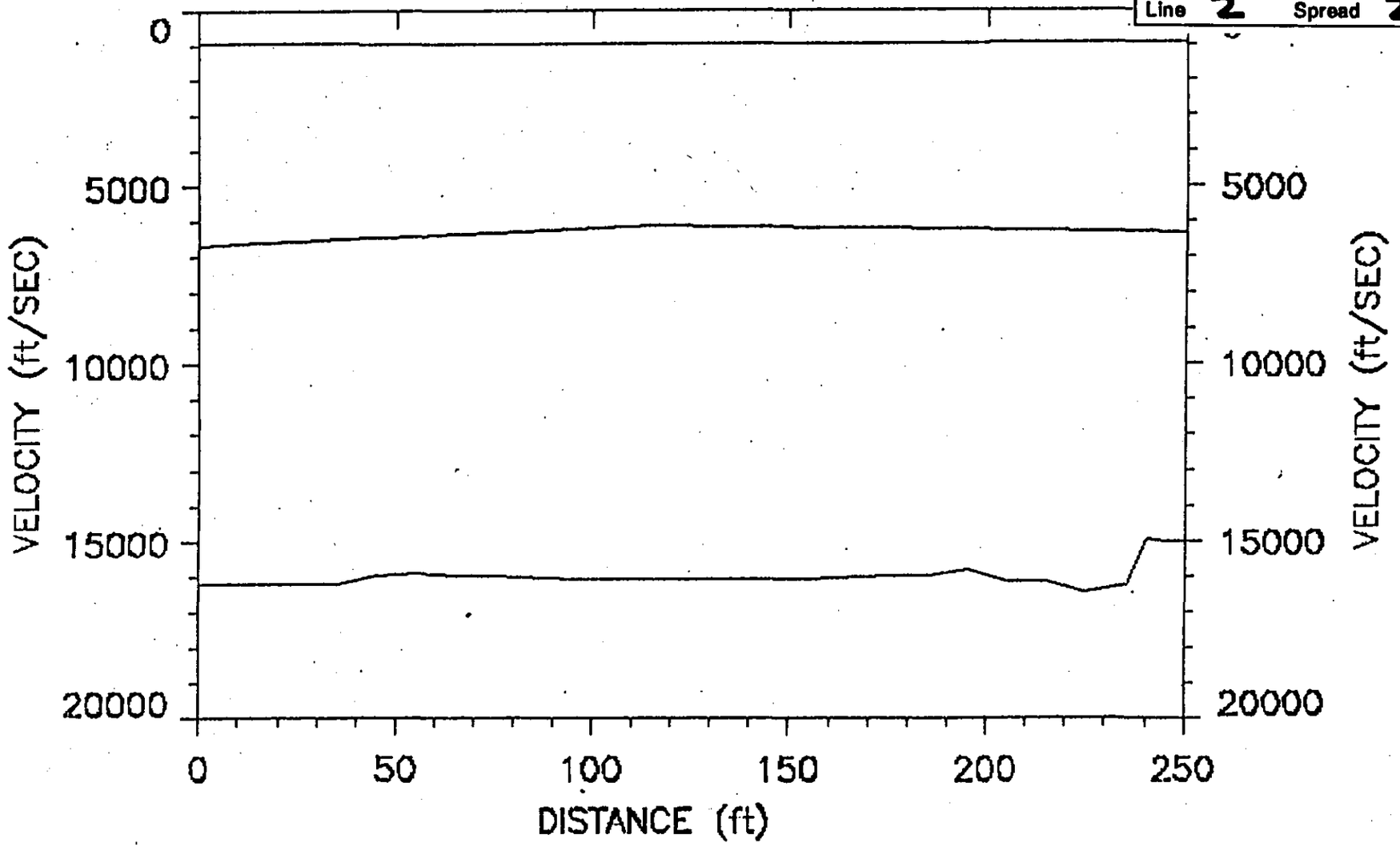

L2S2 shots: 3 2 4 5 6
KOHLER LANDFILL
Refraction Seismic data
Time-depth plots
Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group
Line 2 Spread 2
TIME (MILLISECONDS)
TIME (MILLISECONDS)
0
1
2
3
4
5
6
7
8
9
10
11
12
0
50
100
150
200
250
DISTANCE (ft)

KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 2 Spread 2

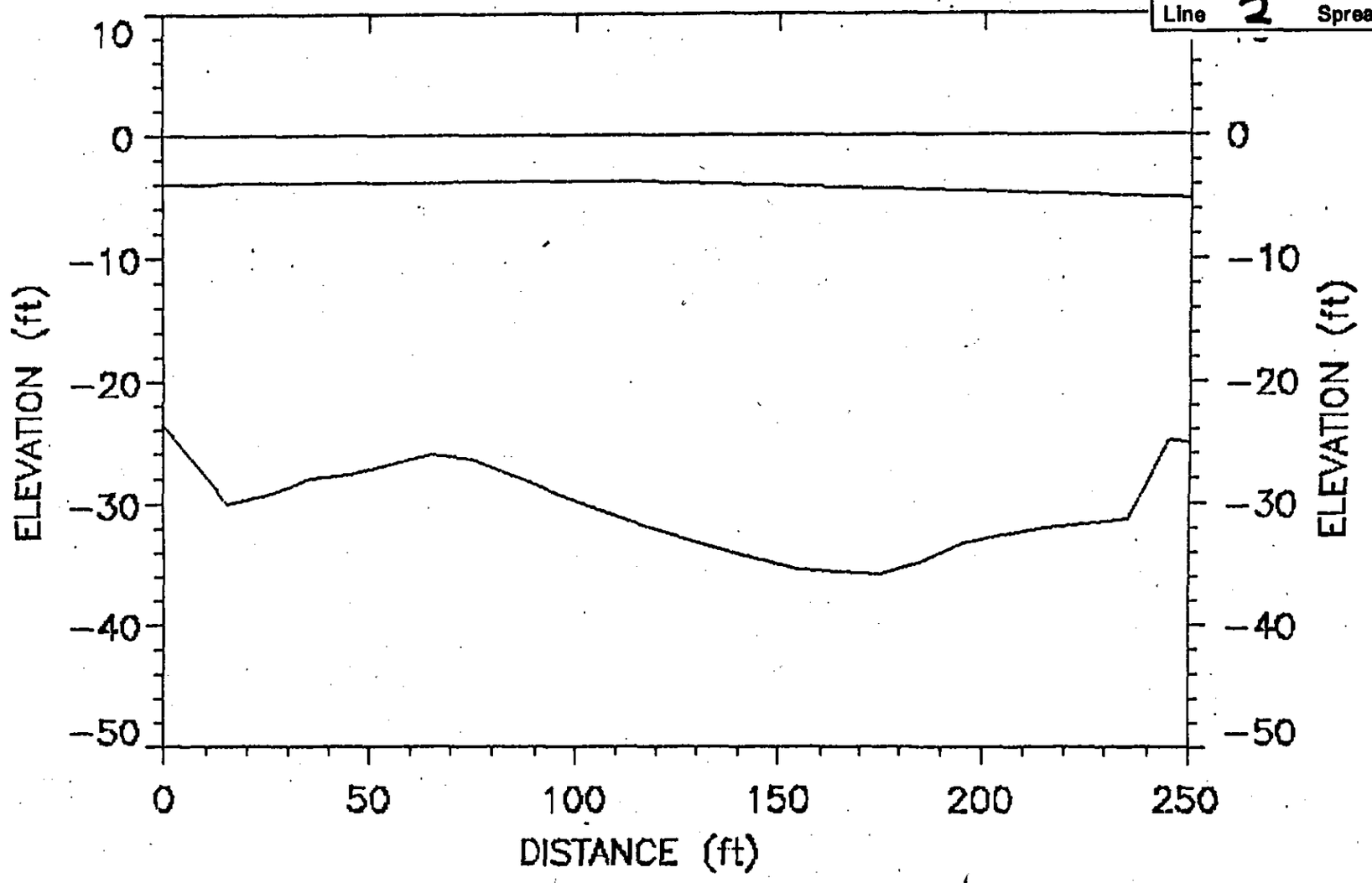


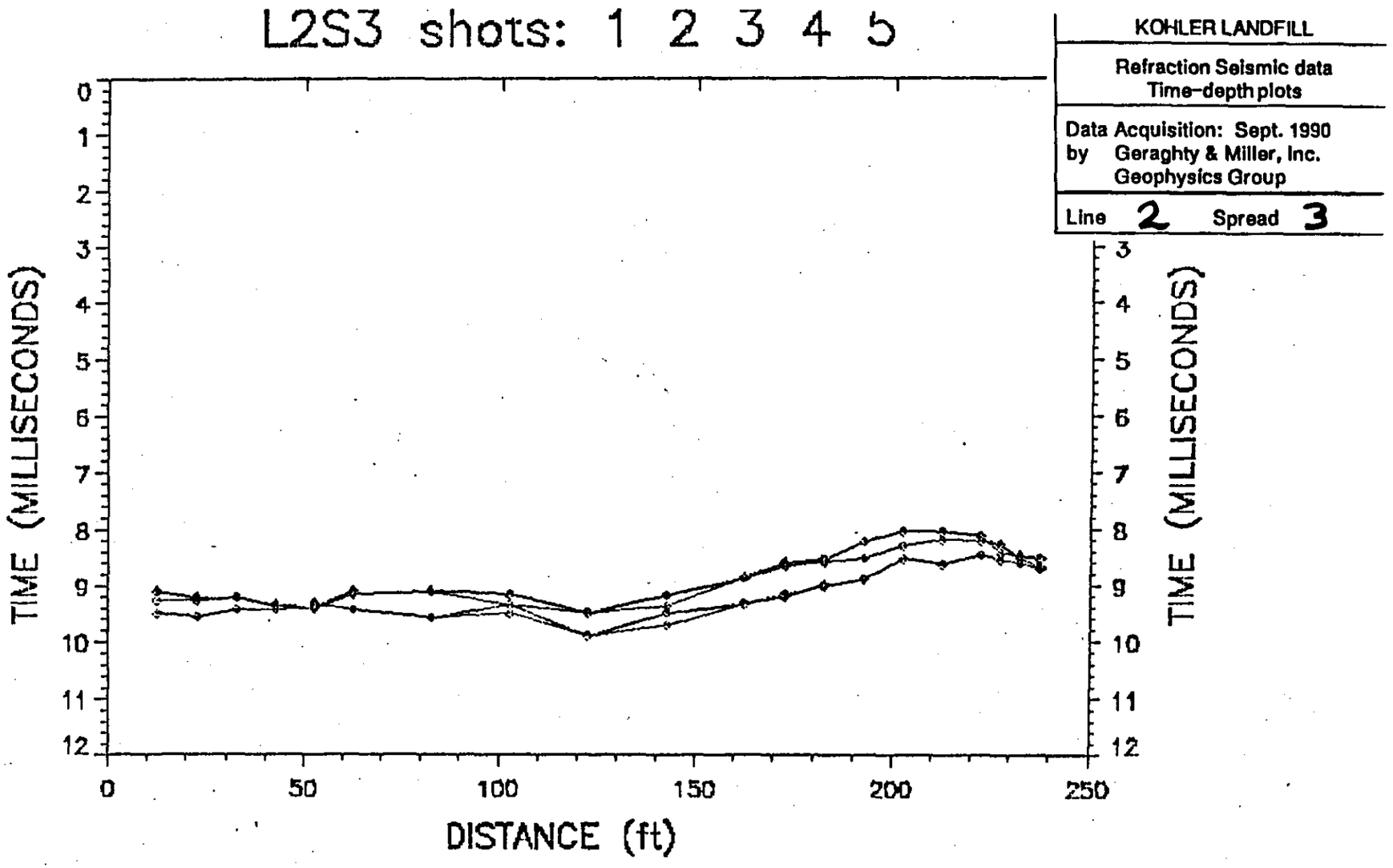
KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 2 Spread 2




L2S3 shots: 1 2 3 4 5
KOHLER LANDFILL
Refraction Seismic data
Time-depth plots
Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group
Line 2 Spread 3
TIME (MILLISECONDS)
0
1
2
3
4
5
6
7
8
9
10
11
12
0
50
100
150
200
250
DISTANCE (ft)

KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
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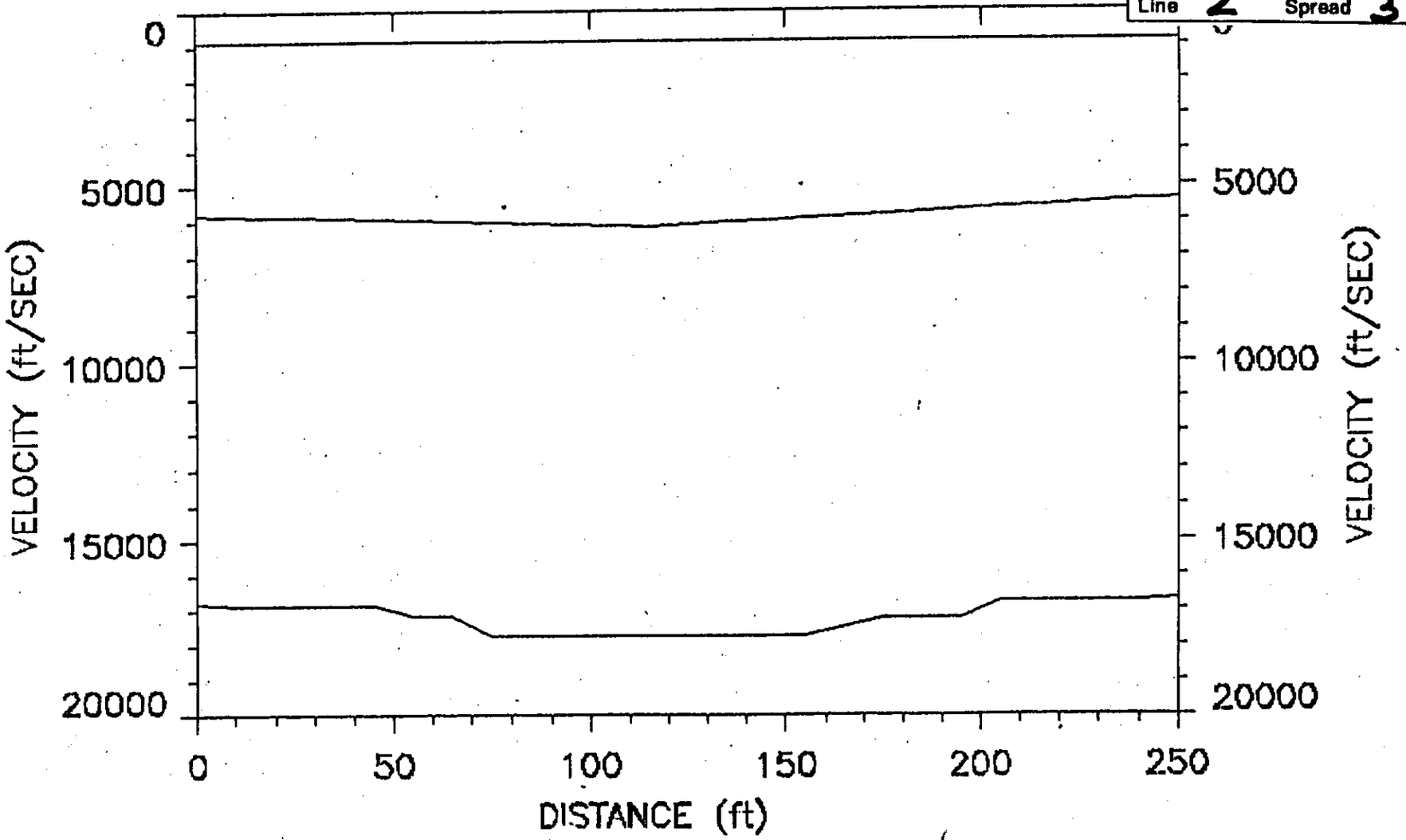
Geophysics Group

Line 2 Spread 3

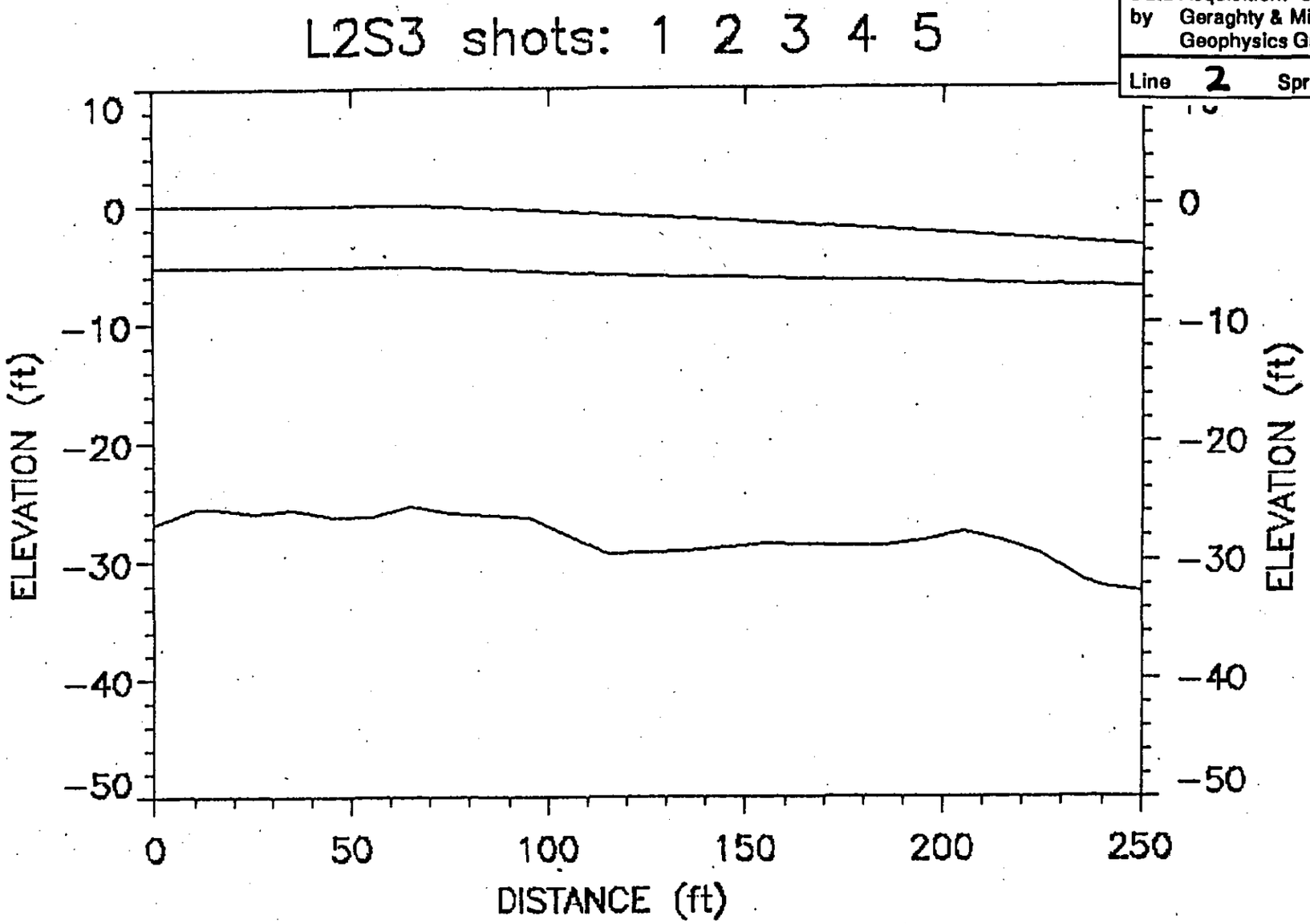


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 2 Spread 3

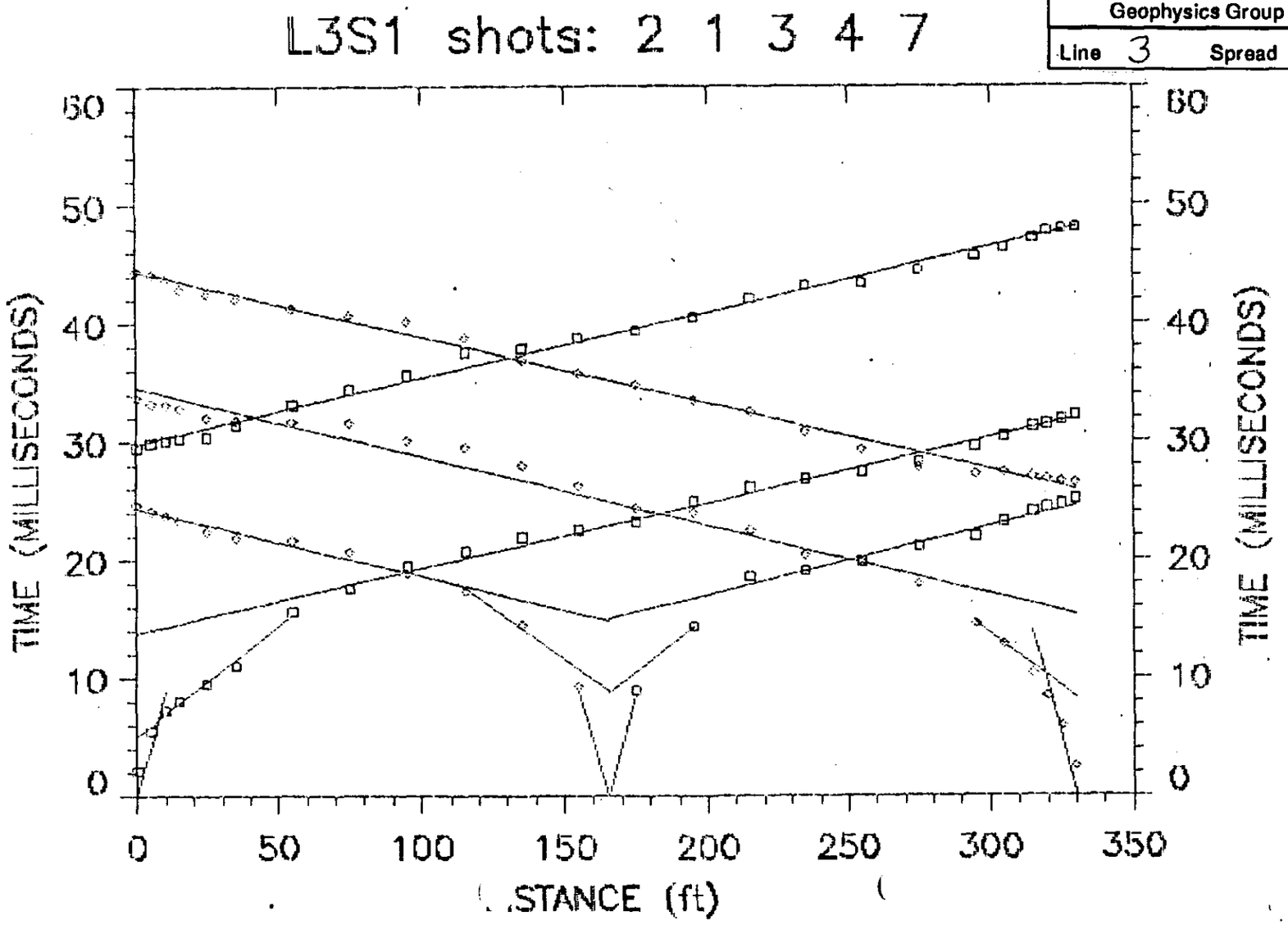


KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 3 Spread 1



KOHLER LANDFILL

Refraction Seismic data
Time-depth plots

Data Acquisition: Sept. 1990
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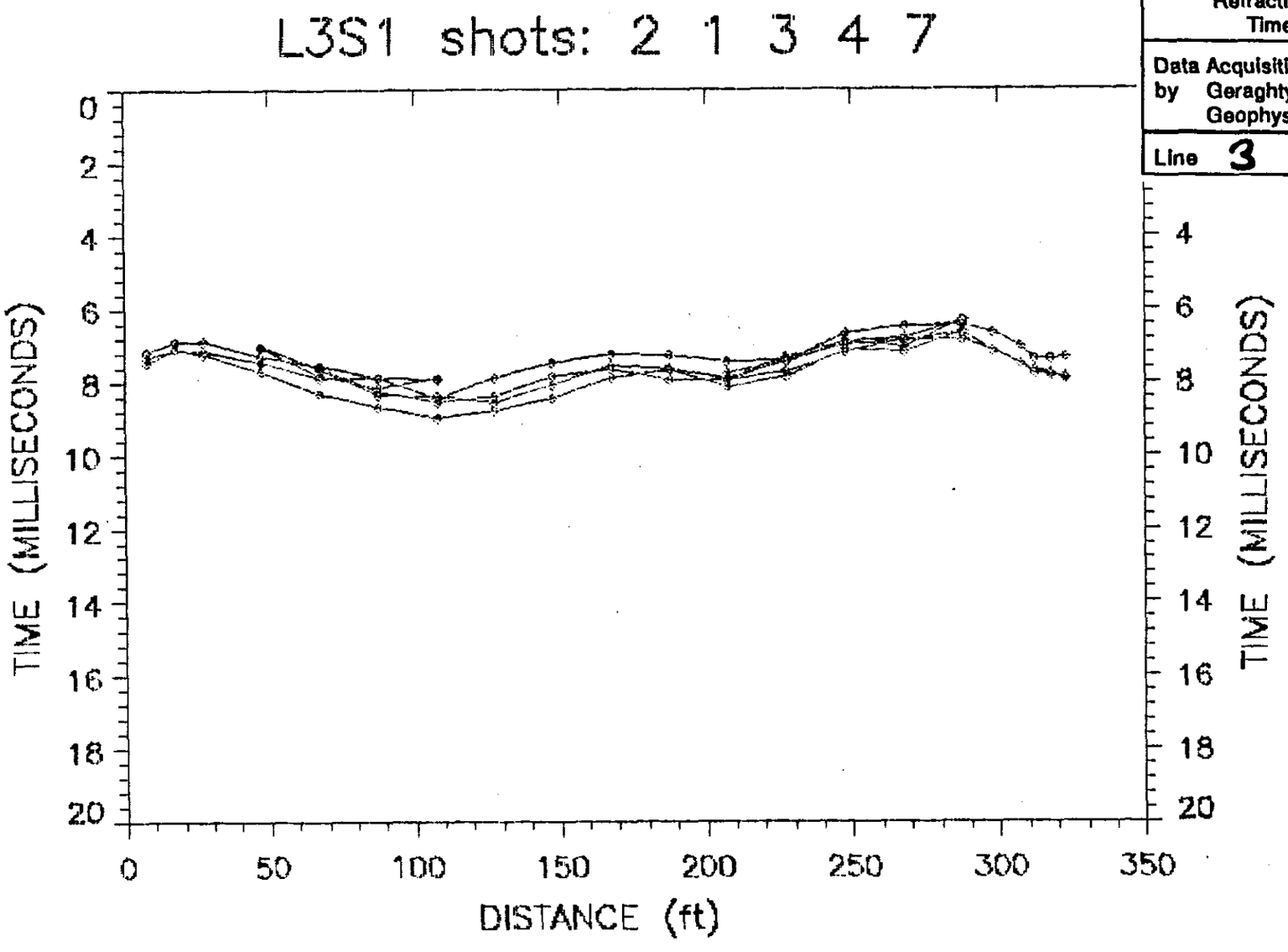
Geophysics Group

Line 3 Spread 1

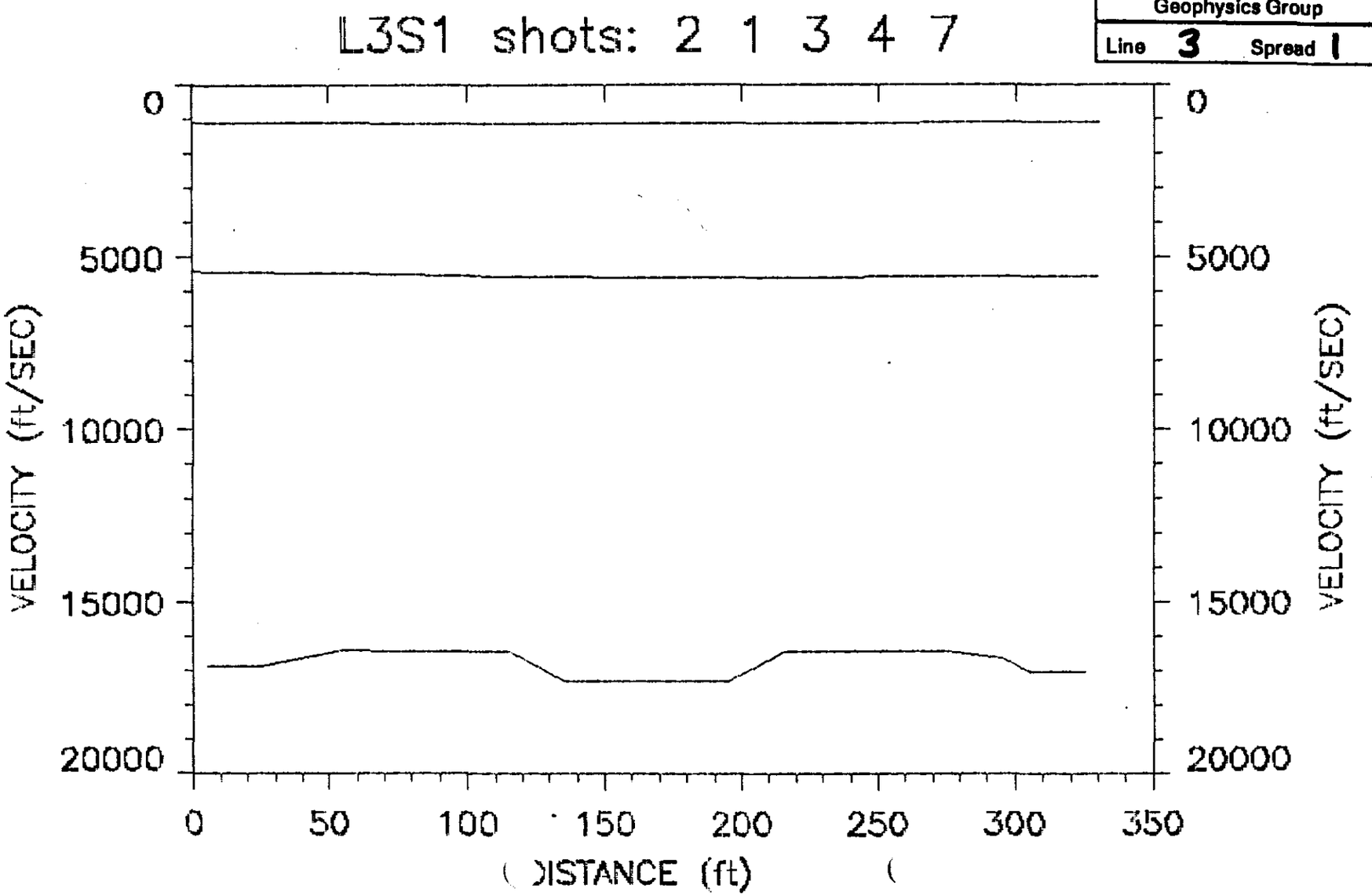


KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 3 Spread 1

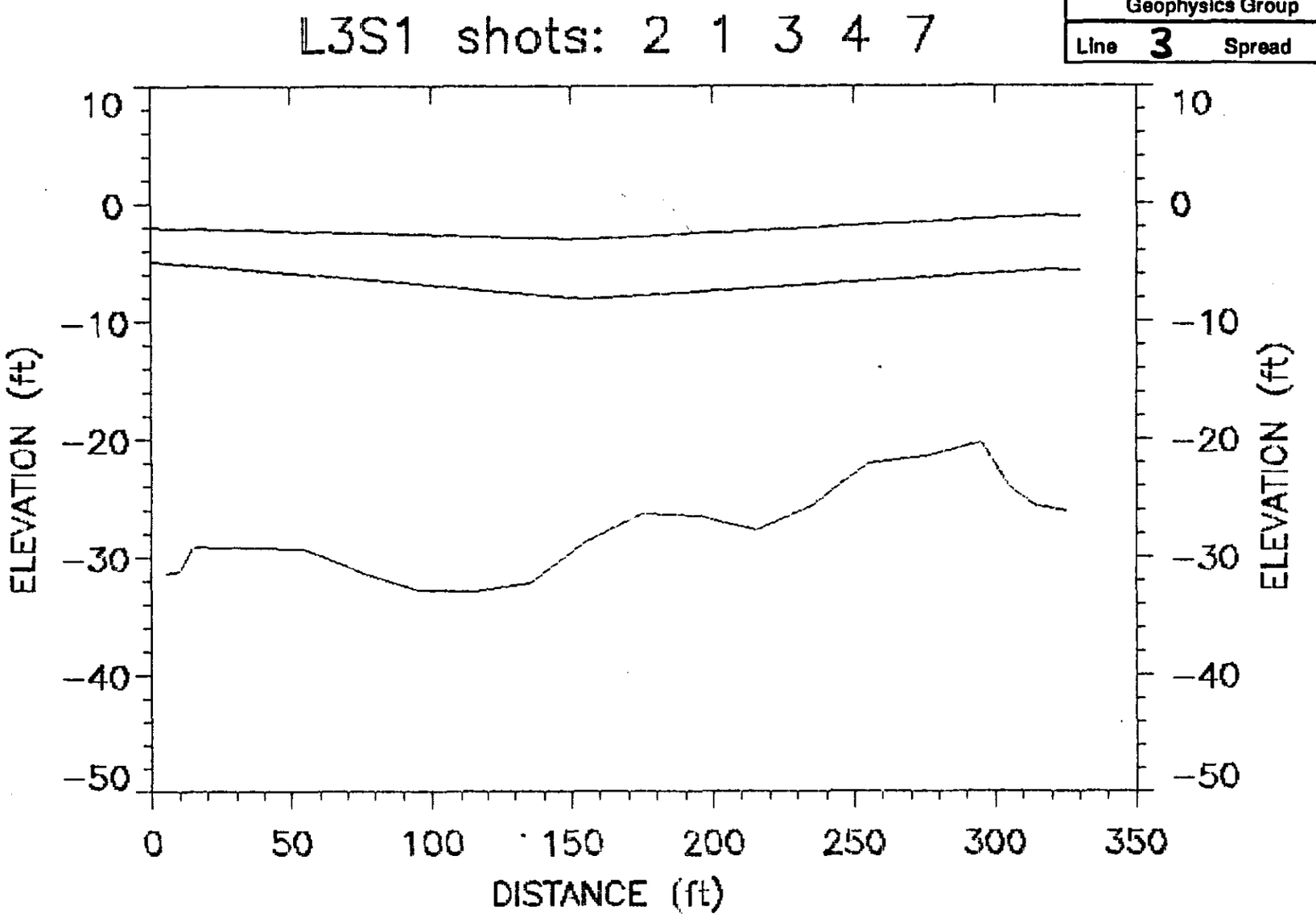


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 3 Spread 1

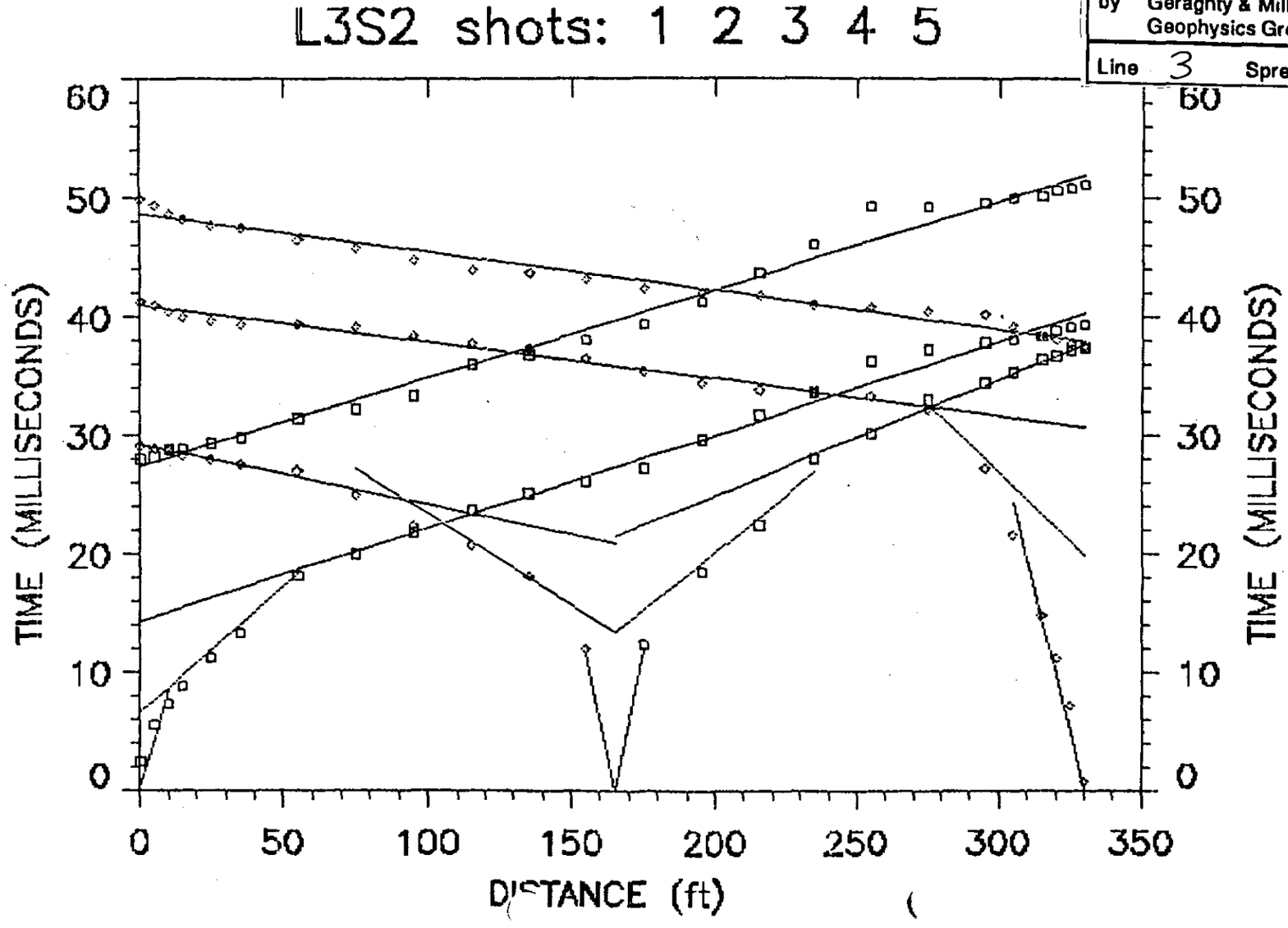


KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 3 Spread 2

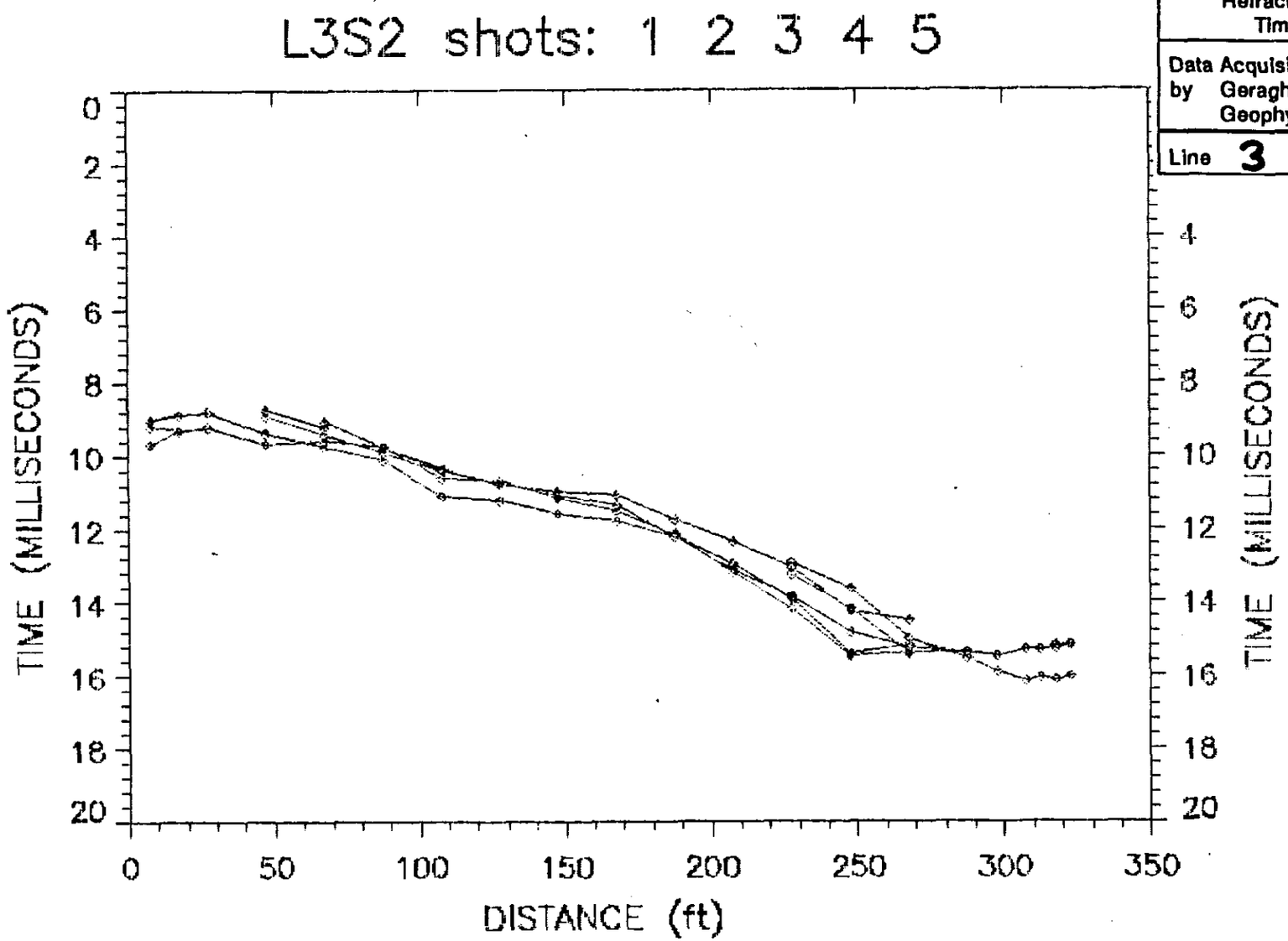


KOHLER LANDFILL

Refraction Seismic data
Time-depth plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 3 Spread 2

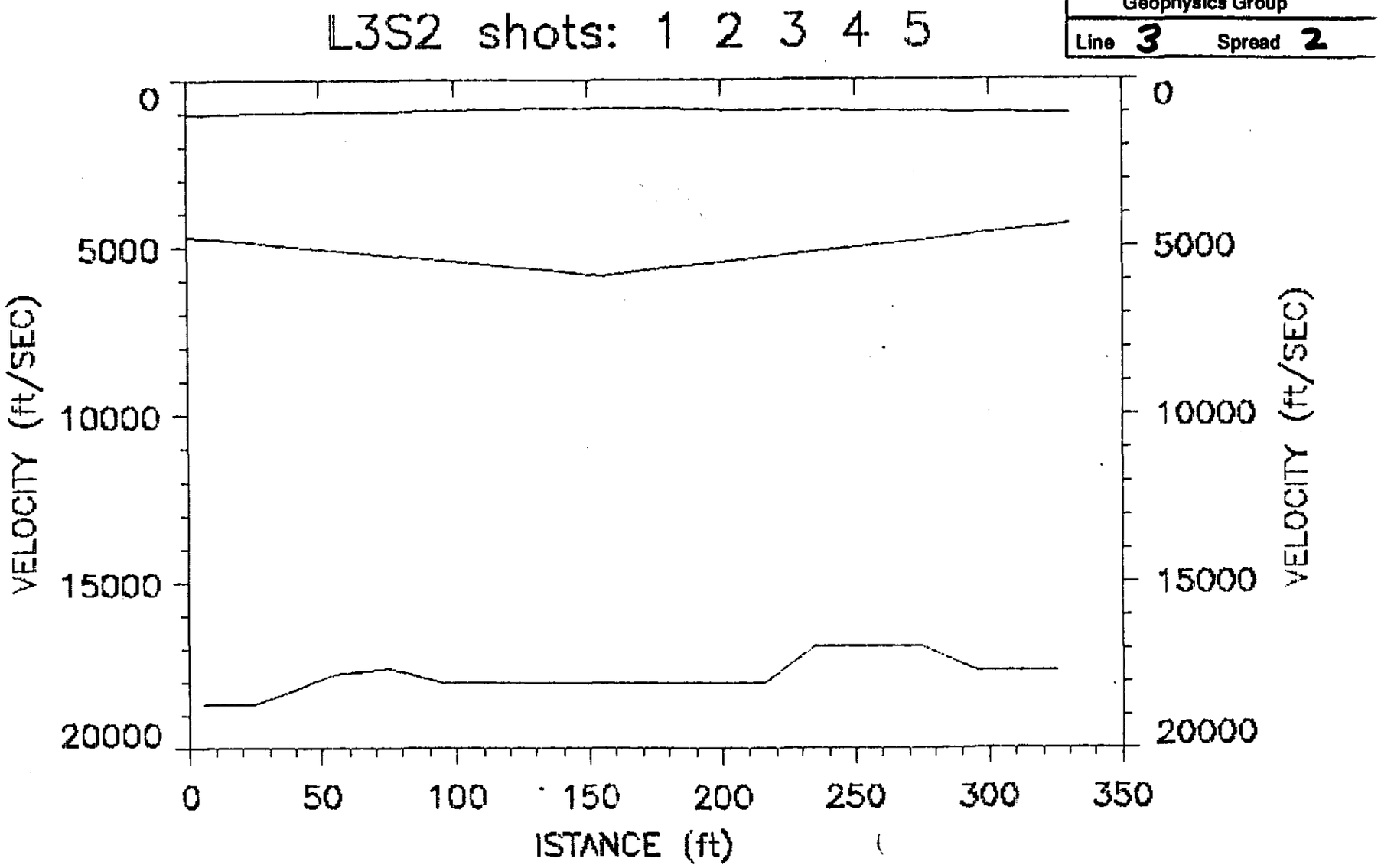


KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 3 Spread 2

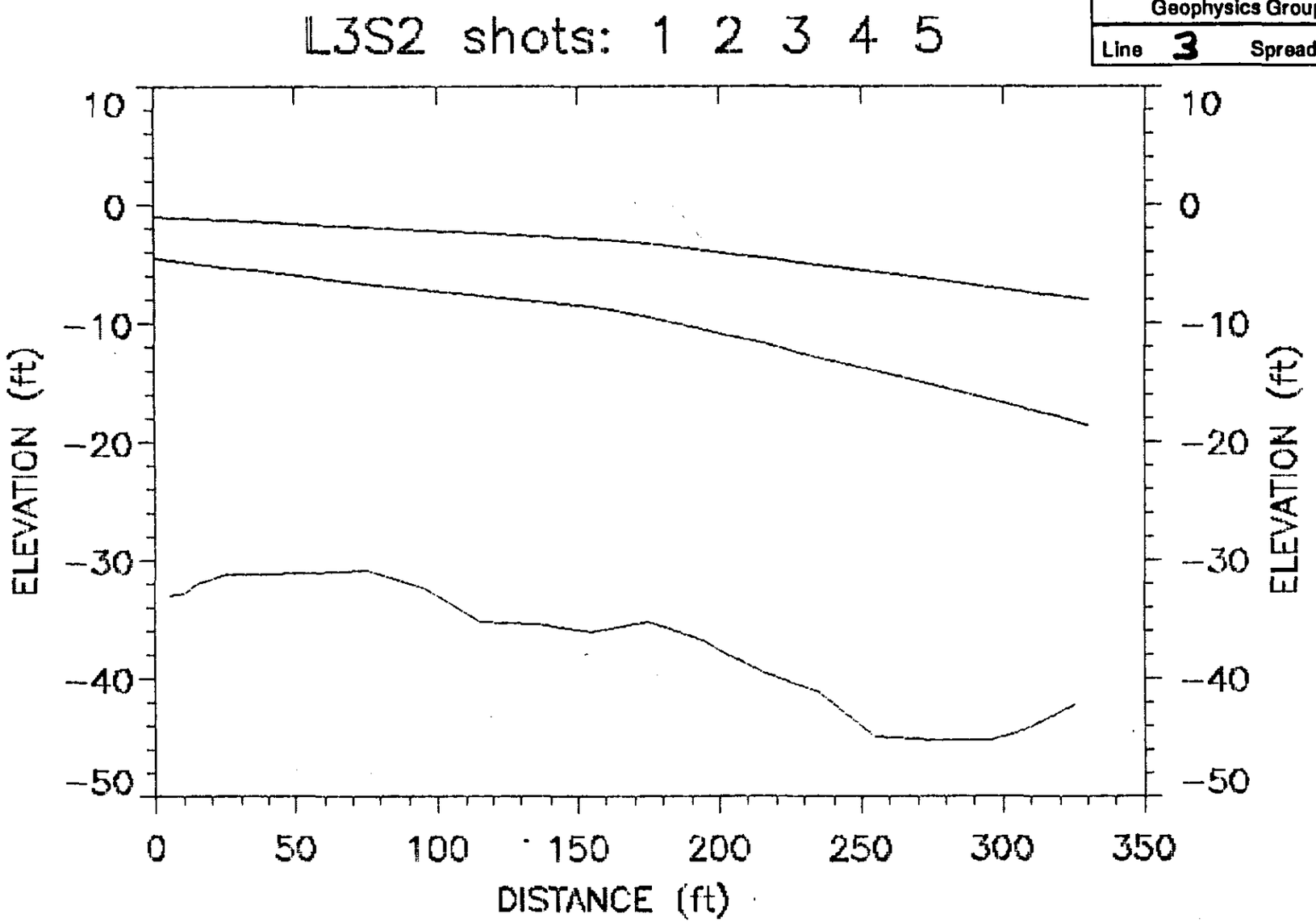


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 3 Spread 2

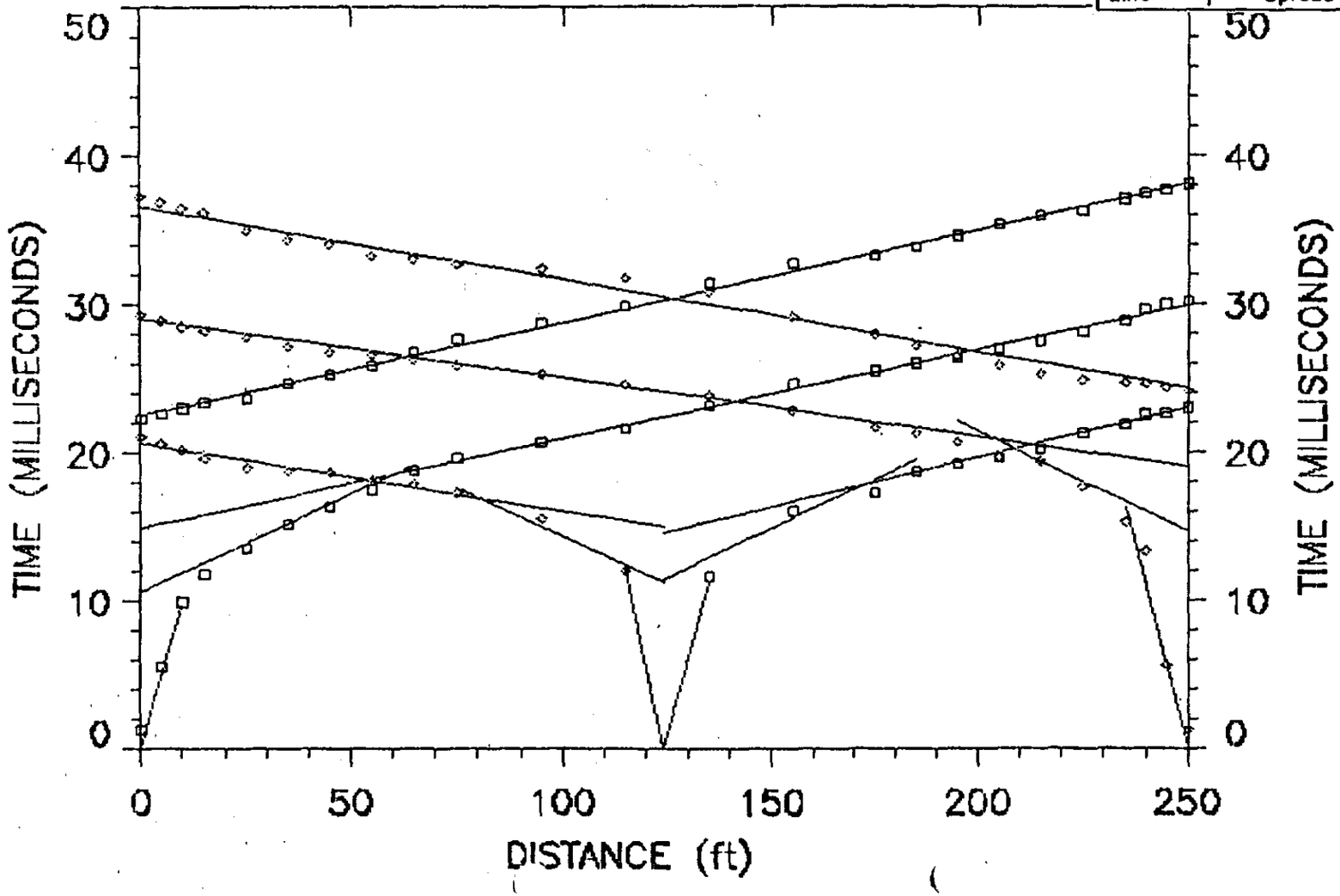


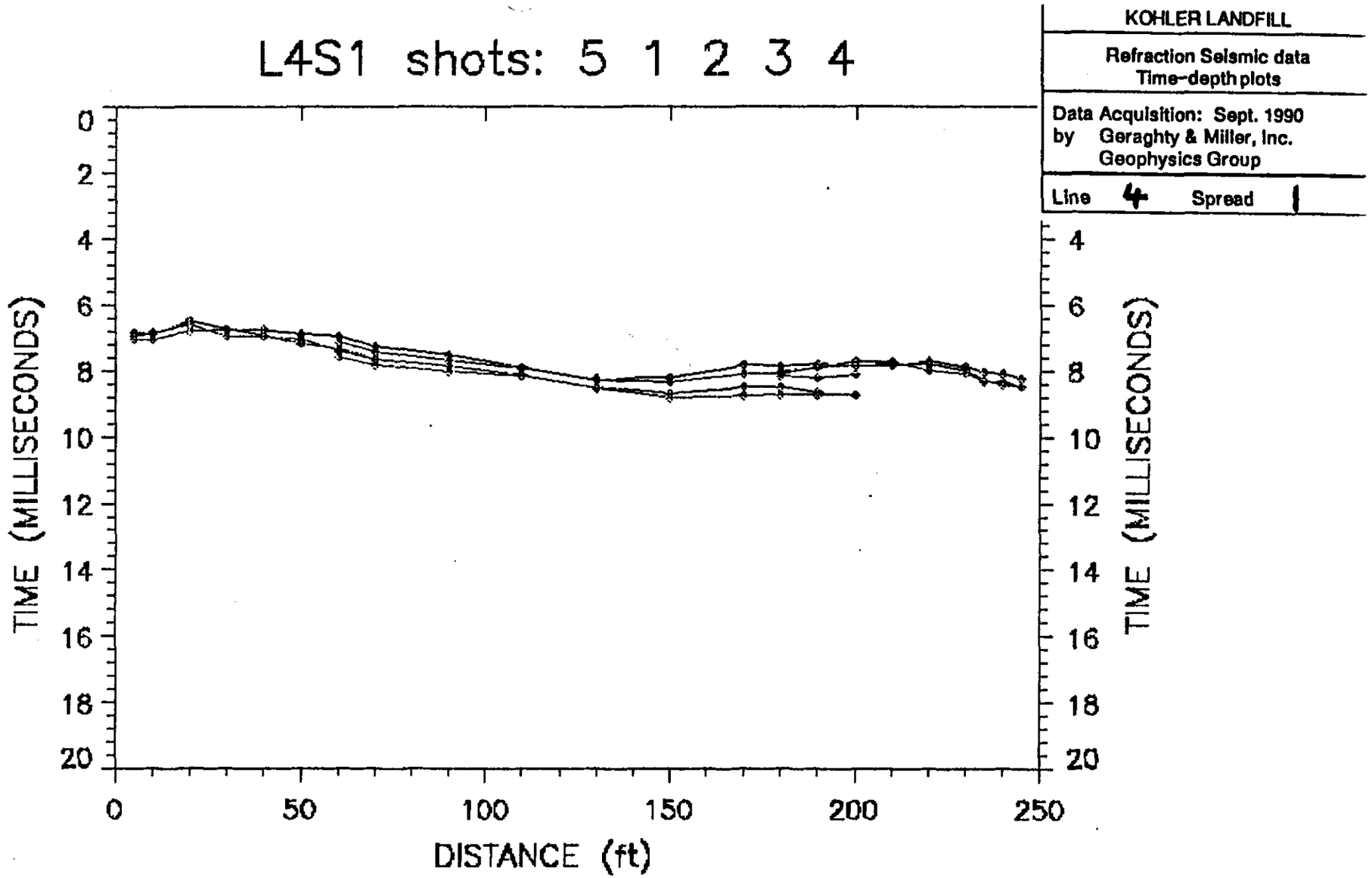
KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 1



