SDMS Document
93263

The Passaic River Study Area

United States Environmental Protection Agency, Region II

Status of PRP Search and Issuance of Notice Letters

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For Chemical Land Holdings, Inc., on behalf of Occidental Chemical Corporation (successor to Diamond Shamrock Chemicals Company, f/k/a Diamond Alkali Company)

February, 2001

DAL:281196.1

932630001

Volume 4 Table of Contents

Tab	PRP Name	Document(s): Summary
3	**Lucent Technologies, Inc.** [Cont'd from Volume 3]	
-B		(*See* summary for this tab in Volume 3 Table of Contents)
-C		February 6, 1984 letter from AT&T (formerly Western Electric Co., Inc.) to NJDEP forwarding initial ECRA Notice Submission. Confirms certain corporate information and hazardous substances at site.
-D		November 1984 AT&T Technologies, Inc. Environmental Cleanup Plan for Kearny Works - Plating Shops and Waste Treatment Plant. Confirms certain hazardous substances at site. June 1985 Amended Environmental Clean-Up Plan. Confirms certain hazardous substances in site soil and storm water catch basins.
-E		October 27, 1981 RCRA and PCB Plant Compliance Inspection at the Kearny Works. Confirms non-compliances with regard to storage of hazardous substances and potential discharges thereof.
-F		September 12, 1997 letter from USEPA to Western Electric Company regarding receipt of NPDES Discharge Monitoring Report and indication of non-compliance with certain effluent limitations specified in permit.
-G		February 5, 1997 letter from Lucent Technologies to NJDEP forwarding Subsurface Soil Investigation Report which identifies the presence of volatile organics in the soils below the former drum storage area.
-H		May 20, 1996 Affidavit of Daniel Bartel, plumber and inspector of the Western Electric Company facility (1952-1985). Bartel's affidavit identifies the source of discharge into the Passaic River from specific

outfalls, plating waste water through the storm sewers, and two drains located within the drum storage area through the storm sewers.

-I October 8, 1997 letter from John Dugdale of Andrews & Kurth L.L.P. to Amelia Wagner, Assistant Regional Counsel, USEPA, regarding issuance of additional notice letters to PRPs associated with the PRSA. Documentation in support of same attached, including documentation of numerous hazardous substances at the site.

February 1993 Remedial Proposal for Contaminated Soil at Former Drum Storage Pad. Confirms hazardous substances, such as metals and solvents, detected in soils taken within the drum storage pad area.

-J Sediment data table indicating that the same types of substances known to be at the facility have been detected at significant levels in Passaic River sediments near the facility.

-K July 26, 2000 New Jersey Department of the Treasury, Division of Revenue, Status Report for Lucent Technologies, Inc.

-L September 12, 1977 letter from USEPA to Western Electric Company regarding Violation of Effluent Limitations, NPDES Permit No. NJ0020443.

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B

932630004

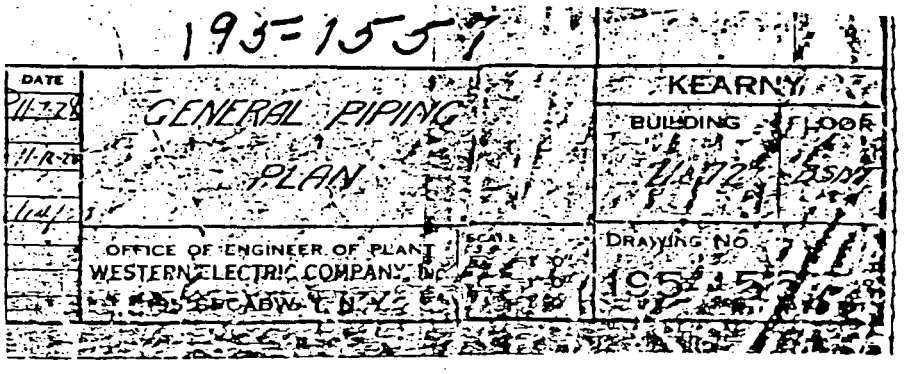
LUCENT TECHNOLOGIES, INC.

TAB B

February 14, 1997 Response of River Terminal Development Company to the USEPA's Request for Information Under 42 USC §9601 et seq. - Diamond Alkali Superfund Site, Passaic River Study Area. Confirm certain corporate information and provides certain drawings showing process and sewer interconnections and discharge outfalls to the river. Also documents site contaminants found in groundwater.

NOTICE ABOUT UNSCANNABLE MAP

THIS MAP CAN BE FOUND IN THE SITE FILE LOCATED AT: U.S. EPA SUPERFUND RECORDS CENTER, 290 BROADWAY, 18TH FLOOR, NY, NY 10007. TO MAKE AN APPOINTMENT TO VIEW THE MATERIAL PLEASE CONTACT THE RECORD CENTER AT (212) 637-4308.



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195-101

THIS DRAWING SUPERSEDES DRAWING NO 195-101 ISSUE 11 DATED 10/17/24

GENERAL BASEMENT PIPING LAYOUT

KEARNY

BUILDING	FLOOR
11 & 12	BSMT.

WESTERN ELECTRIC COMPANY, INC.
PLANT DEVELOPMENT ENGINEERING
195 BROADWAY, N. Y.

SCALE 1/16" = 1'-0" = 1'-0" = 1'-0"

DRAWING NO. 195-

195-101

932630007

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STORM AND SANITARY DRAINAGE SERV. - REMODELING NORTH TRACT BLDGS. - KEARNY WORKS, N.J. UNITED ENGINEERS & CONSTRUCTORS INC PHILADELPHIA		KEARNY BUILDING: 170 FLOOR: 1
WESTERN ELECTRIC COMPANY, INC. ENGINEER OF PLANT 195 BROADWAY, N. Y.	SCALE 1/32" = 1'-0"	DRAWING NO. EPK-25107

7075-EPK107

932630008

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RELOCATED STORM-WATER SEWER & DRAINS. - SOUTH SIDE	KEARNY	
	BUILDING 170	FLOOR 1ST & YAR-
WESTERN ELECTRIC COMPANY, INC. ENGINEER OF PLANT 195 BROADWAY, N. Y.	SCALE AS SHOWN = 1'-0" = 1'-0" = 1'-0"	DRAWING NO. 195-5107

932630009

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195-3582

[illegible] BY [illegible]	APPROVED BY	DATE
[illegible] BY	CHIEF DRAFTSMAN	8/8/39
[illegible] BY C/H		
T.E.S.	ENGINEER	
[illegible]	BUILDING SERVICE ENGINEER	8-7-39
[illegible]	SERVICE SYSTEMS ENGINEER	8/16/39
	PLANT DEVELOPMENT ENG	

932630010

Exhibit R of River Terminal
Development Company's response
to the USEPA's Request for Information

ABA000602

932630011

RESULTS OF THE JUNE 1996 GROUNDWATER SAMPLING EVENT AND EVALUATION OF GROUNDWATER CONDITIONS

FORMER WESTERN ELECTRIC COMPANY, INC.
KEARNY WORKS FACILITY

CENTRAL AVENUE, KEARNY TOWN
HUDSON COUNTY, NEW JERSEY
ISRA CASE NUMBER: E84025

Prepared for:

Lucent Technologies, Incorporated
131 Morristown Road
Basking Ridge, New Jersey
07920

Prepared by:

J M Sorge, Incorporated
50 County Line Road
Somerville, New Jersey 08876

August 1996

ABA000603

932630012

List of Tables

Table 1	Groundwater Field Measurement Data: June 1996
Table 2	Groundwater Sampling Results Summary: June 1996
Table 3	Chemical Characterization Summary
Table 4	Microorganisms Identification Analyses Results
Table 5	Chlorinated Ethylenes and Ethanes - MW-11
Table 6	Chlorinated Ethylenes and Ethanes - MW-14
Table 7	Chlorinated Ethylenes and Ethanes - MW-15
Table 8	Chlorinated Ethylenes and Ethanes - MW-17/17R
Table 9	Summary of the Mann-Whitney U-Test for MW-14

List of Figures

Figure 1	Site Location Map
Figure 2	Groundwater Contour Map (June 1996)
Figure 3	Total Chlorinated Ethylenes Isopleth Map (June 1996)
Figure 4	Total Chlorinated Ethanes Isopleth Map (June 1996)
Figure 5	Tetrachloroethylene Isopleth Map (June 1996)
Figure 6	Trichloroethylene Isopleth Map (June 1996)
Figure 7	Vinyl Chloride Isopleth Map (June 1996)
Figure 8	1,1,1-Trichloroethane Isopleth Map (June 1996)

Attachments

A	Laboratory Analytical Results Report
B	Plate Count Analyses Report

1.0 INTRODUCTION

J M Sorge, Inc. (JMS) was retained by Lucent Technologies, Inc. (Lucent) to provide environmental services in connection with the former Western Electric facility located at 100 Central Avenue in Kearny, New Jersey. This report provides the results of the groundwater sampling round conducted on June 27, 1996 in the former drum storage area. The former drum storage area is the only remaining area of concern at the property in connection with the Western Electric ISRA case.

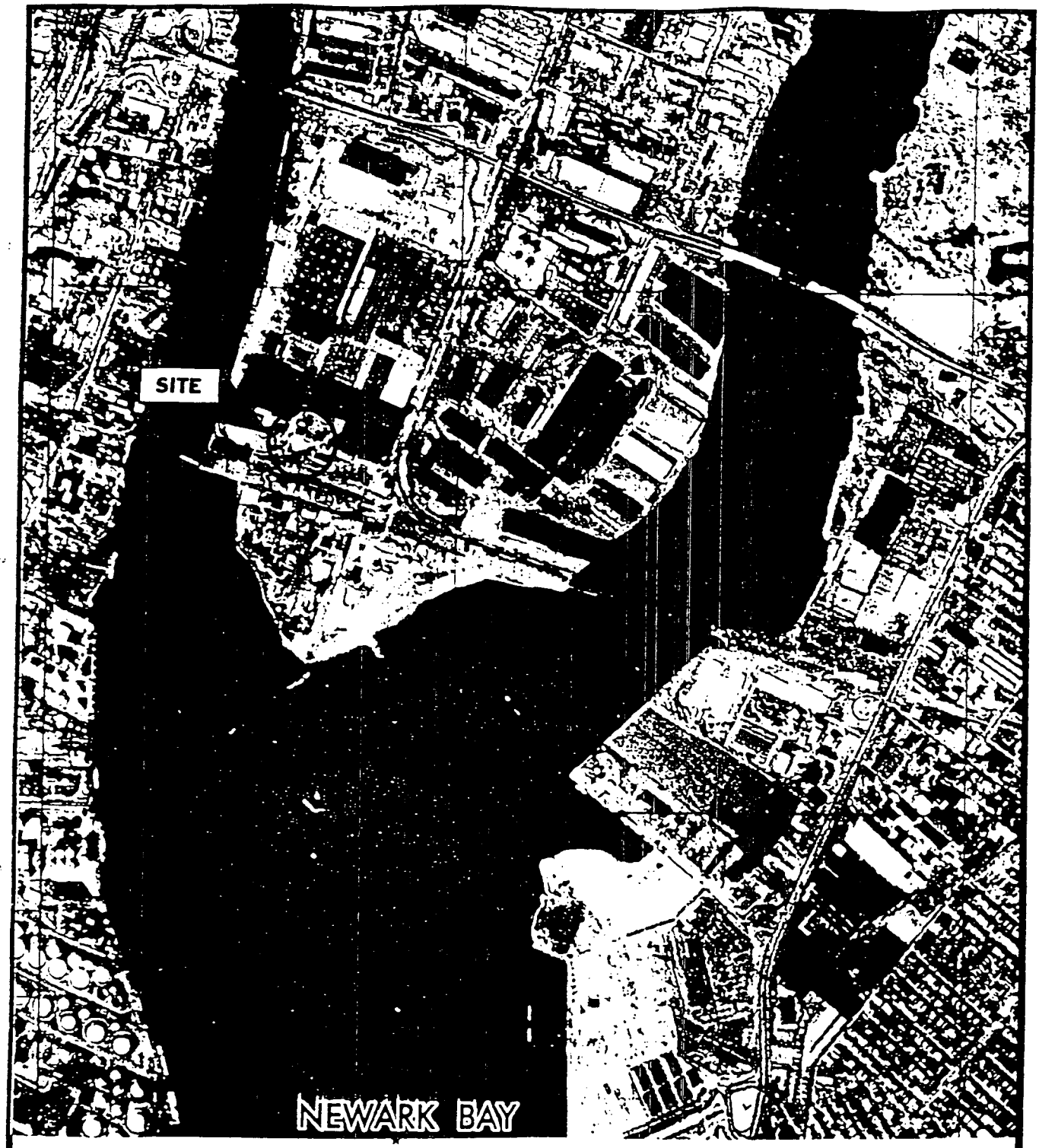
1.1 Background

The former Western Electric facility is located in the Town of Kearny, New Jersey, on the peninsula bounded on the east by the Hackensack River and on the west by the Passaic River (Figure 1). The confluence of these rivers at the southern tip of the peninsula produces the body of water known as Newark Bay. The former drum storage area is located approximately 150 feet north of the southern property line (Figure 2) and approximately 1,200 feet from the Passaic River (Figure 1). There are no potable wells located on the entire Kearny Point peninsula; consequently, there are no potable receptors located downgradient to, or within 0.5 miles of, the former drum storage area.

After triggering an ECRA investigation in 1984, Western Electric initiated investigative and remedial activities at the entire property. As a result, the NJDEP has approved no further action for the soils at all areas of concern. In addition, the NJDEP has approved no further action regarding groundwater for all areas of concern with the exception of the Former Drum Storage Area. The groundwater in this area contains elevated concentrations of volatile organic compounds (VOCs) consisting of chlorinated hydrocarbons; however, as previously submitted, the concentrations of contaminants are indicative of a dissolved-phase problem only. The contaminant concentrations are not indicative of the presence of dense non-aqueous phase liquids (DNAPL).

On April 12, 1996, JMS submitted a report to NJDEP providing a complete summary of all groundwater analyses results obtained from the wells in this area. Within the April 1996 report, JMS provided sufficient documentation to conclude the following:

- ✓ Aromatic hydrocarbon contaminants are no longer a concern;
- ✓ Chlorinated methane contaminants are no longer a concern;
- ✓ The remaining contaminants of concern include chlorinated ethanes and ethylenes;
- ✓ Reductions have been observed regarding the extent of the dissolved-phase contamination plume in connection with chlorinated ethanes;
- ✓ Reductions have been observed regarding the extent of the dissolved-phase contamination plume in connection with chlorinated ethylenes;
- ✓ The calculated pollutant transport velocity for chlorinated ethanes and ethylenes results determined that the transport velocities are extremely slow; and,



SOURCE:
PHOTOQUAD BASEMAP
STATE OF NEW JERSEY
DEPARTMENT OF
ENVIRONMENTAL PROTECTION
JERSEY CITY NJ–NY

13.0°
231 MILS
1992 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE: 1" = 1,500

JM SORGE, INC.	FORMER WESTERN ELECTRIC FACILITY

SITE LOCATION MAP

FIGURE 1

P-000628

932630015

- ✓ There are no potential receptors (potable or other); therefore, the facility is not located within a groundwater use area and, there is no potential threat to human health or the environment

In its most recent correspondence to Lucent (dated June 3, 1996) the NJDEP required the facility to continue quarterly monitoring until the following two (2) conditions are met:

1) A statistically significant decrease in ground water contaminant concentrations is evident at MW-11; and
2) A statistically significant static or decreasing level of contamination is evident in MW-14.

Therefore, in addition to the presentation of the June 1996 sample round data, the following report provides an evaluation of the trends in groundwater contamination as well as documentation to confirm that attenuating conditions are present at the property.

2.0 RESULTS OF JUNE 1996 GROUNDWATER SAMPLING ROUND

JMS personnel collected groundwater samples from monitoring wells MW-11, MW-14, MW-15 and MW-17R on June 27, 1996. Monitoring well MW-16 could not be sampled properly due to structural damage of this well. All groundwater samples were collected in strict accordance with the New Jersey Department of Environmental Protection's (NJDEP) Field Sampling Procedures Manual, the Technical Requirements for Site Remediation (TRSR) and the Department's approval correspondence to Lucent dated June 23, 1994.

Prior to collecting groundwater samples, the depth to groundwater was measured in each well (Table 1). A potentiometric map was prepared using the static water level measurements (Figure 2). The data obtained confirmed prior submissions which indicate that shallow groundwater in this area flows in a northeast to southwest direction. The samples were delivered to Envirotech Research, Inc. of Edison, New Jersey, for analyses of VOCs plus a forward library search (VO+10), iron, dissolved organic carbon (DOC), alkalinity, chloride, nitrate, nitrite, ammonia, total phosphorous, sulfate, oxidation reduction potential (ORP), chemical oxygen demand (COD), total kjeldahl nitrogen (TKN) and five-day biological oxygen demand (BOD_5). JMS also collected pH, specific conductance, total dissolved solids (TDS), temperature, dissolved oxygen (DO) and carbon dioxide (CO_2) measurements during field activities.

The following provides a description of the enclosed tables and figures along with a summary of the most recent investigative activities conducted at this site.

Table 1	Summary of the field data collected during the June 1996 sampling event;
Table 2	Summary of all VOCs detected at all monitoring wells: June 1996;
Table 3	Summary of the additional chemical parameters analyzed;
Table 4	Summary of the aerobic and anaerobic plate counts, including the results of microorganism identification analyses results;
Table 5	Chlorinated ethylenes and ethanes analyses results for monitoring well MW-11;
Table 6	Chlorinated ethylenes and ethanes analyses results for monitoring well MW-14;
Table 7	Chlorinated ethylenes and ethanes analyses results for monitoring well MW-15;
Table 8	Chlorinated ethylenes and ethanes analyses results for monitoring well MW-17R;
Table 9	Summary of Mann-Whitney U-Test results for monitoring well MW-14.

Figure 1	Site Location Map;
Figure 2	Groundwater elevation contour map: June 1996 sampling event;
Figure 3	Total chlorinated ethylenes concentration isopleth map: June1996 sampling event;
Figure 4	Total chlorinated ethanes concentration isopleth map: June 1996 sampling event;
Figure 5	Tetrachloroethylene concentration isopleth map: June 1996 sampling event;
Figure 6	Trichloroethylene concentration isopleth map: June 1996 sampling event;
Figure 7	Vinyl chloride concentration isopleth map: June 1996 sampling event; and,
Figure 8	1,1,1-trichloroethane concentration isopleth map: June 1996 sampling event.

JMS also characterized microbial factors of the shallow groundwater in order to determine the feasibility of natural degradation as a means of remediating the residual chlorinated hydrocarbons at this site. Samples from monitoring wells MW-11, MW-14 and MW-17R were submitted to Pure Earth Environmental Laboratory, Inc. (PEEL) of Pennsauken, New Jersey, for the following microbiological parameter analyses: aerobic/anaerobic microorganism counts (total) and aerobic/anaerobic identification and enumeration. The microbiological results are summarized on Table 4.

A summary of the VOCs identified during the most recent sampling event is provided on Table 2. A historical summary of the chlorinated ethylenes and ethanes analyses results is provided on Tables 5 through 8. The complete laboratory analytical report for the June 1996 sampling round is provided in Attachment A.

2.1 MW-11:

The most elevated concentrations of chlorinated hydrocarbons continue to be observed at MW-11; however, the most recent laboratory results confirm a significant decrease in the total concentration of contaminants within the source area (MW-11), particularly since the previous sampling event. The total concentration of ethylenes and ethanes have decreased by nearly half from 19,640 to 10,880 parts per billion (ppb) and 1,320 to 660 ppb, respectively. Much lower concentrations of the same contaminants were detected in the remaining monitoring wells. Please refer to Figures 3 through 8 for illustrations of the distribution of individual and total chlorinated contaminant concentrations (isopleth maps).

2.2 MW-14:

Chlorinated compound concentrations were either below, or very close to, Groundwater Quality Standards (GWQS) in monitoring wells MW-14. As illustrated on Table 6, chlorinated hydrocarbon concentrations in the downgradient monitoring well (MW-14) have shown a statistically significant decrease over the course of this monitoring program. The trace concentrations of chlorinated compounds detected in MW-14 serve to adequately delineate the groundwater contamination in the former drum storage area.

2.3 MW-15:

No contaminants were identified exceeding the GWQS. A summary of all VOCs detected in MW-15 during the June 27, 1996 sampling event are provided on Table 2. Therefore, JMS requests that groundwater sampling and analyses at this well point be terminated.

2.4 MW-17R:

Laboratory analyses identified only two chlorinated compounds: chloroethane and trichloroethylene (TCE) at concentrations above the Department's GWQS. Chloroethane is a nonhazardous substance, the presence of which is the result of the degradation of 1,1,1-trichloroethane. As illustrated on Table 8, a significant decrease in both total chlorinated ethylene and ethane concentrations has been identified since groundwater pumping was ceased in June 1991.

The concentrations of the contaminants detected during this groundwater sampling event are consistent with those previously obtained. The most elevated concentrations of chlorinated hydrocarbons continue to be observed at MW-11; however, the contaminants continue to be detected at lower than DNAPL indicative concentrations. Figures 3 through 8 depict the chlorinated contaminant isopleth maps prepared based on recent and historic data.

3.0 EVALUATION OF CONTAMINATION CONCENTRATION TRENDS

Groundwater samples collected from MW-11, which is located less than 50 feet downgradient of the former concrete pad, have historically consisted of elevated concentrations of chlorinated ethylenes and ethanes. The site contamination has been consistently limited to the area adjacent to MW-11. Please refer to Figures 3 through 8 for illustrations of the distribution of individual and total contaminant concentrations (isopleth maps). There has been no indication that contaminants have transported, or will transport, from this area of the property. In fact, the contaminant concentrations historically detected in the sentinel well (MW-14) have significantly decreased. *An application of the Mann-Whitney U-Test to the historic sample analyses at MW-14 demonstrate a statistically significant decrease in concentrations of all contaminants of concern*. A summary of the Mann-Whitney U-Test results for MW-14 is presented on Table 9.

3.1 Chlorinated Ethanes

During the initial groundwater investigation (1985), elevated concentrations of chlorinated ethanes were identified in the monitoring wells located nearby the former drum storage area. MW-11 contained the most elevated concentrations of the source contaminants (PCA and TCA). PCA was detected at concentrations up to 980 ppb, and TCA was detected at concentrations up to 1200 ppb. DCA and chloroethane (CA), both of which are daughter products of PCA and TCA, were detected at concentrations up to 2,100 ppb and 980 ppb, respectively. TCA was also detected in the remaining monitoring wells; however, the TCA concentration at each well was below 60 ppb. Daughter contaminants (including DCA and CA) were also present in wells MW-14 through MW-17 (Tables 5-8).

By the end of the groundwater pumping period (March 1991), chlorinated ethane concentrations had reduced to trace levels at MW-11 (TCA-7 ppb, DCA-13 ppb, and CA-4 ppb); TCA was not detected in MW-14 through MW-17. Daughter contaminants (DCA and chloroethane) were detected in MW-14 and MW-17. The results of this sampling round confirmed that the pumping activity was effectively removing the source of chlorinated ethanes, and, the remaining contamination was/is present in dissolved phase only. These results also demonstrated that the sequence of the disappearance of individual chlorinated ethane compounds at the site is consistent with the reported chlorinated ethane degradation pathway.

In summary, the remediation activities have removed the source of chlorinated ethane contaminants, and the residual contamination (which is primarily located in the area of MW-11) is present in dissolved phase only.

3.2 Chlorinated Ethylenes

During the initial groundwater investigation (1985), elevated chlorinated ethylene concentrations were detected in all five (5) monitoring wells. The most elevated chlorinated ethylene concentrations were detected in MW-11, with source contaminant (PCE and TCE) concentrations

of greater than 10,000 ppb and 5,000 ppb, respectively. 1,2-DCE and VC (transformation products) were detected at concentrations of up to 24,996 ppb and 1,200 ppb, respectively. A similar degradation trend has been identified between the transformation of chlorinated ethylenes as that previously described for chlorinated ethanes. Following the August 1985 excavation, chlorinated ethylenes, both source and daughter contaminants, had reduced appreciably at MW-11. During the most recent five (5) groundwater sampling events, the source chlorinated ethylenes (PCE and TCE) have been detected at relatively consistent concentrations in MW-11 and have decreased in all remaining wells (including the downgradient, sentinel well [MW-14]). It should be noted that the most elevated concentrations of PCE and TCE detected in MW-11, following the removal of the concrete pad, are not indicative of Dense Non-Aqueous Phase Liquids (DNAPL). In addition, the ratio of PCE to TCE in MW-11 has decreased sequentially over the last eight quarters of groundwater sampling.

4.0 EVALUATION OF ATTENUATING CONDITIONS

4.1 Chemical and Microbial Properties

In addition to the VOC monitoring, JMS also characterized the chemical and microbial properties of the shallow aquifer in order to determine the feasibility of natural degradation as a means of remediation of the residual chlorinated hydrocarbons within the groundwater. Discussed below are the chemical characteristics of the shallow groundwater within the affected area.

4.1.1 Oxidation Reduction Potential (ORP) and Dissolved Oxygen (DO)

Organisms obtain energy through redox reactions; the redox potential or ORP, expresses the electron availability as it affects oxidation states. From redox measurements, the available electron acceptors within a site can be estimated. The primary electron acceptors is oxygen; however, nitrate, sulfate, carbon dioxide and organic compounds can also serve as electron acceptors when oxygen is not available. A system is classified as being under aerobic conditions, when oxygen (O_2) is used as the electron acceptor in the energy yielding redox reactions. Otherwise, the system is under anaerobic conditions. Microorganisms that require oxygen are classified as aerobes; those that cannot grow in the presence of oxygen (greater than 0.5 mg/l) are obligate anaerobes. Organisms that can grow with or without oxygen are facultative anaerobes. The measurements of ORP and DO provide knowledge regarding the availability of electron acceptors. From the ORP and DO values, one can estimate the aerobic/anaerobic microbial activity and the possibility of contaminant biotransformation.

The ORP values measured in the monitoring wells at the former Western Electric facility ranged from 262 mv in MW-17R to 378 mv in MW-15. A soil with an ORP range of 100 to 400 mv is generally characterized as a moderately reduced soil; thus, the subsurface at the subject site is under moderately reduced conditions. DO values were measured at the top and base of the water columns in the field, using a calibrated DO meter. Initial DO values ranged from 1.1 - 2.0 ppm in the monitoring wells. These values indicate that the site groundwater is under slightly aerobic conditions.

In summary, based upon the ORP and DO measurement results, the subsurface of this site is identified as generally under aerobic conditions which support aerobic microbial activities. It should be noted, however, that an observation of an aerobic condition in the subsurface in general should not be interpreted that no anaerobic microbial activity is occurring. In fact, there are always anaerobic microsites in the subsurface environment (Paul and Clark, 1988).

When oxygen is not available, alternate electronic acceptors, such as nitrogens (nitrate and nitrite) and sulfur (sulfate and sulfite), etc., can also be used (denitrification, or sulfate/sulfite reducing reactions). The data (Table 3) illustrates that no nitrate or nitrite were detected above the method detection limits (0.1 mg/l), except for 0.38 ppm of nitrate detected in MW-14. Ammonia was however, detected at all monitoring wells. This is consistent with the redox potential measurement; ammonia exists in relatively reduced environments. Consequently, nitrogen is not

likely to be an alternate electron acceptor at the subject site. However, sulfate was detected in all the site monitoring wells, ranging from 118 ppm to 268 ppm. Substantial quantities of iron, ranging from 1,110 ppm to 9,890 ppm, were detected in all four (4) monitoring wells. Ferric iron is also an alternate electronic acceptor under anaerobic conditions. In anaerobic microsites where oxygen is absent, sulfate, ferric iron or carbon dioxide are available for microbial anaerobic metabolism.

4.1.2 Availability of Nutrients

Nutrients are required for organisms to survive and undergo biosynthesis (growth). The microbial requirements for nutrients are approximately the same as the composition of their cells. Carbon, oxygen, nitrogen, hydrogen and phosphorus are the major nutrients required by microorganisms. The source of carbon is typically the existing soil organics or the organic hydrocarbons present at contaminated sites.

The site groundwater was characterized as having low organic matter since low BOD_5, COD and DOC values were detected (Table 3). Nitrogen (ammonia), sulfate, and phosphorus nutrients were determined to be present at sufficient concentrations to support microbial metabolism and biotransformation of contaminants.

4.1.3 Summary of Chemical Characterization

An evaluation of the availability of electron acceptors at the site shows that the subsurface environment is generally under aerobic conditions and supports aerobic microbial metabolism. In anaerobic microsites where oxygen is not available, various alternative electron acceptors, such as carbon dioxide, sulfate, and ferric iron will be used to support microbial anaerobic metabolism. Low organic concentrations were detected in site soil and groundwater; however, sufficient nutrients (nitrogen, phosphorus and others) were identified. Therefore, our chemical characterization of the former Western Electric facility indicates that favorable conditions for biotransformation of contaminants at this site.

4.1.4 Evaluation for the Presence of Microorganisms

As discussed above, chemical characterization results indicate that the site provides favorable conditions for natural aerobic/anaerobic microbial activity. In order to confirm that biotransformation of contaminants is occurring, JMS performed aerobic and anaerobic microbial enumeration and identification. The most established method available to enumerate microorganisms is the total plate count method. This method, which provides the number of microbes that grow on fixed nutritional media, was used employed. A complete bacterial identification was also performed on the groundwater samples. A summary of the aerobic and anaerobic plate counts, including the percentile of each microbe in monitoring wells MW-11,

MW-14 and MW-17R, is presented on Table 4; a copy of the plate count analysis is provided as Attachment B.

The number of anaerobes ranged from 20 colony forming units per milliliter (CFU/ml) in MW-14 to 97 CFU/ml in MW-11. The most predominant anaerobes identified in samples collected from MW-14 and MW-17R was *Clostridium* species, which has been demonstrated to transform TCA, carbon tetrachloride, chloroform and other chlorinated hydrocarbons, through anaerobic reductive dehalogenation or dehydrochlorination process (Cookson, 1995). The most predominant anaerobe identified in MW-11 was *Veillonella* species. No record of organic degradation ability has been determined for this species.

Anaerobic reductive dehalogenation is the predominant process for biological degradation of highly halogenated compounds, such as PCE, TCA and TCE (Cookson, 1995). During anaerobic reductive dehalogenation, the halogens in the molecules of halogenated compounds are replaced by hydrogenolysis or dihaloelimination. The higher the halogenated degree of a compound (such as PCE, TCA, and TCE), the easier for the compound to undertake reductive dehalogenation (provided certain microbial consortium and environmental conditions are present).

The number of aerobes in the groundwater samples ranged from 41 CFU/ml in MW-17R to 152 CFU/ml in MW-14 (Table 4). Various aerobes which are capable of transforming chlorinated hydrocarbons and other contaminants were identified in the monitoring wells at the Kearny site. *Pseudomonas fluorescens* was identified in both MW-14 and MW-17R. *P. fluorescens* has been reported to be capable of transforming 1,1,2-TCA, 1,2-DCA and various other chlorinated hydrocarbons (Mahaffey et al., 1990). *Flavobacterium* species and *Bacillus* species were identified in MW-14 and MW-17R, respectively. Bacteria of these two species have exhibited the cometabolism phenomenon and the capability of transforming aliphatic hydrocarbons and various xenobiotic compounds. *Aeromonas* species, which are capable of oxidizing aliphatic hydrocarbons, was identified at MW-11.

Results of microbial characterization confirmed the coexistence of aerobes and anaerobes, and thus, aerobic and anaerobic microbial activities in the subsurface of the site. The complete bacterial identification further confirmed that bacteria, which are capable of biotransforming chlorinated hydrocarbons, and other xenobiotic compounds, are present in the subsurface of the former Western Electric site.

4.2 Transformation of Chlorinated Solvents

The transformation of chlorinated solvents is a complex and dynamic process. Degradation of chlorinated hydrocarbons can occur through both abiotic (chemical) and biotic (microbiological) processes. Microbiological degradation of chlorinated solvents has been observed to occur under both aerobic and anaerobic conditions. The monitoring results at the Western Electric site indicate that the abiotic and biological degradation of site contaminants is occurring. In most cases, abiotic, aerobic and anaerobic processes occur simultaneously, breaking down a common contamination zone.

The degradation of higher order chlorinated ethylenes (PCE, TCE) results in the temporary formation of lower order chlorinated hydrocarbons (1,2-DCE, 1,1-DCE, VC, etc.) as degradation intermediate products. Similarly, higher order chlorinated ethanes (PCA, TCA) transform to DCA and CA. The intermediates, in turn, ultimately degrade to innocuous materials (e.g. ethene, ethane, carbon dioxide, etc.). The distribution of the chlorinated hydrocarbons in well MW-11 is consistent with *all* available literature regarding the transformation pathways resulting from the abiotic and biotic degradation of chlorinated compounds.

5.0 SUMMARY

The results of this most recent investigation have confirmed that bio-attenuating conditions exist at the former Western Electric site due to the following:

- ✓ Statistically significant decreases (in accordance with Mann-Whitney U-Test) are observed in contaminant concentrations at MW-14 and MW-17R;
- ✓ Decreases are observed in groundwater contamination concentrations at MW-11;
- ✓ The presence of sufficient nutrients (nitrogens, sulfate, phosphorus etc.) to support microbial activities were detected in the subsurface;
- ✓ The presence of sufficient electron acceptors were detected in the subsurface, also supporting attenuating conditions at the property; and,
- ✓ The presence of bacteria, which are capable of biotransformation of the contaminants at this site, are present.

JMS will continue the groundwater monitoring program as outlined in our correspondence dated June 24, 1996. It is anticipated that the results of the pending two groundwater sampling events (September and December, 1996), along with the historical groundwater sampling results, will further confirm the attenuating trends being observed of the site contaminants.

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Harris, R. F. (1981). Effect of water potential on microbial growth and activity. In "Water Potential Relation in Soil Microbiology" (J. Parr et al. eds.). Soil Sci. Soc. Am., Madison, Wisconsin.

Maharffey, W R, Compean, G., Nelson, M., and Kinsella, J. (1990), Development of Strategies for Bioremediation of PAH's and TCE. In-situ Bioremediation of Groundwater and Contaminated Soil. WPCF Annual Conference, Washington, D. C. pp3-47, Oct, 1990.

Paul, E. A. and F. E. Clark (1988) Soil Microbiology and Biochemistry. pp17. Academic Press, Inc. San Diego, California.

Table 1
Lucent Technologies - Former Western Electric Company Site, Keary, New Jersey
Groundwater Field Measurement Data: June, 1996

		MW-11	MW-14	MW-15	MW-17R
Casing Elevation (ft):		9.65	8.54	9.42	9.14
Total Depth (ft):		15.3	13.6	14.28	14.1
Depth to Top of Screened (ft below ground surface)		2	2	2	2
Length of Screened (ft)		10	10	10	10
Depth to Water (ft)	Initial -	7.34	6.32	7.04	6.7
	Post Purge -	7.38	11.3	11.9	11.72
	At Sample -	7.32	8.05	7.24	8.14
Elev. of Water (ft)	Initial -	2.31	2.22	2.38	2.44
	Post Purge -	2.27	-2.76	-2.48	-2.58
	At Sample -	2.33	0.49	2.18	1
Temp. (centigrade)	Initial -	17.5	18.6	19.1	17.7
	Post Purge -	17.9	16.7	22.1	18.1
	At Sample -	17.3	16.6	21.7	17
pH	Initial -	6.5	6	6.5	6.4
	Post Purge -	6.7	6.2	6.4	6.4
	At Sample -	6.7	6	6.8	6.4
D. O. (mg/l) (Top of Water)	Initial -	2	1.6	2.6	1.5
	Post Purge -	2.2	1.4	3.7	2.2
	At Sample -	3.2	6.5	2.8	3
D. O. (mg/l) (Base of Water)	Initial -	1.1	1.4	2.5	1.1
	Post Purge -	1.1	1.4	3.7	2.2
	At Sample -	1.8	4.1	1.6	2.6
TDS (mS)	At Sample -	1.1	1	0.7	2.4
Carbon Dioxide (ppm)	At Sample -	75	72	50	140

MS ?

June 1996 DATA		MW-11	MW-14	MW-15	MW-17R
SAMPLING DATE		6/27/96	6/27/96	6/27/96	6/27/96
PID READING (PPM):	Initial:	25	50	0	0
	At Sample:	ND	ND	ND	ND
PURGE TIME: START -		1106	0930	0853	1011
PURGE TIME: END -		1122	0952	0908	1043
PURGE RATE (GPM)		<1.0	<1.0	<1.0	<1.0
PURGED VOLUME (Gals)		15.9	14.4	14.1	14.7
POST PURGE WATER DEPTH -		7.38	11.3	11.9	11.72
SAMPLE TIME		1340	1225	1145	1300
WATER DEPTH AT SAMPLING:		7.32	8.05	7.24	8.14

Notes:
ND - Not Detected

Table 2
Lucent Technologies - Former Western Electric Company Site, Keary, New Jersey
Groundwater Sampling Results - June 1996

Sample Number Laboratory Sample Number Date Collected	GW Quality Criteria	MW-11 54039 06/27/96	MW-14 54037 06/27/96	MW-15 54036 06/27/96	MW-17R 54038 06/27/96
VOLATILE ORGANICS (ppb)					
Benzene	1	ND	ND	ND	60
Chloroethane	100	ND	ND	ND	360
Chloroform	6	ND	2.6	ND	ND
1,1-Dichloroethane	70	260	31	1.4	20
cis-1,2-Dichloroethene	10	8900	330	1.9	4.4
trans-1,2-Dichloroethene	100	ND	6.2	ND	ND
Tetrachloroethene	1	660	10	ND	0.2
1,1,1-Trichloroethane	30	400	16	ND	1
Trichloroethene	1	1000	25	ND	2.7
Toluene	1000	ND	ND	ND	0.3
Vinyl Chloride	5	260	28	1	2.9
Identified Peaks	NS	1700 (1)	29 (1)	ND	3.1 (1)
Unknown Peaks	NS	ND	ND	ND	ND

Notes:
ppb - parts per billion
ND - Not Dectected
NS - No Standard
Shaded areas exceed Groundwater Quality Standards.
() - Number of tentatively identified compounds.

