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ENVIRONMENTAL MANAGEMENT

REMEDIAL INVESTIGATION/ FEASIBILITY STUDY WORK PLAN

Cantor Brothers, Inc.
Engineers Lane
Farmingdale, New York
Site No. 152021

May, 1992

Handex®

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FEASIBILITY STUDY
WORK PLAN

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Prepared For:

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May, 1992

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1.0 INTRODUCTION

Handex Environmental Management, Inc. ("Handex") has been retained to undertake the technical tasks necessary to ensure compliance with the Consent Order pertaining to the Cantor Brothers, Inc. ("Cantor") facility at Engineers Lane in Farmingdale, New York. Figure 1 shows the site location.

Cantor entered into the Consent Order with the New York State Department of Environmental Conservation ("NYSDEC") under Article 27, Title 13 of the Environmental Conservation Law of the State of New York ("ECL"), entitled "Inactive Hazardous Waste Disposal Sites". The Consent Order was signed by NYSDEC on March 25, 1992. The NYSDEC maintains that the Cantor site is an inactive hazardous waste disposal site and presents a significant threat to the public health and environment. The site, listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site Number 1-52-021, has been classified by the NYSDEC as a "2". The site classification was upgraded to a "2" based on the results of a Phase II investigation as reported in the Phase II report dated June, 1990 which was prepared by LeRoy Callender for NYSDEC.

Handex has developed this Remedial Investigation/Feasibility Study Work Plan in accordance with the Consent Order, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), the Superfund Amendments and Reauthorization Act

("SARA"), the Environmental Protection Agency's ("EPA") document titled "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA", and the National Contingency Plan ("NCP").

The work plan presents a technical scope of work for conducting the proposed field activities and investigation, as well as preparing the Remedial Investigation ("RI") and Feasibility Study ("FS") reports. The RI and FS will be conducted using a phased approach in accordance with CERCLA, SARA and ECL. The phased approach results in: a more efficient use of resources used in the field investigation; improved data to support the alternative selection; and a shorter overall timeframe to select a remedy for the site.

The objective of the RI is to determine the nature and distribution of contaminants which NYSDEC believes may be present, and to determine whether there are potential threats to human health and the environment if contamination is found. The objective of the FS is to evaluate potential remedial alternatives from an engineering, public health, environmental and economic perspective if potential threats to human health and the environment are determined to exist at the Cantor site.

Site specific information, including historical use, previous environmental sampling events and results, and other pertinent data, and information regarding surrounding suspect sites is

presented in Section 2.0. The Field Sampling Plan ("FSP"), which includes a detailed description of all RI/FS sampling and analytical activities that will be performed for groundwater and soils is included as Sections 3.0 and 4.0, respectively. Section 3.0 sets forth the proposed groundwater investigation and hydrogeologic assessment. Section 4.0 of this report summarizes the proposed soil investigation plan for each area of potential environmental concern. Section 5.0 details the procedures for data evaluation. Section 6.0 sets forth the requirements for development of the feasibility study. The project implementation plan is discussed in Section 7.0.

The Health and Safety Plan ("HASP") for the site is included as an attachment to this Work Plan. The HASP was developed to protect persons at and in the vicinity of the site during implementation of field activities. The HASP was prepared in accordance with 29 CFR 1910.120 and other applicable standards by a certified industrial hygienist. The HASP will be updated as needed throughout all phases of RI/FS work plan implementation.

The Citizen Participation Plan ("CPP"), which was prepared in accordance with the document entitled New York State Inactive Hazardous Waste Site Citizen Participation Plan dated August 30, 1988, is included as an attachment to this work plan.

The Quality Assurance Project Plan ("QAPP"), which contains the QA/QC procedures that will be followed during the implementation of all phases of the RI/FS is contained as an attachment.

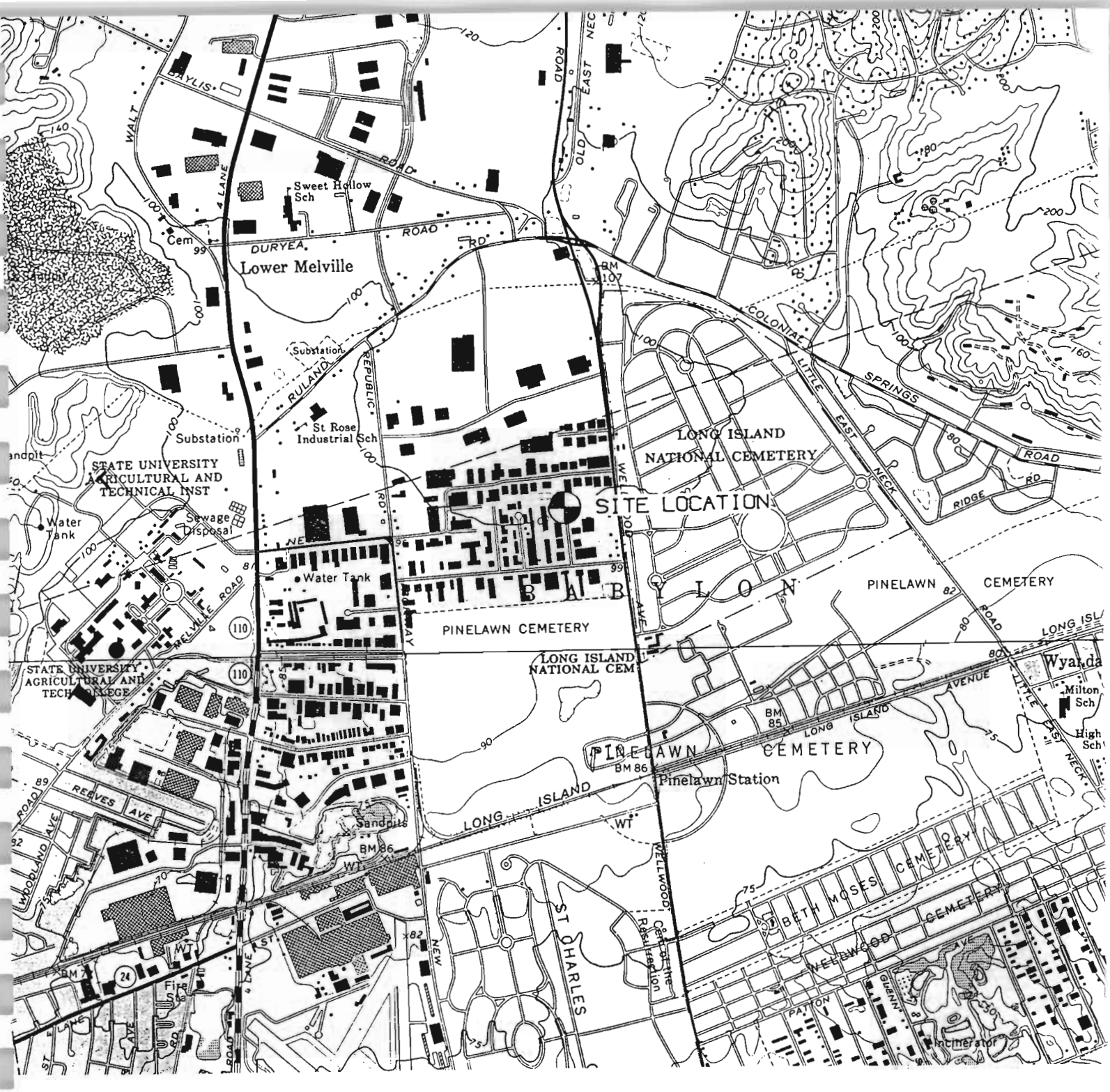

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FIGURE 1

SITE LOCATION MAP

CANTOR BROTHERS
ENGINEERS LANE
FARMINGDALE, NEW YORK

2.0 SITE CHARACTERIZATION

2.1 Site Location and Description

Cantor Brothers, Inc. is located on Engineers Lane in Farmingdale, New York. The site is located in southwestern Suffolk County, approximately 2 miles east of the Nassau County border.

Cantor currently occupies a large one-story masonry building situated on approximately 3.2 acres of land. Most of the site is covered by either paved parking areas or the building. Figure 2 is a general site map. The property was reportedly developed in 1964. Prior to this date the site was part of a farm.

The local land use is predominantly mixed industrial/commercial. The sites adjacent to Cantor are primarily industrial facilities.

2.2 Site Topography and Drainage

The Cantor site lies at an elevation of approximately 100 feet above mean sea level. The site and surrounding areas are relatively flat with average ground surface slopes of less than 3%. There are no surface water bodies identified within a 1/2 mile radius of the site. The nearest surface water is what appears to be a lagoon, which is located 3/4 miles southwest of the site. Roof storm drains and surface runoff from the site discharge to the

storm water drains located in the parking lots surrounding the building. The storm drains allow surface water to percolate into the sediments that underlie the site.

2.3 Aerial Photographs

Aerial photographs in stereo coverage were obtained for the years 1976 and 1988. The aerial photographs were obtained from AeroGraphics Corporation in order to review historical site operations and environmental condition.

Review of the 1976 coverage shows the site as it appears presently. No new construction appears to have been performed between 1976 and the present. The parking lot on the east side of the facility appears heavily stained, some which may have tracked onto the adjacent property to the northeast. The aerials also show some unidentifiable debris piled adjacent to the building near the trash dumpster area. Of note, there appears to be a lagoon, leaching pit or sump on the upgradient adjacent property to the northwest. The use and construction of this structure should be documented.

The 1988 aerial photos show the same building structures as the 1976 photos and as presently seen. There are several objects that appear to be tractor trailers stored in the parking lot on the east side of the building. The potential staining observed in the 1976 photo is not present in the 1988 photos. The potential lagoon

immediately upgradient of the Cantor site is also visible on these aerials.

The following aerial photos are being submitted to the NYSDEC for review:

Date	Photo Identification
4/6/76	29-854
4/6/76	29-855
3/8/88	4-73
3/8/88	4-74
3/8/88	4-75

2.4 Previous Sampling and Results

2.4.1 Storm Drain Sediments

In April, 1983, the Suffolk County Department of Health Services ("SCDHS") sampled the storm drain located 10 feet east of the front entrance to the facility, which is located on the southwest corner of the Cantor Bros. building. The SCDHS report does not specify whether it was a water or sediment sample. The results indicated that a total concentration of 5.334 ppm, which consisted of Benzene (0.330 ppm), Toluene (4.800 ppm) and Xylenes (0.204 ppm), was

detected in this sample.