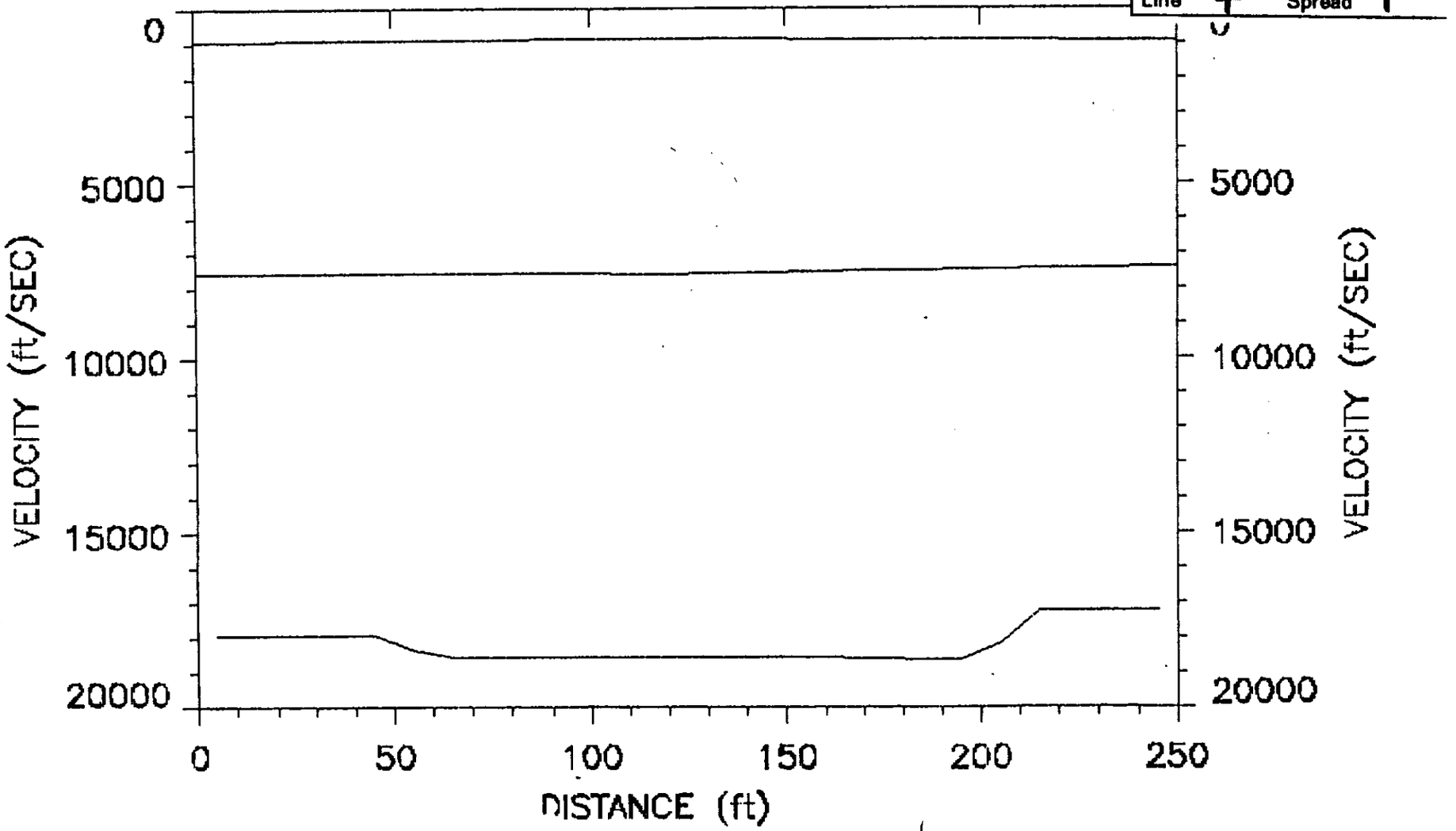

L4S1 shots: 5 1 2 3 4
KOHLER LANDFILL
Refraction Seismic data
Time-depth plots
Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group
Line 4 Spread 1
TIME (MILLISECONDS)
0
2
4
6
8
10
12
14
16
18
20
0
50
100
150
200
250
DISTANCE (ft)

KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 1

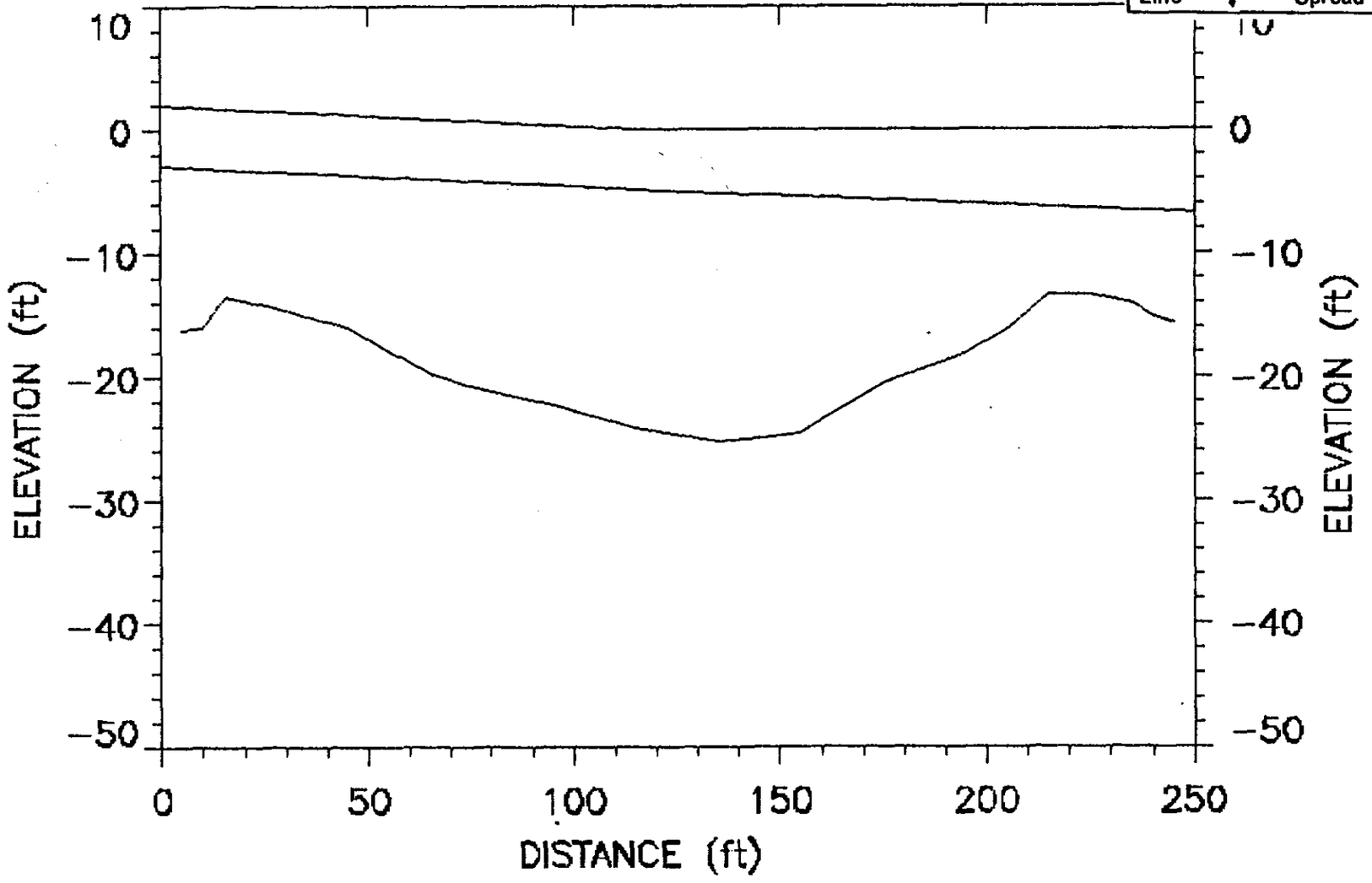


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by . Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 1

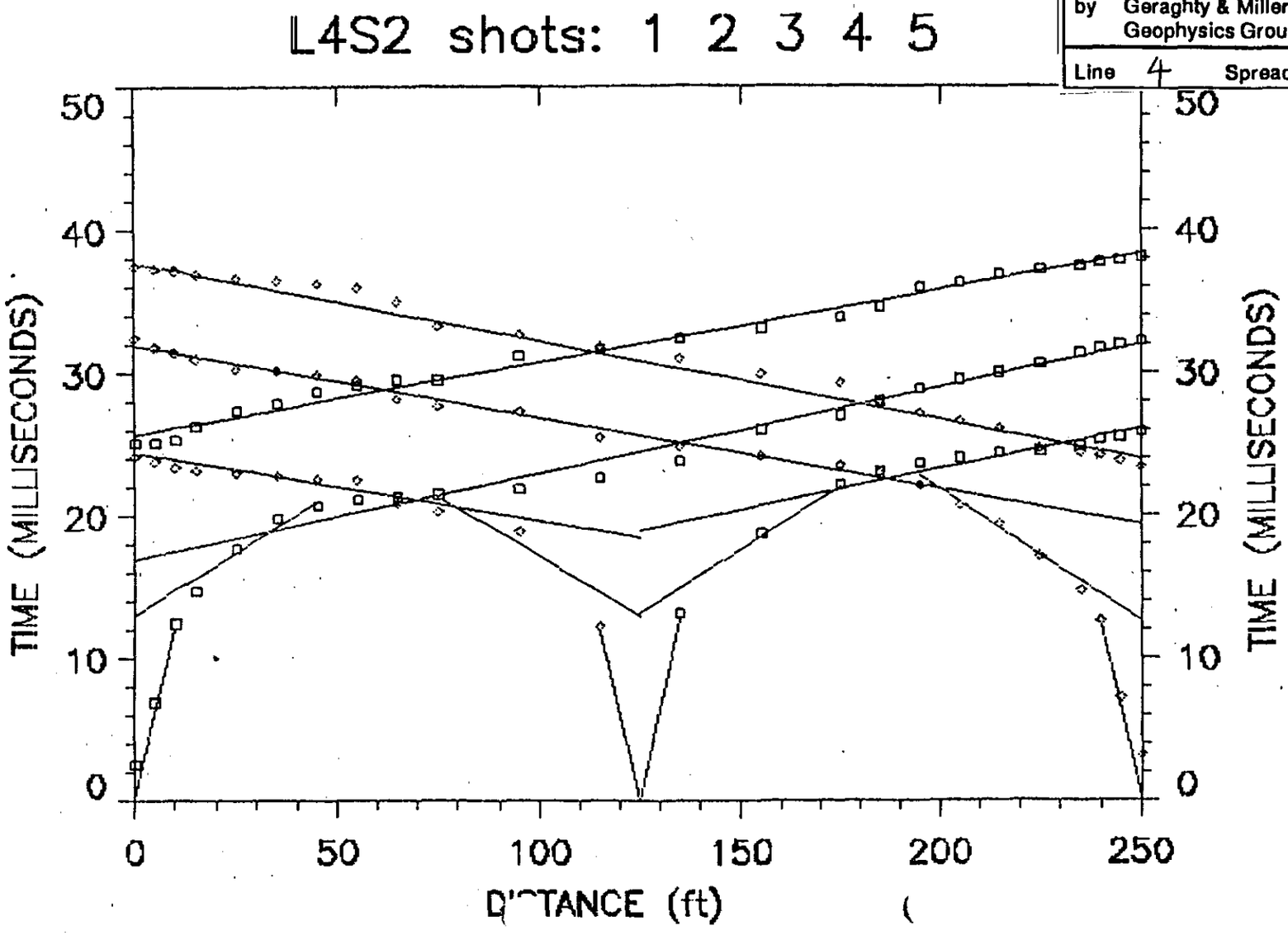


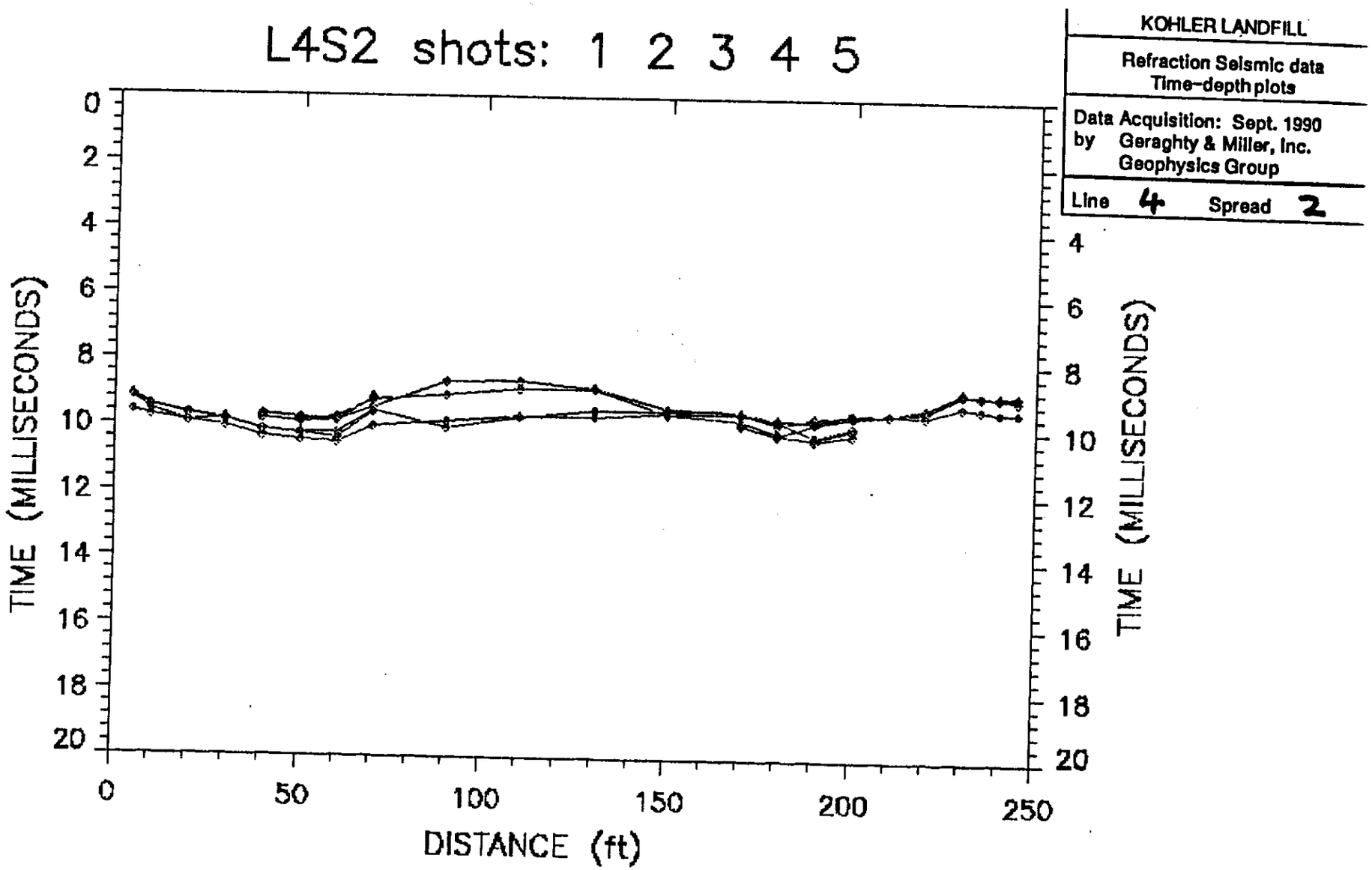
KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 2



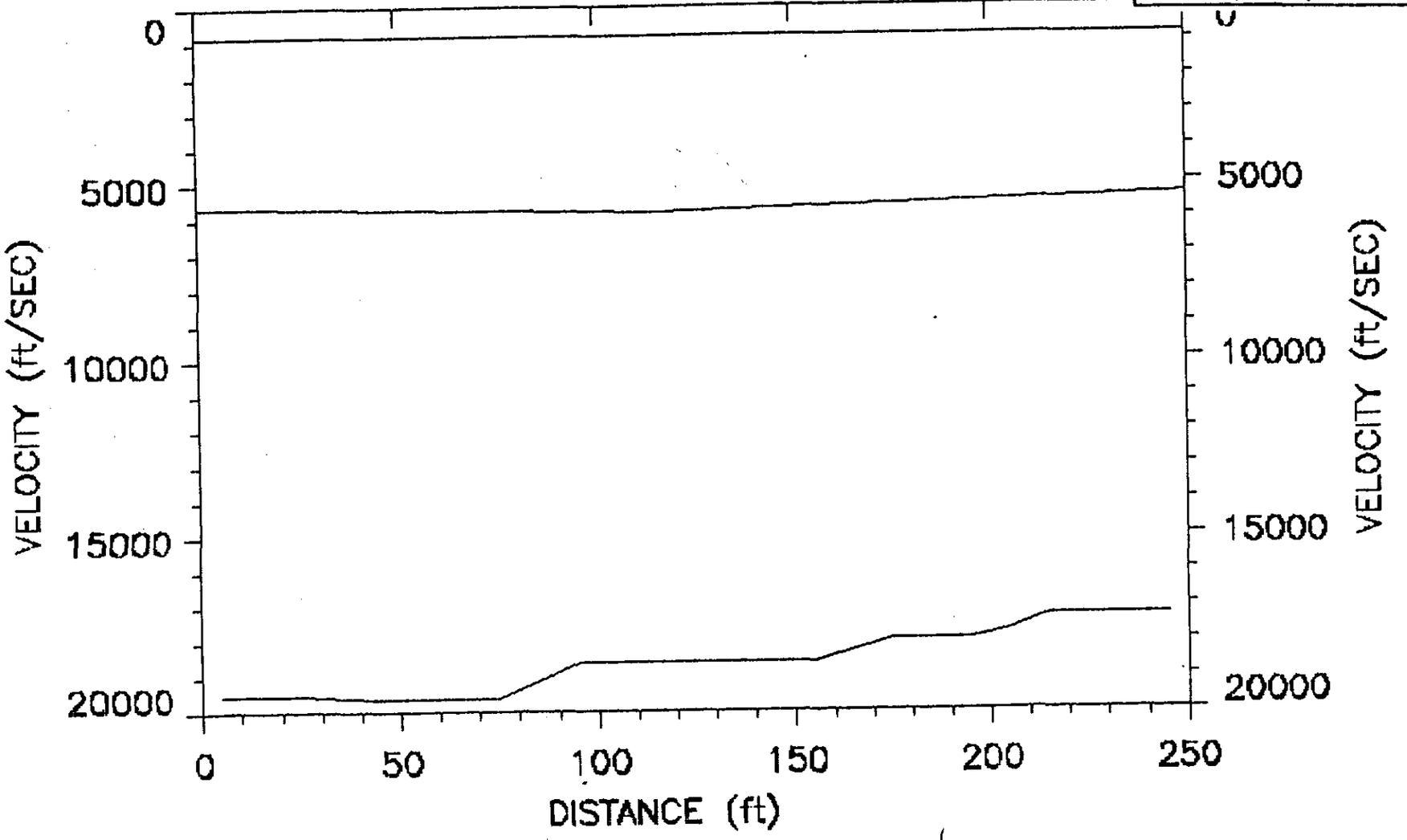

L4S2 shots: 1 2 3 4 5
KOHLER LANDFILL
Refraction Seismic data
Time-depth plots
Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group
Line 4 Spread 2
TIME (MILLISECONDS)
0
2
4
6
8
10
12
14
16
18
20
0
50
100
150
200
250
DISTANCE (ft)
TIME (MILLISECONDS)
4
6
8
10
12
14
16
18
20

KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 2

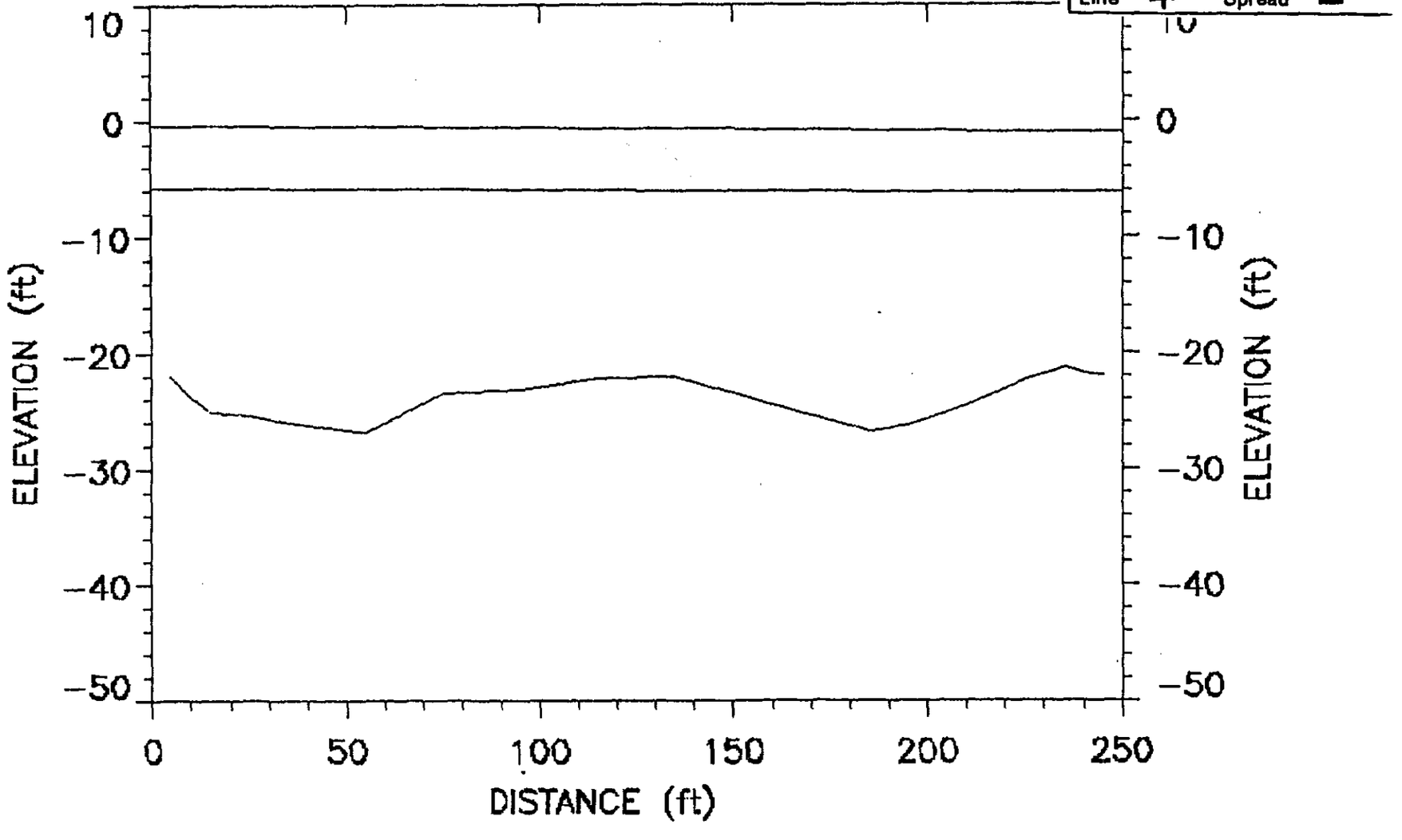


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 2

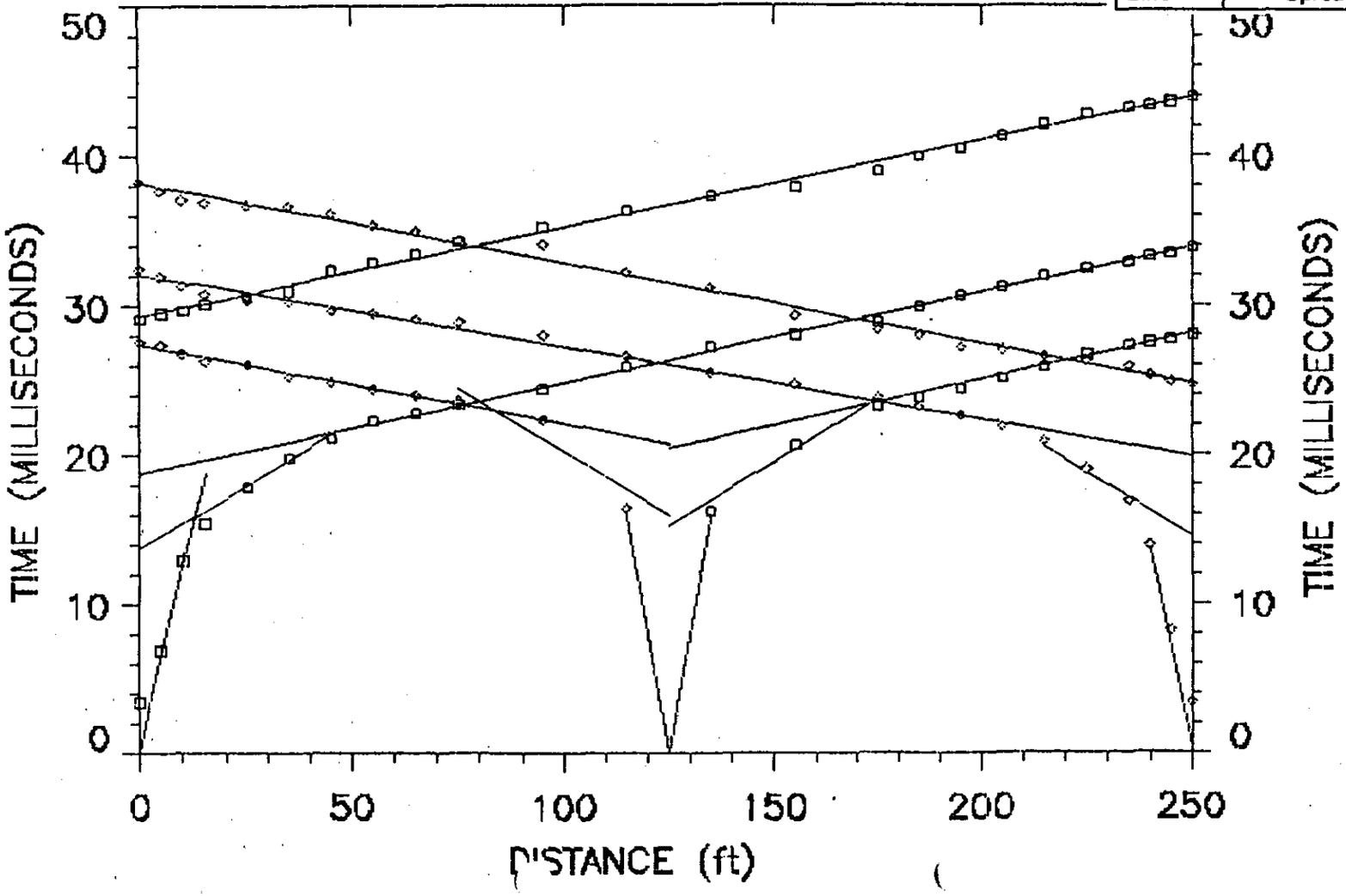


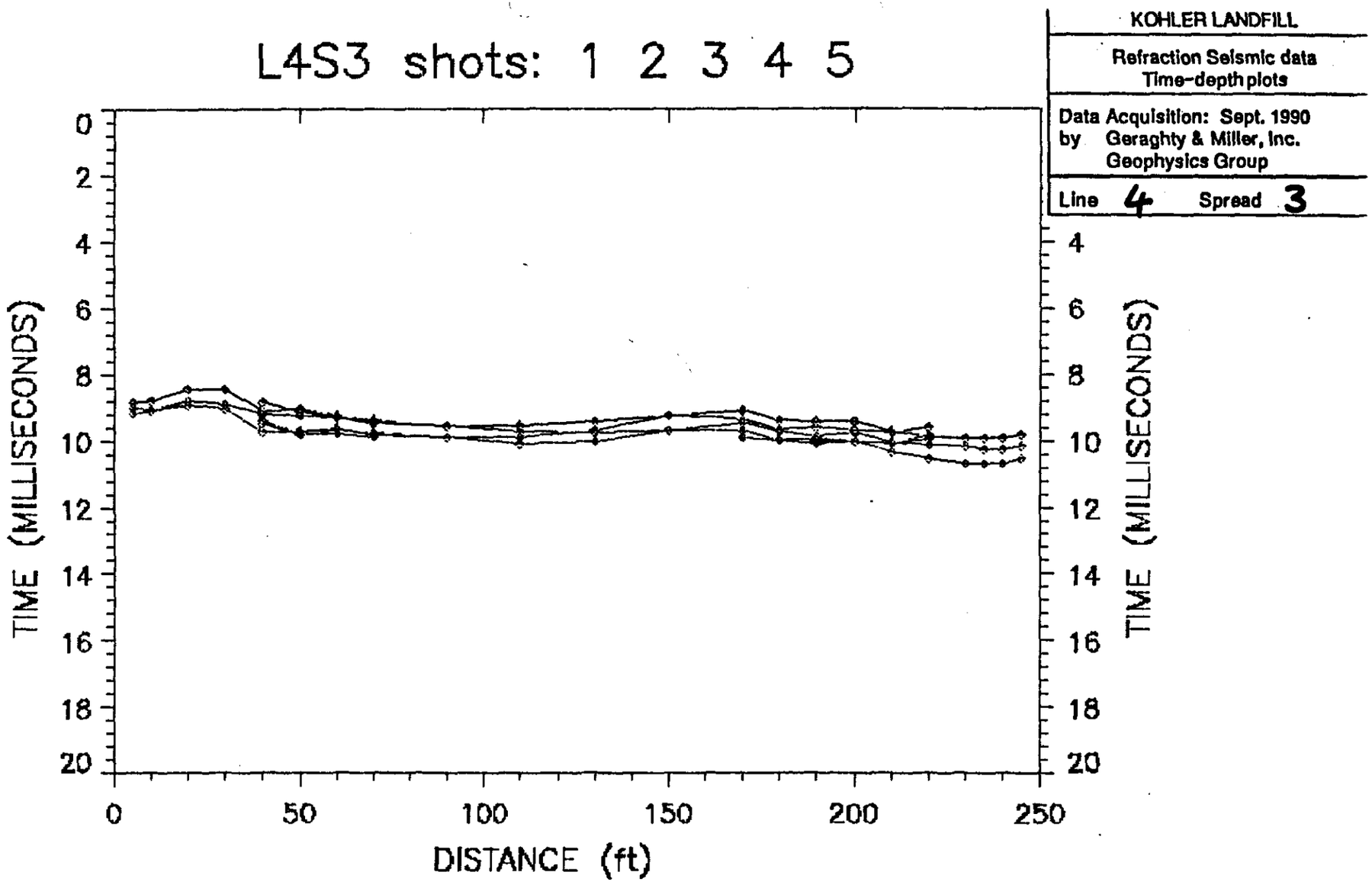
KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 3



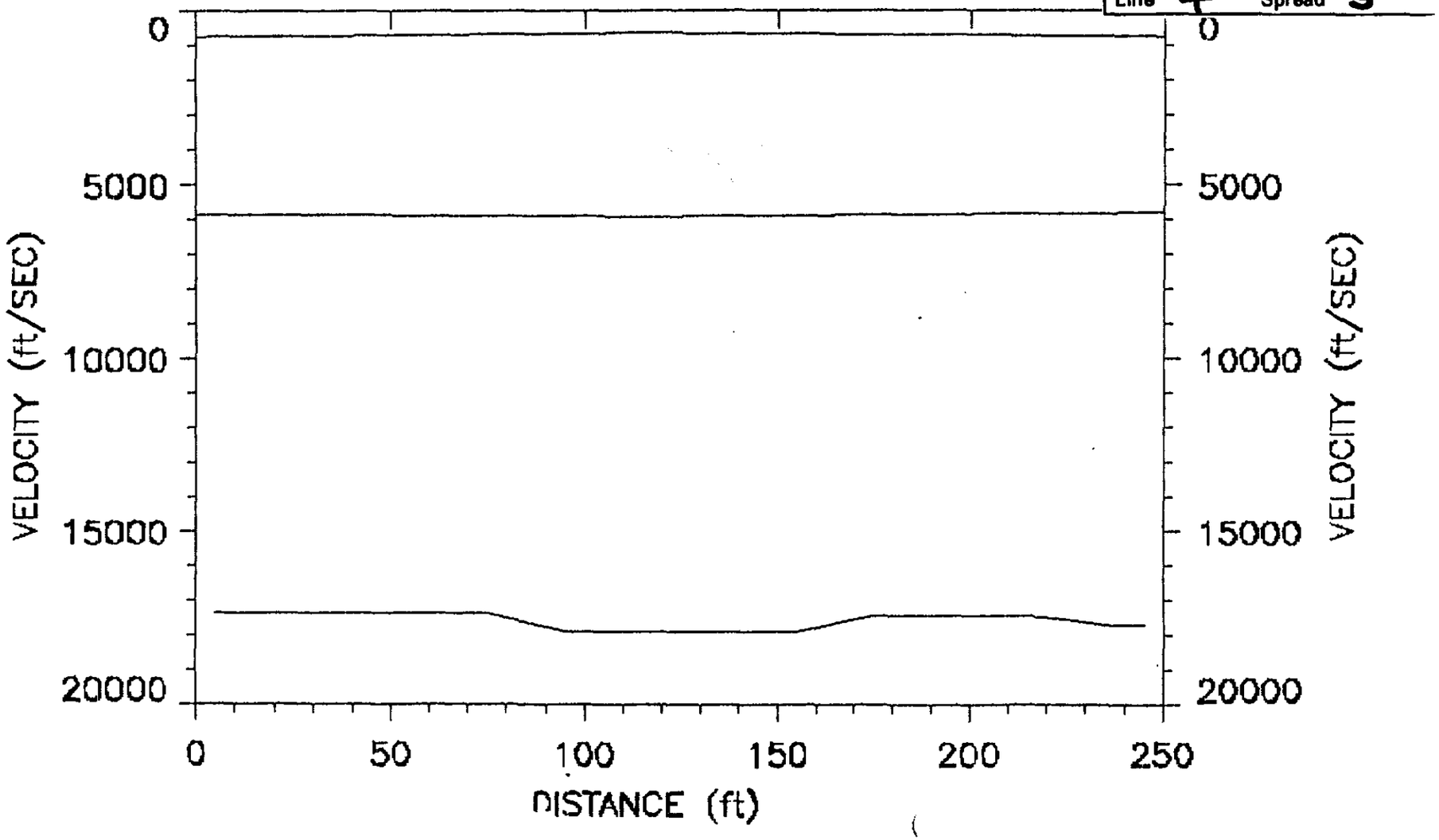

L4S3 shots: 1 2 3 4 5
KOHLER LANDFILL
Refraction Seismic data
Time-depth plots
Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group
Line 4 Spread 3
TIME (MILLISECONDS)
0
2
4
6
8
10
12
14
16
18
20
0
50
100
150
200
250
DISTANCE (ft)

KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 3

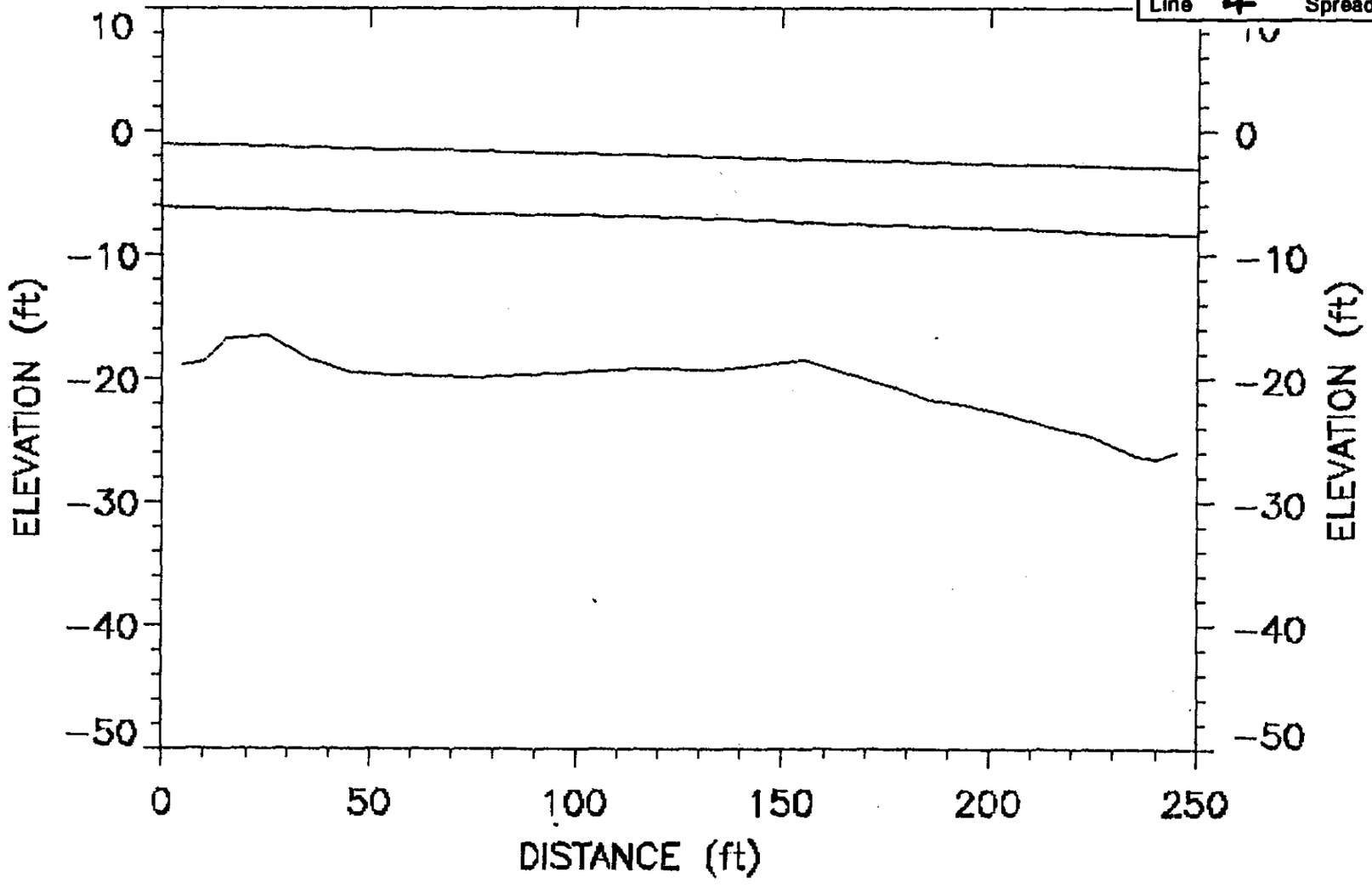


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 3

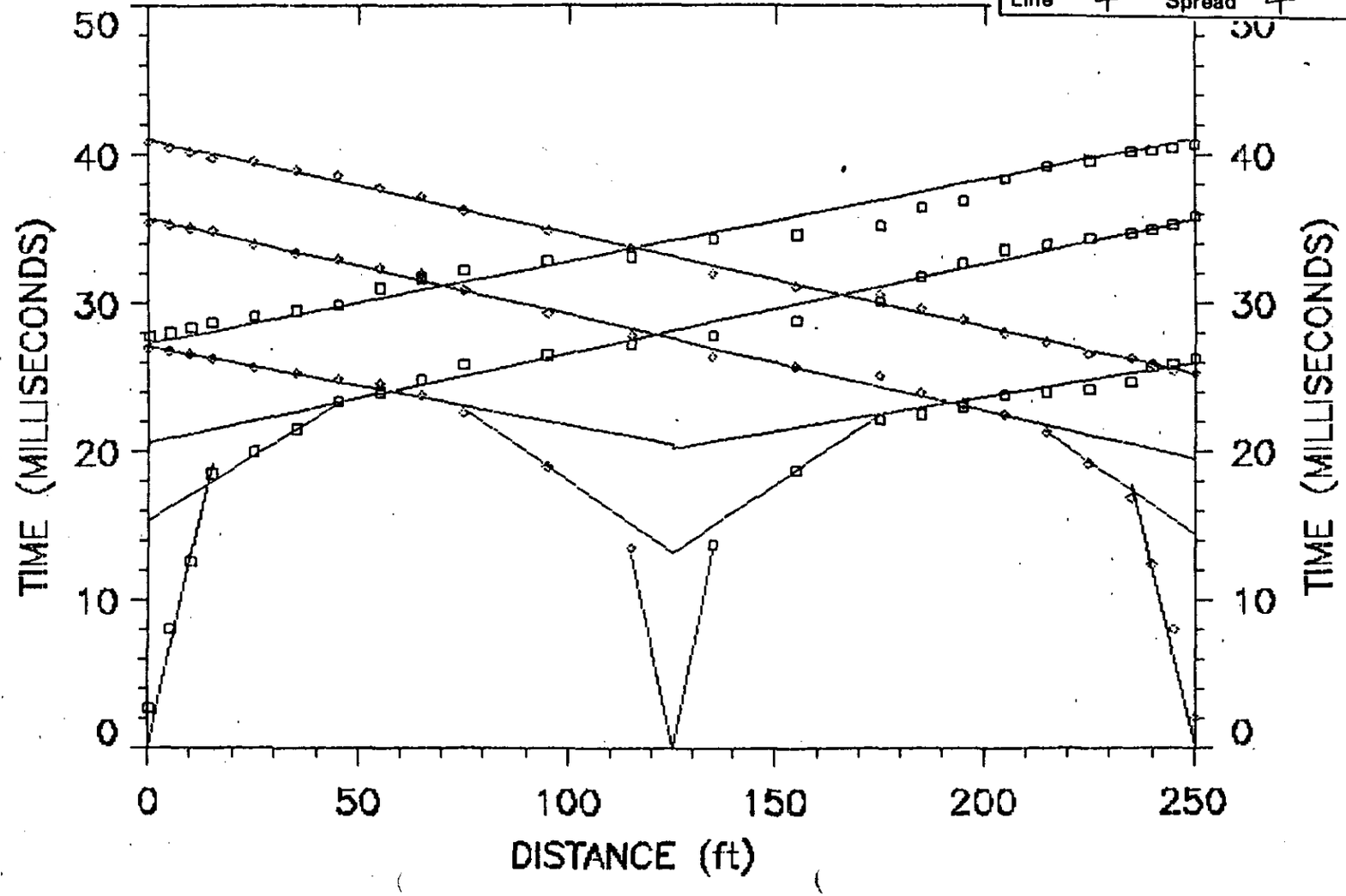


KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 4

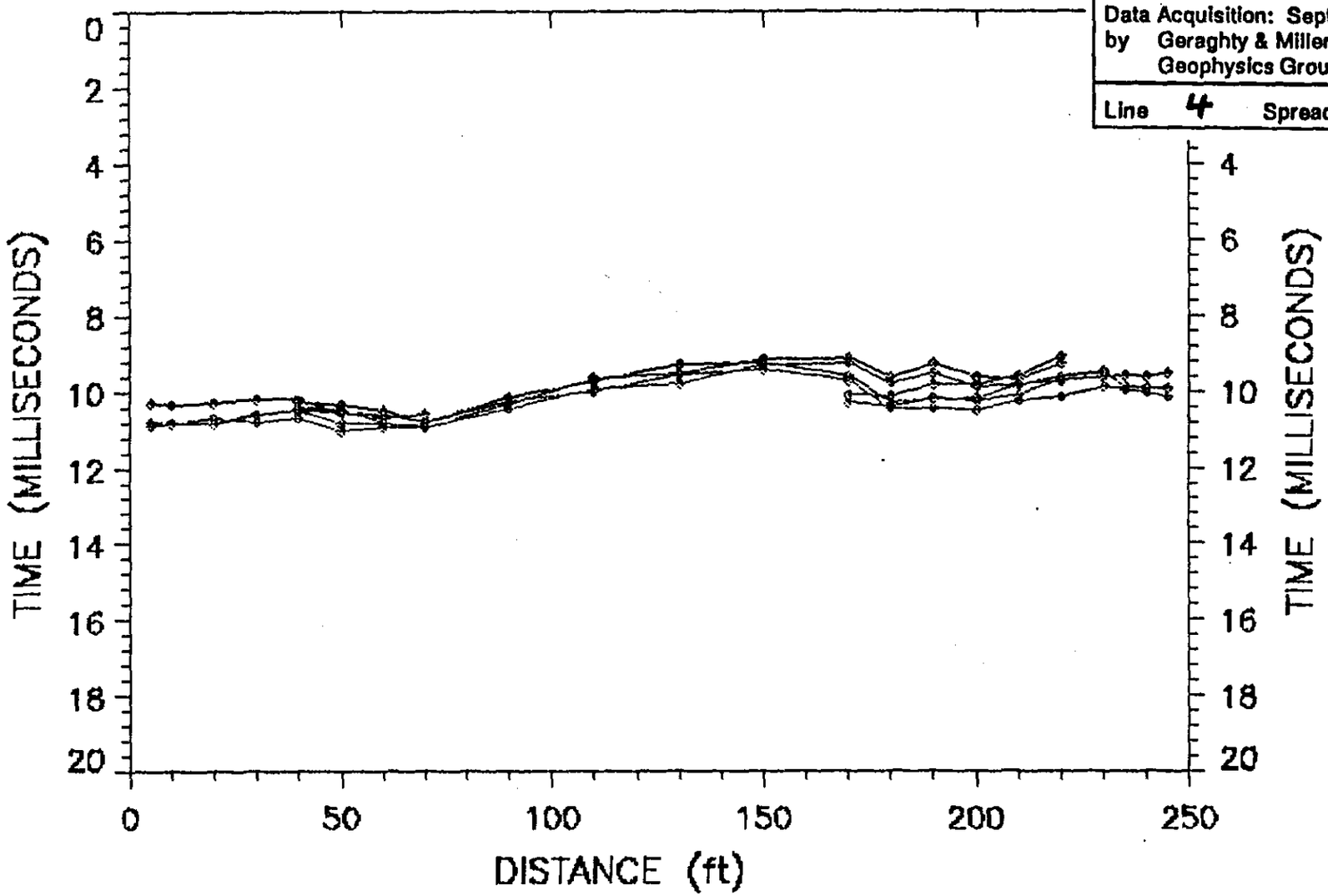


KOHLER LANDFILL

Refraction Seismic data
Time-depth plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 4