Table 3
Lucent Technologies - Former Western Electric Company Site, Keary, New Jersey
Chemical Characterization Summary

Sample ID Collection Data	MW-11 06/27/96	MW-14 06/27/96	MW-15 06/27/96	MW-17R 06/27/96
Redox Potential (mv)	350	375	378	262
Biological Oxygen Demand, 5	<2	<2	<2	4
Chemical Oxygen Demand	36.8	59	28	54.6
Dissolved Organic Carbon	11.3	4.3	5.4	18.2
Nitrogen, Ammonia	1.9	3	1.6	6.8
Nitrogen, Nitrate	ND	0.38	ND	ND
Nitrogen, Nitrite	ND	ND	ND	ND
Nitrogen, Total Kjeldahl	3.2	3.7	2.7	7.7
Sulfate	268	118	122	233
Sulfite	ND	ND	ND	ND
Phosphorus, Total	0.25	0.24	0.48	0.98
Iron	1980	1110	5080	9890
Chloride	202	97.5	43.7	575
Alkalinity	253	157	285	485

COD

Notes:
* All units are mg/l except otherwise specified
ND - Not Detected

Table 4
Lucent Technologies - Former Western Electric Company Site, Keary, New Jersey
Results of Bacteria Enumeration and Identification

	MW-11	MW-14	MW-17R
Aerobes			
Counts (CFU/ml)	77	152	41
Aeromonas species	70%		15%
Bacillus species		15%	15%
Enterobacter gergoviae	30%		5%
Flavobacterium species		40%	
Ochrobactrum species			50%
Psychrobacter immobilis		30%	
Pseudomonas fluorescens		15%	15%
Anaerobic			
Counts (CFU/ml)	97	20	30
Clostridium species		100%	100%
Veillonella species	100%		

Table
MW-
Former Western Electric Facility - Kearny, NJ
Chlorinated Ethylenes and Ethanes

	Chlorinated Ethylenes					Chlorinated Ethanes				
Date	PCE	TCE	1,2-DCE	VCE	TOTAL	PCA	TCA	DCA	Chloroethane	TOTAL
	Chlorinated Ethylenes					Chlorinated Ethanes				
Date	PCE	TCE	1,2-DCE	VCE	TOTAL	PCA	TCA	DCA	Chloroethane	TOTAL
WELL INSTALLATION (02/85):										
Feb-85	10,000	5,660	12,000	130	**27,790**	ND	630	560	ND	**1,190**
Apr-85	870	2,110	24,996	520	**28,496**	ND	560	460	ND	**1,020**
May-85	1,500	1,200	3,200	1,200	**7,100**	980	1,200	2,100	60	**4,340**
ORIGINAL EXCAVATION (08/85):										
Dec-85	3,200	3,000	14,000	2,800	**23,000**	120	530	490	980	**2,120**
START GROUNDWATER PUMPING (08/86):										
Sep-86	400	480	8,600	1,100	**10,580**	<40	160	190	<100	**350**
Dec-86	400	300	4,000	700	**5,400**	ND	NA	100	NA	**100**
Mar-87	400	310	2,500	380	**3,590**	ND	NA	80	NA	**80**
Jun-87	410	330	15,000	1,500	**17,240**	ND	NA	320	NA	**320**
Sep-87	1,000	750	7,000	600	**9,350**	ND	NA	80	NA	**80**
Dec-87	700	450	8,000	900	**10,050**	ND	NA	300	NA	**300**
Mar-88	210	120	3,000	1,000	**4,330**	ND	NA	200	NA	**200**
Jun-88	280	120	1,800	340	**2,540**	ND	NA	0	NA	**0**
Sep-88	120	65	600	400	**1,185**	ND	NA	100	NA	**100**
Dec-88	190	60	180	24	**454**	ND	NA	0	NA	**0**
Mar-89	12	18	70	90	**190**	ND	NA	60	NA	**60**
Dec-89	88	89	5,400	220	**5,797**	ND	85	48	<10	**133**
Mar-90	<5	32	890	850	**1,772**	ND	0	110	56	**166**
Jun-90	36	<5	300	67	**403**	ND	0	31	23	**54**
Sep-90	67	66	400	86	**619**	ND	0	7	<5	**7**
Dec-90	68	58	430	68	**624**	ND	0	8	<10	**8**
Mar-91	25	31	710	84	**850**	ND	7	13	4	**23**

Table 5 (continued)
MW-11
Former Western Electric Facility - Kearny, NJ
Chlorinated Ethylenes and Ethanes

	Chlorinated Ethylenes					Chlorinated Ethanes				
Date	PCE	TCE	1,2-DCE	VCE	TOTAL	PCA	TCA	DCA	Chloroethane	TOTAL
STOP GROUNDWATER PUMPING (06/91):										
Jun-91	74	150	1,900	710	**2,834**	ND	12	79	<10	**91**
Sep-91	95	140	3,300	330	**3,865**	ND	47	130	29	**206**
Dec-91	490	1,100	9,800	190	**11,580**	ND	400	200	<250	**600**
Mar-92	240	500	6,300	530	**7,570**	ND	220	200	<500	**420**
Jun-92	350	460	24,000	1,600	**26,410**	ND	550	460	<1000	**1,010**
Sep-92	300	400	19,000	600	**20,300**	ND	<500	<500	<1000	**ND**
Dec-92	170	280	4,300	130	**4,880**	ND	<250	<250	<500	**ND**
Mar-93	700	840	5,840	110	**7,490**	ND	190	100	<100	**290**
Jun-93	300	500	12,000	530	**13,330**	ND	210	230	<250	**440**
Sep-93	520	810	12,000	310	**13,640**	ND	370	400	<250	**770**
EXCAVATE CONCRETE PAD/SOIL (09/93):										
Dec-93	310	410	4,000	42	**4,762**	ND	150	67	<25	**217**
Mar-94	110	140	1,100	62	**1,412**	ND	46	26	ND	**72**
Sep-94	190	360	3,600	330	**4,480**	ND	29	96	ND	**125**
EXCAVATION BACKFILLED (10/94):										
Feb-95	450	1,300	14,000	360	**16,110**	ND	680	400	ND	**1,080**
May-95	320	600	6,700	200	**7,820**	ND	170	190	ND	**360**
Aug-95	450	830	10,000	640	**11,920**	ND	490	300	ND	**790**
Nov-95	310	1,100	8,400	110	**9,920**	ND	670	380	ND	**1,050**
Feb-96	940	1,700	17,000	ND	**19,640**	ND	910	410	ND	**1,320**
Jun-96	660	1,000	8,900	320	**10,880**	ND	400	260	ND	**660**

Notes:
ND - Not Detected

ABA000609

Table 6
Former Western Electric Facility - Kearny, NJ
Chlorinated Ethylenes and Ethanes - MW-14

MW-14	PCE	TCE	1,2-DCE	VCE	TOTAL	TCA	DCA	TOTAL
WELL INSTALLATION (02/85):								
Apr-85	ND	30	466	59	**555**	22	37	59
ORIGINAL EXCAVATION (08/85):								
START GROUNDWATER PUMPING (08/86):								
Sep-86	29	86	1,900	18	**2,033**	36	48	**84**
Dec-86	48	77	1,500	9	**1,634**	100	27	**127**
Mar-87	206	285	3,783	22	**4,297**	290	60	**350**
Jun-87	99	143	2,077	5	**2,324**	127	46	**174**
Sep-87	113	186	3,717	38	**4,053**	108	54	**162**
Dec-87	42	57	899	ND	**998**	12	15	**27**
Mar-88	47	61	1,160	ND	**1,268**	17	14	**31**
Jun-88	43	65	920	ND	**1,028**	9	12	**21**
Sep-88	35	58	924	ND	**1,017**	7	13	**20**
Dec-88	51	87	1,130	ND	**1,268**	10	12	**22**
Mar-89	27	39	453	ND	**519**	ND	ND	**ND**
Jun-89	ND	15	205	47	**267**	ND	9	**9**
Sep-89	ND	ND	14	ND	**14**	ND	6	**6**
Dec-89	ND	6	94	ND	**100**	ND	6	**6**
Mar-90	ND	23	320	ND	**343**	ND	ND	**ND**
Jun-90	17	31	470	ND	**518**	ND	8	**8**
Sep-90	20	38	500	ND	**558**	ND	8	**8**
Dec-90	18	30	390	ND	**438**	ND	5	**5**
Mar-91	22	32	300	ND	**354**	ND	ND	**ND**
STOP GROUNDWATER PUMPING (06/91):								
Jun-91	ND	11	190	ND	**201**	ND	7	**7**
Sep-91	ND	11	170	ND	**181**	ND	8	**8**
EXCAVATE CONCRETE PAD/SOIL (09/93):								
Oct-94	1	2	33	2	**38**	ND	4	**4**
EXCAVATION BACKFILLED (10/94):								
Feb-95	8	20	290	14	**332**	3	10	**13**
May-95	13	23	370	ND	**406**	4	14	**18**
Aug-95	11	27	380	17	**435**	4	16	**20**
Nov-95	8	18	270	3	**299**	3	8	**11**
Feb-96	5	12	180	5	**203**	7	12	**19**
Jun-96	10	25	330	28	**393**	16	31	**47**

Note:
ND - Not Detected

Former Western Electric Facility - Kearny, NJ
Chlorinated Ethylenes and Ethanes - MW-15

MW-15	PCE	TCE	1,2-DCE	VCE	TOTAL	TCA	DCA	Chloroethane	TOTAL
WELL INSTALLATION (02/85):									
Apr-85	14	31	36	ND	81	37	50	ND	87
ORIGINAL EXCAVATION (08/85):									
START GROUNDWATER PUMPING (08/86):									
Sep-86	6	15	52	17	90	<2	94	<5	94
Oct-86	6	16	22	5	49	<2	37	5	37
Nov-86	<2	4	15	<5	19	<2	23	<5	23
Dec-86	8	14	14	9	44	ND	35	ND	35
Jan-87	5	11	10	ND	26	ND	19	ND	19
Feb-87	ND	9	11	ND	20	ND	14	ND	14
Mar-87	ND	9	9	ND	18	ND	12	ND	12
Apr-87	6	12	11	ND	29	ND	17	ND	17
May-87	6	12	11	ND	29	ND	19	ND	19
Jun-87	7	12	16	ND	35	ND	34	ND	34
Jul-87	6	18	17	ND	41	ND	14	ND	14
Aug-87	ND	14	18	ND	32	ND	7	ND	7
Sep-87	ND	19	28	12	59	ND	28	ND	28
Dec-87	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mar-88	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jun-88	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sep-88	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dec-88	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mar-89	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jun-89	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sep-89	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dec-89	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mar-90	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jun-90	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sep-90	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dec-90	ND	7	6	ND	12	ND	ND	ND	ND
Mar-91	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jun-91	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sep-91	ND	ND	ND	ND	ND	ND	ND	ND	ND
STOP GROUNDWATER PUMPING (06/91):									
EXCAVATE CONCRETE PAD/SOIL (09/93):									
Oct-94	ND	ND	1.3	1	2.3	ND	ND	ND	ND
EXCAVATION BACKFILLED (10/94):									
May-95	0.8	4.4	2.5	ND	7.7	ND	ND	ND	ND
Nov-95	ND	0.8	2.3	0.8	3.9	ND	1	ND	1
Feb-96	0.3	1.5	2.1	0.7	4.6	ND	2.2	ND	2.2
Jun-96	ND	ND	1.9	1	2.9	ND	2.6	ND	2.6

Notes:
ND - Not Detected

932630035

ABA000607

Table 8
Former Western Electric Facility - Kearny, NJ
Chlorinated Ethylenes and Ethanes - MW-17

MW-17	PCE	TCE	1,2-DCE	VCE	TOTAL	TCA	DCA	Chloroethane	Total
WELL INSTALLATION (02/85):									
Apr-85	25	20	74	24	143	56	290	125	471
ORIGINAL EXCAVATION (08/85):									
Dec-85	23	43	430	1,000	1,496	160	7,600	2,200	9,960
START GROUNDWATER PUMPING (08/86):									
Sep-86	<100	<100	<100	<250	0	<100	5,000	3,000	8,000
Dec-86	15	16	380	190	601	23	2,800	5,400	8,223
Mar-87	18	ND	324	267	609	449	5,830	5,190	11,469
Jun-87	32	ND	255	197	484	960	5,470	1,430	7,860
Sep-87	6	ND	22	18	46	ND	1,770	4,170	5,940
Dec-87	ND	ND	20	11	31	ND	67	6,000	6,067
Mar-88	15	ND	ND	ND	15	51	8,670	8,230	16,951
Jun-88	32	8	326	409	775	511	19,500	3,330	23,341
Sep-88	9	5	24	ND	38	ND	149	2,620	2,769
Dec-88	6	15	92	74	187	ND	1,020	5,820	6,840
Mar-89	19	ND	31	37	87	17	ND	4,630	4,647
Jun-89	ND	19	276	45	340	35	2,470	3,070	5,575
Sep-89	123	10	209	36	378	9	55	2,690	2,754
Dec-89	ND	ND	8	ND	8	ND	5	3,500	3,505
Mar-90	ND	7	120	41	168	34	1,000	2,200	3,234
Jun-90	17	ND	26	ND	43	34	2,200	1,100	3,334
Sep-90	ND	ND	ND	ND	ND	ND	ND	1,400	1,400
Dec-90	ND	ND	ND	ND	ND	ND	ND	690	690
Mar-91	ND	ND	8	ND	8	ND	23	600	623
Jun-91	12	ND	35	ND	47	ND	5	540	545
STOP GROUNDWATER PUMPING (6/91):									
Sep-91	100	6	140	ND	246	ND	20	500	520
Dec-91	ND	ND	8	ND	8	ND	10	610	620
Mar-92	ND	ND	ND	ND	ND	ND	960	970	1,930
Jun-92	ND	ND	ND	ND	ND	ND	990	610	1,600
Sep-92	ND	ND	ND	ND	ND	ND	ND	850	850
Dec-92	ND	ND	140	ND	140	ND	ND	760	760
Mar-93	ND	ND	8	ND	8	ND	280	1,100	1,380
Jun-93	21	ND	21	ND	42	ND	23	840	863
Sep-93	ND	7	14	10	31	ND	6	640	646
EXCAVATE CONCRETE PAD/SOIL (09/93):									
EXCAVATION BACKFILLED (10/94):									
Feb-95	ND	ND	ND	ND	ND	ND	ND	710	710
May-95	ND	ND	ND	ND	ND	ND	ND	910	910
Aug-95	1.0	5.9	78.0	20.0	105	7	78	310	395
Nov-95	3.8	26.0	113.5	14.0	157	23	110	13	146
Feb-96	1.8	21.0	67.0	8.6	98	3	41	8	52
Jun-96	0.9	2.7	4.4	2.9	11	1	20	360	381

Note:
ND - Not Detected.

ABA000606

932630036

Table 9
Chlorinated Ethylenes and Ethanes in MW-14
Former Western Electric Facility - Kearny, NJ
Mann-Whitney U-Test Results

Data Set A

Initial 4 Quarterly Rounds following Comencement of Groundwater Pumping (8/86):

	PCE	TCE	1,2-DCE	VCE	TOTAL	TCA	DCA	TOTAL
Sep-86	29	86	1,900	18	**2,033**	36	48	**84**
Dec-86	48	77	1,500	9	**1,634**	100	27	**127**
Mar-87	206	285	3,783	22	**4,297**	290	60	**350**
Jun-87	99	143	2,077	5	**2,324**	127	46	**174**

Data Set B

Final 4 Quarterly Rounds prior to Completion of Groundwater Pumping (6/91)

	PCE	TCE	1,2-DCE	VCE	TOTAL	TCA	DCA	TOTAL
Jun-90	17	31	470	ND	**518**	ND	8	**8**
Sep-90	20	38	500	ND	**558**	ND	8	**8**
Dec-90	18	30	390	ND	**438**	ND	5	**5**
Mar-91	22	32	300	ND	**354**	ND	ND	**ND**

Data Set C

Most Recent 4 Quarterly Rounds collected following Completion of Groundwater Pumping

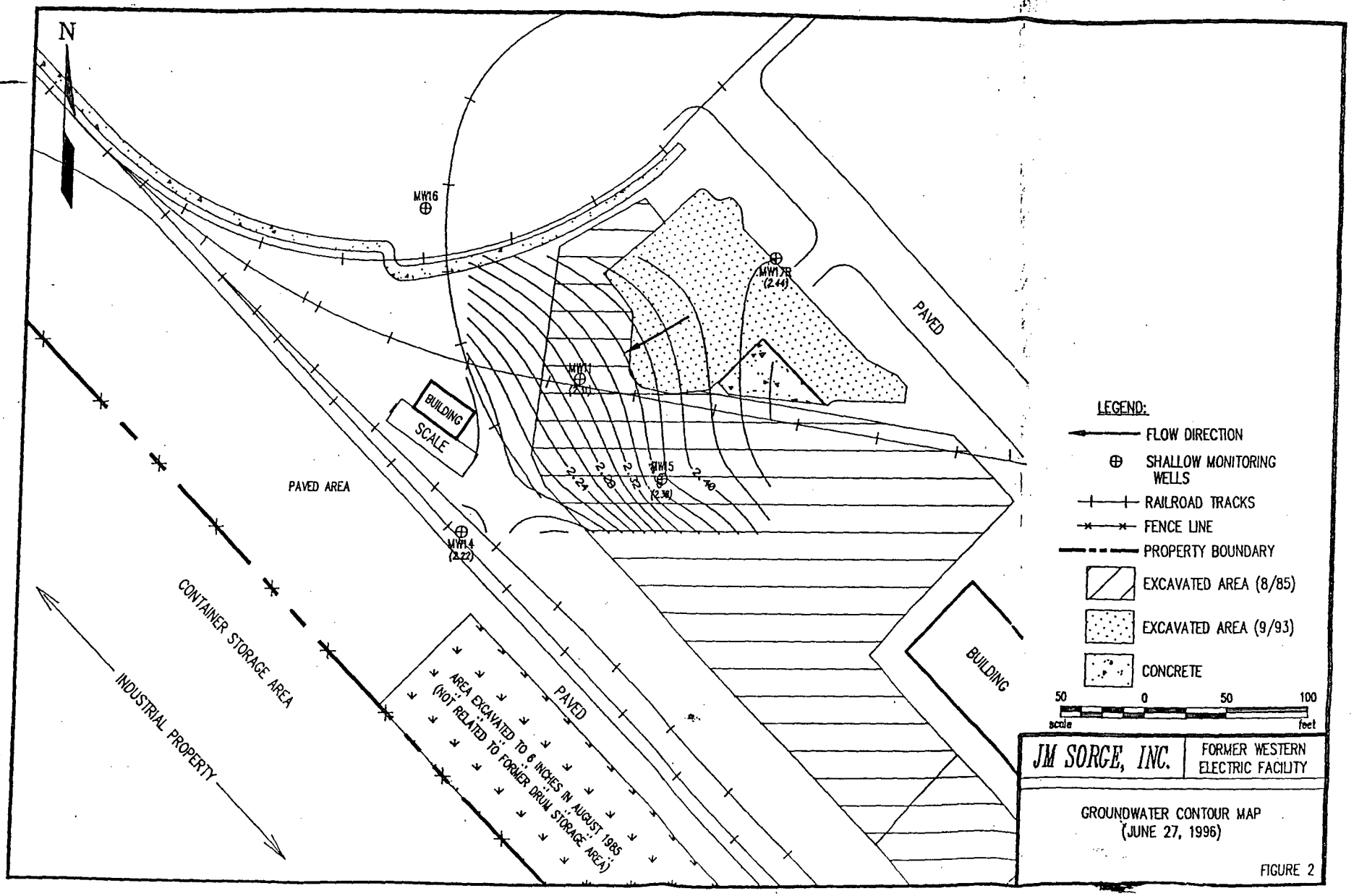
	PCE	TCE	1,2-DCE	VCE	TOTAL	TCA	DCA	TOTAL
Aug-95	11	27	380	17	**435**	4	16	**20**
Nov-95	8	18	270	3	**299**	3	8	**11**
Feb-96	5	12	180	5	**203**	7	12	**19**
Jun-96	10	25	330	28	**393**	16	31	**47**

Utilizing the Mann-Whitney U-Test between Data Set A and Data Set B, the following trends were identified in MW-14:

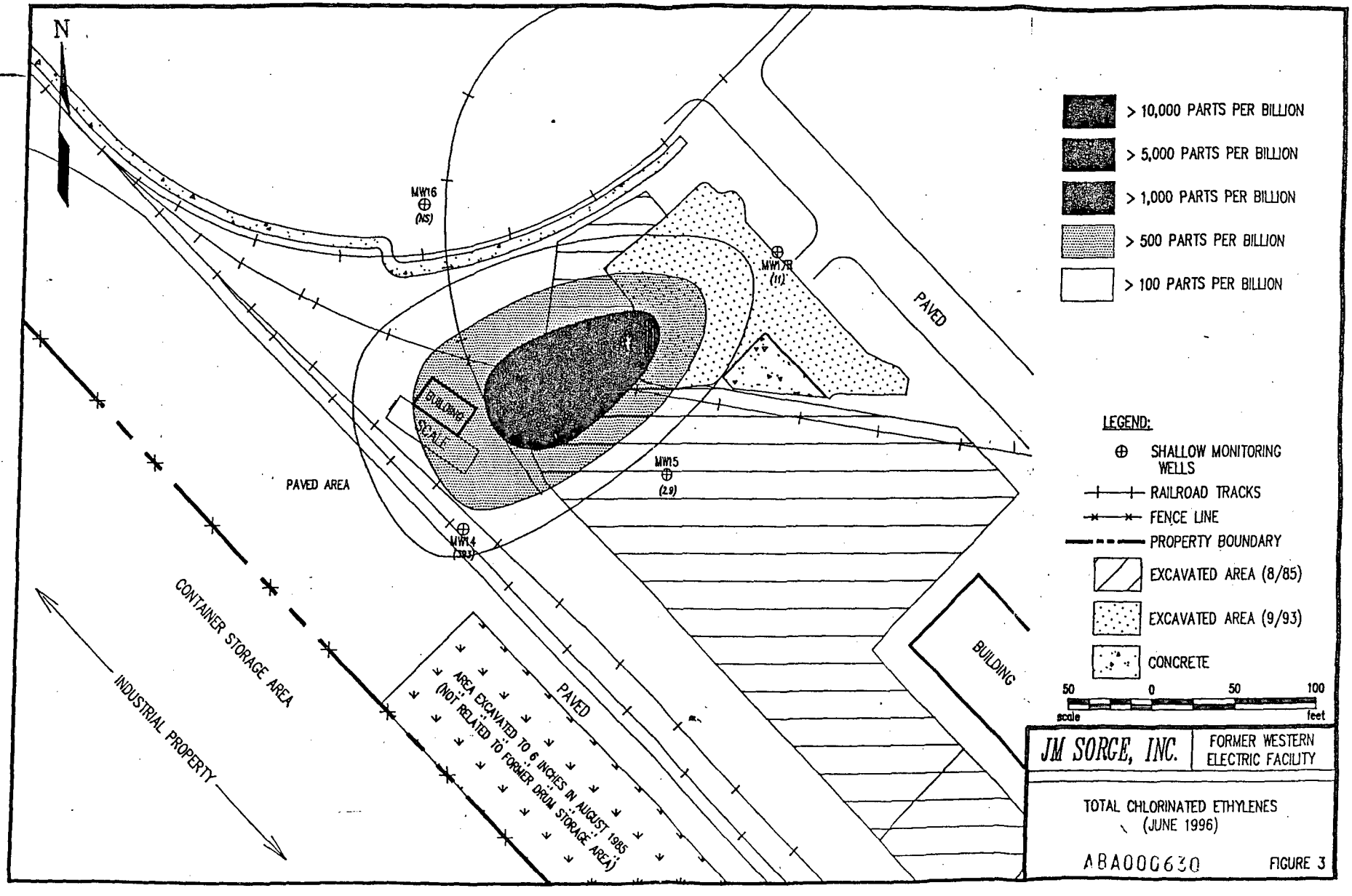
Concentrations are decreasing over time for all contaminants with 90% confidence. A "U" value of 0 was calculated for each specific contaminant.

Utilizing the Mann-Whitney U-Test between Data Set B and Data Set C, the following trends were identified in MW-14:

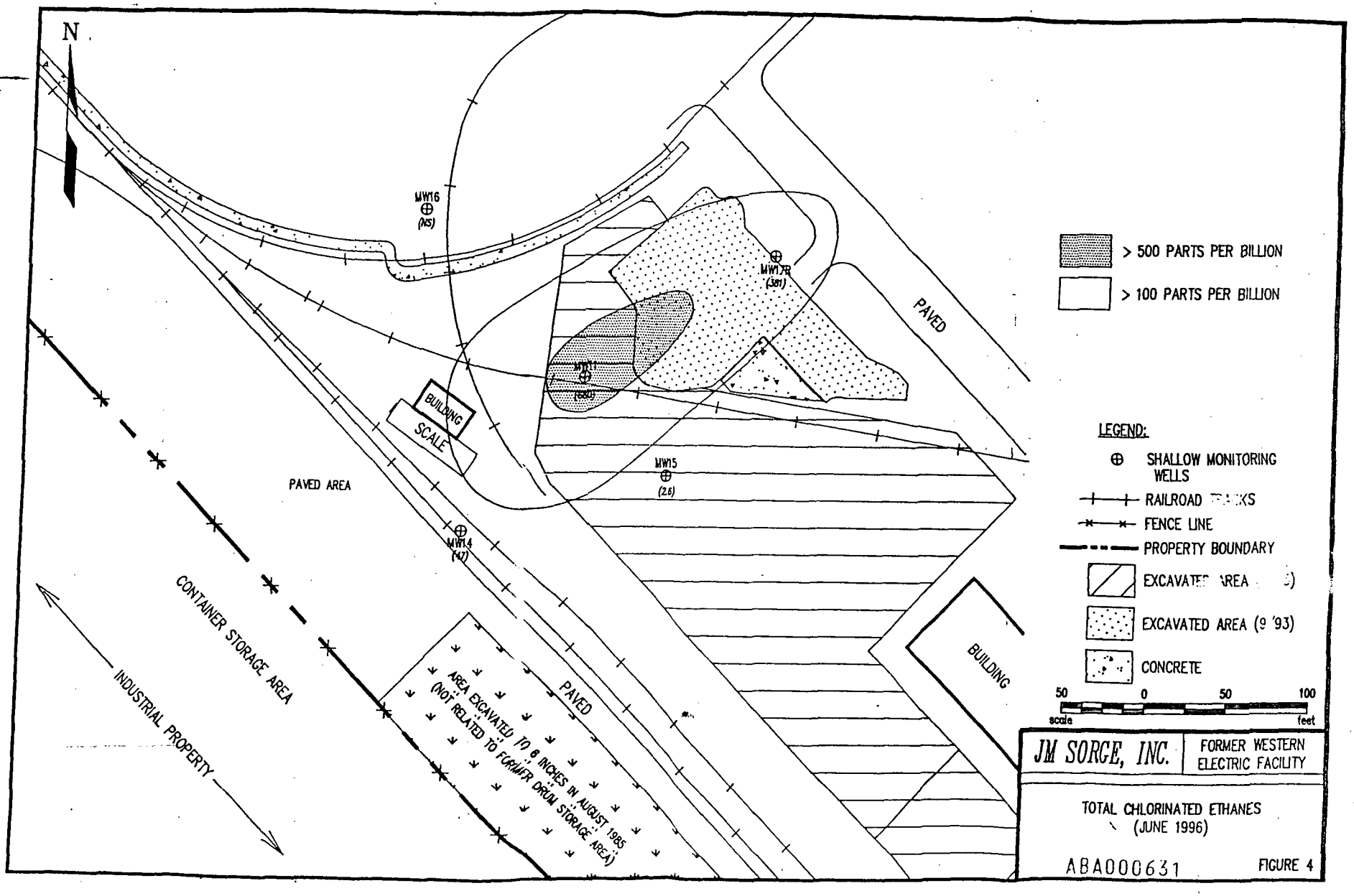
Contaminant concentrations for PCE, TCE, 1,2-DCE and total chlorinated ethylenes are decreasing with 90% confidence. Contaminant concentrations for VCE, TCA, DCA and total ethanes cannot be confidently concluded to be decreasing over time.


N
MW16
MW17R
(2.44)
MW11
(2.31)
MW15
(2.38)
2.24
2.28
2.32
2.36
MW14
(2.22)
BUILDING
SCALE
PAVED AREA
CONTAINER STORAGE AREA
INDUSTRIAL PROPERTY
AREA EXCAVATED TO 6 INCHES IN AUGUST 1985
(NOT RELATED TO FORMER DRUM STORAGE AREA)
PAVED
PAVED
BUILDING
LEGEND:
FLOW DIRECTION
SHALLOW MONITORING WELLS
RAILROAD TRACKS
FENCE LINE
PROPERTY BOUNDARY
EXCAVATED AREA (8/85)
EXCAVATED AREA (9/93)
CONCRETE
50 0 50 100
scale feet
JM SORGE, INC.
FORMER WESTERN ELECTRIC FACILITY
GROUNDWATER CONTOUR MAP
(JUNE 27, 1996)
FIGURE 2

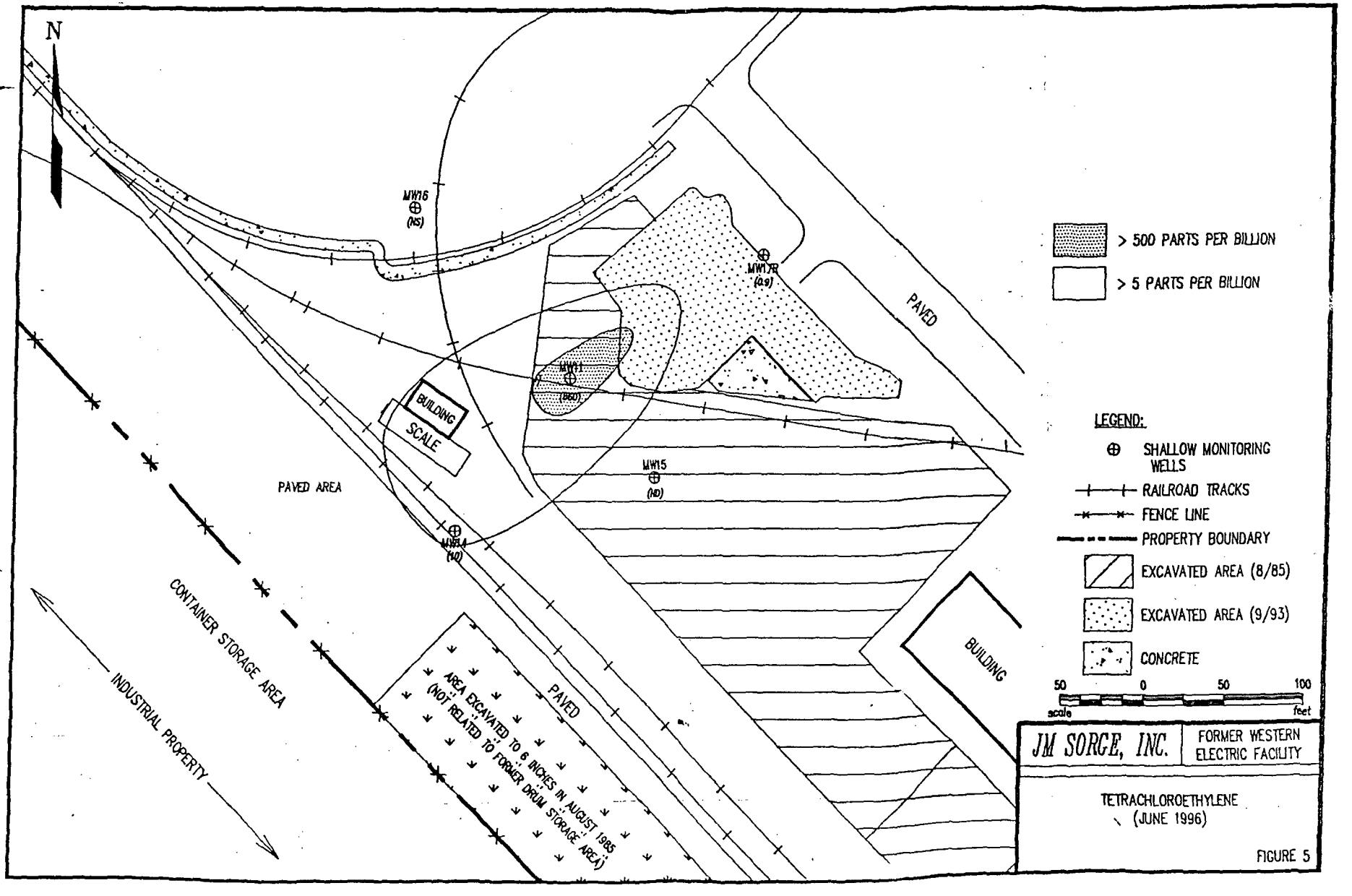
932630039


N
MW16
(NS)
MW17R
(11)
MW15
(2.9)
MW14
(39.3)
BUILDING
SCALE
PAVED AREA
CONTAINER STORAGE AREA
INDUSTRIAL PROPERTY
AREA EXCAVATED TO 6 INCHES IN AUGUST 1985
(NOT RELATED TO FORMER DRUM STORAGE AREA)
PAVED
PAVED
BUILDING
> 10,000 PARTS PER BILLION
> 5,000 PARTS PER BILLION
> 1,000 PARTS PER BILLION
> 500 PARTS PER BILLION
> 100 PARTS PER BILLION
LEGEND:
SHALLOW MONITORING WELLS
RAILROAD TRACKS
FENCE LINE
PROPERTY BOUNDARY
EXCAVATED AREA (8/85)
EXCAVATED AREA (9/93)
CONCRETE
50 0 50 100
scale feet
JM SORGE, INC.
FORMER WESTERN ELECTRIC FACILITY
TOTAL CHLORINATED ETHYLENES
(JUNE 1996)
ABA000630
FIGURE 3

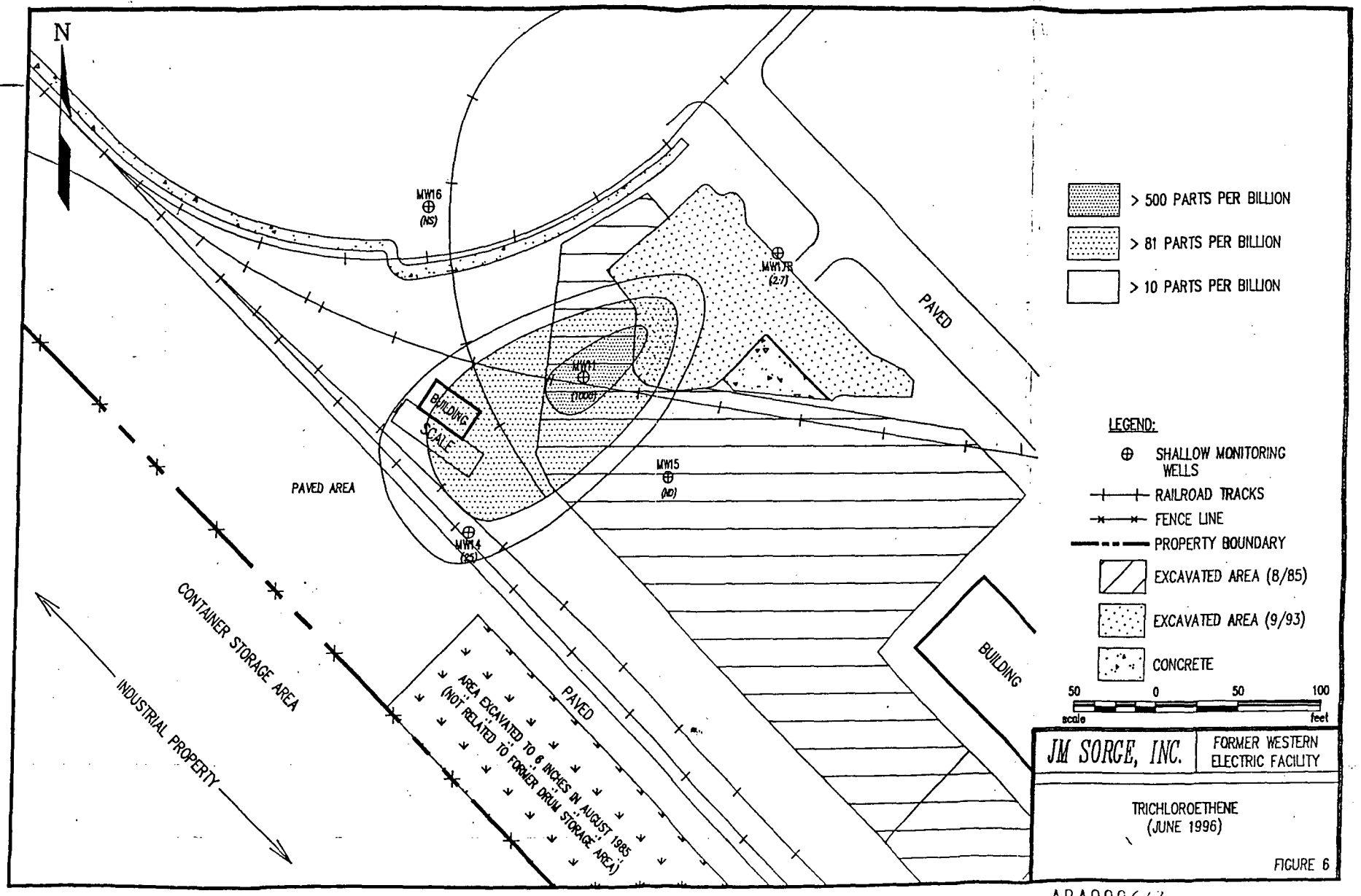
932630040


N
MW16
(NS)
MW17R
(381)
MW11
(640)
MW15
(2.6)
MW14
(47)
BUILDING
SCALE
PAVED AREA
CONTAINER STORAGE AREA
INDUSTRIAL PROPERTY
AREA EXCAVATED TO 6 INCHES IN AUGUST 1985
(NOT RELATED TO FORMER DRUM STORAGE AREA)
PAVED
PAVED
BUILDING
> 500 PARTS PER BILLION
> 100 PARTS PER BILLION
LEGEND:
SHALLOW MONITORING WELLS
RAILROAD TRACKS
FENCE LINE
PROPERTY BOUNDARY
EXCAVATED AREA
EXCAVATED AREA (9 '93)
CONCRETE
50 0 50 100
scale feet
JM SORGE, INC.
FORMER WESTERN ELECTRIC FACILITY
TOTAL CHLORINATED ETHANES
(JUNE 1996)
ABA000631
FIGURE 4

932630041

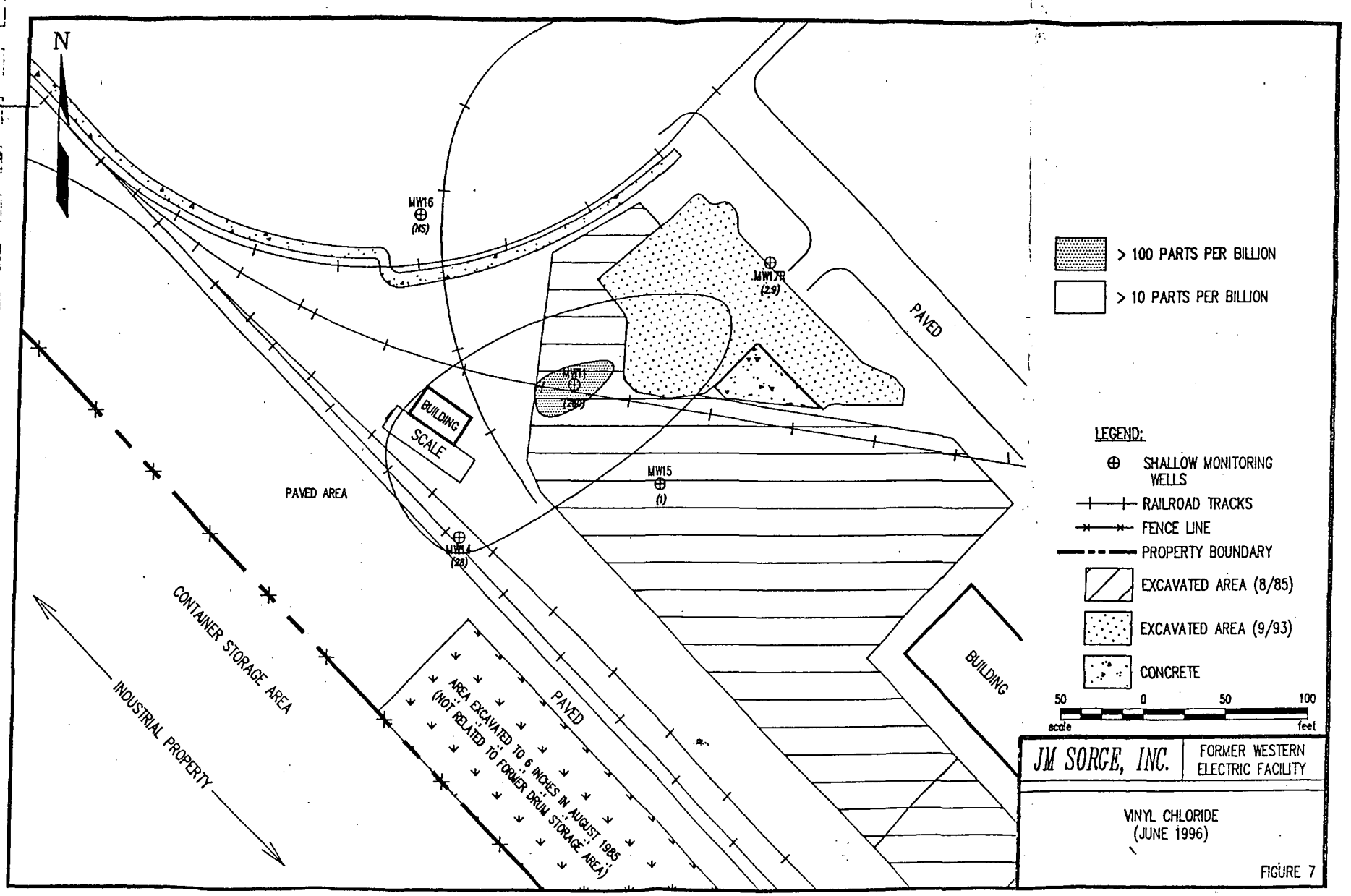


ABA000632

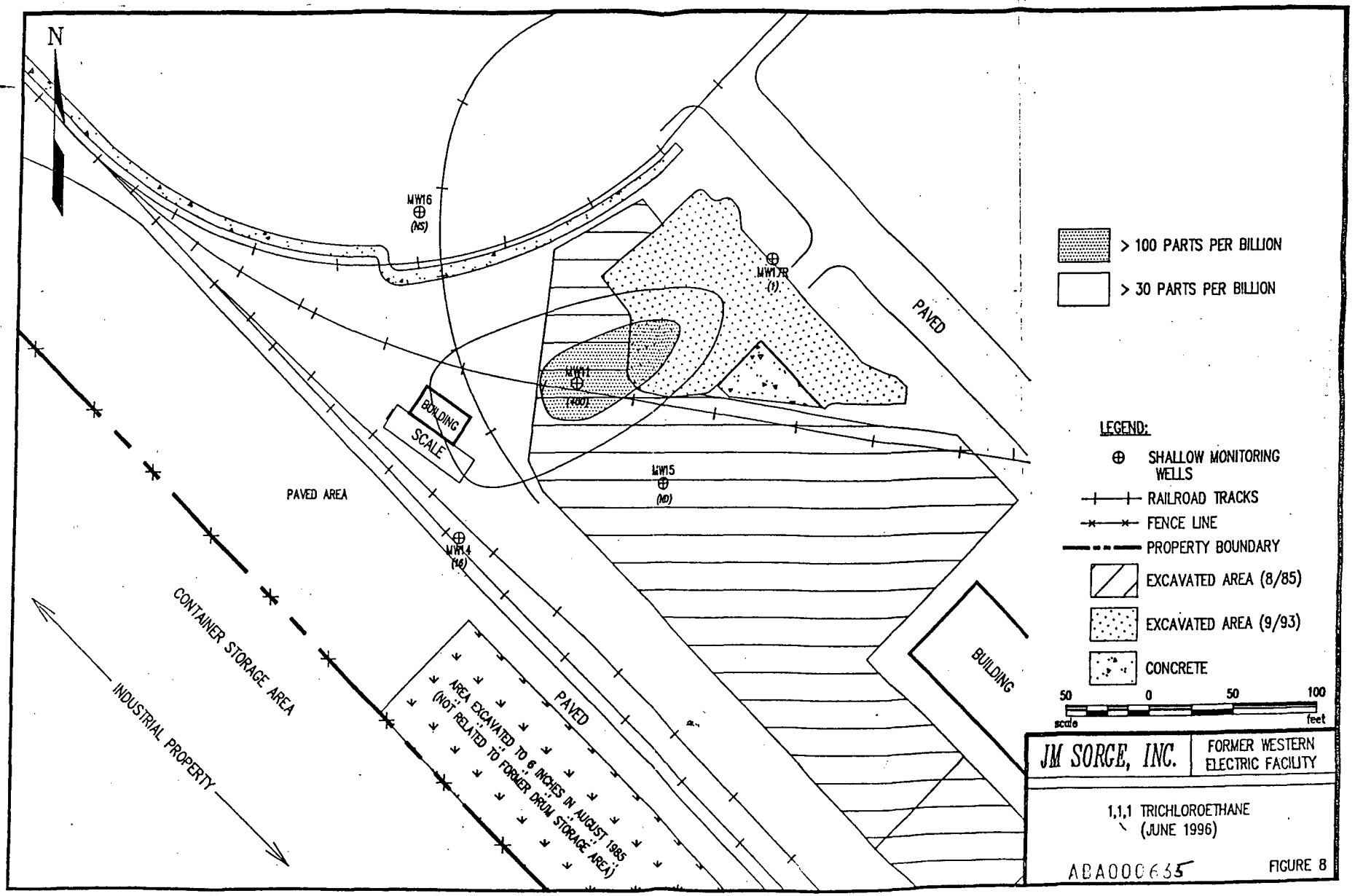


ABA000633

932630042



ABA000634 932630043


N
MW16
(NS)
MW17R
(1)
MW11
(400)
MW15
(ND)
MW14
(16)
BUILDING
SCALE
PAVED AREA
CONTAINER STORAGE AREA
INDUSTRIAL PROPERTY
AREA EXCAVATED TO 6 INCHES IN AUGUST 1985
(NOT RELATED TO FORMER DRUM STORAGE AREA)
PAVED
PAVED
BUILDING
> 100 PARTS PER BILLION
> 30 PARTS PER BILLION
LEGEND:
SHALLOW MONITORING WELLS
RAILROAD TRACKS
FENCE LINE
PROPERTY BOUNDARY
EXCAVATED AREA (8/85)
EXCAVATED AREA (9/93)
CONCRETE
50 0 50 100
scale feet
JM SORGE, INC.
FORMER WESTERN ELECTRIC FACILITY
1,1,1 TRICHLOROETHANE
(JUNE 1996)
ABA000635
FIGURE 8

932630044

C

932630045

LUCENT TECHNOLOGIES, INC.