Sediment samples were collected from three of the ten on-site storm drains during implementation of the Phase II investigation in October and December, 1988. The samples were analyzed for volatile organics, semi-volatile organics, inorganics, pesticides and PCBs.

The results, as reported in Table IV-4B of the Phase II report, indicate that all three storm drains sampled contained Methylene Chloride, Acetone, and Toluene. In addition, the storm drain identified as SD-2 (located in the recessed truck loading dock on the eastern side of the facility) contained 1,2-Dichloroethane, Trichloroethylene and Tetrachloroethylene.

The remaining analytical parameters for these sediment samples have not been detected in the groundwater and therefore are not considered to be contaminants of concern.

2.4.2 Former USTs

The underground storage tanks ("UST") were reported to have been installed in 1964. The SCDHS inspected the site on June, 1983, and noted that the USTs were in the process of being integrity tested. Only three of the thirteen tanks tested were tight.

According to the Phase II report, in November, 1984, an engineering

report was prepared which discussed UST management. The report indicated that there were 16 tanks on-site, 15 tanks located between the building and the street and the 16th tank situated in the parking lot on the west side of the facility. Fifteen of the tanks were tested, of which 10 were tight. The 16th tank, which had been used to store gasoline, was not tested and was subsequently removed in 1985 under SCDHS supervision.

An updated UST inventory, based upon information obtained during a site inspection conducted by the SCDHS in January, 1988, reported a total of 13 tanks on-site.

During July, 1991, Cantor had the remaining 12 tanks on-site removed. The UST closures and soil sampling results are detailed in Section 4.3 of this work plan.

2.4.3 Groundwater

Groundwater samples were collected from the monitoring wells located on the Cantor site in 1984 and 1988.

Five crudely constructed monitoring wells were installed downgradient of the UST area by SCDHS. The SCDHS reported that the wells were installed to determine whether the USTs that had failed precision integrity tests had impacted groundwater quality. The wells were sampled by SCDHS in 1984. The samples were apparently

analyzed for select volatile organics. The results from the five wells indicate that several chlorinated solvents were detected (the highest value detected in any of the wells is shown in parenthesis) including Tetrachloroethylene (2600 ppb), Dichloroethylene (1900 ppb) and 1,1,2-Trichloroethylene (470 ppb). No upgradient wells were installed by SCDHS.

The groundwater samples collected in December, 1988 were obtained from four additional monitoring wells installed as part of the Phase II investigation of the site. According to the Phase II report dated June, 1990, the groundwater samples were analyzed for volatile organics, semi-volatile organics, inorganics, pesticides and PCBs.

The volatile organic results for the 1988 sampling event indicate that all four wells contained contamination above both NYSDEC and EPA standards. MW-1, the upgradient well, contained 1,1,1-Trichloroethane (3 ppb), Trichloroethylene (33 ppb) and Tetrachloroethylene (110 ppb). MW-2, the well downgradient of the UST area, contained 1,1,1-Trichloroethane (7 ppb), Trichloroethylene (96 ppb) and Tetrachloroethylene (110 ppb). MW-3, the well downgradient of the east parking lot, contained 1,1,1-Trichloroethane (19 ppb), Trichloroethylene (100 ppb) and Tetrachloroethylene (2000 ppb). MW-4, the well downgradient of the west parking lot, contained Trichloroethylene (10 ppb) and Tetrachloroethylene (18 ppb).

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The groundwater results indicate that the volatile organics of concern (chlorinated solvents) are present in the upgradient well in addition to the downgradient wells. This fact suggests that potential sources of chlorinated solvents exist upgradient of the Cantor site.

The remaining analytical parameters were not identified in the Phase II report as contaminants of concern.

2.5 Surrounding Suspect Sites

Within 2 miles of the Cantor site, there are at least 12 NYSDEC registered inactive hazardous waste sites. The following list of sites indicates the approximate distance and direction of each site from the Cantor facility.

NYSDEC Site Name	Distance and Direction From Site
Astro Electroplating, Inc.	¼ Mi. SW
Tronic Plating, Inc.	½ Mi. SW
Circuitron Corp.	1 Mi. SW
Hazardous Waste Disposal	1 Mi. SW
Target Rock Corp.	1½ Mi. SW
110 Sand & Gravel	1½ Mi. NW
Fairchild Republic Aircraft	1½ Mi. SW
I. W. Industries	1½ Mi. N-NW
Spectrum Finishing Corp.	2 Mi. S-SE
West Babylon Industrial Area	2 Mi. S-SE
NTU Curcuits, Inc.	2 Mi. SE
Ron Lyn, Inc.	2 Mi. SE

In addition to these registered sites, Cantor has become aware of a contaminated site located on the adjacent property to the north. The facility, operated by Hygrade Metal Moulding Manufacturing Corporation ("Hygrade"), is located at 540 Smith Street in Farmingdale. Hygrade formerly used two 2,000 gallon circular concrete leaching pools which are located on the east side of the Hygrade building.

The first leaching pool, closest to Smith Street, is approximately 25 to 30 feet deep, according to SCDHS. Until recently, steam condensate, which contained spent Tetrachloroethylene (also known as Perchloroethylene or "PCE"), was discharged to the on-site leaching pool from Hygrade's degreasing operation. A letter from Hygrade, dated March 9, 1983, indicates that the degreaser would be discontinued by June 30, 1983. An addendum to the SCDHS inspection report dated October 14, 1988 indicates the permit for operation of the degreaser was canceled October 17, 1988.

The sand at the base of the first Hygrade leaching pool was sampled by SCDHS on May 31, 1990. The sample, analyzed for volatile organics, contained 7200 ppb of PCE. A sample collected previously on October 20, 1982 indicated that PCE was present at a concentration of 32,000 ppb, in addition to lesser concentrations of Trimethylbenzene, Trichloroethane, Trichloroethylene and Xylenes.

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The second Hygrade leaching pool is located approximately 75 feet south of the first leaching pool, closer to Cantor's northern border. The second pool reportedly accepted discharges from the floor drains within the production area of the facility. On March 15, 1984, the second leaching pool was abandoned in-place along with 5,000 and 4,000 gallon Number 2 heating oil USTs. The original depth of the second leaching pool could not be determined because the pool is presently filled with sand to the ground surface. The second leaching pool apparently was not sampled because it was filled with sand.

Lincoln Graphics, located approximately ¼ mile north of the Cantor facility on Finn Court, may also be an upgradient source of volatile organic contamination. The SCDHS collected a sample from an industrial pool, possibly a leaching pool, and analyzed it for volatile organics. The analytical results, as contained in the SCDHS report dated April 3, 1989, indicates that Trimethylbenzene is present at a concentration of 179,000 ppb, in addition to Xylenes at 24,000 ppb and Ethyltoluene at 120,000 ppb.

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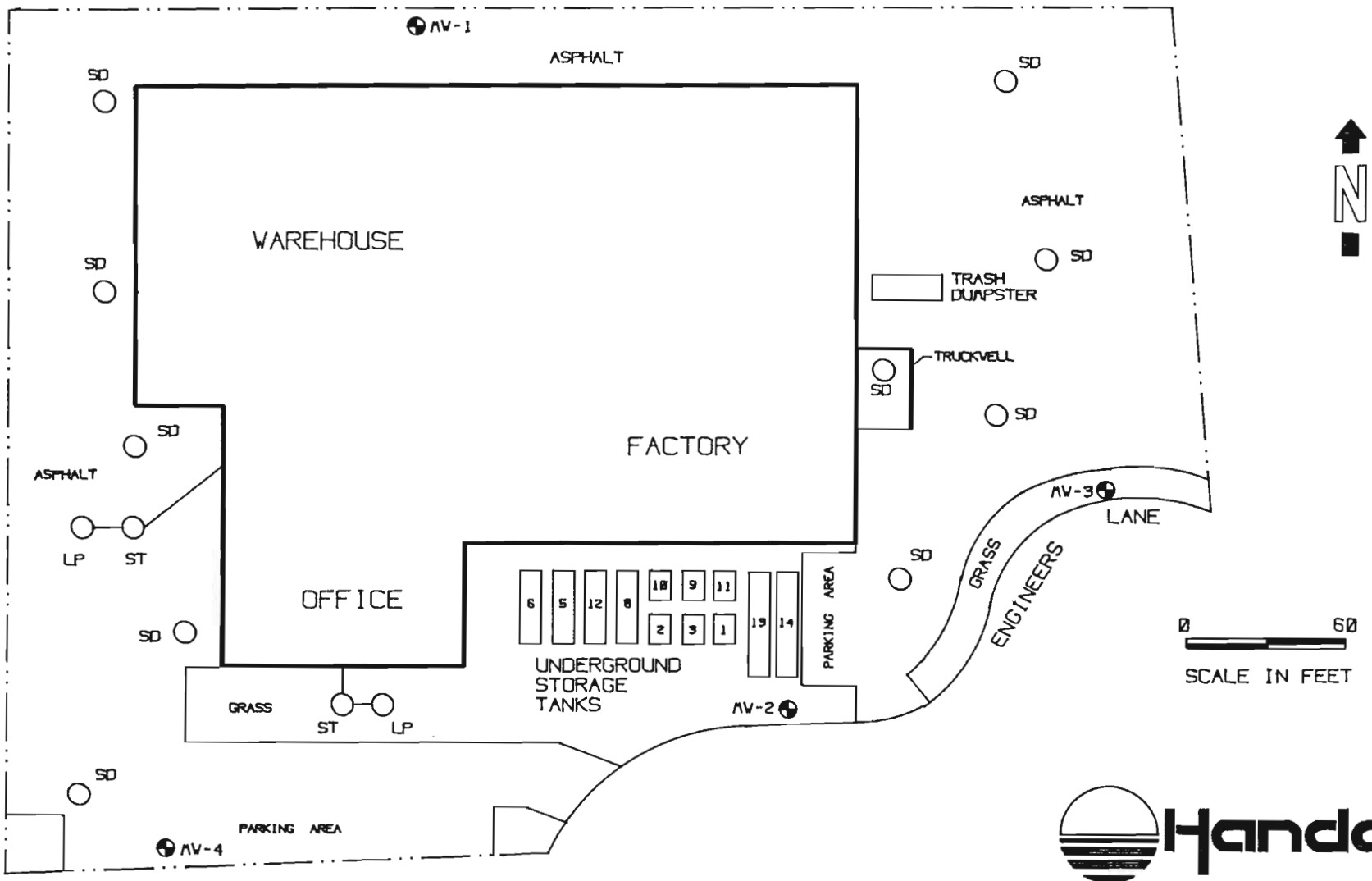

SD = STORM DRAIN
ST = SETTLING TANK
LP = LEACHING POOL

NOTE: MONITORING WELL LOCATIONS ARE APPROXIMATE

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FIGURE 2

GENERAL SITE MAP

CANTOR BROTHERS
ENGINEERS LANE
FARMINGDALE, NEW YORK

3.0 GROUNDWATER INVESTIGATION

Previously five monitoring wells were installed by SCDHS in presumed downgradient locations from the USTs. These wells were not sampled during the Phase II investigation. In the Phase II report, the wells are reported to have been constructed without sand packs or bentonite seals. Because their construction and integrity are suspect, these five wells will not be sampled during implementation of the RI/FS. In accordance with the recommendations of the Phase I report, four monitoring wells were installed during the implementation of the Phase II investigation. One of these wells was installed in an upgradient position with the remaining three wells located along the downgradient property line.