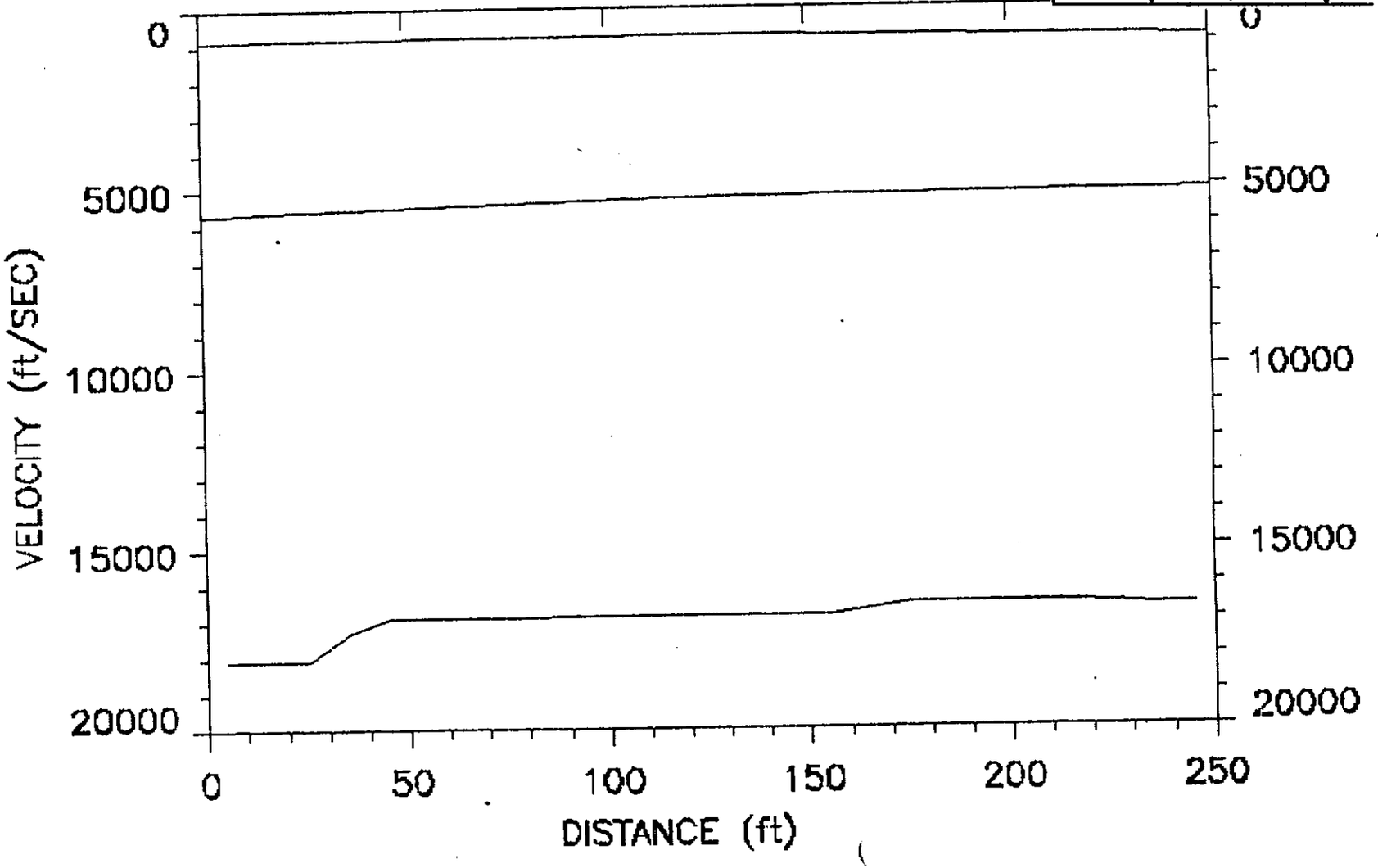


KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 4

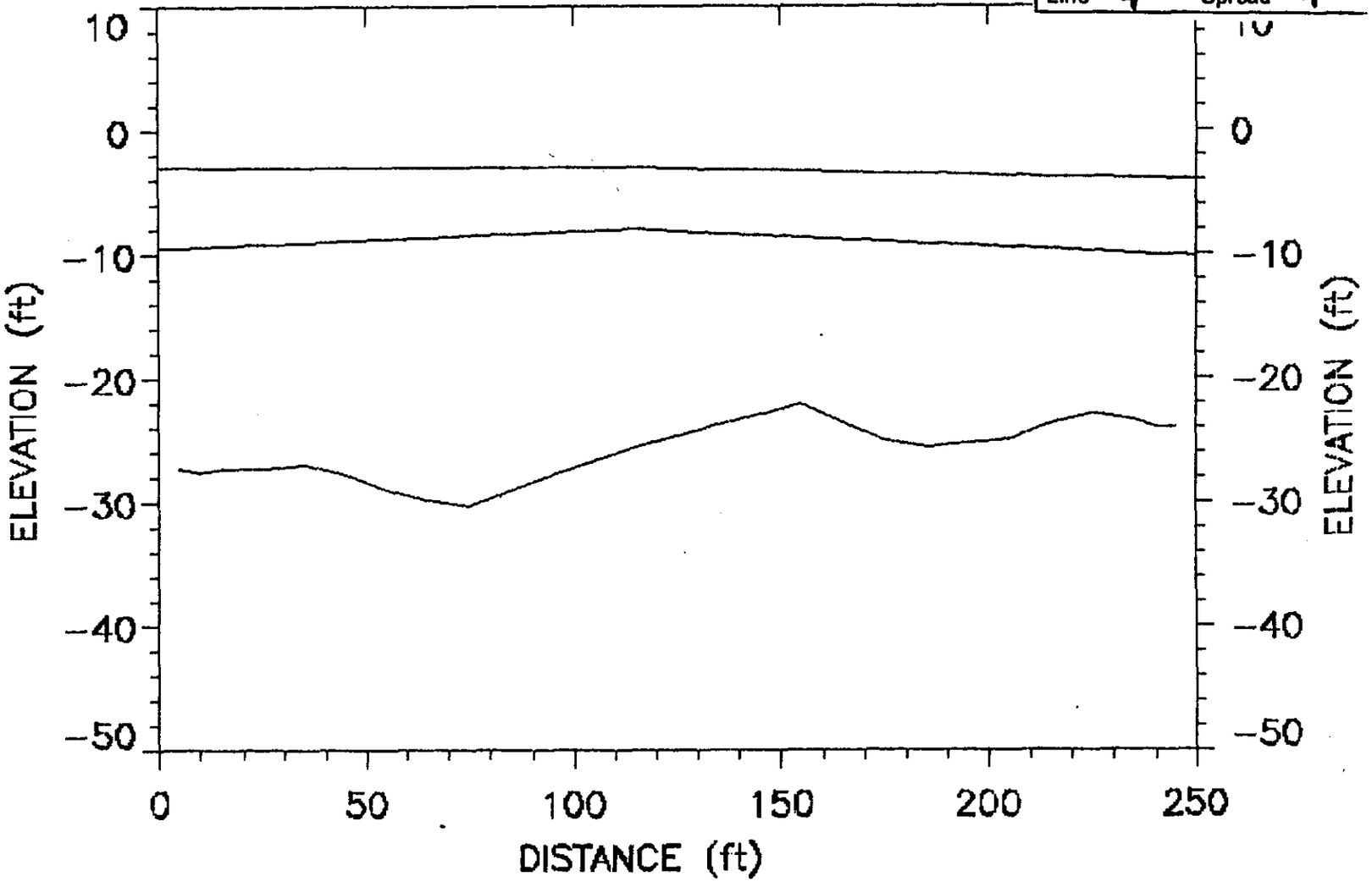


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 4

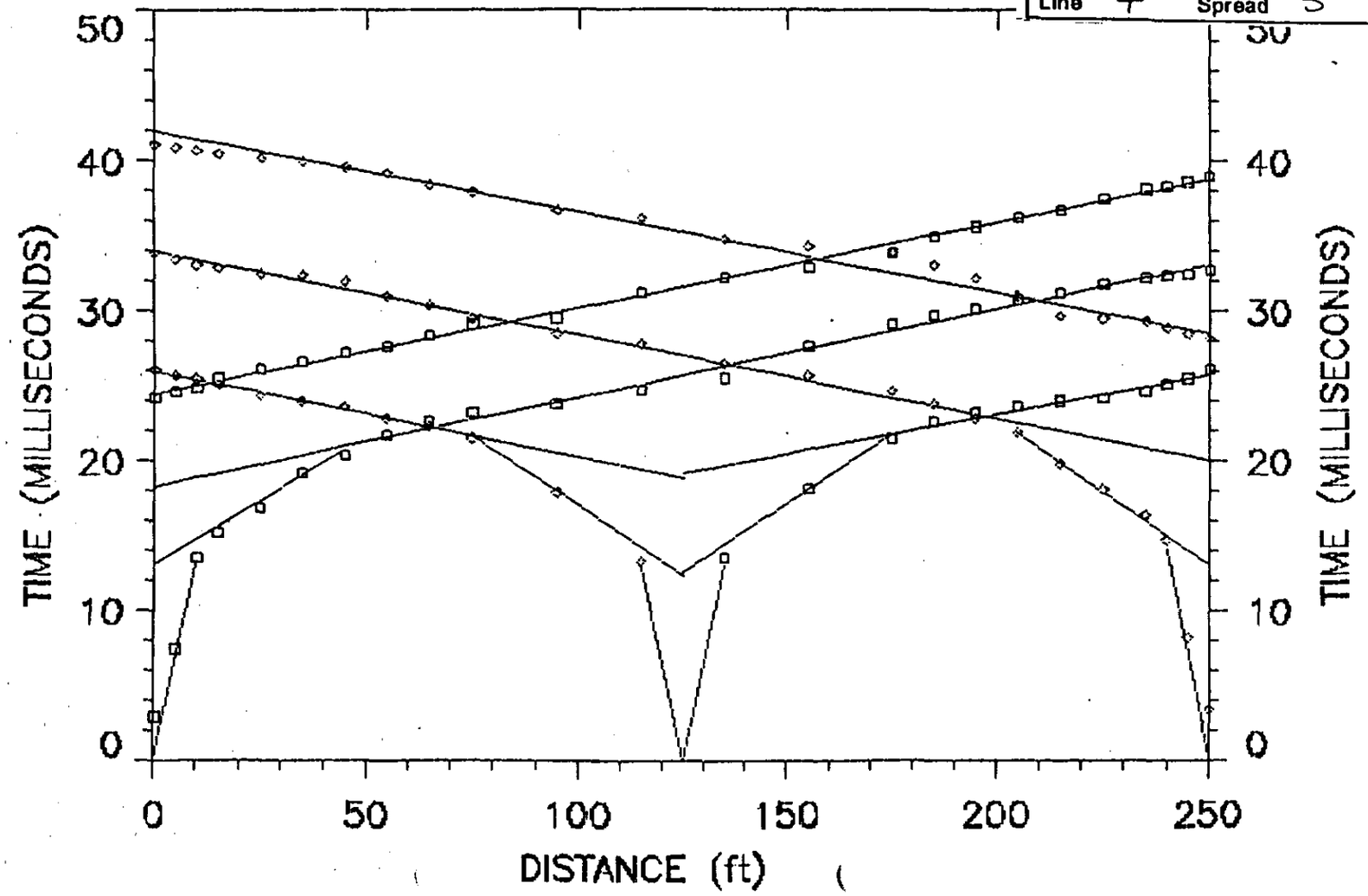


KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 5

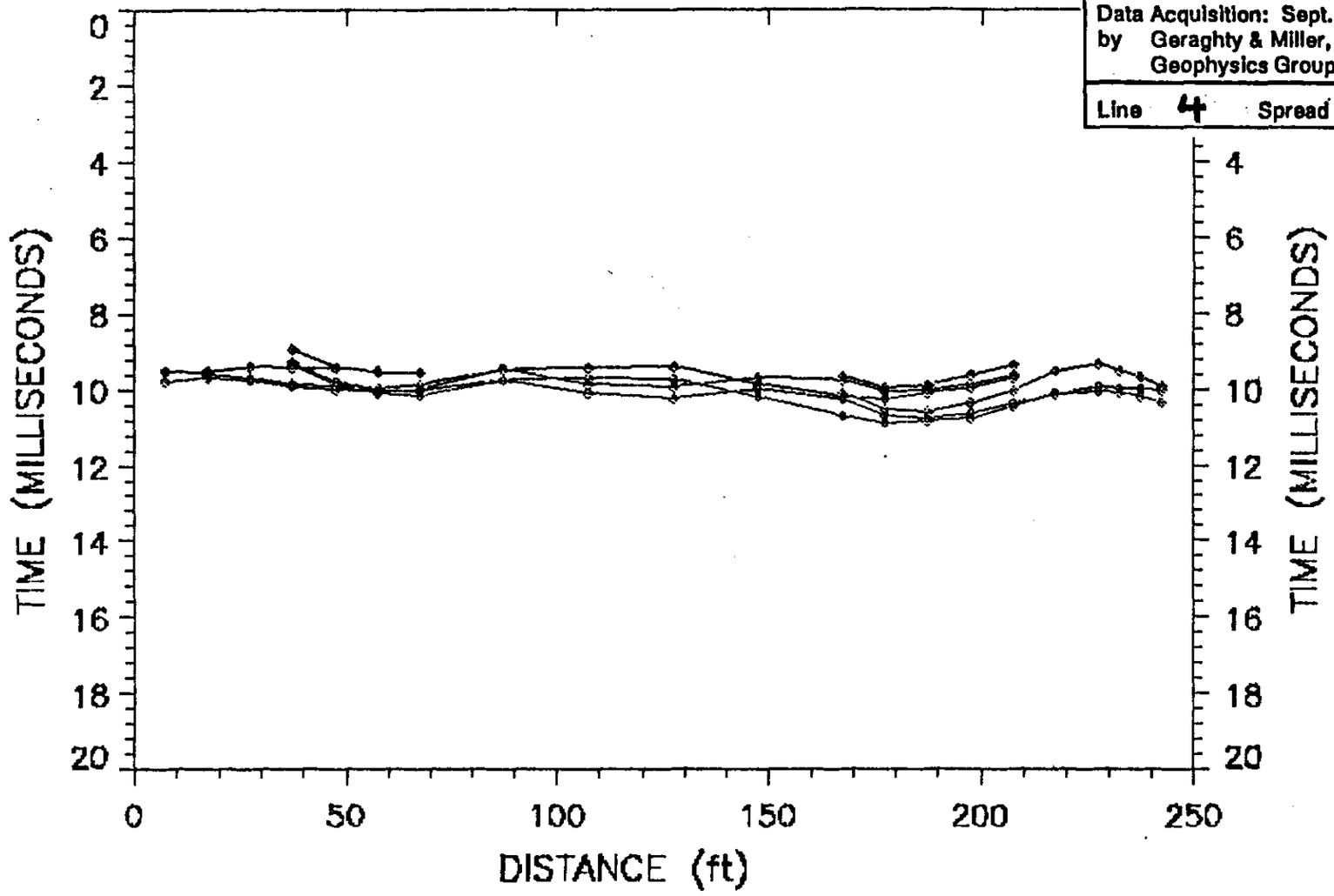


KOHLER LANDFILL

Refraction Seismic data
Time-depth plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 5

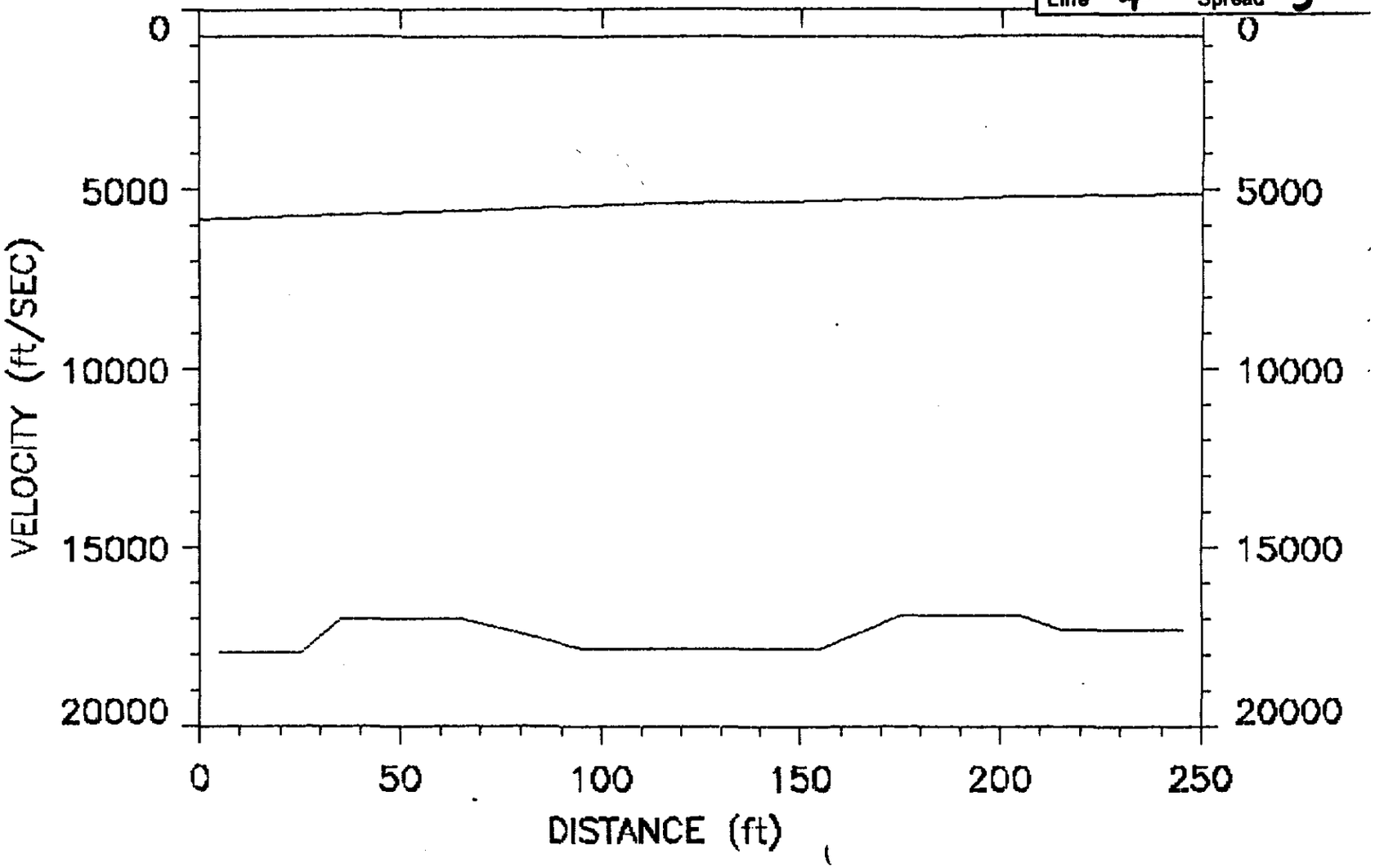


KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 5

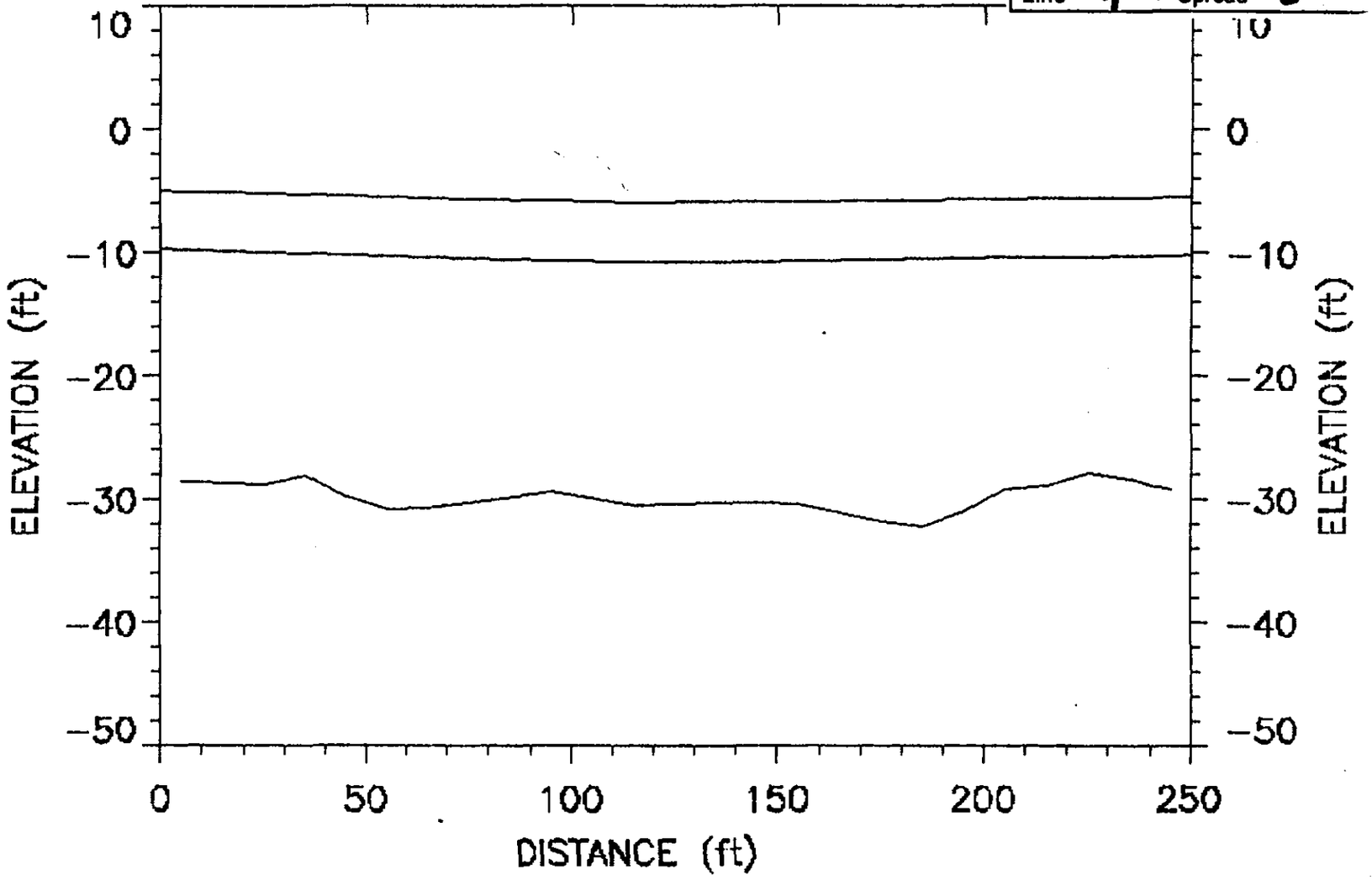


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by . Geraghty & Miller, Inc.
Geophysics Group

Line 4 . Spread 5

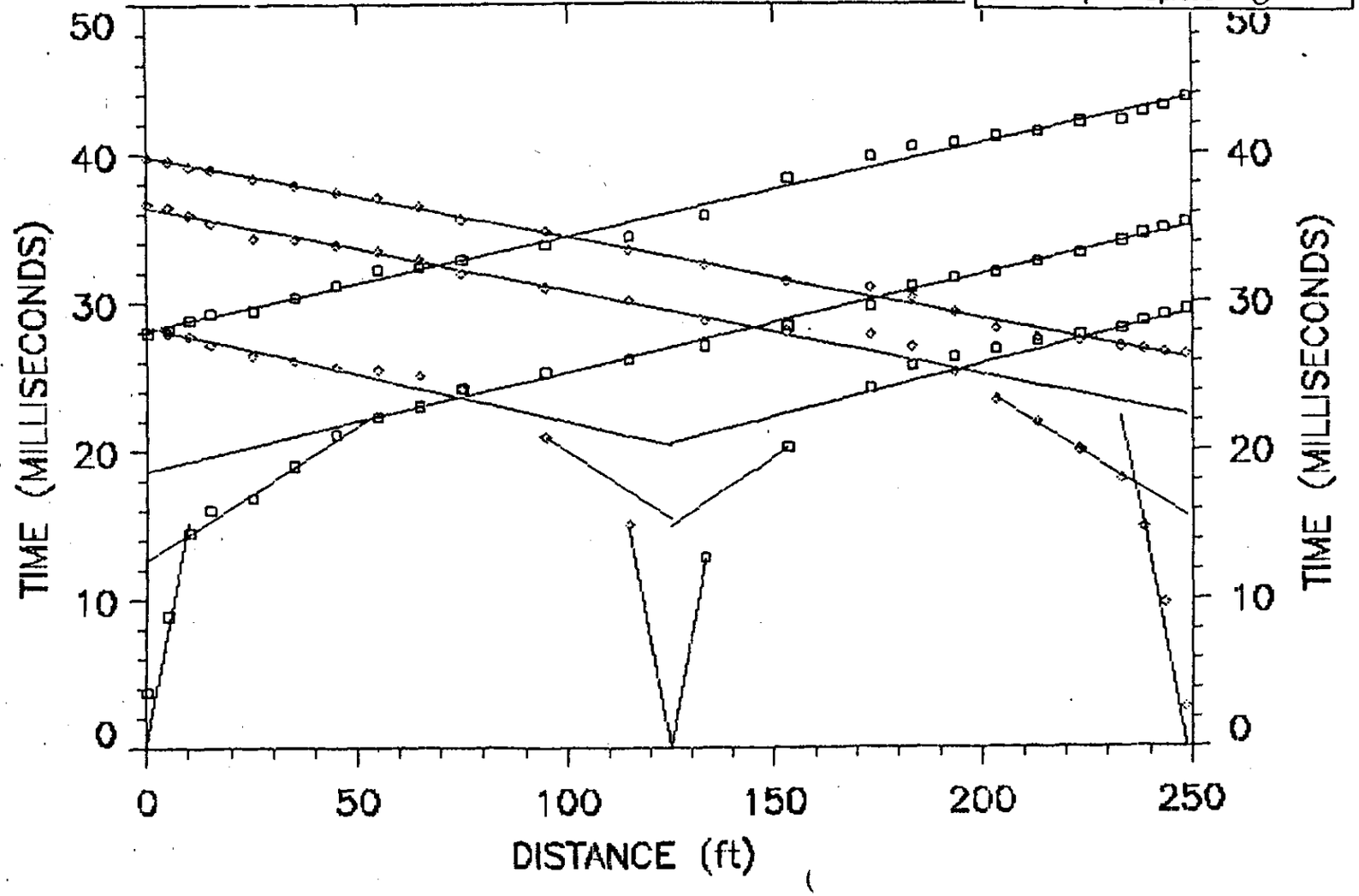


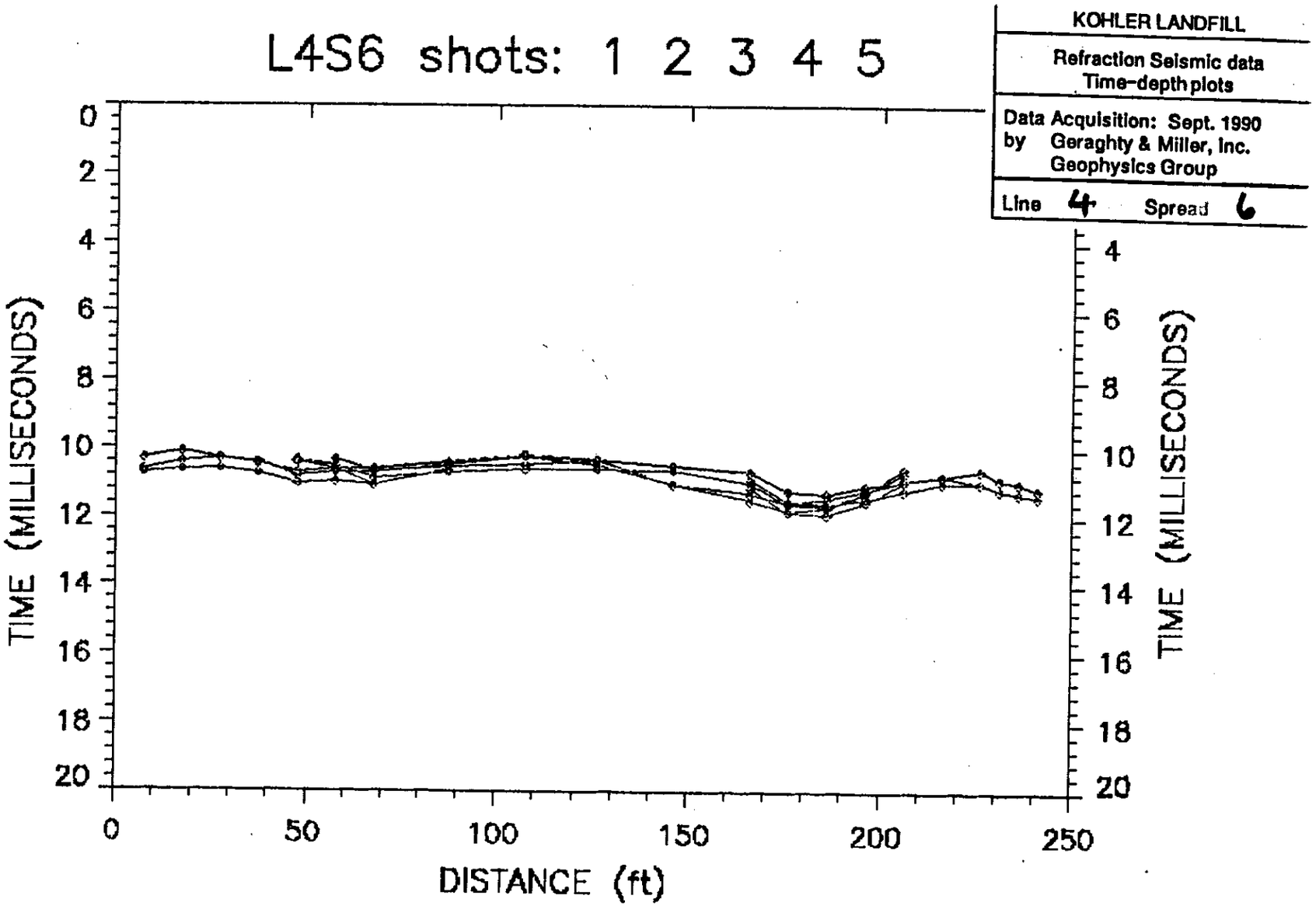
KOHLER LANDFILL

Refraction Seismic data
Time-distance plots

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 6



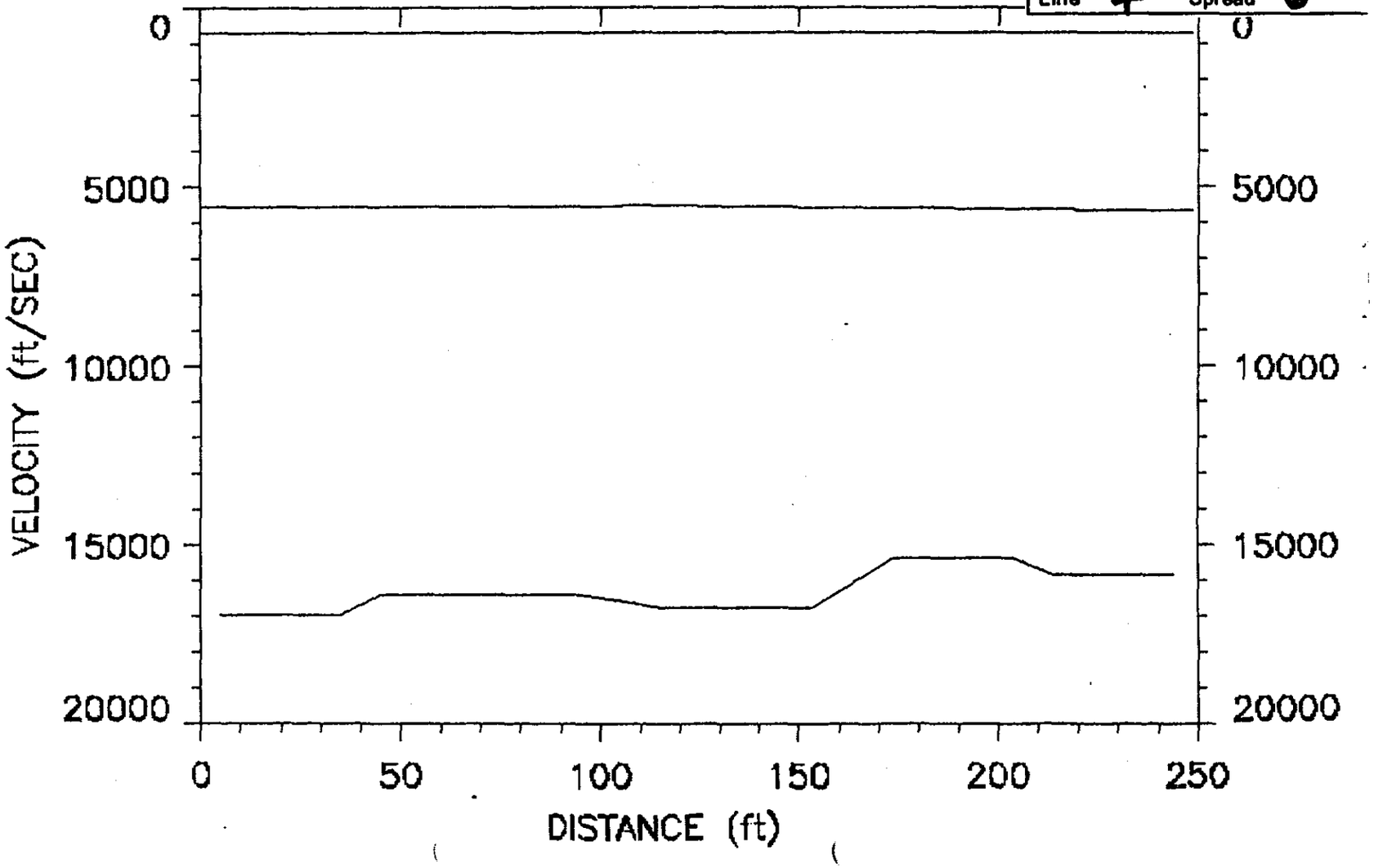

L4S6 shots: 1 2 3 4 5
KOHLER LANDFILL
Refraction Seismic data
Time-depth plots
Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group
Line 4 Spread 6
TIME (MILLISECONDS)
0
2
4
6
8
10
12
14
16
18
20
0
50
100
150
200
250
DISTANCE (ft)

KOHLER LANDFILL

Refraction Seismic data
Velocity plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 6

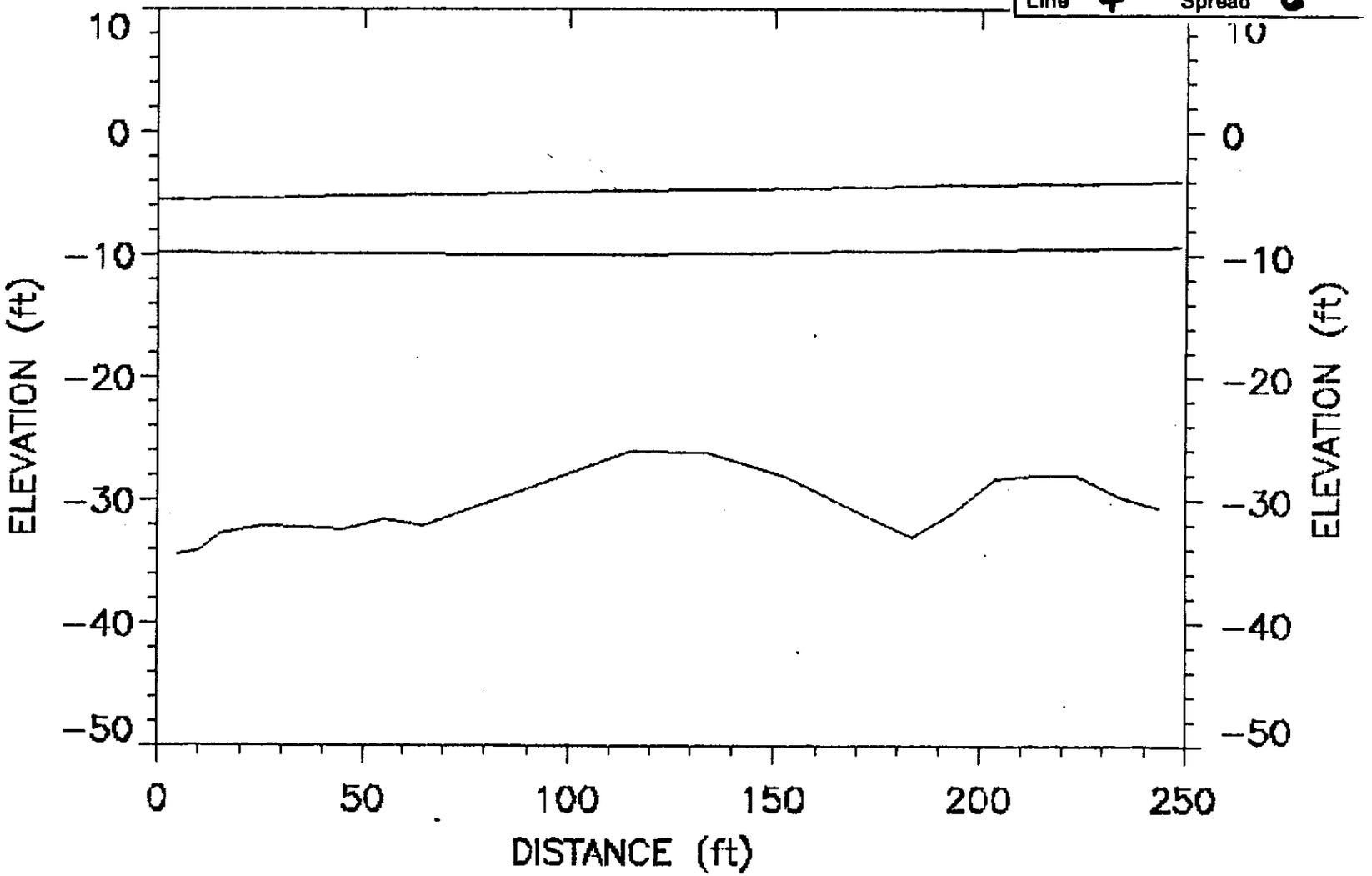


KOHLER LANDFILL

Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 6

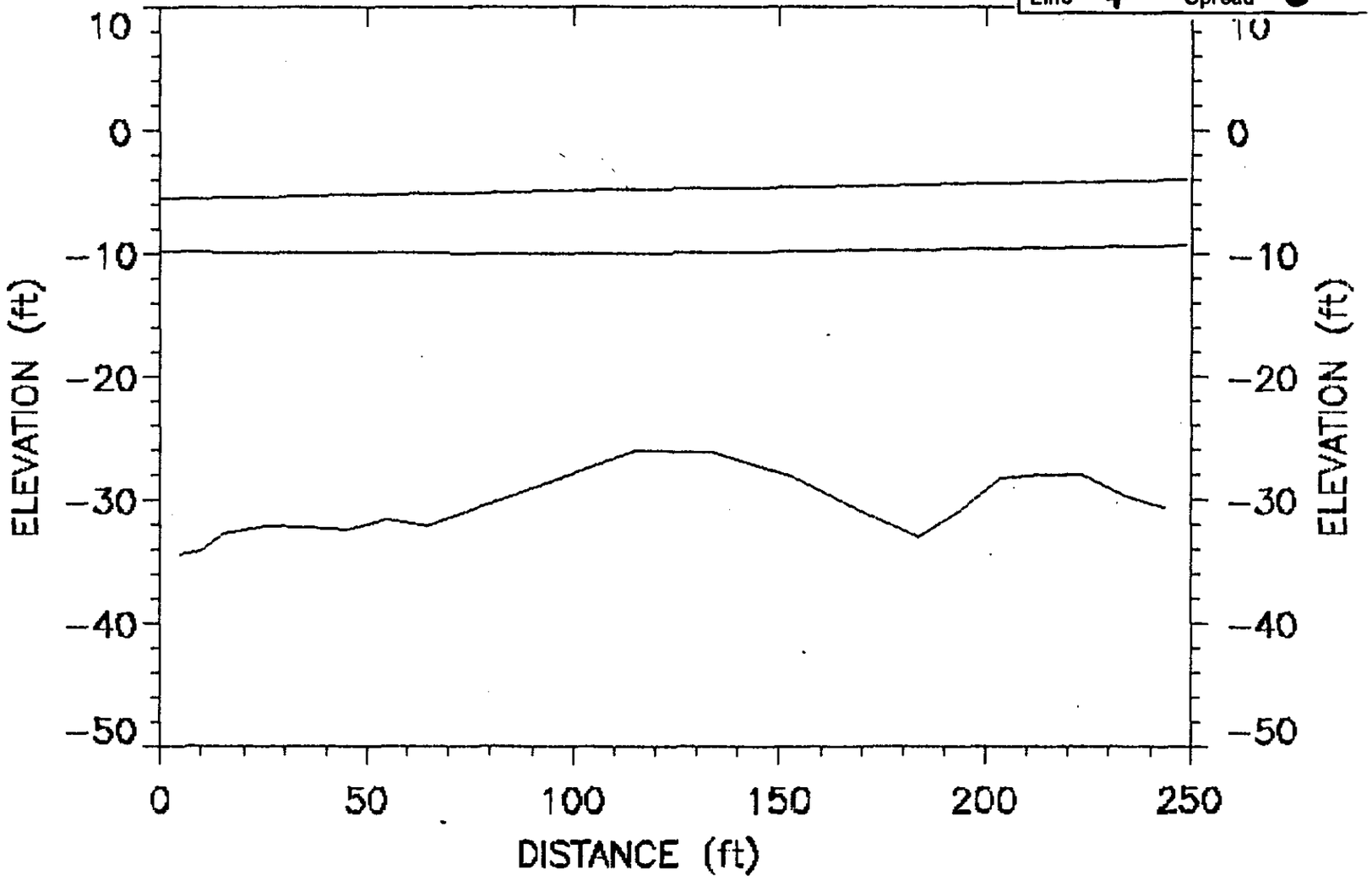


KOHLER LANDFILL

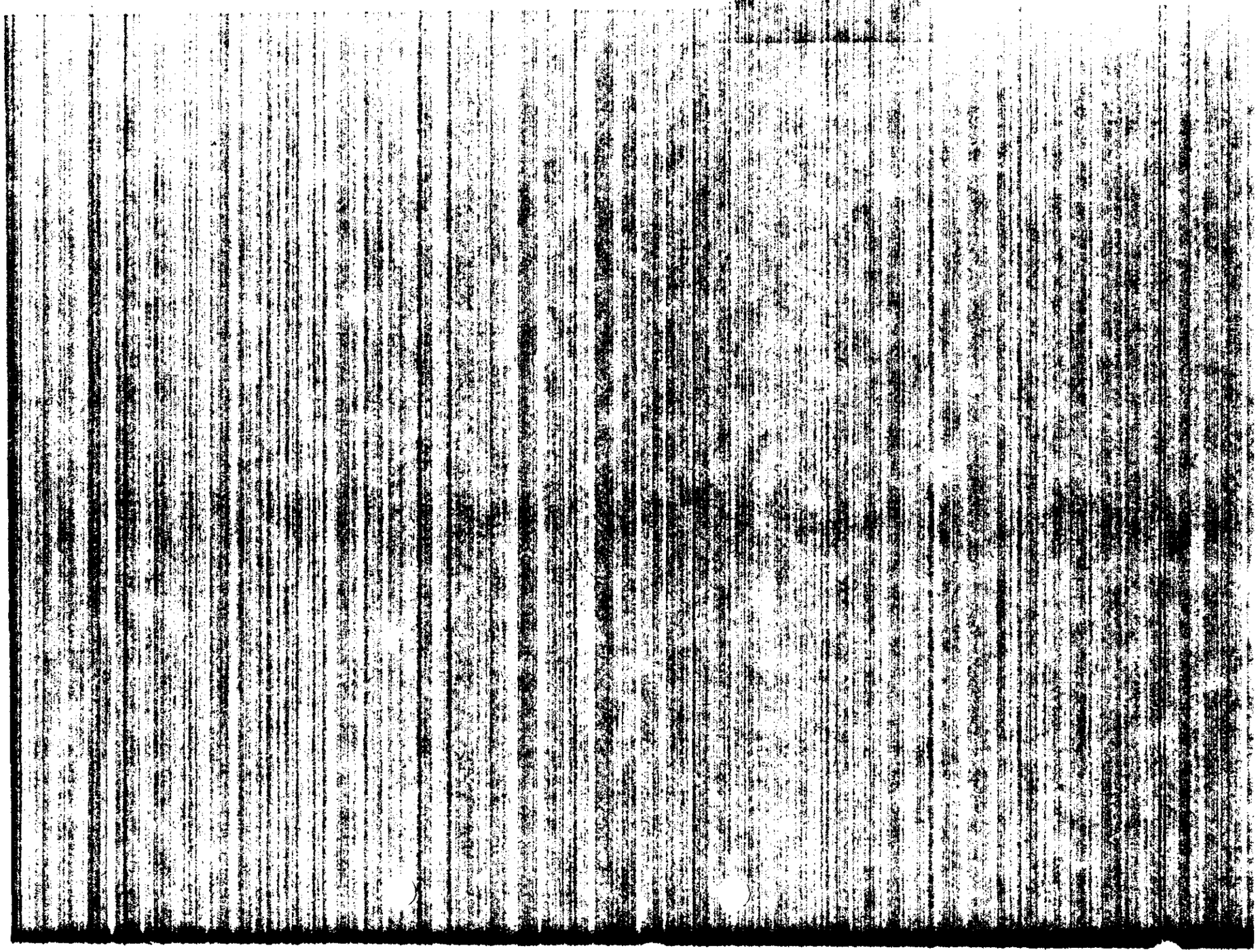
Refraction Seismic data
Depth plot

Data Acquisition: Sept. 1990
by Geraghty & Miller, Inc.
Geophysics Group

Line 4 Spread 6



APPENDIX E



GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB1 **Project/No.** KOHLER LANDFILL/WI16401 **Page** 1 **of** 1
Site
Location KOHLER, WI **Drilling Started** 10/2/90 9:40 **Drilling Completed** 10/2/90 11:55
Total Depth Drilled 8 feet **Hole Diameter** 8 inches **Type of Sample/ Coring Device** STAINLESS SPLITSPOON
Length and Diameter of Coring Device 2' X 2" **Sample Interval** CONTINUOUS
Land-Surface Elev. 648.68 feet X Surveyed __Estimated **Datum** MEAN SEA LEVEL
Drilling Fluid Used NONE **Drilling Method** HOLLOW STEM AUGER
Drilling Contractor WISCONSIN TEST DRILLING **Driller** GREGG **Helper** MIKE
Prepared By ROSS M. CREIGHTON **Hammer Weight** 140 **Hammer Drop** 30 *inches*

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.2	2-3-5-6	0	Dark brown sandy silt, with organics, dry, medium stiff.	0
2	4	1.5	2-5-9-10	0	Dark brown sandy silt with organics, medium stiff, moist, small amount of medium gravel.	0
4	6	1.4	5-4-4-5	0	Same as above, still moist.	0
6	8	1.2	6-4-3-5	0	0-0.3 same as above. 0.3-1.2 light brown silt, soft to medium stiff, wet at the color change.	0
8	10	1.3	4-4-3-5	0	Same as above.	0

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Environmental Services

SAMPLE/CORE LOG

Boring/Well SB2 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 2
Site
Location KOHLER, WI
Drilling Started 10/16/90 2:30 Drilling Completed 10/16/90 3:35
Total Depth Drilled 16 feet Hole Diameter 8 inches Type of Sample/ Coring Device SPLITSPOON
Length and Diameter of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface Elev. 638.10 feet X Surveyed Estimated Datum MEAN SEA LEVEL
Drilling Fluid Used NONE Drilling Method HOLLOW STEM AUGER
Drilling Contractor WISCONSIN TEST DRILLING Driller MR. JOE PERCY Helper MR. JOE NELSON
Prepared By KEITH MARQUARDT Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.6	4-4-8-12	5	2 inches silty sand, black sand intermixed with white chalklike substance, red consolidated sand and gray slag fragments. Wet at 1.6 feet.	2
2	4	1.3	14-21-14-32	8	3 inches white porcelain chips, black sand intermixed with white rocks all sizes, wet.	3
4	6	1.4	5-5-6-10	1	Black sand intermix with gray slag and pea gravel 5-7 mm, white and brown. Sample bottled.	3
6	8	2.0	7-2-2-5	9	HC like smell and appearance, 1 inch well saturated (90% water), black sand, loose, 6 inches brown clay, 4 inches gray-brown silty, fine sand.	2
8	10	1.8	2-1-1-4	9	6 inches gray sand, little silt, 2 inches brown clay, 1 inch gray sand.	2
10	12	1.3	4-1-1-6	13	1 foot brown clay, 4 inches gray fine sand, little silt.	0.5

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB2 **Page** 2 **of** 2

Prepared By KEITH MARQUARDT

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
12	14	1.8	5-7-7-7	10.	3 inches gray sand, 4 inches black sand, 6 inches tan silt, remaining red clay, gray mottling.	0.5
14	16	1.5	5-15-23-27	8	Dense, brown-red clay.	1

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Environmental Services

SAMPLE/CORE LOG

Boring/Well SB3 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 2
Site Drilling Drilling
Location KOHLER, WI Started 10/15/90 17:50 Completed 10/15/90 8:50
Total Hole Type of Sample/
Depth Drilled 18 feet Diameter 8 inches Coring Device STAINLESS SPLITSPOON
Length and Diameter
of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface
Elev. 641.00 feet X Surveyed Estimated Datum MEAN SEA LEVEL
Drilling Drilling
Fluid Used NONE Method HOLLOW STEM AUGER
Drilling
Contractor WISCONSIN TEST DRILLING Driller GREGG Helper MIKE
Prepared Hammer Hammer
By ROSS M. CREIGHTON Weight 140 Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	2.0	4-7-9-10	13.5	Black, fine, silty sand with consolidated fine sand and gray slag fragments, organics, loose to medium dense, moist.	0.2
2	4	0.6	3-2-4-5	19	Same as above, wet.	1.0
4	6	2.0	7-3-2-2	13	Same as above, wet.	4.5
6	8	2.0	2-1-1-2	17.5	Same as above, wet.	5.0
8	10	1.8	2-2-2-3	10.5	Same as above, wet.	3.0
10	12	1.8	1-2-3-3	11.5	Same as above, wet.	3.0
12	14	1.5	3-3-3-11	24	0-1.1 black fine silty sand, has iridescent sheen, 1.1-1.5 light brown silty, sandy, dry, stiff, very moist.	3.0
14	16	2.0	10-8-17-13	17	0-1.5 black fine sand with dry and coarse sand fragments, (may be sluff from auger), 1.5-2.0 light brown sandy, silty clay, medium stiff, very moist.	3.5

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Environmental Services

SAMPLE/CORE LOG

Boring/Well SB3 **Page** 2 **of** 2

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
16	18	1.8	8-9-11-13	21	Light brown sandy, silty clay, sandy at top of spoon, clayey at bottom, stiff-very stiff, very moist.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB4 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 4
Site Location KOHLER, WI
Drilling Started 10/8/90 11:25 Drilling Completed 10/9/90 12:10
Total Depth Drilled 60 feet Hole Diameter 8 inches Type of Sample/ Coring Device STAINLESS SPLITSPOON
Length and Diameter of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface Elev. 657.25 feet X Surveyed Estimated Datum MEAN SEA LEVEL
Drilling Fluid Used NONE Drilling Method HOLLOW STEM AUGER
Drilling Contractor WISCONSIN TEST DRILLING Driller GREGG Helper MIKE
Prepared By ROSS M. CREIGHTON Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.3	6-7-8-10	0	Light brown, clayey silt with organics and small gravel, medium stiff, dry.	0
2	4	2.0	6-5-5-4	0	0-0.8 light brown silty clay with small to medium gravel, medium stiff, moist 0.8-2.0 black fine sand with blue vitreous crystalline matter, loose, dry.	0
4	6	1.6	2-2-3-1	N.C.	Light brown silt and clay, and black firm sand, reworked material, mixed throughout spoon, soft to medium stiff, moist.	0
6	8	1.5	2-1-4-21	45	Same as above with asphalt fragments, moist.	0
8	10	1.2	3-16-5-2	300	Same as above, very mixed, moist, soft to medium stiff (no sample collected in glass jars).	0
10	12	1.8	8-4-3-3	300	Mixed clay and silt with fine sand. Asphalt fragments 0.2-0.4 (no sample collected in jars).	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB4 **Page** 2 **of** 4

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
12	14	1.7	5-3-1-2	35	0-1.3 mixed silt, clay, fine sand and asphalt fragments. 1.3-1.7 black firm sand with gray slag, both intervals moist.	0
14	16	2.0	2-2-3-4	300	0-0.6 black fine sand as above, 0.6-2.0 greenish to gray silt and clay, mixed, medium stiff, moist.	0
16	18	2.0	4-4-2-3	250	Black, greenish gray silt, clay and fine sand with less than 1" light gray powdery lenses throughout the also green material. Medium stiff, very moist.	0
18	20	1.8	1-1-2-2	250	Black, very soft, clay? has odor, light brown clay lense 1.7-1.8, very moist.	1.0
20	22	2.0	1-1-3-3	35	As above, no jars collected 1.6-2.0 light brown silty clay with small gravel, soft very moist.	0.0
22	24	2.0	1-1-3-4	60	0-1.1 black clay soft and very moist. 1.1-0.4 olive green medium sand, loose light gray to white pasty sludge material. WET.	0.0
24	26	2.0	1-3-4-4	90	Black fine sand with two white and gray sludge lenses approximately 1-2" thick moist, soft, grass and roots also present.	0.5

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB4 **Page** 3 **of** 4

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
26	28	1.0	8-13-23-35	N.C.	Black fine sand with lenses of yellow and purple, soft, moist.	3.0
28	30	1.2	6-8-11-12	20	Black fine sand with medium to coarse sand sized particles of vitreous glass like crystalline substance, fragments of rust colored consolidated fine sand, and gray slag, wood also present, moist.	3.0
30	32	1.4	7-19-17-13	N.C.	Black fine sand with yellow and rust colored consolidated fine sand fragments.	3.0
32	34	0.5	Pushed with cathead	90	Black fine sand with slag.	8.0
34	36	2.0	8-20-12-11	30	Black fine sand with gray lenses and slag and metal fragments, loose to medium stiff, moist.	3.0
36	38	2.0	4-4-3-4	10	0-1.6 black sand as above, with gray to white pasty lenses. 1.6-2.0 white pasty substance.	2.0
38	40	1.6	5-7-16-15	20	Black sand with lenses as before, very moist.	18
40	42	1.5	3-7-11-12	25	Same as above.	10
42	44	1.9	6-7-9-9	15	Same as above.	13
44	46	1.3	7-11-12-16	20	Same as above.	70

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB4 **Page** 4 **of** 4

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
46	48	1.2	10-10-21-27	N.C.	Black fine sand with gray paste or sludge lenses, submitted as MS-MSD sample.	300
48	50	1.6	4-7-12-42	200	0-1.4 black firm sand, soft very moist to wet, 1.4-1.6 light brown to yellow medium to coarse sand, small gravel and other unidentifiable particles, wet.	2
50	52	2.0	22-17-17-19	200	0-1.2 black sand as above 1.2-1.6 gravel and sand sized particles as above, 1.6-2.0 black stained silty clay with organics, stiff, all intervals wet.	6
52	54	1.4	12-16-13-14	30	0-0.7 black fine sand, 0.7-1.4 black yellow and gray fine sand to medium gravel, mixed, soft, wet.	5
54	56	2.0	7-12-16-17	40	0-1.8 black stained fine sand to medium gravel, loose, wet. 1.8-2.0 light brown to red clay, stiff to very stiff, moist.	2
56	58	1.1	6-9-12-13	13	Light brown silty clay (mostly clay) with rust blebs, very stiff, moist.	0.5
58	60		4-4-6-8	6	Light brown slightly silty clay as above very stiff, moist.	0

N.C. = Not enough sample to complete measurement.