TAB C

February 6, 1984 letter from AT&T (formerly Western Electric Co., Inc.) to NJDEP forwarding initial ECRA Notice Submission. Confirms certain corporate information and hazardous substances at site.

Rec'd 29 F__ 1984

34

AT&T
Technology Systems

R. B. BUTTERFIELD, JR.
General Manager
Kearny Works

100 Central Avenue
Kearny, N. J. 07032
201 465-4001

February 6, 1984

ECRA OFFICE
Division of Waste Management
New Jersey Department of Environmental Protection
CN-Ø28
Trenton, New Jersey Ø8625

Attention: Initial ECRA Notice Submission

Gentlemen:

Re: Initial Notice Required by the Interim Environmental Cleanup Responsibility Act Regulations, N.J.A.C. 7:13

Pursuant to the subject Regulations, we submit the enclosed written Notice of the decision to cease operations at the Kearny Works location of A.T.&T. Technologies, Inc., formerly Western Electric Co., Inc.

The original public notice to close was published prior to the passage of the Environmental Cleanup and Responsibility Act (ECRA). To comply with ECRA, a letter of notification was sent to Mr. Joe Schmidt of the Office of Regulatory Services on December 7, 1983. A copy is attached.

Kearny Works is a large location with diverse operations. The closure will proceed gradually over a period of several years. Some materials, whose disposal is proposed in the Notice, may ultimately remain on the site under the terms of sale for the property. Any environmental cleanup plan must therefore be flexible with respect to timing and details.

To the best of our knowledge, the attached Notice is a thorough and accurate representation.

Very truly yours,

R B Butterfield Jr.

Att.

WRITTEN NOTICE OF DECISION TO CLOSE OPERATIONS

FOR THE

KEARNY WORKS LOCATION

OF

A.T.&T. TECHNOLOGIES, INC.
(FORMERLY WESTERN ELECTRIC CO., INC.)

4. STORAGE FACILITIES

The site maps in Section 2 of this Notice have a vertical (alphabetical) grid index on the left hand side, and a horizontal (numerical) grid index along the top. The following paragraphs discuss storage facilities in a clockwise order of rotation beginning in the lower left corner of the first site map titled, "Site Plan - Bulk Storage and Transfer."

1. Building 25, Grid Index J-4, has 32 adjacent underground tanks. The tanks range in capacity from 500 gallons to 4,000 gallons. The tanks contained oils and paint thinners but were drained and filled with sand approximately 20 years ago. No action is therefore necessary.

2. A small amount of silt pumped from Powerhouse cooling water tunnels was examined for contaminants and deposited at Grid Index J-2 several years ago. A laboratory report on the silt is included in Section 16 of this Notice. The silt is environmentally innocuous, and no action is therefore necessary.

3. An outdoor storage yard for virgin materials and another for waste materials are located at Grid Index I-3. The materials are stored on impervious pavement, and no spills have occurred. See action proposed under Section 9 of this Notice, Decontamination, Decommission and Disposal, Procedure No. 1.

4. Four, 10,000 gallon, underground tanks are located south of Building 83 at Grid Index H-3. Three tanks contained No. 4 oil and were drained and filled with sand approximately 15 years ago, therefore no action is needed for these tanks. The fourth tank contains diesel oil. It is currently in use, well maintained and regularly gauged. No leakage is evident. See action proposed under Section 9, Procedure No. 2.

5. The 840,000 gallon, Powerhouse standby, No. 6 oil tank is at Grid Index G-3. The tank floor is a heavily reenforced, sixteen inch thick concrete slab on a piling grillage 3 ft., 10 in. on centers in both directions. The steel tank walls are entirely visible with no evidence of leakage. The tank is surrounded by a steel dike of adequate capacity to contain a complete rupture. The tank is well maintained and regularly gauged. See action proposed under Section 9, Procedure No. 1.

6. Building 85 basement, Grid Index E-1, has some slightly oily liquids in pits and dried, copper-bearing sludge on the floor. See action proposed under Section 9, Procedure No. 1.

7. The 20,000 gallon, Powerhouse, No. 6 oil day tank, Grid Index F-3, is in an underground vault and not used. There is no evidence of leakage. See action proposed in Section 9, Procedure No. 2.

8. The Garage, Grid Index E-7, has two underground 10,000 gallon gasoline tanks. The tanks are well maintained, regularly gauged and show no evidence of leakage. See action proposed in Section 9, Procedure No. 2.

9. There are two, above ground, 1,800 gallon, liquefied petroleum gas tanks at Grid Index E-8 and three more at Grid Index B-19. Any spills would instantly volatilize. See action proposed in Section 9, Procedure No. 2.

10. Raw materials and empty drums are stored on impervious pavement in an outside yard at Grid Index E-12. See action proposed in Section 9, Procedure No. 1.

11. Numerous above-ground tanks serve the plating operations and its associated Waste Treatment Plant, along with a conveyorized paint line washing machine in Building 185. Refer to Grid Index D-13. The entire train of tanks, piping, exhaust ductwork and pollution control equipment will be decontaminated as outlined in Section 9, Procedure No. 3.

12. Buildings 170 and 161, Grid Index I-15, were environmentally cleaned and demolished in 1981. No action is therefore necessary.

13. Building 171 has two, outside, above-ground, 1,000 gallon, anhydrous ammonia tanks and one, 6,000 galon, liquefied nitrogen tank at Grid Index E-17. Any spills would instantly vaporize. See action proposed in Section 9, Procedure No. 4.

14. Building 171 has a small heat sink oxidizing operation at Grid Index E-17 and a washing machine with cleaning tanks at Grid Index F-18. All are effluent-piped to the Waste Treatment Plant and will be decontaminated aong with Building 185 plating solutions as outlined in Section 9, Procedure No. 3.

15. Air conditioning is provided to a number of buildings via the circulations of chromated, chilled water generated in the Powerhouse, Grid Index E-3. See action proposed in Section 9, Procedure No. 3.

16. Prior to 1963, a large coal pile was maintained in the area defined by Grid Indices F-H-2-3. The weight of the coal probably produced soil settlement, and there may be a thin layer of coal fines under the current gravel surface. this is environmentally harmless, therefore no action is required.

Refer also to Section 6 of this Notice for a inventory of numerous small quantities of hazardous materials which fall within the purview of the Cleanup Regulations.

6. HAZARDOUS SUBSTANCE INVENTORY

1. The following operations have small quantities of the substances listed:

Item	Location*	Shop	Material
1. Degreaser, Open Tank, Vapor	71-7,S-21	Jack Shop	1,1,1 Trichloroethan
2. Mass Solderer	71-6,S-23	Back Plane	Flux
3. Degreaser, Open Tank, Vapor	71-6,S-22	Back Plane	Chlorofluorocarbon
4. Degreaser Open Tank, Cold	71-4,R-17E	Tool Const.	Varsol
Degreaser Open Tank, Cold	71-4,R-17W	Tool Const.	Varsol
5. Mass Solder & Cleaner	71-2,X-20	K.E.	Chlorofluorocarbon
6. Barrier Coating	71-2,P-25	Mini Relay	Chlorofluorocarbon
Barrier Coating Cleaning	71-2,P-25	Mini Relay	Chlorofluorocarbon
7. Mass Solderer & Cleaner	71-1,X-26	TB-40	Perchloroethylene
8. Finger Cleaning	71-1,X-26	TB-40	Perchloroethylene
9. Finger Cleaning	71-1,X-23	TB-40	Perchloroethylene
10. Finger Cleaning	71-1,X-18	Model Shop	Perchloroethylene
11. Lacquer Spray	73-1S,C-10	TB-20	Lacquer and Thinner
12. Mass Solderer & Aqu. Clean.	73-1S,D-10	TB-20	Flux and Cleaner
13. Finger Cleaning	73-1S,D-10	TB-20	Perchloroethylene
14. Coil Varnish Tank 1, East	73-1 NE	Coil	Water Reducible Varn:
2	73-1 NE	Coil	Water Reducible Varni
3	73-1 NE	Coil	Water Reducible Varni
4, West	73-1 NE	Coil	Water Reducible Varni
16. Coil Varnish Autosoak	73-1 NE	Coil	Water Reducible Varni
17. Coil Epoxy Degreaser	73-1 NE	Coil	Chlorofluorocarbon
20. Consruction Paint Spray	85-1	Const.	Paints
21. Cross Bar Degreaser	171-S	Piece Part	Trichloroethylene
22. Spray Booths South	185-1S	Met.Fin.	Paints and Sludge
23. Spray Booths North	185-1N	Met.Fin.	Paints and Sludge
24. Degreaser,Open Tank,Cold,So.	Garage	Garage	Varsol
Degreaser,Open Tank,Cold,W.	Garage	Garage	Varsol

See Decontamination, Decommission and Disposal actions outlined in Section 9 of th Notice, Procedure No. 5.

* Building-Floor-Column Number

2. The second map in Section 2 of this Notice locates all large oil or P.C.B.filled transformers on the premises as well as P.C.B.'s in storage. It is expected that the 11, P.C.B. filled, functioning transformers and the mineral oil filled transformers will be sold intact with the property. See Section 9, Procedure No. 1, regarding disposal of the other P.C.B.'s in storage in Building 25 at Grid Index K-3. PCB

3. In addition to items in 1 and 2 above and the storage facilities listed in Section 4 of this Notice, almost every shop has small varying quantities of of general purpose solvents, inks, etc. An inventory of these and laboratory supply materials would be difficult to get and would be valid only for a very brief period. See Section 9, Procedure No. 5, for an assignment of responsibilty for the collection and disposal of these materials as individual shops are shut down or transferred.

4. Asbestos is bonded into old piping, boiler insulation, friction materials and, and, in very small amounts, in some floor tile. It is assumed that boilers, piping and functioning insulation will be sold intact with the buildings. See Section 9, Procedure No. 1, covering residual loose floor tile and friction materials.

5. A small amount of groundskeeping materials, fertilizer, pesticides, etc., is currently stored in Building 23, Grid Index I-5. This material is being depleted, and the groundskeeping function will be contracted prior to the final plant shutdown. No other action will therefore be required.

6. The central Powerhouse air conditioning plant, Grid Index E-3, has approximately 10,000 pounds of volatile refrigerant in closed systems. See Section 9, Procedure No. 4, for action if this equipment is not sold intact with the property.

No hazardous materials will remain on the site except those required with the sale of the property.

D

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LUCENT TECHNOLOGIES, INC.

TAB D

November 1984 AT&T Technologies, Inc. Environmental Cleanup Plan for Kearny Works - Plating Shops and Waste Treatment Plant. Confirms certain hazardous substances at site.

June 1985 Amended Environmental Clean-Up Plan. Confirms certain hazardous substances in site soil and storm water catch basins.

RCVD 12-6-84

ENVIRONMENTAL CLEANUP PLAN
AT&T TECHNOLOGIES, INC.
(Formerly Western Electric)
KEARNY WORKS - PLATING SHOPS
AND WASTE TREATMENT PLANT

ERT Document Number D367-100B/4811A

November 1984

Prepared for

AT&T Technologies, Inc.

Prepared by

Environmental Research & Technology, Inc.
601 Grant Street Pittsburgh, Pennsylvania 15219

932630056

LIST OF FIGURES

Figure No.		Page
2-1	Waste Treatment Plant Flow Schematic	7

932630057

1.0 INTRODUCTION

AT&T Technologies Inc. (formerly Western Electric) is in the process of decommissioning and decontaminating its plant located at 100 Central Avenue in Kearny, New Jersey. It is intended that the facility will be sold. The purpose of this document is to describe the proposed decontamination procedures for the Plating Shop (Building 185), miscellaneous equipment areas in Building 171, and the Waste Treatment Plant (Building 186).

AT&T is currently exploring an agreement with a prospective occupant which may eventually operate Building 185 as a plating shop. The plating operations proposed by the occupant are slightly different than the operations currently used by AT&T; however, the existing equipment can be used by the new plating operation with minor or no modifications. If the existing equipment can be cleaned and left in place, its economic value is substantially increased.

The decontamination work plan described in this document takes into consideration the benefits of cleaning the equipment in place or removing the equipment, in conjunction with the overall economic value associated with either decontamination option. The level to which the plant will be decontaminated is one where visible levels of deposits will be removed and general manufacturing areas will be cleaned as necessary. The main objectives of the decontamination plan are to clean the equipment and work areas to avoid possible adverse effects from mixing incompatible chemicals and to avoid possible health hazards to construction/maintenance workers that may be working on the equipment during future plant remodeling or retrofitting.

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2.0 PLANT DESCRIPTION

2.1 Plating Shop (Building 185)

2.1.1 General Description

There are seven different plating lines as shown in Table 2-1. The basic plating operation consists of sequentially dipping the metal parts to be plated into the various tanks that contain plating solutions and water rinses. A typical process line consists of caustic cleaning, acid pickle dipping, metal plating and drying, generally with water rinse baths in between each process step. Many of the solutions are heated to accelerate the reactions taking place in the bath. The plating operation housed in this building covers an area on the second floor of approximately 50 feet by 600 feet.

2.1.2 Ductwork

Tanks that produce harmful gases or strong odors are vented to one of three separate duct systems: cyanide, chrome or acid/alkali. Each vented tank has an air intake hood mounted directly above it in order to direct the vapors away from plant personnel. The fumes are pulled through the ductwork by centrifugal fans that are mounted on a second story platform to the west of Building 185. There are a total of twelve fans each venting to a separate stack. Seven vent the acid/alkali ducts; two vent the chrome ducts; and three vent the cyanide ducts. A total of nine liquid contact scrubbers are located in the acid/alkali and chrome lines immediately upstream of the fans. The cyanide duct systems do not have any scrubbers. The material of construction for the vent hoods, duct work, scrubbers, fans and stacks, is fiberglass reinforced plastic. Polypropylene tellerette packing material is used as the contact media in the scrubbers.

2.1.3 Equipment

Three plating lines are completely automatic: Zinc 1, Zinc 2, and Nickel-Chrome. The Horizontal Barrel line is also automatic and the other three lines (Still and Oblique, Acid Dip and Precious Metal)

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TABLE 2-1

PLATING LINES

*Precious Metals

Still and Oblique

Acid Dip and Clean

Horizontal Barrel

Automatic Zinc 2

Automatic Zinc 1

Automatic Nickel-Chrome

*All Precious Metals tanks and hoods have been removed and shipped to another plant.

NOTE: Listed in order from north to south.

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are completely manual. The automatic lines have a continuous overhead conveyance system that dips each item being plated into the proper bath for a specified time period and then automatically advances the item to the next rinse or bath.

There is a great deal of electrical equipment in the plating area that powers both the electroplating equipment and heaters. Most of the acid and caustic baths are heated with steam or submersion heaters. Some tanks also have small pumps that circulate the plating fluids through filters to remove the solids generated during the plating process.

2.1.4 Drainage Pans and Lines

There are seven different gravity drain lines from the plating shop that feed the waste treatment plant. Four are in a concentrated service and three are in a dilute service. A listing of these lines is shown in Table 2-2. The drainage lines are primarily used to drain spent process fluids from the plating tanks but also serve as general area drains. The general area drains are fed by a series of pans that are located beneath the plating shop which are used to collect any spills that may occur in the shop. Pans that are below tanks containing cyanide solutions drain to the concentrated cyanide drain line and the rest of the pans drain to the concentrated chrome drain line.

2.2 Waste Treatment Plant (Building 186)

2.2.1 General Description

The waste treatment plant takes the liquid wastes generated by the plating operation and, after a series of treatment and settling steps, discharges the treated liquid effluent into the Passaic River. The water is also reused in the process when there is sufficient demand.

TABLE 2-2

PLATING AREA DRAINAGE LINES

Concentrated Chrome

Dilute Chrome

Concentrated Cyanide

Dilute Cyanide

Concentrated Acid

Concentrated Alkali

Dilute Acid/Alkali

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2.2.2 Equipment

The three plating operation effluents (chrome, cyanide and acid/alkali) are initially handled separately and are individually treated prior to mixing for the settling and final pH correction steps. Dilute wastes, fed from the scrubber hold tanks and dilute rinse process tanks, are mixed with a metered amount of concentrated wastes and are then treated. Effluents from these individual treatment steps are rapid mixed and sent to the clarifier where the solids are removed by gravity settling. The clarified effluent then undergoes a final pH correction and is discharged as necessary to the Passaic River. The thickened sludge is sent to a vacuum precoat filter where the solids are removed for disposal in a secure landfill. Figure 2-1 is a schematic of the process flows for the Waste Treatment Plant.

2.3 Component Manufacturing (Building 171)

This building is primarily used for metal parts manufacturing; however, three areas will be decontaminated as part of this work plan.

2.3.1 Trichloroethylene Degreaser

This unit is a three stage degreaser used for parts cleaning and is situated in an area approximately 50 feet by 50 feet on the south side of the building. The unit is equipped with a solvent recovery still and two vapor carbon adsorption units. Two carbon units are utilized so that the degreaser can be operational while one of the units is being regenerated. The degreaser is a totally enclosed unit, therefore there are no trichloroethylene feed pipes associated with this system that will need to be decontaminated.

2.3.2 Aluminum Etch and Clean Area

The aluminum etch and clean machines were both located on the north side of the building and covered an area of approximately 80 feet by 40 feet. Both machines have been dismantled and sent to another AT&T plant. All that remains of these operations are two 3"

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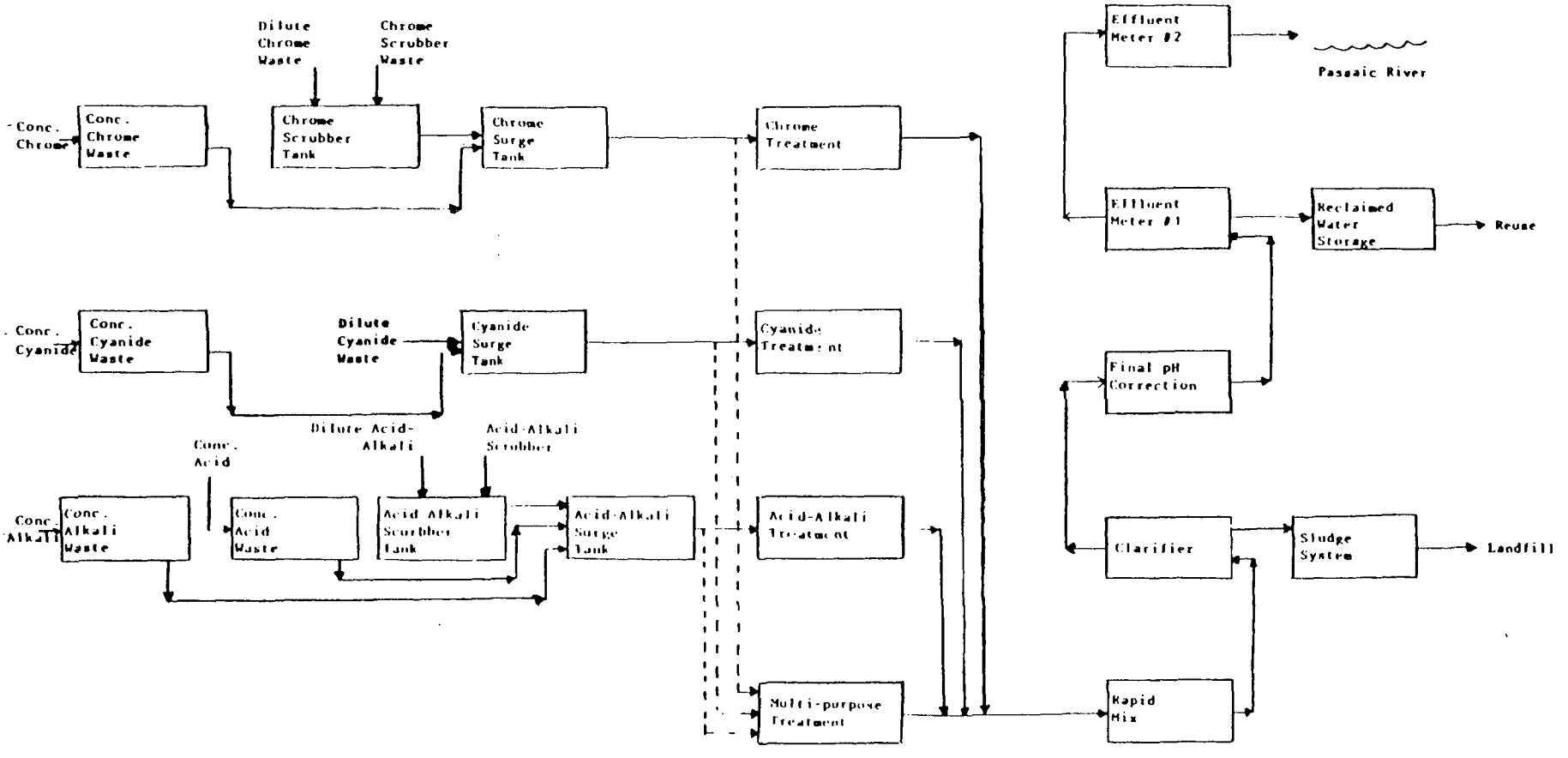

Figure 2-1 Waste Treatment Plant Flow Schematic

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PVC plastic pipes, one which formerly transferred dilute chrome wastes and the other transferred acid/alkali wastes. These pipes fed into the main carbon steel saran lined drain pipes which travel underground and eventually feed the waste treatment plant in Building 186 after tying into the plating operation drainage lines in Building 185.

2.3.3 Heat Sink Room

The heat sink operation formerly covered an area of approximately 60 feet by 30 feet on the west side of the building. This operation has already been dismantled and shipped to another plant. The only remnants of this operation are two 2" fiberglass reinforced plastic pipes that carried dilute chrome and acid/alkali wastes to the two carbon steel saran lined pipes that feed the waste treatment plant as described in Section 2.3.2.

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3.0 WORK PLAN GENERAL DISCUSSION

The work plan presented in this document is for the decomissioning and decontamination of the plating shop in Building 185, miscellaneous equipment and process areas in Building 171 and the waste treatment plant in Building 186. Three issues that were investigated to formulate the criteria for selecting the decontamination plans for each building are listed below.

1. Investigate the current condition and establish the types and level of contaminants for the equipment and areas to be decontaminated.

2. Assess the possible functions of the waste treatment plant during the decontamination of Buildings 171 and 185.

3. Determine the extent of cleaning required to eliminate any health and safety risks.

Each of these issues are discussed in Sections 3.1, 3.2 and 3.3 respectively. The detailed plans for decontaminating the process areas associated with Buildings 185, 171 and 186 are discussed in Sections 4.0, 5.0 and 6.0.

3.1 Equipment Condition and Ductwork Investigation

The equipment and process areas in Buildings 171, 185 and 186 were investigated to determine the level of hazardous constituents present and the physical condition of the equipment and process areas. The investigation consisted of a visual inspection of all equipment and process areas. Both a visual inspection and a sampling and analysis study was performed on the air duct systems in the plating shop (Building 185).

The visual inspection of the process areas revealed that the general maintenance and "housekeeping" of the areas are in good order. The trichloroethylene degreaser area, located in Building 171,

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is very clean with only minor amounts of metal fragments and normal shop dust found in the area. Also located in Building 171, are the heat sink room, caustic clean machine and aluminum etch machine areas. This equipment has already been removed and contamination found in these areas consists of minor amounts of scale, caustic salts and normal shop dust.

The general working areas in the waste treatment plant (Building 186) are in exceptionally clean condition. The only area with any noticeable contamination is a waste chemical staging area where minor amounts of chemical salts are present upon the floor.

The general working areas in the plating shop (Building 185) appear to be in good condition. A general maintenance clean-up would be required to remove spare parts and dust which is scattered throughout the working areas.

Access to piping in the plating shop was very limited; however a visual inspection of some pipework revealed deposits of chemical salts and scale. Information received from plant personnel revealed that some residual salts have been found in the plating shop drainage pipes in the past. Therefore, it is assumed that most of the piping will contain minor amount of scale and chemical salt deposits.

The plating shop drainage pans are contaminated with deposits of salts and residues from spilled chemicals. Metal parts, rags and miscellaneous maintenance items (e.g. used welding rods) are also present in the drainage pans.

The visual inspection of the plating shop hoods and air ducts established that approximately seventy five percent of the plating tank slotted air intake hoods mounted on the tanks and five percent to ten percent of the ducts are heavily corroded or are in need of major repairs. Most of the ductwork contains a fine film of normal atmospheric dust. Some sections of the air ducts contain powdery deposits believed to be dust carried over into the ducts during chemical mixing in the plating baths. Other sections contain residues that appear to be salts that have condensed and precipitated out of

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the fumes from the plating and rinse baths. A detailed inspection log of the plating shop air duct systems is provided in Appendix A. The analytical results for the plating shop air duct samples are summarized on Table 3-1. It should be noted that samples were obtained from areas where visual precipitate other than atmospheric dust was found. The ductwork contains residues generally comprised of chromium or lead compounds at concentrations up to about 4000 and 5000 ppm respectively. Some selected deposits show up to about 50% chromium or lead salts. These areas can be distinguished visually by the color and character of the deposit.

3.2 Waste Treatment Plant Function During Site Decontamination

After a careful review of the waste treatment plant operations it was deemed economically feasible to use the waste treatment plant to treat the washwaters from the decontamination operations. The normal function of the waste treatment plant is to neutralize spent acids and alkalies, destroy cyanides, reduce hexavalent chrome, and remove heavy metals from the spent plating solutions and to remove the treatment sludge containing the metals. The treated clean liquid from the waste treatment plant is neutralized and discharged to the Passaic River. The only constraint in treating the washwater used in the cleanup operation is that soaps and detergents which contain chelating agents cannot be used because these agents will combine with the metal ions and prevent the metals from being removed in the waste treatment plant.

3.3 Cleaning Required to Minimize Future Health and Safety Risks

The goal of the decontamination is to minimize the health and safety risks to future users of the buildings through contact with hazardous materials. Decontamination will be accomplished either by removing major chemical deposits by cleaning, completely removing and properly disposing of contaminated items or by permanently sealing contaminated items in place to prevent future use. Where appropriate, the level of cleaniness will be determined by visual inspection. In some cases, analytical testing will also be performed to insure that the major chemical deposits have been removed from the ducts, pipes

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and equipment. Decontamination will be used: (1) to minimize the possibility of accidental explosion or sudden toxic gas releases from future operations using chemicals incompatable with residues left by AT&T; and (2) to minimize health hazards to construction workers (that may be removing or replacing different portions of the existing equipment) resulting from contact with hazardous residues left by AT&T.

3.4 Summary of Work Plan Criteria

The criteria established to select the appropriate means for decontamination of the plating shop, miscellaneous equipment in Building 171 and the waste treatment plant are:

1. current condition of the equipment,

2. capability of available cleaning methods to reduce future hazards to a safe level, and

3. the benefits of in-situ cleaning of the equipment versus complete removal and disposal of the equipment.

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TABLE 3-1

RESULTS OF ANALYSES PERFORMED ON SAMPLES TAKEN FROM THE AT&T PLATING SHOP AIR DUCTS

Sample #	Plating Line	Vent System	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	CN
1	HOR BAR	A/A	-	-	-	0.37	-	-	-	-	ND
2	HOR BAR	A/A	-	-	-	0.12	-	-	-	-	ND
2A	HOR BAR	A/A (Hood)	-	-	-	0.05	-	-	-	-	ND
3	HOR BAR	A/A	T	ND	ND	0.12	22.0	ND	ND	ND	ND
4	HOR BAR	CN	-	-	-	0.09	-	-	-	-	ND
5	ACID DIP	CN	ND	ND	ND	0.10	0.04	T	ND	0.02	POS
6	ACID DIP	A/A	T	ND	0.01	0.10	0.14	ND	T	0.05	ND
7	ACID DIP	CR	ND	ND	ND	50.1	0.35	T	ND	0.02	ND
8	ST & OB	A/A	-	-	-	-	58.0	-	-	-	ND
9	ST & OB	CN	-	-	-	-	-	-	-	-	ND
10	ST & OB	CN	-	-	-	-	-	-	-	-	ND
12	ST & OB	A/A	-	-	-	-	0.48	-	-	-	ND
13	ST & OB	A/A	ND	ND	ND	0.08	0.02	T	ND	ND	ND
14	HOR BAR	CN (Hood)	-	-	-	-	-	-	-	-	POS
16	PM	CN	-	-	-	-	-	-	-	ND	POS
17	PM	CN (Hood)	-	-	-	-	-	-	-	ND	POS
18	PM	CN (Hood)	-	-	-	-	-	-	-	0.04	POS
19	PM	CN	-	-	-	-	-	-	-	ND	ND
20	PM	CN	ND	ND	ND	0.12	0.05	T	ND	ND	POS
20A	PM	CN(Fan)	ND	ND	ND	0.19	0.33	T	ND	ND	ND
21	PM	A/A	-	-	-	-	-	-	-	ND	ND
22	PM	A/A	-	-	-	-	-	-	-	0.11	ND
30	N/C	A/A	-	-	-	0.19	-	-	-	-	-
31	N/C	A/A	-	-	-	0.03	-	-	-	-	-
32	N/C	A/A(Hood)	-	-	-	0.03	-	-	-	-	-
33	N/C	A/A(Hood)	-	-	-	0.20	-	-	-	-	-
35	N/C	CR	-	-	-	40.4	-	-	-	-	-
38	N/C	A/A	-	-	-	0.10	-	-	-	-	-
39	N/C	A/A	ND	ND	ND	0.39	0.04	ND	T	ND	ND
40	Z1	CN	-	-	-	-	-	-	-	-	ND
41	Z2	CN	-	-	-	-	-	-	-	-	ND
42	Z2	A/A(Hood)	-	-	-	-	-	-	-	-	ND
43	Z2	A/A(Hood)	-	-	-	-	-	-	-	-	ND
44	Z2	A/A	ND	ND	ND	0.01	ND	T	ND	ND	ND
45	N/C	CR(Scrub)	ND	ND	ND	10.1	0.04	T	T	ND	ND
46	N/C	A/A(Scrub)	ND	ND	ND	0.25	0.11	ND	ND	ND	ND

Note: All numerical results are in weight percentages.

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TABLE 3-1 (Cont'd)

EXPLANATION OF ABBREVIATIONS

PLATING LINES

PM	Precious Metals
ST & OB	Still and Oblique
ACID DIP	Acid Dip and Clean
HOR BAR	Horizontal Barrel
Z1	Auto Zinc 1
Z2	Auto Zinc 2
N/C	Auto Nickel/Chrome

VENT SYSTEMS

A/A	Acid Alkali
CN	Cyanide
CR	Chrome
(Hood)	Sample Taken from Hood on the Noted Vent System
(Fan)	Sample Taken from Fan on the Noted Vent System
(Scrub)	Sample Taken from Scrubber on the Noted Vent System

TESTS RUN

As	Arsenic
Ba	Barium
Cd	Cadmium
Cr	Chromium
Pb	Lead
Hg	Mercury
Se	Selenium
Ag	Silver
Cn	Cyanide

RESULTS

ND	Tested for but not detected or below the detection limit
T	Tested for and only traces found
-	Not tested for
POS	Cyanide concentrations were not tested for, only its presence is reported, this indicates a concentration of greater than or equal to 0.2 ppm

NOTES:
- All numerical results are in weight percentages. (Weight % $x10^4$ = ppm)
- Breaks in sample numerical sequences occur because samples were not taken at some inspection locations and an intentional break was left between samples 22 and 30.

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4.0 PLATING SHOP DECONTAMINATION

4.1 Ductwork

Depending upon the condition of the individual area of ductwork, the section will be either cleaned in place or removed and disposed of. An inventory of the vent ducts has revealed that there is a total of almost 3000 feet of duct work that will have to be cleaned or removed. The ductwork was evaluated on both structural integrity as well as the economic feasibility of in place cleaning. Based on both an internal and external examination, it is estimated that only five to ten percent of the current ductwork will have to be removed and disposed of. In particular it is known that the Chrome vent on the Nickel-Chrome plating line is in poor condition and will have to be removed. There are also some areas of the Cyanide vent in this area that have a resinous deposit and it is not known if cleaning will be economically feasible. It is also estimated that as much as seventy-five percent of the existing tank vent hoods will have to be removed and disposed of because of their severe degradation or encrustation.

It is believed that the remainder of the ductwork and hoods can be easily cleaned in place using a combination of low pressure steam and high pressure water. This washwater would be directed to the plating and processing tanks so that it could easily be fed to the waste treatment plant for processing.

The scrubber packing material will be removed, tested, and shipped to a secure landfill if necessary and the scrubber vessels will be cleaned with the above mentioned steam/water combination. This wash water will gravity drain to the waste treatment plant for processing by way of the scrubber liquor return lines. Based upon previous visual observations, it is anticipated that the fans and stacks will not have to be cleaned.

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4.2 Equipment

The plating line conveyors and racks will be cleaned by hand or with a water and steam spray, and the resulting spent cleaning solutions will be directed towards the drainage pans. Materials contaminated during the plating operation, such as filter cartridges, will be removed and disposed of at a secure landfill such as the CECOS facility in Niagara Falls, New York, while equipment such as the filter housings, filter feed pumps and bath submersion heaters will be cleaned in place with the cleaning fluids being processed in the waste treatment plant.

Before the tanks can be cleaned they must be emptied. It is estimated that the tanks can be emptied in about two months and the contents can be properly handled by the waste treatment plant. The emptying of the tanks will be completed prior to the start of the decontamination work. The bulk of the deposits on the plating tanks will be removed by hand and properly disposed of off site at a secure landfill and this cleaning will be followed by a water/steam cleaning. The tanks will be thoroughly cleaned inside and out with the spent cleaning liquid being directed to the the waste treatment plant.

4.3 General Area

The entire second floor of Building 185 where the plating operation is housed will first get a thorough janitorial type cleaning to remove any dust, dirt or debris that may have accumulated. This general cleaning will be followed by a low pressure water wash of the structure and all equipment approximately ten to twelve feet up from the floor level. This wash water will be directed towards the drainage pans on a metered basis so that it can be processed in the waste treatment plant. Special care will be taken to prevent damage to electrical equipment by isolating the equipment with plastic. All electrical equipment will be carefully cleaned by hand as necessary.

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In addition to the second floor cleanup there are a few areas that will need to be decontaminated on the first floor due to leakage from the pan and tank drain lines. These areas will be cleaned on an as needed basis with the general methods being the same as those applied to the plating area.

4.4 Drainage Pans and Lines

An oil absorbent will be spread on the pans and then the pans will be broom cleaned prior to the start the rest of the cleaning activities in the plating shop. This will remove all of the oil, dirt and debris that has accumulated since the last general cleaning and reduce the possibility of plugging the pan drain lines. After all of the other decontamination work has been completed in the plating shop, the drain pans will be thoroughly cleaned using a steam/water combination. These and all fluids contaminated in this area during cleaning will be processed in the waste treatment plant.

After the pans have been cleaned, work will begin on the drain lines that feed the waste treatment plant. These pipes will be cleaned by using repeated steam/water cleanings until a thorough visual examination verifies the cleanliness of the pipes. Also, line moles or pigs may be used with a high pressure water driver if residual scale becomes extremely difficult to remove. There is approximately 6,000 feet of pipe ranging from two to ten inches in diameter that will be cleaned.

4.5 Cost and Schedule

Based upon budgetary estimates (+/- 30%) of the decontamination work provided by independent contractors, it is estimated that the above specified work to be performed in Building 185 can be completed

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in approximately four to six weeks and at a cost of approximately $281,000. A breakdown of the major items are as follows:

Ductwork	$105,000
Equipment	$ 76,000
General Area	$ 35,000
Drainage Pans and Lines	$ 20,000
General Supervision	$ 35,000
Laboratory Analysis	$ 10,000
TOTAL	$281,000

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5.0 COMPONENT MANUFACTURING BUILDING DECONTAMINATION

5.1 Trichloroethylene Degreaser and Auxiliary Equipment

The degreaser, recovery still and carbon adsorption units will be initially hand cleaned followed by a neutralization, if necessary, and a high pressure steam/water spray or a solvent rinse capable of removing residual degreasing compounds and grease. After the equipment has been decontaminated a general area clean up will be performed using the same methods applied to the equipment clean up.

All wastes generated and removed during the decontamination will be properly containerized and trucked to CECOS in Niagara Falls, New York, or other authorized facility. Upon decontamination, this equipment will be retired in place.

5.2 Aluminum Etch and Clean Area

The general area where this equipment was operated will be cleaned using a high pressure water/steam wash. Wastes generated during this wash down will be trucked to the waste treatment plant or to a secure landfill for appropriate disposal.

The plastic pipes from this area connecting into the lined steel drain pipes amount to approximately 800 total feet and will be removed in 18' to 20' lengths and properly disposed of in a secure off-site landfill. The two 4 inch saran lined steel pipes that lead to the plating operation drain lines are each approximately 1500 feet in length and will be thoroughly steam/water cleaned and then securely capped at both ends.

5.3 Heat Sink Room

The heat sink room will be first cleaned by normal janitorial methods which will be followed by a thorough area wash down. All wastes generated will be appropriately disposed of at either the waste treatment plant or a secure landfill off-site.

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The two 2 inch fiberglass reinforced pipes that lead from the heat sink room to the lined steel drain pipes are about 250 feet long each and will be removed and properly disposed of at a secure landfill off-site, such as the CECOS Niagara Falls, New York facility.

5.4 Cost and Schedule

Based upon budgetary estimates (+/-30%) of the decontamination provided by independent contractors, it is estimated that the above specified work to be performed in Building 171 will take approximately one to two weeks at a cost of approximately $81,000 with a typical breakdown of the work as follows:

PVC Piping	$10,000
Steel Piping	$40,000
Misc. Equipment and Areas	$20,000
General Supervision	$ 6,000
Laboratory Analyses	$ 5,000
TOTAL	$81,000

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6.0 WASTE TREATMENT PLANT DECONTAMINATION

6.1 General Cleanup

Only select floor areas of the first and second floors of Building 186 will be thoroughly cleaned with a water/steam mixture after a janitorial cleanup has been completed. All wastes from this cleanup will be processed in the waste treatment plant. After testing, solids will be trucked to a secure landfill for disposal, such as CECOS in Niagara Falls, New York.

6.2 Storage Tanks and Pipework

If excess treatment chemicals exist after all of the wastes have been processed, these chemicals will be properly drummed for off-site disposal in an approved facility. The emptied tanks and their associated pipework will be thoroughly flushed to the waste treatment process tanks to complete this cleanup step.

6.3 Process Tanks and Equipment

All process tanks and piping will be thoroughly washed or rinsed with a mixture of water and steam to ensure decontamination. This will be performed sequentially beginning with the dilute and concentrated holding tanks and ending with the final pH adjustment tank. All sludge generated will be trucked to an approved off-site secure landfill. Cleanup of the sludge processing equipment will then begin with all solid and liquid wastes being properly disposed of at an approved off-site secure landfill.

6.4 Cost and Schedule

Based upon budgetary estimates (+/- 30%) of the decontamination work provided by independent contractors, it is estimated that the above specified work to be performed in Building 186 will take

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approximately one to two weeks at a cost of approximately $142,000 with a cost breakdown as follows:

Tank Cleaning	$90,000
Pipework	20,000
General Area and Equipment	15,000
General Supervision	12,000
Laboratory Analysis	5,000
TOTAL	$142,000

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7.0 SUMMARY OF DECONTAMINATION PLANS

The decontamination plans for the three areas discussed in Sections 4.0, 5.0 and 6.0 generally consist of cleaning structurally stable ductwork with high pressure water and steam, removing miscellaneous free hanging polyvinyl chloride "plastic" pipe and fiber glass reinforced "plastic" piping, removing heavily contaminated and corroded tank hoods, removing structurally unstable ductwork, capping or plugging saran lined steel pipe after a thorough flushing and draining, cleaning tanks and miscellaneous equipment (conveyors, filters) with high pressure water and steam or by a manual scrubbing, and performing a general maintenance cleaning of area floors and walls. All cleaning will be performed to remove major deposits of contamination to prevent worker health hazards or future safety hazards (e.g., explosions or toxic gas releases) from incompatible chemical mixtures.

The total cost to clean all three process areas (Buildings 171, 186 and 186) is estimated to be approximately $504,000 ± 30% accuracy. The estimated schedule to complete the work is between eight to twelve weeks.