Two additional monitoring wells are proposed in upgradient positions, as indicated in Figure 3. The purpose of installing upgradient wells is to characterize the water quality of groundwater entering the site from Hygrade and other potential sources of groundwater contamination. Additional deep monitoring wells may be proposed in the future to address vertical delineation of contamination if it becomes evident that activities conducted by Cantor may have contributed significantly to groundwater contamination.

The Cantor site is included on the NYSDEC's Inactive Hazardous Waste Disposal Sites list due to the presence of chlorinated

solvents in the groundwater beneath the site. If any of the contaminants are detected in the downgradient monitoring wells on-site at comparable or lower concentrations than the associated hydraulically upgradient wells, Cantor may petition NYSDEC to delist its facility from the registry of Inactive Hazardous Waste Disposal Sites.

3.1 Monitoring Well Installation

Two 4" diameter monitoring wells will be installed at the site in accordance with NYSDEC monitoring well construction regulations. The wells will be advanced by means of a hollow stem auger to a level at least 10' below the initial static water level. The cuttings from the monitoring well borings will be visually logged and screened with a PID. The drill cuttings that have PID measurements of 5 ppm or greater volatiles will be containerized in Department of Transportation ("DOT") approved 55 gallon drums, which will be clearly marked indicating site name, contents, source and date. The drummed drill cuttings will be managed in accordance with Resource Conservation and Recovery Act ("RCRA") and NYSDEC requirements.

Schedule 40, flush joint threaded, 0.010 inch machine-slotted PVC screen will be emplaced with solid PVC casing used to complete each well to grade. The screen will extend from approximately 5' above to 10' below the static water level. The annular space surrounding

the screen will be filled with a sandpack of clean washed silica sand appropriately graded for the well screen and formation to a level approximately two feet above the screen. A two foot bentonite seal will then be placed atop the sand pack. A bentonite slurry seal may be used in place of a pellet seal if the seal depth exceeds 45 feet below grade. The remainder of the annular space will be filled with either a neat cement grout or a cement/bentonite grout (95 to 5 ratio). Each well will be fitted with either a locking cap and a flush-mounted curb box or a slip-on cap and a locking protective steel riser. Well logs will be prepared which include soil lithology, field observations and PID readings.

Following installation, the wells will be developed to establish hydraulic connection with the formation. Development will be performed by means of a submersible pump for one hour or until the water is free of suspended particles. The development water will be containerized in DOT approved 55 gallon drums, which will be clearly marked indicating site name, contents, source and date. The drummed development water will be managed in accordance with RCRA and NYSDEC requirements.

3.2 Monitoring Well Surveying

All wells on the site will be surveyed to the nearest 0.01 foot by a New York licensed surveyor. The well elevations will be surveyed

relative to either U. S. G. S. bench mark or to a site specific monument.

3.3 Groundwater Sampling

The two additional wells will be developed and allowed to equilibrate for two weeks prior to sampling. The four existing wells (installed as part of the Phase II investigation) and the two additional wells (installed as part of the RI) will be sampled.

The four existing monitoring wells were reportedly sampled in 1988 as part of the Phase II investigation. Since the hydrogeologic conditions change over time, the groundwater data previously collected may be outdated. Resampling the four on-site wells is recommended in order to document current conditions and contaminant concentrations. Table 1 contains a summary of the proposed groundwater sampling activties.

Groundwater sampling will conform to the QA/QC procedures set forth in the Quality Assurance Project Plan ("QAPP").

3.4 Analysis of Groundwater Samples

The groundwater samples will be analyzed for Target Compound List ("TCL") Volatile Organics plus a forward library search of the first 10 peaks, which will be reported as tentatively identified

compounds ("VO+10"). The TCL VO+10 scan is proposed to determine whether the volatile organic compounds that were previously detected in the groundwater samples collected from on-site monitoring wells during implementation of the Phase II investigation are still present, and if they are, at what concentrations (Refer to Section 2.4.3 for a detailed discussion of previous sampling results).

3.5 Contour Maps

The water level measurements obtained during the proposed groundwater sampling will be used to construct a groundwater contour map. The depth to water measurements will be subtracted from the corresponding well casing elevations in order to determine the groundwater elevations at each well. The groundwater elevations will be plotted on a site map and interpreted to show groundwater flow patterns.

3.6 Concentration Isopleth Map

The groundwater sampling results for the monitoring wells will be used to construct concentration isopleth maps. The isopleth map will be used in conjunction with the contour map to identify possible source areas and determine the potential extent of the contaminant plume on-site.

3.7 Interim Report

If any of the contaminants are detected in the downgradient monitoring wells on-site at comparable or lower concentrations than the associated hydraulically upgradient wells, Cantor will prepare an interim report which will detail the results of the groundwater investigation proposed in this work plan. The findings and conclusions documented in the interim report will be used as the basis for petitioning NYSDEC to delist the Cantor facility from the registry of Inactive Hazardous Waste Disposal Sites. The interim report will not be prepared if the groundwater investigation findings support NYSDEC's contention that the Cantor facility is the primary responsible party.

TABLE 1

PROPOSED GROUNDWATER SAMPLING SUMMARY

Cantor Bros. Site
Farmingdale, New York

Well No.	Location	Analysis
MW-1	Upgradient	TCL VO+10
MW-2	Downgradient	TCL VO+10
MW-3	Downgradient	TCL VO+10
MW-4	Downgradient	TCL VO+10
MW-5	Upgradient	TCL VO+10
MW-6	Upgradient	TCL VO+10

TCL VO+10 - Target Compound List Volatile Organics plus 10 peaks

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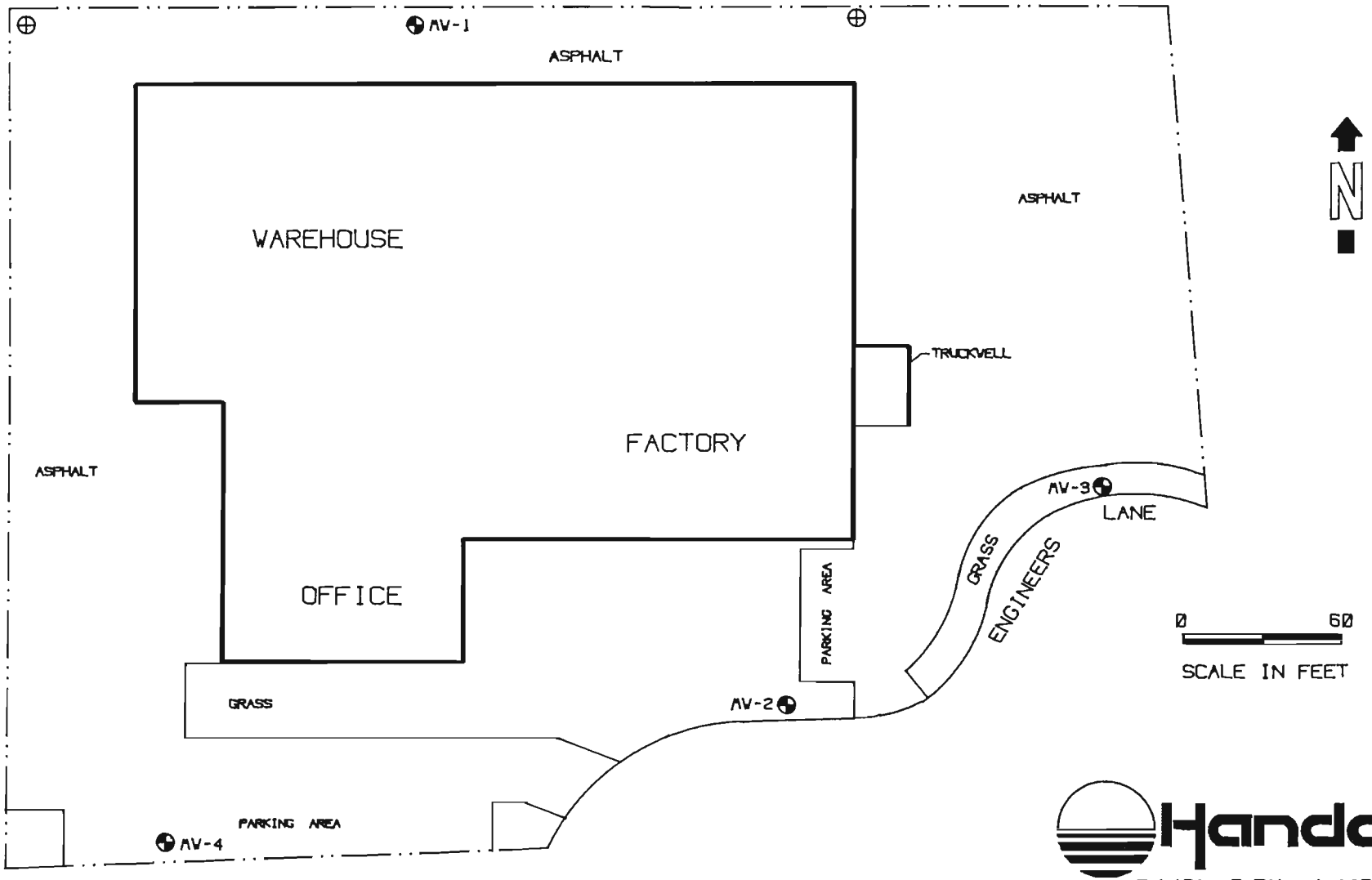

NOTE: MONITORING WELL LOCATIONS ARE APPROXIMATE

⊕ PROPOSED MONITORING WELL

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FIGURE 3

PROPOSED MONITORING WELL LOCATIONS

CANTOR BROTHERS
ENGINEERS LANE
FARMINGDALE, NEW YORK

4.0 SOILS INVESTIGATION

The soil investigation outlined in this section is proposed in order to investigate all on-site areas of potential environmental concern. The soils investigation program will only be conducted if the results of the groundwater investigation support the NYSDEC's contention that Cantor is a source of the chlorinated solvents.