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB5 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 5
Site Drilling Drilling
Location KOHLER LANDFILL, SHEBOYGAN CO. Started 10/11/90 9:30 Completed 10/11/90 16:00
Total Hole Type of Sample/
Depth Drilled 58 feet Diameter 8 inches Coring Device SPLITSPOON
Length and Diameter
of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface
Elev. 665.46 feet X Surveyed Estimated Datum MEAN SEA LEVEL
Drilling Drilling
Fluid Used NONE Method HOLLOW STEM AUGER
Drilling
Contractor WISCONSIN TEST DRILLING Driller GREGG Helper MIKE
Prepared Hammer Hammer
By ROSS M. CREIGHTON Weight 140 Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.3	3-6-9-9	0	0-0.6 light brown silty clay with organics, medium stiff, moist. 0.8-1.3 black fine sand with slag fragments, medium stiff, moist.	0
2	4	1.9	6-7-12-18	2	0-0.3 light brown silty clay as above 0.3-1.9 silty clay as above mixed with black fine sand as above.	0
4	6	2.0	12-7-6-5	7	0-0.4 silty clay mixed with black fine sand. 0.4-2.0 black fine sand with slag and porcelain fragments, also maroon colored consolidated fine sand fragments.	0
6	8	1.9	3-3-2-2	7	Black fine sand with gray slag fragments.	0.5
8	10	1.2	2-2-2-2	4.5	Black fine sand with gray sludge lense (1" thick middle of spoon) yellow consoldiated sand fragments loose, dry, slightly moist.	3

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB5 **Page** 2 **of** 5

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
10	12	1.0	2-3-5-8	7	Black fine sand with porcelain and light olive green consolidated fine sand fragments. Gray sludge lens 1/4" thick at middle of spoon.	1.0
12	14	0.6	2-4-4-16	7	Black fine sand with porcelain fragments.	7
14	16	0.5	15-7-8-9	18	Black fine sand with gray slag, large >3" fragment prevented recovery last 2 spoons.	4.0
16	18	1.3	4-2-1-2	9	Black fine sand with porcelain fragments and rubber, loose, dry.	6.0
18	20	0.5	5-3-4-3	5	Black fine sand with porcelain fragments.	2.0
20	22	1.2	4-4-4-4	5.5	0-0.5 black fine sand with porcelain 0.5-0.8 light brown reworked silty clay material, 0.8-1.2 black sand as above.	3.0
22	24	1.8	5-4-4-8	2	Black fine sand with yellow and gray consolidated fine sand fragments.	1.0
24	26	1.5	5-5-7-11	4	0-0.9 black fine sand with porcelain fragments. 0.9-1.5 light brown to black silty clay with organics, fine black sand and slag fragments.	1.0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB5 **Page** 3 **of** 5

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
26	28	1.7	22-24-8-11	3	0-0.6 light brown silty clay mixed with black fine sand and gray slag fragments. 0.6-1.7 black fine sand with yellow, and gray consolidated fine sand and slag fragments, also lenses of gray fine sand.	5.0
28	30	1.8	3-2-2-2	5	0-1.0 black fine sand with gray slag fragments loose and moist. 1.0-1.8 black stained fine sandy silt, soft, moist. slag fragments.	0
30	32	1.7	2-2-3-6	2	Black silt and fine sand mixed, gray wet sludge lenses mostly slag fragments at 1.0-1.2 also green stained particles of waffer board found.	15
32	34	1.6	12-18-28-29	50	Black fine silty sand with slag fragments, medium dense, dry to slightly moist.	30
34	36	1.8	18-30-44-45	50	Same as above.	35
36	38	2.0	6-9-10-20	20	Same as above.	3.0
38	40	2.0	6-8-10-14	20	Same as above.	1.0
40	42	2.0	10-28-29-37	30	Black fine silty sand, gray silt size sludge lenses at 1.7-1.9, loose to medium dense, very moist.	5.0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB5 **Page** 4 **of** 5

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
42	44	2.0	8-10-16-14	22	Black fine sand as above, loose and moist to very moist.	3.0
44	46	2.0	8-10-10-9	30	1-1.4 black sand as above, gray silt, possibly sludge very moist to wet.	
46	48	2.0	6-4-2-3	20	0-0.7 black fine sand with silty sludge layers <1", black and gray stained silty clay with fine sand mixed in, reworked, soft, wet.	7.0
48	50	2.0	8-12-23-23	60	Black fine to coarse sand with small to medium gravel sized slag fragments.	14.0
50	52	2.0	17-16-12-12	35	Same as above 0-1.8, 1.8-2.0 black loose and wet stained silty clay with orgnaics, very stiff, very wet.	7.0
52	54	2.0	8-11-13-14	45	0-1 black gravely sand, as above 1.0-2.0 light brown silty sand with samll to medium gravel, medium dense, wet.	20
54	56	1.0	6-8-14-16	5	0-0.8 light gray to white silty fine to coarse sand and small to medium well rounded gravel loose, wet. 0.8-1.0 red clay, with rust colored mottling, very stiff, moist.	1.0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB5 **Page** 5 **of** 5

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
56	58	1.3	8-11-14-15	9	Light brown to gray clay with rust and light gray mottling very stiff, moist.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB6 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 4
Site Drilling Drilling
Location KOHLER LANDFILL, SHEBOYGAN CO. Started 10/12/90 8:00 Completed 10/12/90 12:30
Total Hole Type of Sample/
Depth Drilled 50 feet Diameter 8 inches Coring Device SPLITSPOON
Length and Diameter
of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface
Elev. 658? feet Surveyed X Estimated Datum MEAN SEA LEVEL
Drilling Drilling
Fluid Used NONE Method HOLLOW STEM AUGER
Drilling
Contractor WISCONSIN TEST DRILLING Driller JOE PERCY Helper JOE NELSON
Prepared Hammer Hammer
By ROBERT GRAZIANO Weight 140 Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.3	12,16,17,21	0	Clay, brown to dark brown, with a little silt and gravel.	0
2	4	1.7	5,15,25,30	0.5	2-2.5 clay (as above), 2.5-4.0 sand, dark brown to black, with coarse sand and gravel, slag fragments, soft gray sludge like fragments.	1-5
4	6	1.1	5,5,5,10	2.5	Clay, brown to black, with black sand and gravel fragments, porcelain fragments.	0-1
6	8	0.5	16,100-refused	0	Clay, brown, silty, with large procelain fragment, caused spoon refusal.	0-1
8	10	1.0	15,11,9,14	1.5	Sand, black to dark brown, with gravel and procelain fragments.	0-1
10	12	0.8	7,15,16,8	1.0	Sand, black, coarse, with brick and procelain fragments.	0-1

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB6

Prepared By ROBERT GRAZIANO

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
12	14	1.6	8,9,11,19	4.0	Sand, black to tan to gray, well sorted, some clay: silt, wood fragments porcelain fragments.	0-1
14	16	1.3	8,5,6,11	1.0	Sand, black and tan, well sorted, little gravel.	1-5
16	18	1.5	46,26,32,50	5.0	Silt, black, fine, well sorted.	0-1
18	20	0.5	16,100+	2.5	Silt, black, well sorted, with rock and porcelain fragments, refusal from metal or porcelain debris.	1-10
20	22	1.8	21,27,35,40	3.0	Silt, black, well sorted, with gravel and some clay (3 inch spoon).	1-15
22	24	1.7	32,26,39,33	6.0	Silt, black, well sorted, gray with brown color banding, moist (2 inch spoon).	1-17
24	26	1.9	27,35,42,39	4.0	24-25 black silt as above, 25-25.7 clay, brown, with gravel, roots, 25.7-26 sand, black coarse with gravel and slag debris.	1-6
26	28	1.1	17, 100	NS	26-27 silt, black with some clay, 27-28 sand dark brown, coarse, with some gravel and slag debris. pounded 2 inch spoon,	10-44

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB6 **Page** 3 **of** 4

Prepared By ROBERT GRAZIANO

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
28	30	2.0	62,45,37,32	3.0	Sand, black, fine, well sorted, trace gravel.	5-14
30	32	0.3	100+	4.0	Silt, black with gravel rock jammed in front of spoon caused low recovery.	0
32	34	1.0	7,6,8,14	11.0	Sand, black to brown, with coarse sand: gravel, wood debris, hard rubber debris, brick debris.	5-20
34	36	1.3	25,35,45,39	NS	Silt: sand, black, tan and dark brown, gravel rock fragments, white brick? material.	10-45
36	38	2.0	25,35,45,39	12.0	Sand, black, fine, well sorted (very consistent).	10-24
38	40	2.0	25,25,17,21	12.0	Sand, same as above with occasional gray banding (very consistent).	3-17
40	42	2.0	17,10,9,14	16.0	Sand, same as above, with cloth debris.	10-31
42	44	1.0	62,100	5.0	Sand, black, fine, with cloth debris, metallic?, slag fragments, some gravel with yellow stained sand.	3-14
44	46	1.4	8,15,30,29	1.0	Sand, black, coarse with gravel and rock fragments, (water table).	0-1
46	48	1.4	16,22,24,28	2.0	46-46.8 sand, black, coarse with gravel, 46.8-47.5 sand and gravel, light brown, 47.5-48 clay, red brown, with trace gravel red brown/gray mottled structure in clay (native?)	0.1

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB6

Prepared
By ROBERT GRAZIANO

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
48	50	1.8	14,12,21,23	1.5	Clay, brown, with mottled gray brown structure, native till, trace sand, gravel.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB7 **Project/No.** KOHLER LANDFILL/WI16401 **Page** 1 **of** 4
Site Location KOHLER LANDFILL, SHEBOYGAN CO. **Drilling Started** 10/11/90 9:30 setup **Drilling Completed** 10/16/90
Total Hole Depth Drilled 54 feet **Diameter** 8 inches **Type of Sample/ Coring Device** 2' SPLITSPOON
Length and Diameter of Coring Device 2' X 2" **Sample Interval** 2' CONTINUOUS
Land-Surface Elev. 657? feet Surveyed X Estimated **Datum** MEAN SEA LEVEL
Drilling Fluid Used NONE **Drilling Method** HOLLOW STEM AUGER
Drilling Contractor WISCONSIN TEST DRILLING **Driller** JOE PERCY **Helper** JOE NELSON
Prepared By ROBERT GRAZIANO **Hammer Weight** 140 **Hammer Drop** 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.7	10,14,16,20	10.0	0-1 clay, brown with little silt, 1-1.7 sand, black, fine with minor silt.	0
2	4	1.8	15,35,37,11	3.0	2-3.2 sand, black to dark brown, with some clay, silt and gravel, 3.2-3.8 gray foundry sand with some silt.	0
4	6	1.1	12,16,6,5	5.0	Sand, black, fine with porcelain fragments.	0
6	8	1.3	6,4,3,3	4.0	Sand, black, with clay: silt and rock fragments, debris, procelain fragments.	0
8	10	1.0	5,3,4,4	5.0	Sand, black with yellow staining, gray soft fragments, porcelain fragments.	1-2
10	12	1.2	4,4,3,4	6.0	Sand, black with red brown staining, some wet clay with gray sludge like material procelain fragments.	1-2

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB7

Prepared By ROBERT GRAZIANO

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
12	14	1.4	3,4,8,8	25.0	Clay, dark brown to black, with some silt and sand, some yellow stained sand fragments, gray fine sand had highest HNU.	1-6
14	16	1.0	6,6,9,12	3.0	Silt, black with some sand and clay with procelain fragments.	1-2
16	18	1.8	4,4,6,7	NS	Sand, black with yellow, gray, and red brown staining, some clay: silt, porcelain, wood, and gravel fragments, soft gray (porcelain like) material.	1-6
18	20	1.3	10,15,18,24	9.0	18-18.7 sand, black, with gravel, porcelain debris, 18.7-19.3 silt, gray brown, with little clay (native?).	1-8
20	22	1.8	8,13,17,14	3.0	Silt, gray brown, with some clay, sand and gravel, rock fragments increasing clay toward bottom.	0
22	24	1.8	3,4,4,8	1.0	Clay, brown, with some silt and trace sand: gravel (native till?).	0
24	26	1.8	3,4,3,10	1.0	Clay, brown to black, silty with little gravel.	
26	28	1.8	18,25,54,50	2.0	26-27.1 clay, brown, with silt sand and gravel, 27.1-27.8 sand, black, with gravel foundry sand.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB7

Prepared By ROBERT GRAZIANO

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
28	30	1.0	100-.2	5.0	Sand, black with some silt and clay, large procelain fragment at bottom.	0
30	32	1.0	6,7,10,12	2.0	Sand, black to dark brown, little clay and silt, porcelain debris.	1-2
32	34	0.8	6,9,13,15	3.0	Sand, black, with little silt (3 inch spoon).	0-1
34	36	0.8	8,10,11,17	6.0	Sand, wet, black, with little silt, gray soft sludge like material.	0-1
36	38	0.8	6,21,82,25	6.0	Sand, dry black, with some gravel, large procelain fragments (3 inch spoon).	0-1
38	40	1.0	21,28,14,14	14.0	Sand (dry), black, with some gravel, porcelain brick, metal, dark red brown sandy fragments (3 inch spoon).	0-1
40	42	0.8	100-.6	6.0	Sand-same as 38-40.	1-4
42	44	1.8	10,14,13,10	10.0	42-43.5 sand, black to dark brown, with yellow and red brown stained sand fragments, gravel, glass (3 inch spoon), 43.5-44 brown clay with some silt and gravel.	1-3
44	46	1.0	6,7,7,5	14.0	Sand, black to dark brown with yellow or red staining, procelain, gravel, Foundry debris, wet below 46.5.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB7

Prepared By ROBERT GRAZIANO

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
46	48	0	100- refused	NS	Metal fragments, no recovery, sand and gravel debris.	0
48	50	1.9	8-9-11-11	8.0	48-49.2 sand, black, wet, silty with some gravel. 49.2-50 silty clay, gray brown, rust (native?).	0
50	52	1.6	88,78,47,38	6.0	Silt, dark brown to tan, with some clay, gravel.	0
52	54	1.7	41,21,22,28	10.0	Clay, gravel, brown, with little silt, sand and gravel gray brown, mottle structure within clay (native) till.	0
54					End of Boring.	

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB8 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 5
Site Drilling Drilling
Location KOHLER, WI Started 10/15/90 1:30 setup Completed 10/16/90
Total Hole Type of Sample/
Depth Drilled 62 feet Diameter 8 inches Coring Device SPLITSPOON
Length and Diameter
of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface
Elev. 658.45 feet X Surveyed Estimated Datum MEAN SEA LEVEL
Drilling Drilling
Fluid Used NONE Method HOLLOW STEM AUGER
Drilling
Contractor WISCONSIN TEST DRILLING Driller MR. JOE PERCY Helper MR. JOE NELSON
Prepared Hammer Hammer
By KEITH MARQUARDT Weight 140 Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.5	6-9-14-14	0	6 inches brown clay, 4 inches brown silty sand, clay over 4 inches white silicon chalk like, dry.	0
2	4	1.0	8-4-9-12	0	1 inch black silty sand, intermixed with porcelain-white, dry.	0
4	6	1.8	8-10-13-11	0	6 inches black clayey sand, 6 inches black sand, 1 foot white-gray chalky putty like material, moist.	0
6	8	0.6	12-10-11-9	0	black sandy clay, no recovery, just whats in shoe moist.	
8	10	0.8	8-10-15-10	0	4 inches white chalk silicon like, moist, 1.5 inches tan fine sand, 4 inches black fine sand, loose, dry.	0
10	12	0.4	10-12-8-9	0	No recovery.	
12	14	0.3	10-7-4-7	0	Black sand intermixed with white pebbles, dry.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB8

Prepared By KEITH MARQUARDT

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
14	16	1.0	12-15-17-14	0	3 inches black silty clay sand, moist, 4 inches black coarse sand with blue porcelain with white chalk, putty like material, dry.	0
16	18	1.0	14-10-16-15	0	Plastic sheeting in shoe, black sand intermix with slag and white chalk-putty like material, dry.	0
18	20			0	No recovery, Shelby tube 3:25 p.m.	
20	22	1.8	10-9-9-11		Black coarse loose sand, dry, intermix with white porcelain chunks.	0
22	24	0.8	10-100-Refused	0	Black sand-dry, intermix with white rock and yellow consolidated sand, dry. porcelain with white chalk, putty like, dry. Plastic sheeting in shoe.	0
24	26	1.2	30-16-8-8	0	1 inch white chalk like, 2 inch gray slag, dry, 1 inch brown sand, loose, dry, 6 inches black sand, moist with yellow consolidated sand. Sample taken for laboratory, no Ziploc.	0
26	28	0.4	80-Refused	0	1 inch white consolidated rock-morter, 3 inches gray shiny metallic like rock.	0
					Auger refusal at 26 feet, pounded 2 inch spoon, encounter gray metallic slag, put on a hydrofrac bit.	

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB8

Prepared By KEITH MARQUARDT

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
28	30	1.9	10-14-13-15	0	5:15 p.m.- 6 inches black sand, white rock, 6 inches brown sandy clay, over 4 inches black sand, 2 inches coarse, moist sand.	0
30	32	1.0	13-23-21-10	0	Black sand, moist, 1 1/2 inch concrete.	0
32	34	2.0	5-3-8-14	0	6 inches black sand, 4 inches black silt, 1 1/2 inch tan silt, wet outside gray, feels putty like dry.	0
34	36	2.0	16-23-47-52		2 inches black sand, 6 inches intermix with wood fibers, brown silty sand, 1.5 inch black sand intermix with yellow, coarse brown consolidated sand particles and white porcelain, dry.	0
36	38	2.0	21-14-14-15	0	Black sand intermix with yellow, orange and pink sand crystals, 1 inch mortar plug at 36.5 feet, dry.	0
38	40	2.0	10-16-19-14	0	Black sand, 1 1/2 inch layer of brown crystal sand at 39 feet, 1-1 inch layer of yellow crystal sand at 39.5 feet, dry.	0
40	42	2.0	16-21-13-18	0	Black sand, 2 inch yellow/ rust sand layer 41.5 feet, black sand white porcelain chips between, 3 inches yellow/rust sand layer 41.8, dry.	

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB8 Page 4 of 5

Prepared
By KEITH MARQUARDT

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
Ended 10/5/90 6:00 p.m. - Began 10/16/90 7:30 a.m.						
42	44	1.0	9-12-17-14	0	Black silty sand intermix with white porcelain and yellow orange consolidated sand crystals, dry.	0
44	46	1.0	4-14-12-9	0	6 inches black coarse sand, very moist, 6 inches black sand intermix with gray slag, orange sand consolidated crystals and white gravel, 3-5 mm, coarser in appearance due to intermix.	0
46	48	1.5	22-16-20-21	0	Black sand intermix with same as above, moist on top, sample taken-bottled.	0
48	50	.8	18-22-21-19	0	Black sand moist top 4 inches, intermi with green porcelain, white porcelain, consolidated brown sand crystals.	0
50	52	1.3	15-15-15-15	0	Black sand intermix with white chalky, white porcelain, yellow consolidated sand, brown consolidated sand, metallic slag, dry.	0
52	54		16-14-20-19	0	Black sand intermix with white porcelain chips, tan, yellow and orange consolidated sand, dry.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB8 Page 5 of 5

Prepared By KEITH MARQUARDT

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
54	56	1.5	19-17-14-16	0	8 inches black sand, 1/2 inch white porcelain, 1 inch black sand, 1 inch tan/brown consolidated bricklike, 5 inches black sand with slag; all dry.	0
56	58	2.0	27-50-52-60	0	Very dense, 6 inches black sand, 3 inches gray concrete like, 4 inches black sand, 2 inches black lava like ash, 6 inches sand intermix layer of orange and a layer of yellow sand.	0
58	60	2.0	16-15-15-17	0	4 inches black sand, 6 inches brown clay, 4 inches brown sandy clay, 4 inches brown sand, moist.	0
60	62	2.0	4-6-2-2	0	Brown fine sand, little silt, trace clay, wet.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB9 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 2
Site Location KOHLER, WI
Drilling Started 10/2/90 13:00
Drilling Completed 10/2/90 15:30
Total Depth Drilled 22 feet
Hole Diameter 8 inches
Type of Sample/ Coring Device STAINLESS SPLITSPOON
Length and Diameter of Coring Device 2' X 2"
Sample Interval 2' CONTINUOUS
Land-Surface Elev. 646.25 feet X Surveyed __Estimated
Datum MEAN SEA LEVEL
Drilling Fluid Used NONE
Drilling Method HOLLOW STEM AUGER
Drilling Contractor WISCONSIN TEST DRILLING
Driller GREGG
Helper MIKE
Prepared By ROSS M. CREIGHTON
Hammer Weight 140
Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.2	2-9-13-15	0	Dark brown silt with organics, some light brown clay intermixed with the silt, stiff, dry.	0
2	4	1.4	4-10-8-22	12	0-0.5 silt and clay as above. 0.5-1.4 foundry sand - like material with glass-like sand fragments loose, dry.	1.5
4	6	1.4	1-1-1-1	0.5	Mixed fill, clay (stiff) and silt (soft to medium stiff). Very slight, very fine sand, very moist to wet, (probably water table)	0
6	8	0.9	2-1-1-1	0	Mixed clay and silt as above, trace slag fragments, medium stiff to stiff, wet.	0
8	10	0.8	2-2-3-4	0	0-0.4 mixed clay and silt as above, wet. 0.4-0.8 black organic material very light density, soft and spongy, very moist.	0
10	12	0.8	3-7-10-13	0	Clay, silt and organic black substance as above. Light brown to red fine sand and small gravel 0.5-0.8 wet.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB9

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
12	14	0.9	4-5-6-6	0	0-0.2 wood, 0.2-0.9 light brown fine to very fine sand, soft, wet.	0
14	16	0.8	5-7-7-9	0	Light brown to red clayey silt with trace fine sand. Appears to be reworked as sand runs vertically through cracks in the clay, stiff, wet.	0
16	18	1.9	5-4-7-13	0	0-1.0 light brown and red clay, very stiff, very moist, wood and concrete present. 1.0-1.9 light grey silt, stiff, wet, wood present.	0
18	20	1.9	7-8-11-13	0	Light brown to gray silt with natural appearing vertical planer mottling, (like red and gray butter-finger) very stiff, very moist to wet.	0
20	22	1.9	7-9-14-22	0	Same as above. Native material. Discontinue boring and build well. Well Screen SBW9 at 5-15.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB10 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 4
Site Drilling Drilling
Location KOHLER LANDFILL, SHEBOYGAN CO. Started 10/12/90 8:20 Completed 10/15/90 14:30
Total Hole Type of Sample/
Depth Drilled 56 feet Diameter 8 inches Coring Device SPLITSPOON
Length and Diameter
of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface
Elev. 654? feet Surveyed X Estimated Datum MEAN SEA LEVEL
Drilling Drilling
Fluid Used NONE Method HOLLOW STEM AUGER
Drilling
Contractor WISCONSIN TEST DRILLING Driller GREGG Helper MIKE
Prepared Hammer Hammer
By ROSS M. CREIGHTON Weight 140 Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.8	1-4-4-6	2.5	Black fine sand with blue and white vitrious fine to medium sand sized granular substance in bottom 2 inches of spoon.	0.5
2	4	1.0	6-6-6-4	6.5	Black and gray fine sand, mixed 0.2-0.4 lense of white pasty substance, hard and dry to wet and soft, sand is loose and moist.	3.0
4	6	1.0	5-9-9-10	3	Black fine sand, white very fine sand 0.5-0.6, porcelian fragments with pasty substance loose, moist.	1.0
6	8	0.9	3-3-2-3	5	Black fine sand with white consolidated paste-like substance 0.7-0.9.	1.2
8	10	0.8	6-7-3-3	3	Black, light brown to rust and white very fine to fine sand, rust and white has consolidated fragments, also porcelain fragments, loose, dry.	0.2

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Environmental Services

SAMPLE/CORE LOG

Boring/Well SB10

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
10	12	1.2	3-2-4-5	2.0	Black fine sand (0-0.4) 0.4-0.6 yellow to rust colored very fine to fine loosely consolidated sand, 0.6-1.2 black and gray fine sand with porcelain fragments.	0.2
12	14	0.5	1-3-4-4	2.0	Black fine sand with gray slag and porcelain fragments, also wood, loose, dry.	0.2
14	16	1.0	7-6-4-6	4.5	Black fine sand, white irregularly consolidated pasty substance 0.6-0.7, gray slag and wood fragments, loose, wet.	0
16	18	1.8	1-2-2-2	4.5	0-0.9 light gray to white silt sized substance, very soft, very wet. 0.9-1.5 black fine, sand, 1.5-1.8 silt sized substance as in 0-0.9 all intervals wet.	0
18	20	1.9	3-1-7-14	4.0	0-1.5 light gray silty substance mixed with black fine sand, 1.5-2.0 black to light brown very fine to fine silty sand, with organics.	0
20	22	2.0	5-23-22-19	3.0	0-1.1 gray to white silt sized soft wet substance, 1.1-2.0 black fine sand, yellow consolidated fragments of fine sand, gray slag fragments loose and dry.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB10

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
22	24	1.0	13-22-11-7	3.5	Black fine silty sand, consolidated yellow fragments, loose, dry to moist.	0
24	26	1.0	5-6-8-6	3.0	Black fine sand with rust colored consolidated fine sand fragments, white dried pasty substance at 0.6-0.7 dry to moist.	1.0
26	28	0.8	5-8-6-7	4.5	Black fine sand, organics, rubber, porcelain, wire, dry to moist.	0.1
28	30	1.1	8-10-6-5	2.5	Black fine sand, rust and yellow consolidated fine sand fragments, light gray sludge lense 0.9-1.0, loose, moist.	
30	32	1.4	5-6-5-5	2.0	Black fine sand with porcelain and gray slag fragments.	0
32	34	0	11-13-15-13		No recovery.	
34	36	0/0.8	10-20-20-23	3.0	No recovery try 3" spoon over same interval. Black fine silty sand with typical rubble.	0
36	38	2.0	6-4-4-3	1.5	Black silty fine to very fine sand with organics fragments of slag and porcelain.	0
38	40	1.5	1-5-9-12	3.0	0-0.2 black fine sand, 0.2-1.1 light gray to white silty clay sized material with very plastic consistency. 1.1-1.5 black sand with slag and porcelain fragments.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB10 **Page** 4 **of** 4

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
40	42	1.2	2-4-8-10	4.0	Black sand with orange sand fragments and porcelain, very moist.	0
42	44	1.8	8-5-7-8	5.5	Same as above, sample submitted.	0
44	46	1.5	5-7-7-9	4.5	Black sand as above with glass and porcelain fragments.	0
46	48	1.6	5-4-6-7	4.0	black fine sand as above, wet.	0
48	50	1.7	2-5-12-17	19	Light brown fine sandy silty clay with organics medium stiff, very moist.	0
50	52	1.0	8-10-11-13	20	Same as above.	0
52	54	0.8	7-13-20-18	21	Small to medium dolomite gravel with fine to coarse sand, both present in top of spoon.	0
54	56	1.4	19-18-9-15	21	0-0.6 medium to coarse sand with small to medium gravel 0.6-1.4 light brown silty clay with small gravel, stiff, moist.	5

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB11 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 4
Site Location KOHLER, WI Drilling Started 10/4/90 9:30 Drilling Completed 10/4/90 17:50
Total Depth Drilled 56 feet Hole Diameter 8 inches Type of Sample/ Coring Device STAINLESS SPLITSPOON
Length and Diameter of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface Elev. 653.78 feet X Surveyed Estimated Datum MEAN SEA LEVEL
Drilling Fluid Used NONE Drilling Method HOLLOW STEM AUGER
Drilling Contractor WISCONSIN TEST DRILLING Driller GREGG Helper MIKE
Prepared By ROSS M. CREIGHTON Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.0	5-7-10-11	0	0-0.5 light brown silt with organics, trace sand, medium stiff and dry. 0.5-1.0 black sandy silt, possibly foundry sand, very fine, medium stiff, dry.	0
2	4	2.0	2-4-5-4	0	0-0.5 light brown clayey silt as above, (probably blow-up). 0.5-2.0 black very fine foundry sand soft, dry.	0
4	6	1.5	4-3-2-2	0	Black foundry sand as above soft, dry with slag fragments.	0
6	8	2.0	2-1-1-1	0	0-1.6 black foundry sand, 1.6-2.0 brown foundry sand dry.	0
8	10	1.5	2-2-5-11	2.5	Black foundry sand with slag fragments, yellow and pink vitrified sand. Black sand was still soft and dry to moist.	0
10	12	2.0	5-11-22-24	2.5	Black foundry sand with porcelain and slag fragments, soft to medium stiff, moist.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB11

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
12	14	1.5	3-5-4-7	75.	0-0.6 black foundry sand as before. 0.6-1.2 blue coarse sand-sized crystallin matter, (has air bubbles and vitrified appearance 1.2-1.5 white fine sand-sized loosely consolidated matter.	0.2
14	16	0.9	2-3-3-2	25	0-0.4 blue crystalline matter as above, 0.4-0.9. Black fine foundry sand with porcelain fragments and consolidated brown fine sand fragments.	1.2
16	18	0.6	5-4-5-5	20	Black foundry sand.	1.8
18	20	0.7	6-5-5-5	20	Black foundry sand, with porcelain fragments also light gray plastic substance soft, moist.	2.0
20	22	2.0	5-4-7-3	54	Black sand with gray plastic matter, light brown consolidated fine sand fragments and white paste material.	2.0
22	24	1.2	2-8-6-7	30	Black foundry sand with white paste-like lense at 0.4-0.8 moist.	1.5
24	26	1.9	9-13-14-22	75	Black foundry sand as before with cardboard and light brown consolidated sand fragments, soft, moist.	0

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB11 **Page** 3 **of** 4

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
26	28	1.4	14-17-17-20	60	Black to light brown foundry sand with porcelain fragments, soft to stiff, moist.	0
28	30	1.1	9-6-6-7	142	Black sand with light brown consolidated sand fragments and yellow consolidated sand fragments.	0
30	32	1.3	5-8-9-11	6.4	Black, brown, yellow, fine sand, soft, moist.	0
32	34	0.4	7-7-8-11		Black fine sand with much more metallic slag than previously, soft, moist, odor.	8
34	36	0.3	29-32-42-45	7.5	Same as above.	5
36	38	1.4	7-8-8-10	N.C.	Black fine sand with 3" gray plastic-consistency sludge at 0.6-0.9, odor present, sand is soft, sludge is stiff. Porcelain and slag fragments.	140
38	40	2.0	10-8-7-5	98	Black sand, same yellow sand fragments.	10

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Environmental Services

SAMPLE/CORE LOG

Boring/Well SB11 **Page** 4 **of** 4

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
40	42	1.9	8-10-10-9	20	Black sand, light brown and yellow consolidated sand, fragments, violet slag fragments soft, moist.	4
42	44	1.0	3-2-2-2	19	Black sand, yellow consolidated sand fragments, porcelain fragments, soft, very moist.	80
44	46	1.9	5-6-8-8	18	Same as above with rags, soft, very moist, wet around porcelain fragments.	0
46	48	1.2	5-6-6-4		Same black fine sand with fragments of yellow consolidated fine sand, soft, moist.	10
48	50	2.0	8-9-10-7	17	Same black fine sand.	
50	52	1.8	3-5-4-4	200	0-1.2 black sand with slag as above, WET. 1.2-1.8 light gray to white fine well sorted sand, WET, loose.	
52	54	1.5	9-14-17-23	18	0-0.6 dark brown to black stained silty clay. Medium stiff to stiff, very moist. 0.6-1.5 light brown very fine sandy silt, soft to medium stiff very moist.	0
54	56	1.5	5-6-10-13	90	Light brown very fine sandy silt, soft, saturated.	0

N.C. = Not enough sample to complete measurement.

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Environmental Services

SAMPLE/CORE LOG

Boring/Well SB12 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 1
Site Location KOHLER, WI Drilling Started 10/5/90 9:20 Drilling Completed 10/5/90 10:05
Total Depth Drilled 8 feet Hole Diameter 8 inches Type of Sample/ Coring Device STAINLESS SPLITSPOON
Length and Diameter of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface Elev. 648.07 feet X Surveyed Estimated Datum MEAN SEA LEVEL
Drilling Fluid Used NONE Drilling Method HOLLOW STEM AUGER
Drilling Contractor WISCONSIN TEST DRILLING Driller GREGG Helper MIKE
Prepared By ROSS M. CREIGHTON Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.6	7-10-14-14	1	0-0.8 light brown clayey silt with organics, medium stiff, moist, 0.8-1.6 black fine sand with yellow fine consolidated sand fragments.	0
2	4	2.0	8-5-7-11	0	0-0.7 black sand as above, 0.7-1.6 light to dark brown silt, stiff, moist, 1.6-2.0 black fine sand as before, also with slag fragments, loose, moist.	0
4	6	2.0	2-2-2-4	0	Light brown to brown clayey silt with organics and trace sand, stiff, moist, appears to be reworked material yet.	0
6	8	2.0	2-3-5-6	0	0-0.5 black fine sand as before, 0.5-1.0 yellow brown silt with small to medium poorly sorted gravel loose very moist. 1.0-2.0 reddish brown clay with light gray mottling and small to medium gravel very stiff, moist (probably not water table).	0
8	10		4-6-10-13	0	Same as above, moist, definitely native material.	0

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Environmental Services

SAMPLE/CORE LOG

Boring/Well SB13 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 2
Site Drilling Drilling
Location KOHLER, WI Started 10/16/90 14:45 Completed 10/16/90 16:30
Total Hole Type of Sample/
Depth Drilled 20 feet Diameter 8 inches Coring Device STAINLESS SPLITSPOON
Length and Diameter
of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface
Elev. 645.56 feet X Surveyed Estimated Datum MEAN SEA LEVEL
Drilling Drilling
Fluid Used NONE Method HOLLOW STEM AUGER
Drilling
Contractor WISCONSIN TEST DRILLING Driller GREGG Helper MIKE
Prepared Hammer Hammer
By ROSS M. CREIGHTON Weight 140 Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.6	4-6-7-9	10	Light brown, fine sandy silty clay with organics and small gravel, appears to be reworked soft to medium stiff, moist.	0
2	4	2.0	7-10-15-11	20	0-0.5 clay as above, 0.5-2.0 light brown clay and black fine sand with gray and purple slag fragments, mixed, soft to medium stiff, moist.	5.0
4	6	1.8	5-7-7-17	13	0-0.4 light brown silty clay, 0.4-1.8 black fine sand, slag, and medium gravel fragments, moist.	6.0
6	8	1.9	8-5-8-22	24	Black fine sand with yellow orange, and brown coarse sand fragments and gray slag soft, moist.	30
8	10	1.3	9-17-8-11	35	Black, fine sand as above, slightly moist.	14
10	12	1.9	8-15-12-10	42	Black fine sand with everything as above, soft, slightly moist.	15

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Environmental Services

SAMPLE/CORE LOG

Boring/Well SB13

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery	Time/Hydraulic Pressure or Blows per 6 inches	Head Space	Sample/Core Description	Spoon Screen HNU (ppm)
12	14	0.8	1-0-1-1	9.5	Black sand as above.	6
14	16	0.8	3-3-3-3	26	Black, fine sand with porcelain layer at 0.5. Also wet at 0.5-0.8, sand above is only moist.	10
16	18	1.9	4-8-12-20	22	Black to gray to light brown, fine sandy silty clay, soft to medium stiff, very moist.	
18	20	2.0	3-8-8-12	12.5	0-0.2 black to gray, sandy silty clay with organics, soft, very moist to wet. 0.2-2.0 red clay with gray mottling and verticle pin-sized pores that have water inside, very stiff, very moist. Light brown, fine sand lense at 1.6-1.7 loose, very moist.	1.5

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well SB14 Project/No. KOHLER LANDFILL/WI16401 Page 1 of 2
Site Drilling Drilling
Location KOHLER LANDFILL, SHEBOYGAN CO. Started 10/16/90 12:10 Completed 10/16/90 13:15
Total Hole Type of Sample/
Depth Drilled 14 feet Diameter 8 inches Coring Device STAINLESS SPLITSPOON
Length and Diameter
of Coring Device 2' X 2" Sample Interval 2' CONTINUOUS
Land-Surface
Elev. 647.78 feet X Surveyed Estimated Datum MEAN SEA LEVEL
Drilling Drilling
Fluid Used NONE Method HOLLOW STEM AUGER
Drilling
Contractor WISCONSIN TEST DRILLING Driller GREGG Helper MIKE
Prepared Hammer Hammer
By ROSS M. CREIGHTON Weight 140 Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
0	2	1.1	2-3-3-4	8.0	Light brown silty clay with organics, stiff, moist.	4.0
2	4	1.7	4-6-6-5	18.0	Light brown sandy silty clay with small gray and black slag fragments, and trace black fine sand, medium stiff-stiff, moist (reworked fill material).	1.5
4	6	1.7	2-2-16-18	19.0	0-1 Light brown sandy silty clay as above, 1.0-1.7 black fine sand with fragments of slag and consolidated fine sand.	2.0
6	8	1.6	2-5-3-3	12.0	Black fine sand with typical slag and consolidated sand fragments, soft, moist.	4.0
8	10	1.0	3-4-10-13	16.0	0-1.7 Black fine sand as above. 1.7-1.8 light brown sandy silty clay mixed with black fine sand, moist.	2.5
10	12	1.8	2-3-3-5	20.0	0-1.2 Black fine sand, soft, wet. 1.2-1.7 Black stained to light brown sandy silty clay with organics and small gravel. 1.7-1.8 Light brown to red silty clay with organic and small gravel medium stiff, very moist.	4.0

GERAGHTY & MILLER, INC.
Environmental Services

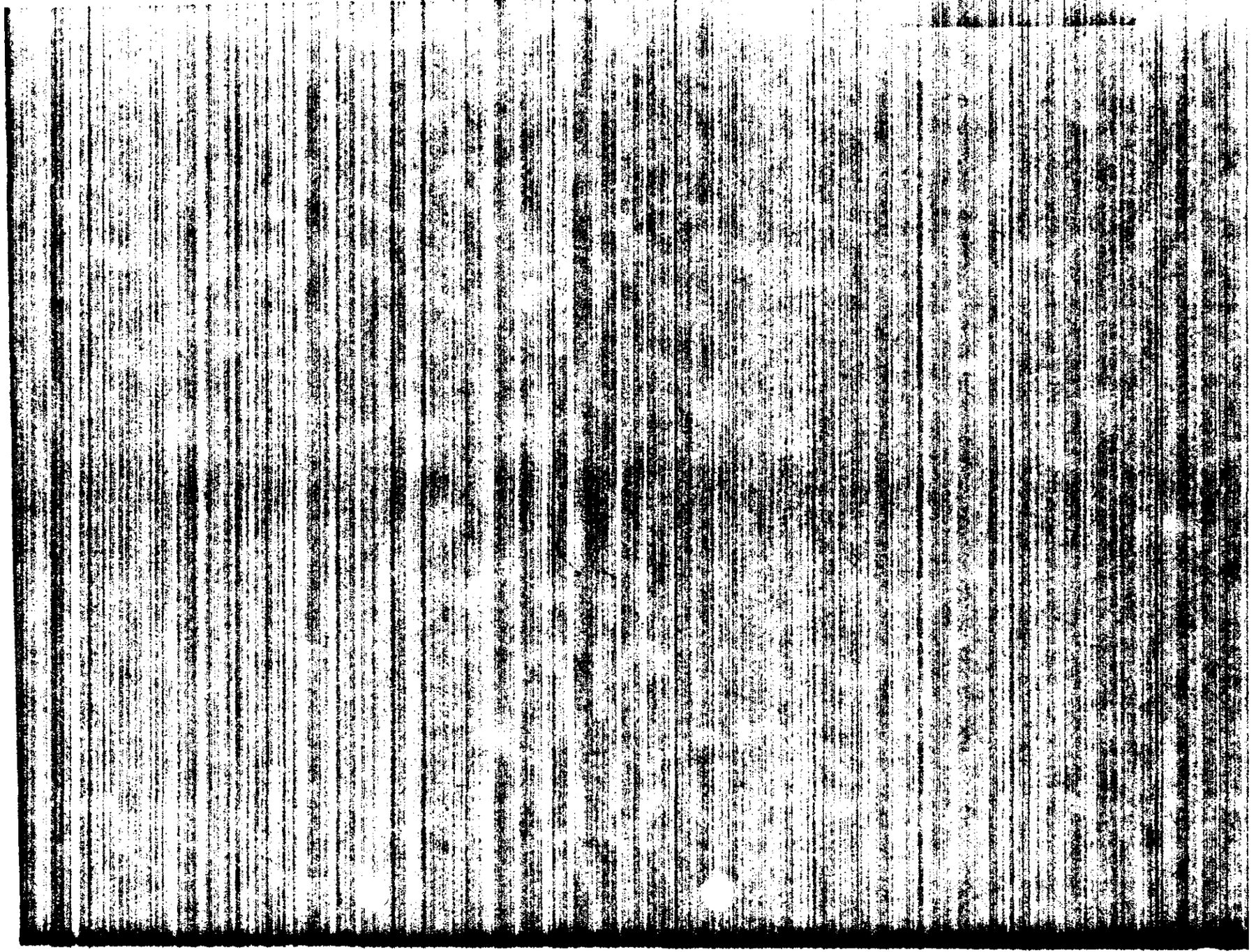
SAMPLE/CORE LOG

Boring/Well SB14 **Page** 2 **of** 2

Prepared By ROSS M. CREIGHTON

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Head Space HNU (ppm)	Sample/Core Description	Spoon Screen HNU (ppm)
12	14	2.0	6-6-8-10	13.0	Red clay, slight mottling and organics present; small 1/8-1/4" fine sand layer at 1.7', very stiff, very moist.	0

APPENDIX F



State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 3

Facility Name: Kohler Co. Landfill	License/Permit/Monitoring Number: 1508
Boring Drilled by (Name): Ross Creighton	Date Installed: 08/15/90 (M M / D D / Y Y)
Facility Well Number: OW1SR	WI Unique Well Number (assigned by DNR): ____
Borehole Diameter: 6.0 Inches	Water Level: ____ Feet
Surface Elevation: 650.90	

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 641935 ____ feet (N) or S 2590740 ____ feet (E) or W

County: Sheboygan

County Code: 60

Civil Town: Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
			Blind drilled - Till					Bkgnd.						
			Cont											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mitch Vale

Firm: Geraghty + Miller, Inc.

This form is authorized by Chapters 144, 147 and 162, Wis Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss. 144.99 and 162.06, Wis Stats.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
								Bkgnd.						
			71' — DOLOMITE BEDROCK											
			72' CORING BEGAN											
			~~Lt gry to tan~~											
			Light grey to tan dolomite with mica inclusions, few fractures in porous intervals. Competent											
	100%		Some ~~fractures~~ vertical fractures contain secondary calcite. Stylolites occur throughout. Competent											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 3 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
			25 E.O.B.					Bkgnd						

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 3

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508

Boring Drilled by (Name)	Date Installed (M M / D D / Y Y)
Leslie Field / Mike Wiczynski	09 / 09 / 90

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
OWIDR		6.0 Inches	___ Feet	650.70

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W
Grid Location (if applicable): 641936 ___ feet (N) or S; 2590752 ___ feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qs) (tsf)	W	LL	PL	P200	Blow Count
		0	6" BLACK TOPSOIL					Bkgnd.						19
	80%	1.5	UPPER UNIT - Brown fine to coarse sand, some silt and gravel, little clay, Gravel is mostly dolomite but some sp. & meta gravel is present. Coarse sand lens layer at 14.0-14.5.											32
	90%													11
*	75%				ML						17	14	63.4	19
	75%													17
														8
														26
	55%	15	Dark brown clay											66
	60%	16	light brown very fine - fine sand + silt.											67
		17	MIDDLE UNIT											26
			Dark brown clay and silt.											59
*	75%		some poorly sorted sand scattered throughout. - Middle Unit.		CL						30	16	92	9
	75%	22												3
	85%		Grey to brown clay & silt, little gravel (dolomite, sp. and meta.), little fine sand.											15
	100%													30
		26												27
*	100%	27	Dark brown v.f sand + silt, some clay		CL						39	18	78.3	49
			Dark brown clay, little silt.											16
	100%		Soil											42
			* GEOTECH Sample Intervals											28
	100%		GMMW01WIDR/4-6,											51
			GMMW01WIDR/18.5-19.5 Cont											23
			GMMW01WIDR/26-28											47
														46
														54
														23
														36

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
[signature]	Geraghty & Miller, Inc.

This form is authorized by Chapters 144, 147 and 162, Wis Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss. 144.99 and 162.06, Wis Stats.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
		33	Cont - Middle Unit.					Bkgnd						
		34	Lower Unit. — Grey to Grey-brown silt sand, some clay and gravel. Gravel is mostly all dolomite but some mafic material is encountered. Gravel Content increases with depth, clay content decreases with depth.											189 141 181 >100/.1 ft. 220
	50%													
	80%													
	0%													
	50%													256
	50%													
	0%													>100/.2 ft.
	30%	71.1	— Bedrock											>100/.3 ft.
	100%		Competent light grey to tan dolomite some iron staining. Stylolites and vugs, few fossils. Some pyrite at stylolites. Some vugs contain secondary calcite. Parting surface at stylolites is weathered & contains clay. Dolomite ranges fm crystalline to microcrystalline. Vertical fractures fm 87.25 - 89.75, 96.2 - 102.4											
	100%													

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4100-122 4/90
Page 3 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qs) (tsf)	SOIL PROPERTIES W	SOIL PROPERTIES LL	SOIL PROPERTIES PL	SOIL PROPERTIES P200	Blow Count
	100%		dolomite continued.					Bkgrd						
	100%													
	100%													
	98%													
		122.4	E.O.B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
R. GRACIANO	08 / 21 / 90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
2 SR	— — — — — —	6.0 Inches	— Feet	594.75

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W
Grid Location (if applicable): 641746 feet (N) or S — feet (E) or W — 2591906

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	BLIND DRILLED - Alluvium & Till					Bkgnd.						
		5												
		10												
		15												
		20												
		25												
			~~Dolo~~ Light to medium grey dolomite some stylolites and recrys. Crystalline to microcrystalline, Vertical fracture at 36.9-37.0 Fairly tight rock.											
		30												
		32												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mark Wilson
Firm: Geraghty & Miller, Inc.

This form is authorized by Chapters 144, 147 and 162, Wis Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss. 144.99 and 162.06, Wis Stats.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 2 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		32						Bkgrnd						
		35												
		42.0	EOB											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Keith Marquardt / Mike Wilczynski	09/13/90 (M M / D D / Y Y)
Facility Well Number	**WI Unique Well Number (assigned by DNR)**	**Borehole Diameter**	**Water Level**	**Surface Elevation**
2DR		6.0 inches	___ Feet	594.50

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 E or W
Grid Location (if applicable) 641733 feet N or S 2591907 feet E or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	76%	0	Tupsen Alluvium — Light brown fine sand little silt well sorted, grey					Bkgnd.						11
		1'												17
		5												17
		7'												11
		8'	Lower Unit — grey silt, sand and gravel some clay											11
		10												4
														5
		15												4
*			* Geotech Sample Interval MW2DR/15-17		SM						11	10	26.6	18
		17												25
														30
		20												79
														121
														116
		25	24.5 — Dolomite Bedrock											45
	97%		Dolomite, fairly tight, some ~~Primary Stylolites~~ permeability at stylolites, secondary calcite present in vugs.					0.8 Bkgnd.						29
		30												61
		31.2												47
														59
														69
														145
														>100/ 4"
														>100/ 1"

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mark Wilczynski
Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
								Bkgnd.						

33 ~~37 ft Fracture zone (0.5 ft)~~
-33.6 to 39.9 Fracture Zone.

91%

40
-41.4 - 42 ft fracture zone

45

100%

50
51.2

55
-56.0 to 57.5
Large vertical calcite filled fracture.

100%

60
-61.2 - 63.5 VUGGY ZONE

65

100%

70

100%

75
75.2 E.O.B.

80

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Mike Wilczynski	10/11/90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
3SR	— — — — — —	6.0 Inches	— Feet	598.20

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 641009 feet (N) or S 2591820 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GEOLOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0'	BLIND DRILLED - ~~HCC~~ ~~Alluvium~~ Alluvium + till					Bkgnd.						
	0%	5												
	—	10												
	—	15												
	—													
	—	20												
	—													
		25'	1 Dolomite bedrock - N.S.											
		30												
		32	Cont											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Geraghty + Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
			Dolomite bedrock cont					Bkgnd						
		33												
		34.3	light grey dolomite, highly fractured											
	100%		Light grey to rusty brown dolomite less fractured than above, iron staining present at fractures. Weathering occurs at fractures.											
		41.8												
			Highly fractured lt grey to lt. brown dolomite, iron staining concentrated at fractures. Fossiliferous from 42.2 - 42.8											
		47'												
			47' EOB											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 3 4/90
Page 1 of 3

Facility Name	License/Permit/Monitoring Number
Kohler Co Landfill	1507
Boring Drilled by (Name)	**Date Installed**
Mike Wilczynski / Eric Carmen / Leslie Fields	00 / 0 1 / 1 0 / 9 0 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
3DR	— — — — — — —	6.0 inches	— Feet	598.60

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W
Grid Location (if applicable): 641009 feet (N) or S 2591814 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	35%	0	Alluvium - 0'-8' silt, clay + fine to medium sand, brown. Sand is well rounded, 8-13 subrounded											15
*	40%													27
	90%	5	dolomite, lst/meta. gravel some sand, silt + clay.											7
	50%													13
	0%													14
	45%	10												19
	50%	13	Middle Unit - Grey brown clay some dolomite gravel (some gravel is lst/meta), trace silt, trace of coarse sand.											24
	100%	15												37
	5%													5
*	30%													10
	0%	20												18
	25%	22	Lower Unit. Grey silt, clay, sand, dolomite gravel + cobbles. Poor sample recovery.											16
	0%	25												19
	—													19
	—		* GEOTECH Sample Intervals MW3DR 22-24.											8
	40%	30												13
		32												23
														29
														36
														>100/.5
														114
														133
														187
														>100/.1
														16

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mark Wilczynski
Firm: Groundwater & Miller, Inc.

This form is authorized by Chapters 144, 147 and 162, Wis Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss. 144.99 and 162.06, Wis Stats.

State of Wisconsin
Department of Natural Resources

3DR

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		32												168 32
	60%													27 100/.5 ft.
	0%													100/.1 ft.
	–													
	–													
	–													
		40												
	0%													>100/0 ft.
	5%													>100/.2 ft.
	10%													>100/.2 ft.
	25%													>100/.5 ft.
	25%													117/.5 ft.
		50												
	30%													135/.3 ft.
	10%													>100/.3 ft.
	25%													>100/.5 ft.
	5%													>100/.3 ft.
		58	mud rotary - Dolomite boulder(?) on ledge(?).											
	0%													>100/.1 ft.
		60												
	0%													100/0 ft.
	0%													1c ft.
	–	66												
	62%													
		68.3												
		70	Into unconsolidated sediments. Grey to green clayey fine sand w/ trace of medium to coarse sand.											
		345												

State of Wisconsin
Department of Natural Resources

3 DR

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 3 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RQD	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
								BKG						

90' ~~[illegible]~~ Grey green to brown silty sandy clay w/ occ. silty sand layer.

94' Fine tan sand.

96' → clay + sand

96.5 → fine tan sand

97.0 → Competent dolomite at 97'

100

100%

105

96%

110' E.O.B.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 1

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Ross Creighton	10/17/90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
6(RE)	— — — — — —	8.0 Inches	— Feet	658.20

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 641051 feet (N) or S — 2589770 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	~~6" Topsoil~~					Bkgrd						
	90%		Upper Unit - interbedded ~~sand~~ w/ fine sand, sandy silt and silty clay, dark brown ~~to~~ & ~~grey~~											4 7
	100%													5 6
*	100%	5			CL						26	16	62.3	4 6
		6	or grey.											
	100%				CL						22	14	66.2	8 10
		8												
	100%				CL						23	13	67.3	7
		9												
	100%	10			SM						Nonplastic		16.1	13
	100%				SM						Nonplastic		29	8 17
		12												
	100%				CL						41	19	90.3	9 19
		14												
	100%				SC-SM						16	14	42.7	16 33
*		16 ft	E.O.B.											

* GEOTECH Sample Interval
MW 6(RE) 14.9 - 16.2

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mich Wilke

Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 3

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508

Boring Drilled by (Name)	Date Installed (M M / D D / Y Y)
Rob Graziano	08 / 21 / 90

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
GSR		6.0 Inches	___ Feet	658.05

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 641062 ___ feet (N) or S ___ feet 2589764 (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RQD	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	BLIND DRILLED					Bkgnd						
			TILL.											
		5												
		10												
		15												
		20												
		25												
		30	(CONT)											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Mark Wiley	Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		32	BLIND DRILLED (cont.)					Bkgnd						
			T. 11.											
		35												
		40												
		45												
		50												
		55												
		60												
		65												
		70												
		75												
		80												
			81.0 Dolomite Bedrock											
			Dolomite, tan, fine porous, few stylolites, common fractures. Crs											
	84r													

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 3 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
			& Dolomite ~~bec~~ becomes gray at 86.1 ft and a dolomite breccia at 87.5 ft to 87.75 ft. weathered fractures occur ~~thro~~ throughout. Secondary calcite in fractures.					Bkgnd						
		99.0	E.O.B											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 3

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508

Boring Drilled by (Name)	Date Installed (M M D D Y Y)
Keith Marquardt / Leslie Fields / M. Wilczynski	08/14/90

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
6DR		6.0 Inches	___ Feet	657.80

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W
Grid Location (if applicable): 641059 feet (N) or S ___ feet (E) or W 2589773

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	60%	0	UPPER UNIT Interbedded sand, silty sand, silty clay and clay. Red to brown					Bkgnd						4
		5												3
	40%													9
		10												13
	60%													15
		15												6
	0%													8
		20												16
			* GEOTECH Sample Interval MW 6DR / 23.5-24.5											26
*	100%				CL						42	20	92.8	34
		25												29
	100%													35
		28.5	MIDDLE UNIT											36
		30	GL Grey clay, some silt/silt. (con't)											41
		32												45
														23
														25
														61
														134
														164
														28
														52
														86
														94
														69
														30
														72
														46
														59
														70
														11

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Mark Wilczynski	Geraghty & Miller, Inc.