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APPENDIX A

PRESENTATION OF ANALYTICAL

DATA

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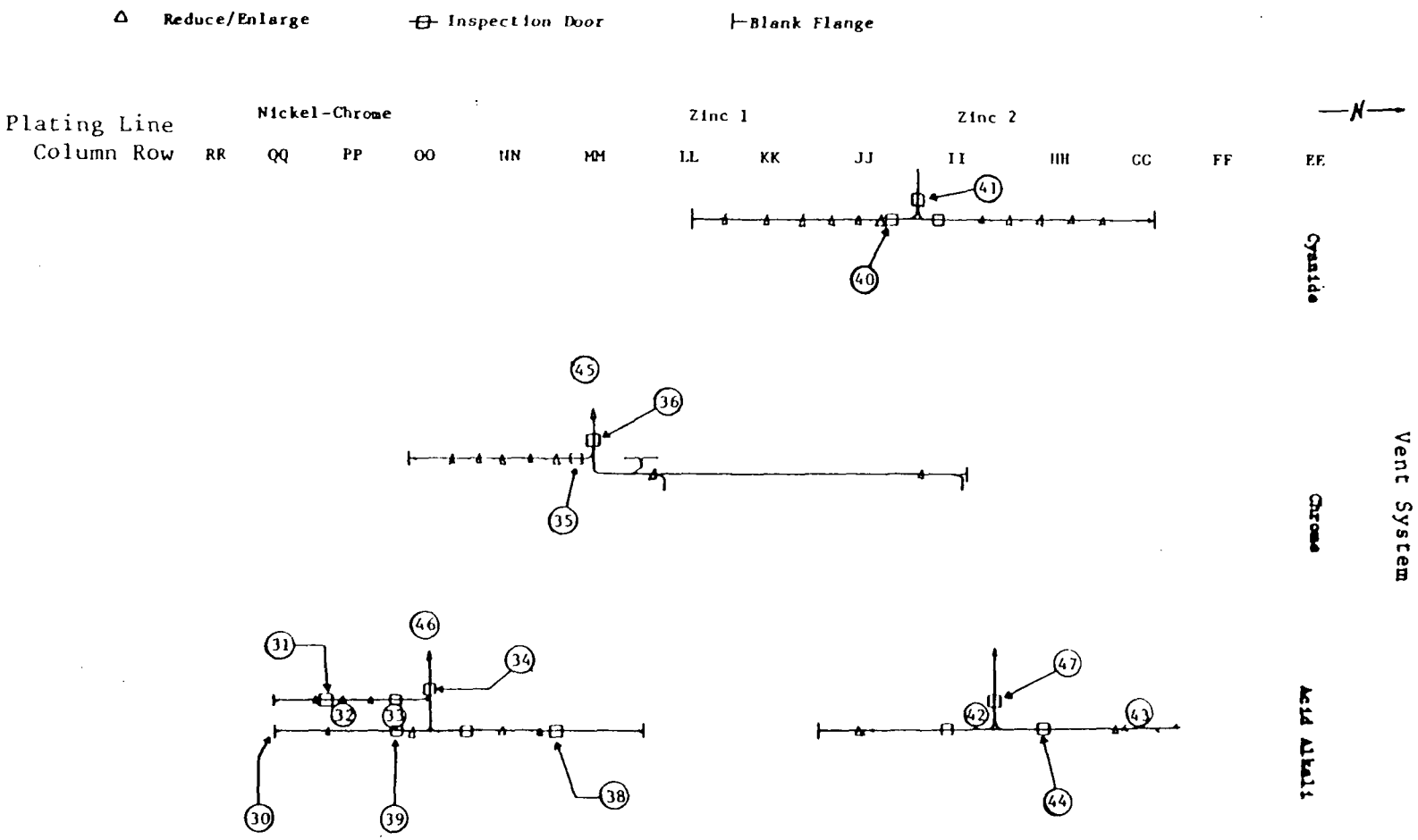
PLATING SHOP EXHAUST DUCT SAMPLE LOCATIONS



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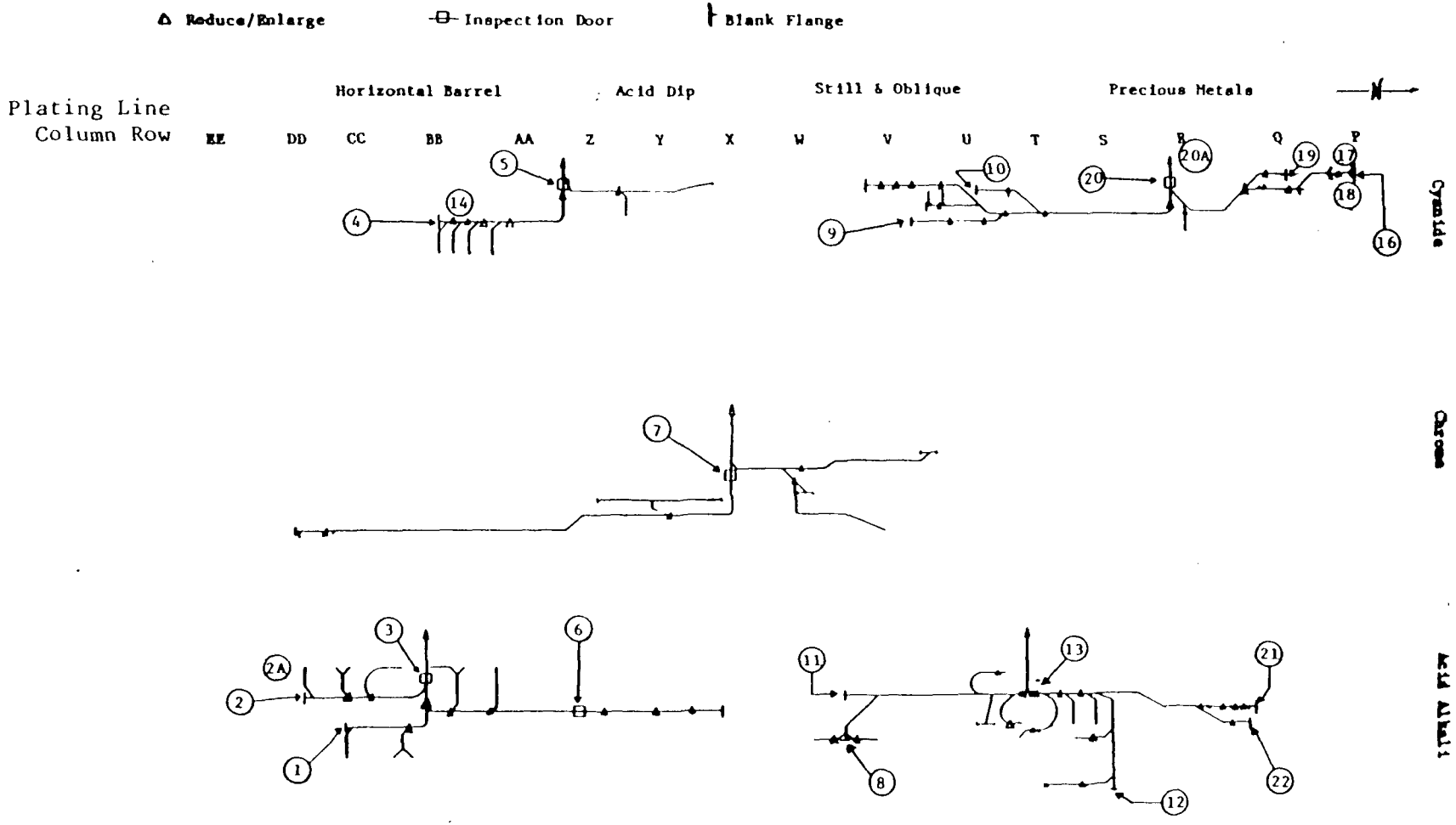
PLATING SHOP EXHAUST DUCT SAMPLE LOCATIONS



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Sample #	Plating Line	Vent System	Observations
1	HOR BAR	A/A	Duct leads from a zinc chromate tank, is at the end of blanked duct and held a small amount of semi-wet light dust, rest of pipe clean - (fine dust layer at most).
2	HOR BAR	A/A	Acid/Alkali duct sample taken closest to a clean caustic bath eventually mixing with acid bath and nickel bath vents, also a blanked end sample. Whitesh gray fine powder was agglomerated and broke apart easily. A small amount was laying in the blanked of the duct. The rest of the duct was clean (fine dust at most).
2A	HOR BAR	A/A	Sample taken from caustic tank hood.
3	HOR BAR	A/A	Inspection door at main duct feed to scrubber represents all exhaust lines, (all merge into here then out of building). (Maintenance man said watch for acid vapors). Some small scale corrosion inside pipe flanges but overall in good shape moisture in pipe from vapor - black from vapor. Overall OK condition sample in corner dust over most of pipe.
4	HOR BAR	CN	Cyanide bath vents heavy white powder and flakes, length of 18 - 20', 3' diameter, would have to be cleaned well. These four baths vent out together with another vent which merges from acid dip and clean area. (This duct vents 2 CN^- baths in acid dip area).
5	ACID DIP	CN	Access panel on duct about 3' diameter. Accumulation of mud-like deposits very near building exit - could be easier to clean manually thru access door - rest of duct looked OK. Main CN^- exhaust duct (Hor BBL area + 2 baths dip and clean area).

Sample #	Plating Line	Vent System	Observations
6	ACID DIP	A/A	Duct near exhaust, fine black soot coated vents for sulfuric acid baths and caustic cleaning baths. Too fine to scrape took 2 smears of 1 sq. ft. from access panel greasy black soot. Also nitric, HCl, muriatic baths and corresponding water rinses exhaust to this duct.
7	ACID DIP	CR	Chrome line to here fed by duct from 2 passivating chromate tank vents in still and oblique area and 2 chromate baths in horizontal barrel area (several chromate water rinse baths). Fine black soot only - swab method used.
8	ST & OB	A/A	Inspection door flange - 2 vents from solder tank - 2 vents from nickel tank. Fairly clean, dust scrapped from sides.
9	ST & OB	CN	Blank flange vents from copper plate tank, pipe coated fairly well with dark blackish-green (copper) soot - fairly dirty but little on floor of pipe mostly in corners only.
10	ST & OB	CN	Flange at duct blank over a water rinse for CN^- dip tank, fairly heavy coating of gray black dusty soot evenly coated over all surfaces.
11	ST & OB	A/A	Bigger main includes pipes from #8 sample point same as #8 (no sample taken) fairly clean.
12	ST & OB	A/A	Blank flange, black soot fairly evenly coated, easy to get sample. This vents solder fluroborate tank and wash tank and nickel sulfate tanks and wash tank.

Sample #	Plating Line	Vent System	Observations
13	ST & OB	A/A	Access doors above HCl vent corroding damper plate. Sides have a gray hard coating, not excessively dirty. Vents sulfuric, HCl (muriatic), caustic cleaners and assoc. wash tanks.
14	HOR BAR (Hood)	CN	Hood sample at cyanide bath - white precipitate around collecting hood inlets around tank tops. PPT appears like the caustic only whiter and much harder and more abundant.
15	HOR BAR (Hood)	A/A	Nickel plate tanks green precipitate in duct inlet hoods over tanks.

All Samples of first 3 areas taken 10/2/84, 1:30 - 7:30 pm. Horiz. BBL, acid dip and clean, still and oblique.

16	PM	CN	Blank flange over old copper tank and an unknown tank - very heavy white powder build-up.
17	PM (Hood)	CN	Sample taken from copper tank hood under #16.
18	PM (Hood)	CN	Sample from unknown tank hood.
19	PM	CN	Blank flange over water rinses next to sodium cyanide bath.

Sample #	Plating Line	Vent System	Observations
20	PM	CN	Inspection door at main duct exit for CN from precious metals room vents most tanks in PM room (3 palladium tanks, 2 copper, 2 unknown, 2 sodium cyanide, 9 tanks and 1 small work bench). Pipe soot covered, floor has light weight black and white flecked, coal-like deposits which when broken apart were wet - ash like in consistency - a good 1" to 1 1/2" of it lines through whole pipe.
20A	PM (Fan)	CN	Fan from precious metal room CN^- ducts - soot covered but overall not very heavily coated, sample scraped from 1 ft^2 access door.
21	PM	A/A	Blank flange over 5 acid/alk rinse tanks. Bright Dip Tanks include nitric acid, muriatic acid and one "Oakite 90" caustic cleaner - dust covered all over, heavier accumulation at sampling end, overall not too much just dust coated.
22	PM	A/A	Blank flange over gold tank and corresponding wash tank. Small diameter pipe about 8" diameter well coated, gray semi damp, mud like material.

Notes:

Most if not all tanks in pm room were clean and were being shipped to Dallas, Texas. Samples taken 10/3/84, 8:00 am.

Sample #	Plating Line	Vent System	Observations
30	N/C	A/A	End of main duct which starts over H_2O/HCl acid tanks then caustic/rinse tanks then rinse H_2O/nitric acid nickel strip tanks and rinse tanks. Dust in duct only, corner of dead end had sample.
31	N/C	A/A	Nickel plating area sample taken at access door - (nickel sulfate tank vents) very very heavy deposits of nickel sulfate. Green and brown in color, green is sulfate crystals and brown is dirt? Same as material sampled at tank tops #32 - whole pipe dirty with 1-2" on bottom. This duct vents into main duct with #30 and out.
32	N/C (Hood)	A/A	Sample from nickel sulfate tank tops green crystals.
33	N/C (Hood)	A/A	Nickel strip tank vent sample, wet greasy mud laying in vent over tank.
34	N/C	A/A	Access door at end of main duct just before exaust duct from nickel sulfate tanks, had carryover of nickel sulfate deposits as in samples #31, 32. Duct carrying acid vapors from acid alk washes and the rest of nickle plating area very clean only dusty. Some small scale corrosion, and a puddle at damper, a sample will be taken at other side of the area on same straight stretch of duct (#36).
35	N/C	CR	Chromic acid tank vents 4 or 5 into 1 large central duct. This duct has a wet oily tar like material lining. Very heavy and tar like - dark black like hot asphalt almost.

Sample #	Plating Line	Vent System	Observations
36	N/C	CR	Right at exit chrome tank main and zinc duct which vents; 2 chromic acid tanks, 2 water rinses and 1 chromic bath in Zn plate area. Same as #35 liquid "tar" on bottom sides clean. (No sample taken)
37	N/C		#2 acid/alk - clean, #1 acid/alk - clean, #3 chromate fan - clean, no samples taken, instead samples will be taken of the solids separated from the scrubbing liquor pulled from the in line strainers. (#45 and #46)
38	N/C	A/A	Access panel between Zn and Ni areas, vents a phosporic acid tank and wash. This acid wash vapor has corroded interior of pipe, getting to the point where pipe may be weak. Very wet inside. Green crystal sample taken from floor, sides coated thin black soot.
39	N/C	A/A	Main central duct for nickel chrome plating area, vents directly below this access door are the nickel and chrome strip tanks. Clean except for small amounts of dust/dirt on floor, sides dusty but overall good condition all 3 directions.
40	Z1	CN	Heavily caked on bottom, white, black and gray flakes which break easily. Heaviest concentration in corner and at ducts to CN^- baths.
41	Z2	CN	Same as #40 heavy amounts of flakes deposited on floor of pipes more dirty than others.

Sample #	Plating Line	Vent System	Observations
42	Z2(Hood)	A/A	HCl acid cleaner - Black flakes.
43	Z2(Hood)	A/A	Caustic - very hard white/yellow.
44	Z2	A/A	Front sq. vent acid/alk line heavy acid (HCl) fumes - fairly even coating of gray over entire surface of pipe heavier toward floor - fairly dirty.
45	N/C	CR	The scrubber fan was clean so a sample was taken of the solids collected by the scrubbing liquor in line filter.
46	N/C	A/A	The scrubber fan was clean so a sample was taken of the solids collected by the scrubbing liquor in line filter.
47	Z2	A/A	Heavy HCl fumes, pipe clean only slightly dusty, no sample taken.

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Kearny, NJ

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Amended Environmental Clean-up Plan, Kearny Works AT&T Technologies, Inc.

(Formerly Western Electric Company, Inc.)

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932630091

TABLE OF CONTENTS

		Page
1.	INTRODUCTION	1-1
	1.1 Amended Environmental Clean-up Plan	1-1
	1.2 Background	1-1
	1.3 Plan Organization	1-4
	1.4 Site History and Surrounding Conditions	1-4
2.	SOIL CLEAN-UP	2-1
	2.1 Soil Sampling and Analysis Procedures	2-1
	2.2 Analytical Results	2-6
	2.3 Summary Soil Clean-up Plan	2-7
	2.4 Action Criteria for Clean-up	2-9
	2.5 Clean-up Action Locations	2-21
	2.6 Additional Sampling and Excavation	2-27
	2.7 Disposition of Contaminated Soil	2-28
	2.8 Clean-up Activities	2-29
	2.9 Personnel	2-29
	2.10 Soil Clean-up Schedule	2-29
	2.11 Soil Clean-up Costs	2-31
	2.12 References	2-31
3.	GROUND-WATER INVESTIGATION	3-1
	3.1 Ground-Water Evaluation Program	3-1
	3.2 Ground-Water Clean-up	3-2
	3.3 Personnel	3-9
	3.4 Schedule and Costs	3-9
4.	OTHER SITE CLEAN-UP ACTIVITIES	4-1
	4.1 Decontamination, Decommission and Disposal	4-1
	4.2 Storage Facilities	4-3
	4.3 Hazardous Substance Inventory	4-6
	4.4 Plating Operations	4-8
	4.5 Waste Treatment Plant	4-9
	4.6 Schedule and Costs	4-11
5.	SUMMARY	5-1
	5.1 Overall Clean-up Schedule	5-1
	5.2 Overall Clean-up Cost Estimate	5-1
	Appendix A - Soil Analytical Data	
	Appendix B - Sampling & Analysis Methodology	
	Appendix C - Health Risk Assessment	
	Appendix D - Plating Shop Closure Plan	

LIST OF FIGURES

Figure		Page
1-1	Map Showing Site Location and Adjacent Geographic Features	1-6
2-1	In Pocket	
2-2	In Pocket	
2-3	AT&T Kearny Works April 6, 1940	2-13
2-4	AT&T Kearny Works April 7, 1951	2-14
2-5	AT&T Kearny Works June 22, 1966	2-15
2-6	AT&T Kearny Works April 11, 1974	2-16
2-7	AT&T Kearny Works April 8, 1981	2-17
2-8	AT&T Kearny Works November 7, 1984	2-18
2-9	In Pocket	
2-10	Soil Clean-up Schedule	2-30
2-11	In Pocket	
2-12	In Pocket	
2-13	Areas 48 and 49	2-28
3-1	Layout of Drainage System	3-3
3-2	Cross-Section of Drainage System	3-5
3-3	Cross-Section of Drainage System and Projected Water Table After One Year of Operation	3-6
3-4	Schedule for Installation of Ground Water Recovery System	3-10
4-1	Schedule for other Site Clean-up Activities	4-12
5-1	Overall Schedule for Site Clean-up Activities	5-2

932630093

LIST OF TABLES

Table		Page
2-1	Action Criteria for Parameters of Concern	2-8
2-2	Lead in Urban/Industrial Soils	2-11
2-3	Lead in Urban Garden Soils in New Jersey	2-12
2-4	Concentratious of Lead in Undisturbed areas at the Kearny Works AT&T Technologies, Inc.	2-19
2-5	Clean-up Locations and Volumes	2-22
2-6	Soil Clean-up Cost Estimate	2-32
2-7	Basic for Cost Estimates for AT&T Kearny Works Soil Clean-up	2-33
3-1	Estimated Costs for Ground-Water Remediation	3-11
4-1	Inventory of Small Quantities of Hazardous Substance at the AT&T Kearny Works	4-7
4-2	Estimated Costs for Other Site Clean-up Activities	4-13
5-1	Overall Cost Estimate for AT&T Kearny Works Clean-up	5-3

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1. INTRODUCTION

1.1 Amended Environmental Clean-Up Plan

This Amended Environmental Clean-up Plan has been developed to meet the requirements of N.J.A.C. 7:1-3.12 with respect to cessation of activities at the Kearny Works of AT&T Technologies, Inc. (formerly Western Electric Company, Inc.), 100 Central Avenue, Kearny, New Jersey. This Amended Environmental Clean-up Plan supercedes the Environmental Clean-up Plan (ERT Document No. D367) submitted in October 1984. This Plan consists of the soil and ground-water sampling and analyses data and the proposed clean-up actions for both those media and all other plant operations. The Amended Clean-up Plan presents and interprets the results of the Environmental Evaluation Measurement Plan (ERT Documents No. D231 and D231a), supplemental ECRA Soil Sampling Plan (ERT Document No. D367B), Site Hydrogeologic Conditions Kearny Works (prepared by Dan Raviv Associates and submitted as Appendix E to this document), and the Plating Shop Closure Plan (ERT Document D367-100B included as Appendix D) prepared in accordance with N.J.A.C. 7:1-3.7 and approved by the New Jersey Department of Environmental Protection (NJDEP) pursuant to N.J.A.C. 7:1-3.9. This document also presents the recommended plan for the most practicable method of clean-up of the site, including time schedules for implementation and cost estimates for each item of clean-up. The Amended Clean-up Plan is presented in two volumes. Volume I contains the main text and all appendices except for Appendix E. Appendix E is bound separately.

1.2 Background

A series of documents have been provided to the NJDEP over a period of time in order to meet the objectives of an ECRA clean-up. The following summarizes the events and activities leading to the present document.

- February 6, 1984. AT&T provides Initial ECRA Notification to NJDEP.
- March 5, 1984. NJDEP requests additional information.
- May 24, 1984. AT&T provides Environmental Evaluation Measurement Plan (ERT Document No. D231) to NJDEP.
- June 19, 1984. NJDEP requests revisions in sampling plan and analytical methodologies stipulated in Environmental Evaluation Measurement Plan.
- June 28, 1984. AT&T responds to comments noted in June 19 correspondence from NJDEP.
- July 13, 1984. AT&T provides Appendix B to Environmental Evaluation Measurement Plan (ERT Document No. 231a) confirming and elaborating on points outlined in June 28 correspondence.
- July 16-20, 1984. AT&T initiates first round of field work for collection of soil samples and tank testing.
- August 28, 1984. Completion of tank testing.
- October 4-10, 1984. AT&T initiates second round of field work for collection of additional soil samples.
- October 22, 1984. AT&T submits Environmental Clean-Up Plan (ERT Document No. D367) to NJDEP based on first round of samples.
- December 6, 1984. AT&T meets with NJDEP to review Environmental Clean-up Plan. NJDEP introduces soil clean-up criteria and notes need for information on uninvestigated areas. AT&T provides detailed plating shop clean-up plan (ERT Document No. D367-100B).
- December 12, 1984. AT&T initiates third round of field work to obtain samples agreed to at December 6 meeting.
- December 20, 1984. AT&T meets with NJDEP to review results of analyses. NJDEP requests fourth round of soil sampling plus ground-water sampling.
- January 14, 1985. NJDEP provides partial approval of clean-up plan subject to results of fourth round of sampling. Also indicates ground-water monitoring requirement.

- January 29, 1985. AT&T provides Supplemental Soil Sampling Plan (ERT Document D367B) to NJDEP.
- February 4, 1985. AT&T meets with NJDEP to review Supplemental Soil Sampling plan. NJDEP provides verbal approval.
- February 6, 1985. AT&T implements supplemental soil sampling plan by initiating field work on fourth round of sampling.
- February 8, 1985. AT&T meets with NJDEP in Kearny for field evaluation of soil sampling and ground-water monitoring program (DRAI submittal dated February 8, 1985). Ground-water monitoring program verbally approved by NJDEP.
- February 11, 1985. AT&T initiates ground-water monitoring program with NJDEP on-site.
- February 25, 1985. NJDEP provides written approval of Plating Shop Clean-up subject to several modifications.
- March 11, 1985. NJDEP provides written approval of ground-water monitoring program subject to several modifications.
- March 14, 1985. NJDEP provides written approval of Supplemental Soil Sampling Plan.
- March 18, 1985. AT&T provides analytical results of Supplemental Soil Sampling Plan to NJDEP.
- March 27, 1985. AT&T provides draft Amended Environmental Clean-Up Plan to NJDEP.
- April 3, 1985. AT&T meets with NJDEP to review draft Amended Environmental Clean-Up Plan. NJDEP accepts soil clean-up plan in principle, subject to several refinements.
- April 16, 1985. AT&T meets with NJDEP regarding ground-water work and requests additional wells to be installed.
- April 29, 1985. AT&T meets with NJDEP for progress update. Remaining soil clean-up issues are resolved in principle. Ground-water clean-up at well AT&T 11 is approved in principle (see Figure 1-2 in map pocket for locations). NJDEP requests additional deep well.

- May 2, 1985. AT&T initiates fifth sampling round to evaluate PCB's in Well AT&T 9 and contamination in unresolved areas.
- May 24, 1985. AT&T initiates sixth sampling round to further evaluate PCB's at well AT&T 9.
- June 7, 1985. AT&T meets with NJDEP to provide results of PCB soil sampling in vicinity of well AT&T 9.
- June 12, 1985. AT&T initiates seventh sampling round to evaluate PCB's along railroad line in areas 4, 5, & 6.
- June, 1985. AT&T provides final Amended Environmental Clean-Up Plan, in conjunction with Plating Shop Closure Plan and Site Hydrogeologic Conditions, to NJDEP.

1.3 Plan Organization

The Amended Clean-up Plan is explained in the following sections. Section 2 provides all of the analytical results of soil samples taken and describes the proposed soil clean-up. Section 3 provides a brief summary of the ground-water investigation and a full explanation of the proposed remedial action. A more comprehensive examination of ground water is provided in the Site Hydrogeologic Conditions Kearny Works prepared and submitted separately by Dan Raviv Associates and bound separately as Appendix E. Section 4 provides a description of other clean-up activities including a summary of the Plating Shop Clean-up Plan. The more detailed Plating Shop Clean-Up Plan prepared by ERT is submitted separately as ERT Document No. D367-100B. Section 5 is a summary of the schedule and costs associated with all the clean-up activity. For the sake of completeness, Appendix A provides all the analytical data obtained on soils. Appendix B contains a compilation of all the sampling and analytical methodologies used. Appendix C contains a report relating to the determination of safe levels of lead in the soil based on a health risk assessment. Appendix D contains the Plating Snop Closure Plan (ERT Document D367-100B) with updates for post clean-up evaluation and health and safety procedures. A separate submittal

from DRAI details the site hydrogeology and is referenced as Appendix E.

1.4 Site History and Surrounding Conditions

The Environmental Cleanup Responsibility Act (ECRA) provides that the NJDEP adopt minimum standards for soil, ground water and surface water quality necessary for the detoxification of the site of an industrial establishment subject to the provisions of ECRA. The standards are intended to insure that the potential for harm to public health and safety is minimized to the maximum extent practicable. Such standards are to take into consideration "the location of the site and surrounding ambient conditions..." Until the NJDEP adopts minimum standards, the NJDEP is required to review, approve or disapprove clean-up plans on a case-by-case basis. At the present time, minimum standards have not been adopted and clean-up plans are being reviewed on a case-by-case basis.

AT&T's Kearny Works is located in the town of Kearny, NJ, on a peninsula bounded on the east by the Hackensack River and on the west by the Passaic River (see Figure 1-1). The confluence of these rivers at the southern tip of the peninsula produces the body of water known as Newark Bay. The water areas adjacent to the site are tidal and brackish. The salinity level of surface waters and ground water preclude the use of these waters for drinking purposes.

The southern portion of the Kearny peninsula is separated from the remainder of the town by a heavy concentration of rail lines which include the main rail lines which enter New York City (formerly owned by the Pennsylvania Railroad) and the Path lines from Newark to Jersey City. The peninsula area, therefore, is isolated from all surrounding areas by water or rail corridors.

Direct access to the southern portion of the peninsula is provided by alternate truck Route 1 and 9 (Lincoln Highway), which crosses both the Passaic and Hackensack Rivers on high level bridges. The highway is located approximately at the northern boundary of the Kearny Works site and is partially elevated as it crosses the peninsula with ramp connections leading down into the plant area.

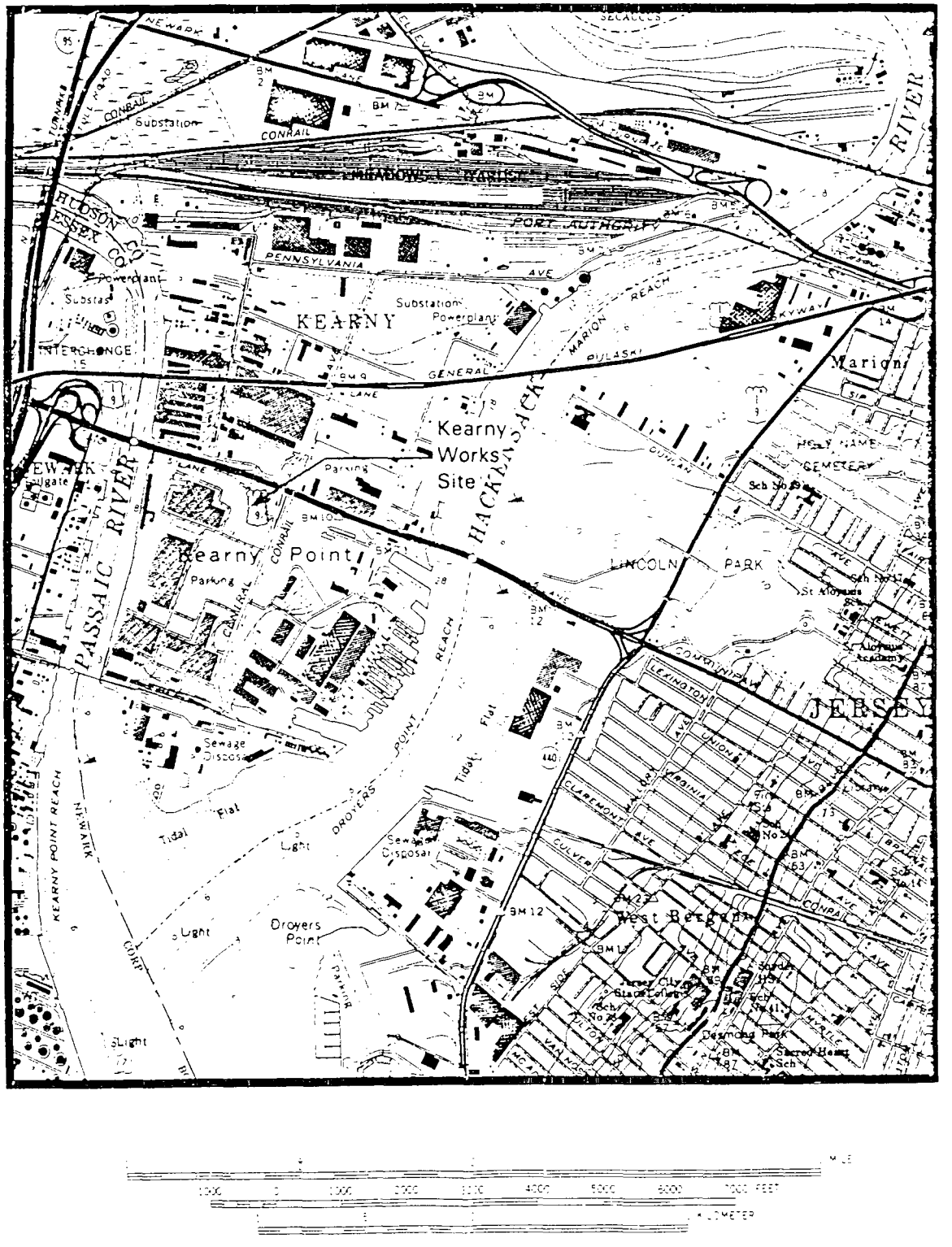

Figure 1-1 Map Showing Site Location and Adjacent Geographic Features

The peninsula area of south Kearny remained essentially undeveloped during the 19th century. It is shown as meadowlands on the 1896 Vermeule Map. A review of historical records indicates that the initial development of the peninsula commenced shortly after the turn of the century with significant developments occurring during the decade commencing in 1910. From the onset, development of the peninsula area focused upon heavy industrial uses. The dedication of this entire area to industrial activities has continued without interruption for 75 years.

By the early 1920s, the property immediately east of the Kearny Works site was occupied by the Federal Shipbuilding Company and by Blast Furnace Products Co. The northern portion of the present Kearny Works site at that time had been developed by the Ford Motor Company. Some of the other industrial users north of the Ford site included Shupe Terminal Corp., Riverside Steel Casting Co., Pure Oil Co., Egyptian Lacquer Co., Pyramid Petroleum Products and Warren Chemicals.

In 1925, AT&T acquired the Ford Motor Company property and adjacent parcels to the south. It has occupied the area continuously for 60 years. By the late 1920s, the western end of the peninsula south of the Kearny Works site had been developed by the Boston Excelsior Company.

As the serial photographs located in Section 2 reveal, this industrial character has been constant. During its entire 75-year period of development, the South Kearny peninsula has been devoted exclusively to industrial uses, warehousing and truck terminals. At no time has any portion of this area been used for residential purposes.

During this period, the industrial activities surrounding the Kearny Works site were served by a series of rail freight lines as well as the Lincoln Highway. Moreover, large scale ship salvage activities were conducted on a portion of the site directly east of the subject property. The heavy rail, truck and car activities around the site are part of the surrounding ambient conditions.

The area remains zoned for industrial use and there is every indication that the Town of Kearny intends to continue this use pattern for the foreseeable future. In 1983, the Planning Board of

the Town of Kearny commissioned the preparation of the "South Kearny Industrial Development Plan." The objective of the report was to improve the attractiveness of the area for industrial development and to improve the area's performance as a tax ratable and employment resource. The following statement from the report describes generally the current development pattern of the entire peninsula.

> "Currently, development patterns in the South Kearny area generally revolve around warehousing and heavy industrial uses. Several large industrial concerns are located on scattered sites throughout the area. However, much of the total land area is devoted to the outdoor parking or storage of trucks, trailers and large containers.
>
> "Lincoln Highway, with its east-west orientation, and Central Avenue, running north-south, divide the area into four quadrants. Land use in the northeastern section of the peninsula is largely devoted to outdoor storage and warehousing uses. Some open vacant land is also present. Land use in the northwestern portion of South Kearny is composed of a variety of uses. Warehousing and storage uses are the most common activities, with heavy industrial uses predominating along the Passaic riverfront. Commercial uses are scattered along Jacobus Avenue and Lincoln Highway.
>
> "The area south of Lincoln Highway is dominated by heavy industrial activity. The Western Electric plant dominates the southwestern portion of the peninsula, while industrial uses associated with the Port of Kearny are located in the southeastern portion. A sizable area of open vacant land is also located in this area, along the east side of Central Avenue."

The nearest residential areas within the Town of Kearny itself are approximately five miles distant. The intervening areas include dump sites, wetlands and major rail and highway complexes. The area immediately adjacent to the Kearny Works property across the Passaic River, which is within the City of Newark, is similarly devoid of residential development and devoted to heavy industrial uses. A major

portion of this area is occupied by an oil storage facility owned by Hess Oil Company. The residential areas within Newark closest to the Kearny Works are approximately two miles distant. The area in Jersey City nearest the peninsula across the Hackensack River has similar characteristics. The nearest residential area in Jersey City is located more than one mile from the entrance to the site. Access to the site from either Jersey City or Newark housing areas requires crossing a series of heavily used highway routes.

Many other, older urban industrial sites are surrounded by residential areas including high density public housing. The problems created by such locations have been noted by NJDEP both in Newark and Jersey City. The risk of accidental exposure of infants and young children to on-site contaminants may be high in such areas since access to these sites often involves short travel distances and few, if any, traffic barriers.

By virtue of its isolation from surrounding areas, however, the Kearny Works is not accessible to infants or young children unless they are brought to the site by adults. There is virtually no possibility of extended, accidental presence of infants, young children and teenagers on the site. Travelling across the river bridges by foot would be much more hazardous to youngsters than any on-site contaminants. Regular access to the site, therefore, is limited to those arriving by motor vehicle. These characteristics which are unique to this location should be taken into consideration in evaluating the potential hazard presented to children and adults from any on-site contamination.

2. SOIL CLEAN-UP

2.1 Soil Sampling and Analysis Procedures

2.1.1 Sampling Activities

Samples from the Kearny Works Site were taken during seven separate sampling rounds. The initial round, which was described in ERT Document No. D367 (the initial Environmental Cleanup Plan), took place during the period July 16-20, 1984. During this round, soil sampling areas were identified by a number. For the sake of convenience this numbering system has been maintained throughout the investigation. Figure 1-2 in the map pocket shows the locations of the various areas. A second soil sampling round to delineate specific areas of concern identified in the first round took place October 4-10, 1984. The NJDEP then requested further sampling in areas not previously investigated. Thus, a third round to sample underneath parking lot and lawn-covered areas took place December 12, 1984. The NJDEP then reviewed the data and gave a listing of areas that were acceptable, areas that would require more contaminant delineation, and areas that would need to be excavated (see letter from NJDEP to AT&T dated January 14, 1985). Then, a fourth sampling round to delineate all areas of concern took place February 5-8, 1985. As a result of PCBs detected in ground water at well AT&T-9, a fifth sampling round was conducted on May 2-10, 1985 to identify any PCB contaminated soil in areas 11 and 12. During this same time period, additional samples were obtained from four subareas (within areas 4, 33, 34 and 45) to better define the limits of excavation in these areas. A sixth sampling round was performed May 24, 1985 to define the vertical extent of PCB contaminated soils in areas 11 and 12. The seventh sampling round was intended to identify any PCB contaminated soil across the road from area 11 and 12 and was done on June 12, 1985. Given the volume of analytical data obtained, it is not suitable to provide all the analytical data in the text. Consequently, all of the soil analytical data obtained are shown in Appendix A. The more important data are shown on Figures 2-1 and 2-2

located in the back pocket. All the analytical methodologies are provided in Appendix B.

It should be noted that some additional soil samples and analyses were conducted during the hydrogeological investigation. These analytical data are reported and discussed in Appendix E (the Site Hydrogeologic Conditions, bound separately).

2.1.2 Sampling Locations and Dates

The first sampling round, described in the initial Environmental Clean-up Plan (ERT Document No. D367) was conducted during the period July 16-20, 1984 and followed very closely the Environmental Evaluation Measurement Plan (ERT Document No. D231 and D231a). The Environmental Evaluation Measurement Plan specified thirty-nine (39) locations where approximately 80 surface and/or subsurface soil samples were to be taken. (See Figure 2-1 for sample locations.) Appropriate samples were taken from all of the specified locations except locations 23 and 24. Subsurface samples at locations 23 and 24 could not be obtained because a thick concrete pad prevented access to subsurface soil. A total of three additional samples were taken which were not specified in the original sampling plan. These were additional subsurface samples at locations 7 and 15 and one additional surface sample at location 22. At each sampling location subsurface and surface samples were taken at the same place except for locations 25, 30, 17 and 32. Subsurface samples for locations 25 and 30 were taken from areas just off of the Building 170 concrete pad, approximately 30 yards from the surface samples. Subsurface samples at 17 and 32 were taken from soil approximately 20 feet from the subsurface borings. The analytical data for these samples were presented to the NJDEP in October 1984 as part of the Environmental Cleanup Plan, ERT Document No. D367.

The second sampling round, conducted without NJDEP approval (October 4-10, 1984), was designed to delineate soil constituent levels in those areas from which data showed unusually high levels of certain constituents. The sample locations and numbers were keyed into the original 39 locations. Detailed location information is

presented on Figure 2-2 located in the back pocket. Approximately 140 surface and/or subsurface soil samples were taken around sample locations: 1, 4, 5, 6, 11, 14, 15, 16, 21, 22, 26, 33, 35, 36, 37, and 38. In addition 14 catch basins near sample point 6, and 2 catch basins near sample point 16, were sampled.

A third smaller sampling round was performed in December 1984 in response to the NJDEP's request for sampling underneath the large parking lot areas along the western and northern boundaries of the property and for sampling of large grass covered areas near buildings 171, 185, and 73. A total of ten locations were sampled and numbered 40-49 to tie into the original 39 locations. Analytical data for these samples were presented to the NJDEP in early January 1985.

The fourth sampling round (approximately 165 samples) was performed in February 1985 to completely delineate all uncovered areas on the site and to define the limits of excavation. Sample numbers were keyed into the existing 49 locations. However, the area location of sample points was determined by gridding the entire site on 100 foot intervals. Samples were taken in the grid locations for all uncovered areas of concern. Surface and/or subsurface soil samples were taken near sample locations: 1, 2, 3, 4, 5, 6, 7, 8, 9, 15, 16, 17, 21, 22, 25, 33, 34, 37, 38, 39, 44, 45, 46, and 47. Analyses were performed for those soil constituents that had been identified at high levels at the initial sample locations.

The fifth sampling round was performed during May 2 and 3, and on May 10, 1985. Soil samples were taken to determine the extent and magnitude of any soil PCB contamination in the area of sampling locations 11 and 12, which is the location of ground-water monitoring well AT&T-9. The ground-water investigation had revealed PCBs in the ground water at Well AT&T-9 at levels less than 1 ppb to 10 ppb (see Figure 1-2 in map pocket). Thirty-two soil samples, surface and subsurface, were taken from a total of 17 sampling points. Sample numbers were continued from the existing sampling locations in Area 11. Samples were taken from beneath the paved loading area, along the railroad spur, and at an electric transformer pad. All samples were analyzed for PCBs. The results are contained in Table A-7, Appendix A. The results are also shown in Figure 2-11 (see back pocket). Also

during this time period, additional surface and subsurface samples were taken in subarea 4-6, areas 33 and 34, and subarea 45-1 to better define the limits of excavation. The results of this sampling round are provided in Table A-12, Appendix A and shown on Figure 2-1.

A sixth round of soil sampling was done in Area 11 on May 24, 1985 after the initial sampling and analyses revealed PCB contaminated soil. Six sample points were selected along the railroad spur next to building 25 (see Figure 2-11 in map pocket for locations and data) for subsurface sampling. Analytic results are reported in Table A-7, Appendix A.

Additional sampling has been done as a seventh sampling round on June 12, 1985 to identify any PCB contaminated soil along the railroad spur that goes through area 11 and 12. The sampling was done in the rail bed across the road from area 11 and 12, in area 4. The analytic data is not available as of this writing. The data from these samples will determine the lateral extent of PCB contaminated soil.

2.1.3 Sampling Methodology

The same sampling methodologies for soil samples were used throughout all five sampling rounds. The basic methods for surface and subsurface sampling are described in ERT SOP No.'s 7110 and 7115, contained in Appendix B, and are described as applied to this site in the paragraphs below.

Surface samples obtained at each location were composite samples of four to six small grab samples taken in the vicinity of each location marker. A stainless-steel trowel was used to obtain a grab sample of soil from zero to six inches depth at points in a radial pattern, approximately five feet from each location marker. A composite sample was obtained by mixing the grab samples in a clean, plastic bucket. Portions of the sample were then packed in 250 and 500 ml amber jars and 40 ml VOA vials using a stainless-steel trowel. Jars were labeled and stored in a large cooler prior to shipment to the laboratory.