Four areas of potential environmental concern have been identified at the Cantor site: the storm drains; septic systems; trash dumpster; and former UST area. Figure 2 is a general site plan of the site which also shows the areas of potential environmental concern. Table 2 contains a summary of the proposed soil sampling activities.

All soil sampling activities will be performed in accordance with the sampling procedures and protocol set forth in the QAPP.

4.1 Septic System

According to Cantor, there are two septic systems on-site. Cantor formerly discharged waste water into an on-site septic tank and leaching pool ("septic system"). The old septic system was abandoned in-place and was replaced by a new septic system, of similar design, when the old one became inoperable. The replacement septic system is currently used for sanitary wastes.

4.1.1 Septic System Soil Sampling

Soil sampling is proposed through each of the leaching pools to document soil quality. The primary route of exposure to the environment occurs through the leaching pool and not through the settling tank. Therefore, the areas surrounding the septic tanks will not be sampled. Since this is the initial phase of investigation, if contamination is detected in soils in either leaching pool, further soils investigation may be required.

One soil boring is proposed through each of the two leaching pools. Prior to drilling, the leaching pools will be located and uncovered to determine the depths to the base of each leaching pool. Each soil boring will be advanced using hollow stem augers to a depth of 18-24" below the base of the leaching pool, where a soil sample will be collected for laboratory analysis. A split spoon sampler, driven ahead of the hollow stem augers, will be used to collect the soil sample. A photoionization detector ("PID") will be used to screen the soil at this depth for volatile organic vapors. If the PID readings are less than 5 ppm, additional drilling will not be performed. If the PID readings are greater than 5 ppm, drilling will continue. Split spoon samples will be collected every 5' and will be screened with a PID. When no PID readings are detected, a soil sample will be collected for laboratory analysis. If elevated PID readings extend to groundwater, which is anticipated to be approximately 35-40 feet below grade based on the findings in the

Phase II report, a soil sample for laboratory analysis will be collected from 0-6" above groundwater. Water level measurements will be collected from the existing on-site wells to determine accurately the depth to groundwater.

Soil cuttings will be inspected for the entire length of the soil boring for lithology, staining, organic vapors and other general observations. Soil boring logs will be prepared for each boring and will contain a description of the lithology, PID readings and observations.

Figure 4 shows the locations of the proposed soil borings in relation to the septic systems.

4.1.2 Analysis of Septic System Soil Samples

The soil samples will be analyzed for TCL VO+10. The TCL VO+10 scan is proposed in order to identify possible volatile organic compounds that may be related to the volatile organic compounds which have been detected in the groundwater samples collected from on-site monitoring wells.

4.2 Storm Drains

There are ten (10) storm drains located on-site which accept storm water runoff (Figure 2). Since most of the site is covered by

either the building or asphalt pavement, the storm drains control flooding by allowing the storm water to infiltrate the ground. The storm drains are located throughout the asphalt parking and loading areas surrounding the building. The drains are constructed similar in design to dry wells. The drains are cylindrical concrete structures that extend approximately 10 to 15 feet below grade. According to Cantor, the base of each basin is unlined and therefore substances discharged to the drain will percolate through the bottom of the drain and will ultimately encounter groundwater. The base of each storm drain will be probed prior to drilling to accurately determine the base depth.

4.2.1 Storm Drain Soil Sampling

Soil sampling is proposed through each of the ten (10) storm drains to document soil quality. The soils surrounding the storm drains will not be sampled because liquids discharged to the storm drains will migrate vertically downward to the water table, and not laterally away from the storm drain. If contamination is detected in any of the storm drains, further soils investigation may be required to fully characterize and delineate the contamination.

One soil boring is proposed through each of the (10) storm drains. Each soil boring will be advanced using hollow stem augers to a depth of 18-24" below the base of the storm drain, where a soil sample will be collected for laboratory analysis. A split spoon

sampler, driven ahead of the hollow stem augers, will be used to collect the soil sample. A PID will be used to screen the soil at this depth for volatile organic vapors at each storm drain. If the PID readings are less than 5 ppm, additional drilling will not be performed. If the PID readings are greater than 5 ppm, drilling will continue. Split spoon samples will be collected every 5' and will be screened with a PID. When no PID readings are detected, a soil sample will be collected for laboratory analysis. If elevated PID readings extend to groundwater, which is anticipated to be approximately 35-40 feet below grade, a soil sample for laboratory analysis will be collected from 0-6" above groundwater. Water level measurements will be collected from the existing on-site wells to determine accurately the depth to groundwater.

Soil cuttings will be inspected for the entire length of the soil boring for lithology, staining, organic vapors and other general observations. A photoionization detector will be used to screen the soil cuttings for volatile organics. Soil boring logs will be prepared for each boring and will contain a description of the lithology and PID readings. Split spoon samplers, driven ahead of the hollow stem augers, will be used to collect soil samples. Soil samples for laboratory analysis will be collected 18-24" below the invert of each storm drain and 0-6" above the water table.

Figure 5 shows the locations of the proposed soil borings in relation to the storm drains.

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4.2.2 Analysis of Storm Drain Soil Samples

The soil samples will be analyzed for TCL VO+10 for the reasons outlined in Section 4.1.2.

4.3 Former UST Area

Cantor owned and operated twelve underground storage tanks, which were reported to have been installed in 1963. The tanks, formerly located in the front of the building, were taken out of service by Cantor by April 1, 1990, and were decommissioned by Handex in July 9-17, 1991. The tanks ranged in size from 2,000 to 10,000 gallons and contained relatively small amounts of various solvents and petroleum products. Table 3 details individual tank sizes and corresponding contents. Figure 2 shows the approximate locations of these tanks.

Tanks numbered 1, 2, 3, 5, 6, 8, 9, 10, 11 and 12 were removed from one large contiguous excavation which measured 72' long by 32 feet wide. The excavation was advanced to an approximate depth of 9 feet, which corresponds to the tank invert of the largest tank. Tanks numbered 13 and 14 were removed from a separate excavation which measured 32 feet long by 38 feet wide, to a depth of approximately 11 feet.

The excavated tanks were visually inspected for corrosion holes,

pitting and overall condition. The tanks appeared to be in excellent condition with no signs of holes or pitting. The product piping was also inspected and was in equally good condition. The soil beneath the tank inverts was checked for odors or staining which might be indicative of a discharge. Robert Morcerf, a representative of the Suffolk County Department of Health Services, was on-site for the tank removals and inspected the excavations for evidence of contamination.

The soil surrounding tank number 2, a 2000 gallon tank which formerly contained kerosene, was the only area that showed evidence of contamination. The soil on the top and sides of the tank was stained and had a petroleum odor. The location of the staining indicated that the potential discharge occurred from overfilling, and not from a hole in the tank. The soil beneath the tank was sampled in July, 1991 for select volatile and semi-volatile organic compounds by Robert Morcerf of the Suffolk County Department of Health Services. The sample was collected from soil at least 1' below the tank invert. Approximately 3 yards of contaminated soil was excavated from beneath this tank and staged in a segregated area.

During tank removals, no groundwater was encountered in the any of the excavations. Monitoring wells located on-site indicate that the water table may be as deep as 35-40 feet below grade.

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The post-excavation sample from the soil beneath tank number 2, taken in July, 1991, was analyzed by the Suffolk County Department of Health Services laboratory for select volatile and semi-volatile organic compounds. The laboratory results of analysis indicate that only Acetone (1.720 ppm), Xylenes (0.300 ppm) and p-Isopropyltoluene (0.630 ppm) were detected. The total concentrations of contaminants detected was 2.650 ppm.

In the tank closure letter dated November 5, 1991, Handex recommended, after backfilling the excavation of Tank 2, that a site assessment be performed to determine the vertical extent of the contamination detected beneath tank 2. The proposed site assessment was designed to determine whether contamination from the soil surrounding tank 2 has migrated downward. The proposed soil investigation in this work plan will substitute for the recommendations outlined in the tank closure letter dated November 5, 1991.

4.3.1 Former UST Area Soil Sampling

Soil sampling is proposed through the former location of the USTs to document soil quality and the presence or absence of soil contamination. Four borings will be placed in representative locations, one of which will be through the former location of tank number 2, to determine the vertical extent of soil contamination detected during tank closure activities.

The soil below the former bases of the USTs will be sampled to determine if product was discharged from any of the UST systems. The soils immediately above the water table will also be sampled to determine if product from any of the former USTs migrated vertically downward to the water table. Further soils investigation may be required to fully characterize and delineate the extent of contamination if contamination is detected in the soil samples.

Four soil borings are proposed through the location of the former USTs. Each soil boring will be advanced using hollow stem augers to a depth of 10-10.5', which corresponds to the depths of the former UST inverts, where a soil sample will be collected for laboratory analysis. A split spoon sampler, driven ahead of the hollow stem augers, will be used to collect the soil sample. A PID will be used to screen the soil at this depth for volatile organic vapors at each boring location. If the PID readings are less than 5 ppm, additional drilling will not be performed. If the PID readings are greater than 5 ppm, drilling will continue. Split spoon samples will be collected every 5' and will be screened with a PID. When no PID readings are detected, a soil sample will be collected for laboratory analysis. If elevated PID readings extend to groundwater, which is anticipated to be approximately 35-40 feet below grade, a soil sample for laboratory analysis will be collected from 0-6" above groundwater. Water level measurements will be collected from the existing on-site wells to determine

accurately the depth to groundwater.