This form is authorized by Chapters 144, 147 and 162, Wis Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss. 144.99 and 162.06, Wis Stats.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	66%	32						Bkgnd.						32
														37
		35												54
	100%													86
		40												18
	100%													24
		45												32
	100%													31
														41
														14
														19
														33
														40
														47
														14
														22
														31
														37
			*GEOTECH Sample Interval MW6DR/50-51, MW6DR/54-55 Atterberg & Grain Size											32
*					CL						37	18	97.8	17
		53.5	LOWER UNIT											29
														36
														73
*		55			CL-ML						16	11	50.6	53
			Light grey sand, silt, & clay and dolomite gravel.											34
														97
														78
		60												76
														94
														49
														43
														134
		65												100
														50/.2
		70												
		75												334/.8
		80												
		81.2	DOLOMITE BEDROCK											
			Buff dolomite some fossils and vugs. Horizontal fractures, stylolites (some)											
		85												

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 3 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
	100%	85	and limonite staining present.					Bkgrd.						
	100%	90 – 91.1	light grey dolomite, stylolite appear to have permeability, some clay present in stylolite, along weathered surface. Few vertical fractures approx 1mm. to 3mm. in thickness secondary calcite and pyrite.											
	100%	95												
		100												
	100%	105	porous zone from 105.4 to 106.8											
		106.1												
		110	light grey dolomite as above, vertical fracture at 117-120; 130.8-132.1											
	97%	115												
		120												
	100%	125												
		130												
		133.5	light grey dolomite, highly fractured zone (mostly vertical), high water loss (1200 gal) thru this secti											
		137.	E.O.B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 1

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Keith Marquardt	10 / 17 / 90 (M M D D Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
8 (Re)	— — — — — —	8.0 inches	— Feet	604.25

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640293 feet (N) or S — feet 2540832 (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	50%	0'	9 Gravel road fill					Bkgnd						11
	60%	2'	Road fill(?), sand, gravel, clay, brown											14
	60%	5												16
	70%													17
	0%	8'	Middle Unit											11
	80%	10	Grey to brown clay, some silt and dolomite gravel. Dense.											17
	80%													35
	85%													41
	—	16'	Lower Unit											40
	100%		Sand, silt, clay and gravel. Brown, becomes gray with depth. Gravel is dolomite.					2						39
	100%	20						Bkgnd						18
*	100%		* GEOTECH Sample Interval MW 8 (RE) 1227-29.5		SC-SM						18	11	42	42
*	100%													31
*	—				GC			3			22	13	36.6	101
*	100%													116
*	—				SC-SM			3			18	12	25.2	>100/ 6"
*	—													150
	40%	30'	E.O.B.		SC-SM			Bkgnd				11	26.9	>100/ 4"
														134
														>100/ 4"

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Rob Graziano	09/11/90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
SSR	— — — — — — —	6.0 Inches	— Feet	603.95

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640294 feet (N) or S 2590820 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RQD	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qs) (tsf)	W	LL	PL	P200	Blow Count
		0	Blind drilled, alluvium and till					Bkgr						
		5												
		10												
		15												
		20												
		25												
		30												
		32	Cut											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mill Wilson Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		32	Cont. blind drilled					Bkgrd						
		35												
		39.3'	Dolomite bedrock N.S.											
	11%	40'	Tan to light grey dolomite, ~~poor~~ porous numerous fractures. Fracture surfaces are weathered. Fairly competent rock											
		42.2												
		45'	Tan to lt. grey dolomite few fractures, some are vertical. Fairly competent rock.											
	93%													
		50												
		52'	Lt. to med. grey dolomite. Few calcite ~~vugs~~ filled ~~some~~ vugs. Weathered vertical fracture 52.5 - 53.9. Very ~~C~~ competent rock											
	100%	55												
		59'	E.O.B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 3

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Rob Gracioso	09/08/90 (MM/DD/YY)
Facility Well Number	**WI Unique Well Number (assigned by DNR)**
8DR	
Borehole Diameter	**Water Level**
6.0 Inches	___ Feet
Surface Elevation	
604.10	

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640294 feet (N) or S 2590809 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	Roadfill - sand & gravel					Bkgrd						
		5												
	75%	7.5	Middle Unit											42
	—	10	red to brown, or grey clay with little silt, sand, & gravel											31
	80%													18
	70%													44
	100%	15												35
	90%													69
	75%													36
	90%	20												5
	20%													40
	90%	25												63
	65%	26	Lower Unit											76
			silt rich zone sand & gravel											113
	50%		dolomite gravel, dolomite cobble											109
	80%	30	Coarse sep. at 35.5 - 37.0											154 / 6
			Igneous boulder at 37.0 - 38.0 (cont)											38
		32												66
														138
														100/5"
														161
														100/5"
														153

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Mark Miller	Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RQD	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
	80%	32						Bkgrd.						198
	10%	35												>100/3"
	40%	39.4'	DOLOMITE BEDROCK											124
		40.0'	↳ STARTED CORING											
	93%		lt. grey dolomite some minor weathering (vugs) very dense crystalline at 43'. stylolites common, fractures along stylolites. Very few oth fractures, (commonly filled with calcite).											
		46.0	fractured vuggy zone 59'-65'											
	93%													
		56.0												
	86%													
		61.0												
	99%													
		70.9												
	100%													
		80.9												
	100%													

cont.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 3 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	SOIL PROPERTIES W	SOIL PROPERTIES LL	SOIL PROPERTIES PL	SOIL PROPERTIES P200	Blow Count
	100%							Background						
		90.9												
	100%	93.0	EOB											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page ___ of ___

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Eric Carman	10/02/90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
13A	___	8.0 inches	___ Feet	599.80

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640644 feet (N) or S 2591694 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	Alluvium - fine sand, silty sand and silt. Brown or grey. Some gravel					0-2						
	100%	5						10						7 23
								1						
	30%	10						3-5						12 7
								BKG						
	100%	13	BLIND DRILLED					200						9 7
		14	MIDDLE UNIT - GREY CLAY with a few dolomite pebbles. E.O.B. at 14'					10						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mil Wile Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Eric Carman	10/02/90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
13C	— — — — — — —	8.0 Inches	— Feet	599.70

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640659 feet (N) or S 259698 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	ALLUVIUM - BLIND DRILLED LOG BASED ON CUTTINGS & other observations Brown to Buff fine sand & silty SAND					Bkgnd.						
		5												
		11	MIDDLE UNIT Grey clay & silty clay some dolomite gravel					0-2						11 7
60%								Bkgnd.						
100%		15												13 C
50%														23 23
100%		23.5	LOWER UNIT Grey clayey silt with dolomite gravel and fine sand											35 68

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mark Wilk

Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		32						Bkgnd						
		34'	E.O.B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 1

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Mike Wilczynski	10/17/90 (M M / D D / Y Y)
Facility Well Number	**WI Unique Well Number (assigned by DNR)**
13C2	— — — — — — —
Borehole Diameter	**Water Level**
6.0 inches	— Feet
Surface Elevation	
599.30	

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640686 feet (N) or S 2591722 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0						Bkgnd.						
		5	*GEOTECH Sample Interval MW13C2/26-29.5											
		10												10
		11	Brown silty clay - Middle Unit											
	0%	13												8 17
		15	As above											18 25
		17												24 1'
		20	As Above											16 38
		22												39 54
			As Above except Some dolomite gravel near the Middle Unit - Lower Unit contact											85 33 86
*			LOWER UNIT Could not drive spoon - switched to rotary drill.		SM						13	11	28.8	132 154 112 231
*														
		31'	EOB											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mike Wilczynski Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 7/89
Page 1 of 2

Facility Name: Kohler Co. Landfill	License/Permit/Monitoring Number: 1508
Boring Drilled by (Name): Mike Wilczynski	Date Installed: 10/30/90 (M M D D Y Y)
Facility Well Number: 13P	WI Unique Well Number (assigned by DNR):
Borehole Diameter: 16.0 Inches	Water Level: ____ Feet
Surface Elevation: 599.95	

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640663 feet (N) or S; 2591701 feet (E) or W

County: Sheboygan | County Code: 60 | Civil Town: Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	DRILLING AIDS	USCS	RQD	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	0'-33' Hand drilled - alluvium & till					Bkgnd						
		5												
		10												
		15												
		20												
		25	26' very gravelly till											
		30												
		33												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Geraghty & Miller Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		32						Bkgnd.						
		33	Bedrock (Dolomite)											
			Rotary drilled											
		35												
		37	STARTED CORING											
		40	Light grey dolomite very tight.											
	100%		Fracture zone at 50'-53', some											
			secondary calcite, iron staining.											
		45	This is probably the most											
			Conductive zone.											
		50												
		55												
		60												
		63	E. O. B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Ross Creighton	08/11/90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
13SR	— — — — — —	6.0 Inches	— Feet	599.60

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640635 feet (N) or S 2591698 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	Blind drilled - alluvium and till					Bkgnd						
		5												
		15												
		29	~~Clay, silty, clay and gravel~~ Grey sand, silt, clay and gravel											
		29½												
		30	Top of dolomite											100/.5 ft.
		32	Dolomite (bedrock) at 30'-32'(?) CONT											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
	Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		32	DOLOMITE BEDROCK CON'T					Bkgnd						
			34' CORE STARTS											
		35	DOLOMITE LT. GREY, vugs filled with secondary calcite. Highly broken up 34'-35'. ~~Res~~ Rest of section 1-2 horizontal fractures per ft. vertical fracture at 37'. Competent rock.											
	100%	40												
			42.5' LT. grey dolomite, competent. Two horizontal fractures in this section. Vertical fracture 46.5'-47.'											
		45												
			47.8 LT. grey dolomite. Highly fractured											
			49.5 — E.O.B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	
Boring Drilled by (Name)	**Date Installed**
Rob Dragjans	10/09/90 (M M D D Y Y)
Facility Well Number	**WI Unique Well Number (assigned by DNR)**	**Borehole Diameter**	**Water Level**	**Surface Elevation**
13SR2	____	6.0 Inches	____ Feet	598.85

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W
Grid Location (if applicable): 640703 feet (N) or S 2591736 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	Blind drilled. Alluvium and till											
		25'	Dolomite bedrock											
			Cont											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Mark Vick	Geraghty & Miller, Inc.

This form is authorized by Chapters 144, 147 and 162, Wis Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss. 144.99 and 162.06, Wis Stats.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	SOIL PROPERTIES W	SOIL PROPERTIES LL	SOIL PROPERTIES PL	SOIL PROPERTIES P200	Blow Count
			Dolomite cont.											
			— EOB 48.4' —											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 3

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Leslie Fields - Mark Rutkowski	09/09/90 (M M / D D / Y Y)
Facility Well Number	**WI Unique Well Number (assigned by DNR)**	**Borehole Diameter**	**Water Level**	**Surface Elevation**
13DR		6.0 Inches	___ Feet	599.30

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640695 feet (N) or S ___ feet (E) or W; 2591703

County: Sheboygan | County Code: 60 | Civil Town: Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	55%		Alluvium Poorly sorted, silt, sand + clay. Brown to red brown.					Bkgrd						18
	50%													20
	100%													3
	75%	6.0	Gravel (dolomite, little lgn/rets) and sand.											4
	0%													11
	5%	10.5	Middle Unit - Clay, some dolomite gravel and silt, little sand. Red brown to brown grey.											26
	80%													41
	0%													29
	25%													9
	90%													9
	60%													12
	100%													17
	95%													7
	0%	26.0	Lower Unit - Poorly sorted silt clay, sand + dolomite gravel, +											12
	50%	30	Cobbles.											10
*	35%		GEOTECH Sample Interval 2 MW13DR / 30-32 Atterberg + Grain size		CL			V			20	12	56.8	15
														16
														33
														14
														22
														9
														23
														52
														65
														37
														77
														21
														58
														138

167/7"

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Mark Wilson	Geraghty + Miller, Inc.

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Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
								Bkgnd.						
	15%													>100/.3ft
	10%	35	Dolomite bedrock - Gray tobuff dolomite, mid stylolites. Vertical fractures from 47.1' to 52', ~~54.4-54.9~~, ~~two~~ few vertical fractures 54.4-61.8 Fracture zone 63.2-63.4, Vertical fractures 71.9-72.4, 75.6-77.8, 89.2', Broken zone at 89.5-90.6. Additional horizontal fractures at stylolites, scattered throughout secton. Limonite staining occurs throughout sect.											>100/.3ft
	10%													>100/.4ft
	10%													>100/.2ft
	0%													>100/.1ft
	0%													100
	70%	50												
	99%	55												
		60												
	100%	65												
		70												
	100%	75												
		80												
		85												85

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 3 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	100%	86	DOLOMITE					Bkgnd						
		92.2	E.O.B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Mike Wilczynski	08/26/90 (M M / D D / Y Y)
Facility Well Number	**WI Unique Well Number (assigned by DNR)**
14	
Borehole Diameter	**Water Level**
6.0 Inches	___ Feet
Surface Elevation	
594.50	

ORIGINALLY DRILLED AS 14SR

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 641319 feet (N) or S 2591931 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
*	—	0	Alluvium - Brown silt grading downward to fine to coarse sand & gravel. Top 0.5ft is topsoil.		CL			Blank			39	26	77.6	22 18 6 9
	50%													12
	100%	5												12
	100%													11
*			*GEOTECH Sample Interval MW14SR/18-23' MW14SR/17-18' MW14SR/1-2' MW14SR/7-9 MW14SR/13-15'		SM						Nonplastic		26.9	7 10
	25%													13
	50%													11
														8 11
	25%	13.0	MIDDLE UNIT - Grey clay, little dolomite gravel											
*	100%	15			CL						41	16	94.9	15 24
		15.0	LOWER UNIT - Light grey clay silt, sand and dolomite gravel.											16 50
*	10%				CL						25	13	63.9	80
*	100%				SM						13	11	38.9	95 31
*	10%				GM						14	12	36.3	98 98
*	0				SM						14	11	43.9	102 102
	—	23.8	Dolomite Bedrock											
	—	25	Competent dolomite, light grey, very tight, very few fractures and very minor stylolites. (Cont)											
	—													
	—													

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mark Miller

Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qp) (tsf)	SOIL PROPERTIES W	SOIL PROPERTIES LL	SOIL PROPERTIES PL	SOIL PROPERTIES P200	Blow Count
	100%	32	CONT'd					Bkgnd						
		35												
			36.5 E.O.B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Mike Wilczynski	09/07/90 (M M / D D / Y Y)
Facility Well Number	**WI Unique Well Number (assigned by DNR)**
14SR	— — — — — — —
Borehole Diameter	**Water Level**
6.0 Inches	— Feet
Surface Elevation	
594.30	

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 641306 feet (N) or S — 2591933 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	—	0	0-24' black dutted - Till and Alluvium.					Bkgnd.						
	50%													
	100%	5												
	100%													
	25%													
	50%													
	25%													
	100%	15												
	10%													
	100%													
	10%													
	0%		24' — Top of dolomite bedrock											
		25	Started coring.											
			Light grey crystalline dolomite. - Horizontal fracture frequency = 1 to 3 per foot.											
		32												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mike Wilczynski Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	100%	32 35 36.4	36'-40' is very tight. No vertical fractures, and horizontal fracture frequency decreases with depth.					Bkgnd						
		40'	E. O. B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508

Boring Drilled by (Name)	Date Installed (M M / D D / Y Y)
Ross Creighton	08 / 15 / 90

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
15	— — — — — — —	6.0 Inches	— Feet	670.90

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640012 — feet (N) or S — 2592271 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	Blind drilled - Till					Bkgnd						
		5												
		10												
		15												
		20												
		25												
		30												
		32	Cont											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mike Wade — Firm: Geraghty + Miller, Inc.

This form is authorized by Chapters 144, 147 and 162, Wis Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss. 144.99 and 162.06, Wis Stats.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
			BLIND DRILLED											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 4 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
*		85	Grey clay, mild dolomite gravel, in Middle Unit		CL						41	18	86.6	24 52 87
		87	As above		CL						38	18	90.9	65 139
		89	Refusal.											
		91												
		95.5	E.O.B											

* GEOTECH Sample Interval
MW 65 / 85 - 89

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 3

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Ross Creighton	08/13/90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
15SR	— — — — — — —	6.0 Inches	— Feet	671.35

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (If applicable): 640014 feet (N) or S 2592282 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	Blind drilled - Till.					Bkgnd						
		5												
		10												
		15												
		20												
		25												
		30												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
	Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	SOIL PROPERTIES W	SOIL PROPERTIES LL	SOIL PROPERTIES PL	SOIL PROPERTIES P200	Blow Count
		35	Blind drilling cont - TILL					Background						
		40												
		45												
		50												
		55												
		60												
		65												
		70												
		75												
		80												
		85												
		86												

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 3 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
		85						Bkgnd.						
		90												
		95												
			101.0 Dolomite BEDROCK Rotary drilled											
		101	104.6 - CORE STARTS											
	90%		Highly fractured, weathered dolomite. lt. brown-tan, with iron staining. Clay present in some fractures also fine sand. Some vuggy zones. Some fossiliferous zones.											
		115												
	71%													
		125												
	100%													
			131.6 E.O.B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 4

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Leslie Field	08/06/90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
15DR	___ ___ ___ ___ ___ ___	8.0 Inches	___ Feet	672.00

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640017 ___ feet (N) or S ___ feet (E) or W — 2592293

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	80%	0	UPPER UNIT Interbedded sand, silt and clay sand and clay layers may be silty. Red to brown in color.					Background						8
	50%													23
	100%	5												6
														5
														9
														12
		10'	Red-brown to brown sand and silt											5
														5
														12
														15
		15												15
			Red-brown clay, little silt & sand											24
														21
														38
		20	Red brown silt, little clay & dolomite gravel.											51
														35
														69
	75%	25	Red-brown silt, little clay.											76
	100%													92
	100%													138
		30												24
	68%	31.5												64
														95
														111
														119
														24
														59
														72
														89
														124
														23

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Mark W. Miller	Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 4

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
			31.5 Brown-brown silt some clay					Bkgnd						43
	100%													54
	100%	35'	Grey to red-brown silt trace of clay											65
	100%													34
	100%													83
	100%	40'	Brown to grey-brown silty sand interlayered with clean fine sand. Clay unit at 44'-45'											89
	40%													48
	100%													193
	0%	45'	MIDDLE UNIT - Grey to red-brown clay, some silty, gravel dolomite gravel											58
	100%													59
	100%													78
	100%													111
	100%													58
	100%													90
	100%													110
	100%													161
	100%	55												22
	100%													72
	100%													100
	100%													144
	100%													41
	100%													78
	100%													77
	100%													130
	100%	65												48
	100%													60
	100%													62
	100%													75
	100%	70												24
	100%													49
	100%													53
	100%													97
	100%	75												29
	100%													48
														56
														76
		80												17
														36
														56
														81

84.5

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 5 of 7

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	—	85	Middle unit Cont					Bkgrd						30
	—													40
	—													64
	—		89.0											100
	—		Lower Unit											55
	—		Grey silt, sand, clay and dolomite gravel.											113
	—	95												>100/.3'
	—													225/.4'
	—		99.5 — Bedrock											
	—		Weathered tan to red-brown dolomite, vuggy zones, iron staining along fracture surfaces.											
100%		105												
		115												
100%														
			123.9											
50%		125	Competent dolomite. Grey to tan with iron staining. Partings along stylolites. Highly fractured zone from 133.4 - 135.9, vertical fracture from 145.4 to 176.5											
92%														
		135												
			Cont											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 4 of 4

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
	32		Con't					Bkgnd						
		140												
	100%													
		145												
		145.9												
		150												
	100%													
		155												
		156.1	E.O.B.											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 3

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Todd Udvig	07/31/90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
16	— — — — — — —	8.0 Inches	— Feet	655.90

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 639778 feet (N) or S 2591567 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		0	BLIND DRILLED - T.11					Bkgnd						
		5												
		10												
		15												
		20												
		25												
		30												
		32	CONT											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		35	Blind drilling cont - Till					Bkgnd						
		40												
		45												
		50												
		55												
		60												
		65												
		70												
		75	* GEOTECH Sample Interval MW16 / 82.5 - 86.5											
	90%	80												7 12 22 33 44
*	-	8	83.5 — LOWER UNIT —		CL						40	18	94.1	86
	10%		Grey silty Clay, sand & gravel, dense Cont											106

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 3 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
			CON'T		CL			Bkgnd			37	18	89.2	149
					CL						25	14	61	160
		86.5	EOB											112

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 7/89
Page 1 of 3

Facility Name: Kohler Co. Landfill	License/Permit/Monitoring Number: — — — — — — — —
Boring Drilled by (Name): Leslie Fields	Date Installed: 07/27/90 (M M D D Y Y)
Facility Well Number: MW 16SR	WI Unique Well Number (assigned by DNR): — — — — — — — —
Borehole Diameter: 6 Inches	Water Level: ____ Feet
Surface Elevation: 655.73	

NE 1/4 of SE 1/4 of Section 29 T 15N, R 23 (E) or W

Grid Location (if applicable): 639774 feet (N) or S; 2591659 feet (E) or W

County: Sheboygan | County Code: 60 | Civil Town: Sheboygan

Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	DILEAM	USCS	RQD	GRAPHIC	Knu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
25%	0	Upper Unit - Red-brown to brown silt, some clay, little fine sand & dolomite gravel.					Bkgnd						40
60%													32
100%	5												13
* 100%		* GEOTECH Sample Interval MW 16SR 1 7.5-8		CL						26	14	73.2	23
100%													39
90%													51
100%													47
100%	15												60
80%													22
100%													40
50%													62
100%													57
100%	25.0	Middle Unit - Brown to red-brown clay, little to some silt, little gravel & fine sand. Becomes grey-brown in color with depth.											38
100%													73
100%													17
100%													24
100%													43
													45
													23
													33
													17
													28
													43
													99
													4.
													35
													17
													20
													36
													47
													30
													27

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] | Firm:

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss. 144.99 and 162.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
		32						Bkgnd						24
	85%													42
	100%	35												58
	100%													26
	85%													76
	100%													30
	100%													47
	50%	45												69
	100%													3
	100%													6
*	40%		* GEOTECH Sample Intervals GMMW 16 SR/50-52 & GMMW16 SR/63.5-64		CL						40	18	84	29
	100%													61
	100%	55												59
	80%													39
	100%													106
	100%	65												50
*	100%				CL						48	22	99.4	27
	100%	65												43
	100%													58
	100%													82
	100%	70												24
	100%													38
	100%													15
	100%													23
	100%													36
	100%	75												52
	100%													33
	100%													5
	100%													25
	100%													33
	100%													49
	100%													47
	100%													20
	100%													40
	100%													20
	100%													27
	100%													39
	100%													50
	100%													36
	100%													40
	100%													20
	100%													39
	100%													41
	100%													14
	100%													34
	100%													80
	100%													51
	15%													116
	100%	85												190
		90												166

80.0 – Lower Unit – Red brown to grey, silt, & gravel some sand some (Dolomite) little clay. Gravel content increases with depth.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 3

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	100%	85						Bkgnd						193
	0													193
	—													>100/.2 Ct.
	67%													>100/.2 ft.
		93.0	Bedrock ROTARY DRILLED CORING STARTS											04
	97%	105	Competent dolomite, light grey with iron staining. Secondary Calcite on fracture surfaces and in vugs. Clay material in fractures. Weathered, fractured zone at 96.2 - 97.0. Vertical ~~fracture~~ fracture 99.4 - 100.5 fracture zone. 116 - 116.8											
	100%	115												
		123.5	E.O.B.											
		125												

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508
Boring Drilled by (Name)	**Date Installed**
Rob Graziano	08 / 22 / 90 (M M / D D / Y Y)

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
17	— — — — — — —	6.0 inches	— Feet	603.35

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640089 feet (N) or S — 2590657 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
			0-36 Blind drill - alluvium + till.					Bkgnd 1						
			Cont					X						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Mark Miller	Geraghty + Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	GRAPHIC LOG	Hnu	SOIL PROPERTIES qu (qp) (tsf)	W	LL	PL	P200	Blow Count
								Pmd						
*	60%	36.0	Grey brown clay, trace of dolomite gravel in middle unit		CL						28	14	83.2	25 / >100 / .24
*	80%	38.0	Blind drilled through dolomite											218
*	80%	40.0	Grey brown silt w/ sand & gravel - Cobble - (Lower Unit)		SM						12	11	39.7	18° 41
		41.0												
		43.0	Grey brown silt / Coarse sand & gravel with		SM						12	11	32.5	85 242 427

E.O.B 43'

* GEOTECH Sample Intervals
MW17/37-38
MW17/40-41
MW17/41-42.7

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 1 of 2

Facility Name	License/Permit/Monitoring Number
Kohler Co. Landfill	1508

Boring Drilled by (Name)	Date Installed (M M D D Y Y)
Rob Graziano / J. Ellinger + M. Wilandt KIETH MARQUARDT	08 / 23 / 90

Facility Well Number	WI Unique Well Number (assigned by DNR)	Borehole Diameter	Water Level	Surface Elevation
17SR		6.0 Inches	___ Feet	603.60

NE 1/4 of SE 1/4 of Section 29 T 15 N, R 23 (E) or W

Grid Location (if applicable): 640092 ___ feet (N) or S ___ 2590670 feet (E) or W

County	County Code	Civil Town
Sheboygan	60	Sheboygan

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RQD	GEOLOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
*	75%		Alluvium - Top soil to 1.5 ft. 1.5-4.5' brown silt, some fine sand. 4.5'-9.0' fine - coarse sand + gravel some silt + clay * GEOTECH Sample Interval MW #17SR / 2-4		CL			Bkgnd.			31	18	74	23 13 10 9
	70%													29 27 24 42
	100%		9.0 = MIDDLE UNIT Grey clay some to little silt and f.-c. sand, and dolomite gravel.											55 23 35 45
	100%													61 59 38 32
	100%													3 44 35 47
	100%													47 48 85 105
	75%													138 306
	—													
														95 105

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Mark W.	Geraghty & Miller, Inc.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 4/90
Page 2 of 2

Sample No.	Sample Rec.	DEPTH	SOIL/ROCK DESCRIPTION	WELL DIAGRAM	USCS	RDQ	LOG GRAPHIC	Hnu	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	P200	Blow Count
	80%							Bkgnd.						32
														37
														47
*		34	Iowa Unit - Grey silt and sand, some clay & dolomite gravel. Dolomite cobble at 45'.		GC-GM						18	12	41.4	27
	35%													21
														38
														46
														73
														46
														154
			* GEOTECH Sample Interval MW 175R / 34-35											
	80%	45												279
			49.0 - Top of dolomite bedrock (Rotary drilled)											
			51.8 - CORING STARTED											134/4"
			Light grey to tan dense crystalline dolomite, few well cemented (calcite) vertical fractures, minor vugs. Competent rock.											
	100%	55												
			Vuggy zone & solution Cavities containing calcite at 61.8 - 64.2 - This is the most permeable zone.											
	100%	65	64.2 to E.O.B. same as 51.8 to 61.8											
	100%													
			81.8 - E.O.B.											

ATTACHMENT A

Table A-1. Summary and Information Sources of Available Well Data Used for Cross-Sections

Table A-2. Hydrogeologic Location of Wells at Kohler Company Landfill vs. Year Well Was Installed

TABLE A-1. SUMMARY AND INFORMATION SOURCES OF AVAILABLE WELL DATA USED FOR CROSS-SECTIONS

Well I.D.	Original Borehole Depth[a]	Original Well Depth[a]	Lithologic Log	Screened Interval	Well Construction Materials	Remarks
1A	20.5	U	Miller	U	U	Original JR Miller & Assoc. log shows well as "Boring No. 1."
1B	21.0	U	Miller	U	U	Original JR Miller & Assoc. log shows well as "Boring No. 14."
1C	26.0	U	Miller	U	U	Original JR Miller & Assoc. log shows well as "Boring No. 15."
1D	45.0	42.0	Miller	Miller	U	
2	10.5	U	Miller	U	U	Original JR Miller & Assoc. log shows well as "Boring No. 2."
2D	19.5	19.5	Miller	Miller	U	
3	14.5	U	Miller	U	U	Original JR Miller & Assoc. log shows well as "Boring No. 3."
3D	28.5	25.5	Miller	Miller	U	
3R Abandoned	62.5	62.5	Weston	Weston	Weston	Abandoned.
3R Replacement	73.0	72.0	Radian	Radian	Radian	Weston well initially drilled 9/88, then replaced (redrilled) by Radian; completion date 10/9/88.
4	32	29	Miller	Miller	U	
4D	U	U	U	U	U	No data for borehole or well.
5	20.5	U	Miller	U	U	
5D	46.0	42.5	Miller	Miller	U	
6	76.0	U	Miller	U	U	
8	U	14.5	Miller	Miller	U	
8D	32.2	32.2	Miller[b]	Weston	Weston	Miller originally installed 8D. The well was damaged, then replaced by Weston on 8/1/88. Weston blind-drilled 8D and referred to the Miller log. Replacement well 8D is shown on cross-section.

(Continued)

TABLE A-1. (Continued)

Well I.D.	Original Borehole Depth[a]	Original Well Depth[a]	Lithologic Log	Screened Interval	Well Construction Materials	Remarks
8R	62.0	62.0	Weston	Weston/Radian (field log)	Weston/Radian (field log)	Weston's field log is comparable to Radian's oversight log, but both differ from Weston's graphic log. The field log data (open-hole completion in dolomite, 37.5 to 62 feet below ground level) are shown on cross-section.
9	35.0	34.8	Warzyn	Warzyn	Warzyn	Triad was primary contractor, no Triad logs. Original Warzyn Engr. Inc. logs indicate well 9 as "MW-1."
9D	60.0	60.0	Warzyn[b]	Warzyn	Warzyn	Triad was primary contractor, no Triad logs. Original Warzyn Engr. Inc. logs indicate well 9D as "MW-2."
10	16.5	16.5	Warzyn	Warzyn	Warzyn	Triad was primary contractor, no Triad logs. Original Warzyn Engr. Inc. logs indicate well 10 as "MW-3."
11	18.0	17.2	Weston[b]	Weston	Weston	Weston logs refer to 11D.
11D	45.0	42.2	Weston	Weston	Weston	Two sets of logs; one sent from Weston and one from ETI. Some differences.
12	10.1	10.1	Weston[b]	Weston	Weston	
12D	28.3	28.0	Weston	Weston	Weston	Total depth on logs vary from 27.9 to 28.3.
13	25.0	25.0	Weston[b]	Weston	Weston	Well construction data lack detail regarding the type of annular seals.
13R	62.0	62.0	Weston	Weston	Weston	
OW-1	25.0	22.5	Weston	Weston	Weston	Field notes show borehole depth as 25 feet, typed log shows 22.5 feet. There are at least two different lithologic logs for this hole.
OW-2	25.0	25.0	Weston	Weston	Weston	Two lithologic logs for same hole.

[a]Feet below grouind surface at time of well construction.

[b]Partial lithologic log: upper portion of the blind drilled, or entire hole blind drilled. Refer to lithologic log taken from an adjacent deep hole.

U=Unknown.

TABLE A-2. HYDROGEOLOGIC LOCATION OF WELLS AT KOHLER COMPANY LANDFILL VS. YEAR WELL WAS INSTALLED

Hydrogeologic Location	1975[a]	1981[b]	1982[c]	1986[d]	1988[e]
Upgradient Till Wells	1A 1B 1C 6(Miller)[*]	1D(Miller)		OW1(Weston)	
Downgradient Till Wells	2 3 4(Miller) 5 8(Miller)	2D(Miller) 3D(Miller) 4D(Miller) 5D(Miller) Original 8D (Miller)	9(Triad)[f] 9D(Triad)[f] 10(Triad)[f]	11(Weston) 11D(Weston) 12(Weston) 12D(Weston) OW2(Weston) new 8D(Weston)	13 (Weston)
Downgradient Bedrock Wells					13R(Weston) 8R(Weston) 3R(Weston) 3R(Radian)

[*] ( ) denotes name of consultant company that drilled the well. This is omitted if the firm is unknown.
[a] Wells installed in 1975 were drilled as part of Kohler Company's fulfillment of WDNR operational requirements for the landfill. Wells were drilled shallow and are screened in a shallow till water zone.
[b] Wells were drilled in 1981 to fulfill WDNR's requirement for deeper monitor wells of the landfill within the lower water table aquifer. Deeper wells are designated by a "D."
[c] Wells drilled in 1982 were also part of Kohler Company Landfill operating requirements and monitoring program.
[d] Wells were drilled in 1986 for Weston's Phase I operations.
[e] Wells were drilled in 1988 as part of Weston's Phase II work.
[f] Casings have been extended on these wells at least twice. Current construction needs to be identified and reviewed.

NOTE: Exact date of well completion can be found on boring logs (Attachment B).
Till = unconsolidated geologic deposits which overlie bedrock.

ATTACHMENT B

BORING LOGS

WESTON

DRILLING LOG

WELL NUMBER: OW-1
OWNER: Kohler Co.
LOCATION: N. Side of Landfill
ADDRESS: Kohler, WI
TOTAL DEPTH: 25'
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: ETI
DRILLING METHOD: HSA
DATE DRILLED: 7/31/86
DRILLER: Jim Rich
HELPER: Kevin
LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
0		1	ss	6-6/10	Black organic topsoil.	.5'
		2	ss	5-6/6	Reddish-brown silty fine sand; well-sorted, small clay fraction; dry. (CL-ML)	
					- becoming more gravelly and clayey	5.5'
		3	ss	3-3/5	Very coarse brown gravelly sand. Wet (SW)	8'
.0		4	ss	5-10/12	Reddish-brown silty clay; massive, moist slightly plastic; some pebbles. Becomes more silty towards bottom. Some gray mottling (CL)	11'
		5	ss	6-5/8	Peddlish-brown silty fine sand; some gravel and clay fraction. Wet (SM)	
		6	ss	10-11/10		15'
		7	ss	3-4/6	Red-brown clay; massive, slightly plastic, moist; no coarse fraction. (CL)	18.5
20		8	ss	9-14/17	Tan silty fine sand. Well sorted; wet (SC-ML)	
		9	ss	9-9/31	- Thin red clay horizon	
		10	ss	12-10/10	- v. stiff silty horizon	25'
					End of Boring	
30						

B-2

*ASTM D1586

SHEET 1 OF 1

WESTON

DRILLING LOG

WELL NUMBER: OW-1 OWNER: Kohler Co.
LOCATION: N. side of Landfill ADDRESS: Kohler WI.
TOTAL DEPTH 25'
SURFACE ELEVATION: WATER LEVEL:
DRILLING COMPANY: ETI DRILLING METHOD: HSA DATE DRILLED: 7/31/06
DRILLER: Jim Rich HELPER: Kevin
LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
		1	SS	6-6 10	Black organic topsoil.	.33'
		2	SS	5-5 6	Reddish-brown silty fine sand; well sorted, small clay fraction; dry. (CL-ML)	
					- becoming more gravelly and clayey.	5.5'
		3	SS	3-3 5	Very coarse brown gravelly sand. wet. (SW)	8'
10		4	SS	5-10 12	Reddish-brown silty clay; massive, moist, slightly plastic; some pebbles. Becomes more silty towards bottom. Some gray mottling (CL)	11'
		5	SS	6-5 8	Reddish-brown silty fine sand; some gravel and clay fraction. wet. (SM)	
		6	SS	10-11 12		15'
		7	SS	3-4 6	Reddish-brown clay; massive, slightly plastic moist; no coarse fraction. (CL)	18.5'
20		8	SS	9-14 17	Tan silty fine sand. Well sorted; wet. (SC-ML)	
		9	SS	9-9 21	- Thin red clay horizon - v. stiff silty horizon	
		10	SS	12-10 10		25'
					End of Boring	
30						

B-3

* A.S.T.M D1586

SHEET 1 OF 1

WESTON

DRILLING LOG

WELL NUMBER: Obs. well 1 OWNER: Kohler Co.
LOCATION: N side of landfill ADDRESS: Kohler WI
TOTAL DEPTH
SURFACE ELEVATION: WATER LEVEL:
DRILLING COMPANY: ETI DRILLING METHOD: HSA DATE DRILLED: 7/31/86
DRILLER: Jim Pirl HELPER: Kevin
LOG BY: Richard Grat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
0		1	SS	8-8 10	4" black organic Topsoil. 1 Brown silty fine sand. Well sorted. Organics. Dry.	HNM BG
		2	SS	55 6	4 1' rec. 5" Brown-red silty fine sand - Becomes gravely and clayey. Dry	HNM BG
5					6	
		3	SS	33 5	7 v. co. brown gravely sand. wet poor sorting.	HNM BG
		4	SS	5-10 12	9 Reddish brown silty clay till. Some scat peb - Massive. sl. plastic moist	
10					10 becoming greyer & sl. mottled. Much more silty. moist	
		5	SS	05 8	12 5" recover wet silty clayey gravely fine sand.	
					13	
		6	SS	10-11 10	14 well sorted fine sand. wet Lam.	
15					15 red brown clay.	
					16 4" recovery.	
		7	SS	5-4 6	17 red brown clay.	
					18	
		8	SS	9-4 17	20 Brownish gray silty well sorted fine sand. wet B-4	
					21	

* A.S.T.M. D1586

SHEET 1 OF 2

WESTON

DRILLING LOG

WELL NUMBER: OW-1 OWNER: Atlantic Richfield

LOCATION: ADDRESS:

TOTAL DEPTH

SURFACE ELEVATION: WATER LEVEL:

DRILLING COMPANY: DRILLING METHOD: DATE DRILLED:

DRILLER: HELPER:

LOG BY:

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
		9	SS	9-9 3'	3"- red brown clay [illegible]. [illegible] fine silty sand. [illegible]. Well sorted. Wet.
25		10	SS	1-10 10	8"- gray fine silty sand. Wet. 10"- red clay till. Massive.

B-5

* A.S.T.M. D1586

SHEET 2 OF 2

Well OW-1

Well Construction Summary

Location or Coords: N of landfill

Elevation: Ground Level

Top of Casing

Location

Personnel

Project

Drilling Summary:

Total Depth 22.5'

Borehole Diameter 7.625"

Driller Exploration Technology, Inc.

Rig CME 55

Bit(s) HSA

Drilling Fluid None - Water used to clean hole

Surface Casing Metal Protector

Well Design:

Basis: Geologic Log X Geophysical Log

Casing String(s): C = Casing S = Screen

22'	17'	S			
17'	3+	C			

Casing: C1 Sch 40 PVC: flush threaded

C2

Screen: S1 Sch 40 PVC: .010 continuous slot

S2

Centralizers

Filter Material Sand - 30 grade 22.5' - 14.8'

Cement Cement - bentonite slurry 10.3' - 2'

Other Bentonite Plug - 14.8' - 10.3'

Concrete Apron - 2' - 0'

Construction Time Log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	7/31	0735	7/31	0930
Geophys. Logging:				
Casing:	7/31	1005	7/31	1015
Filter Placement:	7/31	1015	7/31	1120
Cementing:	8/4	1300	8/4	1400
Development:				
Other:				
Bentonite Plug	7/31	1130	7/31	1140
Concrete Apron	8/5	1730	8/5	1745

Well Development:

Comments:

Materials Used:

3 bags - sand

1 bag - bentonite

2 bags - cement

WESTON REMEDIATION CONSULTANT

EXPLORATION TECHNOLOGY INC.

LOG OF TEST BORING

Project: Kohler Landfill
Roy F. Weston Inc.
Location: Kohler, Wisconsin

Boring No. OW1
Surface Elevation
Job No. 811294
Sheet 1 of 1

1402 EMIL STREET • P.O. BOX 9404, MADISON, WIS. 53715 • TEL. (608) 258-9550

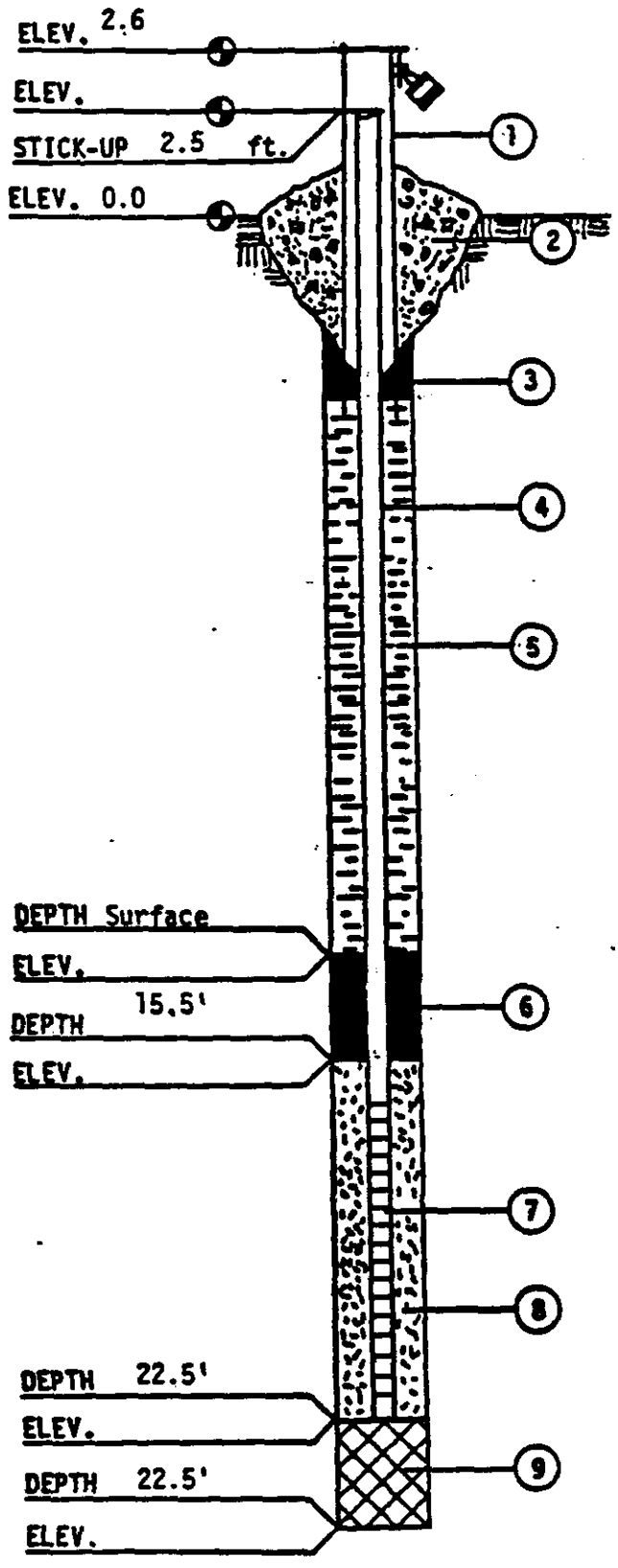
SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
		Recovery	Moisture								
No.	Type	↓	↓	N	Depth		qp	W	LL	PL	S
1	SS	12"	M	16		TOPSOIL					
2	SS	12"	M	11	5	Medium Dense, Brown Silty Sandy CLAY, SomeGravel					
3	SS	12"	W	8							
4	SS	12"	M	22	10						
5	SS	6"	M	13		Wet					
6	SS	18"	W	21	15	*					
7	SS		M	10		Medium Dense, Brown Silty Sandy CLAY, Some Gravel					
8	SS			26	20						
9	SS	18"	W	40		Dense					
10	SS	18"	M	20							
					25	End Boring at 22.5'					
						*Light Brown Fine to Medium SAND, Wet					
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 7/31/86 Complete 7/31/86
Crew Chief JR Rig 9230
Drilling Method
4½" I.D. HSA



EXPLORATION TECHNOLOGY INC.

MONITORING WELL CONSTRUCTION INFORMATION

JOB NO. 811294

BORING/WELL NO. OW1

DATE 7/31/86

CHIEF/UNIT JR/9230

1. PROTECTIVE CASING YES NO
   LOCKING YES NO
2. CONCRETE SEAL YES NO
3. TYPE OF SURFACE SEAL (IF INSTALLED)
   Cmenet Bentonite Grout
4. SOLID PIPE TYPE SCHD 40 PVC
   SOLID PIPE LENGTH 17.5 ft.
   JOINT TYPE SLIP/GLUED (THREADED)
5. TYPE OF BACKFILL Cement Bentonite Grout
   HOW INSTALLED (TREMIE FROM SURFACE)
6. TYPE OF LOWER SEAL (IF INSTALLED)
   Bentonite Slurry
7. SCREEN TYPE Continuous Wire Wrap SCHD 40 PVC
   SCREEN LENGTH 5.0'
   SLOT-SIZE 0.010" LENGTH 4.5 ft.
   SCREEN DIAMETER 2.0 in.
8. TYPE OF BACKFILL AROUND SCREEN
   #30 Flint Sand
9. TYPE OF BACKFILL Spoil
10. DRILLING METHOD 4¼" I.D. HSA
11. ADDITIVES USED (IF ANY)
    None

WATER LEVEL _____ DATE _____

*ALL DEPTHS MEASURED FROM GROUND SURFACE.

WESTON

DRILLING LOG

WELL NUMBER: OW-2 OWNER: Kohler Co.
LOCATION: North of old Waste Pit ADDRESS: Kohler, WI
TOTAL DEPTH 25'
SURFACE ELEVATION: WATER LEVEL:
DRILLING COMPANY: ETI DRILLING METHOD: HSA DATE DRILLED: 8/7/86
DRILLER: Jeff Poeshi HELPER: Tom Ebert
LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0		1	ss	10-7-6	Fill Brown and clayey towards top becoming loose and sandy after approx. 3'. Generally contains cinder and slag.
		2	ss	4-4-6	
		3	ss	9-10-11	
		4	ss	24-31	- orangish tint
		5	ss	4-3-2	
10		6	ss	5-3-3	- blue green chalky zone
		7	ss	4-4-9	
		8	ss	12-19-19	Interlayered silty red clay and tan silty fine sands. Layers up to 8 inches in thickness wet at approx. 16 feet. (CL - ML)
20		9	ss	7-14-23	
		10	ss	14-24-24	
		11	ss	12-20-29	End of Boring
30					

15'

25'

B-9

* ASTM D1586

SHEET 1 OF 1

WESTON

DRILLING LOG

WELL NUMBER: OW-2 OWNER: Kohler Co.
LOCATION: North of old ADDRESS: Kohler WI.
TOTAL DEPTH 35'
SURFACE ELEVATION: WATER LEVEL:
DRILLING COMPANY: ETI DRILLING METHOD: HSA DATE DRILLED: 8/7/86
DRILLER: Jeff Poeschl HELPER: Tim Eberl
LOG BY: Richard Grot

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0		1	SS	10-6 6	Fill. Brown and clayey towards top becoming loose and sandy after approx. 3'. Becoming maine cinder and slag.
		2	SS	4-4 6	
		3	SS	9-10 11	
		4	SS	24-32 31	- orangish tint.
10		5	SS	4-3 2	
		6	SS	5-3 3	- blue green chalky zone. - oil saturated and hydrocarbon odor.
		7	SS	4-4 9	15'
		8	SS	12-19 19	Interlayered silty red clay and tan silty fine sands. Layers up to 8 inches in thickness wet at approx. 16 feet (CL-ML)
20		9	SS	7-14 23	
		10	SS	14-24 24	
		11	SS	12-20 29	25'
					End of Boring
30					

B-10

* A.S.T.M. D1586

SHEET 1 OF 1

WESTON

DRILLING LOG

WELL NUMBER: OW-2 OWNER: Kohler

LOCATION: _____ ADDRESS: Kohler WI

_____ _____

_____ TOTAL DEPTH _____

SURFACE ELEVATION: _____ WATER LEVEL: _____

DRILLING COMPANY: ETI DRILLING METHOD: HSA DATE DRILLED: 9/7/88

DRILLER: Jeff D. HELPER: Tim

LOG BY: Richard Grat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
0		1	SS	10-6 5	0-4 - brown 3" fill [illegible]	
				6	4-8 - brown clayey fill [illegible]	
		3	SS	9-10 11	8" - reddish brown clayey fill	
5					6" - black sandy organic fill. Loose dry	BG
		4	SS	24-33 31	8-20 - brown - black - yellowish sand, clay [illegible] Loose dry	BG
		5	SS	4-3 2	0" - clayey brown/black fill [illegible]	BG
					2" - black sandy cinder fill becoming moist towards 10"	
		6	SS	5-3 3	Poor rec. 1" - black & brown org. fill 2" 1" - light blue green chalky fill 1" - black organic fill. Tar smell	HNU DH 3 BG W BG
		7	SS	4-4 9	13-20 3" - oil saturated sand (fill) 4" - grey clayey silt 7" - black oil saturated sand	HNU DH HNU-S 30 W BG
		8	SS	12-19 17	20-28 3" - brown red silty fine sandy clay 13" - lt. brown well sorted fine sand well clean 3 Poor bentonite seal. to rest well	HNU DH 1
		9	SS	7-16 23	28-40 8" - red clay fill 4" - grey/brown sand B-11	DH 1.5 HNU BG

* A.S.T.M D1586

SHEET 1 OF 2

WESTON

DRILLING LOG

WELL NUMBER: OW2 OWNER: _____

LOCATION: _____ ADDRESS: _____

_____ _____

_____ TOTAL DEPTH: _____

SURFACE ELEVATION: _____ WATER LEVEL: _____

DRILLING COMPANY: _____ DRILLING METHOD: _____ DATE DRILLED: _____

DRILLER: _____ HELPER: _____

LOG BY: _____

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
20						
21					Fine sand, silty, some clay	HNU 2 SBG
22		10	SS	14 21 24		
23						HNU 6
24		11	SS	12-26 29	Brownish red fine sand, wet at time slight trace silt clay.	SBG
25						

B-12

* A.S.T.M. D1586

SHEET 2 OF 2

Well OW-2

Well Construction Summary

Location or Coords: North of Old Waste Pit

Elevation: Ground Level

Top of Casing

Location

Personnel

Project

Drilling Summary:

Total Depth 25'

Borehole Diameter 7.625'

Driller Exploration Technology, Inc.

Rig CME 55

Bit(s) HSA

Drilling Fluid None - Water to wash hole. Lost 60 gal to aquifer.

Surface Casing Metal Protector

Well Design:

Basis: Geologic Log X Geophysical Log

Casing String(s): C = Casing S = Screen

25	20'	S			
20'	2.5+	C			

Casing: C1 Sch. 40 PVC; flush threaded

C2

Screen: S1 Sch 40 PVC; .010 continuous slot

S2

Centralizers

Filter Material Sand - 30 grade 25 - 17.92'

Cement Cement - bentonite slurry 14.5' - 1.5'

Other Bentonite Plug - 17.92' - 14.5'

Concrete Apron - 1.5' - 0'

Construction Time Log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	8/7	0920	8/7	1040
Geophys. Logging:				
Casing:	8/7	1140	8/7	1150
Filter Placement:	8/7	1150	8/7	1220
Cementing:	8/7	1415	8/7	1550
Development:				
Other:				
Bentonite Plug	8/7	1220	8/7	1240
Concrete Apron	8/8	0935	8/8	0950

Well Development:

Comments:

Material Used:

200 lbs - sand

300 lbs - cement*

2 bags - bentonite

2 bags - concrete

* lossing grout to fill

WESTON

EXPLORATION TECHNOLOGY INC.

LOG OF TEST BORING

Project: Kohler Landfill
Roy F. Weston Inc.
Location: Kohler, Wisconsin

Boring No. OW2
Surface Elevation
Job No. 811294
Sheet 1 of 1

1402 EMIL STREET • P.O. BOX 9404, MADISON, WIS. 53715 • TEL. (608) 258-9550

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu	W	LL	PL	D
1	SS		M	12		FILL: Loose to Very Dense, Black, Fine to Medium Sand, Trace of Brick, Cinder, Moist/Wet					
2	SS		M	10							
3	SS		M	21	5						
4	SS		M	64		Few Brown Lean Clay Layers, Moist					
5	SS		M	5							
6	SS		W	6	10						
7	SS			13							
8	SS		W	38	15	Dense, Light Brown Fine to Medium SAND, Wet					
9	SS		W	37							
10	SS		W	48	20	Few to Some Red Brown Fat Clay Layers, Moist					
11	SS		W	49							
					25	End Boring at 25'					
					30	Bentonite/Cement Grout 1.5-14.5'					
					35						
					40						

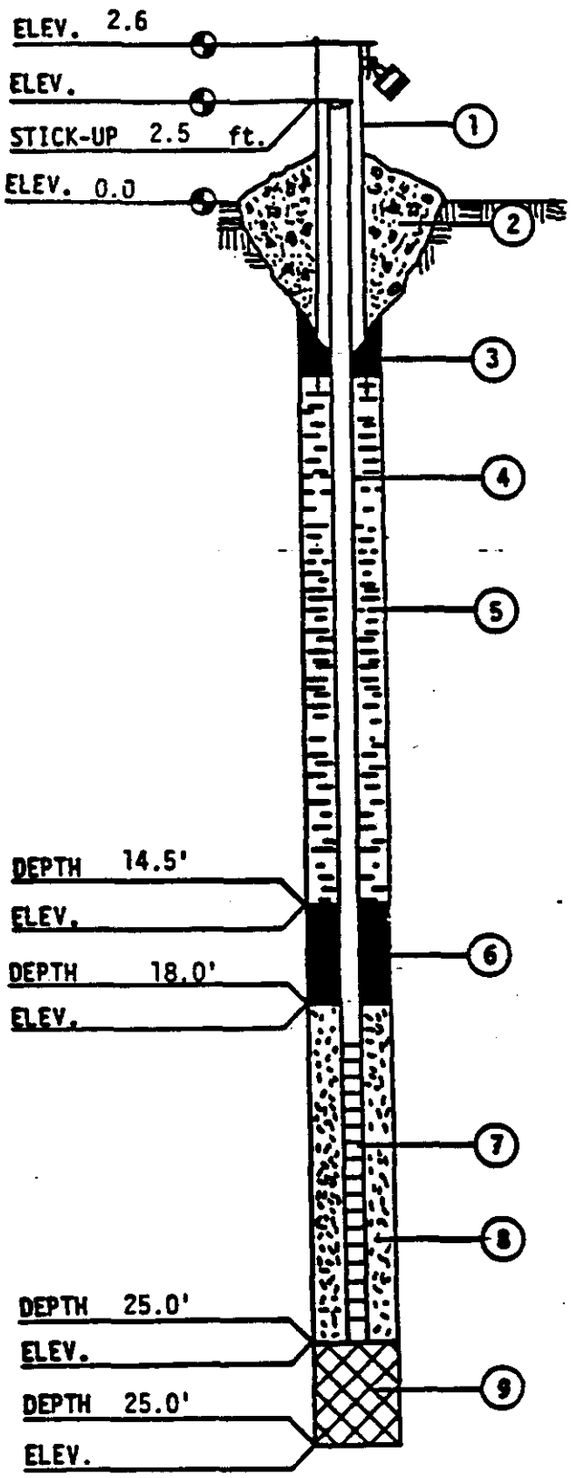
WATER LEVEL OBSERVATIONS

While Drilling 11'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

B-14

GENERAL NOTES

Start 8/7/86 Complete 8/7/86
Crew Chief JP Rig CME 55
Drilling Method 4¼ I.D. HSA



EXPLORATION TECHNOLOGY INC.