For the first three sampling rounds, subsurface samples were obtained from the unsaturated zone using a hollow-stem auger drill

(three inch I.D. core) and a split-spoon sampler (three inch O.D. by two foot length). First, the auger was used to determine depth to saturation. A borehole was drilled to one-foot depth and the split-spoon was then driven through two feet of unsaturated soil and lifted. The collected dry soil was then emptied into and mixed in a clean stainless-steel bucket to insure uniform samples. If wet soil was obtained in the spoon, it was discarded and the drilling procedure was repeated at a location less than ten feet from the original hole. The depths of subsurface samples are reported in Appendix A.

For the fourth sampling round, a different methodology was employed for subsurface sample collection. Since the purpose of this sampling round was to delineate constituents that were already of concern from the previous sampling rounds, stratified grab samples were taken at 18" and 36" depth. Two separate split-spoon samplers were used. The first split-spoon was driven from 0"-18". It was then removed from the borehole and a second split-spoon was driven from 18"-36". Samples were taken from the bottom of each spoon and placed directly into a 250ml amber jar.

In sampling areas 4-6, 33 & 34, and 45-1 for the fifth sampling round, surface and subsurface samples were collected using the same methodology as the fourth sampling round. In sampling area 11 for PCB's in the fifth, sixth, & seventh sampling rounds, subsurface samples were collected using the same methodology as the fourth sampling round, except the sampling intervals were 0-2', 2-4', 4-6' and 6-8'.

An appropriate quality assurance plan was described in the Environmental Evaluation Measurement Plan, ERT Document No.'s D231 and D231a. Soil samples were preserved according to applicable sections of EPA-600/4-82-029. Sample packaging and shipment was done according to ERT SOP No. 7515 (Appendix B). Equipment cleaning and decontamination was done following the general provisions of ERT SOP 7600 (see Appendix B) with no specialized decontamination procedures necessary due to the nature of contaminants present. Duplicate soil samples were taken at a rate of one duplicate for every 15 samples collected. Normal laboratory QA/QC protocol (e.g., reference blanks, duplicate analyses, spiked samples, and similar activities) was

maintained in accordance with Laboratory Quality Assurance Manual, Chemical Service Section, Environmental Chemistry Center of Environmental Research and Technology (Appendix B). Methodologies and protocols for tests analysis performed by subcontractors to ERT are described in Appendix B.

2.2 Analytical Results

2.2.1 Soils Analysis

Analytical results for six sampling rounds have been provided in Appendix A. Some data from the initial sampling round have been included in a separate table since some parameters did not present any concerns and were not tested for again. Data for: barium, beryllium, mercury, silver, thallium, and total organic carbon are found in Table A-10. The data are displayed on the site maps on Figures 2-1, 2-2, and 2-11 (see map pocket). In addition, Appendix A contains a table of data for volatile organic analyses on each compound analyzed for in the samples. Data from EP Toxicity tests, sulfide reactivity, and cyanide reactivity from samples collected on the first and fifth sampling rounds are also provided in Appendix A.

The analyses performed on individual samples varied according to the sample location and the purpose of the particular sampling round. The first round was a general evaluation of heavy metals, pH, cyanide, volatile organic compounds, polychlorinated biphenyls (PCB's), and petroleum hydrocarbons (PHC). In the first round an HNu photoionizer was used in a cold headspace analysis on all soil samples as a screening technique to determine whether volatile organic analyses (VOA) should be done. These results of the headspace analyses are reported in Appendix A. The second round was conducted to define the limits of contamination of those constituents identified in the first round. Analyses performed included: heavy metals (with EP toxicity tests), cyanide, PHC (at locations 11, 14, and 15), PCBs (at locations 21 and 22), and VOA. The third round was a general evaluation of new areas; analyses for this round included: heavy metals, PHC, and VOA. The fourth round was intended to delineate those constituents of

concern in particular areas. Only certain analyses were performed on samples from the fourth round. These were described in the Supplemental Soil Sampling Plan, ERT Document No. D-367B. The fifth round was intended to identify PCB contaminated soil in areas 11 and 12, and to determine the concentration of constituents of concern in areas 4-6, 33 & 34, and 45-1. The sixth round was intended to focus on PCB's in area 11 and 12. The seventh round was to define the lateral extent of PCB contamination across the road from area 11.

2.2.2 Underground Fuel Storage Tank Testing

Underground fuel storage tanks are present at two of the sampling locations. A 10,000 gallon fuel tank used for storage of diesel oil is at location 7 and two 10,000 gallon gasoline tanks are at location 15. The tank at location 7 was tested by Lombardo Equipment Co., Elmwood Park, New Jersey. The two tanks at location 15 were tested by Hunter Environmental Services, Inc., Malvern, Pennsylvania. Both tests conformed to standards established by NFPA 329. The test results indicated that no leakage above 0.05 gallons per hour was detected in any of the three tanks. The test results are provided in Appendix A. The testing procedures are provided in Appendix B.

2.3 Summary Soil Clean-up Plan

On the basis of the analytical data developed, a soil clean-up plan has been prepared for the Kearny Works. That plan is described here and consists of the following items.

1) Excavate and remove contaminated soil according to the action criteria identified in Table 2-1.
2) Backfill the excavations with clean fill known to have chemical characteristics less than the action criteria shown in Table 2-1.

The following subsections describe and explain these actions in more detail.

TABLE 2-1

ACTION CRITERIA FOR PARAMETERS OF CONCERN

Parameter	Soil Concentration (mg/kg)
Arsenic	20
Cadmium	3
Chromium	100
Copper	170
Lead	400
Nickel	100
Selenium	20
Zinc	350
Cyanide	12
PCB	5
VOC	1
Petroleum Hydrocarbons	100

2.4 Action Criteria for Clean-up

2.4.1 General Criteria

In general, soil containing concentrations exceeding the values in Table 2-1 will be excavated and removed from the site. With the exception of lead, these values are identical to the criteria used by NJDEP. The following subsection provides a discussion of and justification for a lead criterion of 400 mg/kg.

2.4.2 Criterion for lead

The value of 400 mg/kg has been proposed as the action criterion for lead at the Kearny Works. This criterion is supported by the following considerations:

1) 400 mg/kg represents a background value for urban areas.
   a) Most urban soils contain lead concentrations greater than 400 mg/kg.
   b) Urban soils in New Jersey (e.g. Newark and Trenton) contain lead concentrations consistently greater than 400 mg/kg.
   c) Areas on the Kearny Works property which have never been subjected to industrial operations contain lead concentrations greater than 400 mg/kg.
2) 400 mg/kg is consistent with clean-up criteria used by other regulatory agencies in other locations.
3) A health risk assessment confirms the preceding analysis that a concentration of 400 mg/kg is a safe and conservative level for industrial soils.

Each of these considerations is discussed below in detail.

<u>Background Values</u>

As the summary in Section 1.4 shows, the Kearny peninsula has always been developed as a commercial/industrial area and has never

had residential use. The land use plans for the forseeable future also indicate a continuation of industrial activities on the peninsula and nearby areas. Consequently, it is appropriate to limit clean-up requirements for soil to background levels which are consistent with urban areas, provided these levels are demonstrated to be safe from a health perspective.

An extensive review of the scientific literature was conducted to determine urban background levels. Table 2-2 provides a summary of sixteen different sources reporting lead in urban and industrial soils. All but two of these studies show urban/industrial soils with a range of concentration greater than 400. Total reported concentrations vary from 3.5 to 11,700 mg/kg. The average values reported vary from 18 to 1,800 mg/kg.

Some of the data evaluated is specific to urban areas of New Jersey. In the early 1980's a nationwide "Urban Garden" program was conducted by the U.S. Department of Agriculture to evaluate the concentration of metals (especially lead) in urban soils. Data from that program in New Jersey have been compiled by Dr. H. Motto, Associate Professor of Soils Research, Rutgers University, and are presented in Table 2-3. These data clearly demonstrate not only the range of values, but also the average values for urban areas in New Jersey exceed 400 mg/kg. The values for Newark, the area closest to the Kearny Works, range from 100 to 2,400, with an average of 561. All of the New Jersey urban data exceed the NJDEP guideline of 100 mg/kg.

An effort has been made to determine background concentrations which are specific to the Kearny Works. To accomplish this, aerial photos were obtained and reviewed to determine which areas on the property have never been subject to industrial activity or development. Figures 2-3 through 2-8 show aerial photographs of the site for the years 1940, 1951, 1966, 1974, 1981 and 1984. Only two areas appear not to have been subjected to development on the site. These are sampling area 47 located between buildings 15 and 71 and the southeast corner of sampling area 1. These areas meet the criteria for background locations and data obtained are considered representative of site background.

TABLE 2-2

LEAD IN URBAN/INDUSTRIAL SOILS

Citation	Location	Concentration[1] Average (mg/kg)	Minimum-Maximum (mg/kg)
Davies 1980	Urban England	275	78-854
	Industrial England	966	521-2,405
EPA 1977	SC	451	-
	ID	1,518	-
	TX	92	-
	UK	1,849	-
Motto 1984	Newark, NJ	561	100-2,400
Motto 1984	Trenton, NJ	506	280-873
Motto 1984	Miscellaneous Urban NJ	730	291-1,870
Spittler and Feder 1979	Boston, MA	800	Approximately 100-4,000
Klein 1972	Urban MI	17.9±12.6	-
	Industrial Mi	47.7±59.6	-
Lagerwerff and Specht 1970	Maryland	-	38-540
Linzon et al. 1976	Metropolitan Canada	292	-
Linzon et al. 1976	Urban Canada	482±338.23	18-1,450
Chaney et al. 1984	Baltimore, MD	1,171±1,889	46-10,900
Miller and McFee 1983	Indiana	-	63.7-364
Motto et al. 1970	NJ	80.1	35.8-159.5
National Bureau of Standards 1977	Washington, D.C.	230	20-1,227
Hibben et al. 1984	Brooklyn, NY	273	-
Nriagu 1978	U.S. Cities	390	99-1,088
Carey et al. 1980	Des Moines, IA	89	9.8-488
	Fitchburg, MA	117	12.0-1,230
	Lake Charles, LA	139	3.5-1,330
	Pittsburg, PA	444	45.0-2,290
	Reading, PA	1,400	21.0-11,700

[1] ±standard deviation presented, if available.

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TABLE 2-3

LEAD IN URBAN GARDEN SOILS IN NEW JERSEY

Location	Sample ID	Lead Concentration (mg/kg)
Newark (1982)	R399 Maryann's plot	450
	R400 Scudder	285
	R401 S. Wright	620
	R402 Bed 9	115
	R403 Ruby site	2400
	R404 Bed 1	100
	R405 Experimental Plot	118
	R406 Frank	400
Trenton (1982)	Prospect Village	340
	Girand	873
	Belleview	280
	Eaton Ave.	458
	Jackson St.	323
	McCoy	760
Miscellaneous (since 1968)		1870
		963
		471
		382
		401
		291

Source: Information accumulated by Dr. H. L. Motto, Associate Professor of Soils Research, Rutgers University, January 9, 1985.

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Figure 2-3 AT&T Kearny Works April 6, 1940

Figure 2-4 AT&T Kearny Works April 7, 1951

Figure 2-5 AT&T Kearny Works June 22, 1966

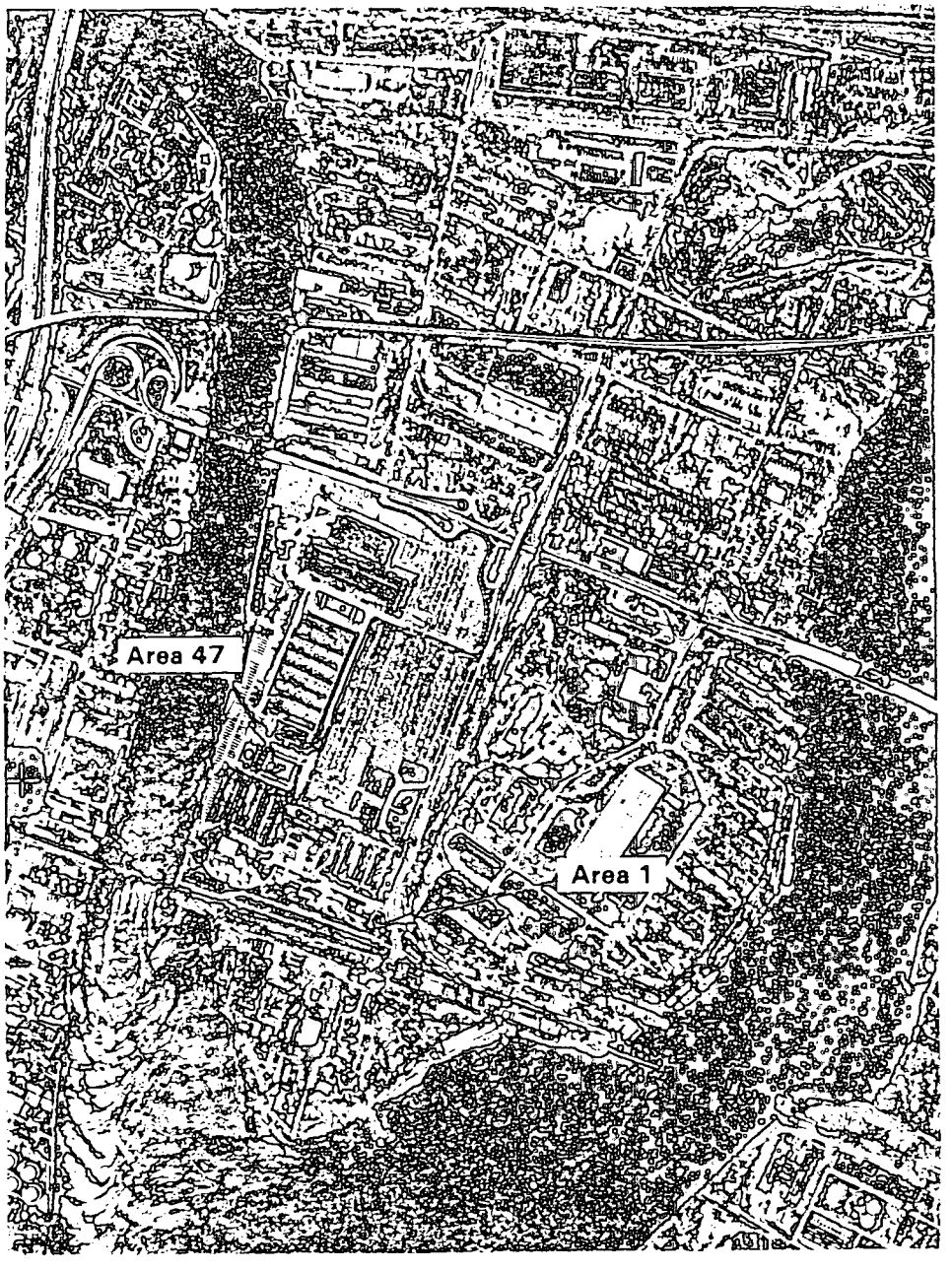

Figure 2-6 AT&T Kearny Works April 11, 1974

Figure 2-7 AT&T Kearny Works April 8, 1981

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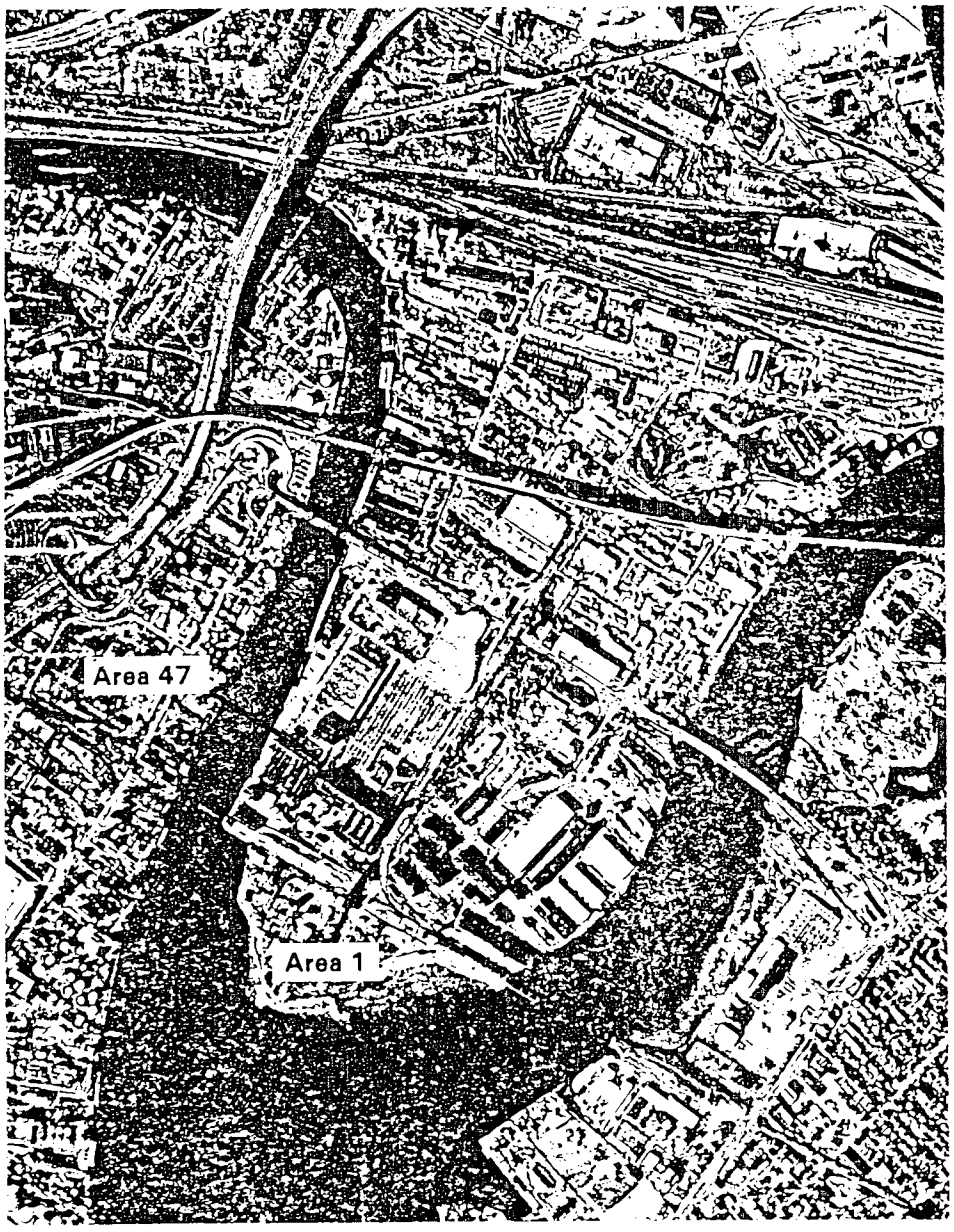

Figure 2-8 AT&T Kearny Works November 7, 1984

Table 2-4 shows the concentrations of lead found by analysis in surface samples taken in these background areas. The results show the lead levels vary from 210 to 460 mg/kg. With this range of values in the site background area, it is reasonable to establish 400 mg/kg as the action criteria for clean-up.

Other Agency Clean-Up Criteria

There do not appear to be any uniform standards established by USEPA or state agencies with regard to the necessity for remedial action. Most states use a case-by-case evaluation of the situation and rely heavily on the results of EP Toxicity testing (or similar methods) to determine both the need to provide remedial action and the ultimate disposition of excavated material. These situations do not relate directly to total metal concentration in the soil. However, some work has been done to determine the need for clean-up based on health effects.

An extensive study of the health effects of smelter emissions in Dallas, TX reported in early 1983 resulted in soil removal at concentrations greater than 500 ppm with a concomitant requirement for foliation of outlying areas to reduce possible exposure. For soil contamination near lead smelters, the Ontario Ministry of the Environment asserts a standard for soil removal of 1,000 ppm total lead (Linzon et al. 1976).

The United Kingdom has developed an Interdepartmental Committee on the Redevelopment of Contaminated Land (ICRCL). In May 1983 the ICRCL issued a revised version of its document "Guidance on the Assessment and Redevelopment of Contaminated Land." This document provides guidance on the problems posed in restoration of contaminated sites to beneficial use at the lowest risk and at reasonable cost. For the principal contaminants, the document sets forth "trigger concentrations," which vary with the intended use of the site. If, after a thorough site investigation, the results show values below the trigger concentrations, it is reasonable to consider the site uncontaminated. These values are not regarded as the maximum permissible concentrations and do not define the concentrations at

TABLE 2-4

CONCENTRATION OF LEAD IN UNDISTURBED

AREAS AT THE KEARNY WORKS

AT&T TECHNOLOGIES, INC.

Sample Location[a]	Lead Concentration in Soil (µg/g)
1-11-X	300
1-14-X	310
47-1-X	330
47-2-X	210
47-3-X	460
47-4-X	400
47-5-X	380
47-6-X	240
47-7-X	320
47-7-X Dup	260
47-8-X	450

[a]Sample locations are defined in Figure 2-1.

which remedial action would automatically be needed. The "trigger concentrations" for lead are 500 mg/kg for domestic gardens and allotments and 2000 mg/kg for parks, playing fields, and open space. No special concentrations are provided for industrial property.

These data demonstrate that an action criteria of 400 mg/kg at the Kearny Works is entirely consistent with clean-up levels established independently by other agencies which have taken into account both health effects and land use.

Health Risk Assessment

To confirm the validity of the preceding analysis, AT&T also conducted a health risk assessment. The results of this assessment also demonstrated that a value of 400 mg/kg is a safe level for the Kearny Works site. The complete assessment is provided in Appendix C. A summary is provided here for the sake of continuity.

Initially, both adults and children were considered in the health assessment; however, it became evident that children are the more sensitive receptors. Although continued, persistent exposure of children to direct contact with the soil on the site is extremely remote, this group was used as the critical group, thereby insuring that the safe levels would be highly conservative. Three scenarios involving children were developed to model the potential for exposure to lead in the soil through ingestion, inhalation, and skin contact, plus factors such as body weight, inhalation rate, and degree of absorption of lead through the gastrointestinal tract, lungs, and skin.

The available literature on the toxicology of lead was reviewed to establish a level of lead intake that would not exceed the maximum safe level, the permissible exposure dose (PED). Since there is a substantial background exposure to land from the environment, this ambient exposure level was subtracted from the PED to estimate an acceptable level of additional exposure from the site.

For lead, the measure of exposure that has been best studied in relation to the appearance of toxic effects is the level of lead in the bloodstream. Hence, the PED is expressed as a blood-lead level to estimate the maximum safe intake of lead. The PED for lead is that

dose resulting in a blood-level not exceeding 30 μg/100 ml. Urban children may have blood-lead levels from ambient sources (food, water, air, etc.) of 20 μg/100 ml. Therefore, an additional 10 μg lead/100 ml blood may be considered permissible and could be attributable to soil exposure from the Kearny site.

Recent data on the relationship between blood lead and intake of lead in children suggests that an increase of 10 μg lead/100 ml blood may result from an intake of 62.5 μg lead/day. Three equations were developed to relate soil lead concentration to intake which consider the three possible routes of intake of contaminated soil--ingestion, inhalation, and skin absorption. Using these equations and adjusting for the proportion of time a child is likely to be exposed at the site, the safe contaminant concentration for lead was calculated as 1,758 mg/kg soil for the one-year old, 409 mg/kg soil for the three-year-old, and 3,196 mg/kg soil for the eight-year-old. Thus, to protect all age groups, a soil lead concentration not exceeding 400 mg/kg soil should be achieved.

Criterion Acceptance

AT&T understands that NJDEP has accepted a criterion of 400 mg/kg lead in soil per the letter from NJDEP to AT&T received June 6, 1985.

2.5 Clean-up Action Locations

Using the action criteria established in Section 2.4, the analytical data contained in Appendix A, and guidance provided by NJDEP, areas of excavation were determined. Figure 2-9 (see map pocket) shows areas to be excavated and indicates the depth of excavation. Table 2-5 presents the soil clean-up locations with the areas, depths and volumes to be excavated at each location. In general, soil contaminated only at the surface will be excavated to a depth of six inches. Where sample analyses show soil contaminated below the surface but uncontaminated at 3 feet in depth, excavation will be done to 18 inches in depth. Soil contaminated at a depth of 3 feet will be excavated to 4 feet to ensure removal of contaminated

TABLE 2-5

CLEAN-UP LOCATIONS AND VOLUMES

Check w/ letter

Location	Type of Disposal[a]	Area (sq ft)	In-ground Volume (cu yd)	20% Expansion[b] (cu yd)
1	Local 6"	90,000	1,667	2,000
2	Local 6"	25,000	463	556
3	Local 6"	34,000	630	756
4,5,6	Local 4'	49,400	7,320	8,784
4,5.6	Local 6"	5,600	104	125
7	Local 6"	9,000	167	200
8	Local 4'	5,600	830	1,000
8	Local 6"	7,800	144	170
9	Local 6"	5,000	93	111
11	Local 4'	2,500	370	444
11	Secure[c]	5,150	698	838
14	Local 4'	600	89	107
15	Secure 4'	6,000	889	1,067
16,17	Local 4'	9,000	1,333	1,600
21,22	Secure 4'	3,100	459	551
21,22	Secure 6"	2,800	52	62
25	Local 18"	10,000	556	667
26 → 31	Local 6"	5,000	93	111
33	Local 4'	47,000	6,963	8,356
34	Local 4'	41,000	6,074	7,289
37,38	Local 6"	43,000	796	956
39	Local 6"	11,000	203	244
44-2	Local 6"	2,000	36	46
45-1	Local 4'	5,600	830	996
45-5	Local 6"	4,000	74	89
47	Local 6"	48,000	889	1,067
TOTAL		477,175	31,826	38,197

[a] Local - Disposal in local landfill
Secure - Disposal in secure landfill
6" - Removal to a depth of 6" below existing grade
4' - Removal to a depth of 4' below existing grade

[b] 20% expansion assumed upon excavation of in-ground volume

[c] see Figure 2-11 for limits of excavation

material above the water table. In developing this excavation plan, it was assumed that soil removal will be confined to exposed areas and generally will not take place under paved areas, buildings, or railroad tracks. Existing roads, utilities, steam lines, storm drains and similar structures will remain in place. Some exceptions to these guidelines have been made. These exceptions are discussed in the following subsections.

2.5.1 Area 8 - Petroleum Hydrocarbons

The analytical data for petroleum hydrocarbons (PHC) from well logs at AT&T are as follows:

Depth (ft)	Concentration (ppm)
0-2	less than 50
2-4	1,200
4-6	less than 50
6-8	1,200

The radically non-uniform vertical distribution of PHC's clearly demonstrates that the PHCs present are not the result of spills or activities attributable to AT&T's operation. Most of the other locations where wells have been installed on the property show the same non-uniform vertical distribution as that evidenced in well AT&T 13, although the differences between highs and lows are not as pronounced (see Table VIII of Appendix E). If spills or operational problems had occurred, one would expect to find a pattern with a high concentration at the surface and decreasing amounts at depth.

The absence of this type of pattern indicates that in all probability the PHC's are attributable to the original fill materials which were brought to the site. A mix of fill was used and it is likely that industrial process residues were mixed with soils to

create the Kearny works property. The nearly universal distribution of PHC's at some level of detection across the site at all depths is conformation that PHC's are representative of a background condition.

2.5.2 Area 11 and 12 - Underground Storage Tanks

The 32 underground storage tanks in area 11 and 12 have all been opened and visually inspected and found to contain sand/cement mixtures up to the level of the manhole lid. No excavation or further action is therefore required in this matter.

2.5.3 Area 11 and 12 - PCB Contaminated Soil

The results of soil sampling in areas 11 and 12 have demonstrated the vertical and horizontal extent of PCB contamination. Figure 2-11 (see map pocket) shows the location and depth of soil samples, the analytical results at each location, and the planned excavation profile.

The nature and distribution of PCB contamination clearly demonstrate that the source of contamination is the transformer located at Building 21. The transformer contains Aroclor 1260 and all the soil samples (as well as the water samples from well AT&T 9) show only Aroclor 1260. The very high concentrations near the transformer and high concentrations at depth in this location taper to very limited surface contamination at points farther away from the transformer. The data also show that the contamination is limited to the area of the railroad tracks and does not extend under the pavement to the south.

Excavation in this area will include removal of the railroad tracks ballast, and contaminated soil. The unpaved areas between the building and loading docks will be excavated.

2.5.4 PCB Contaminated Soil at Other Areas

Figure 2-12 (see back pocket) shows five locations of the five PCB transformer sites now or formerly located at the Kearny Works. Of

these sites, three are inside buildings with continuous concrete floors. The associated transformers are in good condition and there is no opportunity for PCB's to come in contact with soil. The transformer locations were inspected on June 5 and no sumps were found to provide access outside the buildings (see "Memorandum of Record" dated June 6, 1985 provided as Exhibit 2-1).

The other two PCB transformer locations are outdoors. The transformers in the building 170 area were removed when the building was demolished. Extensive surface and subsurface soil sampling has been done in the building 170 area to identify PCB contaminated soil. PCB contaminated soil is being properly addressed through soil removal in areas 21 and 22.

There are no other known sources of PCB's present on site. Additional surface and subsurface soil samples were taken while drilling wells AT&T 1, 3, 7 and 11 and showed no PCB's in soils at these locations. PCB sampling and on-site investigation indicates that the area of PCB contamination has been established and that no further sampling is necessary.

2.5.5 Area 26

Nine surface samples taken in the vicinity of location 26 show concentrations that meet the criteria of Table 2-5. One sample (26A) at a depth of 36 inches in area 26 showed zinc and chromium concentrations which exceed the criteria in Table 2-5. This sample was obtained by drilling through an 18 inch thick concrete pad which lies 12 inches below the ground surface. This pad is the remains of the foundation and/or flooring from building 170 which was demolished in 1979. The pad was encountered at other locations during soil sampling activities and is continuous under the building 170 area. Given the integrity of this concrete obstruction it is not practical to excavate below the pad. With surface soil being shown to be uncontaminated and deeper soils being inaccessible, no excavation will be conducted in this area.

EXHIBIT 2-1

June 6, 1985

MEMORANDUM FOR RECORD

Re: Inspection for Sumps in Areas Adjacent to PCB Transformers in Buildings 32 and 72 Basement and Building 186-1.

On May 30, 1985, Maria Kent, Kearny's ECRA case manager, requested an inspection of the Building 32 Basement PCB Transformer area for the presence of sumps. The purpose of the request was to insure that, in the eventuality of a PCB leak, there would be no possibility that the PCB material could enter any water way.

On June 5, 1985, Mike Frank, one of Kearny's Plant Inspectors, and I performed the requested inspection. However, instead of just inspecting the Building 32 Basement area, we also inspected the other two areas in Kearny, Building 72 Basement and Building 186-1, wherein PCB Transformers are located.

The inspection procedure and results follow.

In each of the three locations, the area in which the transformers were secured and the entire viewable area in that building adjacent to the secured location were visually inspected for the presence of a sump. Approximately 10,000 square feet were visually inspected at each location.

The result was the same at all three locations. There were no sumps within the area inspected.

G. C. Tranchetti

G. C. TRANCHETTI, CSP - 23310

Copy to:
A. Basile - Union
W. Duvel - ERT
M. Kent - NJDEP, ECRA
M. Frank - 23310

Signed this 6th day of June, 1985.

Helen J. Hagadorn

HELEN J. HAGADORN
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Dec. 5, 1987

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2.5.6 Areas 48 and 49

The analytical data show that soils in areas 48 and 49 exceed the criteria of Table 2-5. However, due to the number of density of utility lines in this area, soil excavation cannot safely be accomplished (See Figure 2-13). These areas contain 3 LPG gas tanks and a 10 inch gas line which services the entire plant. In addition there is a 13.5 kVA electric main that crosses these areas. These areas are in a remote corner of the property, surrounded by an eight foot high chain-linked fence with locked gates and are inaccessible to unauthorized persons.

2.6 Additional Sampling and Excavation

The soil sampling and analyses reported here constitute a full and complete evaluation of the soils on the site and meet NJDEP site evaluation requirements. The areas of soil contamination have been fully defined; consequently, no post-excavation sampling will be required.

2.7 Disposition of Contaminated Soil

Soils with PCB's above 5 ppm and soils which are hazardous wastes as defined by RCRA will be disposed of at a RCRA permitted hazardous waste landfill (i.e., a secure landfill). Soil which is not hazardous waste and is characterized as ID#27 by NJDEP will be taken to a designated Hackensack Meadowlands Development Corporation landfill of equivalent local facility to be used as interim cover (if approved by NJDEP) or disposed of as a waste.

2.8 Clean-up Activities

The following sequence of activities will be undertaken to carry out the clean-up operation.

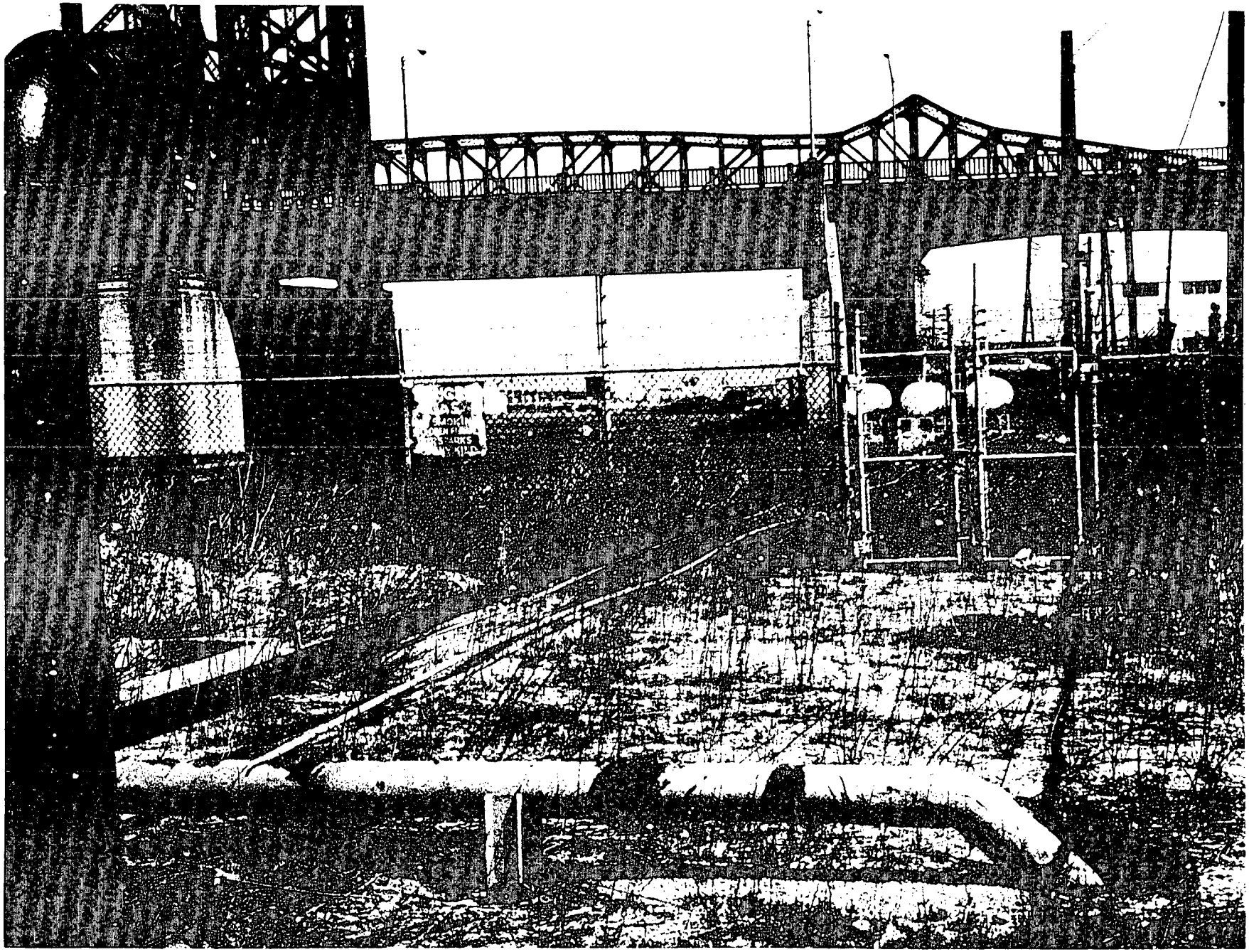

Figure 2-13 Areas 48 and 49. Truck Route 1 and 9 in Background

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1) Prepare bid specification (including health and safety plan, run-off control plan and other incidental work items); solicit bids; select contractor to conduct excavation, hauling, and disposal.

2) Finalize arrangements with landfills for receipt of estimated quantity of materials.

3) Stake-out and label specific areas for removal of hazardous and non-hazardous soils.

4) Excavate contaminated soil at staked locations using a backhoe or front-end loader. Excavate contents of catch basins using a clam-shell clean-out unit. Load soil and catch-basin clean-out directly into bulk transport units. Provide appropriate dust suppression and equipment decontamination on site during excavation. Transport contaminated soil to appropriate landfill.

5) Backfill excavated areas with clean fill. Regrade and cover with size 2B gravel or equivalent.

6) Prepare documentation showing extent of work completed and the confirmatory analytical work.

2.9 Personnel

The clean-up activities will be carried out by and under the supervision of personnel of AT&T Technologies, Inc. and ERT, Concord, MA. Properly licensed subcontractors will be hired to perform the excavation, backfilling, transport, and disposal.

2.10 Soil Clean-up Schedule

Figure 2-10 presents the estimated schedule for the soil clean-up activities. The schedule is based on the soil removal rate of 300 cubic yards per day. This rate is limited by local landfill and transportation constraints. A 20% weather contingency has been included in the soil removal schedule estimate. Figure 2-10 shows that on-site activities will take 32 weeks and would be completed approximately 38 weeks after start-up.

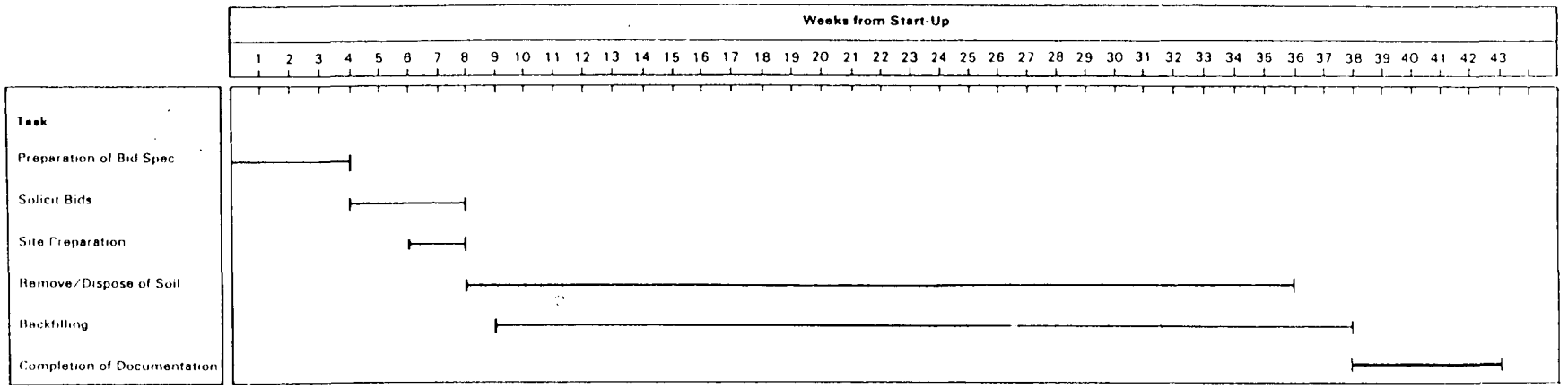

Figure 2-10 Soil Clean-up Schedule

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2.11 Soil Clean-up Costs

Table 2-6 presents the cost estimate for the soil clean-up. Costs were based on the assumptions outlined in Table 2-7. An overall contingency of 10% was included in the final total cost estimate of $2,542,000 for the soil clean-up.

It should be noted that these costs are based on the assumption that all but 2525 cubic yards of soil will be transported and disposed of in a local landfill. Only 2525 cubic yards are now estimated to be disposed of in a secure landfill. If the volume which must be disposed of in a secure landfill is increased, costs for the soil clean-up would increase substantially.

2.12 References

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TABLE 2-6

SOIL CLEAN-UP COST ESTIMATE

1.	Soil Removal		$2,093,000
	a. Excavation and Grading		
	150 days @ $3,000/day	$450,000	
	b. Backfill		
	30,000 c.y. @ $8/c.y.	240,000	
	c. Catch Basin Clean-out		
	18 catch basins @ $500/catch basin	9,000	
	d. Transport:		
	To local landfill		
	35,675 c.y. @ $10/c.y.	356,750	
	To secure landfill:		
	2,525 c.y. @ $70/c.y.	177,000	
	e. Disposal		
	In local landfill		
	35,675 c.y. @ $14.00/c.y.	499,450	
	In secure landfill (non-PCB waste)		
	1,067 c.y. @ $123/c.y.	131,000	
	In secure landfill (PCB waste)		
	1456 c.y. @ $158/c.y.	230,000	
2.	Engineering		218,000
	a. Preparation of bid specifications and evaluation of bids	18,000	
	b. Direct supervision of all on-site work, quality assurance program documentation and administration	160,000	
	c. Surveying of excavation	20,000	
	d. Compaction testing	20,000	
3.	Contingency @ 10%		231,000
TOTAL			$2,542,000

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TABLE 2-7

BASIS FOR COST ESTIMATES FOR AT&T

KEARNY WORKS SOIL CLEAN-UP

Estimates for specific operations were obtained from Hazardous Waste Removal Contractors familiar with the site and the clean-up plan. The lowest estimates received for each item were used as the basis for the total cost estimates. Cost estimates for Engineering items were based on ERT's current pricing. All values were rounded to four significant figures.