Soil cuttings will be inspected for the entire length of the soil boring for lithology, staining, organic vapors and other general observations. A photoionization detector will be used to screen the soil cuttings for volatile organics. Soil boring logs will be prepared for each boring and will contain a description of the lithology and PID readings. Split spoon samplers, driven ahead of the hollow stem augers, will be used to collect soil samples. Soil samples for laboratory analysis will be collected 18-24" below the invert of each storm drain and 0-6" above the water table.

Figure 6 shows the locations of the proposed soil borings in the area of the former USTs.

4.3.2 Analysis of Former UST Area Soil Samples

The soil samples will be analyzed for Total Petroleum Hydrocarbons ("TPHC") and TCL VO+10. The TCL VO+10 scan is proposed in order to identify possible volatile organic compounds that may be related to the solvents which were stored in the tanks prior to closure. The TPHC analysis will detect the presence of contamination related to the petroleum products.

4.4 Trash Dumpster

There is a trash dumpster located on the east side of the facility, adjacent to the recessed loading dock. The asphalt surrounding the dumpster appears stained with an unidentified product. The integrity of the asphalt surrounding the trash dumpster will be inspected. If the inspection reveals that the asphalt surface is competent, then any waste discharged to this area would flow along the surface gradient to the nearest storm drain, located approximately 30' east of the trash dumpster. Since the storm drains are being addressed separately, no soil sampling will be performed if the asphalt is competent. If the inspection of the asphalt reveals that the surface is not competent (cracked or otherwise lacking continuity), then the soil sampling proposed in Sections 4.4.1 and 4.4.2 will be performed.

4.4.1 Trash Dumpster Soil Sampling

If the asphalt is not competent, soil sampling will be performed through the asphalt surface adjacent to the dumpster to document whether the surface staining has penetrated through the asphalt and adversely affected near-surface and subsurface soil quality. If near-surface soil contamination is detected, the subsurface soil sampling may serve to document the vertical extent of downward migration.

One soil boring is proposed through the center of the stained area. The soil boring will be advanced using hollow stem augers to a depth of 18-24", where a soil sample will be collected for laboratory analysis. A split spoon sampler, driven ahead of the hollow stem augers, will be used to collect the soil sample. A PID will be used to screen the soil at this depth for volatile organic vapors. If the PID readings are less than 5 ppm, additional drilling will not be performed. If the PID readings are greater than 5 ppm, drilling will continue. Split spoon samples will be collected every 5' and will be screened with a PID. When no PID readings are detected, a soil sample will be collected for laboratory analysis. If elevated PID readings extend to groundwater, which is anticipated to be approximately 35-40 feet below grade, a soil sample for laboratory analysis will be collected from 0-6" above groundwater. Water level measurements will be collected from the existing on-site wells to determine accurately the depth to groundwater.

Soil cuttings will be inspected for the entire length of the soil boring for lithology, staining, organic vapors and other general observations. A photoionization detector will be used to screen the soil cuttings for volatile organics. Soil boring logs will be prepared for each boring and will contain a description of the lithology and PID readings.

Figure 7 shows the location of the proposed soil boring in relation

to the surface staining.

4.4.2 Analysis of Trash Dumpster Soil Samples

The soil samples will be analyzed for TCL VO+10 for the aforementioned reasons.

TABLE 2

Proposed Soil Sampling Summary

Cantor Bros. Site
Farmingdale, New York

APEC	Number Of Samples	Sample Depth	Analysis
Storm Drains			
	10	18-24" below inverts	TCL VO+10
	10	0-6" above GW	TCL VO+10 *
Septic Systems			
	2	18-24" below inverts	TCL VO+10
	2	0-6" above GW	TCL VO+10 *
Trash Dumpster			
	1	18-24" below asphalt	TCL VO+10
	1	0-6" above GW	TCL VO+10 *
Former USTs			
	4	10-10.5'	TCL VO+10
	4	0-6" above GW	TCL VO+10 *

APEC - Area of Potential Environmental Concern

TCL VO+10 - Target Compound List Volatile Organics plus 10 peaks

* The collection of these samples will be dependent upon PID readings

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TABLE 3

Former UST Information Summary

Cantor Bros. Site
Farmingdale, New York

Tank No.	Volume	Length & Diameter	Contents
1	2,000	12' x 5.5'	Acetone
2	2,000	12' x 5.5'	Kerosene
3	2,000	12' x 5.5'	Lacquer Thinner
5	5,000	24' x 5.5'	Turpentine
6	5,000	24' x 5.5'	Denatured Alcohol
8	3,000	18' x 5.5'	Benzine
9	2,000	12' x 5.5'	Mineral Spirits
10	2,000	12' x 5.5'	Lacquer Thinner
11	2,000	12' x 5.5'	Naptha
12	5,000	24' x 5.5'	Turpentine
13	10,000	27' x 8'	Mineral Spirits
14	10,000	27' x 8'	Kerosene

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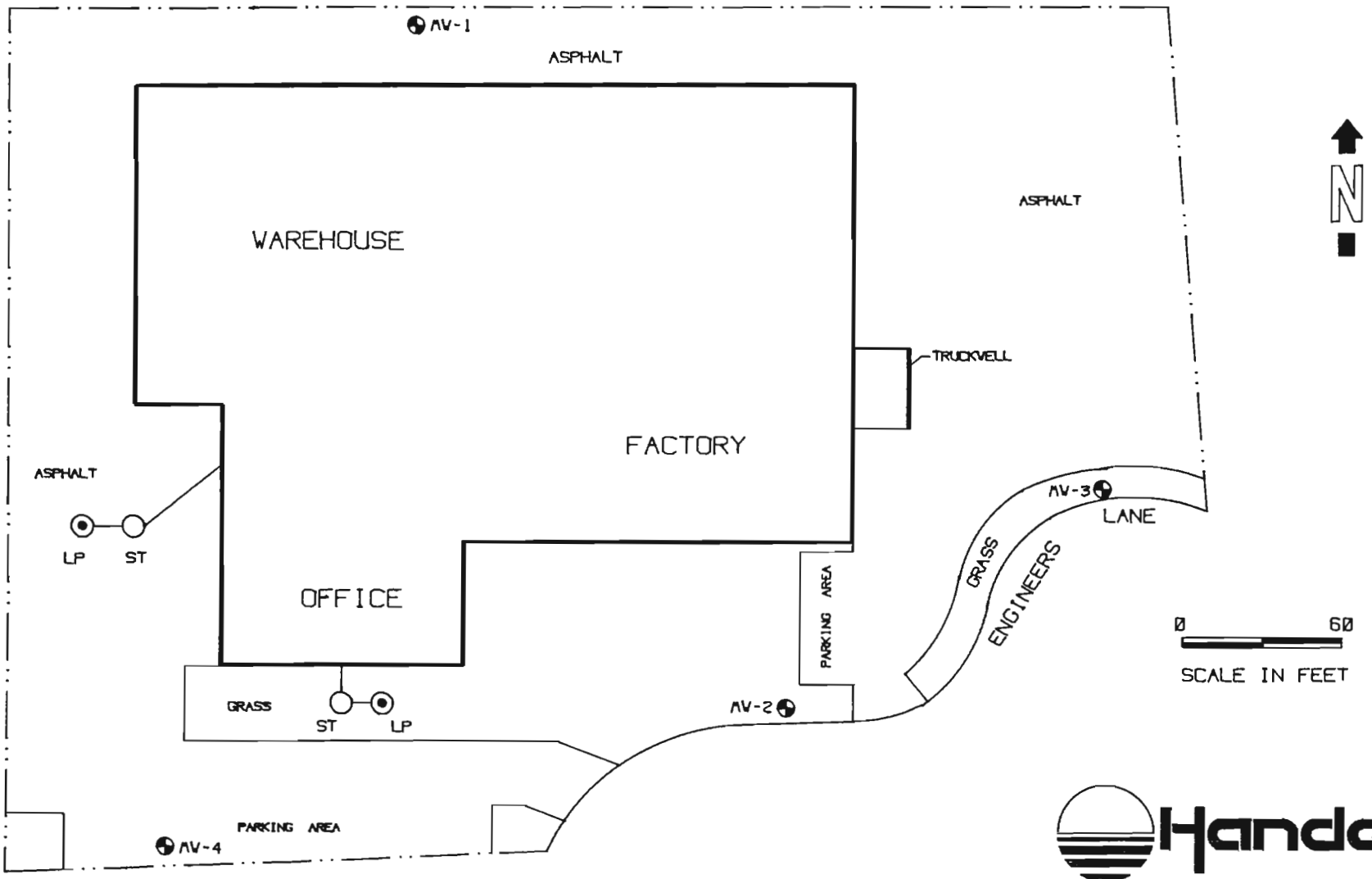