MONITORING WELL CONSTRUCTION INFORMATION

JOB NO. 811294

BORING/WELL NO. OW-2

DATE 8/7/86

CHIEF/UNIT JP/9230

1. PROTECTIVE CASING YES NO

   LOCKING YES NO

2. CONCRETE SEAL YES NO

3. TYPE OF SURFACE SEAL (IF INSTALLED)
   Cement Bentonite Gourt

4. SOLID PIPE TYPE SCHD 40 PVC

   SOLID PIPE LENGTH 22.5 ft.

   JOINT TYPE SLIP/GLUED THREADED

5. TYPE OF BACKFILL Cement Bentonite Grou

   HOW INSTALLED - TREMIE
   FROM SURFACE

6. TYPE OF LOWER SEAL (IF INSTALLED)
   Bentonite Slurry

7. SCREEN TYPE Continuous Wire Wrap
   SCHD 40 PVC

   SCREEN LENGTH 5.0'

   SLOT-SIZE 0.010" LENGTH 4.5 ft

   SCREEN DIAMETER 2.0 in

8. TYPE OF BACKFILL AROUND SCREEN
   #30 Flint Sand

9. TYPE OF BACKFILL -

10. DRILLING METHOD 4½"I.D. HSA

11. ADDITIVES USED (IF ANY)
    None

WATER LEVEL _____ DATE _____

*ALL DEPTHS MEASURED FROM GROUND SURFACE.

Well 1A

RECORD OF SOIL EXPLORATION

BORING NO. 1

PROJECT THE KOHLER COMPANY LANDFILL LOCATION Kohler, Wisconsin

SURFACE ELEVATION 79.2 City of Kohler DATUM CLIENT The Kohler Company

JOB NO. 8292

SAMPLE

DEPTH	NO.	TYPE	REC.	DESCRIPTION OF MATERIAL	W/L	SAMPLE DEPTH	DRILLING & SAMPLING NOTES
00				SURFACE Dk. Br. Moist Loamy Topsoil		0-0.5'	(Pt-CH)
							water @ 5 days
5							
	1	A		Reddish brown moist stiff clay, some coarse sand noted (CL)		0.5'-14.5'	
10							water @ 16 days
15							
	2	A		Red moist very stiff clay (CL)		14.5'-18.5'	
				Tan wet runny sandy silt (ML)		18.5'-	
20	3	A				20.5'	
				END OF BORING 20.5'			
				Water obs. pt. @ 17.5'			
				2.5' of pipe above ground			
25							A= Sample obtained off auger flights

GROUND WATER MEASUREMENTS

DEPTH AT COMPL. 5.0 FT. CAVE-IN DEPTH 8.0 FT

AFTER 120 HRS. 4.0 FT. AFTER 15 days 10 FT

DATE BEGUN 4-30-75 DATE COMPL. 4-30-75

FOREMAN S. Rutter INSPECTOR E. Harvey

METHOD 4" cont. flight augers

J.ROGER MILLER & ASSOCIATES, INC. CONSULTING ENGINEERS
5308 SOUTH 12TH. ST. SHEBOYGAN 53081

Well 1B

RECORD OF SOIL EXPLORATION

Well 1B

BORING NO. 14

PROJECT THE KOHLER COMPANY LANDFILL LOCATION Kohler, Wisconsin

SURFACE ELEVATION 79.2 City of Kohler DATUM CLIENT The Kohler Company

JOB NO. 8292

▽ SAMPLE

DEPTH	NO.	TYPE	REC.	DESCRIPTION OF MATERIAL	SAMPLE DEPTH	DRILLING & SAMPLING NOTES
0.0				SURFACE Moist dk.brn.clayey loam topsoil	0-0.5'	(Pt - CL)
						Gravelly drilling 3.5-4.5'
5	1	DS	6"	Moist reddish brown stiff sandy clay, occasional gravel noted (CL)	0.5'-12.5'	N=5/5/5
10	2	DS	7"			N=5/6/8 Water @ 3 days
				Moist to wet light brown loose silty fine sand (SM)	12.5'-18.0'	Slightly difficult drilling 12.5'-16.5'
15	3	DS	4"			N=6/9/12
				Moist grayish brown very stiff clay (CL)	16.5'-18.0'	
				Wet light brown loose silty fine sand (SM)	18.0'-21.0'	
20	4	DS	4"			N=6/11/30
				END OF BORING 21.0' Water obs. point @ 18.5' 1.5' of pipe above ground		
30						

GROUND WATER MEASUREMENTS

DEPTH AT COMPL. 17.0 FT CAVE-IN DEPTH 18.0 FT.

AFTER 72 HRS. 11.0 FT. AFTER ____ HRS. ____ FT.

DATE BEGUN 5-19-75 DATE COMPL. 5-19-75

FOREMAN S. Rutter INSPECTOR E. Harvey

METHOD 6" hollow stem augers

B-17

J.ROGER MILLER & ASSOCIATES, INC. CONSULTING ENGINEERS

5308 SOUTH 12TH. ST. SHEBOYGAN 53081

21-A

Well 1C

RECORD OF SOIL EXPLORATION

Well 1C

BORING NO. 15

PROJECT THE KOHLER COMPANY LANDFILL LOCATION Kohler, Wisconsin

SURFACE ELEVATION 79.2 City of Kohler DATUM CLIENT The Kohler Company

JOB NO. 8292

▽ SAMPLE

DEPTH	NO.	TYPE	REC.	DESCRIPTION OF MATERIAL	SAMPLE DEPTH	DRILLING & SAMPLING NOTES
00				SURFACE Moist dk.brn clayey loam topsoil	0-0.5'	(Pt - CL)
						Sounds gravelly 3.5'-4.5'
5	1	DS	4"	Moist reddish brown stiff sandy clay, occasional gravel noted (CL)	0.5'-12.5'	N=7/6/8
10	2	DS	5"			N=9/16/6
						Water @ 3 days
						N=3/4/9
15	3	DS	7"	Moist dark gray stiff clay, some gravel noted (CL)	12.5'-20.0'	Difficult drilling 12.5' - 20.0'
20	4	DS	5"		20.0'-26.0'	N=3/3/7
				Wet light brown to tan runny loose to moderately dense silty fine sand (SM)		
25	5	DS	7"			N=3/7/23
				END OF BORING 26.0' Water obs. point @ 24.0' 1.5' of pipe above ground		

GROUND WATER MEASUREMENTS

DEPTH AT COMPL. 11.0 FT. CAVE-IN DEPTH 21 FT

AFTER 72 HRS. 13.0 FT. AFTER ____ HRS. ____ FT.

DATE BEGUN 5-19-75 DATE COMPL. 5-19-75

FOREMAN S. Rutter INSPECTOR E. Harvey

METHOD 6" hollow stem augers

B-18

J.ROGER MILLER & ASSOCIATES, INC. CONSULTING ENGINEERS

5308 SOUTH 12TH ST. SHEBOYGAN 53081

21-b

BORING LOG OF TEST HOLE NO. 201 #1D

PROJECT ACTIVE LANDFILL SITE LOCATION KOHLER, WISCONSIN

SURFACE ELEVATION +79.2 JOB NO 8582 CLIENT KOHLER COMPANY

BENCHMARK OR DATUM CITY OF KOHLER DATUM DATE 6-4-81

DEPTH	SAMPLE NO	SAMPLE TYPE	SAMPLE REC	SOIL DESCRIPTION	SYM	UNIFIED CLASSIF	N	q_u	γ_d	PL	LL	OTHER LAB TESTS
00				SURFACE MOIST DARK BROWN FIRM CLAYEY LOAM 1'		OL						TOP ELEV. +82.2
				MOIST REDDISH BROWN STIFF SANDY CLAY, TRACE GRAVEL NOTED								
5						CL						
10				12½'								
				MOIST DARK GREY STIFF CLAY, SOME FINE GRAVEL NOTED								
15						CL						2" PVC OBSERVATION WELL PIPE, 5' SLOTTED TIP.
20				20' WET LIGHT BROWN MODERATELY DENSE SILTY FINE SAND								
25						SM						
30				32' MOIST GREY VERY STIFF SILTY CLAY								
35						CL						
				37' WET BROWN MODERATELY DENSE FINE SILTY SAND								
40						SP						TIP ELEV. +37.2
45				BORING ENDED AT 45' ELEVATION +34.2								

GROUNDWATER MEASUREMENTS

DEPTH AT COMPL. ---------- FT CAVE IN DEPTH ---------- FT

AFTER ---- HRS ------ FT AFTER ------- HRS. ------- FT

AFTER ---- HRS ------ FT AFTER ------- HRS ------- FT

DRILLING & SAMPLING NOTES

DATE BEGUN 6-2-81 DATE COMPL 6-2-81

CREW BYNVEEN & ERDCER RIG CME 45

METHOD 4" CFA, ASTM D1452

Well 2 D-2 #2

RECORD OF SOIL EXPLORATION — BORING NO. 2

PROJECT THE KOHLER COMPANY LANDFILL — LOCATION Kohler, Wisconsin

SURFACE ELEVATION 15.0 — DATUM City of Kohler — CLIENT The Kohler Company

JOB NO. 8292

▽ SAMPLE

DEPTH	NO.	TYPE	REC.	DESCRIPTION OF MATERIAL	W/L	SAMPLE DEPTH	DRILLING & SAMPLING NOTES
00				SURFACE			
				Moist dark brown loamy topsoil (CH-Pt)	▽	0-2'	water @ 4 days
	1	A		Wet brown clayey fine sand (SC)		2-4.5	
5					▽		water @ 15 days
	2	A		Wet runny brown silty fine sand (SM)		4.5'-10.5'	
10							
				END OF BORING 10.5'			
				Water obs. Pt. @ 9.0'			
				4.0' of pipe above ground			
15							
20							

A= Sample obtained off auger flights

GROUND WATER MEASUREMENTS

DEPTH AT COMPL. 1.0 FT. — CAVE-IN DEPTH 9.0 FT

AFTER 96 HRS. 1.0 FT. — AFTER 15 days 6.5 FT

DATE BEGUN 5-1-75 — DATE COMPL. 5-1-75

FOREMAN S. Rutter — INSPECTOR E. Harvey

METHOD 4" cont. flight augers

B-20

J.ROGER MILLER & ASSOCIATES, INC. CONSULTING ENGINEERS

5308 SOUTH 12TH ST SHEBOYGAN 53081

9

SOIL LOG OF TEST HOLE NO. 204

#20

PROJECT	ACTIVE LANDFILL SITE	LOCATION	KOHLER, WISCONSIN
SURFACE ELEVATION	+14.5	JOB NO 8582	CLIENT KOHLER COMPANY
BENCHMARK & DATUM	CITY OF KOHLER DATUM		DATE 6-4-81

DEPTH	SAMPLE NO	SAMPLE TYPE	SAMPLE REC.	SOIL DESCRIPTION	SYM	UNIFIED CLASSIF	N	PP	q_u	LL PL PI	% PASSING #200	OTHER TESTS
00				SURFACE MOIST BLACK SOFT SANDY LOAM 2'		OL						TOP ELEV. +15.0
				WET BROWN MOTTLED MODERATELY DENSE CLAYEY FINE SAND		SC						2" PVC OBSERVATION WELL PIPE WITH 5' SLOTTED END.
5												
10				12'								
				WET GREY MODERATELY DENSE SANDY CLAYEY SILT		ML						
15				19½'								TIP ELEV. (-) 5.0
20				AUGER REFUSAL AT 19½, ELEVATION (-) 5.0								
25												

GROUNDWATER MEASUREMENTS

DEPTH AT COMPL. ---------- FT CAVE IN DEPTH ---------- FT

AFTER ------ HRS ------ FT AFTER ------ HRS ------ FT

AFTER ------ HRS ------ FT AFTER ------ HRS ------ FT

DRILLING & SAMPLING NOTES

DATE BEGUN 6-1-81 DATE COMPL 6-1-81

CREW ---- STAVEEN & BRUCER ---- RIG CME 45

METHOD ---- 4" CFA, ASTM D1452

Well 3 B-3 #3

RECORD OF SOIL EXPLORATION — BORING NO. 3

OBJECT THE KOHLER COMPANY LANDFILL LOCATION Kohler, Wisconsin

SURFACE ELEVATION 16.5 City of Kohler DATUM CLIENT The Kohler Company

JOB NO. 8292

▽ SAMPLE

DEPTH	NO.	TYPE	REC.	DESCRIPTION OF MATERIAL	W/L	SAMPLE DEPTH	DRILLING & SAMPLING NOTES
00				SURFACE Moist dk. br. loamy topsoil	▽	0-1'	(CH-Pt) water @ 4 days
	1	A		Moist brown clayey sand (SC)		1'-3.5'	
5	2	A		Wet brown sand, some clay noted (SC)		3.5'-7.5'	
	3	A					
					▽		water @ 15 days
10	4	A		Wet brown runny silty sand (SM)		7.5'-14.5'	
				END OF BORING 14.5' Water obs. point @ 11.0' 2.0' of pipe above ground			A= Sample obtained off auger flights

GROUND WATER MEASUREMENTS

DEPTH AT COMPL 2.0 FT. CAVE-IN DEPTH 12.0 FT.

AFTER 96 HRS. 0.5 FT. AFTER 15 days 8.5 FT.

DATE BEGUN 5-1-75 DATE COMPL 5-1-75

FOREMAN S. Rutter INSPECTOR E. Harvey

METHOD 4" cont. flight augers

B-22

J.ROGER MILLER & ASSOCIATES, INC. CONSULTING ENGINEERS

5308 SOUTH 12TH ST SHEBOYGAN 53081

BORING LOG OF TEST HOLE NO. B 205

#3D

PROJECT	ACTIVE LANDFILL SITE		LOCATION	KOHLER, WISCONSIN	
SURFACE ELEVATION	+17.1	JOB NO 8582	CLIENT	KOHLER COMPANY	
BENCHMARK OR DATUM	CITY OF KOHLER DATUM			DATE	6-4-81

DEPTH	SAMPLE NO	SAMPLE TYPE	SAMPLE REC	SOIL DESCRIPTION	SYM	UNIFIED CLASSIF	N	P.P	γ_d	W	LL	PL	OTHER LAB TESTS
0.0				SURFACE MOIST BLACK SOFT SANDY LOAM		OL							TOP ELEV. +20.1
				2'									
				MOIST YELLOWISH BROWN MOTTLED LOOSE CLAYEY FINE SAND		SP							
5													
				7'									
				WET GREYISH BROWN MODERATELY STIFF SILTY CLAY		CL							2" PVC OBSERVATION WELL PIPE WITH 5' SLOTTED END.
10													
15													
20													
				22'									
				WET GREY MODERATELY DENSE SANDY CLAYEY SILT		ML							TIP ELEV. (-) 8.4
25													
				28½'									
				AUGER REFUSAL AT 28½', ELEVATION (-) 11.4									
30													

GROUNDWATER MEASUREMENTS

DEPTH AT COMPL ---------- FT. CAVE IN DEPTH ---------- FT

AFTER ------ HRS ------- FT AFTER ------ HRS ------- FT

AFTER ------ HRS ------- FT AFTER ------ HRS ------- FT

DRILLING & SAMPLING NOTES

DATE BEGUN 6-1-81 DATE COMPL 6-1-81

CREW BYRNEN & BRUGER RIG CME 45

METHOD 4" CFA, ASTM D1452

GEOLOGIC DRILL LOG

PROJECT NAME AND LOCATION: KOHLER LANDFILL, SHEBOYGAN, WI

PAGE NO.: 1 of 3 | HOLE NO.: MW-3R

START	FINISH	DRILLER	DRILL METHOD	BOREHOLE DIAMETER	WELL DIAMETER	TOTAL DEPTH
9/7/88	9/12/88	Wisconsin Test	6.25 HSA/Tri-Cone	10"/4"	4"	62.50'

LOGGER	TOP of CASING ELEV.	GROUND ELEVATION	DEPTH/ELEVATION GROUNDWATER - DATE MEASURED
Bill Niemann			4.20'/' 9-13-88

Well Construction: 4-inch Stainless Steel Casing to 34.5 FT; open hole completion to 62.5 Ft.

SAMPLE NO.	SAMPLE TYPE	RECOVERY *	SAMPLE BLOWS*	ELEV	DEPTH	CLASS-IFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
								Surface: 2" Gravel Fill	
								Topsoil	
								Silty Sand: trace clay, brown, moist.	
01	SS	14	4 6 3			SM			
02	SS	16	3 2 6		5	SP		Sand: medium to fine, some gravel, brown, wet	
03	ST	12				SP			
04	SS	12	5 6 12		10	SP			
05	SS	6	15 8 6			SP			
06	SS	2	1 1 3		15	ML		Sandy Silt: some gravel, brown, wet.	
07	ST	24				CL		Silty Clay: gray, moist.	

*ASTM D1586
SS = SPLIT SPOON
D = DENNISON
ST = SHELBY TUBE
C = CORE
CT = CUTTINGS
CS = CONTINUOUS SAMPLER
OT = OTHER

ORIGINAL — NOW ADD.

WESTON

GEOLOGIC DRILL LOG

PROJECT NAME AND LOCATION: KOHLER LANDFILL, SHEBOYGAN, WI

PAGE NO.: 2 of 3

HOLE NO.: MW-3R

SAMPLE NO.	SAMPLE TYPE	RECOVERY *	SAMPLE BLOWS*	ELEV	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASSIFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
08	SS	18	3 9 13					CL			
09	SS	18	34 37 65					ML		Silt: some gravel, brown, moist. (hardpan till)	
10	SS	12	21 61 100		25			ML			
11	SS	0	100/0"					DOL		Weathered Dolomite Bedrock: yellow to light brown, moist. Dolomite Bedrock: fresh, white and yellow to light brown, moist.	
					30						
					35						
					40						

*ASTM D1586
SS = SPLIT SPOON
D = DENNISON
ST = SHELBY TUBE
C = CORE
CT = CUTTINGS
CS = CONTINUOUS SAMPLER
OT = OTHER

GEOLOGIC DRILL LOG

PROJECT NAME AND LOCATION: KOHLER LANDFILL, SHEBOYGAN, WI

PAGE NO.: 3 of 3

HOLE NO.: MW-3R

SAMPLE NO.	SAMPLE TYPE	RECOVERY "	SAMPLE BLOWS*	ELEC	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASS-IFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
					45						
					50						
					55						
					60						
										END OF BORING AT 62.5 FT.	

*ASTM D1586
SS = SPLIT SPOON ST = SHELBY TUBE
D = DENNISON C = CORE CS = CONTINUOUS SAMPLER
CT = CUTTINGS OT = OTHER

KOHLER LANDFILL
SHEBOYGAN, WI

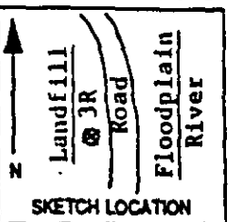
PAGE NO.: 3 of 3

HOLE NO.: MW-3R

Replacement for original drilled by Weston

RADIAN CORPORATION	LOG OF ROCK CORE	BORING No. 3R PAGE 1 of 2

PROJECT	NAME: Kohler Co. Landfill, Kohler, WI	NUMBER: 250-028	
HYDROGEOLOGIST: Tom Morahan		OFFICE: Austin, TX	
DRILLING CONTRACTOR: Fox Drilling, Itasca, IL		DRILLER: Jerry Hamman	
EQUIPMENT: Mobile-Drill B-61			
DATE	STARTED: 10-6-88	COMPLETED: 10-6-88	
ELEVATION:	DEPTH ROCK: 46.5 ft BGL	TOTAL HOLE DEPTH: 73.0 ft BGL	
BIT	TYPE: Diamond Core / SIZE: NX / DIAMETER: 3 in o.d.	ACCOMPANYING SOIL LOG? Y ☒ N ☐	



Depth (Ft; BGL)	Fracture Log: Angle (sketch)	Fracture Log: Fill	Fracture Log: Weathering	Description	Core Time (min/ft)	Run Time (min)	Run Length (ft)	Recovery (ft)	RQD	Water Pressure (psi)	Down Pressure (psi)	Run Reference (ft)	Notes
53.0												0	Core started 0842 hrs
					1:05				300 psi	300 psi		1	
54.0	Broken up	Poor	Very weathered										
					1:15				300 psi	300 psi			Steady return over entire core
55.0												2	
					0:35				300 psi	300 psi			
56.0				Friable, weathered to fresh buff to light gray microcrystalline to crystalline moderately bedded DOLOMITE.								3	
					0:05				300 psi	300 psi			
57.0	Drop												Rod drop 56.0-58.0 ft.
					0:05			0.3 ft.	300 psi	300 psi		4	
58.0					17:05	10.0	5.2						
					0:45			6%	300 psi	0 psi		5	
59.0	Broken up	Poor	Very weathered										
					0:45				300 psi	0 psi		6	
60.0													
					2:30				300 psi	50 psi		7	
61.0	Drop												Rod drop 60.8-61.0 ft.
	Broken up				4:50				300 psi	250-300 psi		8	
62.0		Poor	Very weathered										Rod drop 62.8-63.0 ft.
					5:10				300 psi	250-300 psi		9	
63.0	Drop			Run #2 con't on p. 2								10	Core ended 0850 hrs Run #2 con't on p. 2

Run No. 1

RADIAN CORPORATION

LOG OF ROCK CORE

BORING No. 3R
PAGE 2 of 2

PROJECT NAME: Kohler Co. Landfill, Kohler, WI NUMBER: 250-028

Depth (Ft; BGL)	Fracture Log: Angle (sketch)	Fracture Log: Fit	Fracture Log: Weathering	Description	Core Time (min/ft)	Run Time (min)	Run Length (ft)	Recovery (ft)	RQD	Water Pressure (psi)	Down Pressure (psi)	Run Reference (ft)	Notes
63.0	M	W										0	
	M	W			3:00				300 psi	250-300 psi			
64.0	G	W										1	
	G	W			2:50				300 psi	250-300 psi			
65.0	G	W										2	No vugs
	G	F			2:00				300 psi	250-300 psi			
66.0	E	F		Fresh buff to light gray microcrystal-line to crystalline massive to moderately bedded DOLOMITE.								3	
					2:00				300 psi	250-300 psi			
67.0	G	F										4	
					2:00				300 psi	250-300 psi			
68.0	P	VW										5	
	M	W			2:00			8.2 ft.	300 psi	350 psi			
69.0	P	VW				22:55	10.0					6	Rod drop 69.3-69.519
Drop	P	VW			2:00			80%	300 psi	350 psi			
70.0	M	W										7	
	G	F			2:30				300 psi	350 psi			
71.0	G	F										8	
					2:10				300 psi	350 psi			
72.0	G	F										9	
					2:25				300 psi	350 psi			
73.0				T.D. 73.0 ft. BGL								10	

Run No. 2

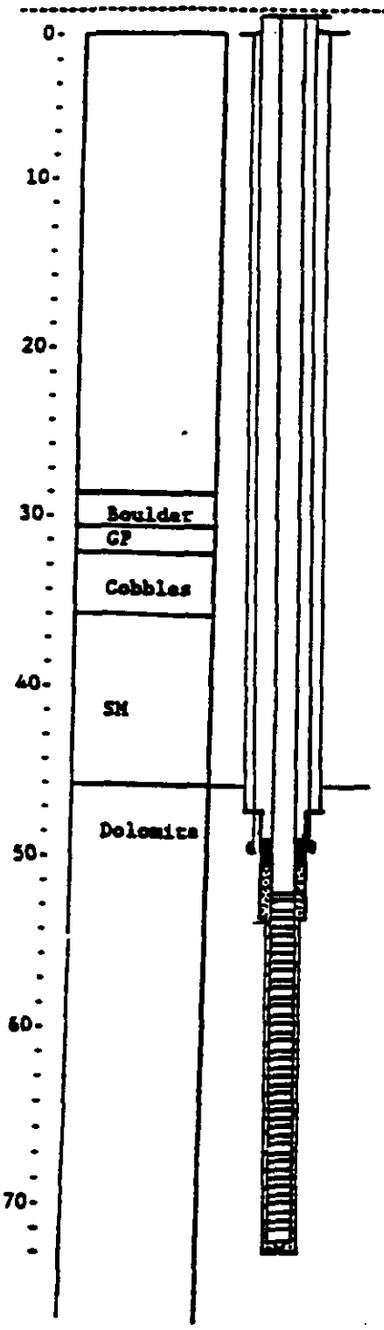
RADIAN CORPORATION

LOG OF DRILLING OPERATIONS

Sheet 1 of .

Boring or Well No. 3R
Location x=2,591,807/07; y=641,002.889
Log Recorded by T. Morahan
Sampling Interval (Est.) 5 ft
Type Drill Rig and Operator Mobil Drill B-61

Project Kohler Co. Landfill RI/FS Phase
Beginning 10/6/88 and e
10/9/88 of drilling operati



Depth	Sample Depth*	Lithologic Description	Remarks
0-			No lithology recorded from 0-2[illegible] ft. Refer to Wes[illegible] log for original boring 3R.
10-		SILTY CLAY TILL:	
20-			
30- Boulder / GP		DOLOMITE BOULDER: 28.5-31.0 ft Rounded GRAVEL: 31.0-33.0 ft	Dolomite chips in return. Gravel in return.
Cobbles	SS-1/33.0-33.9 ft SS-2/36.0-36.3 ft	Dolomite COBBLES	
40- SM	SS-3/39.0-40.4 ft SS-4/41.5-42.0 ft	Thinly bedded weathered yellow to white to tan to red well sorted fine SAND and silt with some clay.	
	SS-5/44.0-44.5 ft SS-6/46.5		Rock fragment.
Dolomite		Dolomite	Dolomite bedrock encountered at 46.5 ft. BGL. Rotary drilling continued to 53.0 ft.
50-		Rock cored from 53.0-73.0 ft BGL. See accompanying log.	
60-			
70-	TD=73 feet bgl	SS=split spoon sample	

RADIAN CORPORATION

MONITOR WELL COMPLETION LOG: SHEET 1/2

Monitor Well No. 3R
Location x=2,591,807.07; y=641,002.889
Elevation (surface) 599.4 (est.)
Elevation (measuring pt.) 601.355

Project Kohler Co. Landfill RI/FS Phas
Log Recorded By T. Morahan
Drilled By Wisconsin Test Drilling

CONSTRUCTION

Construction Started 9/6/88 Completed 9/8/88
Total Depth Drilled (ft) 73.0 Hole Diameter 3"
Drilling Method NX core/rotary and set casing
Problems Encountered During Drilling boulder
Water Source for Drilling and Completion Procedures Kohler/Municipal water from Lal Michigan

COMPLETION

Type of Completion Above ground
Top of Well Casing (ft) -2.0 ft above gl Depth (ft) 72.0 ft bgl
Screen Interval (ft-ft) 52.0-72.0 bgl

Interval of Grout (ft-ft) -0.5 ft above ground (runoff diversion pad)-48.5 ft bgl
Interval of Bentonite (ft-ft) 48.5-50.5 ft bgl
Interval of Sand Pack (ft-ft) 50.5-73.0 ft bgl

SAMPLING

Number and Type of Samples Collected Split spoons from 31.0-46.5 ft bgl
Sample Interval (ft-ft) 2 rock cores from 53.0-73.0 ft bgl
Storage and/or Preservation Method(s) Jars for split spoons and boxes for rock cor

MATERIALS

Casing Type 316 stainless steel
Screen Type Johnson Wire Wrapped Slot Size 0.020 inch
Method of Joining Casing/Screen Flush threaded joints

Type of Grout 10% granular bentonite in neat cement
Source
Amount
Type of Bentonite 1/4" pellet seal
Source Brainerd-Killman
Amount
Type of Sand Pack Washed #5 sand
Source
Amount (147-8 oz. jars) - 1.19 cubi ft.
Lithology of Sand Pack Quartz

SECURITY MEASURES

Description Protective steel casing with locking lid
Padlock ID No(s).
Location of Key(s) Kohler Co. - Environmental Engineering

RADIAN CORPORATION

MONITOR WELL COMPLETION LOG: SHEET 2/2

Boring or Well No. 3R
Location x=2,591,807.07; y=641,002.889

Project Kohler Co. Landfill RI/FS Phase 2
Log Recorded by T. Morahan/D. Hoffman

CONSTRUCTION SCHEMATIC (ft)

0
10
20
30
40
50
60
70

Attached

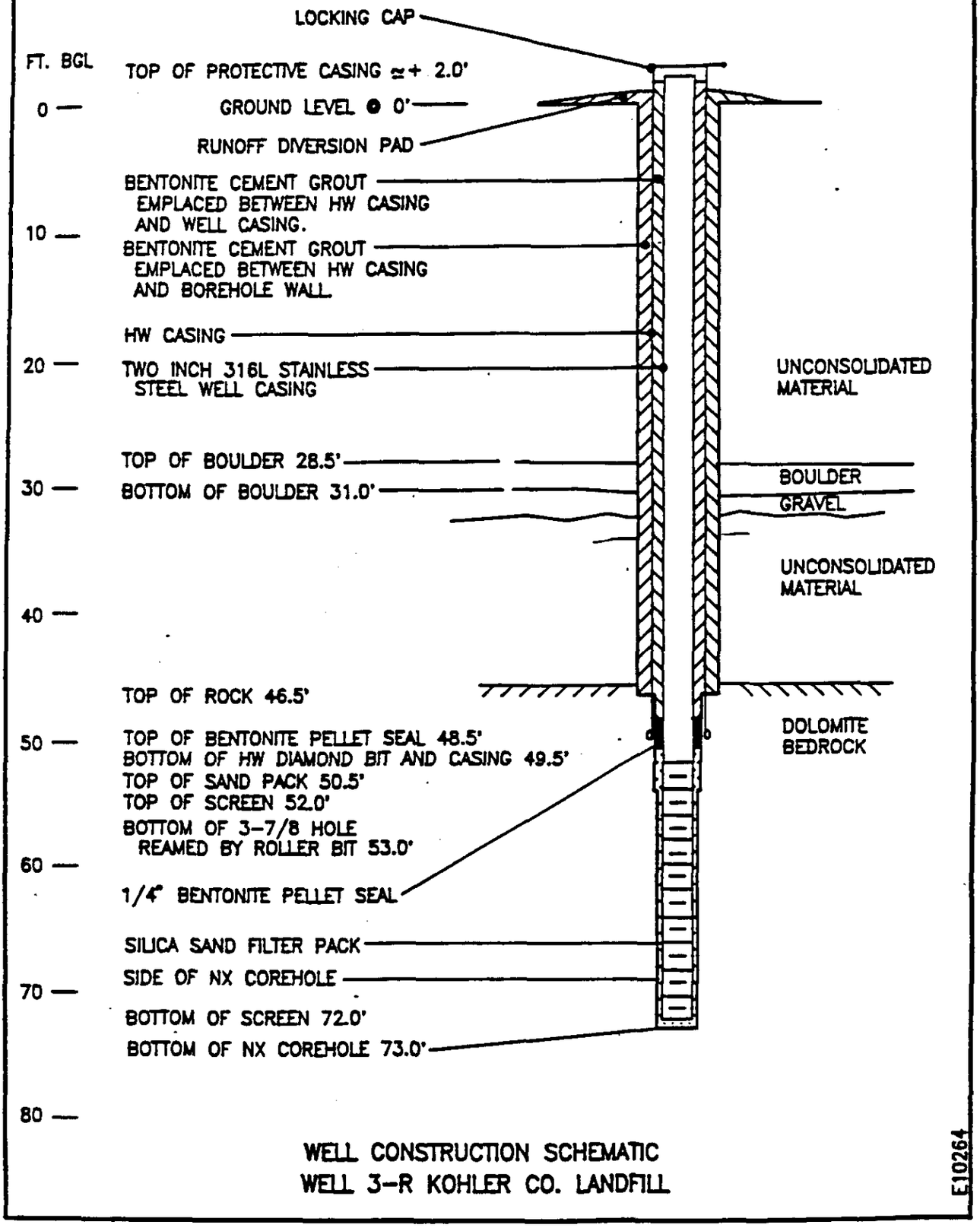
Static level of water before 7.54 (ft) and afte
8.17 (ft) development. Development started
9:35 10/15/88 and ended 11:35 10/15/88
Water Quantity discharged during development 60 (ga
Type, size/capacity of pump or bailer used for developmer
nitrogen tank; air lift

Depth of open hole inside well:
Before development (ft) N/R After development (ft) N/R

Development Record of Discharge and Sediment

Time	Clar/Clr. Discharge	Odor of Discharge	Lithology/ Grain Size	pH	Conductivity	T°F
10:00/ 3 g.	Clear	None	N/R	9.4	380	57
10:20/ 15 g.	V. turbid	None	N/R	8.4	840	52
10:45/ 30 g.	V. turbid	None	Fine sand	8.1	890	52
11:10/ 45 g.	V. turbid	None	Fine sand	8.0	935	52
11:35/ 60 g.	V. turbid	None	Fine Sand	8.0	950	53

RADIAN CORPORATION



WELL CONSTRUCTION SCHEMATIC
WELL 3-R KOHLER CO. LANDFILL

E10264

PROJECT ACTIVE LANDFILL SITE LOCATION EDGERTON, WISCONSIN

SURFACE ELEVATION +16.0 JOB NO 8582 CLIENT EDGERTON COMPANY

BENCHMARK OR DATUM CITY OF EDGERTON DATUM DATE 6-4-81

4D from Wartzy data

DEPTH	SAMPLE NO	SAMPLE TYPE	SAMPLE REC.	SOIL DESCRIPTION	SYM	UNIFIED CLASSIF	N	PP	q_u	OTHER LAB TESTS
00				SURFACE MOIST BLACK SOFT SANDY LOAM 1'		OL				TOP ELEV. +16.5
				MOIST YELLOWISH BROWN STIFF MOTTLED SANDY CLAY		CL				
5				7'						
				WET YELLOWISH BROWN DENSE GRAVELLY CLAYEY SAND SOME MEDIUM COBBLES SCATTERED THROUGHOUT.			1			
10						SP				2" PVC OBSERVATION WELL PIPE WITH 5' SLOTTED END.
15										
20				20' WET PALE GREY STIFF SILTY CLAY						
25						CL				TIP ELEV. (-) 15.0
30				32' AUGER REFUSAL AT 32', ELEVATION (-) 16.0						
35										

GROUNDWATER MEASUREMENTS

DEPTH AT COMPL ---------- FT CAVE IN DEPTH ---------- FT

AFTER ---- HRS ------ FT AFTER ------- HRS ------- FT

AFTER ---- HRS ------ FT AFTER ------- HRS ------- FT

DRILLING & SAMPLING NOTES

DATE BEGUN 6-1-81 DATE COMPL 6-1-81

CREW ... WYNVEEN & BERGER RIG CME 45

METHOD .. 4" CFA, ASTM D1452

---- ---- CONSULTING ENGINEER

Well 5 B-5 #5

RECORD OF SOIL EXPLORATION

BORING NO. 5

PROJECT THE KOHLER COMPANY LANDFILL LOCATION Kohler, Wisconsin

SURFACE ELEVATION 56.1 DATUM City of Kohler CLIENT The Kohler Company

JOB NO. 8292

▽ SAMPLE

DEPTH	NO.	TYPE	REC.	DESCRIPTION OF MATERIAL	W/L	SAMPLE DEPTH	DRILLING & SAMPLING NOTES
0.0				SURFACE			
	1	A		Moist brown silty sandy clay fill trace of gravel noted (CL)		0'-3.5'	
5							
	2	A		Moist black fill (cinders, broken bricks, etc.)		3.5'-13.5'	This boring is approx. 10' South of an oil pond
					▽		water @ 5 days
10							
					▽		water @ 16 days
	3	A		Wet black fill (cinders, broken bricks) ORIGINAL GROUND SURFACE		13.5'-14.5'	
15	4	A		Moist tan silty sand (SM)		15'	
	5	A		Moist reddish brown stiff leached clay, silt & sand seams noted (CL)		15'-17.5'	
	6	A		Wet dark gray runny silty sand (SM)		17.5'-20.5'	
20				END OF BORING 20.5' Water obs. pt. @ 16.5' 4.5' of pipe above ground			A= Sample obtained from auger flights

GROUND WATER MEASUREMENTS

DEPTH AT COMPL. 11.0 FT. CAVE-IN DEPTH 16.0 FT

AFTER 120 HRS. 9.0 FT. AFTER 16 days 13 FT

DATE BEGUN 4-30-75 DATE COMPL 4-30-75

FOREMAN S. Rutter INSPECTOR E. Harvey

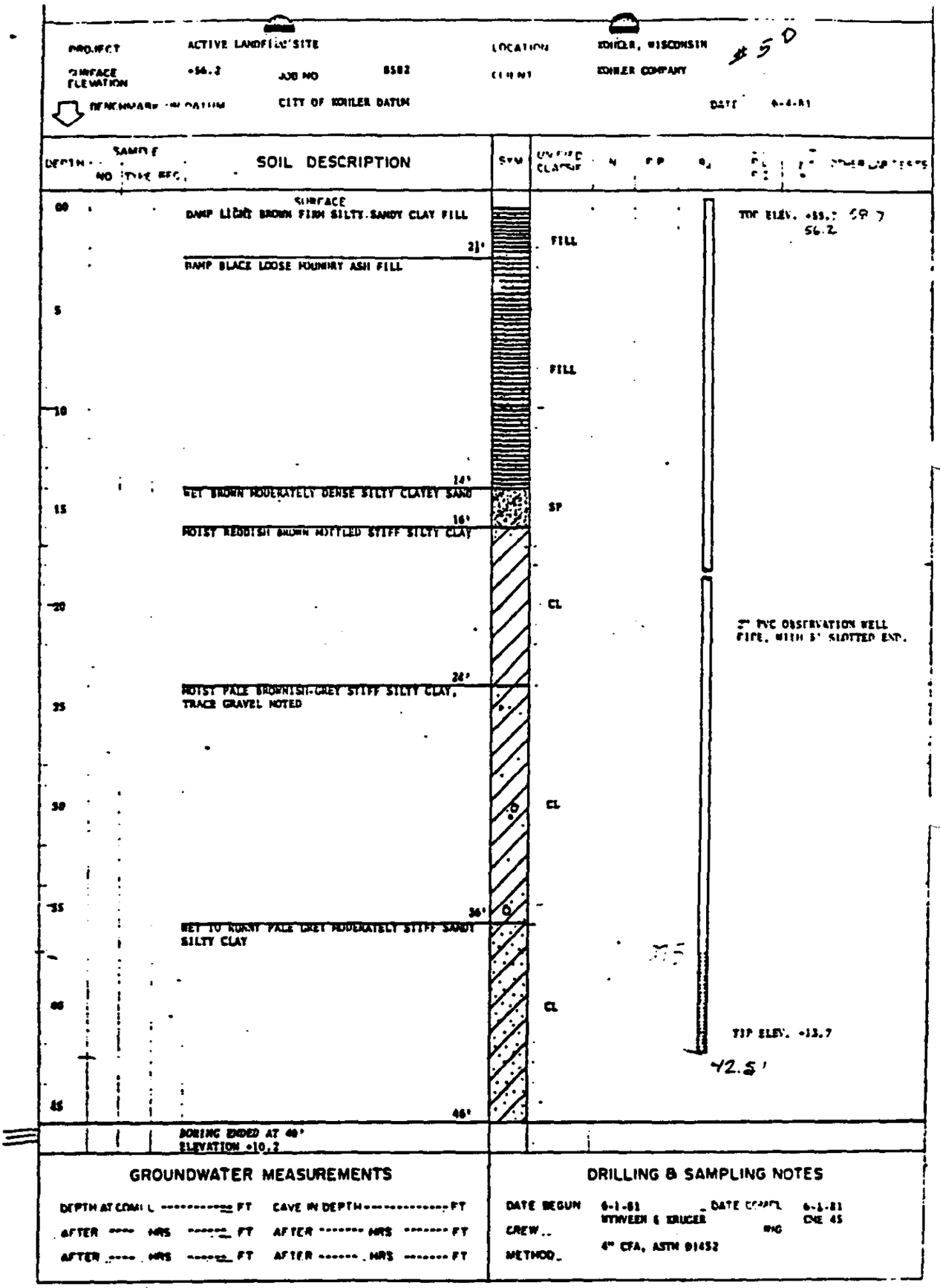
METHOD 4" cont. flight augers

B-34

J.ROGER MILLER & ASSOCIATES, INC. CONSULTING ENGINEERS

5308 SOUTH 12TH ST SHEBOYGAN 53081

17


PROJECT ACTIVE LANDFILL SITE
LOCATION KOHLER, WISCONSIN
#50
SURFACE ELEVATION +56.2
JOB NO 8582
CLIENT KOHLER COMPANY
BENCHMARK DATUM CITY OF KOHLER DATUM
DATE 6-4-81
DEPTH
SAMPLE NO
SOIL DESCRIPTION
SYM
UNIFIED CLASS
N
PP
TOP ELEV. +55.7 SP 7
56.2
SURFACE
DAMP LIGHT BROWN FIRM SILTY-SANDY CLAY FILL
2½'
FILL
DAMP BLACK LOOSE FOUNDRY ASH FILL
FILL
14'
WET BROWN MODERATELY DENSE SILTY CLAYEY SAND
SP
16'
MOIST REDDISH BROWN MOTTLED STIFF SILTY CLAY
CL
2" PVC OBSERVATION WELL PIPE, WITH 5' SLOTTED END.
24'
MOIST PALE BROWNISH-GREY STIFF SILTY CLAY, TRACE GRAVEL NOTED
CL
36'
WET TO DAMP PALE GREY MODERATELY STIFF SANDY SILTY CLAY
CL
TIP ELEV. +13.7
42.5'
46'
BORING ENDED AT 46'
ELEVATION +10.2
GROUNDWATER MEASUREMENTS
DEPTH AT COMPL ---------- FT
CAVE IN DEPTH ---------- FT
AFTER ---- HRS ------ FT
AFTER ------- HRS ------- FT
AFTER ---- HRS ------ FT
AFTER ------- HRS ------- FT
DRILLING & SAMPLING NOTES
DATE BEGUN 6-1-81
DATE COMPL 6-1-81
CREW BETWEEN 6 BRUCER
RIG CME 45
METHOD 4" CFA, ASTM D1452

Well #6

RECORD OF SOIL EXPLORATION

BORING NO. 9

PROJECT THE KOHLER COMPANY LANDFILL LOCATION Kohler, Wisconsin

SURFACE ELEVATION 78.8 DATUM City of Kohler CLIENT The Kohler Company

JOB NO. 8292

▽ SAMPLE

DEPTH	NO.	TYPE	REC.	DESCRIPTION OF MATERIAL	SAMPLE DEPTH	DRILLING & SAMPLING NOTES
0.0				SURFACE		
				Moist black mod. stiff silt-loam topsoil (Pt)	0-3.0	
	1	Pt	6"	Moist reddish brown very stiff sandy silt (SM-ML)	3.0 - 7.0'	P_r = 2.7
	2	Pt	10"	Moist reddish brown stiff clay (CL)	7.0 - 9.5'	P_r = 2.0
10				Moist tan alternating layers clay & fine sand (SM-SC)	9.5 - 11.5'	
	3	Pt	10"	Moist reddish brown stiff clay, occ. gravel noted (CL)	11.5 - 15.0	
	4	DS	5"	Moist gray stiff clay, traces of silt, sand & gravel noted (CL)	15.0 - 33.5'	N= 8/9/11
20						
	5	A				
30				Becomes lt. brown @ 30.5'		
	6	A				
	7	A				
40	8	A		Wet tan runny silty clayey fine sand (SC)	33.5 - 44.5	
				BORING CONTINUES		
50						A= Samples obtained off auger flights

GROUND WATER MEASUREMENTS

DEPTH AT COMPL. 7.0 FT. CAVE-IN DEPTH 14.0 FT.

AFTER 120 HRS. 4.5 FT. AFTER ____ HRS. ____ FT.

DATE BEGUN 4-23-75 DATE COMPL. 4-30-75

FOREMAN S. Rutter INSPECTOR E. Harvey

METHOD 6" HSA & 4" CA

B-36

J.ROGER MILLER & ASSOCIATES, INC. CONSULTING ENGINEERS

6300 SOUTH 12TH. ST. SHEBOYGAN 53081

Well #6 (continued)

RECORD OF SOIL EXPLORATION — BORING NO. 9

PROJECT THE KOHLER COMPANY LANDFILL — LOCATION Kohler, Wisconsin

SURFACE ELEVATION 78.7 City of Kohler DATUM — CLIENT The Kohler Company

JOB NO. 8292

SAMPLE

DEPTH	NO	TYPE	REC	DESCRIPTION OF MATERIAL	W/L	SAMPLE DEPTH	DRILLING & SAMPLING NOTE
40				SURFACE			
				Wet tan runny silty clayey fine sand (SC)		33.5 - 55.0'	Changed from 4" augers to 8" auge @ 44.0'
50	9	DS	6"				N= 4/3/11
							Had 5" of push-in @ 56.5'
							Washed boring clean with with H20 before sampling
	10	DS	16"	Moist red stiff sandy clay (CL)			N= 6/4/0
							58.0-63.0' Sounds gravell
60							
	11	DS	4"	Becomes soft, some coarse sand noted		55.0 - 70.5'	N= 4/1/2 P_r 1.0
	12	DS	6"	Becomes mod. stiff & sticky			N= 8/3/3
70							
	13	DS	12"	Wet tan runny mod. dense silty clayey fine sand		70.5 - 76.0'	N= 10/12/16 Difficult dril[illegible] @ 75 due to claye
							Sand seizing auge
				AUGER REFUSAL @ 76.0'			
80							
90							

GROUND WATER MEASUREMENTS

DEPTH AT COMPL 7.0 FT — CAVE-IN DEPTH 14.0 FT

AFTER 120 HRS 4.5 FT — AFTER ____ HRS ____ FT

DATE BEGUN 4-23-75 DATE COMPL 5-15-75

FOREMAN G. Wynveen INSPECTOR S. Rutter

METHOD 8" HSA

B-37

ROGER MILLER & ASSOCIATES, INC. CONSULTING ENGINEERS

5308 South 12th St. Sheboygan 53081

PROJECT: ACTIVE LANDFILL SITE — LOCATION: EDGERTON, WISCONSIN

SURFACE ELEVATION: +22.1 — JOB NO: 8562 — CLIENT: EDGERTON COMPANY

BENCHMARK OR DATUM: CITY OF EDGERTON DATUM — DATE: 6-4-81

8, 8D

DEPTH	SAMPLE NO	SAMPLE TYPE	SAMPLE REC	SOIL DESCRIPTION	GRAPHIC	UNIFIED CLASS	N	PP	q_u	WELL CONSTRUCTION DETAILS
0				SURFACE DAMP DARK BROWN FINE SANDY LOAM 2½'		OL	TOP ELEV. +22.1			TOP ELEV. +22.1
				MOIST REDDISH BROWN DENSE MOTTLED SANDY CLAY		SC				
5				5' WET RUSTY GREYISH BROWN DENSE SANDY GRAVEL 6½'		GP				2" PVC OBSERVATION WELL PIPE, WITH 2½' SLOTTED END
10				MOIST GREY VERY DENSE SANDY CLAYEY SILT, OCCASIONAL VERY DENSE GRAVEL POCKETS NOTED						TIP ELEV. +7.6
15						ML				2" PVC OBSERVATION WELL PIPE, WITH 5' SLOTTED END
20				30'						TIP ELEV. (-) 7.4
25				BORING ENDED AT 30', ELEVATION (-) 7.9						

GROUNDWATER MEASUREMENTS

DEPTH AT COMPL. ---------- FT. — CAVE IN DEPTH ---------- FT.

AFTER ---- HRS ---- FT. — AFTER ---- HRS ---- FT.

AFTER ---- HRS ---- FT. — AFTER ---- HRS ---- FT.

DRILLING & SAMPLING NOTES

DATE BEGUN 6-2-81 — DATE COMPL. 6-2-81

CREW ---- WYNVEEN & KRUGER — RIG CME 45

METHOD ---- 4" C.F.A. ASTM D1452

WESTERN

DRILLING LOG

WELL NUMBER: 8 D
LOCATION: South end of Landfill
SURFACE ELEVATION:
DRILLING COMPANY: ETI
DRILLER: Jim Rich
LOG BY: Richard Gnat

OWNER: Kohler Co.
ADDRESS: Kohler, WI
TOTAL DEPTH: 32.5'
WATER LEVEL:
DRILLING METHOD: HSA
DATE DRILLED: 8/1/86
HELPER: Kevin

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0					Replaced for damaged well 8D. Refer to well log developed by Miller Assoc. for original well 8D.
10					
20			ST*		* Shelby Tube recovery not successful due to density of the gravelly silt layer.
30					End of Boring

B-39

* A.S.T.M. D1586

SHEET 1 OF 1

WESTON

DRILLING LOG

WELL NUMBER: 8D
LOCATION: South end of
OWNER: Kohler Co.
ADDRESS: Kohler WI.
TOTAL DEPTH 32.5'
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: ETI
DRILLING METHOD: HSA
DATE DRILLED: 8/1/86
DRILLER: Jim Rich
HELPER: Kevin
LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0					Replacement for damaged well 8D. Refer to well log developed by Miller Assoc. for original well 8D.
10					
20		ST*			* Shelby Tube recovery not successful due to densing of the gravelly silt layer.
30					End of Boring

B-40

* A.S.T.M D1586

SHEET 1 OF 1

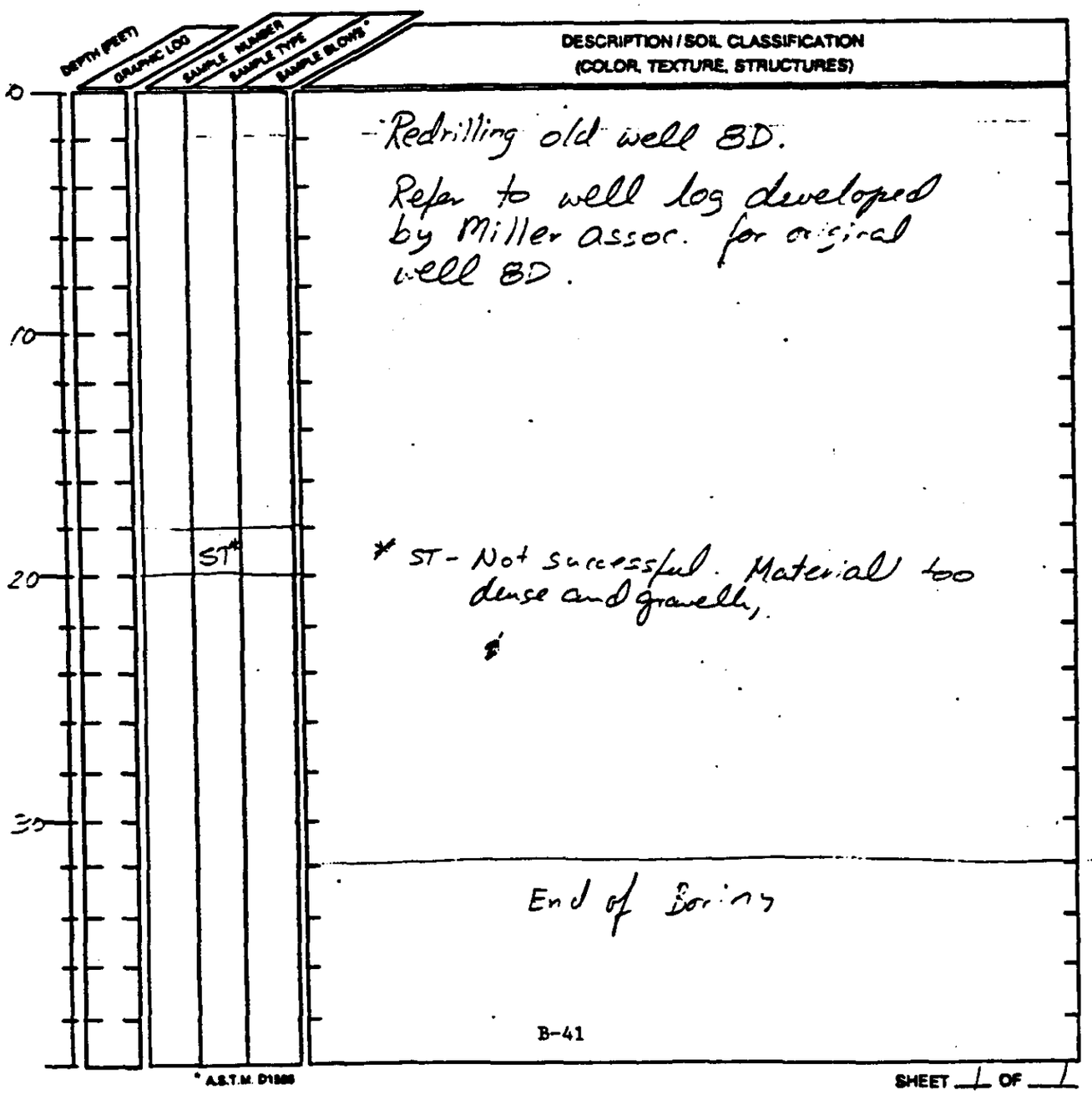
WESTON

DRILLING LOG

WELL NUMBER: BD
OWNER: Kohler
LOCATION:
ADDRESS:
TOTAL DEPTH: 32.5'
SURFACE ELEVATION:
WATER LEVEL: ~10'
DRILLING COMPANY: ETI
DRILLING METHOD: HSA
DATE DRILLED: 8/1/86
DRILLER: Jim Rich
HELPER: Kevin
LOG BY: Richard Grat

SKETCH MAP

NOTES:



B-41

* A.S.T.M. D1586

SHEET 1 OF 1

Well 8D

Well Construction Summary

Location or Coords: S end of landfill

Elevation: Ground Level

Top of Casing

Location

Personnel

Project

Drilling Summary:

Total Depth 32.5'

Borehole Diameter 7.625"

Driller Exploration Technology, Inc.

Rig CME 55

Bit(s) HSA

Drilling Fluid None - Water used to clean hole.