1. Volume, Cubic Yards	Total Volumes were obtained by summing the volume estimates for soil removal at each individual location of concern. Areas were estimated based on the proposed clean-up criteria site geography and all available data. Depths were estimated based on proposed clean-up criteria and all available data. For surface clean-up, a full 6" depth was assumed. For clean-up of areas contaminated at 36", a full 48" (4') depth was assumed.
2. Weight, Tons	Tonnage was estimated by assuming a soil density of 1.3 tons/cubic yard.
3. Working Days for Soil Removal	Based on the maximum removal rate of 15 loads/day and 20 cubic yards/load. this rate is limited because of contractors equipment limitations and landfill scheduling limitations: 15 loads/day x 20 c.y./load = 300 c.y./day. Four days for Mobilization/Demobilization were added to the soil removal days estimate for each scenario.

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TABLE 2-7 (Continued)

		Ten days for final backfilling was added to the above estimate.
4.	Cost of Excavation	Based on $3,000/day for crew with one backhoe and one front-end loader.
5.	Transport to Local Landfill	$\frac{\$200/\text{load}}{20 \text{ c.y. load}} = \$10/\text{c.y.}$
6.	Transportation to Secure Landfill	Based on cost of transportation to secure landfill in New York State: $\frac{\$1400/\text{load}}{20 \text{ c.y. load}} = \$70/\text{c.y.}$
7.	Disposal in Local Landfill	Based on disposal in HMDC's Bailing Landfill: $167.00/load 114.00/load (taxes) $281.00/load Assume $280.00/load 20 c.y./load = $14.00/c.y.
8.	Disposal in Secure Landfill	Based on disposal at secure landfill in New York State:

a. Non-PCB Waste

Fee $\frac{\$1,700/\text{load}}{20 \text{ c.y./load}} = \$85/\text{c.y.}$

CERCLA TAXES:

NYS $27/ton

Federal 2.13/ton

29.13 /ton x 1.3 ton/c.y. = $38/c.y.

Total $123/c.y.

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b. PCB Waste

Fee $\frac{\$2,400/\text{load}}{20 \text{ c.y./load}}$ = $120/c.y.

CERCLA TAXES:

NYS $27/ton

Federal 2.13/ton

$29.13/ton x 1.3 ton/c.y. = $38/c.y.

Total $158/c.y.

9. Cost for Backfill — Based on locally obtained backfill delivered at $8/c.y.

10. Catch Basin Clean-out — Based on unit cost of $500/catch basin.

11. Cost for Engineering

a. Preparation of bid specifications and evaluation of bids based on 30 days @ $500/day.

b. 1) Site-Work Supervision

Labor	$400/day
Other Direct Costs	$150/day
	$550/day

2) Documentation and Report Preparation Based on minimum of 30 days $500/day

3) Project Management and Administrative Costs: 20% added to engineering cost estimates.

12. Contingencies — 10% was added to total estimates to account for contingencies such as weather, contractor scheduling, etc.

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3) A series of tests were done at well 9 to confirm or deny the presence of PCBs in the ground water in that area. The results of the tests showed no PCB contamination above detectable limits (detection limit of 1 part per billion). These tests are explained further in Section 3.2.2 and in Appendix E.

Proposed clean-up activities for these points of concern are described in Section 3.2.

3.2 Ground Water Clean-up

3.2.1 VOC Contamination

The ground-water VOC contamination in the vicinity of well 11 (see Figure 1-2 in map pocket), discussed in Section 3.1, will be eliminated by a two phase procedure: (1) the soil removal plan described in Section 2 will eliminate the source of the contamination and (2) a drainage system will be installed to effectively remove contaminated ground water. The soil removal plan calls for removal of the top four feet of soil in the area of well 11. Also, the 14 catch basins in the concrete pad near well 11 will be cleaned out, removing the contaminated silt. The drainage system will consist of four perforated drainage pipes 4 inches in diameter. Three of the pipes will be approximately 100 ft apart and each 200 ft long and the fourth will serve as an interconnection as well as a drain. The 4 inch drain size will be adequate to remove the water that will accumulate without any back pressure effects. The layout of the drainage system is shown on Figure 3-1. This layout has been designed to minimize the number of physical objects such as large trees, concrete slabs or railroad tracks that must be removed in order to install the drainage system. Underground sewer and water lines have also been considered and will be avoided.

Boring logs from ground-water well installations in the area of well 11 show approximately six feet of miscellaneous fill material overlying a black silt layer (see Figure 5, Appendix E). It is

1) How long to operate drainage system
2) [illegible]
3) [illegible]

3. GROUND-WATER INVESTIGATION

3.1 Ground-Water Evaluation Program

A ground-water investigation was performed at the AT&T Kearny Works site by Dan Raviv Associates, Inc. (DRAI), in conjunction with Environ Corporation of Princeton, New Jersey for AT&T. An investigation program was developed and submitted to the NJDEP as "AT&T Supplemental Ground Water Sampling, (Revised 2/28/85, per NJDEP)." Field activities then began February 11, 1985 and continued into March 1985. Based on the results from this sampling, additional data were collected in April, May, and June 1985. All field activities and sampling were documented by DRAI, and DRAI protocols for well installation and sampling were followed.

- Preparation of a site map, including well locations.
- Drilling and installation of shallow and deep wells.
- Well development and sampling.
- Chemical analysis of soils collected during well drilling.
- Chemical analysis of ground water.
- Preparation of hydrogeologic report

A total of 20 wells were installed for the study. The locations of the wells are shown on Figure 1-1. Details of the procedures, results, and conclusions of the study are provided in Appendix E, the hydrogeologic report submitted by DRAI and bound separately. The study results that are the most pertinent for the clean-up plan can be summarized as follows:

1) No volatile organic compounds (VOC) were found in wells 1 through 10, 12, 13, 18, and 20.
2) VOC were found in wells 11, 14, 15, 16, 17 and 19. This is a localized condition centered at well 11, where the total VOC concentration was highest. From this location, a rapid drop-off in concentration was observed in the other, surrounding wells (see Figure 20 of Appendix E).

Submit specs for treatment system of flowdiagram

TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g
6-1-B	72*	2.5*	180*	670*	1200*	-	<1.4*	-	7.6	-	-
6-1-A	120	<0.25	24	98	200	-	1.8	-	<2.6	8400	
6-2-B	54	4.1	290	360	620	-	1.9	-	5.8	-	-
6-2-A	20	<0.25	22	84	81	-	<1.6	-	<2.8	1500	-
6-3-B	43	3.6	430	500	670	-	<1.5	-	3.4	-	-
6-3-A	28	0.64	54	170	210	-	<1.1	-	1.8	600	-
6-4-B	40	3.3	320	1000	940	-	<1.4	-	<2.9	-	-
6-4-B (Dup)	33	3.1	290	1000	860	-	<1.4	-	<3.0	-	-
6-4-A	11	2.2	16	320	150	-	<1.6	-	<2.0	-	-
6-5-B	18	20	96	580	740	-	3.7	-	8.8	-	-
6-5-A	7.2	8.1	19	120	100	-	<1.3	-	<1.7	300	-
6-6-B	57	0.35	130	100	400	-	2.6	-	<2.0	-	-
6-6-A	35	<0.25	26	52	170	-	<1.4	-	<1.3	26	-
6-7-B	87	<0.25	74	90	520	-	2.4	-	<1.8	-	-
6-7-A	12	<0.25	15	32	56	-	<1.4	-	<1.9	13	-
6-8-X	81	-	120	44	440	38	-	69	-	ND	-
6-8-X dup	17	-	40	180	370	33	-	82	-	-	-
6-8-Y	18	-	28	160	220	45	-	450	-	153.1	-
6-8-Z	27	-	17	42	<25	34	-	420	-	678.2	-
6-CB-1†	35*	11*	400*	480*	880*	-	32*	-	<9.3	<15	-
6-CB-2	29	6.3	340	400	800	-	10	-	<3.4	-	-
6-CB-3	22	11	860	700	1300	-	4.5	-	<3.0	-	-
6-CB-4	20	1.8	300	470	1100	-	2.0	-	<2.5	-	-
6-CB-5	14	4.8	160	500	830	-	2.7	-	<1.7	-	-
6-CB-6	15	1.8	90	480	790	-	<2.1	-	<3.3	-	-
6-CB-7	16	2.7	160	270	520	-	<2.0	-	<2.1	-	-
6-CB-8	24	3.8	100	300	1000	-	<2.7	-	<2.8	-	-
6-CB-9	16	4.6	250	580	1200	-	<2.3	-	<2.2	-	-
6-CB-10	17	6.2	160	860	890		<3.3	-	<4.9	69	-
6-CB-11	87	9.4	330	420	2000	-	6.8	-	10	-	
6-CB-12	43	4.0	810	530	850	-	<4.2		<6.5		-

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates
†CB = Catch Basin sample.

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

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TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g
GA-4 B†	46	2.6	8700	370	590	-	<1.4	-	5.0	36	-
GA-4 A	42	0.50	860	89	160	-	2.6	-	2.2	110	-
GA-5-B	19	2.5	13000	180	330	-	<1.4	-	2.4*	14	-
GA-5 B (Dup)	27*	2.6	8000*	190*	400	-	<1.5*	-	10	13	-
GA 6 B	83	5.1	5600	190	400	-	3.5	-	6.5	300	-
GA-6-A	8.5	<0.25	140	36	47	-	2.7	-	13	15	-
GA-7 B	39	3.0	13000	1100	440	-	1.5	-	<2.2	27	-
GA 7 A	21	<0.92	440	74	130	-	7.1	-	12	470	-
5A	8.7	-	49	100	54	46	<2.7	520	-	4.73	-
5B	110	-	850	1110	520	110	4.4	1270	-	0.46	-
5-1-B	260	4.0	560	420	900	-	11	-	<2.5	36	-
5-1-A	13	<0.25	19	39	83	-	<1.4	-	-	-	-
5-2-B	94	1.2	100	200	550	-	3.7	-	38	98	-
5-2-A	130	<0.25	21	43	150	-	<1.8	-	110*	-	-
5-3-B	360	2.3	110	260	580	-	2.7	-	<2.2	67	-
5-3-A	1200	0.37	14	99	640	-	7.3	-	12	-	-
5-4-B	1300	5.1	280	290	770	-	1.7	-	180	-	-
5-4-A	590	0.36	25	71	280	-	<1.4	-	<2.3	-	-
5-5-B	190	3.1	200	590	900	-	1.2	-	2.7*	-	-
5-5-A	13	<0.25	18	68	110	-	<1.5	-	<2.0	-	-
5-6-B	300	3.3	7800	250	520	-	<1.5	-	4.2	-	-
5-6-A	28	<0.25	19	54	38	-	<1.6	-	<2.2	280	-
5-7-B	260	3.0*	3900*	200*	560*	-	<1.4*	-	3.6	-	-
5-7-A	200	<0.25	580	36	33	-	<1.4	-	<2.1	201	-
5-8-X	300	-	200	820	1000	79	-	460	-	23.3	-
5-8-Y	48	-	19	170	610	42		610	-	ND	-
5-8-Z	33	-	17	45	<25	28	-	470	-	9.5	-
5-9-Y	19	-	18	96	73	35	-	310	-	23.0	-
5-9-Z	7.7	-	13	38	<25	15	-	130	-	34.7	
6A	29	-	25	90	120	<25	<2.5	920	54	113.4	-
6B	78	-	65	330	500	92	<2.5	110	-	1.70	-

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates
†GA = Grassy Area near sample point 4.

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

932630145

TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g
6-CB-13	70	4.1	35	180	730	-	<1.2	-	14	-	-
6-CB-14	44	19	230	640	1300	-	<1.9	-	<2.7	-	-
7A	13	<0.25	<30	24	46	18	<3.0	55	-	-	9
7A (DUP)	18	-	<24	68	120	26	<2.3	100	-	-	8
7B	37	<0.25	72	210	450	32	5.4	100	-	-	8
7B (DUP)	30	-	110	120	710	23	<2.5	91	-	-	7
7C	-	-	-	-	-	-	-	-	-	-	99
7-1-X	47	-	250	-	540	-	-	-	-	-	-
7-2-X	34	-	-	190	180		-	-	-	-	
8A	7.6	<0.25	<28	90	360	28	<2.8	87	-	ND	-
8B	11	2.3	36	340	300	50	3.6	270	-	-	-
8-1-Y	-	-	-	<12	<25	-	-	-	-	-	-
8-1-Z	-	-	-	140		-	-	-	-	-	
8-2-Y	-	-	-	14	<25	-	-	-	-	-	-
8-2-Z	-	-	-	110	-	270	-	-	-	-	-
8-3-Y	-	-	-	9.4	<25	-	-	-	-	-	-
8-3-Z	-	-	-	47	190	-	-	-	-	-	-
8-4-Y	-	-	-	<12	<25	-	-	-	-	-	-
8-4-Z	-	-	-	52	30	-	-	-	-	-	-
8-5-Y	-	-	-	50	<25	-	-	-	-	-	-
8-5-Z	-	-	-	450	150	-	-	-	-	-	-
9A	-	-	-	-	-	-	-	-	-	-	
9B	-	-	-	-	-	-	-	-	-	-	-
9-1-X	-	-	-	90	180	-	-	-	-	-	-
9-1-Y	-	-	<12	<25	-	-	-	-	-	-	-
9-1-Z	-	-	-	98	240	-		-	-	-	-
9-2-X	-	-	-	150	290	-		-	-	-	-
9-2-Y	-	-	-	30	71	-	-	-	-	-	-
9-2-Z	-		-	100	180	-		-	-	-	-
9-3-Y	-	-	-	43	<25	-	-	-	-	-	-
9-3-Z	-	-	-	49	87	-	-	-	-	-	-

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

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TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g
9-4-X	-	-	-	250	290	-	-	-	-	-	
9-4-Y	-	-	-	77	150	-	-	-	-	-	-
9-4-Z		-	-	77	150	-	-	-	-	-	-
10A			-	-	-	-	-	-	-	0.016	9
10B	-	-	-	-	-	-	-	-	-	-	17
11A	-	-	-	-	-	-	-	-	-	-	5,500
11-1-A	-	-	-	-	-	-	-	-	-	-	-
11-2-A	-	-	-	-	-	-	-	-	-	-	10,300
11-3-A	-	-	-	-	-	-	-	-	-	-	11,400
12A	-	-	-	-	-	-	-	-	-	-	110
13A	9.8	<0.25	<25	52	28	<25	<2.5	30	<12	0.023	45
13B	16	1.3	120	60	120	40	<2.5	110	<12	-	6
14A	23	-	180	240	1200	54	<3.4	120	<12	0.066	3700
14B	10	-	70	68	75	80	4.8	110	<12	-	23
14-1-A	35	<0.25	38	87	110	-	<1.3	-	-	-	<5
14-2-A	17	0.35	27	88	93	-	<1.3	-	-	-	42
14-3-A	15	0.50	34	45	160	-	<1.4	-	-	-	26
14-4-A	8.4	2.0	38	79	110	-	<1.3	-	-	-	56
14-5-A	5.8	0.28	25	53	130	-	<1.3	-	-	-	<5
14-6-A	14	<0.25	40	53	80	-	1.3	-	-	-	<5
14-7-A	23	<0.25	19	77	190	-	<1.3	-	-	-	<5
14-8-A	22	0.26	57	87	320	-	<1.3	-	-	-	13
14-9-A	16	0.38	36	58	150	-	<1.3	-	-	-	180
15A	-	-	-	-	-	-	-	-	-	2.24	110
15B	-	-	-	-	-	-	-	-	-	0.088	2000
15C	-	-	-	-	-	-	-	-	-	0.040	13
15-1-B	-	-	-	-	-	-	-	-	-	3.2	23
15-1-A	-	-	-	-	-	-	-	-	-	14	36
15-2-B	-	-	-	-	-	-	-	-	-	7.3	16
15-2-A	-	-	-	-	-	-	-	-	-	10	11
15-3-B			-	-	-	-	-	-	-	8.3	130

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

932630147

TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g	PCB µg/g
16-10-X	40	-	340	150	190	160	-	290	-	ND	-	
16-10-Y	16	-	38	65	78	38	-	200	-	0.8	-	
16-10-Z	9.6	-	31	120	180	29	-	120	-	18.5	-	
16-CB-1+	14	1.7	260	-	240	-	<1.3	-	-	-		
16-CB-2	15	2.4	310	600	730	-	<1.3	-	-	-	-	
17A	4.2	<0.25	<25	88	<25	<25	<2.5	48	-	-	-	
17B	20	4.1	270	400	600	92	<2.5	680	-	-	-	
17-1-X	2.6	-	34	46	120	16	-	200	-	ND	-	
17-1-Y	17	-	960	110	130	59	-	140	-	-	-	
17-1-Z	7.0	-	19	38	73	14	-	62	-	2.8	-	
17-2-X	16	-	210	150	640	56	-	280	-	9.6	-	
17-2-Y	24	-	2800	77	130	180	-	230	-	80.7	-	-
17-2-Z	17	-	140	410	170	83	-	430	-	27.2	-	-
18A	-	-	-	-	-	-	-	-	-	-	-	-
18B	-	-	-	-	-	-	-	-	-	-		-
19A	8.9	<0.25	<27	84	54	22	<2.6	73	<12	-	-	-
19A (Dup)	6.2	<0.25	<28	68	55	29	<3.4	120	<12	-	-	-
19B	3.7	<0.25	<21	28	<21	16	<2.1	45	<12	-	-	-
20A	17	0.38	28	70	190	84	<2.3	160	<12	0.03	-	-
20B	15.	0.47	47.	130	150.	45	<2.6	230	<12	-		-
20B (Dup)	12	-	32	83	120	43	<2.9	180	<12	-		-
21A	10	-	50	55	250	<25	<2.5	130	<12	-	-	1.1
21B	26	-	68	160	700	65	<2.5	420	<12	0.039	-	12
21-1-B	-	-	-	-	-	-	-	-	-	-	-	9.4
21-1-A	-	-	-	-	-	-	-	-	-	-		2.3
21-2-B	-	-	-	-	-	-	-	-	-	-	-	4.1
21-2-B (Dup)	-	-	-	-	-	-	-	-	-	-	-	3.4
21-2-A	-	-	-	-	-	-	-	-	-	-	-	1.6
21-3-B	-		-	-	-	-	-	-	-	-	-	32.3
21-3-A	-		-	-	-		-	-	-	-	-	<1.0
21-6-A	-	-	-	-	-	-	-	-	-	-	-	2.5

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

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TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g
15-3-A	-	-	-	-	-	-	-	-	-	10	30
15-5-Y	-	-	-	-	-	-	-	-	-	ND	35,000
15-5-Z	-	-	-	-	-	-	-	-	-	ND	8,200
15-6-Y	-	-	-	-	-	-	-	-	-	ND	940
15-6-Z	-	-	-	-	-	-	-	-	-	ND	1,100
15-7-Y	-	-	-	-	-	-	-	-	-	ND	8,100
15-7-Z	-	-	-	-	-	-	-	-	-	ND	100
15-8-Y	-	-	-	-	-	-	-	-	-	ND	1,600
15-8-Z	-	-	-	-	-	-	-	-	-	1.1	290
16A	12.	-	1160	226	380	170	26	300	-	234.7	-
16B	20	-	900	240	1670	76	<2.5	<140	-	-	-
16-1-B	57	15	420	220	1000	-	<13	-	-	110	-
16-1-A	10	<0.25*	500*	78*	200*	-	2.4*	-	-	220	-
16-2-B	43	4.6	420	360	670	-	3.0	-	-	70	-
16-2-A	57	2.3	630	360	1000	-	<1.2	-	-	330	-
16-3-B	44	3.0	340	170	350	-	<1.1	-	-	-	-
16-3-A	28	1.3	590	2300	3000	-	<1.3	-	-	250	-
16-4-B	40	3.5	480	180	350	-	<1.1	-	-	98	-
16-4-A	28	<0.25	1200	86	180	-	<1.4	-	-	24	-
16-5-B	49	1.0	490	170	480	-	<1.4	-	-	65	-
16-5-A	63	1.5	730	85	300	-	<1.4	-	-	23	-
16-6-B	53	18	300	290	860	-	<1.1	-	-	59	-
16-6-A	33	0.8	160	94	65	-	12	-	-	59	-
16-7-B	58	2.6	420	240	1000	-	<1.3	-	-	34	-
16-7-A	24	2.4	9000	140	170	-	2.4	-	-	160	-
16-8-B	45	3.3	400	160	300	-	<1.3	-	-	22	-
16-8-B (Dup)	14	3.5	530	180	290	-	<1.2	-	-	4.7	-
16-8-A	10	<0.25	1300	120	120	-	<1.4	-	-	73	-
16-9-X	34	-	220	160	280	62	-	280	-	1.62	-
16-9-Y	30	-	260	160	280	47	-	250	-	0.7	-
16-9-Z	-	-	110	74	55	34	-	200	-	0.7	-

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates
†CB = Catch Basin sample.

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

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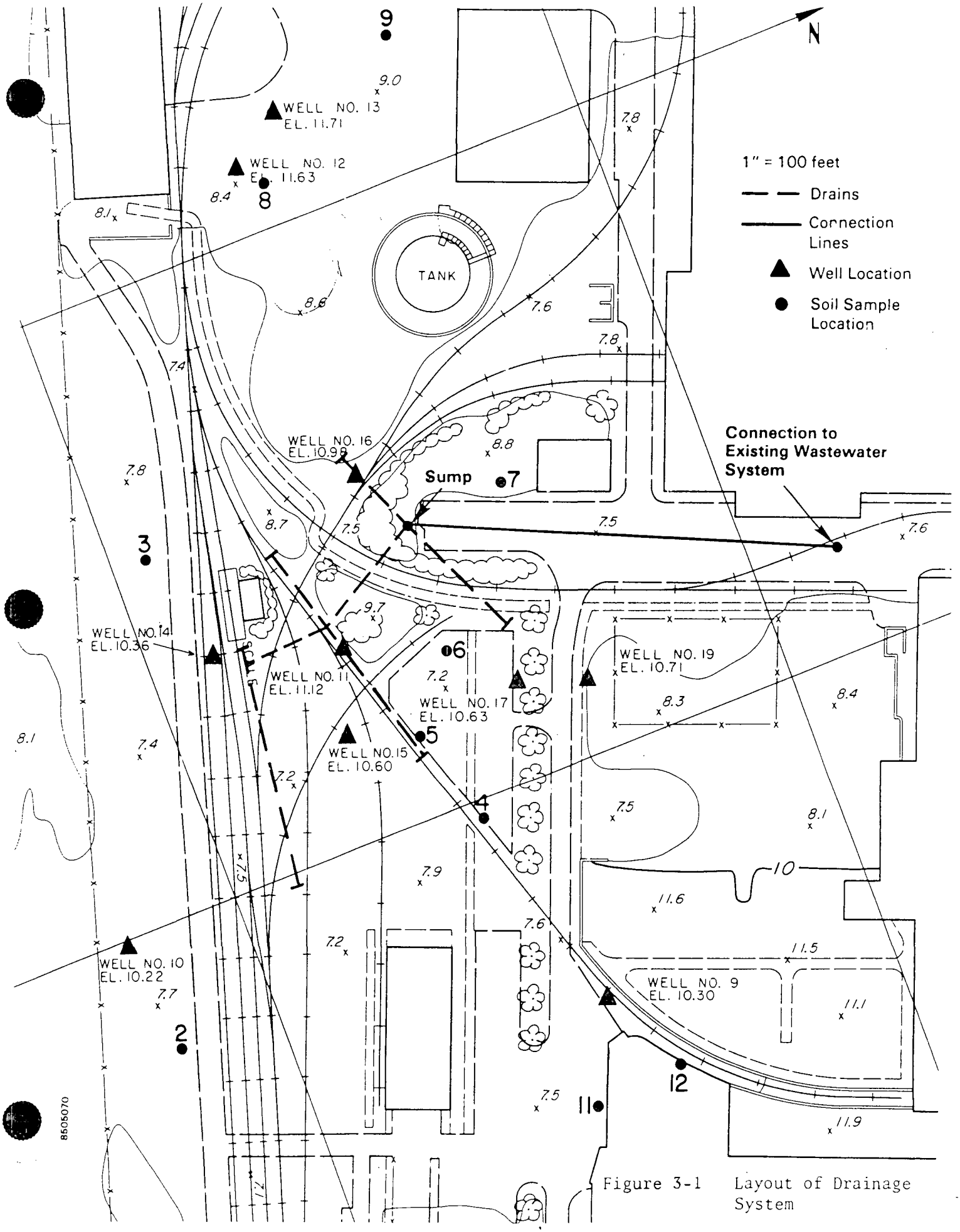

Figure 3-1 Layout of Drainage System

estimated from the hydrogeologic study of the area that the upper five feet of this silt layer is water bearing and thus might contain contaminated ground water. Below this point, the silt layer becomes increasingly impermeable. Therefore, in order to remove all of the contaminated ground water, the drainage system will be placed 13-16 ft below the ground level, at the top of the impermeable section of the silt layer. A cross-section of the drainage system is given in Figure 3-2. Trenches will be dug for the drains and stabilized by dewatering. The trenches will be approximately twelve feet wide at the surface and four feet wide at the bottom. Each trench will be filled with four feet of medium grade gravel at the bottom, four feet of medium grain sand overlaying the gravel, and then four feet of cover material. This design will allow ground water from all levels of the water bearing strata to flow relatively unimpeded to the drainage pipes.

The first step in the sequence of operations will be the installation of a ground-water treatment system. A sump will be installed and connected to each of the trenches to provide trench dewatering during excavation. During operation, water from the drainage system will be collected in the sump, and then pumped to the aeration treatment system. This system will discharge to the ground around well 11 to enhance aquifer flushing.

Initial operation of the drainage system will produce approximately 1500 gpd of ground/water with an estimated VOC concentration of 5000-7000 ppb. Within 90 days of operation it is estimated that the production rate will be approximately 150 gpd and the VOC concentration of the removed water will be 1000 ppb. Figure 3-3 shows the water table one year after the drainage system begins operation. It is estimated that approximately two to four years after the initial operation of the system, the maximum VOC concentration in the ground/water will stabilize at an acceptable level.

Samples will be taken and analyzed once each month for the first six months to determine the VOC concentrations in both the discharge water from the drainage system and in monitoring wells 11, 14, 15, 16,

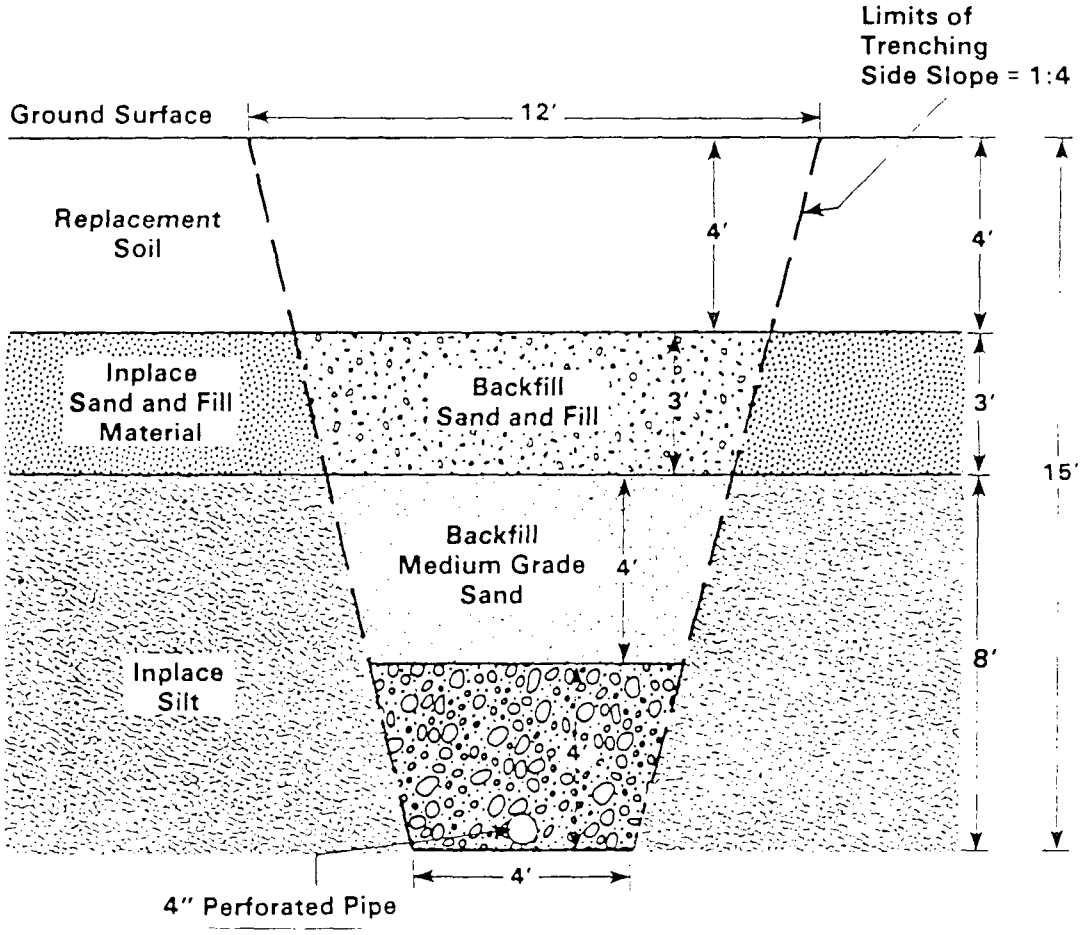

Figure 3-2 Cross-Section of Drainage System

Ed, IS design 9.15' overkill? 8 feet into original fill

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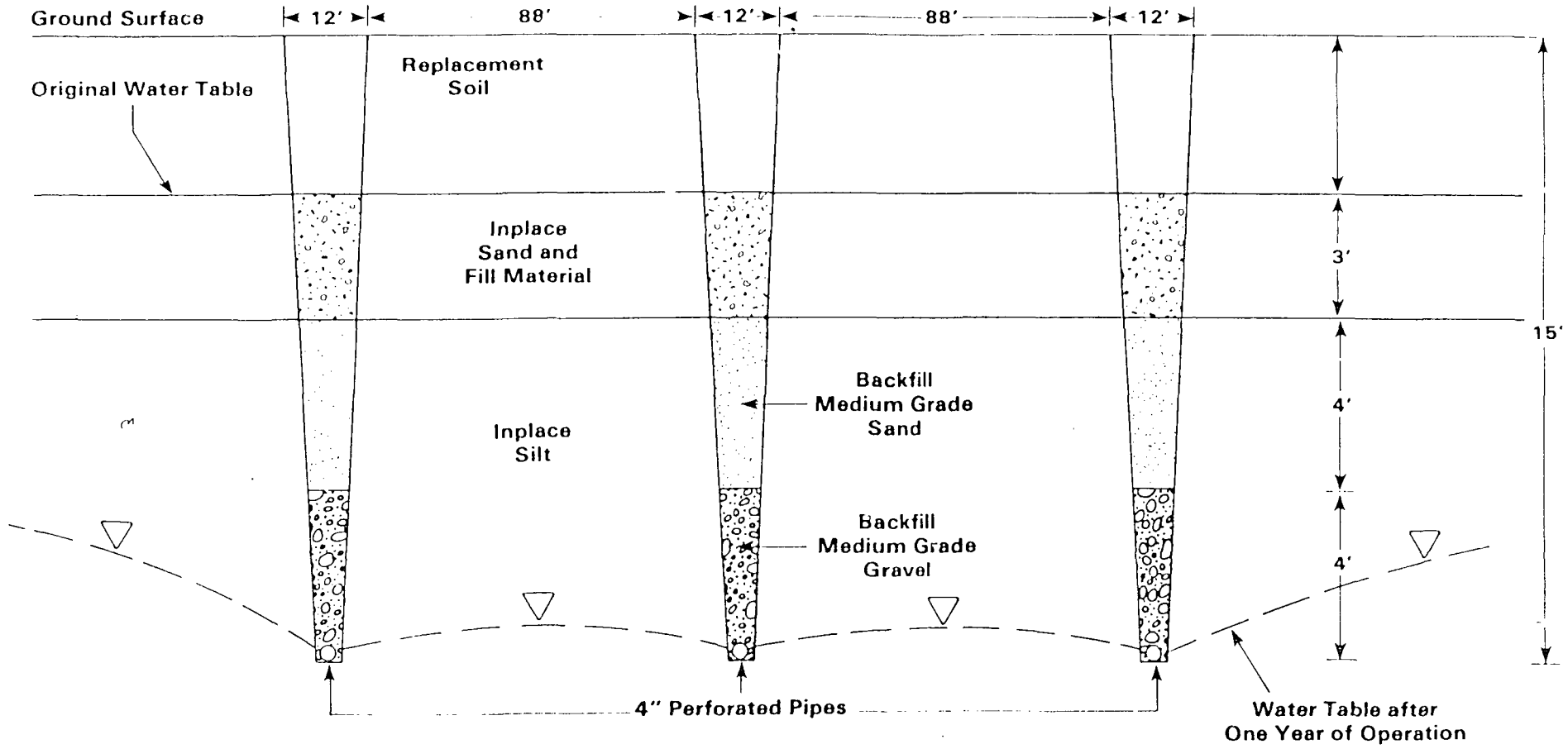

Figure 3-3 Cross Section of Drainage System and Projected Water Table After One Year of Operation (Vertical Exaggeration 10:1)

and 17. After six months, sampling and analysis will be done on a quarterly basis at these same locations. The procedures to be used will be similar to those of the site hydrogeologic study program (Raviv, 1985). When the sampling program indicates that the total VOC concentration of the ground water has either stabilized at an acceptable level or is less than 100 ppb whichever comes first, pumping from the drainage system will be discontinued, the pump will be removed, and the sump will be closed.

— No new language

use appropriate backfill.

3.2.2 PCB Contamination

The ground-water PCB contamination in the vicinity of well 9 (see Figure 1-2 for location) has been addressed by a two phase procedure: (1) the soil removal plan described in Section 2.5.3 will eliminate the source of the contamination and (2) a monitoring program has been conducted in the area of well 9 to assess whether ground water is contaminated.

PCB contamination (10 parts per billion, ppb) was found in a ground water sample obtained from well 9 by DRAI personnel on February 26, 1985. Subsequent sampling of this well indicated decreasing concentrations of PCB's, as summarized in Table XV, Appendix E. PCB's concentration in well 9 were found to be less than 1 ppb. PCB contamination was found in surface and subsurface soil samples obtained by ERT personnel in the vicinity of well 9. The contamination in the ground water samples, found in the initial samples, was apparently the result of the presence of contaminated soil particles in the water samples. This conclusion is based on the review of the different sampling methods used for this well. A sampling history of well 9 and specific sample collection methods used each time is summarized below.

Well 9 was first sampled for PCB's on February 25, 1985. the well was pumped on February 25, 1985. Pumping started at 2:27 PM and the well was pumped dry by 2:34 PM. (Pumping was accomplished with a small power suction pump which produces about ten gallons per minute.) The sample was then collected on February 26 at 10:20 AM.

Well 9 was sampled a second time for PCB's on April 9, 1985. Pumping started at 1:00 PM and was completed in 60 seconds. The sample was then collected at 2:11 PM.

Well 9 was sampled a third time for PCB's on April 10, 1985. The well was pumped at 1:00 PM and was completely evacuated in 60 seconds.

Well 9 was sampled a fourth time on May 7, 1985. The well was developed by pumping from 10:11 to 10:25 AM and 11:53 AM to 12:02 PM. A discharge rate of 3.5 gallons per minute was recorded at 10:11 AM. In both instances, the discharge was initially cloudy and brown and then cleared, and the flow rate decreased to zero before pumping stopped. A total volume of approximately 70 gallons of water were removed from the well before the actual sample was taken.

Well 9 was sampled a fifth time on May 31, 1985. The well was pumped three times from 8:40 to 8:44 AM, 8:54 to 8:55:30 AM, and 9:54 to 9:57 AM. A discharge rate of 7.5 gallons per minute was recorded during the period of 8:40 to 8:44 AM.

After removal of the standing water by pumping and allowing the well to recover, normal DRAI sampling protocol includes sample collection using a clean bottom loading PVC bailer and clean nylon rope to lower the bailer to the bottom of the well. The water from two successive bails is discarded prior to transferring any water from the bailer to the sample jars. This procedure was followed on the first four sampling dates.

For the fifth sampling, a different method was employed. To collect this sample, a peristaltic pump,fitted with a new length of flexible tygon tubing, was used. The pumping rate from this pump is on the order of 1/4 gallon per minute or less. The tubing was inserted to depth of 1.4 feet below ground water to recover the sample.

The PCB contamination in the earlier samples from well 9 is probably due to silt contamination due to the sampling method. Sampling by bailing, often results in silty samples because any material in the well generally sinks to the bottom and agitation by the bailer stirs jup this material. However, sampling with a peristaltic pump from the upper portion of the well should result in a much 'cleaner' sample in terms of suspended particulates because of the lack of agitation.

It is believed the declining PCB content of the samples from well 9 is the result of declining concentration of PCB contaminated silt particles in the samples as a result of additional development each time the well was sampled and a sample collection method allowing for minimal agitation of the well water during sampling. latest data?

3.3 Personnel

Ground-water clean-up operations will be performed under the supervision of AT&T Technologies, Inc. and ERT personnel. Properly licensed subcontractors will be hired to perform the excavation, plumbing, and backfilling.

3.4 Schedule and Costs

Installation of the ground-water recovery system in the area of well 11 will take place over a nine week period as shown on the schedule for these activities, Figure 3-4. These installation activities will begin on the 11th week of the overall clean-up schedule because of soil removal activities in the area. It is assumed that drainage installation will take place after the soil removal but before the soil replacement in the well 11 area.

Ground-water recovery system installation will be performed by contractors. Costs for these activities are shown on Table 3-1. The estimated total is **$397,300**.

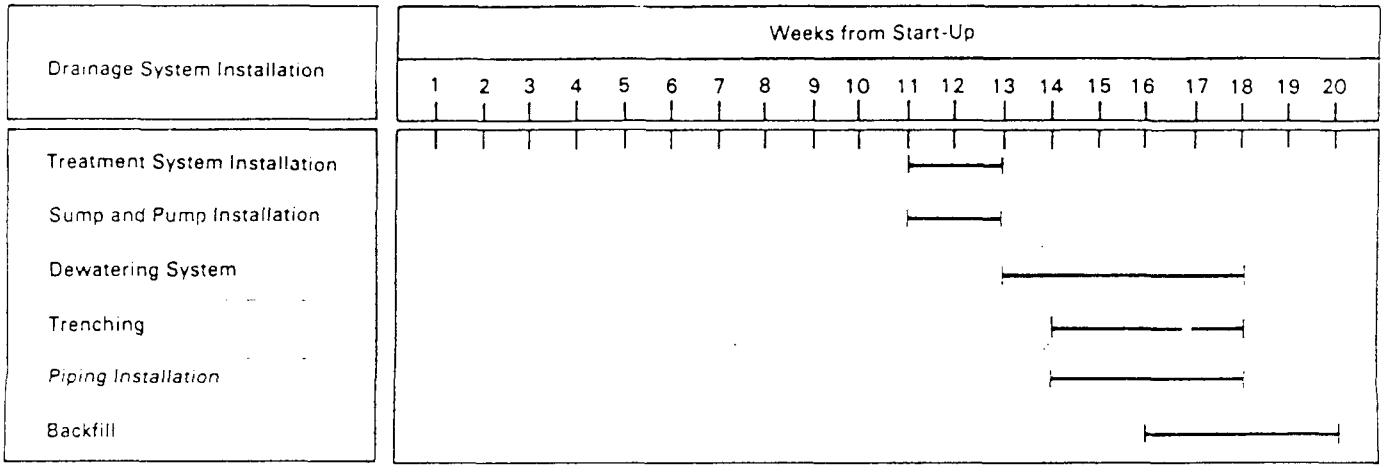

Figure 3-4 Schedule for Installation of Ground Water Recovery System

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TABLE 3-1

ESTIMATED COSTS FOR GROUND-WATER REMEDIATION

VOC Barrier Drain System for AT&T 11

1)	Trenching/Excavation/Filling	$278,450
2)	Sump Installation	$15,350
3)	Treatment System Installation	$39,000
4)	Well Replacement & Monitoring	$26,600
5)	Engineering	$27,300
6)	Operation and Maintenance (2 years)	$10,600
	TOTAL	$397,300

4. OTHER SITE CLEAN-UP ACTIVITIES

The foregoing sections have described in detail the overall outdoor site clean-up activity to be conducted at the Kearny works. Other decontamination, decommissioning and disposal activities will be conducted in relation to hazardous materials at various storage and processing operations at the Kearny works. The following sections describe the activities which will be conducted. (Note: this discussion largely reproduces the commitments made by AT&T in its Initial ECRA Notice Submission to NJDEP on February 6, 1984, and the Environmental Cleanup Plan for Kearny Works Plating Shops and Waste Treatment Plant, submitted to NJDEP on December 6, 1984. The information is summarized here for the sake of continuity and completeness.)

4.1 Decontamination, Decommission and Disposal

In general, all hazardous inventories will be depleted in production to the extent possible. The irreducible remainder of raw material plus all wastes will be handled as follows:

4.1.1 Procedure No. 1 - General

Residual raw materials and wastes will be properly packaged or containerized and shipped to Chemical Waste Management, Inc., Emelle, Alabama or other authorized disposal facility. Where possible, plating type wastes will be processed through the Waste Treatment Plant. (This procedure is applicable to materials discussed below in Sections 4.2 Items 3, 6, and 10; and 4.3 Items 2 and 4).

4.1.2 Procedure No. 2 - Fuels

Remaining fuels, not sold with the property, will be sold as reclaimable fuels to an authorized oil reclaimer, or will be returned to their suppliers. Drained underground tanks will be cleaned with a detergent solution, rinsed with water, and filled with a sand/cement mixture or the tanks will be removed. (This procedure is applicable to materials discussed below in Section 4.2 Items 4, 5, 7, 8, and 9).

4.1.3 Procedure No. 3 - Plating Type Materials (see also Section 4.4 below)

After shutdown of the plating operations is authorized, all plating type wastes will be processed through the Waste Treatment Plant where possible and the process tanks will be rinsed clean.

Plating exhaust hoods, ductwork, scrubbers and scrubber stacks will be cleaned or disassembled and disposed of. Where possible, rinse water will be processed through the Waste Treatment Plant.