ST = SETTLING TANK
LP = LEACHING POOL

NOTE: MONITORING WELL LOCATIONS ARE APPROXIMATE
● SAMPLE LOCATIONS

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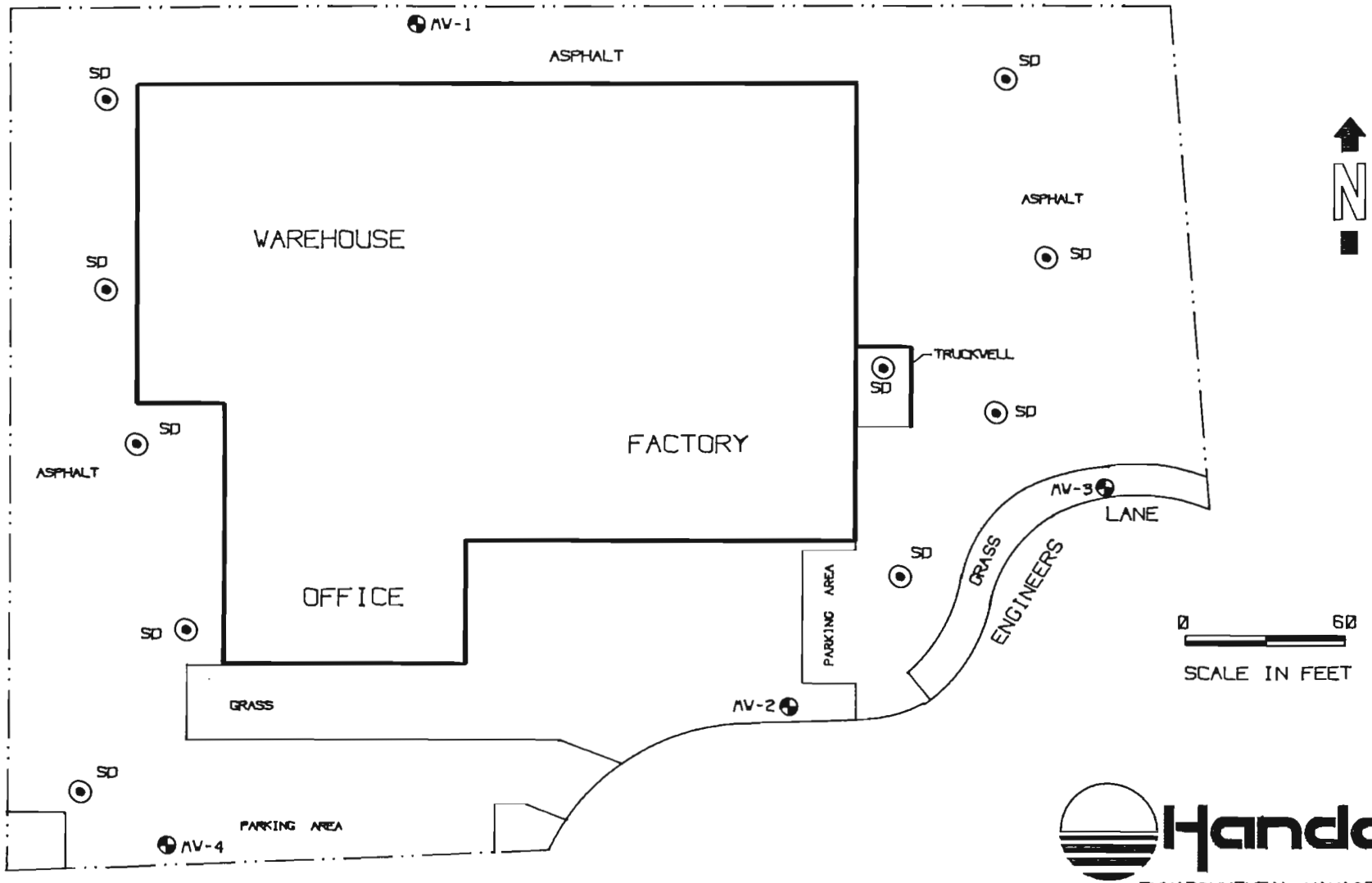
ENVIRONMENTAL MANAGEMENT

FIGURE 4
PROPOSED SOIL BORING LOCATIONS
SEPTIC SYSTEMS
CANTOR BROTHERS
ENGINEERS LANE
FARMINGDALE, NEW YORK



SD = STORM DRAIN

NOTE: MONITORING WELL LOCATIONS ARE APPROXIMATE

● SAMPLE LOCATION

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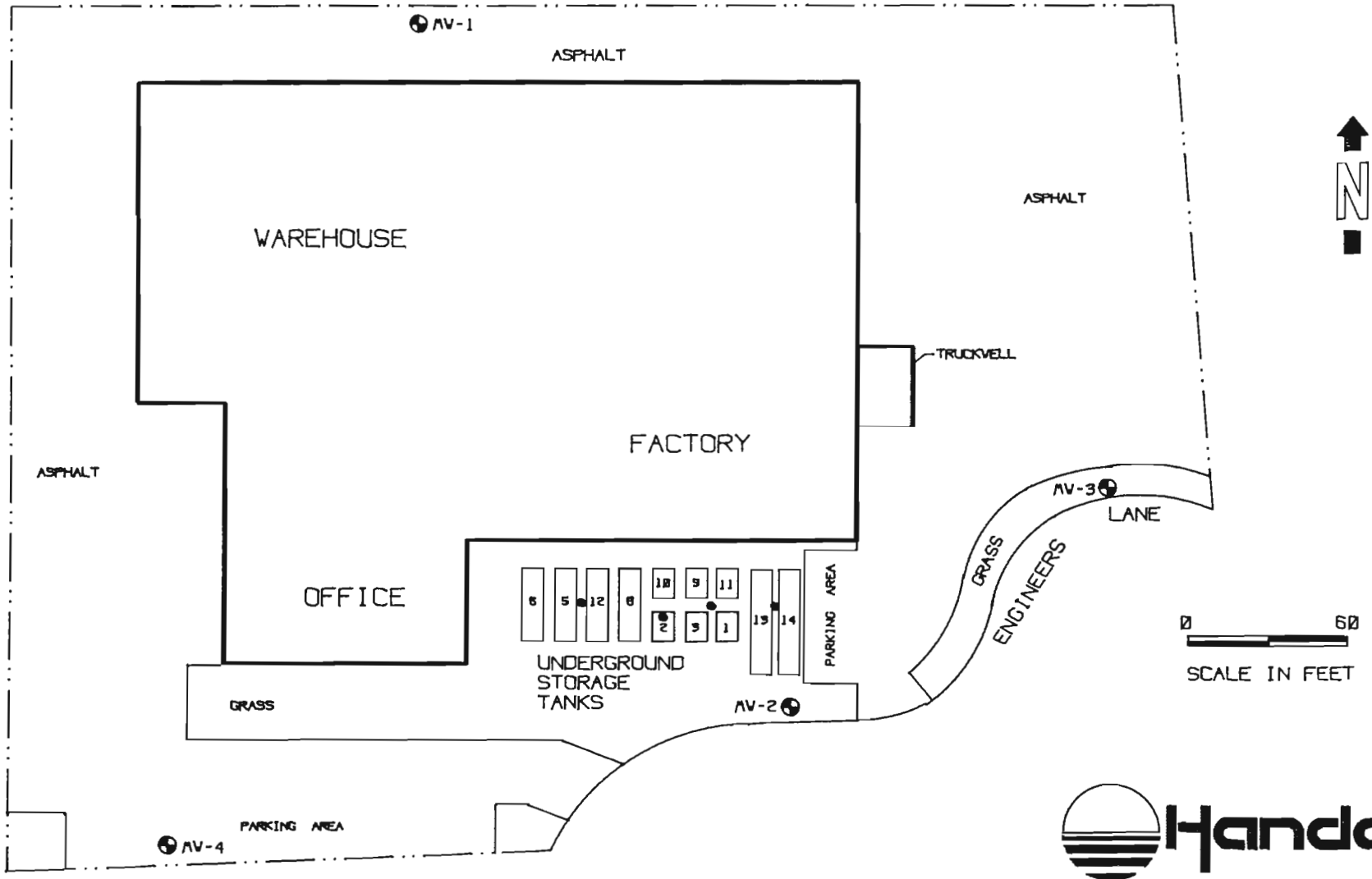
FIGURE 5
PROPOSED SOIL BORING LOCATIONS
STORM DRAINS

CANTOR BROTHERS
ENGINEERS LANE
FARMINGDALE, NEW YORK



NOTE: MONITORING WELL LOCATIONS ARE APPROXIMATE

● SAMPLE LOCATION

FORMER UST LOCATION

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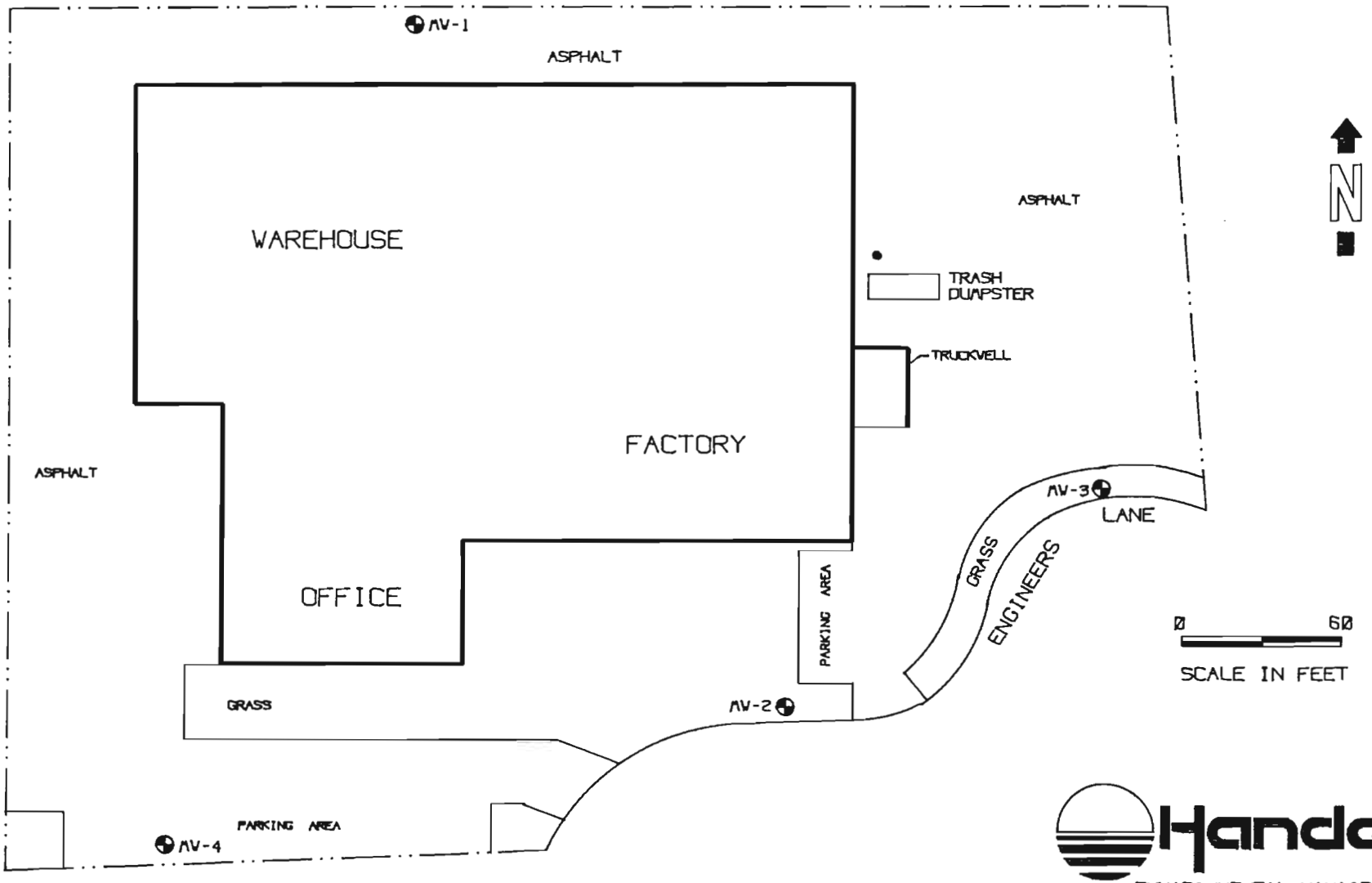
FIGURE 6
PROPOSED SOIL BORING LOCATIONS
FORMER UST AREA