Surface Casing Metal Protector

Well Design:

Basis: Geologic Log X Geophysical Log

Casing String(s): C=Casing S=Screen

32.16'	- 27.16'	S		-	
27.16'	- 2.66+	C		-	

Casing: C1 Sch 40 PVC; flush threaded

C2

Screen: S1 Sch 40 PVC; .010 continuous slot

S2

Centralizers

Filter Material Sand - 30 grade
32.16' - 23.16'

Cement Cement - bentonite slurry
18.33' - 1.5'

Other
Bentonite Plug 23.16' - 18.33'
Concrete Apron - 1.5' - 0'

Construction Time Log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	8/1	0700	8/1	1040
Geophys. Logging:				
Casing:	8/1	1115	8/1	1130
Filter Placement:	8/1	1130	8/1	1215
Cementing:	8/4	0945	8/4	1215
Development:				
Other:				
Bentonite Plug	8/1	1215	8/1	1250

Well Development:

Comments:

Materials Used:
2 bags - sand
1 bag - bentonite
2 bags - cement
2 bags - concrete
3 bags - concrete for shoring up well 8.

WESTON DESIGNERS CONSULTANTS

EXPLORATION TECHNOLOGY INC.

LOG OF TEST BORING

Project: Kohler Landfill
Roy F. Weston Inc.
Location: Kohler, Wisconsin

Boring No. 8-D
Surface Elevation
Job No. 811294
Sheet 1 of 1

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SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture								
No.	Type	↓	↓	N	Depth		qu	W	LL	PL	D
						8" Light Brown Organic TOPSOIL					
						Brown Silty CLAY					
					5						
						Light Gray Silty CLAY, Occasional Sand and Gravel					
					10						
					15						
					20						
					25						
					30						
						End Boring at 32.2'					
					35						
					40						

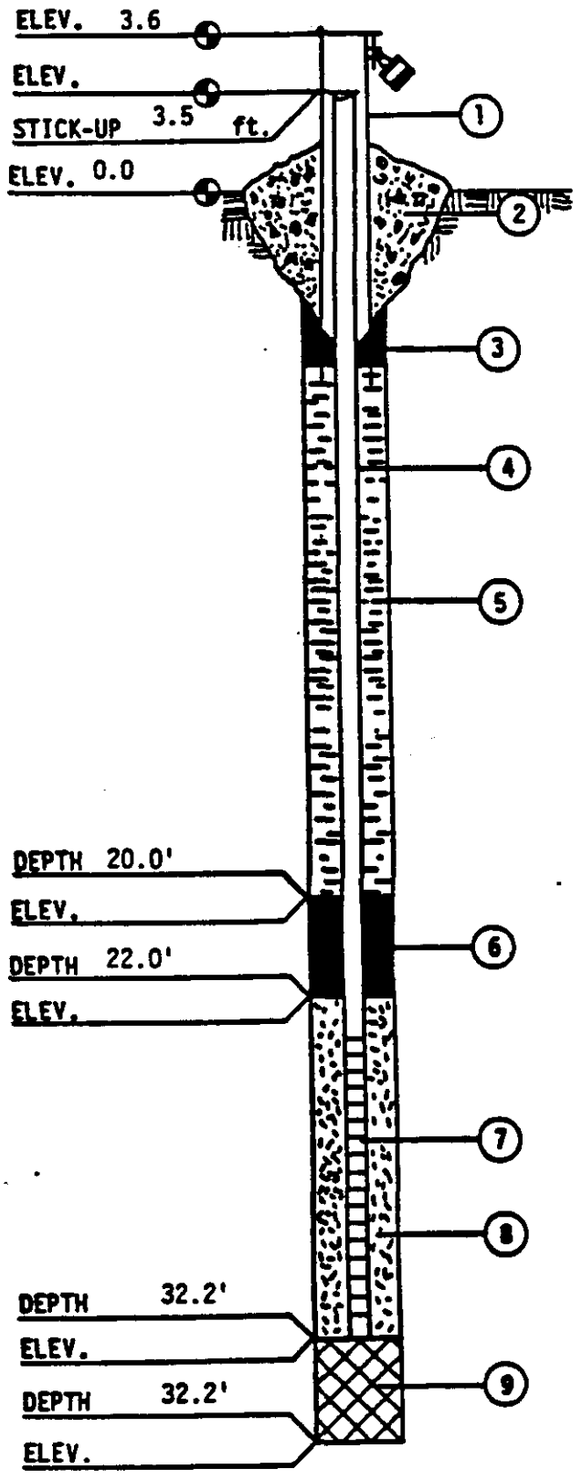
WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

B-43

GENERAL NOTES

Start 9/1/86 Complete 9/1/36
Crew Chief JR Rig 9230
Drilling Method
4½" I.D. HSA



EXPLORATION TECHNOLOGY INC.

MONITORING WELL CONSTRUCTION INFORMATION

JOB NO. 811294

BORING/WELL NO. B-D

DATE 9/1/86

CHIEF/UNIT JR/9230

1. PROTECTIVE CASING (YES) NO
   LOCKING (YES) NO
2. CONCRETE SEAL (YES) NO
3. TYPE OF SURFACE SEAL (IF INSTALLED)
   Cement Bentonite Grout
4. SOLID PIPE TYPE SCHD 40 PVC
   SOLID PIPE LENGTH 27.6 ft.
   JOINT TYPE SLIP/GLUED (THREADED)
5. TYPE OF BACKFILL Cement Bentonite Grout
   HOW INSTALLED (TREMIE FROM SURFACE)
6. TYPE OF LOWER SEAL (IF INSTALLED)
   Bentonite Slurry
7. SCREEN TYPE Continuous Wire Wrap SCHD 40 PVC
   SCREEN LENGTH 5.0'
   SLOT-SIZE 0.010" LENGTH 4.5 ft.
   SCREEN DIAMETER 2.0 in.
8. TYPE OF BACKFILL AROUND SCREEN
   #30 Flint Sand
9. TYPE OF BACKFILL Spoil
10. DRILLING METHOD 4¼" I.D. HSA
11. ADDITIVES USED (IF ANY)
    None

WATER LEVEL _____ DATE _____

*ALL DEPTHS MEASURED FROM GROUND SURFACE.

GEOLOGIC DRILL LOG

WESTON

PROJECT NAME AND LOCATION	PAGE NO.	HOLE NO.
KOHLER LANDFILL, SHEBOYGAN, WI	1 of 3	MW-8R

START	FINISH	DRILLER	DRILL METHOD	BOREHOLE DIAMETER	WELL DIAMETER	TOTAL DEPTH
9/13/88	9/15/88	Wisconsin Test	6.25 HSA/Tri-Cone	10"/4"	4"	62.00'

LOGGER	TOP of CASING ELEV.	GROUND ELEVATION	DEPTH/ELEVATION GROUNDWATER - DATE MEASURED
Bill Niemann			4.80'/' 9-15-88

Well Construction: 4-inch stainless steel casing to 32.5 FT; open hole completion to 62 FT.

SAMPLE NO.	SAMPLE TYPE	RECOVERY "	SAMPLE BLOWS*	ELEV	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASS-IFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
										Surface: 6" Gravel Fill	
										Topsoil	
										Silty Sand: fine, brown, moist.	
01	SS	13	3 4 5					SP			
02	SS	12	2 6 9		5			SP		As above, some gravel, wet.	
03	SS	14	6 8 9					CL		Silty Clay: gray, moist.	
04	SS	14	8 9 13		10			CL		As above, some gravel.	
05	SS	12	15 16 76					CL		Gravel layer from 12.5 to 13.0 FT	
06	ST	13			15			CL			
07	SS	12	18 20 100/5"					CL		Large dolomite cobble from 18.5 to 19.5 FT	

*ASTM D1586
SS = SPLIT SPOON, D = DENNISON
ST = SHELBY TUBE, C = CORE, CT = CUTTINGS
CS = CONTINUOUS SAMPLER, OT = OTHER

KOHLER LANDFILL
SHEBOYGAN, WI

PAGE NO. 1 of 3 | HOLE NO. MW-8R

GEOLOGIC DRILL LOG

PROJECT NAME AND LOCATION: KOHLER LANDFILL, SHEBOYGAN, WI

PAGE NO.: 2 of 3 | HOLE NO.: MW-8R

SAMPLE NO.	SAMPLE TYPE	RECOVERY *	SAMPLE BLOWS*	ELEV	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASS-IFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
08	SS	14	32 38 47					CL		As above	
09	SS	12	73 43 53		25			CL			
10	SS	10	27 56 100/3"					CL			
11	SS	6	100/6"		30			DOL		Dolomite: fresh, light yellow to brown, moist.	
					35						
					40						

*ASTM D1586
SS = SPLIT SPOON
D = DENNISON
ST = SHELBY TUBE
C = CORE
CS = CONTINUOUS SAMPLER
CT = CUTTINGS
OT = OTHER

KOHLER LANDFILL
SHEBOYGAN, WI

PAGE NO.: 2 of 3 | HOLE NO.: MW-8R

GEOLOGIC DRILL LOG

PROJECT NAME AND LOCATION: KOHLER LANDFILL, SHEBOYGAN, WI

PAGE NO.: 3 of 3 | HOLE NO.: MW-8R

SAMPLE NO.	SAMPLE TYPE	RECOVERY "	SAMPLE BLOWS*	ELEV	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASSIFICATION SAMPLE INTERVAL	DESCRIPTION	NOTES
					45					
					50					
					55					
					60				END OF BORING AT 62 FT.	

*ASTM D1586
SS = SPLIT SPOON ST = SHELBY TUBE
D = DENNISON C = CORE CS = CONTINUOUS SAMPLER
CT = CUTTINGS OT = OTHER

KOHLER LANDFILL
SHEBOYGAN, WI

PAGE NO.: 3 of 3 | HOLE NO.: MW-8R

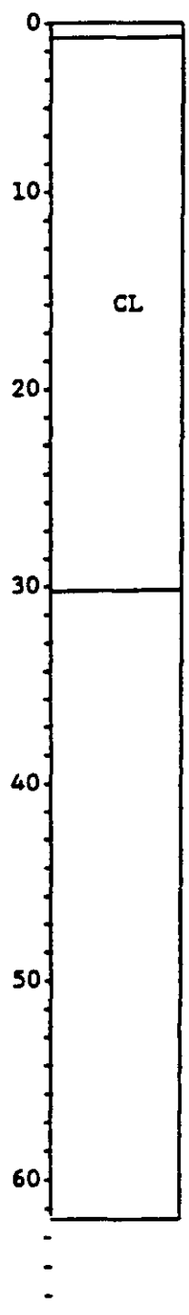
RADIAN CORPORATION

LOG OF DRILLING OPERATIONS

Sheet 1 of 1

Boring or Well No. 8R
Location x=2,590,908.99; y=640,173.403
Log Recorded by D. Richmann
Sampling Interval (Est.) 2.5 ft
Type Drill Rig and Operator Hollow-stem auger/rotary-Wisconsin Test Drilling

Project Kohler Co. Landfill RI/FS Phase 2
Beginning 13 September 1988 and end
15 September 1988 of drilling operation



Depth	Sample Depth*	Lithologic Description	Remarks
		SOIL: Sandy loam, dark brown, firm.	Log from surface to 15 feet blg was generalized from adjacent wells logs 8 and 8D.
		CLAY: Sandy, mottled red-brown, dense.	No data available for 8R over this interval.
	SS(12.5-14)		
	S(15-15.7)	CLAY: Stiff, silty; gray-brown gravel and cobbles.	Tube crushed agains boulder; -0.7 ft recovery; 18-20-10/
	SS(17.5-18.75)		10/4"
	SS(20-20.33)		
	SS(21-22.5)	CLAY: Gray "hardpan".	32-38-47
	SS(27.5-28.75)	CLAY: Gray, silty with gravel and cobbles.	27-56-100/3"
	SS(30-30.8)	DOLOMITE: Weathered bedrock surface at 30.5 feet bgl; competent bedrock at about 37 feet bgl.	100/6"-100/4" Switched to rotary
	SS(32.5-32.8)		100/4"-dolomite cuttings
	TD = 62 feet bgl		

*Sample type: G-grab; SS-split spoon; S-Shelby tube

RADIAN CORPORATION

MONITOR WELL COMPLETION LOG: SHEET 1/2

Monitor Well No. 8R
Location x=2,590,908.99; y=640,173.403
Elevation (surface) 605.5 (est.)
Elevation (measuring pt.) 607.646

Project Kohler Co. Landfill RI/FS Phase 2
Log Recorded By D. Richmann
Drilled By Wisconsin Test Drilling

CONSTRUCTION

Construction Started 13 September 1988 Completed 15 September 1988
Total Depth Drilled (ft) 62.0 Hole Diameter 10"-surface to 37.5 ft. bgl; 6"-37.5 to 62 ft., bgl
Drilling Method Hollow-stem auger (till); and rotary (dolomite)
Problems Encountered During Drilling None
Water Source for Drilling and Completion Procedures Plant potable water

COMPLETION

Type of Completion Open hole
Top of Well Casing (ft) +2.1 Depth (ft) 37.7
Screen Interval (ft-ft) 37.7-62.0

Interval of Grout (ft-ft) 37.7-surface
Interval of Bentonite (ft-ft) 28.5-37.7
Interval of Sand Pack (ft-ft) N/A

SAMPLING

Number and Type of Samples Collected One Shelby tube sample for geotechnical analysis
Sample Interval (ft-ft) 15.0-15.7
Storage and/or Preservation Method(s) Sample sealed in tube with wax

MATERIALS

Casing Type 316 stainless steel (4 inch i.d.)
Screen Type N/A Slot Size
Method of Joining Casing/Screen Flush threaded joints

Type of Grout Neat cement Source
Amount 4-94 # sacks
Type of Bentonite "Quik Gel" Source
Amount ~1/3 sack (~18 lbs)
Type of Sand Pack N/A Source
Amount
Lithology of Sand Pack N/A

SECURITY MEASURES

Description Protective steel casing with locking lid
Padlock ID No(s).
Location of Key(s) Kohler Co. - Environmental Engineering

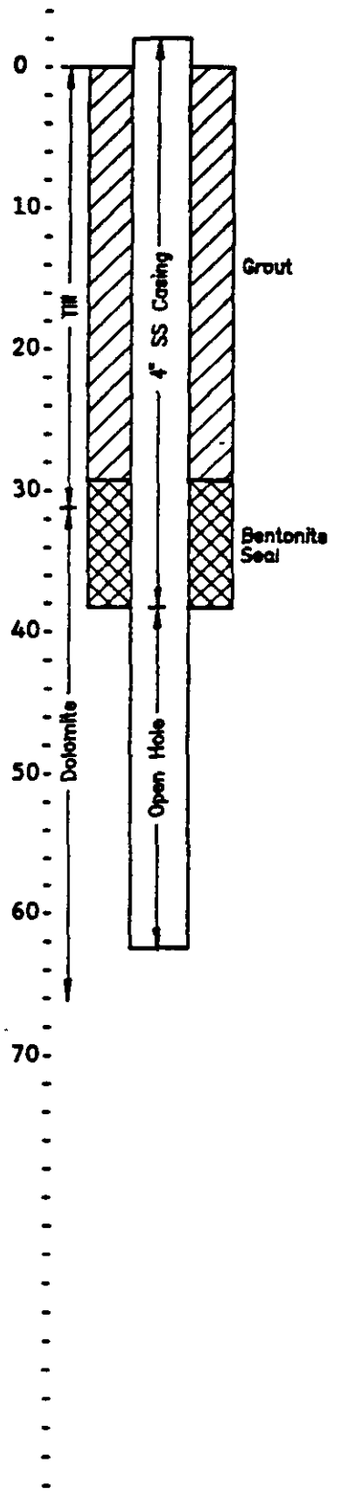
RADIAN CORPORATION

MONITOR WELL COMPLETION LOG: SHEET 2/2

Boring or Well No. 8R
Location x-2,590,908.99; y-640,173.403

Project Kohler Co. Landfill RI/FS Phase 2
Log Recorded by D. Richmann

CONSTRUCTION SCHEMATIC (ft)



Static level of water before NR (ft) and after NR (ft) development. Development started 1300 15 Sept. 1988 and ended 1900 15 Sept. 1988
Water Quantity discharged during development ~ 1800 (gal)
Type, size/capacity of pump or bailer used for development
Nitrogen tanks - air lift

Depth of open hole inside well:
Before development (ft) 60 After development (ft) 62

Development Record of Discharge and Sediment

Time	Clar/Clr. Discharge	Odor of Discharge	Lithology/ Grain Size	pH	Conductivity	T°C
13:45/ 285 g.	Clear to slightly cloudy					
16:45/ 650 g.						
18:05/ 1375 g.	Clear					

651.5 elev.

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Kohler Company
Triad Engineering
Location: Sheboygan, Wisconsin

Boring No. MW-1 #9
Surface Elevation
Job No. C 10254
Sheet 1 of 1

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SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks
1	SS	X	M	-		FILL: Black & Yellow Foundry Sand
2	SS	X	M	9		Gray Brown Clay at 1.5' to 2.5'
3	SS	X	M	9	5	Wood Chips and Gray Clay Seam at 5'
4	SS	X	M	6	10	Reddish Brown Silty CLAY (CL)
						Gray Brown Sand Seam at 10'
5	SS	X	M	6	15	Reddish Brown Silty Sand Seams at 13.5' to 15'
6	SS	X	M	12	20	2" Silty Sand Seam at 19.5'
7	SS	X	W	10	25	Wet at 24'
8	SS	X	W	11	30	Gray to Brown Silty SAND, Some to Little Silt, Occasional Gravel, Trace Clay (SM)
						Little Gravel, Very Little Silt from 30' to 33'
9	SS	X	M	30	35	Gray Silty CLAY (CL)
						End Boring at 35'
					40	

SOIL PROPERTIES: q_u | W | LL | PL | D

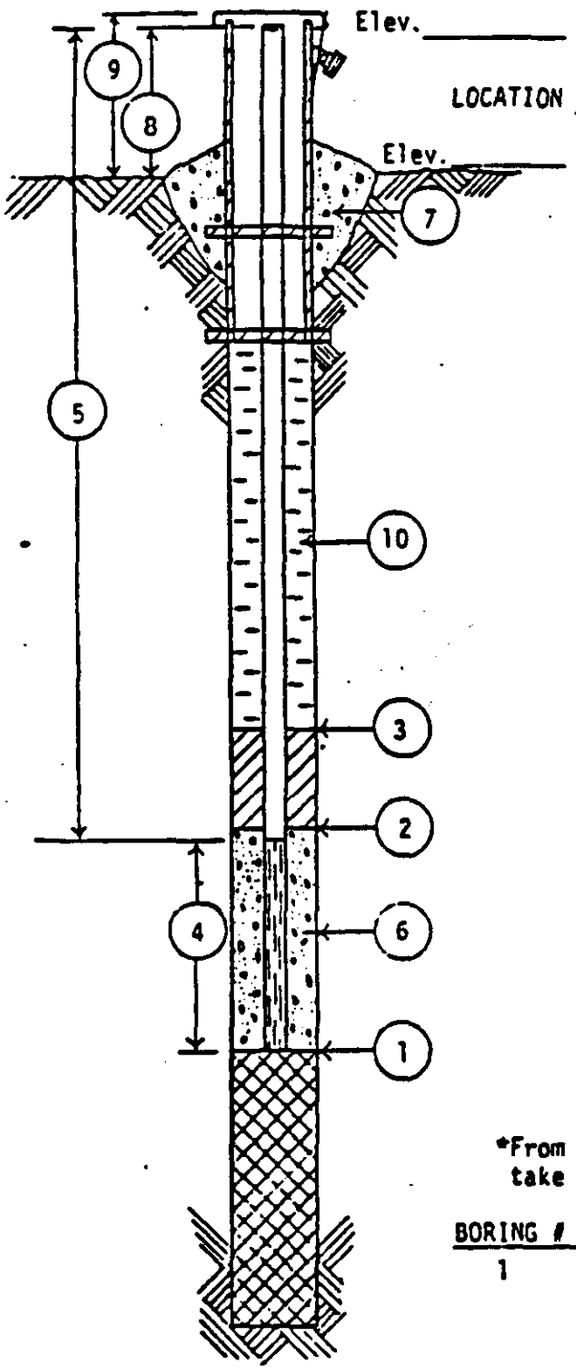
WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water

GENERAL NOTES

Start 12/15/81 Complete 12/15/81
Crew Chief LS Rig 55-2
Drilling Method Auger/Split Spoon

WELL DETAIL INFORMATION SHEET



JOB NO. C 10254

BORING NO. MW-1 (Well #9)

DATE 12/15/81

CHIEF LS

LOCATION Kohler Foundry Landfill

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

1. DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 34'6" FEET.
2. DEPTH OF BOTTOM OF SEAL (if installed) 23'6" FEET.
3. DEPTH TO TOP OF SEAL (if installed) 0 FEET.
4. LENGTH OF WELL POINT, (PVC WELL SCREEN,) OR SLOTTED PIPE 10. FEET. (Circle One)
5. TOTAL LENGTH OF PIPE 26'6" FEET @ 2 IN. DIAMETER.
6. TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Flint Sand.
7. CONCRETE CAP, YES (NO) (Circle One)
8. HEIGHT OF WELL CASING ABOVE GROUND 1'8" FEET.
9. PROTECTIVE CASING? (YES) 2'5" NO (Circle One)
   HEIGHT ABOVE GROUND 2'5".
   LOCKING CAP? (YES) NO (Circle One)
10. TYPE OF BACKFILL: Bentonite

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS
1	12/15/81	2:30 PM	33'5"	From top ½ h after install
	12/16/81	3:30 PM	25'0"	

WARZYN

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Kohler Company
Triad Engineering
Location: Sheboygan, Wisconsin

Boring No. MW-2 #9D
Surface Elevation:
Job No. C-10254
Sheet 1 of 2

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SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture								
No.	Type	↓	↓	N	Depth		qp	W	LL	PL	D
					5	First 35' See Boring #1					
					10						
					15						
					20						
					25						
					30						
					35	Gray Silty CLAY (CL)					
1	SS	X	M	11	40						
2	SS	X	M	12	45						

(Continued)

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Kohler Company
Triad Engineering
Location: Sheboygan, Wisconsin

Boring No. MW-2 #9D
Surface Elevation
Job No. C.10254
Sheet 2 of 2

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SAMPLE No.	Type	Recovery ↓	Moisture ↓	N	Depth	VISUAL CLASSIFICATION and Remarks
						Gray Silty CLAY (CL)
3	SS	X	W	34	50	Gray Brown Silty Sandy CLAY, Little Gravel, Occasional Thin Clean Sand Seams (CL)
4	SS	X	M	50/3"	55	Dense Fine to Medium, Gray Brown Silty SAND (SM) Little to Some Gravel, Little Clay Drilled like rock from 58-60' after attempting split spoon sample
5	SS	NR	-	50/0"	60	End Boring at 60'
					65	
					70	
					75	
					80	
					85	

SOIL PROPERTIES

qu	W	LL	PL	D

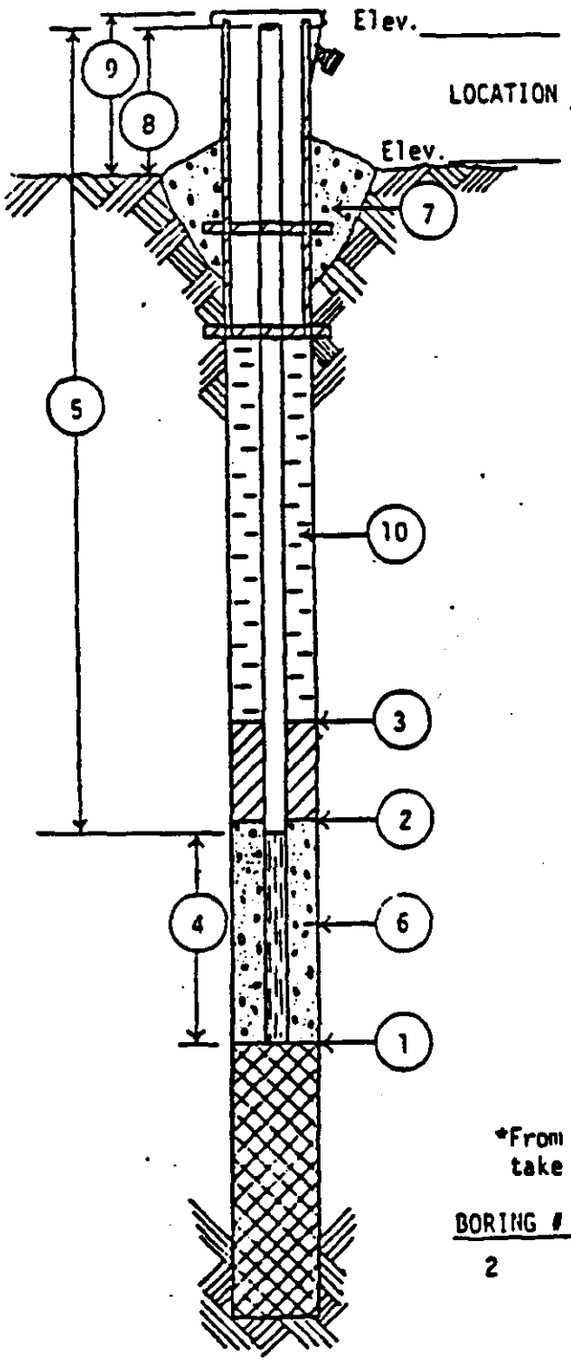
WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 12/15/81 Complete 12/15/8
Crew Chief LS Rig 55-2
Drilling Method
Earth Drill 0-35'
Wash Bore & Split Spoon 35-60'

WELL DETAIL INFORMATION SHEET



JOB NO. C 10254

BORING NO. MW-2 #9D

DATE 12/16/81

CHIEF LS & CB

LOCATION Kohler Company

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

(1) DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 60 FEET.

(2) DEPTH OF BOTTOM OF SEAL (if installed) 54 FEET.

(3) DEPTH TO TOP OF SEAL (if installed) 0 FEET.

(4) LENGTH OF WELL POINT, (PVC WELL SCREEN) OR SLOTTED PIPE 5' FEET. (Circle One)

(5) TOTAL LENGTH OF PIPE 57 FEET @ 2 IN. DIAMETER.

(6) TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Flint Sand .

(7) CONCRETE CAP, YES (NO) (Circle One)

(8) HEIGHT OF WELL CASING ABOVE GROUND 2 FEET.

(9) PROTECTIVE CASING? (YES) NO (Circle One)
HEIGHT ABOVE GROUND 2'2"
LOCKING CAP? (YES) NO (Circle One)

(10) TYPE OF BACKFILL: Bentonite

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS
2	12/16/81	3:30 PM	24'	1 hour after pumping down 45'

WARZYN

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project Kohler Company/Triad Engineering

Location Sheboygan, Wisconsin

Boring No. #10 MW-3

Surface Elevation

Job No. C 10254

Sheet 1 of 1

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SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture								
No.	Type	↓	↓	N	Depth		q_u	W	LL	PL	D
					5	FILL (Sludge)*					
					10						
					15						
					20	End Boring at 16.5'					
					25	* No log prepared since samples were turned over to Triad Engineering at time of drilling.					
					30	Earth drill from 0-10'					
					35	3 - 3" shelby tubes obtained from 10 - 16.5'					
					40						

WATER LEVEL OBSERVATIONS

While Drilling

Upon Completion of Drilling

Time After Drilling

Depth to Water

Depth to Cave In

GENERAL NOTES

Start 12/21/81 Complete 12/21/81

Crew Chief JH Rig CME 55

Drilling Method

WELL DETAIL INFORMATION SHEET

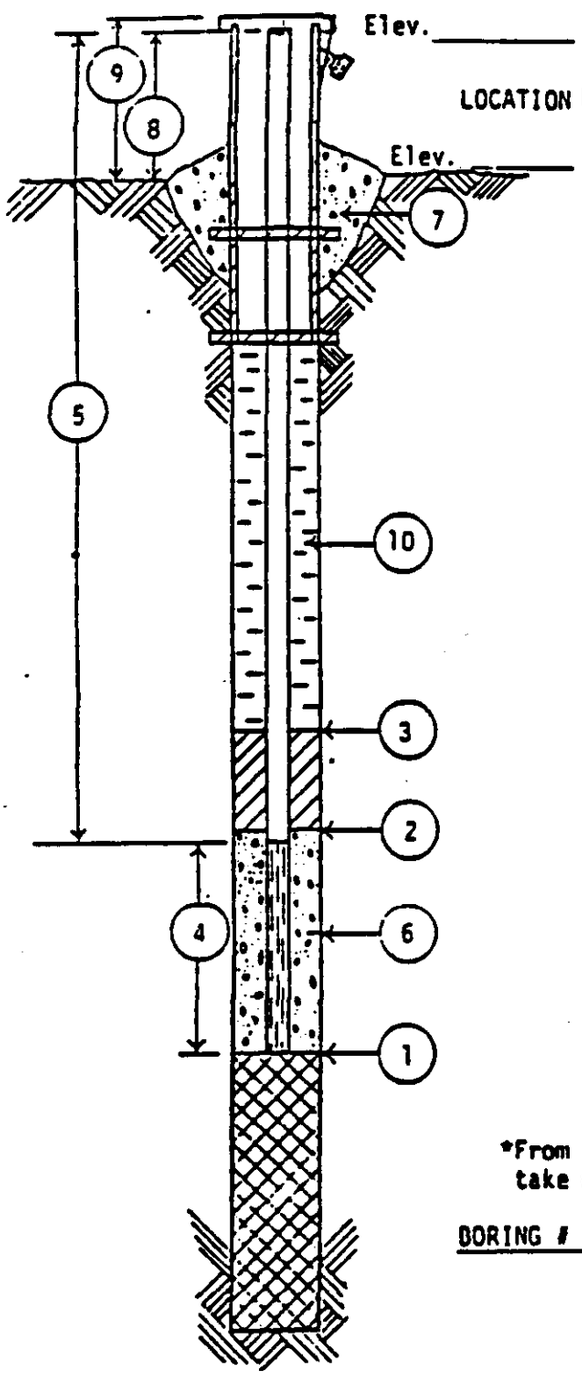
JOB NO. C 10254

BORING NO. MW-3 #10

DATE 12/21/81

CHIEF JR/CB

LOCATION Kohler Company



All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

1. DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 16.5 FEET.
2. DEPTH OF BOTTOM OF SEAL (if installed) 5.5 FEET.
3. DEPTH TO TOP OF SEAL (if installed) Surface FEET.
4. LENGTH OF WELL POINT, (PVC WELL SCREEN) OR SLOTTED PIPE 10.0 FEET. (Circle One)
5. TOTAL LENGTH OF PIPE 8.5 FEET @ 2 IN. DIAMETER.
6. TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand.
7. CONCRETE CAP, YES (NO) (Circle One)
8. HEIGHT OF WELL CASING ABOVE GROUND 2.0 FEET.
9. PROTECTIVE CASING? (YES) NO (Circle One) HEIGHT ABOVE GROUND 2.0. LOCKING CAP? (YES) NO (Circle One)
10. TYPE OF BACKFILL: Sand/Bentonite

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN

WESTON

DRILLING LOG

WELL NUMBER: 11 OWNER: Kohler Co.
LOCATION: East of old Waste Pit ADDRESS: Kohler, WI
TOTAL DEPTH 17.2'
SURFACE ELEVATION: WATER LEVEL:
DRILLING COMPANY: WTI DRILLING METHOD: HSA DATE DRILLED: 8/6/86
DRILLER: Jeff Poeschi HELPER: Tim Ebert

LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0					Refer to boring log for well 11D
10					
					End of Boring
20					

B-58

* A.S.T.M. D1586

SHEET 1 OF 1

WESTON

DRILLING LOG

WELL NUMBER: 11 OWNER: Kohler Co.

LOCATION: East of old sinks pit. ADDRESS: Kohler, WI.

TOTAL DEPTH: 17.2'

SURFACE ELEVATION: WATER LEVEL:

DRILLING COMPANY: ETI DRILLING METHOD: HSA DATE DRILLED: 8/6/86

DRILLER: Jeff Poeschl HELPER: Tim Ebert

LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
					Refer to boring log for well 11D.
17.2'					End of Boring

B-59

* A.S.T.M D1586

SHEET 1 OF 1

Project

Location

Personnel

Well 11

Well Construction Summary

Location or Coords: East of Old Waste Pit

Elevation: Ground Level

Top of Casing

Drilling Summary:

Total Depth 18'

Borehole Diameter 7.6?5"

Driller Exploration Technology, Inc.

Rig GME 55

Bit(s) HSA

Drilling Fluid None - Deionized water used to wash hole

Surface Casing Metal Protective

Well Design:

Basis: Geologic Log X Geophysical Log

Casing String(s): C=Casing S=Screen

17.16'	12.16'	S			
12.16'	2.5 +	C			

Casing: C1 Sch. 40 PVC; flush threaded

C2

Screen: S1 Sch. 40 PVC; .010 continuous slot.

S2

Centralizers

Filter Material Sand - 30 grade 17.16' - 10.16'

Cement Cement - bentonite slurry 7.5' - 1.5'

Other Bentonite Plug - 10.16' - 7.5'
Concrete apron - 1.5' - 0'

Construction Time Log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	8/6	0910	8/6	0945
Geophys. Logging:				
Casing:	8/6	1400	8/6	1335
Filter Placement:	8/6	1400	8/6	1500
Cementing:	8/7	1630	8/7	1710
Development:				
Other:				
Bentonite Plug	8/6	1540	8/6	1610
Concrete Apron	8/8	0900	8/8	0915

Well Development:

Comments:

Materials Used:

200 lbs - Sand

100 lbs - Cement

1/2 bag - Bentonite

2 bags - Concrete

WESTON DESIGNERS CONSULTANTS

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 [X] E [ ] W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location 641063 ft. [X] N. [ ] S. 2590525 ft. [X] E. [ ] W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): SB-14

WI Unique Well No. _ _ _ _ _ _

Reason For Abandonment: Boring for sampling

Date of Abandonment: 10/16/90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 10/16/90

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 14 Casing Diameter (ins.) _____
(From groundsurface)

Casing Depth (ft.) _____

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[X] No	

If No, Explain: Casing was never installed.

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[X] Yes	[ ] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	14	4.9 ft.³	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Ross Creighton

Signature of Person Doing Work: Ross M. Creighton
Date Signed: 11/25/90

Street or Route: 126 N. Jefferson, #400
Telephone Number: (414)276-7742

City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 [X] E [ ] W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location 641140 ft. [X] N. [ ] S. 2590411 ft. [X] E. [ ] W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): SB-12

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Boring for sampling

Date of Abandonment: 10/5/90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 10/5/90

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 10 Casing Diameter (ins.) _____
(From groundsurface)

Casing Depth (ft.) _____

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[X] No	

If No, Explain: Casing was never installed.

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[X] Yes	[ ] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	10	3.5 ft.³	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Ross Creighton

Signature of Person Doing Work: Ross M. Creighton
Date Signed: 1/25/91

Street or Route: 126 N. Jefferson, #400
Telephone Number: (414)276-7742

City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 [X] E [ ] W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location 641150 ft. [X] N. [ ] S. 2590632 ft. [X] E. [ ] W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): SB-13

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Boring for sampling

Date of Abandonment: 10.16.90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 10.16.90

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 20 Casing Diameter (ins.) _____
(From groundsurface)

Casing Depth (ft.) _____

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[X] No	

If No, Explain: Casing was never installed.

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[X] Yes	[ ] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well borehole only
[ ] Bentonite Pellets
[X] Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	20	7.0 ft.³	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: Ross Creighton

Signature of Person Doing Work: Ross M. Creighton
Date Signed: 11/25/90
Street or Route: 126 N. Jefferson, #400
Telephone Number: (414)276-7742
City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 [X] E [ ] W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. [X] N. [ ] S. _____ ft. [X] E. [ ] W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): SB-10

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Boring for sampling

Date of Abandonment: 10/15/90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 10/15/90

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 56 (From groundsurface) Casing Diameter (ins.) _____

Casing Depth (ft.) _____

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[X] No	

If No, Explain: Casing was never installed.

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[X] Yes	[ ] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	56	19.5 ft.^{3}	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: Ross Creighton

Signature of Person Doing Work: Ross M Creighton
Date Signed: 11/25/90
Street or Route: 126 N. Jefferson, #400
Telephone Number: (414)276-7742
City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 [X] E [ ] W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location 641252 ft. [X] N. [ ] S. 2591495 ft. [X] E. [ ] W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): SB-11

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Boring for sampling

Date of Abandonment: 10/4/90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 10/4/90

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 56 (From groundsurface) Casing Diameter (ins.) _____

Casing Depth (ft.) _____

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[X] No	

If No, Explain: Casing was never installed.

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[X] Yes	[ ] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well borehole only
[ ] Bentonite Pellets
[X] Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	56	19.5 ft.^{3}	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Ross Creighton

Signature of Person Doing Work: Ross M Creighton
Date Signed: 1/25/91

Street or Route: 126 N. Jefferson, #400
Telephone Number: (414)276-7742

City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 ☒ E ☐ W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): SB-7

WI Unique Well No. _ _ _ _ _ _

Reason For Abandonment: Boring for sampling purposes

Date of Abandonment: 10/16/90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 10/16/90

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☒ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 54 Casing Diameter (ins.) _____
(From groundsurface)

Casing Depth (ft.) _____

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain: Casing was never installed.

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) gravity

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☒ Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	54	18.8 ft.^{3}	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Robert Graziano

Signature of Person Doing Work: Robert J Graziano
Date Signed: January 25, 1991
Street or Route: 126 N. Jefferson, #400
Telephone Number: (414)276-7742
City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 [X] E [ ] W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location 640556 ft. [X] N. [ ] S. 2591392 ft. [X] E. [ ] W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): SB-8

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Boring for sampling

Date of Abandonment: 10/16/90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 10/16/90

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 62 Casing Diameter (ins.) _____
(From groundsurface)

Casing Depth (ft.) _____

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[X] No	

If No, Explain: Casing was never installed.

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[X] Yes	[ ] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	62	21.6 ft.^{3}	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work

Keith Marquardt

Signature of Person Doing Work: Keith Marquardt
Date Signed: 1-25-91

Street or Route: 126 N. Jefferson, #400
Telephone Number: (414)276-7742

City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected
District/County
Reviewer/Inspector
Follow-up Necessary

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 [X] E [ ] W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location: 641071 ft. [X] N. [ ] S. 2591300 ft. [X] E. [ ] W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): SB-5

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: BOREHOLE FOR SAMPLING

Date of Abandonment: 10/11/90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 10/11/90

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) ____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 58 (From groundsurface) Casing Diameter (ins.) ____

Casing Depth (ft.) ____

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) ____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[X] No	

If No, Explain: Casing was never installed.

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[X] Yes	[ ] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	58	20.2 ft.^{3}	

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work
Ross Creighton

Signature of Person Doing Work: Ross M. Creighton
Date Signed: 1/25/91
Street or Route: 126 N. Jefferson, #400
Telephone Number: (414)276-7742
City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b — Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: **SHEBOYGAN**

NE 1/4 of **SE** 1/4 of Sec. **29** ; T **15** N; R. **23** ☒ E ☐ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.

Civil Town Name: **SHEBOYGAN**

Street Address of Well: **444 HIGHLAND DRIVE**

City, Village: **KOHLER**

(2) FACILITY NAME

Original Well Owner (If Known): **KOHLER CO.**

Present Well Owner: **KOHLER CO.**

Street or Route: **444 HIGHLAND**

City, State, Zip Code: **KOHLER, WI 53044**

Facility Well No. and/or Name (If Applicable): **SB-6**

WI Unique Well No.: _____

Reason For Abandonment: **BOREHOLE FOR SAMPLING**

Date of Abandonment: **10/12/90**

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **10/12/90**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☒ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **50** (From groundsurface) Casing Diameter (ins.) _____

Casing Depth (ft.) _____

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed? ☐ Yes ☐ No ☒ Not Applicable
Liner(s) Removed? ☐ Yes ☐ No ☒ Not Applicable
Screen Removed? ☐ Yes ☐ No ☒ Not Applicable
Casing Left in Place? ☐ Yes ☒ No
If No, Explain **Casing was never installed.**

Was Casing Cut Off Below Surface? ☐ Yes ☐ No
Did Sealing Material Rise to Surface? ☒ Yes ☐ No
Did Material Settle After 24 Hours? ☐ Yes ☒ No
If Yes, Was Hole Retopped? ☐ Yes ☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **gravity**

(6) Sealing Materials — *For monitoring wells and monitoring well boreholes only*
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	50	**17.5 ft.^{3}**	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Robert Graziano**

Signature of Person Doing Work: Robert J. Graziano
Date Signed: January 25, 1991
Street or Route: **126 N. Jefferson, #400**
Telephone Number: **(414)276-7742**
City, State, Zip Code: **Milwaukee, WI 53202**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 [X] E [ ] W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location 641733 ft. [X] N. [ ] S. 2591907 ft. [X] E. [ ] W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): 2DR

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Hole problems

Date of Abandonment: 8/3/90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) Never built a well

[ ] Monitoring Well
[ ] Water Well
[X] Drillhole
[ ] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[ ] Unconsolidated Formation [X] Bedrock

Total Well Depth (ft.) 75 (From groundsurface) Casing Diameter (ins.) 6"

Casing Depth (ft.) 25'

Was Well Annular Space Grouted? [ ] Yes [X] No [ ] Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[X] No	

If No, Explain: Well was never built; only temporary casing was in hole

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[X] Yes	[ ] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [X] Conductor Pipe-Pumped
[ ] Dump Bailer [ ] Other (Explain)

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[X] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[ ] Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite (55lbs.), sand (10%) and water (100 gals.)	Surface	75	26.2 ft.^{3}	12 lbs./gallon

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Mike Wilczynski

Signature of Person Doing Work: Mike Wilczynski
Date Signed: 1-25-91

Street or Route: 126 N. Jefferson, #400
Telephone Number: (414)276-7742

City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONEMNT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/ Drillhole/Borehole Location

County: SHEBOYGAN

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N; R. 23 [X] E [ ] W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location 640712 ft. [X] N. [ ] S. 2590398 ft. [X] E. [ ] W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 444 HIGHLAND DRIVE

City, Village: KOHLER

(2) FACILITY NAME

Original Well Owner (If Known): KOHLER CO.

Present Well Owner: KOHLER CO.

Street or Route: 444 HIGHLAND

City, State, Zip Code: KOHLER, WI 53044

Facility Well No. and/or Name (If Applicable): SB-1

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: BORING FOR SAMPLING

Date of Abandonment: 10/2/90

WELL/ DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 10/2/90

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 8 Casing Diameter (ins.) _____
(From groundsurface)

Casing Depth (ft.) _____

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[X] No	

If No, Explain: Casing was never installed.

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[X] Yes	[ ] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Baroid Holeplug™	Surface	10	3.5 ft.^{3}	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: Ross Creighton

Signature of Person Doing Work: Ross M. Creighton

Date Signed: 1/25/91

Street or Route: 126 N. Jefferson, #400

Telephone Number: (414)276-7742

City, State, Zip Code: Milwaukee, WI 53202

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: **Sheboygan**

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N;R. 23 ☑ E ☐ W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location: 640597 ft ☑ N. ☐ S. 2590640 ft ☑ E. ☐ W.

Civil Town Name: **Sheboygan**

Street Address of Well: **444 Higland Drive**

City, Village: **Kohler**

(2) FACILITY NAME

Original Well Owner (If Known): **Kohler Company**

Present Well Owner: **Kohler Company**

Street or Route: **444 Highland**

City, State, Zip Code: **Kohler, Wisconsin 53044**

Facility Well No. and/or Name (If Applicable): **SB9/02**

WI Unique Well No.: _____

Reason For Abandonment: **Borehole for sampling**

Date of Abandonment: **11/1/90**

WELL/DRILLHOLE/BOREHOLE

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **11/01/91**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☑ Borehole

Construction Report Available ? ☐ Yes ☑ No

Construction Type:
☑ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☑ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 6.0 Casing Diameter (ins.) --
(From groundsurface)

Casing Depth (ft.) --

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pumping & Piping Removed?	☐ Yes	☐ No	☑ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☑ Not Applicable
Screen Removed?	☐ Yes	☐ No	☑ Not Applicable
Casing Left in Place?	☐ Yes	☑ No	

If No, Explain **No casing installed**

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☑ Yes	☐ No
Did Materital Settle After 24 Hours?	☐ Yes	☑ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☑ Other (Explain) **gravity**

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete Grout)
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☑ Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	**Surface**	**4.0**	**1.4 ft (3)**	**NA**
Baroid Holeplug (TM)				

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Ross M. Creighton**

Signature of Person Doing Work: Ross M Creighton
Date Signed: **4/29/91**

Street or Route: **126 N. Jefferson Street, Suite 400**
Telephone Number: **(414) 276-7742**

City, State, Zip Code: **Milwaukee, Wisconsin 53202**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5b Rev. 5-90

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: **Sheboygan**

NE 1/4 of SE 1/4 of Sec. 29 ; T 15 N;R. 23 ☑ E ☐ W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location: 641694 ft ☑ N. ☐ S. 2590683 ft ☑ E. ☐ W.

Civil Town Name: **Sheboygan**

Street Address of Well: **444 Higland Drive**

City, Village: **Kohler**

(2) FACILITY NAME

Original Well Owner (If Known): **Kohler Company**

Present Well Owner: **Kohler Company**

Street or Route: **444 Highland**

City, State, Zip Code: **Kohler, Wisconsin 53044**

Facility Well No. and/or Name (If Applicable): **SB2/02**

WI Unique Well No.: _____

Reason For Abandonment: **Borehole for sampling**

Date of Abandonment: **11/1/90**

WELL/DRILLHOLE/BOREHOLE

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **11/01/91**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☑ Borehole

Construction Report Available ? ☐ Yes ☑ No

Construction Type:
☑ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☑ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 6.0 Casing Diameter (ins.) –
(From groundsurface)

Casing Depth (ft.) –

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) _____

Pumping & Piping Removed?	☐ Yes	☐ No	☑ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☑ Not Applicable
Screen Removed?	☐ Yes	☐ No	☑ Not Applicable
Casing Left in Place?	☐ Yes	☑ No	

If No, Explain **No casing installed**

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☑ Yes	☐ No
Did Materital Settle After 24 Hours?	☐ Yes	☑ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☑ Other (Explain) **gravity**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes o...
☐ Neat Cement Grout
☐ Sand-Cement (Concrete Grout)
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☑ Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	**Surface**	**6.0**	**2.1 ft(3)**	**NA**
Baroid Holeplug (TM)				

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Ross M. Creighton

Signature of Person Doing Work: Ross M. Creighton — Date Signed: **4/29/91**

Street or Route: **126 N. Jefferson Street, Suite 400** — Telephone Number: **(414) 276-7742**

City, State, Zip Code: **Milwaukee, Wisconsin 53202**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

APPENDIX G

RADIAN CORPORATION

MONITOR WELL COMPLETION LOG: SHEET 1/2

Monitor Well No. 13R
Location x=2,591,705.44; y=640,654.65
Elevation (surface) 600.6 (est.)
Elevation (measuring pt.) 602.572

Project Kohler Co. Landfill RI/FS Phase 2
Log Recorded By T. Morahan
Drilled By Wisconsin Test Drilling

CONSTRUCTION

Construction Started _____ Completed 6 September 1988
Total Depth Drilled (ft) 62.0 Hole Diameter _____
Drilling Method NX core/rotary drilled and set casing
Problems Encountered During Drilling _____
Water Source for Drilling and Completion Procedures plant potable water

COMPLETION

Type of Completion open hole
Top of Well Casing (ft) approx. +2 Depth (ft) 62
Screen Interval (ft-ft) N/A

Interval of Grout (ft-ft) 34 ft. to surface
Interval of Bentonite (ft-ft) 34-31
Interval of Sand Pack (ft-ft) N/A

SAMPLING

Number and Type of Samples Collected 3 Shelby tubes - other soil drilling data not available
Sample Interval (ft-ft) rock core 34.0-62.0 BGL
Storage and/or Preservation Method(s) _____

MATERIALS

Casing Type 316 stainless steel (4 inch i.d.)
Screen Type N/A Slot Size _____
Method of Joining Casing/Screen flush threaded joints

Type of Grout neat cement Source _____
Amount _____
Type of Bentonite granular Source Quick Gel
Amount _____
Type of Sand Pack N/A Source _____
Amount _____
Lithology of Sand Pack N/A

SECURITY MEASURES

Description Protective steel casing with locking lid
Padlock ID No(s). _____
Location of Key(s) Kohler co. - Environmental Engineering

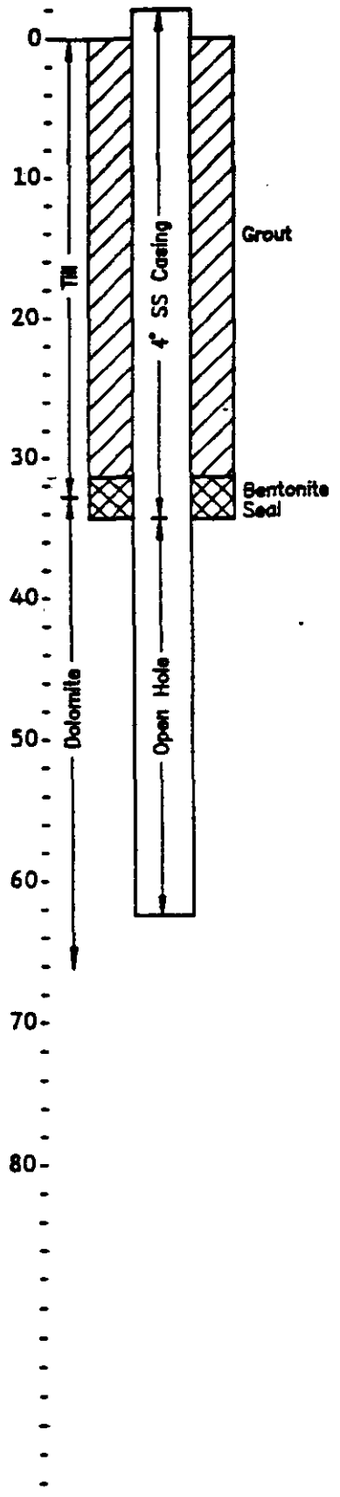
RADIAN CORPORATION

MONITOR WELL COMPLETION LOG: SHEET 2/2

Boring or Well No. 13R
Location x-2,591,705.44; y-640,654.65

Project Kohler Co. Landfill RI/FS Phase 2
Log Recorded by T. Morahan

CONSTRUCTION SCHEMATIC (ft)



Static level of water before NR (ft) and after NR (ft) development:
Development started 1110:7 Sept. 88 and ended 1600:7 Sept 88
Water Quantity discharged during development 160 (gal)
Type, size/capacity of pump or bailer used for development Nitrogen tanks - air lift (used 4 tanks)
Depth of open hole inside well:
Before development (ft) 62 After development (ft) 62

Development Record of Discharge and Sediment

Time	Clar/Clr. Discharge	Odor of Discharge	Lithology/ Grain Size	pH	Conductivity	T°C
11:10/ 40 g.	Clear to light gray		rock flour			
12:20/ 75 g.						
13:18	Mostly clean					
16:00 160 g.	Clean					

RADIAN CORPORATION

LOG OF ROCK CORE

BORING No. 13R
PAGE 3 of 3

PROJECT NAME: Kohler Co. Landfill, Kohler, WI NUMBER: 250-028

Depth (Ft; BGL)	Fracture Log: Angle (sketch)	Fracture Log: Fil	Fracture Log: Weathering	Description	Core Time (min/ft)	Run Time (min)	Run Length (ft)	Recovery (ft)	RQD	Water Pressure (psi)	Down Pressure (psi)	Run Reference (ft)	Notes
52.0												0	
	P		Very Fresh		5.0								
53.0	P		Very Fresh									1	
					3.0								
	Vert. frac- ture	M	Fresh	joints								2	
54.0		G			4.0								
55.0	P	M										3	
	P	M			3.0								
56.0	P	M		Fresh buff to light gray microcrystal- line to crystalline massive to moderately bedded DOLOMITE.								4	
					3.0								
57.0						32.0	10.0	10.5	93 in. 74%	Not recorded	Not recorded	5	
	G	W			3.0								
58.0	Bro- ken up		Fresh									6	
					3.0								
59.0												7	
					2.0								
60.0	G		Fresh									8	
					3.0								
61.0												9	
	EX		Fresh		3.0								
62.0				T.D. 62.0 ft. BGL								10	T.D. 62.0 ft. BGL

Run No. 3

RADIAN CORPORATION

LOG OF DRILLING OPERATIONS

Sheet 1 of 1

Boring or Well No. 13R
Location x=2,591,705.44; y=640,654.65
Log Recorded by Rock Core log - T. Morahan
Sampling Interval (Est.) _____ ft
Type Drill Rig and Operator Hollow-stem auger/rotary-Wisconsin Test Drilling

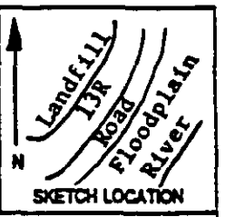
Project Kohler Co. Landfill RI/FS Phase 2
Beginning _____ and end
1714:6 Sept. 88 of drilling operation

Depth	Graphic Log	Sample Depth*	Lithologic Description	Remarks
0		ST #K-4 4.0-5.6 ft.	GLACIAL TILL: No details available	No logs provided by Weston; no Radian oversight geologist on-site for soil drilling activities. No adjacent wells (logs).
10		ST #K-5 10.0-11.5 ft.		
20		ST #K-6 22.5-24 ft.		
30			DOLOMITE: Competent bedrock at approximately 34 feet bgl. See attached Radian rock core log for lithologic and drilling details.	
40		RC Run No. 1 34.0-42.0 ft.		
		RC Run No. 2 42.0-52.0 ft.		
50		RC Run No. 3 52.0-62.0 ft.		
60		TD = 62 feet bgl		

*Sample type: RC=rock core; SS=split spoon; ST=Shelby tube

RADIAN CORPORATION	LOG OF ROCK CORE	BORING No. 13R PAGE 1 of 3

PROJECT	NAME: Kohler Co. Landfill Kohler, WI	NUMBER: 250-028	
HYDROGEOLOGIST: Tom Morahan		OFFICE: Austin, TX	
DRILLING CONTRACTOR: Wisconsin Test Drilling		DRILLER:	
EQUIPMENT: Hollow Stem Auger - Rotary			
DATE	STARTED: 9-6-88	COMPLETED: 9-8-88	
ELEVATION:	DEPTH ROCK: 34.0 BGL	TOTAL HOLE DEPTH: 62.0 BGL	
BIT	TYPE: Diamond Core / SIZE: NX / DIAMETER: 3 in. O.D.	ACCOMPANYING SOIL LOG? Y ☒ N ☐	



Depth (Ft. BGL)	Fracture Log: Angle (sketch)	Fracture Log: Fit	Fracture Log: Weathering	Description	Core Time (min/ft)	Run Time (min)	Run Length (ft)	Recovery (ft)	RQD	Water Pressure (psi)	Down Pressure (psi)	Run Reference (ft)	Notes
34.0												0	
		G	W		6.0							1	Fluid loss 3 mins.
35.0		M	W	Friable, weathered to fresh buff to light gray microcrystalline to crystalline moderately bedded DOLOMITE.	3.0							2	
		P	W										
36.0		P	W		3.0							3	
		M	W										
		M	W										
37.0					5.0							4	
		M	M			29.0	8.0	7.0	49.5 in. 59%	Not recorded	Not recorded		
38.0		M	M										
		M	M		3.0							5	
39.0				Fresh buff to light gray microcrystalline to crystalline massive to moderately bedded DOLOMITE.	2.0							6	
40.0			M-F		3.0								
41.0					4.0							7	
		P	W										
42.0		P	W	Run 2 con't on p. 2								8	Run 2 con't on p. 2

RADIAN CORPORATION

LOG OF ROCK CORE

BORING No. 13R
PAGE 2 of 3

PROJECT NAME: Kohler Co. Landfill, Kohler, WI NUMBER: 250-028

Depth (Ft; BGL)	Angle (sketch)	Fracture Log: Fit	Fracture Log: Weathering	Description	Core Time (min/ft)	Run Time (min)	Run Length (ft)	Recovery (ft)	RQD	Water Pressure (psi)	Down Pressure (psi)	Run Reference (ft)	Notes
42.0		P M M M	M M M M		5.0							0	
43.0					4.0							1	
44.0		EX	W	Fresh buff to light gray micro-crystalline to crystalline massive to moderately bedded DOLOMITE.	3.0							2	
45.0					3.0							3	
46.0					3.0							4	
47.0		EX P Very Fresh	Fresh M M		5.0	38.0	10.0	9.5	76 in. 67%	Not recorded	Not recorded	Run No. 2 5	1/4 in X 1/2" vugs
48.0		Fresh	Fresh		2.0							6	
49.0		B O N U	B O N U		2.0							7	
50.0		P	P		7.0							8	
51.0		EX EX	Very Fresh Very Fresh		4.0							9	
52.0				Run No. 3 cont. on p.3								10	Run No. 3 cont. on p. 3

GEOLOGIC DRILL LOG

PROJECT NAME AND LOCATION: KOHLER LANDFILL, SHEBOYGAN, WI

PAGE NO.: 2 of 3 | HOLE NO.: MW-13I

SAMPLE NO.	SAMPLE TYPE	RECOVERY "	SAMPLE BLOWS*	ELEV.	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASS-IFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
08	SS	1	4 6 12					CL		As above	
09	ST	18						CL			
10	SS	2	6 12 28		25			CL			
11	SS	2	22 100/-					DOL		Weathered Dolomite bedrock: yellow to light brown, wet.	
12	SS	0	100/0"		30			DOL		Dolomite bedrock: fresh, yellow to light brown, wet.	
13	C							DOL		Core 34-42 FT; Recovery: 7 FT.	
					35						
					40						

*ASTM D1586
SS = SPLIT SPOON
D = DENNISON
ST = SHELBY TUBE
C = CORE
CT = CUTTINGS
CS = CONTINUOUS SAMPLER
OT = OTHER

WESTON

GEOLOGIC DRILL LOG

PROJECT NAME AND LOCATION: KOHLER LANDFILL, SHEBOYGAN, WI

PAGE NO.: 3 of 3

HOLE: MW-

SAMPLE NO.	SAMPLE TYPE	RECOVERY "	SAMPLE BLOWS*	ELEV.	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASSIFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
14	C				45			DOL		Core 42-52 FT; Recovery: 9 FT.	
15	C				50			DOL		Core 52-62 FT; Recovery: 10 FT.	
					55						
					60					END OF BORING AT 62 FT.	