Where possible, chromate treated water will be piped to the Waste Treatment Plant and treated or trucked to an authorized treatment facility. The Waste Treatment Plant will then rinse and manually decontaminate itself. Waste Treatment Plant sludge will be trucked to CECOS International, Niagara Falls, New York, or other authorized facility.

4.1.4 Procedure No. 4 - Liquefied Gases

Residual liquefied nitrogen, anhydrous ammonia, and chlorofluorocarbon refrigerants will be sold or returned to the supplier. (This is applicable to materials discussed below in Section 4.2 Item 13 and Section 4.3, Item 6.)

4.1.5 Procedure No. 5 - Responsibility

As shops close or are transferred, shop product engineers are responsible for a total inspection of the shop and collection and transfer of all hazardous materials to the on-site authorized hazardous waste area. Then the wastes will be shipped to Chemical Waste Management, Inc., Emelle, Alabama, or other authorized facility. Shop product engineers will work in consultation with the AT&T Technologies, Inc. professional Environmental Engineering Staff. The Environmental Engineering Staff will be responsible for final inspection of all vacated premises and decommissioned facilities. (This procedure is applicable to materials discussed below in Section 4.3 Items 1 and 3).

4.2 Storage Facilities

The following paragraphs discuss storage facilities in a clockwise order of rotation beginning in the lower left corner of Drawing 8452-120579-D, located in the back pocket.

1. Building 25, Grid Index J-4, has 32 adjacent underground tanks. The tanks range in capacity from 500 gallons to 4,000 gallons. The tanks contained oils and paint thinners but were drained and filled with a sand cement mixture approximately 20 years ago. Each of these tanks will be opened and visually inspected for liquid residuals. Liquid residuals will be handled according to procedure No. 1.

2. A small amount of silt pumped from Powerhouse cooling water tunnels was examined for contaminants and deposited at Grid Index J-2 several years ago. A laboratory report on the silt is included on the next page (Chemtech analysis dated June 29, 1981). The silt is not a hazardous waste by NJDEP criteria. However, most of the silt will be excavated and removed along with contaminated soil from Area 2 as described in Section 2.5 of this plan.

3. An outdoor storage yard for virgin materials and another for waste materials are located at Grid Index I-3. The materials are stored on impervious pavement, and no spills have occurred. Follow Procedure No. 1. Contaminated soil around the periphery of this area will be dealt with as described in Section 3 of this plan.

4. Four, 10,000 gallon, underground tanks are located south of Building 83 at Grid Index H-3. Three tanks contained No. 4 oil and were drained and filled with sand approximately 15 years ago, therefore no action is needed for these tanks. The fourth tank contains diesel oil. It is currently in use, well maintained and regularly gauged. Recent test results demonstrate this tank does not leak. Follow Procedure No. 2.

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5. The 840,000 gallon, Powerhouse standby, No. 6 oil tank is at Grid Index G-3. The tank floor is a heavily reinforced, sixteen inch thick concrete slab on a piling grillage 3 ft., 10 in. on centers in both directions. The steel tank walls are entirely visible with no evidence of leakage. The tank is surrounded by a steel dike of adequate capacity to contain a complete rupture. The tank is well maintained and regularly gauged. Follow Procedure 2.

6. Building 85 basement, Grid Index E-1, has some slightly oily liquids in pits and dried, copper-bearing sludge on the floor. Follow Procedure No. 1.

7. The 20,000 gallon, Powerhouse, No. 6 oil day tank, Grid Index F-3, is in an underground vault and not used. There is no evidence of leakage. Follow Procedure No. 2.

8. The Garage, Grid Index E-7, has two underground 10,000 gallon gasoline tanks. The tanks are well maintained, regularly gauged and recent tests show no evidence of leakage. Follow Procedure No. 2.

   The Garage also contains an oil drainage system which has two grated troughs running the length of the garage and a centrally located oil trap and sump. The oil trap and sump will be pumped out and the clean-out will be disposed of according to Procedure No. 1. Following clean-out of the oil trap system, the walls and floors of the garage will be detergent washed/steam cleaned. Cleaning wastewater will be routed to the municipal sewer system.

9. There are two, above ground, 1,800 gallon, liquefied petroleum gas tanks at Grid Index E-8 and three more at Grid Index B-19. Any spills would instantly volatilize. Follow Procedure No. 2.

10. Raw materials and empty drums are stored on impervious pavement in an outside yard at Grid Index E-12. Follow Procedure No. 2.

11. Numerous above-ground tanks serve the plating operations and its associated Waste Treatment Plant, along with a conveyorized paint line washing machine in Building 185. Refer to Grid Index D-13. The entire train of tanks, piping, exhaust ductwork and pollution control equipment will be decontaminated as outlined in Procedure No. 3 and Section 4.4 below.

12. Buildings 170 and 161, Grid Index I-15, were environmentally cleaned and demolished in 1981. No action is therefore necessary.

13. Building 171 has two, outside, above-ground, 1,000 gallon, anhydrous ammonia tanks and one, 6,000 gallon, liquefied nitrogen tank at Grid Index E-17. Any spills would instantly vaporize. Follow Procedure No. 4.

14. Building 171 has a small heat sink oxidizing operation at Grid Index E-17 and a washing machine with cleaning tanks at Grid Index F-18. All are effluent-piped to the Waste Treatment Plant and will be decontaminated along with Building 185 plating solutions as outlined in Procedure No. 3.

15. Air conditioning is provided to a number of buildings via the circulation of chromated, chilled water generated in the Powerhouse, Grid Index E-3. Follow Procedure No. 3.

16. Prior to 1963, a large coal pile was maintained in the area defined by Grid Indices F-H-2-3. The weight of the coal probably produced soil settlement, and there may be a thin layer of coal fines under the current gravel surface. This is environmentally harmless, therefore no action is required.

4.3 Hazardous Substance Inventory

Numerous small quantities of hazardous materials which fall within the purview of the ECRA clean up regulations are located on the Kearny works property. These materials will be handled as follows:

1. Table 4-1 shows materials used in various shops at the Kearny works. These materials will be disposed of by Procedure No. 5.

2. The 11, PCB filled, functioning transformers and the mineral oil filled transformers will be sold intact with the property. Follow Procedure No. 1, regarding disposal of the other PCB's in storage in Building 25 at Grid Index K-3.

3. In addition to items in 1 and 2 above and the storage facilities listed in Section 4.2 above, almost every shop has small varying quantities of general purpose solvents, inks, etc. An inventory of these and laboratory supply materials would be difficult to obtain and would be valid only for a very brief period. Follow Procedure No. 5 for an assignment of responsibility for the collection and disposal of these materials as individual shops are shut down or transferred.

4. Asbestos is bonded into old piping, boiler insulation, friction materials and, in very small amounts, in some floor tile. It is assumed that boilers, piping and functioning insulation will be sold intact with the buildings. Follow Procedure No. 1 covering residual loose floor tile and friction materials.

5. A small amount of groundskeeping materials are currently stored in Building 23, Grid Index I-5. This material is being depleted, and the groundskeeping function will be contracted prior to the final plant shutdown. No other action will therefore be required.

TABLE 4-1

INVENTORY OF SMALL QUANTITIES OF HAZARDOUS SUBSTANCES

AT THE AT&T KEARNY WORK

Item		Location*	Shop	Material
1.	Degreaser, Open Tank, Vapor	71-7, S-21	Jack Shop	1,1,1 Trichloroethane
2.	Mass Solderer	71-6, S-23	Back Plane	Flux
3.	Degreaser, Open Tank, Vapor	71-6, S-22	Back Plane	Chlorofluorocarbon
4.	Degreaser Open Tank, Cold	71-4, R-17E	Tool Const.	Varsol
	Degreaser Open Tank, Cold	71-4, R-17W	Tool Const.	Varsol
5.	Mass Solder & Cleaner	71-2, X-20	K.E.	Chlorofluorocarbon
6.	Barrier Coating	71-2, P-25	Mini Relay	Chlorofluorocarbon
	Barrier Coating Cleaning	71-2, P-25	Mini Relay	Clorofluorocarbon
7.	Mass Solderer & Cleaner	71-1, X-26	TB-40	Perchloroethylene
8.	Finger Cleaning	71-1, X-26	TB-40	Perchloroethylene
9.	Finger Cleaning	71-1, X-23	TB-40	Perchloroethylene
10.	Finger Cleaning	71-1, X-18	Model Shop	Perchloroethylene
1.	Lacquer Spray	73-1S, C-10	TB-20	Lacquer and Thinner
12.	Mass Solderer & Aqu. Clean.	73-1S, D-10	TB-20	Flux and Cleaner
13.	Finger Cleaning	73-1S, D-10	TB-20	Perchloroethylene
14.	Coil Varnish Tank 1, East	73-1 NE	Coil	Water Reducible Varnish
	2	73-1 NE	Coil	Water Reducible Varnish
	3	73-1 NE	Coil	Water Reducible Varnish
	4, West	73-1 NE	Coil	Water Reducible Varnish
16.	Coil Varnish Autosoak	73-1 NE	Coil	Water Reducible Varnish
17.	Coil Epoxy Degreaser	73-1 NE	Coil	Chlorofluorocarbon
20.	Construction Paint Spray	85-1	Const.	Paints
21.	Cross Bar Degreaser	171-S	Piece Part	Trichloroethylene
22.	Spray Booths South	185-1S	Met. Fin.	Paints and Sludge
23.	Spray Booths North	185=1N	Met. Fin.	Paints and Sludge
24.	Degreaser, Open Tank, Cols, So.	Garage	Garage	Varsol
	Degreaser, Open Tank, Cold, W.	Garage	Garage	Varsol

Building-Floor-Column Number

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6. The central Powerhouse air conditioning plant, Grid Index E-3, has approximately 10,000 pounds of volatile refrigerant in closed systems. Follow Procedure No. 4 for action if this equipment is not sold intact with the property.

4.4 Plating Operations

A complete description of clean-up operations for the Waste Treatment Plant and Plating Operations is contained in ERT Document No. D367-100B/4811A "Environmental Cleanup Plan AT&T Technologies, Inc. Kearny Works - Plating Shops and Waste Treatment Plant" submitted to NJDEP on December 6, 1984. For the sake of continuity, a synopsis of that plan appears here. The complete Plating Shop Closure Plan is contained in Appendix D with modifications for post clean-up sampling and health and safety during closure.

4.4.1 Building 171

The plating operations conducted in Building 171 will be disconnected, dismantled, and shipped to another AT&T location. Connecting ductwork will be dismantled, rinsed clean and disposed of or shipped for reuse with the reassembled units. The central ductwork will be examined for residuals and, if required, will be cleaned or cut down for disposal. Connecting drain lines will be removed, rinsed clean and disposed of in a local landfill. Central drain lines will be rinsed with acid, flushed with water, and left in place. Adjacent floors and walls will also be cleaned and rinsed. Wash and rinse waters will be routed to the waste treatment plant.

4.4.2 Building 185

The plating operations conducted in Building 185 will be discontinued, decontaminated, decommissioned, and where practical, left in place. The tanks will be chemically and mechanically cleaned and rinsed. The ductwork, scrubbers, and scrubber stacks will be examined and chemically tested for the presence of significant quantities of hazardous residues. If necessary and if possible, the

ductwork, scrubbers, and scrubber stacks will be chemically/mechanically cleaned and rinsed to a safe level. If this is not possible, the items will be cut down, cleaned, and disposed of at a local landfill. The connecting drain lines will be handled in a manner similar to the ductwork and scrubbers. The main sewers to the treatment plant will be examined for significant hazardous chemical deposits. If necessary and, if possible, these lines will be chemically/mechanically cleaned to a safe level. If cleaning is not possible, the lines will be permanently plugged with a cement grout mixture. Walls, floors and appurtenances will be thoroughly cleaned and rinsed. All rinse waters will be routed to the waste treatment plant through existing lines.

The value of the Kearny property is substantially increased if the existing tanks, ductwork, and piping can be left in place ready for use by the next occupant. Thus, if it is established that the next occupant will be a plating operation similar to the existing operation, the cleaning operations will be conducted so as to be compatible with the known future use. Also, process flow diagrams of the existing and planned future plating operations will be provided to NJDEP so that a compatibility comparison can be completed.

4.4.3 Post Clean-up Evaluation

Upon completion of plating shop clean-up activities a post clean-up evaluation will be conducted. The evaluation will consist of two phases. The first phase will be a well documented visual inspection for each decontaminated area. The second phase will be a sampling tour of these areas that presented the highest potential hazards. All samples will be promptly analysed at ERT's analytical laboratory. The results of these analyses will be contained in a summary report of clean-up activities at the Kearny site.

4.5 Waste Treatment Plant

The waste treatment plant will be kept in operation to accommodate wastewaters generated in the decommissioning and

decontamination of the plating operations. Following decontamination of the plating operations, the waste treatment plant will be closed according to the following procedures.

All concentrated process liquids in holding tanks at the waste treatment plant will be emptied by bleeding the waste into the appropriate waste treatment system. The holding tanks will be rinsed with water and the rinse water routed to the treatment system.

Starting with the empty holding tanks, the several unit operations within each of the three process lines of the waste treatment plant will be sequentially discontinued and cleaned. Each tank in the line will be taken out of service, emptied into the subsequent tank, and thoroughly cleaned with water from high pressure hoses. Wastewater from the cleaning will be pumped to the subsequent tank. The tank washings will be treated and piped to the solids removal system (clarifier). Supernatant clear liquor in the clarifier will be analyzed to assure compliance with NPDES permit limits and discharged to the Passaic River. The remaining solids will be pumped to the vacuum drum filter system for dewatering. Dewatered sludges will be trucked to CECOS International, Niagara Falls, New York, or other authorized facility. The clarifiers will be cleaned with water from high pressure hoses. The rinse water will be analyzed and, if acceptable, discharged to the Passaic River.

Residual chemicals used in the treatment process (chlorine, sulfur dioxide, sodium hydroxide, sulfuric acid, ferric sulfate, coagulant acid, and filter aid) will either be shipped to another AT&T location, returned to the supplier, or disposed of off-site per Procedures No. 1 and No. 4. Large chemical holding tanks, one each for sulfuric acid and sodium hydroxide, will be emptied of chemicals and rinsed with water from high pressure hoses. The rinse water will be routed to the Passaic River following pH check and adjustment as necessary. Small quantities of stock laboratory chemicals and paints, oils, etc used for maintenance purposes, will be disposed of according to Procedures No. 1 and No. 5.

4.6 Schedule and Costs

Decontamination, decommissioning, and disposal operations will be conducted by AT&T personnel over the next several months, with all operations ceasing by August 1985. A schedule for these other clean-up activities is shown in Figure 4-1. The overall time for completion of these activities is approximately twenty weeks.

The general costs of close-out are being absorbed by AT&T as part of its normal operation with regular full-time employees. Decontamination and decommissioning of the plating operation and waste treatment plant will be handled in part by outside contractors. The estimated cost for each major item of activity is shown in Table 4-2. The total cost for these clean-up activities is estimated to be $681,000.

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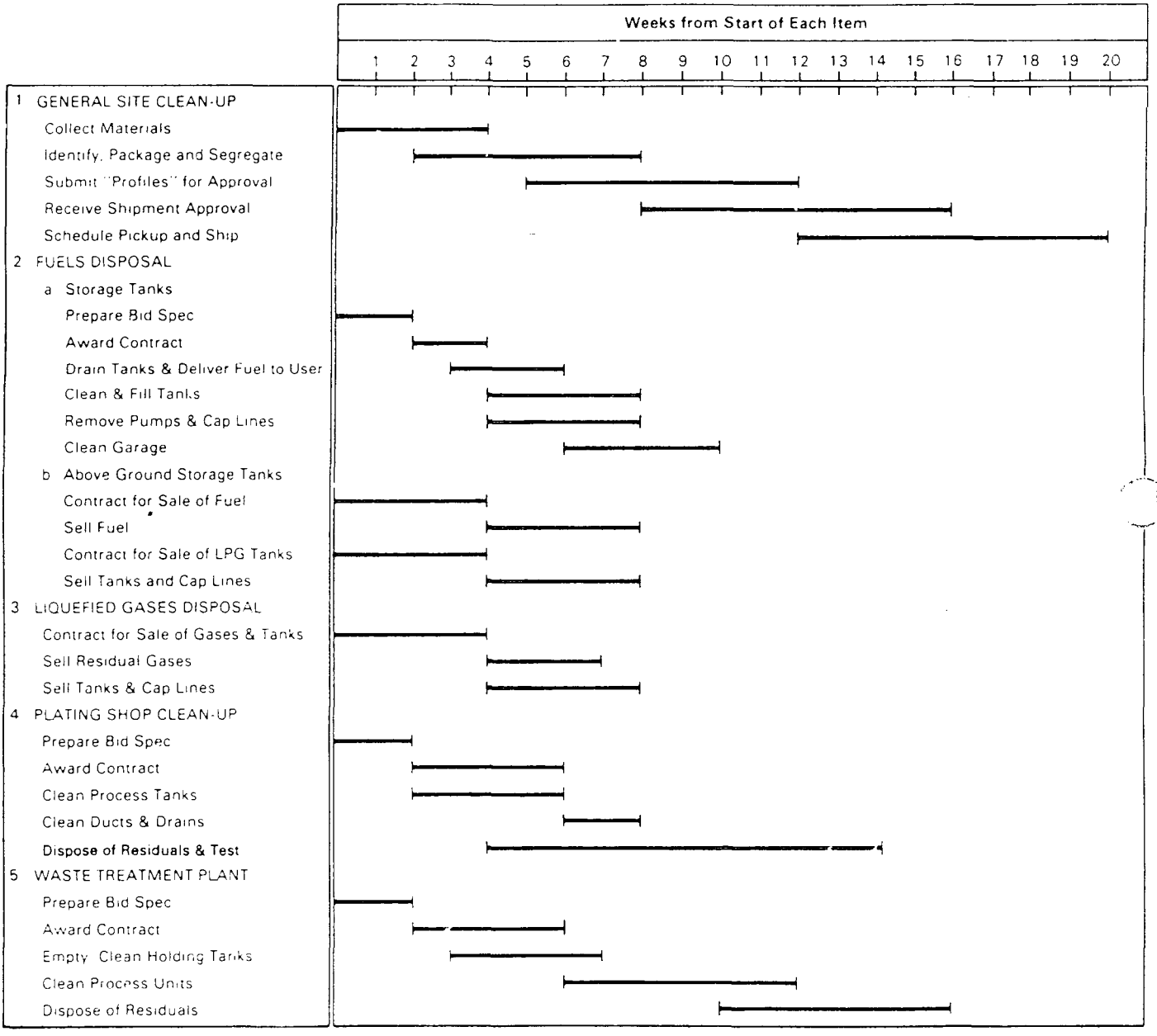

Figure 4-1 Schedule for other Site Cleanup Activities

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TABLE 4-2

ESTIMATED COSTS FOR OTHER SITE

CLEAN-UP ACTIVITIES

1.	General Site Clean-up (Section 4.1.1 Procedure No. 1)	$132,000
2.	Fuels Management (Section 4.1.2 Procedure No. 2)	30,000
3.	Liquefied Gases (Section 4.1.4 Procedure No. 4)	5,000
4.	Plating Operations (Section 4.4)	372,000
5.	Waste Treatment Plant (Section 4.5)	142,000
	Total	$681,000

5. SUMMARY

The AT&T Kearny Works clean-up will include the excavation and removal of 38,200 cubic yards of contaminated soil, as described in Section 2.5 in addition to the other clean-up activities such as decommissioning and clean-up of the plating operations and wastewater treatment plant described in Section 4. Ground-water contamination is limited to localized areas that are being addressed by removal of contaminated soil and ground-water in those areas.

5.1 Overall Clean-up Schedule

Figure 5-1 shows the schedule for all clean-up activities at AT&T Kearny Works. This schedule is based on considerations discussed in Sections 2.9 and 4.6. All on-site clean-up work will be completed approximately 43 weeks after start-up. Complete documentation will be provided approximately four weeks after completion of on-site work.

5.2 Overall Clean-up Cost Estimate

Table 5-1 summarizes the estimated costs for all clean-up activities at the AT&T Kearny Works. This cost estimate is based on considerations discussed in Sections 2.10 and 4.6 and expenditures to date. In addition to actual cleanup costs, AT&T will have expended approximately $800,000 for the testing of soils and groundwater and the preparation of the proposed cleanup plan. The total cost to comply with ECRA, based upon the cleanup plan submitted herein, is estimated to be $3.62 million.

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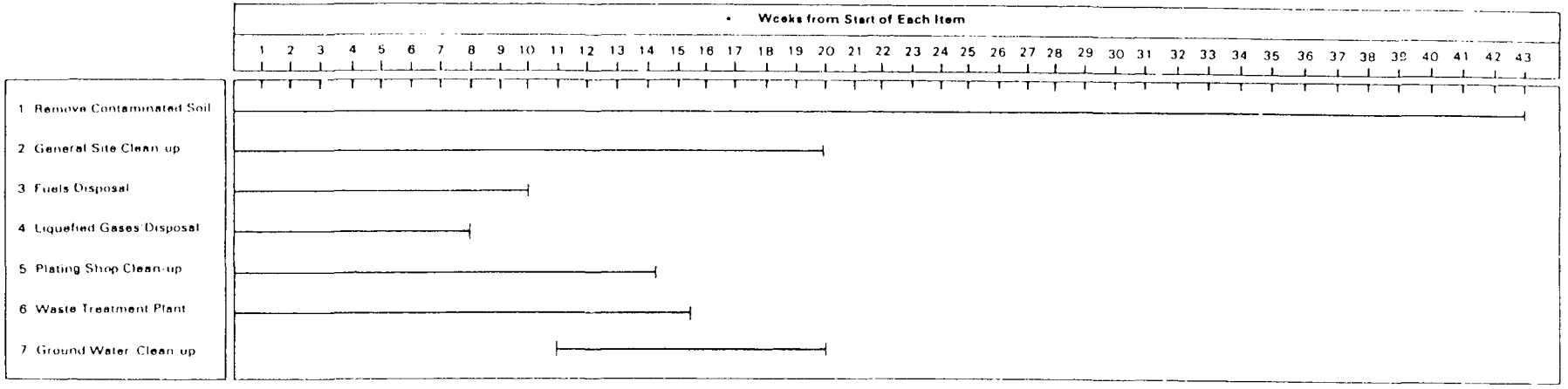

Figure 5-1 Overall Schedule for Site Clean-up Activities

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TABLE 5-1

OVERALL COST ESTIMATE FOR AT&T KEARNY WORKS CLEAN-UP

1.	SOIL CLEAN-UP		$2,542,000
	a. Soil Removal	$2,093,000	
	b. Engineering	$218,000	
	c. Contingency @ 10%	$231,000	
2.	GROUND WATER REMEDIATION		$397,000
3.	OTHER SITE CLEAN-UP ACTIVITIES		$681,000
	a. General Site Clean-up	$132,000	
	b. Fuels Management and Liquified Gases	$35,000	
	c. Plating Operations	$372,000	
	d. Waste Treatment Plant	$142,000	
TOTAL			$3,620,000

APPENDIX A

SOIL ANALYTICAL DATA

APPENDIX A

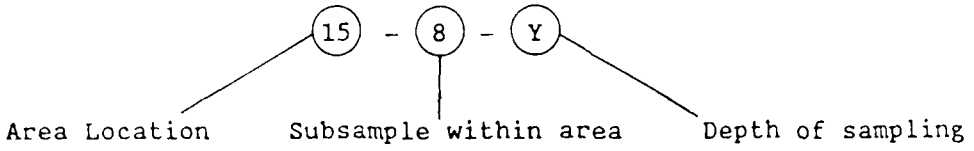
SOIL ANALYTICAL DATA

Appendix A contains all the analytical data obtained as a result of soil sampling conducted at the AT&T Kearny Works site. This includes:

Table A-1:	Results of Analyses for Priority Pollutant Metals of Concern, Cyanide, Volatile Organics, and Petroleum Hydrocarbons (This table includes analytical data from the first four sampling rounds conducted. For the ease of comparison the information from these sampling rounds is integrated so that the data from one sampling location is all grouped together in the table.)
Table A-2:	Depths of Subsurface Samples
Table A-3:	Analyses for Selected EP Toxicity Extractable Metals from Soil Samples
Table A-4:	Results of Priority Pollutant Volatiles Scans of Samples from Locations Selected by Headspace Tests
Table A-5:	Summary of Analytical Results for Volatile Organics in Soil
Table A-6:	Total PCBs in Samples Collected October 4-10, 1984
Table A-7:	Total PCBs in samples collected May 2-10, 1985
Table A-8:	Results of Analyses for Sulfide Reactivity
Table A-9:	Results of Analyses for Cyanide Reactivity
Table A-10:	Results of Arsenic EP Toxicity
Table A-11:	Results of Analyses for All Priority Pollutant Metals, Cyanide, and pH from July 1984.
Table A-12:	Results of Analyses from Samples collected May 2-10, 1985
Enclosure A-13:	Results of Underground Storage Tank Testing

Samples are referenced to Figures 2-1 and 2-2 through a two or three number letter sample ID code, e.g. 1-6-B or 15-8-Y. This code

is established as follows:



"X" and "B" denotes a surface sample

"A" denotes a composite, homogenized sample taken between depth of 12-36 inches

"Y" denotes a grab sample obtained at 18" depth

"Z" denotes a grab sample obtained at 36" depth

(Note: Sample identification numbers for the second tour have been changed slightly from the original reporting. The suffixes "A" and "B" have been substituted for "U" and "S" respectively to simplify the codification of identification numbers.)

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SOIL ANALYTICAL DATA

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Table A-10:	Results of Arsenic EP Toxicity
Table A-11:	Results of Analyses for All Priority Pollutant Metals, Cyanide, and pH from July 1984.
Table A-12:	Results of Analyses from Samples collected May 2-10, 1985
Enclosure A-13:	Results of Underground Storage Tank Testing

Samples are referenced to Figures 2-1 and 2-2 through a two or three number letter sample ID code, e.g. 1-6-B or 15-8-Y. This code

TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g	PCB µg/g
21-7-X	-	-	-	-	150	-	-	410	-	-	-	1.5
21-7-Y	-	-	-	-	240	-		270	-	-	-	ND
21-7-Y (Dup)	-	-	-	-	560	-	-	600	-			ND
21-7-Z	-	-	-	-	490	-	-	350	-	-	-	ND
21-8-X	-	-	-	38	-	100	-	-	-	-	-	1.7
21-9-X	-	-	-	-	50	-	-	140	-	-		ND
21-10-X	-	-	-	-	<25	-	-	95	-	-		ND
21-10-Y	-	-	-	-	55	-	-	250	-	-		ND
21-10-Z	-	-	-	-	96	-	-	300	-	-	-	ND
22A	10	-	52	55	590	<25	<2.5	550	<12	-	-	4.1
22B	12	-	50	78	410	38	<2.5	350	<12	0.031	-	21
22-1-B	-	-	-	-	-	-	-	-	-	-	-	6.5
22-1-A	-	-	-	-	-	-	-	-	-	-	-	19.8
22-2-B	-	-	-	-	-	-	-	-	-	-	-	2.6
22-2-A	-	-	-	-	-	-	-	-	-	-	-	2.9
22-3-B	-	-	-	-	-	-	-	-	-	-	-	3.1
22-3-A	-	-	-	-	-	-	-	-	-	-	-	9.6
22-4-B	-	-	-	-	-	-	-	-	-	-	-	2.6
22-4-A	-	-	-	-	-	-	-	-	-	-	-	5.8
22-5-B	-	-	-	-	-	-	-	-	-	-	-	4.5
22-5-A	-	-	-	-	-	-	-	-	-	-	-	5.4
22-6-B	-	-	-	-	-	-	-	-	-	-	-	6.2
22-6-A	-	-	-	-	-	-	-	-	-	-		<10.0
22-7-B	-	-	-	-	-	-	-	-	-	-	-	2.7
22-7-B (Dup)	-	-	-	-	-	-	-	-	-	-		4.4
22-8-B	-	-	-	-	-	-	-	-	-	-		16.5
22-9-B	-	-	-	-	-	-	-	-	-	-	-	15.0
22-9-A	-	-	-	-	-	-	-	-	-	-	-	<10.0
22-10-X	-	-	-	-	65	-	-	160	-	-		ND
22-11-X	-	-	-	-	51	-	-	120	-	-		ND
22-12-X	-	-	-	-	110	-	-	290	-	-		ND

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

932630179

TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g	PCB µg/g
22-12 Y	-	-	-	-	310			1400	-	-	-	ND
22-12-Z	-	-	-	-	150	-	-	400	-	-	-	1.3
23B	7.3	<0.25	30	78	45	30	<2.5	170	<12	-	-	-
24B	6.2	<0.25	<19	26	<19	20	<1.9	56	<12	-	-	-
25A	5.0	-	<25	150	88	<25	<2.5	750	<12	-		-
25B	15	<0.25	40	42	30	25	<2.5	100	<12	-	-	-
25-1-X	-	-	-	-	270	-	-	250	-	-	-	
25-1-Y	-	-	-	-	460	-	-	100	-	-	-	
25-1-Z	-	-	-	-	210	-	-	170	-	-	-	
25-2-X	-	-	-	-	1100	-	-	2500	-	-	-	
25-2-Y	-	-	-	-	130	-	-	310	-	-	-	
25-2-Z	-	-	-	-	-	-	-	100	-	-	-	
25-2-Z dup	-	-	-	-	-	-	-	300	-	-	-	
25-3-X	-	-	-	-	-	-	-	350	-	-	-	
26A	8.1	-	1580	170	230	126	<2.9	1370	<12	-	-	
26B	6.9	-	<28	61	<28	28	<2.8	77	<12	-	-	
26-1-B	9.6	<0.25	34	48	48	-	<1.4	-	-	-	-	
26-2-B	8.1	<0.25	32	38	70	-	<1.3	-	-	-	-	
26-3-B	9.9	<0.25	30	30	44	-	<1.4	-	-	-	-	
26-4-B	6.4	<0.25	27	32	49	-	<1.2	-	-	-	-	
26-5-B	7.3	<0.25	33	35	53	-	<1.2	-	-	-	-	
26-6-B	6.8	<1.8	37	110	290	-	<1.4	-	-	-	-	
26-7 B	8.2	<0.25	27	33	57	-	<1.4	-	-	-	-	
26-8-B	5.5	<0.25	19	20	25	-	<1.4	-	-	-	-	
26-8 B (Dup)	7.1	<0.25	23	23	30	-	<1.2	-	-	-	-	
27A	5.8	-	<28	58	47	22	<2.7	94	<12	-	-	
27B	8.6	<0.25	<26	42	36	31	<2.6	100	<12	0.035	-	
28A	7.5		25	52	52	<25	<2.5	140	<12	ND	-	
28B	18	<0.25	32	22	<25	<25	<2.5	45	<12	ND	-	
29A	12.	-	<28	150	200	28	<2.7	170	<12	-	-	
29B	19.	3.8	56	130	390	51	<3.0	1220	<12	0.025		

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

932630180

TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g	Chromium +6 µg/g
35-CB	44	<5.5	140	1000	820		3.0	-	-	-	-	-
36-CB	5.6	-	80	520	380	73	<1.9	920	-	-	1700	-
36-CB	7.1	<4.3	43	150	260	-	<1.1	-	-	-	-	-
37A	10.	-	84	78	110	22	<3.1	110	-	-	-	-
37A (Dup)	4.9	-	74	46	99	22	5.2	86	-	-	-	-
37B	9.3	-	5830	210	190	290	<2.5	800	-	0.148	-	-
37B (Dup)	6.3	-	<29	43	66	23	<2.9	150	-	-	-	-
37-1-B	11	2.6*	310*	220*	220*	-	<0.98	-	34	-		-
37-2-B	14	3.2	370	201	250	-	<1.3	-	-	-	-	-
37-3-B	20	4.5	5000	150	340	-	<1.6	-	-	-	-	-
37-4-B	17	1.3	1900	130	200	-	<1.3	-	-	-	-	
37-5-B	14	2.1	480	80	160	-	<1.4	-	-	-	-	
37-6-B	16	2.9	290	120	1400	-	6.3	-	-	-	-	
37-7-B	11	2.6	75	220	150	-	<1.2	-	-	-	-	
37-8-B	16	3.0	1500	140	<240	-	<1.3	-	-	-	-	
37-9-B	14	2.2	1300	320	280	-	<1.3	-	-	-	-	
37-10-B	23	3.4	6300	180	290	-	<1.4	-	-	-	-	
37-10-B (Dup)	140	<13	5500	600	330	-	<1.3	-	-	-	-	
37-11-B	13	2.6	540	200	240	-	<1.3	-	-	-	-	
37-12-B	17	4.8	3000	270	330	-	<1.4	-	-	-	-	
37-13-B	15	2.9	470	230	300	-	1.2	-	-	-	-	
37-13-B (Dup)	17	1.6	2700	240	440	-	<1.9	-	-	-	-	
37-14-X	17	-	33	83	180	36	-	270	<3.1	-	-	
37-16-X	51	-	80	130	170	43	-	280	<3.1	-	-	
38A	<2.5	-	26	13	<26	16	7.7	32	-	-	-	
38B	13	-	5060	250	230	230	<2.8	290	-	0.132	-	
38-1-B	17	3.3	1500	350	270	-	<1.2	-	100	-	-	
38-2-B	34	0.7	6300	110	210	-	<1.2	-	-	-	-	
38-3-B	54	1.7	7400	170	340	-	<1.3	-	-	-	-	
38-4-B	30	1.7	8300	530	240	-	<1.5	-	-	-	-	
38-5-B	20	1.6*	3000*	220*	240*		<1.2	-	-	-	-	

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

932630181

TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g
38-6-B	25	1.2	8200	130	280	-	<1.4	-	-	-	-
38-7-B	12	0.5*	8200*	90*	140*	-	<1.4	-	-	-	
38-8-B	82	0.83	9300	130	300	-	4.6	-	-	-	-
38-9-B	28	1.9	1100	180	340	-	2.0	-	-	-	-
38-10-B	44	2.6	5600	140	320	-	<1.4	-	-	-	-
38-11-B	21	4.1	680	220	400	-	2.0	-	-	-	-
38-12-X	51	-	480	410	740	140	-	480	<3.1	-	-
38-14-X	59	-	1100	60	89	92	-	180	3.1	-	-
39A	4.8	-	<23	13	<26	18	<2.3	96	-	-	-
39B	12	-	220	130	280	36	<2.7	230	-	-	-
39-2-X	-	-	200	-	350	-	-	-	-	-	-
39-3-X	-	-	210	-	250	-	-	-	-	-	-
39-4-X	-	-	88-	-	260	-	-	-	-	-	-
39-7-X	-	-	110	-	300	-	-	-	-	-	-
39-7-X (Dup)	-	-	91	-	280	-	-	-	-	-	-
40A	14	<1.2	48	63	120	63	5.2	120	<2.5	<2.5	180
41A	14	<0.5	6800	53	64	250	<1.3	190	<2.5	<2.5	1700
42A	15	<0.25	50	71	54	71	<1.3	46	<2.5	<2.5	2800
43A	12	<0.25	60	63	60	69	2.1	51	<2.5	<2.5	82
44A	22	1.0	32	59	56	53	<1.3	150	<2.5	<2.5	150
44B	29	2.0	770	130	290	110	<1.3	200	<2.5	-	26
44-1-X	-	-	66	-	200	-	-	-	-	-	-
44-2-X	-	-	160	-	520	-	-	-	-	-	-
44-3-X	-	-	96	-	270	-	-	-	-	-	-
45A	29	0.78	46	68	300	47	<1.3	230	<2.5	<2.5	51
45B	24	0.33	58	64	210	44	<1.3	190	<2.5	-	16
45-1-X	-	-	-	-	210	-	-	-	-	-	-
45-1-X (dup)	-	-	-	-	210	-	-	-	-	-	-
45-1-Y	-	-	-	-	170	-	-	-	-	-	-
45-1-Z	-	-	-	-	590	-	-	-	-	-	
45-2-X	-	-	-	-	190			-		-	

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

93263018 1A

TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g	Chromium +6 µg/g
30A	8.0	-	<30	45	130	24	<3.0	86	<12	ND	-	
30B	4.4	<0.25	<25	49	<25	32	<2.5	69	<12	-	-	
31A	9.5	-	72	60	42	38	<2.5	160	<12	-	-	
31B	14	1.6	55	230	510	45	<2.5	1050	-	0.025	-	
32A	9.6	-	59	280	150	53	17	120	-	-	-	
32B	7.5	<0.25	60	58	74	35	<2.0	110	-	-		
33A	16	-	110	65	98	48	<2.5	100	-	-	-	
33B	85	-	6500	150	380	510	<2.55	720	-	-	-	
33-1-B	30	1.0	5300	490	880	-	<1.4	-	160	-	-	-
33-2-B	42	1.5	11000	730	1400	-	<1.4	-	-	-	-	-
33-3-B	40	1.6	8500	620	1100	-	<1.3	-	-	-	-	-
33-4-B	51	2.0	9900	740	1000	-	11	-	-	-	-	-
33-5-B	26	2.8	19000	1200	1900	-	14	-	-	-	-	-
33-6-B	35	1.6	4800	430	900	-	3.1	-	-	-	-	-
33-7-B	54	1.2	8600	620	1100	-	1.5	-	-	-	-	-
33-8 B	40*	1.8*	11000*	750*	1400*	-	<1.5	-	-	-	-	-
33-9-X	21	-	2200	210	350	640	-	1000	14	-	-	17
33-10-X	26	-	6400	520	840	1800	-	2600	54	-	-	10
33-11-X	12	-	8400	710	1000	2300	-	3900	95	-	-	4.7
33-12-X	19	-	2900	350	700	1100	-	1700	49	-		3.4
33-13-X	22	-	480	180	480	170	-	910	3.5	-	-	16
33-14-X	16	-	2000	210	670	620	-	1100	21	-	-	1.7
33-14-X dup	16	-	1700	200	750	650	-	1100	18	-		4.9
34A	6.0	-	27	36	<27	19	<2.7	60	-		-	-
34B	8.6	1.4	290	180	250	110	<2.8	490	-	-	-	
34-1-X	15	-	110	98	270	62	-	320	<3.1			
34-2-X	11	-	53	98	140	29	-	190	<3.1	-	-	-
34-4-X	4.6	-	110	140	650	42	-	570	<3.1	-	-	-
34-5-X	7.7	-	2500	310	400	1200	-	2300	39	-	-	-
34-6-X	12	-	5600	450	490	960	-	1700	36	-	-	-
35-CB†	31	-	220	1370	1140	110	<4.9	1220	-	0.168	4100	-

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates
†CB = Catch Basin sample.

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

932630182

TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g
45-2-Y	-	-	-	-	<25	-	-	-	-	-	
45-2-Z	-	-	-	-	46	-	-	-	-	-	-
45-3-X	-	-	-	-	350	-	-	-	-	-	-
45-3-Y	-	-	-	-	310	-	-	-	-	-	-
45-3-Z	-	-	-	-	300	-	-	-	-	-	-
45-4-X	-	-	-	-	290	-	-	-	-	-	-
45-4-Y	-	-	-	-	100	-	-	-	-	-	-
45-4-Z	-	-	-	-	370	-	-	-	-	-	-
45-5-X	-	-	-	-	580	-	-	-	-	-	-
45-5-Y	-	-	-	-	66	-	-	-	-	-	-
45-5-Z	-	-	-	-	<25	-	-	-	-	-	-
46A	11	<0.25	52	45	130	41	<1.3	71	<2.5	<2.5	26
46A (Dup)	12	<0.25	33	52	120	50	<1.3	86	-	-	-
46B	17	<0.25	80	60	160	37	1.4	98	<2.5	-	42
46-1-X	-	-	-	-	370	-	-	-	-	-	-
46-2-X	-	-	-	-	230	-	-	-	-	-	-
46-3-X	-	-	-	-	310	-	-	-	-	-	
46- 3-X dup	-	-	-	-	320	-	-	-	-	-	-
47A	12	<0.25	30	68	75	55	<1.3	48	<2.5	<2.5	<5
47B	39	0.58	120	66	310	50	<1.3	75	<2.5	-	14
47-1-X	-	-	79	-	330	-	-	-	-	-	-
47-2-X	-	-	80	-	210	-	-	-	-	-	-
47-3-X	-	-	120	-	460	-	-	-	-	-	
47-4-X	-	-	240	-	400	-	-	-	-	-	-
47-5-X	-	-	120	-	380	-	-	-	-	-	-
47-6-X	-	-	91	-	240	-	-	-	-	-	-
47-7-X	-	-	110	-	320	-	-	-	-	-	-
47-7-X dup.	-	-	83	-	260	-	-	-	-	-	
47-8-X	-	-	250	-	450	-	-	-	-	-	-
48B	24	0.73	80	100	380	54	2.2	240	<2.5	-	83
49B	25	0.90	95	120	390	58	6.8	500	<2.5	-	29
49B Dup	24	0.78	96	100	410	57	<1.3	250	<2.5	-	

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

932630183

TABLE A-2

DEPTHS OF SUBSURFACE SAMPLES

Location	Depth, ft.	Location	Depth, ft.
1A	1-3	32A	1-3
2A	1-3	33A	1-3
3A	1-3	34A	3-5
4A	1-3	37A	1-3
5A	1-3	38A	1-3
6A	1-3	39A	1-3
7A	1-3	40A	1-3
7C	10-12	41A	3-5
8A	1-3	42A	1-3
9A	1-3	43A	1-3
10A	1-3	44A	2-4
11A	1-3	45A	1-3
12A	1-3	46A	1-3
13A	3-5	47A	3-5
14A	3-5	4-1-A	1-3
15A	1-3	4-2-A	1-3
16A	1-3	4-4-A	1-3
17A	1-3	GA-1-A	1-3
18A	1-3	GA-2-A	1-3
19A	1-3	GA-3-A	1-3
20A	1-3	GA-4-A	1-3
21A	1-3	GA-5-A	1-3
22A	3-5	GA-6-A	1-3
25A	3-5	GA-7-A	1-3
26A	1-3	5-1-A	1-3
27A	1.5-3.5	5-2-A	1-3
28A	1.5-3.5	5-3-A	1-3
29A	1-3	5-4-A	1-3
30A	1.5-2	5-5-A	1-3
31A	1-3	5-6-A	1-3

Note: All sample numbers suffixed, -Y and -Z, were taken as grab samples at 18" and 36" respectively.