CANTOR BROTHERS
ENGINEERS LANE
FARMINGDALE, NEW YORK



NOTE: MONITORING WELL LOCATIONS ARE APPROXIMATE

• SAMPLE LOCATION

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FIGURE 7
PROPOSED SOIL BORING LOCATIONS
TRASH DUMPSTER

CANTOR BROTHERS
ENGINEERS LANE
FARMINGDALE, NEW YORK

5.0 DATA EVALUATION

The purpose of data quality evaluation is to assure that data generated during the project is adequate in quantity and quality, and applicable to project objectives. In order to make this determination, the body of data must be reviewed for the quality of data coverage, compatibility of data collection methods, and completeness with respect to meeting project objectives.

To facilitate the interpretation of data generated during the RI field activities, the data will be tabulated in the form of appropriate data summary tables. Figures showing sampling locations with the corresponding analytical results will be prepared to enhance the overall understanding of site conditions in regard to the magnitude and location of contamination. The results, along with supporting documentation, will be supplied to the NYSDEC in the form of a RI summary report. The RI report will contain a description of the source, geologic and hydrogeologic, and water quality characterizations.

5.1 Source Characterization

Source characterization will be based on laboratory results for soil and groundwater samples as well as pathway transport mechanisms, to define the possible location, magnitude and types of sources of contamination.

5.2 Geologic and Hydrogeologic Characterization

Geologic and hydrogeologic characterization will incorporate the results of subsurface evaluation and sampling activities, groundwater sampling and monitoring activities as well as general hydrogeologic and hydraulic features of the site. The characterization will set forth conclusions regarding the direction, gradients and potential fluctuations or anomalies of groundwater in the immediate vicinity of the site.

5.3 Water Quality Characterization

Water quality characterization will be based on the analytical results of groundwater samples. The groundwater contaminant concentrations will be evaluated with respect to federal, state or local guidelines, and health and safety considerations. The evaluation will be focused on addressing specific concerns identified by the NYSDEC for this site.

5.4 Identification of Guidelines

The cleanup of hazardous waste sites are governed by Federal Applicable or Relevant and Appropriate Requirements ("ARARs") and State Promulgated Standards and Guidance Documents ("SPSAGDs"). These requirements fall into two categories that are considered during the RI/FS process: first, applicable or relevant and

appropriate requirements, and second, criteria, advisories and guidance to be considered.

5.4.1 Applicable Requirements

Applicable Requirements are those federal and state promulgated requirements that are legally applicable to a response action.

5.4.2 Relevant and Appropriate Requirements

Relevant and Appropriate Requirements are federal and state requirements that are not directly applicable, but are designed for problems suffiently similar to those encountered during remedial activities to make their application appropriate. Relevant and Appropriate Requirements are intended to have the same weight and consideration as Applicable Requirements. Therefore, once a requirement is identified as relevant and appropriate, it is applied in the same manner as an Applicable Requirement.

5.4.3 Implementation of Guidelines

ARARs and SPSAGDs will be used as guides in evaluating the appropriate extent of site cleanup, scoping and developing remedial action alternatives, and governing the implementation and operation of the selected action. ARARs and SPSAGDs will be identified and considered so that remedial actions are consistent with pertinent

state and federal environmental regulations. In the absence of regulations that address a site specific condition, federal or state guidance and criteria may be considered and used as appropriate.

A preliminary list of potential site remediation regulations is presented in Table 4. The regulations on the list will be evaluated against the analytical results obtained during the implementation of the field investigation.

5.5 Additional Field Investigations

Additional field investigation may be required upon completion of the RI scope of work. Conditions that would warrant additional investigation include data gaps, further delineation of groundwater or soil contamination, or additional data necessary to evaluate or determine the effectiveness of a potential remedial alternative technology.

If additional investigation is required, a supplemental work plan will be prepared and submitted to NYSDEC for review and approval.

5.6 Interim Remedial Measures

Prior to the selection of the remedial alternative, an interim remedial measure ("IRM") may be proposed to address unacceptable or

imminent risks. Preliminary results from the RI will be used to evaluate the necessity for an immediate response associated with a particular medium, route of exposure or potential sensitive receptor. The IRM will be selected with the understanding that the measure should be compatible with the overall project objectives and long-term remedial action goals.

If an IRM is deemed necessary, a work plan will be submitted to NYSDEC which describes the proposed measure, justification for its selection and a schedule for the activities associated with its implementation. Depending on specific circumstances and conditions at the site following complete implementation of IRMs, the activities associated with the IRMs may be determined to constitute complete remediation.

5.7 Remedial Investigation Report

Upon completion of the RI activities, a Remedial Investigation report will be generated which includes all data, information, evaluations, interpretations and recommendations developed during the implementation of the NYSDEC-approved RI/FS work plan. The Remedial Investigation Report will have a certification by the individual with primary responsibility for the daily supervision of the RI that all activities that comprised the RI were performed in accordance with the NYSDEC-approved RI/FS Work Plan.

TABLE 4

Potential Site Remediation Requirements

Cantor Bros. Site
Farmingdale, New York

Federal ARARs	New York SPSAGDs
GROUNDWATER	
o Safe Drinking Water Act (40 CFR 141) Maximum Contaminant Levels	o 6 NYCRR Part 703 Groundwater Quality Standards
o Safe Drinking Water Act (40 CFR 141) Maximum Contaminant Goals	o NYSDOH Part 5 State Sanitary Code Drinking Water Supplies
o RCRA (CFR 264) Groundwater Protection Standards	o Division of Water - Technical and Operations Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values
o Clean Water Act (CFR 120) Ambient Water Quality Criteria	o NYSDEC Draft Cleanup Policy and Guidelines (Vol. II, Appendix B)
o USEPA Groundwater Protection Strategy - Guidelines for Groundwater Classification	
o USEPA Reference Doses	
o USEPA Health Assessment Document	
SOIL	
None	o NYSDEC Draft Cleanup Policy and Guidelines (Vol. II, Appendix C)

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6.0 DEVELOPMENT OF ALTERNATIVES (FEASIBILITY STUDY)

The basis for the Feasibility Study (FS) and possible selection of a remedial alternative will be generated from information obtained during the implementation of this Work Plan. Potential remedial alternatives will be compiled from appropriate available technologies and will be evaluated in the next phase of work. The possible alternatives will include active remediation, but may also include alternatives for groundwater monitoring or no further action. The alternatives will be presented to the NYSDEC for comment and approval. The alternatives will also be detailed in a format consistent with the Citizen Participation Plan for presentation during public meetings.

6.1 Scoping the Feasibility Study

The FS will be prepared using reference documents including, but not limited to, USEPA Guidance on Feasibility Studies Under CERCLA, National Oil and Hazardous Substances Pollution Contingency Plan, Remedial Action Costing Procedures Manual; Interim Guidance on Superfund Selection of Remedy, and any relevant technology guidance and evaluation documents that may be appropriate. As additional guidance documents become available or are updated, they will be incorporated into the FS process.

6.2 Objectives of the Feasibility Study

The overall objective of the FS is to develop and evaluate remedial alternatives for the selection of a remedial action. The selected remedial action will exhibit the following characteristics:

- protection of public health and the environment;
- attains federal and state public health and environmental requirements identified for the site (ARARs and SPSAGDs);
- utilizes permanent solutions and alternative treatment technologies to most practical extent within proven technological feasibility and availability;
- utilizes treatment to permanently reduce the toxicity, mobility, volume or extent of contamination; and
- minimizes costs.

The remedial alternatives considered will have the aforementioned characteristics. The remedial action selected will have the best combination of these characteristics as determined by the NYSDEC, Cantor and other interested parties.

6.3 Remedial Alternative Sources

Based on the findings of the remedial investigation and the target remedial action levels (based on the ARARs and SPSAGDs), a list of applicable technologies will be developed for this site. Sources utilized during the screening of initial technologies will include, but not be limited to, the following:

- Remedial Action at Waste Disposal Sites Handbook (Revised), USEPA, October 1985;
- Handbook for Evaluating Remedial Action Technology Plans, USEPA, September, 1984;
- Review of In-Place Treatment Technologies for Contaminated Surface Soils: Volume I Technical Evaluation, USEPA, September 1984;
- Technologies Applicable to Hazardous Waste, USEPA, May 1985; and
- Handbook for Stabilization/Solidification of Hazardous Wastes, USEPA, June 1986.

6.4 Remedial Alternative Options

Remedial alternative technologies will be screened on the basis of effectiveness, technical feasibility, practicality, demonstrated performance, and availability of equipment. The remedial alternative technologies will be evaluated on each technologies ability to reduce the mobility, toxicity or volume of contaminants. A containment option involving little or no treatment and a no-action alternative will also be developed.

6.4.1 Source Control

To the extent that it is both feasible and appropriate, treatment alternatives for source control remedial actions will be developed. Alternatives that contain treatment technologies which permanently reduce the toxicity, mobility, or volume of contamination will be highlighted.