*ASTM D1586
SS = SPLIT SPOON ST = SHELBY TUBE C = CORE CS = CONTINUOUS SAMPLER
D = DENNISON CT = CUTTINGS OT = OTHER

KOHLER LANDFILL
SHEBOYGAN, WI

PAGE NO.: 3 of 3

RADIAN CORPORATION

MONITOR WELL COMPLETION LOG: SHEET 2/2

Boring or Well No. 13 Project Kohler Co. Landfill RI/FS Phase 2
Location x=2,591,708.69; y=640,662.534 Log Recorded by Roy F. Weston, Inc.

CONSTRUCTION SCHEMATIC (ft)

Static level of water before _____ (ft) and after _____ (ft) development.
Development started _____ and ended _____
Water Quantity discharged during development _____ (gal)
Type, size/capacity of pump or bailer used for development
_____
_____
Depth of open hole inside well _____
Before development (ft) _____ After development (ft) _____

Development Record of Discharge and Sediment

Time	Clar/Clr. Discharge	Odor of Discharge	Lithology/ Grain Size	pH	Conductivity	T°C

Data not available

GEOLOGIC DRILL LOG

PROJECT NAME AND LOCATION: KOHLER LANDFILL, SHEBOYGAN, WI

PAGE NO.: 1 of 3 | HOLE NO.: MW-1

START	FINISH	DRILLER	DRILL METHOD	BOREHOLE DIAMETER	WELL DIAMETER	TOTAL DEPTH
8/29/88	9/3/88	Wisconsin Test	6.25 HSA/Tri-Cone	10"/4"	4"	62.00'

LOGGER	TOP of CASING ELEV.	GROUND ELEVATION	DEPTH/ELEVATION GROUNDWATER - DATE MEASURED
Bill Niemann			3.80'/' 9-3-88

Well Construction: 4-inch stainless steel casing to 35 FT; open hole completion to 62 FT.

SAMPLE NO.	SAMPLE TYPE	RECOVERY "	SAMPLE BLOWS*	ELEV	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASSIFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
										Surface: 3' Topsoil	
01	SS	14	1 3 1					SM		Sandy Silt: trace clay, brown, wet.	
02	SS	9	0 0 5		5			SM			
03	SS	12	2 3 3					CL		Silty Clay: gray, wet.	
04	ST	18			10			CL			
05	SS	2	2 3 2					CL			
06	SS	1	4 6 8		15			CL			
07	SS	14	5 7 12					CL			

*ASTM D1586
SS = SPLIT SPOON ST = SHELBY TUBE
D = DENNISON C = CORE CS = CONTINUOUS SAMPLER
CT = CUTTINGS OT = OTHER

IAN
ORATION

LOG OF DRILLING OPERATIONS

Sheet 1 of 1

or Well No. 13
ation x-2,591,708.69; y-640,662.534
Recorded by Roy F. Weston, Inc.
ling Interval (Est.) not available ft
e Drill Rig and Operator Hollow-stem auger/Wisconsin Test Drilling

Project Kohler Co. Landfill RI/FS Phase 2
Beginning _____ and end
_____ of drilling operation

th	Graphic Log	Sample Depth*	Lithologic Description	Remarks

No data available

RADIAN CORPORATION

MONITOR WELL COMPLETION LOG: SHEET 1/2

Monitor Well No. 13
Location x-2,591,708.69; y-640,662.534
Elevation (surface) _____
Elevation (measuring pt.) 601.824

Project Kohler Co. Landfill RI/FS Phase 2
Log Recorded By Roy F. Weston, Inc.
Drilled By Wisconsin Test Drilling

CONSTRUCTION

Construction Started _____ Completed _____
Total Depth Drilled (ft) _____ Hole Diameter _____
Drilling Method Hollow stem auger
Problems Encountered During Drilling _____
Water Source for Drilling and Completion Procedures _____

COMPLETION

Type of Completion Above-ground
Top of Well Casing (ft) _____ Depth (ft) _____
Screen Interval (ft-ft) _____

Interval of Grout (ft-ft) _____
Interval of Bentonite (ft-ft) _____
Interval of Sand Pack (ft-ft) _____

SAMPLING

Number and Type of Samples Collected _____
Sample Interval (ft-ft) _____
Storage and/or Preservation Method(s) _____

MATERIALS

Casing Type PVC
Screen Type PVC Slot Size _____
Method of Joining Casing/Screen Flush threaded joints

Type of Grout _____ Source _____
Amount _____
Type of Bentonite _____ Source _____
Amount _____
Type of Sand Pack _____ Source _____
Amount _____
Lithology of Sand Pack _____

SECURITY MEASURES

Description Protective steel casing with locking lid
Padlock ID No(s). _____
Location of Key(s) Kohler Company - Environmental Engineering

Weston data unavailable - no Radian geologist oversaw activities.

GEOLOGIC DRILL LOG

PROJECT NAME AND LOCATION	PAGE NO.	HOLE NO.
KOHLER LANDFILL, SHEBOYGAN, WI	1 of 2	MW-13

START	FINISH	DRILLER	DRILL METHOD	BOREHOLE DIAMETER	WELL DIAMETER	TOTAL DEPTH
9/1/88	9/1/88	Wisconsin Test	6.25 HSA/Tri-Cone	10"	2"	25.00'

LOGGER	TOP of CASING ELEV.	GROUND ELEVATION	DEPTH/ELEVATION GROUNDWATER - DATE MEASURED
Bill Niemann			5.00'/' 9-16-88

Well construction: 2" PVC

SAMPLE NO.	SAMPLE TYPE	RECOVERY "	SAMPLE BLOWS*	ELEV	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASS-IFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
					5					Blind drill. See log for MW-13R.	
					10						
					15						

*ASTM D1586
SS = SPLIT SPOON D = DENNISON ST = SHELBY TUBE C = CORE CT = CUTTINGS CS = CONTINUOUS SAMPLER OT = OTHER

WESTON

GEOLOGIC DRILL LOG	PROJECT NAME AND LOCATION: KOHLER LANDFILL, SHEBOYGAN, WI	PAGE NO.: 2 of 2	HOLE NO.: MW-

SAMPLE NO.	SAMPLE TYPE	RECOVERY "	SAMPLE BLOWS*	ELEV	DEPTH	GRAPHIC LOG	WELL CONSTRUCTION	CLASSIFICATION	SAMPLE INTERVAL	DESCRIPTION	NOTES
					25					END OF BORING AT 25 FT.	

*ASTM D1586 — SS = SPLIT SPOOL, D = DENNISON — ST = SHELBY TUBE, C = CORE, CT = CUTTINGS, CS = CONTINUOUS SAMPLER, OT = OTHER

KOHLER LANDFILL
SHEBOYGAN, WI

PAGE NO.: 2 of 2 — HOLE NO.: MW-

EXPLORATION TECHNOLOGY INC.

LOG OF TEST BORING

Project: Kohler Landfill
Roy F. Weston Inc.
Location: Kohler, Wisconsin

Boring No. 12D
Surface Elevation
Job No. 811294
Sheet 1 of 1

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SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks
						TOPSOIL
1	SS	12"	M	8		Loose, Brown SILT
2	SS	12"	W	11	5	
3	SS	12"	W	10		Medium Dense, Gray Silty CLAY
4	SS		W		10	Trace Fine Gravel 3" Shelby 9-10', No Recovery 3" Shelby Tube 10.4-10.6', No Recovery
5	SS		W	70/5"		
6	SS	.8"	W	100/8"	15	Very Dense
7	SS	.5"	W	100/5"		
8	SS	.4"	W	100/4"	20	
9	SS	.8"	W	100/8"		
10	SS	.3"	W	100/3"	25	
						End Boring at 28'
					30	Well installed at 23'
					35	
					40	

SOIL PROPERTIES

qp	W	LL	PL	S

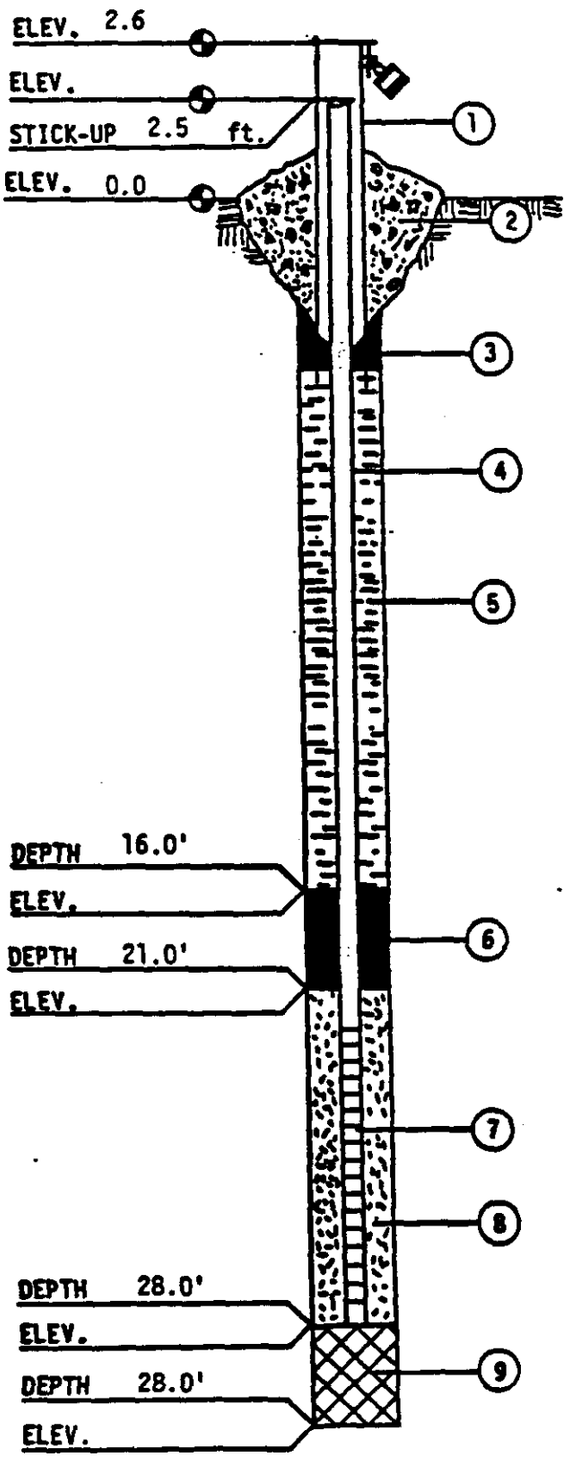
WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

B-84

GENERAL NOTES

Start 7/29/86 Complete 7/29/86
Crew Chief JHR Rig 9230
Drilling Method 4¼" I.D. HSA



EXPLORATION TECHNOLOGY INC.

MONITORING WELL CONSTRUCTION INFORMATION

JOB NO. 811294

BORING/WELL NO. 12D

DATE 7/29/86

CHIEF/UNIT JR/9230

1. PROTECTIVE CASING (YES) NO
   LOCKING (YES) NO
2. CONCRETE SEAL (YES) NO
3. TYPE OF SURFACE SEAL (IF INSTALLED)
   Cement Bentonite Grout
4. SOLID PIPE TYPE SCHD 40 PVC
   SOLID PIPE LENGTH 25.5 ft.
   JOINT TYPE SLIP/GLUED ~~THREADED~~
5. TYPE OF BACKFILL Cement Bentonite Grout
   HOW INSTALLED (TREMIE) ~~FROM SURFACE~~
6. TYPE OF LOWER SEAL (IF INSTALLED)
   Bentonite Slurry
7. SCREEN TYPE Continuous Wire Wrap SCHD 40 PVC
   SCREEN LENGTH 5.0'
   SLOT-SIZE 0.010" LENGTH 4.5 ft
   SCREEN DIAMETER 2.0 in
8. TYPE OF BACKFILL AROUND SCREEN
   #30 Flint Sand
9. TYPE OF BACKFILL Spoil
10. DRILLING METHOD 4¼"I.D. HSA
11. ADDITIVES USED (IF ANY)
    None

WATER LEVEL _____ DATE _____

*ALL DEPTHS MEASURED FROM GROUND SURFACE.

WESTON

DRILLING LOG

WELL NUMBER: 12D
OWNER: Kohler
LOCATION: NE corner Kohler Co. Landfill
ADDRESS: Kohler Wisc.
TOTAL DEPTH:
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: FTI
DRILLING METHOD: HSA
DATE DRILLED: 7/24/86
DRILLER: Jim Rich
HELPER: Kevin
LOG BY: Rich Gnad

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
20					20 - 20A
		8	SS	100/4	Some as above. - Grayish clayey silt. Gravel abund. Wi gabbro piece. Sl. increase in sand. Dry. HNU BG
					22.7 - 23.5 60 40/8"
		9	SS	100/8	Gray sandy silt Some clay. Abun. grav. Dry. Stiff. massive HNU-BG
5					25.3 - 25.6'
		10	SS	100/3	some as above. sitting on Lst. HNU-BG
					28.0 - 28.3'
		11	SS	100/3	Gray clayey silt. Trace sand. Scat pebb. Stiff. massive. Sl. more moist than above HNU-BG
30					
35					
40					

B-82

* A.S.T.M. D1586

Well 12D

Well Construction Summary

Location or Coords: NE corner of Landfill

Elevation: Ground Level

Top of Casing

Drilling Summary:

Total Depth 27.9'

Borehole Diameter 7.625'

Driller Exploration Technology, Inc.

Rig CME 55

Bit(s) HSA

Drilling Fluid None - Water used to clean hole.

Surface Casing Metal Protector

Well Design:

Basis: Geologic Log X Geophysical Log

Casing String(s): C=Casing S=Screen

26.7'	21.7'	S			
21.7'	2.45+	C			

Casing: C1 Sch 40 PVC; .010 flush threaded

C2

Screen: S1 Sch 40 PVC; .010 continuous slot

S2

Centralizers

Filter Material Sand - 30 grade 26.7' - 19.7'

Cement Cement - bentonite slurry 14.3' - 1.5'

Other Bentonite Plug - 19.7' - 14.3'
Concrete Apron - 1.5' - 0'

Construction Time Log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	7/29	0920	7/29	1630
Geophys. Logging:				
Casing:	7/30	0930	7/30	
Filter Placement:	7/30	0945	7/30	1050
Cementing:	7/31	1340	7/31	1430
Development:				
Other:				
Bentonite Plug	7/30	1050	7/30	113
Concrete Apron	8/4	1330	8/4	134

Well Development:

Comments:

Materials Used:
3.5 bags - sand
.75 bag - bentonite
3 bags - cement
2 bags - concrete

Location

Personnel

Project

WESTON

DRILLING LOG

WELL NUMBER: 12D
LOCATION: NE corner of landfill
OWNER: Kohler
ADDRESS: Kohler Wisc
TOTAL DEPTH:
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: ETI
DRILLING METHOD: HSA
DATE DRILLED: 7/29/86
DRILLER: Tim Rich
HELPER: Kevin
LOG BY: Rich Gnat

SKETCH MAP:

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0		1	SS	3-5	Organic. Brownish red v. clayey silt. Dry. HNU - BG
4' G.W.					wet @ 4'
5		2	SS	11-4 3	5.5-7' Reddish brown silty sand. Wet. Laminated HNU BG
		3	SS	2-3 5	8-9.5' Grayish silty clay. soft, plastic, massive. some coal pebbles HNU BG
		X	ST		9.5-11.5' - Shelby Tube Push 9.5-10.7. Stone ruins tube. Will drill to ~11' and push another tube. - Greyish silty clay. Plastic. some grav. & sandy fraction
10					10.2-12.2 - Shelby Tube - Still sitting on rock. Have a split spoon pounded.
		4	SS	20 49 11	Gray silty sandy clay. Gravel HNU BG
					12.7-14.9 Shelby tube - Clay
		5	SS	70+ 5"	Gray gravelly clayey sandy silt. Dense. No lam. HNU BG
15					@ 15.3'
		6	SS	48-50-5	Gray gravely clayey silt. Trace sand. Stiff. Fairly dry. HNU BG
					17.8-18' 18'-18.5' (6" recov. HNU
		7	SS	90/6	Gray sandy gravelly silt. V. clayey. Sl. moist massive stiff. but crumbly. BG

R-R1

WESTON

DRILLING LOG

WELL NUMBER: 12D
LOCATION: NE Corner of Landfill
OWNER: Kohler Co.
ADDRESS: Kohler, WI
TOTAL DEPTH: 28'
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: ETI
DRILLING METHOD: HSA
DATE DRILLED: 7/30/86
DRILLER: Jim Rich
HELPER: Kevin
LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
		1	ss	3-5	Brownish red clayey silty fine sand. Thin laminations bexome evident after 3 feet wet at 4' (ML)
		2	ss	11-4 3	
		3	ss	2-3 5	Gray silty clay. Soft, plastic, massive. Trace of scattered pebbles. No laminations. (CL) 7.5
		1	ST*	—	
		4	ss	20-19 11	12.
		5	ss	20/.5	
		6	ss	48- 20/.5	Gray clayey sandy silt. Abundant gravel with some more gravelly seams. Stiff, crumbly, massive, fairly dry. (ML)
		7	ss	20/.5	
20		8	ss	100/.4	
		9	ss	100/.8	
		10	ss	100/.3	- becoming wet
		11	ss	100/.3	Auger refusal 28
					End fo Boring
30					
					* Shelby tube - ruined due to gravel
					B-79
40					

* ASTM D1586

SHEET 1 OF 1

WESTON

DRILLING LOG

WELL NUMBER: 12D
OWNER: Kohler Co.
LOCATION: NE Corner - n- Landfill
ADDRESS: Kohler WI.
TOTAL DEPTH: 28'
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: ETI
DRILLING METHOD: HSA
DATE DRILLED: 7/30/86
DRILLER: Jim Rich
HELPER: Kevin
LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0		1	SS	3-5	Brownish red clayey silty fine sand. Thin laminations become evident after 3 feet. Wet at 4'. (ML)
		2	SS	11-4 3	
					7.5'
8		3	SS	2-3 5	Gray silty clay. Soft, plastic, massive. Trace of scattered pebbles. No laminations. (CL) Moist.
		1	ST*	—	
		4	SS	20-19 11	12.2'
		5	SS	70/.5	Gray clayey sandy silt. Abundant gravel with some more gravelly seams. Stiff, crumbly, massive. Fairly dry. (ML)
		6	SS	48-50/.5	
		7	SS	90/.5	
20		8	SS	100/.4	
		9	SS	100/.8	
		10	SS	100/.3	- becoming wet.
		11	SS	100/.3	Auger refusal. 28.3'
30					End of boring
					* Shelby tube - ruined due to gravel.
40					B-80

* A.S.T.M. D1586

SHEET 1 OF 1

EXPLORATION TECHNOLOGY INC.

LOG OF TEST BORING

Project: Kohler Landfill
Roy F. Weston Inc.
Location: Kohler, Wisconsin

Boring No. 12
Surface Elevation
Job No. 811294
Sheet 1 of 1

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SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture				qp	W	LL	PL	P
No.	Type	↓	↓	N	Depth						
						TOPSOIL, Brown Organic					
						Shelby tube #1 pushed from 4-5.5', 1.5' Recovery					
					5	Light Brown Silty CLAY, Little Fine Sand (Moist)					
						Shelby tube #2 pushed from 7-9', full recovery *					
					10	End Boring at 10.1'					
						*Shelby tube #3 pushed from 9-11' Gray Sandy CLAY, Little Fine Gravel					
					15						
					20						
					25						
					30						
					35						
					40						

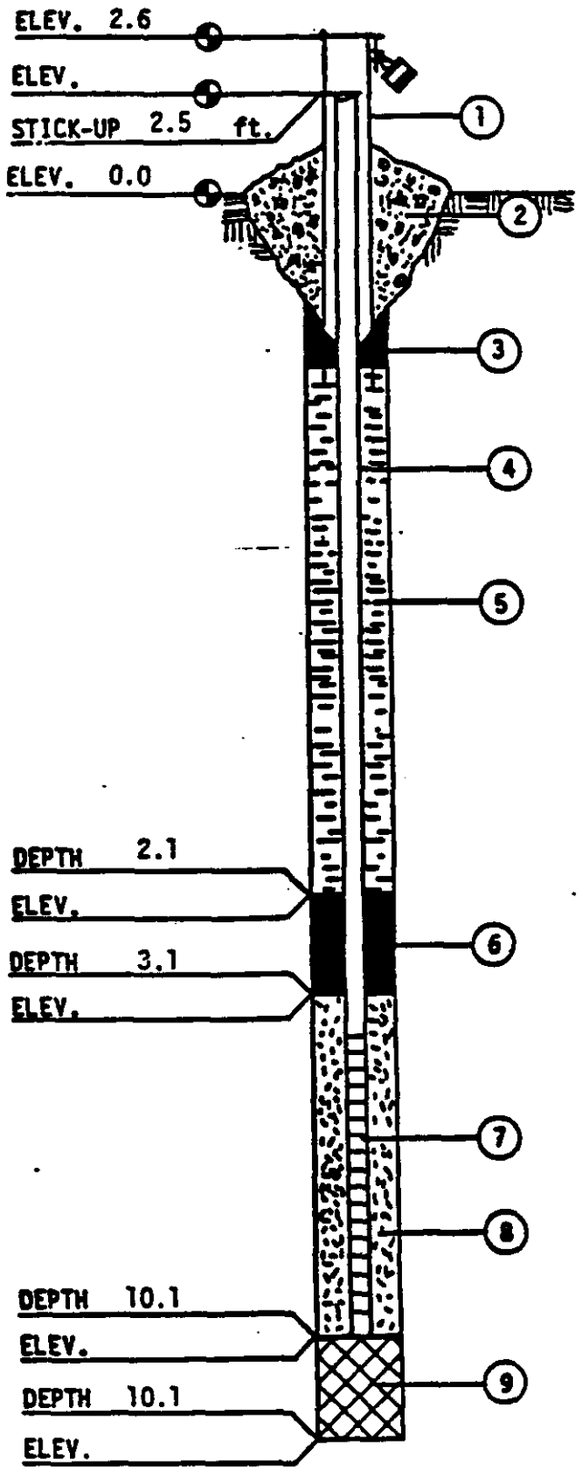
WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

B-77

GENERAL NOTES

Start 7/30/86 Complete 7/30/86
Crew Chief JR Rig 9230
Drilling Method 4¼" I.D. HSA



EXPLORATION TECHNOLOGY INC.

MONITORING WELL CONSTRUCTION INFORMATION

JOB NO. 811294

BORING/WELL NO. 12

DATE 7/30/86

CHIEF/UNIT Rech/9230

1. PROTECTIVE CASING (YES) NO
   LOCKING (YES) NO
2. CONCRETE SEAL (YES) NO
3. TYPE OF SURFACE SEAL (IF INSTALLED)
   Cement Bentonite Grout
4. SOLID PIPE TYPE SCHD 40 PVC
   SOLID PIPE LENGTH 7.5 ft.
   JOINT TYPE SLIP/GLUED (THREADED)
5. TYPE OF BACKFILL Cement Bentonite Gr
   HOW INSTALLED (TREMIE) ~~FROM SURFACE~~
6. TYPE OF LOWER SEAL (IF INSTALLED)
   Bentonite Pellets
7. SCREEN TYPE Continuous Wire Wrap SCHD 40 PVC
   SCREEN LENGTH 5.0'
   SLOT-SIZE 0.010" LENGTH 4.5 ft.
   SCREEN DIAMETER 2.0 in.
8. TYPE OF BACKFILL AROUND SCREEN
   #30 Flint Sand
9. TYPE OF BACKFILL Spoils
10. DRILLING METHOD 4¼" I.D. HSA
11. ADDITIVES USED (IF ANY)
    - None

WATER LEVEL _____ DATE _____

*ALL DEPTHS MEASURED FROM GROUND SURFACE.

WESTON

DRILLING LOG

WELL NUMBER: 12 OWNER: Kohler Co.
LOCATION: NE Corner of Landfill ADDRESS: Kohler WI
TOTAL DEPTH
SURFACE ELEVATION: WATER LEVEL:
DRILLING COMPANY: FTI DRILLING METHOD: HSA DATE DRILLED: 7/30/86
DRILLER: Jim Rich HELPER: Kevin
LOG BY: Rich Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
					For drill log refer to log for boring 12D.
4'					
5		1	ST	NA	Shelby Tube - Reddish brown silty fine sand. Tube refusal at 5.6'
5.6'					
7'					
7		2	ST	NA	Shelby Tube - Gray silty clay soil, plastic. Trace of scattered pebbles.
9					
10		2D	ST	NA	Shelby Tube - Duplicate.
					End of boring

B-75

* A.S.T.M D1586

SHEET ___ OF ___

Well 12

Well Construction Summary

Location or Coords: NE Corner of Landfill

Elevation: Ground Level

Top of Casing

Location

Personnel

Project

Drilling Summary:

Total Depth 10.1'

Borehole Diameter 7.625"

Driller Exploration Technology, Inc.

Rig CME 55

Bit(s) HSA

Drilling Fluid None - Water to wash out hole.

Surface Casing Metal Protector

Well Design:

Basis: Geologic Log X Geophysical Log

Casing String(s): C=Casing S=Screen

10.1'	5.1'	S			
5.1'	2.4+	C			

Casing: C1 Sch 40 PVC; flush threaded

C2

Screen: S1 Sch 40 PVC; .010 continuous slot

S2

Centralizers

Filter Material Sand - 30 grade
10.1' - 4.0'

Cement Cement - bentonite slurry
3.0' - 1.5'

Other
Bentonite Pellets - 4.0' - 3.0'
Concrete Apron - 1.5' - 0'

Construction Time Log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	7/30	1350	7/30	1450
Geophys. Logging:				
Casing:	7/30	1455	7/30	150
Filter Placement:	7/30	1500	7/30	1520
Cementing:	7/31	1435	7/31	1445
Development:				
Other:				
Bentonite Plug	7/30	1520	7/30	1525
Concrete Apron	8/1	1430	8/1	1445

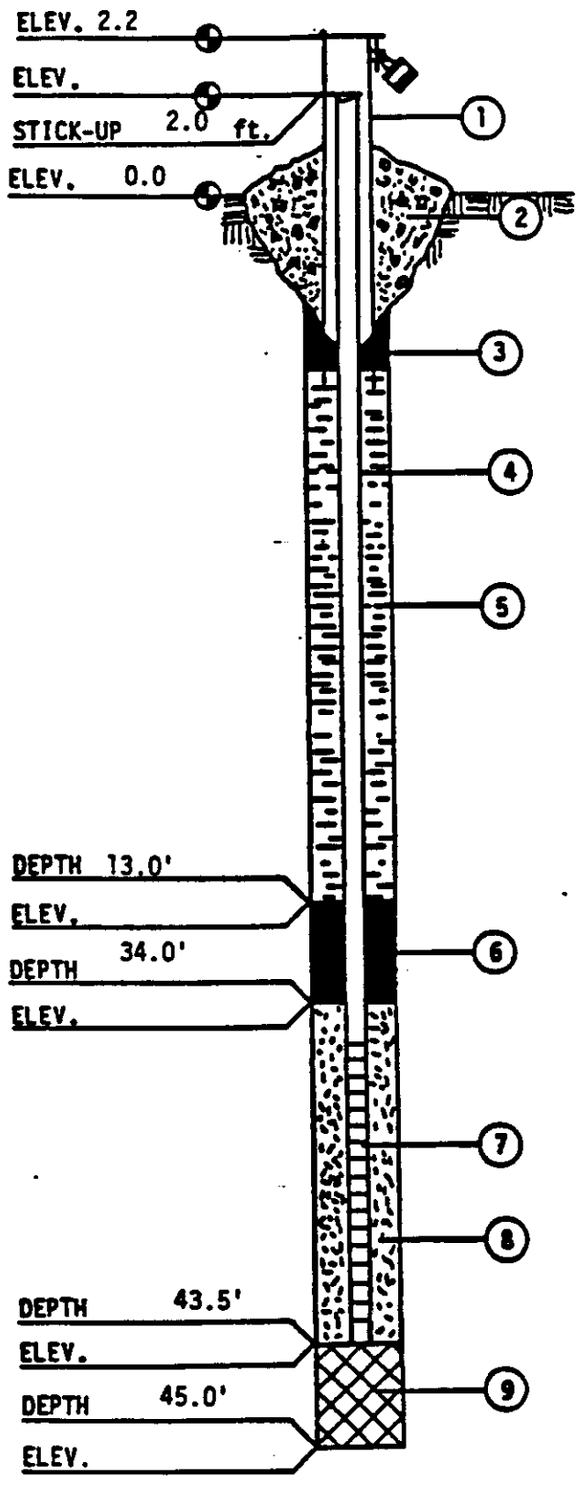
Well Development:

Comments:

Materials Used:
3 Shelby Tubes
200 lbs - sand
.25 bucket - Bentonite Pellet

Note: Only 1 foot bentonite plug due to shallowness of well

WESTON



EXPLORATION TECHNOLOGY INC.

MONITORING WELL CONSTRUCTION INFORMATION

JOB NO. 811294

BORING/WELL NO. 11D

DATE 8/5/86

CHIEF/UNIT JP/9230

1. PROTECTIVE CASING (YES) NO
   LOCKING (YES) NO
2. CONCRETE SEAL (YES) NO
3. TYPE OF SURFACE SEAL (IF INSTALLED)
   Cement Bentonite Grout
4. SOLID PIPE TYPE SCHD 40 PVC
   SOLID PIPE LENGTH 40.5 ft.
   JOINT TYPE SLIP/GLUED (THREADED)
5. TYPE OF BACKFILL Cement Bentonite Grout
   HOW INSTALLED (TREMIE) FROM SURFACE
6. TYPE OF LOWER SEAL (IF INSTALLED)
   Bentonite Slurry
7. SCREEN TYPE Continuous Wire Wrap SCHD 40 PVC
   SCREEN LENGTH 5.0'
   SLOT-SIZE 0.010" LENGTH 4.5 ft.
   SCREEN DIAMETER 2.0 in.
8. TYPE OF BACKFILL AROUND SCREEN
   #30 Flint Sand
9. TYPE OF BACKFILL Spoils
10. DRILLING METHOD 4¼"I.D. HSA
11. ADDITIVES USED (IF ANY)
    None

WATER LEVEL _____ DATE _____

*ALL DEPTHS MEASURED FROM GROUND SURFACE.

WESTON

DRILLING LOG

WELL NUMBER: 12 OWNER: Kohler Co.

LOCATION: NE Coner of Landfill ADDRESS: Kohler, WI

TOTAL DEPTH

SURFACE ELEVATION: WATER LEVEL:

DRILLING COMPANY: ETI DRILLING METHOD: HSA DATE DRILLED: 7/30/86

DRILLER: Jim Rich HELPER: Kevin

LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
0					For drill log refer to log for boring 12D	
5		1	ST	NA	Shelby Tube - Reddish brown silty fine sand. Tube refusal at 5.6'	4' 5.6'
		2	ST	NA	Shelby Tube - Gray silty clay. Soft, plastic. Trace of scattered pebbles.	7'
10		2D	ST	NA	Shelby Tube - Duplicate	9'
					End of Boring	

B-74

* ASTM D1586

SHEET ___ OF ___

EXPLORATION TECHNOLOGY INC.

LOG OF TEST BORING

Project: Kohler Landfill
Roy F. Weston, Inc.
Location: Kohler, Wisconsin

Boring No. 11D
Surface Elevation
Job No. 811294
Sheet 1 of 2

1402 EMIL STREET • P.O. BOX 9404 MADISON, WIS. 53715 • TEL. (608) 256-9550

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu	W	LL	PL	D
1	SS		M	18		FILL: Mixed Black Brown & Yellow Fine to Medium Sand, Moist					
2	SS		M	19							
3	SS		M	11	5						
4	SS		M	8							
5	SS		M	2	10	Very Loose to Medium Dense, Black Silty Fine to Medium SAND, Moist/Wet					
6	SS		W	2							
7	SS		W	16	15						
8	SS		W	11							
9	SS		M/W	26	20	Very Dense, Gray Fine Sandy SILT, Some Fine to Coarse Gravel, Trace of Clay, Moist					
10	SS		M	114							
11	SS		M	100/11"	25						
12	SS		M	100/4"		Very Dense, Gray Mottled Silty Fine SAND, Some Fine to Coarse Gravel, Moist/Wet					
13	SS		M	100/10"	30						
14	SS		M	100/5"							
15	SS		W	100/2"	35						
16	SS		W	100/4"							
17	SS		W	100/5"	40						
18	SS		W	100/3"							
19	SS		W	100/4"	45						
						End Boring at 45'					

B-71

(Continued)

EXPLORATION TECHNOLOGY INC.

LOG OF TEST BORING

Project: Kohler Landfill
Roy F. Weston Inc.
Location: Kohler, Wisconsin

Boring No. 11D
Surface Elevation
Job No. 811294
Sheet 2 of 2

1402 EMIL STREET P.O. BOX 9404 MADISON, WI 53715 • TEL (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture								
No.	Type	↓	↓	N	Depth		qu	W	LL	PL	D
					50						
					55						
					60						
					65						
					70						
					75						
					80						
					85						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

B-72

GENERAL NOTES

Start 8/5/86 Complete 8/5/86
Crew Chief JP Rig CME 55
Drilling Method
4¼ I.D. HSA

WESTON

DRILLING LOG

WELL NUMBER: 11D
OWNER: Kaiser Co.
LOCATION:
ADDRESS:
TOTAL DEPTH:
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY:
DRILLING METHOD:
DATE DRILLED: 8/5/86
DRILLER:
HELPER:
LOG BY: P. Graf

SKETCH MAP

42.5
35.5

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
40						
					41	UNUDNG
		SS 18		100/3"	No recovery. Sitting drop only. 42	HNU-W BG
					43	
					44	
		SS 19		100/4"	fine sandy gray silt. Thin lamin. No gravel. V. moist. 45	HNU-DH BG HNU-W BG HNU-S-BG
45					End of Boring	
					46	
					47	
					48	
					49	
50					50	

B-69

SHEET 3 OF 3

Well 11D

Well Construction Summary

Location or Coords: East of Old Waste Pit.

Elevation: Ground Level

Top of Casing

Location

Personnel

Project

Drilling Summary:

Total Depth 45'

Borehole Diameter 7/625"

Driller Exploration Technology, Inc.

Rig CME 55

Bit(s) HSA

Drilling Fluid None - Water used to clean hole.

Surface Casing Metal Protection

Well Design:

Basis: Geologic Log X Geophysical Log

Casing String(s): C=Casing S=Screen

42.16'	37.16'	S			
37.16'	2.3+	C			

Casing: C1 Sch. 40 PVC; flush threaded

C2

Screen: S1 Sch. 40 PVC; .010 continuous slot.

S2

Centralizers

Filter Material Sand - 30 grade 42.16' - 34.6'

Cement Cement - bentonite slurry 14.0' - 1.5'

Other Bentonite Pluf - 34.6' 14'

Concrete Apron - 1.5' - 0'

Construction Time Log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling	8/5	7030	8/5	124[illegible]
Geophys. Logging:				
Casing:	8/5	1530	8/5	[illegible]
Filter Placement:	8/5	1545	8/5	16[illegible]
Cementing:	8/6	0730	8/6	081[illegible]
Development:				
Other:				
Bentonite Plug	8/5	1645	8/5	173[illegible]
Concrete Apron	8/8	0915	8/8	093[illegible]

Well Development:

Comments:

Materials Used:

300 lbs - Sand

2 bags - bentonite

75 lbs - cement

200 lbs - concrete

WESTON DESIGNERS CONS

start 0730

WESTON

DRILLING LOG

WELL NUMBER: 11D
LOCATION: Equinette
OWNER: Kohler
ADDRESS:
TOTAL DEPTH:
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: ETI
DRILLING METHOD:
DATE DRILLED: 8/5/86
DRILLER: Jeff
HELPER: Ebert
LOG BY: Rick Grant

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
0		1	SS	2-9	2" topsoil	HNU BG
					Sandy fill. Some slag. Brick. Dry	HNU BG
		2	SS	4-7 9 12	Brown & tan gravelly fill. Some black slag & sand. Dry	HNU DH - 2.5 HNU W - BG HNU S - BG
		3	SS	7-6 5	15" - Black sandy fine slag fill → HNU - limit 3" - Brown sandy fill - BG.	HNU DH - limit HNU W - BG
5		4	SS	6-3 5	12" - Black sandy slag fill. Moist. HNU limit Poor recovery Clayey sand, HNU 1	HNU DH - 1.5 HNU W - BG HNU S -
		5	SS	1-1 1		HNU DH - 2 HNU W - BG
10		6	SS	1-1 1	2"- Charcoal gray. V. soft silty clay. gray & black. Slag 6" - blackish silty clayey fine sand. V. moist. 2" - gray v. soft clay	HNU DH - 24 HNU - W BG HNU S - 5.
		7	SS	6-8 8	1" - Soft gray silty clay - HNU BG No PID 3" - brown clay, sl. silty 4" - black ~~sand~~ fine silty sand. moist — HNU - 16	HNU - DH-14 HNU W - BG
15		8	SS	6-5 6	4" - soft gry silty clay - HNU 2 14" - [illegible] fine sand wet. HNU - 6 max.	HNU - DH 22 HNU - W BG
		9	SS	6-14 12	Black sandy wet becoming clayey & grayish towards bot HNU - S 21 5" - [illegible] silty clay with shell	HNU - DH 42 HNU W BG
20						

* A.S.T.M D1586

BG B-67

SHEET 1 OF 2

WESTON

DRILLING LOG

WELL NUMBER: 11D
LOCATION: _____
_____
_____
SURFACE ELEVATION: _____
DRILLING COMPANY: _____
DRILLER: _____
LOG BY: _____

OWNER: _____
ADDRESS: _____
_____
TOTAL DEPTH _____
WATER LEVEL: _____
DRILLING METHOD: _____
DATE DRILLED: 8/7/86
HELPER: _____

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
20						
		SS	10	25-22 82	21 gray clayey [illegible] silt - SAND? Trace f. sand.	JU DH-18 HNU W-BG HNU S-1
					22	
					23	
		SS	11	38 12/5"	24 gray sandy clayey silt. STIFF v. gravelly.	HNU DH-2.5 HNU W-BG HNU S-2
25					25	
					26	
		SS	12	100/4"	27 Brown & gray mottled silty fine sand to sandy fine silt. Trace of gravel. Dry to sl. moist. HNU - 3	HNU DH 20 HNU - W BG
					28	
		SS	13	45-95/4"	29 v. sandy gray silt to silty fine sand. Some med. sand and gravel. moist	HNU DH - 3 HNU-W BG HNU-S BG
30					30	
		SS	14	100/6"	31 gray clayey silty fine sand v. moist Some gravel. Silt lenses towards top. Trace of yellowish brown color.	HNU DH-8 HNU W-BG HNU BG1-1
					32	
					33	
		SS	15	100/6"	34 gray to ~~brown~~ silty v. fine sand to fine sandy silt (pounded atop cobble). ~~wet~~ . Clayey.	HNU DH - 18 HNU W BG HNU S 2
35					35	
					36	
		SS	16	100/4"	37 gray (brownish gray) fine sandy silt sl. moist to dry, gravelly.	HNU DH 4 HNU W BG HNU S BG
					38	
		SS	17	100/6"	39 Grady fine sandy silt; gravelly. becoming v. moist to wet [illegible]	HNU DH-4 HNU W-BG HNU S-2
40					40	

● A.S.T.M. D1586

WESTON

DRILLING LOG

WELL NUMBER: 11D
OWNER: Kohler Co.
LOCATION: East of old wash pit.
ADDRESS: Kohler, WI
TOTAL DEPTH: 45'
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: ETI
DRILLING METHOD: HSA
DATE DRILLED: 9/5,15,16
DRILLER: Jeff Poeschl
HELPER: Tim Ebert
LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0		1	SS	2-9 9	Fill. Colors range from black, yellow, brown and gray. Generally sandy with slag and cinder. Dry.
		2	SS	4-7 12	
		3	SS	7-6 5	
		4	SS	6-3 6	- becoming moist 8'
10		5	SS	1-1 1	Interlayered soft brownish silty clays and silty fine sands. Layers range from approx. 3 inches to 1 foot in thickness. Sandy horizons are stained black due to presence of silty materials. Bottom of set at 12.5'. (CL-ML)
		6	SS	1-1 1	
		7	SS	6-8 8	
		8	SS	6-5 6	
		9	SS	6-12 12	19.6'
20		10	SS	25-32 82	Very stiff gray gravelly silt; massive, dry. Trace of clay. (ML)
		11	SS	38-62/5"	- sandier horizon 26'
		12	SS	100/4"	Brown and gray mottled silty fine sand, some gravelly horizons; very stiff. (ML)
30		13	SS	45-50/4"	
		14	SS	100/8"	-becoming very moist 33'
		15	SS	100/6"	Very stiff gray fine sandy silt; small gravel and clay fractions; massive, wet. (ML)
		16	SS	100/4"	
40		17	SS	100/5"	B-65

* A.S.T.M D1586

WESTON

DRILLING LOG

WELL NUMBER: 11D
LOCATION: East of old
landfill
OWNER: Kohler Co.
ADDRESS: Kohler WI.
TOTAL DEPTH: 45'
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: ETI
DRILLING METHOD: HSA
DATE DRILLED: 9/5/86
DRILLER: Jeff Boesch
HELPER: Tim Ebert
LOG BY: Richard Grat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
40		18	SS	100/3"	Very stiff gray fine sandy silt; gravel and clay fraction; wet. (ML)
		19	SS	100/4"	- loosing gravel fraction. Evidence of fine laminations. 45'
					End of Boring
50					

B-66

* A.S.T.M D1586

SHEET 2 OF 2

WESTON

DRILLING LOG

WELL NUMBER: 11 D
LOCATION: East of old Waste Pit.
OWNER: Kohler Co.
ADDRESS: Kohler, WI
TOTAL DEPTH: 45'
SURFACE ELEVATION:
WATER LEVEL:
DRILLING COMPANY: ETI
DRILLING METHOD: HSA
DATE DRILLED: 8/5/86
DRILLER: Jeff Poeschi
HELPER: Tim Ebert
LOG BY: Richard Gnat

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	
0		1	ss	2-9	Fill. Colors range from black, yellowish, brown, and gray. Generally sandy with slag and cinder. Dry.	
		2	ss	4-7 / 12		
		3	ss	7-6 / 5		
		4	ss	6-3 / 5	- becoming moist	8'
10		5	ss	1-1 / 1	Interlayered soft brownish clays and silty fine sands. Layers range form approx. 3 inches to 1 foot in thickness. Sandy horizons are stained black due to presence of oily materials. Becomes wet at 12.5': (CL - ML)	
		6	ss	1-1 / 1		
		7	ss	6-8 / 8		
		8	ss	6-5 / 6		
20		9	ss	6-14 / 12		19
		10	ss	25-38 / 82	Very stiff gray gravelly silt; massive, dry. Trace of clay. (ML)	
		11	ss	62/5"	- sandier horizon	
		12	ss	100/4"	Brown and gray molted silty fine sand, some gravelly horizons; very stiff. (ML)	26
30		13	ss	45-55/4"		
		14	ss	100/5"	- becoming very moist	33
		15	ss	100/2"	Very stiff gray fine sandy silt; small gravel and clay fractions; massive, wet. (ML)	
		16	ss	100/4"		
		17	ss	100/5"		
40						

B-63

*ASTM D1586

WESTON

DRILLING LOG

WELL NUMBER: 11 D
LOCATION: East of old Waste Pit
SURFACE ELEVATION:
DRILLING COMPANY: ETI
DRILLER: Jeff Poeschi
LOG BY: Richard Gnat

OWNER: Kohler Co.
ADDRESS: Kohler, WI
TOTAL DEPTH: 45'
WATER LEVEL:
DRILLING METHOD: HSA
DATE DRILLED: 8/5/86
HELPER: Tim Ebert

SKETCH MAP

NOTES:

DEPTH (FEET)	GRAPHIC LOG	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE BLOWS*	DESCRIPTION / SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
40		18	ss	100/3"	Very stiff gray fine sandy silt; gravel and clay fraction; wet. (ML)
		19	ss	100/4"	- loosing gravel fraction. Evidence fo fine laminations.
45'					End of Boring

B-64

* ASTM D1586

SHEET 2 OF 2

EXPLORATION TECHNOLOGY INC.

LOG OF TEST BORING

Project: Kohler Landfill
Roy F. Weston Inc.
Location: Kohler, Wisconsin

Boring No. 11
Surface Elevation
Job No 811294
Sheet 1 of 1

1402 EARL STREET • P.O. BOX 9404, MADISON, WIS. 53715 • TEL. (608) 258-9550

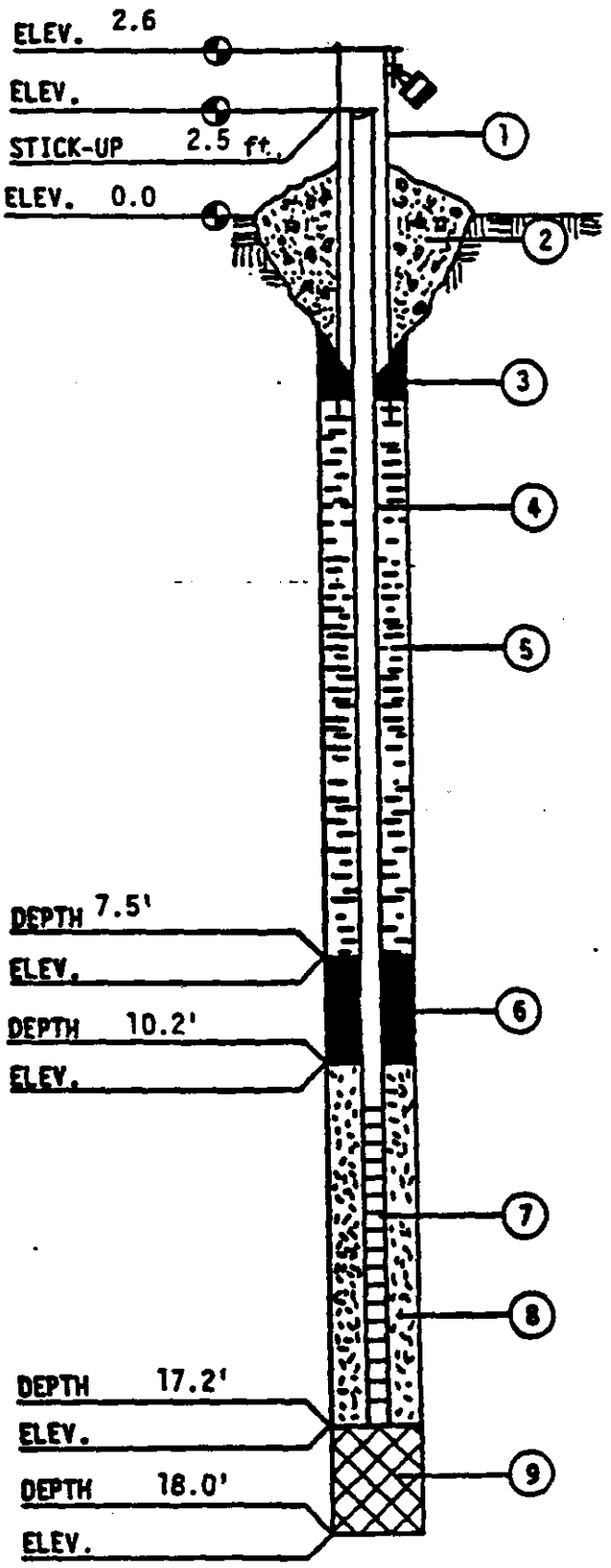
SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture								
No.	Type	↓	↓	%	Depth		qp	W	LL	PL	D
					5	Blind Drilled (5'SW of 11D)					
					10						
					15						
					20	End Boring at 15'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 8/6/86 Complete 8/6/86
Crew Chief P/TF Rig CME 55
Drilling Method 4¼" ID HSA



EXPLORATION TECHNOLOGY INC.

MONITORING WELL CONSTRUCTION INFORMATION

JOB NO. 811294

BORING/WELL NO. OW11

DATE 8/6/86

CHIEF/UNIT JP/9230

1. PROTECTIVE CASING (YES) NO
   LOCKING (YES) NO
2. CONCRETE SEAL (YES) NO
3. TYPE OF SURFACE SEAL (IF INSTALLED)
   Cement Bentonite Grout
4. SOLID PIPE TYPE SCHD 40 PVC
   SOLID PIPE LENGTH 14.7 ft.
   JOINT TYPE SLIP/GLUED (THREADED)
5. TYPE OF BACKFILL Cement Bentonite Grou
   HOW INSTALLED (TREMIE) FROM SURFACE
6. TYPE OF LOWER SEAL (IF INSTALLED)
   Bentonite Slurry
7. SCREEN TYPE Continuous Wire Wrap SCHD 40 PVC
   SCREEN LENGTH 5.0'
   SLOT-SIZE 0.010" LENGTH 4.5 ft.
   SCREEN DIAMETER 2.0 in.
8. TYPE OF BACKFILL AROUND SCREEN
   #30 Flint Sand
9. TYPE OF BACKFILL Spoils
10. DRILLING METHOD 4¼"I.D. HSA
11. ADDITIVES USED (IF ANY)
    None

WATER LEVEL _____ DATE _____

*ALL DEPTHS MEASURED FROM GROUND SURFACE.