6.4.2 Migration Control

To the extent that it is both feasible and appropriate, treatment alternatives that address the management of migration will be developed. For groundwater remediation, remedial alternatives that provide varying degrees of treatment, in terms of restoration levels and rates of cleanup, will be evaluated.

6.4.3 Containment

An alternative that involves containment of waste, but provides protection of public health and the environment, will be developed. Although containment provides little or no treatment, it reduces the exposure potential by reducing the mobility of the waste.

6.4.4 Waste Removal

An alternative which involves the off-site transportation and disposal of waste will be developed. Under SARA, the off-site transportation and disposal of waste without treatment should be the least favored alternative remedial action if practical treatment technologies are available.

6.4.5 No-Action

A no-action alternative will also be developed.

6.5 Preliminary Screening of Alternatives

The remedial action alternatives will be screened to narrow the number of alternatives for a more detailed feasibility analysis. The screening will eliminate remedial alternatives that are not technically feasible, practical or cost effective, while retaining a range of treatment options. Reasons for elimination of

technologies are as follows:

- Alternatives which are not technically reliable, do not effectively and adequately protect human health and the environment, or do not attain ARAR/SPSAGD action levels;

- Alternatives that are not technically feasible or available, or require significant regulatory or administrative effort during implementation or operation; and

- Alternatives that are significantly more costly than other alternatives, but fail to achieve greater reliability, effectiveness, or environmental/health benefits.

The FS report will document the selection process and rationale for elimination of remedial alternatives.

6.6 Evaluation of Alternatives

6.6.1 Treatability Studies

Additional investigation may be required to evaluate remedial alternatives selected for the site. Field investigations may require bench scale or pilot scale testing to determine feasibility

of various treatment technologies being considered for the site. Computer modeling may be used to enhance field studies, or in limited cases will be applied when field studies are not feasible. The treatability studies would only be performed for those technologies which require testing of site specific materials to document effectiveness or feasibility. Examples of technologies that may require field studies are vapor extraction, biological treatment, thermal or chemical oxidation, and solidification.

Work plans will be prepared, if required, for each of the treatability studies. The exact technologies to be tested, the extent of testing and the types of testing will be determined by the technologies to be tested. The tests will be designed to determine the following information:

- Recovery, removal or destruction efficiency for contaminants;
- Effluent or residual materials contamination levels;
- Major equipment and utility requirements;
- Capital and operating costs.

6.6.2 Analysis of Alternatives

The relevant information regarding each selected remedial alternative will be analyzed to facilitate selection of the site remedial action. The specific requirements that will be addressed for each remedial alternative include protectiveness of human health and the environment; attainment of ARARs and SPSAGDs; reduction of mobility, toxicity and volume of hazardous contaminants; implementability; and cost effectiveness.

The analysis of each alternative includes a detailed description of the alternative. The description contains a projected length of system operation; bench or pilot scale test results or supporting data from a literature review; and projected short-term and long-term impacts, effectiveness and performance.

6.6.3 Comparison of Alternatives

Upon completion of the detailed analysis of each alternative, the alternatives will be compared to each other using the information collected and factors described above. The effectiveness of the alternatives which achieve the same relative degree of protection of human health and the environment will be compared on the basis of cost. The alternatives which achieve the same relative degree of protection of human health and the environment will be favored over those alternatives which attain the same effectiveness at a

higher cost.

6.7 Recommendation of Remedial Action (FS Report)

Upon completion of the evaluation of alternatives, a recommendation will be presented for the selection of the remedial action alternative for each area of concern at the site. The recommendations will be presented at a meeting with the NYSDEC and Cantor.

The results, findings and recommendations of the FS phase of work will be presented and discussed in the FS report. The FS report will document the approach and methodology used to select the recommended remedial action alternative. The FS report will be prepared in accordance with the NYSDEC-approved RI/FS Work Plan and in a manner consistent with CERCLA, the NCP and other pertinent guidance documents. The FS will have a certification by a New York State lisenced professional engineer that the Feasibility Study was conducted in accordance with the NYSDEC-approved RI/FS Work Plan.

6.8 Selection of Remedial Action

The results of the detailed evaluation, with additional comments from the NYSDEC, public and any other parties, will be reviewed. Based on this review, a remedial action alternative which best achieves the selection criteria will be selected in a Record of

Decision ("ROD"). The selected remedial action will be further developed into an engineering design.

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7.0 PROJECT MANAGEMENT PLAN

The project management plan summarizes the approach which will be taken to manage the proposed activities, including personnel functions and implementation scheduling.

7.1 Project Organization

The activities proposed in this work plan will be directed out of the Handex Environmental Management, Inc. office located at 500 Campus Drive in Morganville, New Jersey.

Mr. Arthur S. Rosenbaum, President, will be the corporate officer directly responsible for oversight of all activities performed by Handex. It is policy of Handex to ensure that an officer of the firm has corporate responsibility for each project. Mr. Rosenbaum is active in both the technical and administrative direction of work. Mr. Rosenbaum is a certified professional geologist with the American Institute of Professional Geologists. His extensive technical experience encompasses numerous aspects of hazardous waste investigations and cleanup. Among the most notable projects in which he has been involved are Love Canal cleanup in New York, Prices Pit in New Jersey, Diamond Shamrock in New Jersey, and Hooker Chemical in New York.

Mr. Scott D. Anderson, Vice President of Operations, is responsible

for managing the operational services on the east coast. Mr. Anderson has been involved in over 100 emergency response cleanups and over 200 remediation projects for private industry and state and federal agencies. He has been involved in numerous EPA and NYS Superfund projects including Kin-buc Landfill in New Jersey, Picillo Farms Site in Rhode Island, Re-Solve Site in Massachusetts, and the Ketona Well Site in New York.

Ms. Nancy M. Lyons, Manager of Technical Services, will review the project at various stages to provide an assessment of the completeness, consistency and overall quality of the data and interpretations. Ms. Lyons has been involved in numerous site investigations and remediations including Kalex Chemical Co., ADT Security Systems, Inc., Red Devil, Inc., and Eastern Steel Barrel, Corp., all in New Jersey.

The project manager for the Cantor site is Andrew D. Waring. Mr. Waring has extensive technical experience in the investigation and remediation of hazardous waste sites. Among his experience, Mr. Waring has been involved in the Renora Superfund site in New Jersey, the Millmaster-Onyx Chemical facility demolition, site investigation and remediation in New Jersey, and with numerous projects associated with the investigation and cleanup of chlorinated solvents.

Mr. Waring, as project manager, is responsible for the overall

technical administration of the project and will be the primary contact with NYSDEC and Cantor. The project manager is responsible for the following:

- organization and development of standard operating procedures with NYSDEC;
- initiation of project activities;
- identification of project staff, equipment and resources;
- identification and scheduling of subcontractors;
- maintaining the project schedule;
- preparation of regular briefings and status reports which detail the progress of the project; and
- maintaining proper project documentation.

Other team members that supply technical support will be assigned by the project manager at a later date. The selection of the individuals for technical support will be dependent upon the difficulty of the task, the experience and qualifications of the individuals and the scheduling constraints.

Resumes of key personnel will be provided at a later date, if required by NYSDEC.

7.2 Quality Review Board

A Quality Review Board will review the project work at appropriate stages to provide an independent senior staff level assessment of the completeness, consistency and overall quality of data and interpretations. The Quality Review Board will consist of Art Rosenbaum, Nancy Lyons and Scott Anderson.

7.3 Project Management Controls

The following sections set forth Handex's plan to manage the proposed project in order to maintain the highest level of quality for all aspects of the project.

7.3.1 Communications

The project manager will be the primary contact for NYSDEC, Cantor and subcontractors, and will be responsible for maintaining project documentation. The project manager will develop lines of communication between the Quality Review Board, Health and Safety Coordinator, and the project staff. Project updates and related information will be conveyed within Handex and to NYSDEC and Cantor by means of status briefings, periodic progress reports, project

meetings and various correspondence.

7.3.2 Project Implementation Schedule

The timely completion of this project depends upon adherence to a realistic, mutually agreed upon schedule. The initiation date for the proposed tasks is dependent on NYSDEC approval of this work plan. The implementation schedule for initiation/completion of activities is based upon weeks from NYSDEC approval. The schedule assumes that there will be immediate access to all areas of the site and that there will be no delays caused by the securing of required permits. Severe weather conditions or force majeure may also cause delays. Frequent communications with NYSDEC will be maintained to ensure compliance with the project schedule and to identify and resolve potential problems. The project schedule outlined in Table 5 shows the proposed activities for the Cantor RI/FS.

7.3.3 Quality Assurance

Quality assurance is an essential component of project management and is the responsibility of the project manager. The following measures will be undertaken to assure that the data quality objectives for the project are meet. The project manager and the Quality Review Board will conduct periodic meetings to evaluate the progress of the project and to identify and solve potential

problems. The project manager and technical staff will hold project meetings upon completion of each phase of field investigation to review project notes for consistency and completeness and to facilitate information transfer. The overall project data will be evaluated by the project manager and Quality Review Board technical quality and completeness.

7.4 Project Budget

The costs for the development and implementation of the RI/FS work plan are being borne solely by Cantor, and therefore a project budget has not been prepared for submittal to NYSDEC at this time.

TABLE 5

Proposed Project Implementation Schedule

Cantor Bros. Site
Farmingdale, New York

Activity	Weeks From NYSDEC Approval
Soil Borings/Sampling	3
Monitoring Well Installations	4
Monitoring Well Surveying	5
Groundwater Sampling	6
Receipt of Soil Sample Results	8
Receipt of Groundwater Sample Results	11
Data Validation	17
Submit Draft RI Report	23 *

* The draft RI report will have an implementation schedule for work to be completed subsequent to its submission.

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8.0 ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
CPP	Citizen Participation Plan
DOT	Department of Transportation
ECL	Environmental Conservation Law (of New York)
EPA	Environmental Protection Agency
FS	Feasibility Study
FSP	Field Sampling Plan
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
NCP	National Contingency Plan
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCE	Perchloroethylene
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SCDHS	Suffolk County Department of Health Services
SOP	Standard Operating Procedures
SPSAGD	State Promulgated Standards and Guidance Documents
TCL	Target Compound List
TPHC	Total Petroleum Hydrocarbons
UST	Underground Storage Tank
VO	Volatile Organics