TABLE A-2 (Continued)

Location	Depth, ft.	Location	Depth, ft.
5-7-A	1-3	21-3-A	2-3
6-1-A	1-3	21-6-A	2-3
6-2-A	1-3	22-1-A	2-3
6-3-A	1-3	22-2-A	2-3
6-4-A	1-3	22-3-A	2-3
6-5-A	1-3	22-4-A	2-3
6-6-A	1-3	22-5-A	2-3
6-7-A	1-3	22-6-A	2-3
14-1-A	1-3	22-9-A	2-3
14-2-A	1-3		
14-3-A	1-3		
14-4-A	1-3		
14-5-A	1-3		
14-6-A	1-3		
14-7-A	1-3		
14-8-A	1-3		
14-9-A	1-3		
15-1-A	1-3		
15-2-A	1-3		
15-3-A	1-3		
16-1-A	1-3		
16-2-A	1-3		
16-3-A	1-3		
16-4-A	1-3		
16-5-A	1-3		
16-6-A	1-3		
16-7-A	1-3		
16-8-A	1-3		
21-1-A	2-3		
21-2-A	2-3		

TABLE A-1

RESULTS OF ANALYSES FOR PRIORITY POLLUTANT

METALS OF CONCERN, CYANIDE, VOLATILE ORGANICS, AND PETROLEUM HYDROCARBONS

(all values are expressed in ppm)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g
1A	10.	<0.25	<28.	73	45.	20.	<2.8	42.	-	0.033	-
1B	120	-	160	200	380	49	4.1	140	-	-	-
1-1-B	200	0.33	74	240	250	-	3.0	-	2.6	-	-
1-2-B	530	<0.25	150	220	600	-	<1.4	-	-	-	-
1-3-B	110	0.52	68	180	290	-	<1.4	-	-	-	-
1-4-B	59	0.37	64	150	190	-	<1.2	-	-	-	-
1-5-B	70	0.74	76	140	190	-	<1.2	-	-	-	-
1-6-B	700	<0.25	320	250	630	-	<1.3	-	-	-	-
1-7-B	510	0.38	160	280	590	-	<1.4	-	-	-	-
1-8-B	110	0.36	75	150	220	-	<1.3	-	-	-	-
1-8-B dup	110	0.42	60	250	200	-	<1.2	-	-	-	-
1-9-X	13	-	140	55	140	65	42	-	160	-	-
1-10-X	140	-	1500	200	680	170	-	560	-	-	-
1-11-X	42	-	160	111	300	61	-	200	-	-	-
1-12-X	18	-	250	160	380	35	-	92	-	-	-
1-13-X	24	-	45	97	270	23	-	90	-	-	-
1-14-X	15	-	200	120	310	77	-	380	-	-	-
1-15-X	66	-	1000	560	780	77	-	240	-	-	-
1-16-X	17	-	470	98	210	100	-	310	-	-	-
1-17-X	51	-	1100	620	790	74	-	260	-	-	-
1-18-X	23	-	170	110	510	41	-	94	-	-	-
2A	17	0.93	28	110	82	<25	<2.5	160	<12	ND	-
2B	29	4.0	240	310	460	62	<2.5	200	-	-	-
2-1-X	16	-	220	130	180	31	-	77	-	-	-
2-2-X	46	-	660	600	730	92	-	380	-	-	-
2-2-X dup	45	-	620	600	760	100	-	440	-	-	-
2-3-X	22	-	180	580	530	240	-	1200	-	-	-
2-4-X	26	-	190	270	330	70	-	120	-	-	-
3A	4.8	0.48	<28	82	85	20	2.8	54	-	0.038	-
3B	21	<0.25	110	200	390	68	4.6	180	-	-	-

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates

Key: "X" and "B" denote surface samples.
"A" denotes 12" - 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

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TABLE A-1 (Continued)

Sampling Location	Arsenic µg/g	Cadmium µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Selenium µg/g	Zinc µg/g	Cyanide µg/g	Total VOA µg/g	PHC** µg/g
3-1-X	23	-	120	270	610	100	-	170	-	-	-
3-2-X	21	-	58	230	430	100	-	96	-		-
3-3-X	22	-	280	220	300	120	-	380	-		
3-4-X	6.7	-	1400	140	130	190	-	240		-	-
3-5-X	15	-	50	200	270	29	-	160	-	-	-
4A	8.7	-	100	35	41	20	<2.9	49		2.55	-
4B	110	-	2510	320	550	200	3.1	560	-	-	-
4-1-B	120	5.4	440	320	600	-	1.4	-	5.5*	43	-
4-1-A	26	<0.25	400	68	59	-	<1.2	-	13	26	-
4-1-A (Dup)	22	<0.25	220	67	91	-	<1.2	-	5.3	30	-
4-2-B	76	3.7	1500	360	740	-	<1.2	-	2.9	52	-
4-2-A	20	0.52	85	88	91	-	2.2	-	2.7	160	-
4-3-B	67	4.1	6300	380	780	-	<1.1	-	2.2	24	-
4-4-B	160	1.5	670	180	460	-	<1.2	-	13	170	-
4-4-A	28	<0.25	58	300	110	-	<1.8	-	410	1200	-
4-5-X	32	-	310	290	410	44	-	140	-	-	ND
4-5-Y	7.1	-	21	68	68	31	-	42	-	ND	-
4-5-Z	7.2	-	15	38	120	27	-	50	-	ND	-
4-5-Z (Dup)	7.9	-	21	56	120	32	-	820	-	-	-
4-6-X	10	-	68	110	270	29	-	180	-	-	ND
4-6-Y	14	-	19	140	390	24	-	120	-	0.9	-
4-6-Z	9.2	-	17	23	<25	<12	-	160	-	2.6	-
4-7-X	68	-	790	810	200	120	-	440		ND	-
4-7-Y	14	-	130	65	150	39	-	250	-	33.2	
4-7-Z	7.9	-	37	18	<25	13	-	160	-	23.1	
GA-1-B†	24	2.4	8600	160	810	-	<1.5	-	4.1	67	-
GA-1-A	30*	<0.25	3200*	95*	460*	-	4.6*	-	<4.1	28	-
GA-2-B	22	1.1	9400	130	310	-	<1.4	-	7.3	42	
GA-2-A	16	0.37	470	57	84	-	3.0	-	<2.7	200	-
GA-3-B	17	1.7	5900	160	340	-	<1.4	-	<2.2	60	
GA-3-A	34	0.55	110	110	150	-	3.9	-	<2.2	-	

*Represents the average of two analyses on same sample.
**Conducted by Chyun Associates
†GA = Grassy Area near sample point 4.

Key: "X" and "B" denote surface samples.
"A" denotes 12" 36" homogenized sample.
"Y" denotes 18" grab sample.
"Z" denotes 36" grab sample.

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TABLE A-3

ANALYSES FOR SELECTED EP TOXICITY EXTRACTABLE METALS

AT&T, KEARNY WORKS

Sampling Location	Cadmium Total µg/g	Cadmium EP tox mg/ℓ	Chromium Total µg/g	Chromium EP tox mg/ℓ	Lead Total µg/g	Lead EP Tox mg/ℓ
1-1 B	0.33	<0.050	74	<0.050	250	<0.10
1-2-B	<0.25	<0.050	150	<0.050	600	<0.10
1-3-B	0.52	<0.050	68	<0.050	290	<0.10
1-4-B	0.37	<0.050	64	<0.050	190	<0.10
1-5-B	0.74	<0.050	76	<0.050	190	<0.10
1-6-B	<0.25	*<0.050	320	*<0.050	630	*<0.10
1-7-B	0.38	<0.050	160	<0.050	590	<0.10
1-8-B	0.36	<0.050	75	<0.050	220	<0.10
1-8-B (Dup)	0.42	<0.050	60	<0.050	200	<0.10
4-1-B	5.4	<0.050	440	<0.050	600	<0.10
4-2-B	3.7	<0.050	1500	<0.050	740	<0.10
4-3-B	4.1	<0.050	6300	0.060	780	<0.10
4-4-B	1.5	<0.050	670	<0.050	460	<0.10
4-1-A	<0.25	<0.050	400	<0.050	59	<0.10
4-1-A (Dup)	<0.25	<0.050	220	<0.050	91	<0.10
4-2-A	0.52	<0.050	85	<0.050	91	<0.10
4-3-A	<0.25	<0.050	16	<0.050	52	<0.10
4-4-A	<0.25	<0.050	58	<0.050	110	<0.10
GA-1-B	2.4	<0.050	8600	0.13	810	<0.10
GA-2-B	1.1	<0.050	9400	<0.050	310	<0.10
GA-3-B	1.7	<0.050	5900	<0.050	340	<0.10
GA-4-B	2.6	<0.050	8700	<0.050	590	<0.10
GA-5-B	2.5	<0.050	13000	<0.050	330	<0.10
GA-6-B	5.1	*<0.050	5600	*<0.050	400	*<0.10

*Represents the average of two analyses of the same sample.
"B" denotes surface sample.
"A" denotes 12"-36" homogenized subsurface sample.

TABLE A-3 (Continued)

Sampling Location	Cadmium Total µg/g	Cadmium EP tox mg/ℓ	Chromium Total µg/g	Chromium EP tox mg/ℓ	Lead Total µg/g	Lead EP Tox mg/ℓ
6-4-B	3.3	<0.050	320	<0.050	940	<0.10
6-4-B (Dup)	3.1	<0.050	290	<0.050	860	<0.10
6-5-B	20.0	<0.050	96	<0.050	740	<0.10
6-6-B	0.35	<0.050	130	<0.050	400	<0.10
6-7-B	<0.25	<0.050	74	<0.050	520	<0.10
6-1-A	<0.25	<0.050	24	<0.050	200	<0.10
6-2-A	<0.25	<0.050	22	<0.050	81	<0.10
6-3-A	0.64	<0.050	54	<0.050	210	<0.10
6-4-A	2.2	<0.050	16	<0.050	150	<0.10
6-5-A	8.1	<0.050	19	<0.050	100	<0.10
6-6-A	<0.25	<0.050	26	<0.050	170	<0.10
6-7-A	<0.25	<0.050	15	<0.050	56	<0.10
6-CB-1**	11*	<0.050	*400	<0.050	*880	<0.10
6-CB-2	6.3	<0.050	340	<0.050	800	<0.10
6-CB-3	11.0	<0.050	860	<0.050	1300	<0.10
6-CB-4	1.8	*<0.050	300	*<0.050	1100	*<0.10
6-CB-5	4.8	<0.050	160	<0.050	830	<0.10
6-CB-6	1.8	<0.050	90	<0.050	790	<0.10
6-CB-7	2.7	<0.050	160	<0.050	520	0.10
6-CB-8	3.8	<0.050	100	<0.050	1000	<0.10
6-CB-9**	4.6	<0.050	250	<0.050	1200	<0.10
6-CB-10	6.2	<0.050	160	<0.050	890	<0.10
6-CB-11	9.4	<0.050	330	<0.050	2000	<0.10
6-CB-12	4.0	<0.050	810	<0.050	850	<0.10
6-CB-13	4.1	<0.050	35	<0.050	730	<0.10
6-CB-14	19.0	<0.050	230	<0.050	1300	<0.10
14-1-A	<0.25	<0.050	38	<0.050	110	<0.10

*Represents the average of two analyses of the same sample.
"B" denotes surface sample.
"A" denotes 12"-36" homogenized subsurface sample.

TABLE A-3 (Continued)

Sampling Location	Cadmium Total µg/g	Cadmium EP tox µg/ℓ	Chromium Total µg/g	Chromium EP tox µg/ℓ	Lead Total µg/g	Lead EP Tox µg/ℓ	Copper Total µg/g	Copper EP Tox µg/ℓ	Zinc Total µg/g	Zinc EP Tox µg/ℓ
37-2-B	3.2	<0.050	370	<0.050	250	<0.10	210			
37-3-B	4.5	<0.050	5000	<0.050	340	<0.10	150			
37-4-B	1.3	<0.050	1900	<0.050	200	<0.10	130			
37-5-B	2.1	<0.050	480	<0.050	160	0.11	80			
37-6-B	2.9	<0.050	290	<0.050	1400	0.11	120			
37-7-B	2.6	<0.050	75	<0.050	150	0.10	220			
37-8-B	3.0	<0.050	1500	<0.050	<240	0.13	140			
37-9-B	2.2	<0.050	1300	<0.050	280	<0.10	320			
37-10-B	3.4	<0.050	6300	<0.050	290	<0.10	180			
37-10-B (Dup)	<13	<0.050	5500	<0.10	330	<0.10	600			
37-11-B	2.6	<0.050	540	<0.050	240	0.10	200			
37-12-B	4.8	<0.050	3000	<0.050	330	0.10	270			
37-13-B	2.9	<0.050	470	<0.050	300	<0.10	230			
37-13-B (Dup)	1.6	<0.050	2700	<0.050	440	0.10	240			
38 B	-	-	5060	0.090	230	0.08	250	1.21	290	44.8
38-1-B	3.3	<0.050	1500	<0.050	270	<0.10	350			
38-2-B	0.7	<0.050	6300	<0.050	210	<0.10	110			
38-3-B	1.7	<0.050	7400	<0.050	340	<0.10	170			
38-4-B	1.7	<0.050	8300	<0.050	240	<0.10	530			
38-5-B	1.6*	<0.50	*3000	<0.050	*240	<0.10	* 220			
38-6-B	1.2	<0.050	8200	<0.050	280	<0.10	130			
38-7-B	0.5*	* <0.050	*8200	*<0.050	*140	*<0.10	* 90			
38-8-B	0.83	<0.050	9300	<0.050	300	<0.10	130			
38-9-B	1.9	<0.050	1100	<0.050	340	<0.10	180			
38-10-B	2.6	<0.050	5600	0.050	320	<0.10	190			
38-11-B	4.1	<0.050	680	<0.050	400	<0.10	1100			

*Represents the average of two analyses of the same sample.
"B" denotes surface sample.
"A" denotes 12"-36" homogenized subsurface sample.

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TABLE A-3 (Continued)

Sampling Location	Cadmium Total µg/g	Cadmium EP tox µg/ℓ	Chromium Total µg/g	Chromium EP tox µg/ℓ	Lead Total µg/g	Lead EP Tox µg/ℓ	Copper Total µg/g	Copper EP Tox µg/ℓ	Zinc Total µg/g	Zinc EP Tox µg/ℓ
16-7-A	2.4	<0.050	9000	<0.050	170	<0.10	140			
16-8-A	<0.25	<0.050	1300	<0.050	120	<0.10	120			
16-CB-1**	1.7	<0.050	260	<0.050	240	<0.10				
16-CB-2	2.4	<0.050	310	<0.050	730	0.13	600			
26-1-B	<0.25	<0.050	34	<0.050	48	<0.10	48			
26-2-B	<0.25	<0.050	32	<0.050	70	<0.10	38			
26-3-B	<0.25	<0.050	30	<0.050	44	<0.10	30			
26-4-B	<0.25	<0.050	27	<0.050	49	<0.10	32			
26-5-B	<0.25	<0.050	33	<0.050	53	<0.10	35			
26-6-B	<1.8	<0.050	37	<0.050	290	<0.10	110			
26-7-B	<0.25	<0.050	27	<0.050	57	<0.10	33			
26-8-B	<0.25	<0.050	19	<0.050	25	<0.10	20			
26-8-B (Dup)	<0.25	<0.050	23	<0.050	30	<0.10	23			
33 B	-	-	6500	<0.050	380	<0.05	150	0.04	720	3.04
33-1-B	1.0	<0.50	5300	<0.050	880	<0.10	490			
33-2-B	1.5	<0.050	11000	<0.050	1400	<0.10	730			
33-3-B	1.6	<0.050	8500	<0.050	1100	<0.10	620			
33-4-B	2.0	<0.050	9900	<0.050	1000	<0.10	740			
33-5-B	2.8	<0.050	19000	<0.050	1900	<0.10	1200			
33-6-B	1.6	<0.050	4800	<0.050	900	<0.10	430			
33-7-B	1.2	<0.050	8600	<0.050	1100	<0.10	620			
33-8-B	1.8*	*<0.050	*11000	*<0.050	*1400	*<0.10	*750			
35-CB	<5.5	<0.050	140	<0.050	820	<0.10	1000			
36-CB	<4.3	<0.050	43	<0.050	260	<0.10	150			
37 B	-	-	5830	0.19	190	0.28	210	0.09	800	1.79
37-1-B	2.6*	<0.050	*310	<0.050	*220	<0.10	220			

*Represents the average of two analyses of the same sample.
**CB denotes Catch basin sample.
"B" denotes surface sample.
"A" denotes 12"-36" homogenized subsurface sample.

932630191

TABLE A-4

RESULTS OF PRIORITY POLLUTANT VOLATILES SCANS OF

SAMPLES FROM LOCATIONS SELECTED BY HEADSPACE TESTS

July 16-18, 1984

(All values are expressed in ppm)

Location[a]	1A	2A	3A	4A	5B	5A	6B	6A	8A	10A
Headspace	22	560	420	2.8	3	34	6	30	34	5.2
Volatiles										
chloroethane		ND[b]							ND	
vinyl chloride										
methylene chloride			0.018	0.017		0.034		26.0		0.011
1,1-dichloroethylene						0.007		0.76		
1,1-dichloroethane						0.006		0.59		
trans-1,2-dichloroethylene				0.042	0.014	0.061	0.114	25.0		
chloroform				0.038	0.019	0.020	0.057	0.32		
1,2-dichloroethane										
1,1,1-trichloroethane			0.020	0.013	0.019	0.143	0.020	18.0		0.005
carbon tetrachloride				0.010						
bromodichloromethane								0.38		
trans-1,3-dichloropropene										
trichloroethylene				1.830	0.297	2.96	0.690			
benzene	0.033							0.18		
tetrachloroethene				0.60	0.115	1.50	0.815			
toluene								39.0		
chlorobenzene										
ethylbenzene								3.2		
Total Volatiles	0.033	ND	0.038	2.55	0.46	4.73	1.696	113.43	ND	0.016

Note: For ease of interpretation of data on this table no value is shown on table where the analyte was not detected in the samples. Values shown are only those which were detected in the sample.

[a]A designates a subsurface sample, B designates a surface sample, 15C was taken at 12-14'.

[b]No detectable volatile priority pollutants in sample.

TABLE A-4 (Continued)

Location	13A	14A	15B	15A	15C	16A	20A	21B	22B	27B	28B	28A	29B
Headspace	13.8	1.5	7	240	30	10	34	100	110	10	10	30	80
Volatiles													
chloroethane											ND	ND	
vinyl chloride						0.61							
methylene chloride			0.060		0.015		0.009	0.031	0.013	0.030			0.011
1,1-dichloroethylene						0.71							
1,1-dichloroethane													
trans-1,2-dichloroethylene		0.034				39.0							
chloroform			0.009				0.006		0.018	0.005			
1,2-dichloroethane						193.0							
1,1,1-trichloroethane	0.014	0.020	0.009		0.007	0.37	0.008	0.008					0.014
carbon tetrachloride													
bromodichloromethane													
trans-1,3-dichloropropene													
trichloroethylene	0.009	0.012			0.018		0.007						
benzene				1.6		0.54							
tetrachloroethene			0.010										
toluene				0.65									
chlorobenzene						0.27							
ethylbenzene						0.20							
Total Volatiles	0.023	0.066	0.088	2.25	0.040	234.7	0.030	0.039	0.031	0.035	ND	ND	0.025

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TABLE A-4 (Continued)

Location	30A	31B	35B	37B	38B
Headspace	36	110	15	25	10
Volatiles	ND				
chloroethane			0.008		
vinyl chloride					
methylene chloride		0.007	0.105	0.125	0.098
1,1-dichloroethylene					
1,1-dichloroethane					
trans-1,2-dichloroethylene					
chloroform			0.007	0.012	0.022
1,2-dichloroethane			0.006		
1,1,1-trichloroethane		0.018	0.027	0.006	0.007
carbon tetrachloride					
bromodichloromethane					
trans-1,3-dichloropropene					
trichloroethylene			0.015	0.005	0.005
benzene					
tetrachloroethene					
toluene					
chlorobenzene					
ethylbenzene					
Total Volatiles	ND	0.025	0.168	0.148	0.132

932630194

TABLE A-5

SUMMARY OF ANALYTICAL RESULTS FOR VOLATILE ORGANICS IN SOIL[a]

Client: AT&T

Sampling Location: Kearny, NJ

Sampling Dates: 6-8 February 1985

Compound	ERT #/Field Identification													
	25552 4-5-X[b]	25559 4-7-X	25564 6-8-X	25584 5-8-Y[c]	25585 5-9-Z[d]	25586 6-8-Z	25587 15-5-Z	25588 4-7-Y	25589 4-7-Z	25590 17-2-X	25591 16-10-X	25592 16-9-X	25593 4-6-Y	25594 4-6-Z
Chloromethane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Bromomethane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Vinyl Chloride	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Chloroethane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Methylene Chloride	<2	<2	<2	<0.6	4.6	<3	<0.6	2.3	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Trichlorofluoro-methane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
1,1-Dichloroethylene	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
1,1-Dichloroethane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Trans-1,2-Dichloro-ethylene	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Chloroform	<2	<2	<2	<0.6	<2	<3	<0.6	3.9	3.2	<0.6	<0.6	<0.6	<0.6	<0.6
1,2-Dichloroethane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
1,1,1-Trichloroethane	<5	<5	<5	<3	5.5	9.5	<3	23	16	<3	<3	<3	<3	<3
Carbon Tetrachloride	<2	<2	<2	<0.6	<2	280	<0.6	<2	<2	<0.6	<0.6	0.62	<0.6	<0.6
Bromodichloromethane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
1,2-Dichloro-propane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Trans-1,3-Dichloro-propene	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Trichloroethylene	<2	<2	<2	<0.6	7.4	230	<0.6	<2	<2	<0.6	<0.6	1.0	<0.6	<0.6
Dibromochloro-methane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6

[a]Results reported in µg/g (parts-per-million)
[b]X - Sample taken at surface
[c]Y - Sample taken at 18 inches
[d]Z - [illegible] taken at 36 inches

932630195

TABLE A-5 (Continued)

SUMMARY OF ANALYTICAL RESULTS FOR VOLATILE ORGANICS IN SOIL[a]

Client: AT&T

Sampling Location: Kearny, NJ

Sampling Dates: 6-8 February 1985

	ERT #/Field Identification											
Compound	25595 15-6-Y	25596 5-9-Y	25597 4-5-Z	25598 15-5-Y	25599 5-8-Z	25600 6-8-Y	25601 15-6-Z	25602 5-8-Z Dup	25603 15-7-Z	35604 15-8-Y	25605 15-8-Z	25606 15-7-Y
Chloromethane	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Bromomethane	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Vinyl Chloride	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Chloroethane	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Methylene Chloride	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Trichlorofluoro-methane	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
1,1-Dichloroethylene	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
1,1-Dichloroethane	<0.6	<0.6	<0.6	<0.6	<0.5	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Trans-1,2-Dichloro-ethylene	<0.6	3.2	<0.6	<0.6	<0.6	75	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Chloroform	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
1,2-Dichloroethane	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
1,1,1-Trichloroethane	<3	<3	<3	<3	<3	<5	<3	<5	<3	<3	<3	<3
Carbon Tetrachloride	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Bromodichloromethane	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
1,2-Dichloro-propane	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Trans-1,3-Dichloro-propene	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Trichloroethylene	<0.6	12	<0.6	<0.6	5.0	46	<0.6	4.4	<0.6	<0.6	<0.6	<0.6
Dibromochloro-methane	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6

[a]Results reported in μg/g (parts-per-million)

932630196

TABLE A-5 (Continued)

SUMMARY OF ANALYTICAL RESULTS FOR VOLATILE ORGANICS IN SOIL[a]

Client: AT&T

Sampling Location: Kearny, NJ

Sampling Dates: 6-8 February 1985

	ERT #/Field Identification											
Compound	25595 15-6-Y	25596 5-9-Y	25597 4-5-Z	25598 15-5-Y	25599 5-8-Z	25600 6-8-Y	25601 15-6-Z	25602 5-8-Z Dup	25603 15-7-Z	35604 15-8-Y	25605 15-8-Z	25606 15-7-Y
Cis-1,3-Dichloro-propene	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
1,1,2-Trichloro-ethane	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Benzene	<0.6	<0.6	<0.6	<0.6	1.1	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
2,-Chloroethyl-vinyl ether	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Bromoform	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Tetrachloroethene	<0.6	7.0	<0.6	<0.6	<0.6	30	<0.6	<2	<0.6	<0.6	<0.6	<0.6
1,1,2,2-Tetrachloro-ethane	<0.6	<0.6	<0.6	<0.6	0.63	2.1	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Toluene	<0.6	0.75	<0.6	<0.6	3.4	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Chlorobenzene	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	<0.6	<0.6
Ethylbenzene	<0.6	<0.6	<0.6	<0.6	<0.6	<2	<0.6	<2	<0.6	<0.6	1.1	<0.6

[a]Results reported in μg/g (parts-per-million).

TABLE A-5 (Continued)

SUMMARY OF ANALYTICAL RESULTS FOR VOLATILE ORGANICS IN SOIL[a]

Client: AT&T

Sampling Location: Kearny, NJ

Sampling Dates: 6-8 February 1985

	ERT #/Field Identification											
Compound	25607 4-5-Y	25608 17-1-X	25708 4-6-X	25709 5-8-X	25711 16-9-Y	25713 16-9-Z	25715 16-10-Y	25717 16-10-Z	25721 17-1-Z	35723 17-2-Y	25725 17-2-Z	25726 17-2-Z Dup
Chloromethane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Bromomethane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Vinyl Chloride	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Chloroethane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Methylene Chloride	<0.6	<0.6	<0.6	2.5	0.72	0.70	0.78	<0.6	0.90	<0.6	<0.6	0.69
Trichlorofluoro-methane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
1,1-Dichloroethylene	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
1,1-Dichloroethane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Trans-1,2-Dichloro-ethylene	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Chloroform	<0.6	<0.6	<0.6	2.4	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	0.69	<0.6
1,2-Dichloroethane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
1,1,1-Trichloroethane	<3	<3	<3	12	<3	<3	<3	<3	<3	3.5	6.5	5.5
Carbon Tetrachloride	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	0.65	<0.6	8.2	1.0	0.94
Bromodichloromethane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
1,2-Dichloro-propane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Trans-1,3-Dichloro-propene	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Trichloroethylene	<0.6	<0.6	<0.6	3.0	<0.6	<0.6	<0.6	14	<0.6	<0.6	0.63	<0.6
Dibromochloro-methane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6

[a]Results reported in μg/g (parts-per-million)

932630198

TABLE A-5 (Continued)

SUMMARY OF ANALYTICAL RESULTS FOR VOLATILE ORGANICS IN SOIL[a]

Client: AT&T

Sampling Location: Kearny, NJ

Sampling Dates: 6-8 February 1985

	ERT #/Field Identification													
Compound	25552 4-5-X	25559 4-7-X	25564 6-8-X	25584 5-8-Y	25585 5-9-Z	25586 6-8-Z	25587 15-5-Z	25588 4-7-Y	25589 4-7-Z	25590 17-2-X	25591 16-10-X	25592 16-9-X	25593 4-6-Y	25594 4-6-Z
Cis-1,3-Dichloro-propene	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
1,1,2-Trichloro-ethane	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Benzene	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	0.87	1.4
2,-Chloroethyl-vinyl ether	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Bromoform	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Tetrachloroethene	<2	<2	<2	<0.6	12	150	<0.6	<2	<2	<3.6	<0.6	<0.6	<0.6	<0.6
1,1,2,2-Tetrachloro-ethane	<2	<2	<2	<0.6	<2	8.7	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Toluene	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	1.2
Chlorobenzene	<2	<2	<2	<0.6	<2	<3	<0.6	<2	<2	<0.6	<0.6	<0.6	<0.6	<0.6
Ethylbenzene	<2	<2	<2	<0.6	4.0	<3	<0.6	4.0	3.9	<0.6	<0.6	<0.6	<0.6	<0.6

[a]Results reported in μg/g (parts-per-million).

932630199

TABLE A-5 (Continued)

SUMMARY OF ANALYTICAL RESULTS FOR VOLATILE ORGANICS IN SOIL[a]

Client: AT&T

Sampling Location: Kearny, NJ

Sampling Dates: 6-8 February 1985

Compound	ERT #/Field Identification											
	25607 4-5-Y	25608 17-1-X	25708 4-6-X	25709 5-8-X	25711 16-9-Y	25713 16-9-Z	25715 16-10-Y	25717 16-10-Z	25721 17-1-Z	35723 17-2-Y	25725 17-2-Z	25726 17-2-Z Dup
Cis-1,3-Dichloro-propene	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
1,1,2-Trichloro-ethane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Benzene	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
2,-Chloroethyl-vinyl ether	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Bromoform	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Tetrachloroethene	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	1.5	<0.6	63	27	19
1,1,2,2-Tetrachloro-ethane	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	6.0	1.6	<0.6
Toluene	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	2.3	1.9	<0.6	2.6	1.8
Chlorobenzene	<0.6	<0.6	<0.6	<2	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Ethylbenzene	<0.6	<0.6	<0.6	2.9	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	0.68	<0.6

[a]Results reported in μg/g (parts-per-million).

932630200

TABLE A-6

TOTAL PCB's IN SAMPLES COLLECTED

OCTOBER 4-10, 1984,

AT&T, KEARNY WORKS

Sampling Location	Total PCB's µg/g
21-1-B	9.4
21-2-B	4.1
21-2-B (Dup)	3.4
21-3-B	32.3
21-1-A	2.3
21-2-A	1.6
21-3-A	<1.0
21-6-A	2.5
22-1-B	6.5
22-2-B	2.6
22-3-B	3.1
22-4-B	2.6
22-5-B	4.5
22-6-B[1]	6.2
22-7-B	2.7
22-7-B (Dup)	4.4
22-8-B	16.5
22-9-B[1]	15.0
22-1-A	19.8
22-2-A	2.9
22-3-A	9.6
22-4-A	5.8
22-5-A	5.4
22-6-A	<10.0[2]
22-9-A	<10.0[2]

[1]These samples were ~10' from the concrete vaults.

[2]High detection limits for these samples due to interference.

"B" denotes surface sample

"A" denotes 12" - 36" homogenized subsurface sample.

932630201

TABLE A-7
TOTAL PCB's IN SAMPLES COLLECTED
May 2-10, 1985
AT&T Kearny Works

Sampling Location		Total PCB's ug/g
11-4	0-2'	9.7
	2-4'	4.9
	4-6'	1.5
	4-6'(Dup)	<1.0
11-5	0-2'	42.
	4-6'	7.9
11-6	0-2'	<1.0
	0-2'(Dup)	1.5
	2-4'	<1.0
	4-6'	<1.0
11-7	1-2'	1.0
	2-4'	<3.0
11-8	4-6'	<1.0
	6-8'	<1.0
11-9	0-6"	82
	0-6"(Dup)	68
	2-3'	<5.0
	4-5'	<5.0
	6-7'	<5.0
	8-9'	<5.0
11-10	0-6"	85.
11-11	0-6"	1300.
	2-3'	<5.0
	4-5'	<5.0
	6-7'	6.5
	8-9'	<5.0
	10-11'	<5.0
11-12	0-6"	660.
11-13	0-2'	<1.0
	4-6'	<1.0
11-14	0-2'	1.0
	4-6'	<1.0

2767D

932630202

TABLE A-7 (Continued)
TOTAL PCB's IN SAMPLES COLLECTED
May 2-10, 1985
AT&T Kearny Works

Sampling Location		Total PCB's ug/g
11-15	0-2'	<1.0
	2-4'	<1.0
	6-8'	<1.0
11-16	2-4'	<1.0
	6-8'	<1.0
11-17	4-6'	<1.0
	6-8'	<1.0
11-18	0-2'	160.
	2-4'	2.7
	4-6'	5.5
11-19	0-6"	3400.
	3-4'	<5.0
	5-6'	<5.0
	7-8'	6.2
11-20	0-6"	430.
	3-4'	<5.0
	5-6'	16.0
	9-10'	<5.0
	11-12'	<5.0
11-21	0-2'	33,000
	2-3'	89,000
	2-4'	17,000
	4-6'	10,500
	7-8'	1650
	9-10'	690
	11-12'	<5.0
11-22	2-3'	37
	4-5'	48
	7-8'	<5.0
	9-10'	<5.0
	11-12'	<5.0

TABLE A-8

SUMMARY OF ANALYTICAL RESULTS

SULFIDE REACTIVITY

AT&T Kearny, NJ

February, 1985

Sample Number	S=concentration (mg/l)
1-15	BDL
6-8-Z	BDL
4-6-Z	BDL
16-10-Z	BDL
33-10	BDL

BDL - Below Detection Limit: 1.0 mg/l soil extract.

TABLE A-9

SUMMARY OF ANALYTICAL RESULTS

CYANIDE REACTIVITY

AT&T Kearny, NJ

October, 1984; February, 1985

SAMPLE NUMBER	CN^- Concentration (mg/l)
1-9-X	BDL
4-4-A	0.016

BDL - Below Detection Limit: 0.0061 mg/l soil extract.

TABLE A-10

SUMMARY OF ANALYTICAL RESULTS

ARSENIC EP TOXICITY

AT&T Kearny, NJ

July, 1984; October, 1984

Sample Number	As Concentration (mg/l)
13B	0.008
26B	0.009
37-10-B	0.006
37-10-B (duplicate)	BDL
6A-6-B	0.006
5-4-B	1.6
5-3-A	4.1
5-4-A	2.0
6-1-A	BDL
1-2-B	0.006
1-6-B	BDL

BDL - Below Detection Limit: 0.005 mg/l soil extract.

TABLE A-11

RESULTS OF ANALYSES FOR PRIORITY POLLUTANT

METALS, CYANIDE AND pH, JULY 1984.

(all values are expressed in ppm)

	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A
Arsenic	10.	120	17	29	4.8	21	8.7	110	8.7	110	29	78	13
Antimony	<2.8	<2.7	<6.2	<6.2	<2.8	<2.5	<2.9	3.1	<2.7	<2.6	<6.2	<6.2	<3.0
Barium	<140.	170	<120	210	<140	270	<140	250	<140	250	<120	120	<150
Beryllium	<14.	<14	<12	<12	<14	<12	<14	<14	<14	<13	<12	<12	<15
Cadmium	<14.	<14	<12	<12	<14	<12	<14	<14	<14	<13	<12	<12	<15
Chromium	<28.	160	28	240	<28	110	100	2510	49	850	52	65	<30
Copper	73	200	110	310	82	200	35	320	100	1110	90	330	24
Lead	45.	380	82	460	85	390	41	550	54	520	120	500	46
Mercury	0.022	0.39	0.86	3.1	0.20	0.47	1.5	1.2	0.81	1.8	0.58	0.61	0.40
Nickel	20.	49	<25	62	20	68	20	200	46	110	<25	92	18
Selenium	<2.8	4.1	<2.5	<2.5	<2.8	4.6	<2.9	3.1	<2.7	4.4	<2.5	<2.5	<3.0
Silver	<14	<14	<12	<12	<14	<12	<14	29	<14	<13	<12	<12	<15
Thallium	<140.	<140	<125	<125	<140	<120	<140	<140	<140	<130	<120	<120	<150
Zinc	42.	140	160	200	54	180	49	560	520	1270	920	110	55
Cyanide	-	-	<12	-	-	-	-	-	-	-	54	-	-
pH	5.0	5.6	5.1	4.4	4.2	3.8	5.8	7.1	6.2	7.4	5.5	5.8	6.8

TABLE A-11 (Continued)

	7A DUPLICATE	7B	7B DUPLICATE	7C	8A	8B	9A	9B	10A	10B	11A	12A
Arsenic	18	37	30	-	7.6	11	-	-	-	-	-	
Antimony	<2.3	<2.8	<2.5	-	3.4	<2.4	-	-	-		-	-
Barium	130	<140	130	-	240	<120	-	-	-	.	-	.
Beryllium	<12	<14	<12	-	<14	<12	-	-	-	.	-	.
Cadmium	<12	<14	<13	-	<14	<12	-	-	-	-	.	.
Chromium	<24	72	110	-	<28	36	-	-	-	-	-	-
Copper	68	210	120	-	90	340	-	-	-	-	-	.
Lead	120	450	710	-	360	300	-	-	-	-	-	-
Mercury	0.47	0.52	0.12	-	0.35	0.53	-	-	-	-	-	.
Nickel	26	32	23	-	28	50	-	-	-	-	-	-
Selenium	<2.3	5.4	<2.5	-	<2.8	3.6	-	-	-	-	-	-
Silver	<11	<14	<12	-	<14	<12	-	-	-	-	-	-
Thallium	<120	<140	<120	-	<140	<120	-	-	-	-	-	-
Zinc	100	100	91	-	87	270	-	-	-	-	-	-
Cyanide	-	-	-	-	-	-	-	-	-	-	-	-
pH	7.8	6.9	7.1	6.9	6.9	7.1	6.6	7.4	6.9	4.9	7.7	7.0

932630208

TABLE A-11 (Continued)

	13A	13B	14A	14B	15A	15B	15C	16A	16B	17A	17B	18A	18B
Arsenic	9.8	16	23	10	-	-	-	12.	20	4.2	20	-	-
Antimony	<6.2	<6.2	<3.4	4.5	-		-	<2.7	<2.5	<6.2	<6.2	-	-
Barium	<120	<120	510	<140	-	-	-	910	<140	<120	<120	-	-
Beryllium	<12	<12	<17	<14	-	-	-	<14	<14	<12	<12	-	-
Cadmium	<12	<12	<17	<14	-	-	-	<14	<13	<12	<12	-	-
Chromium	<25	120	180	70	-	-	-	1160	900	<25	270	-	-
Copper	52	60	240	68	-	-	-	220	240	88	400	-	-
Lead	28	120	1200	75	-		-	380	1670	<25	600	-	-
Mercury	0.22	0.76	0.69	0.28	-	-	-	0.85	0.67	0.13	0.70	-	-
Nickel	<25	40	54	80	-	-	-	170	76	<25	92	-	-
Selenium	<2.5	<2.5	<3.4	4.8	-	-	-	26	<2.5	<2.5	<2.5	-	-
Silver	<12	<12	<17	<14	-	-	-	<14	<12	<12	<12	-	-
Thallium	<120	<120	<170	<140	-	-	-	<140	<130	<120	<120	-	-
Zinc	30	110	120	110	-	-	-	390	<140	48	680	-	-
Cyanide	<12	<12	<12	<12	-	-	-	-	-	-	-	-	-
pH	6.2	6.0	8.5	6.7	7.4	6.8	7.1	7.2	7.5	8.2	7.1	8.5	9.8

932630209

TABLE A-11 (Continued)

	19A	19A DUPLICATE	19B	20A	20B	20B DUPLICATE	21A	21B	22A	22B	23B
Arsenic	8.9	6.2	3.7	17	15.	12	10	26	10	12	7.3
Antimony	<2.6	<2.6	<2.1	<2.3	<2.6	<2.9	<6.2	<6.2	<6.2	<6.2	<2.5
Barium	<130	<130	100	120	150	<140	<120	160	<120	200	350
Beryllium	<13	<130	<10	<11	<13	<14	<12	<12	<12	<12	<12
Cadmium	<13	<13	<10	<12	<12	<14	<12	<12	<12	<12	<12
Chromium	<27	<28	<21	28	47	32	50	68	52	50	30
Copper	84	68	28	70	130	83	55	160	55	78	78
Lead	54	55	<21	190	150	120	250	700	590	410	45
Mercury	0.36	0.60	0.18	0.56	0.61	0.056	0.10	0.14	0.21	0.12	0.45
Nickel	22	29	16	84	45	43	<25	65	<25	38	30
Selenium	<2.6	<3.4	<2.1	<2.3	<2.6	<2.9	<2.5	<2.5	<2.5	<2.5	<2.5
Silver	<13	<13	<10	<12	<13	<14	<12	<12	<12	<12	<12
Thallium	<130	<130	<100	<120	<130	<140	<120	<120	<120	<120	<120
Zinc	73	120	45	160	230	180	130	420	550	350	170
Cyanide	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
pH	3.9	3.8	7.9	7.0	7.2	7.6	8.8	7.4	9.8	7.6	8.1

TABLE A-11 (Continued)

	24B	25A	25B	26A	26B	27A	27B	28A	28B	29A	29B	30A
Arsenic	6.2	5.0	15	8.1	6.9	5.8	8.6	7.5	18	12.	19.	8.0
Antimony	2.0	<6.2	<6.2	<2.9	<2.8	<2.7	<2.6	<6.2	<6.2	<2.7	<3.0	<3.0
Barium	120	<120	<120	<140	<140	<140	<130	190	<120	<140	1940	<150
Beryllium	<9.3	<12	<12	<14	<14	<14	<13	<12	<12	<14	<15	<15
Cadmium	<9.3	<12	<12	<14	<14	<14	<13	<12	<12	<14	<15	<15
Chromium	<19	<25	40	1580	<28	<28	<26	25	32	<28	56	<30
Copper	26	150	42	170	61	58	42	52	22	150	130	45
Lead	<19	88	30	230	<28	47	36	52	<25	200	390	130
Mercury	0.028	0.44	0.42	0.81	0.16	0.35	0.15	1.2	0.052	1.0	0.71	0.48
Nickel	20	<25	25	126	28	22	31	<25	<25	28	51	24
Selenium	<1.9	<2.5	<2.5	<2.9	<2.8	<2.7	<2.6	<2.5	<2.5	<2.7	<3.0	<3.0
Silver	<9.5	<12	<12	<14	<14	<14	<13	<12	<12	<14	<15	<15
Thallium	<93	<120	<120	<140	<140	<140	<130	<120	<120	<140	<150	<150
Zinc	56	750	100	1370	77	94	100	140	45	170	1220	86
Cyanide	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
pH	8 1	7.8	9.0	10.1	7.6	9.1	7.5	10.4	8.8	7.2	7.3	9.6

932630211

TABLE A 11 (Continued)

	30B	31A	31B	32A	32B	33A	33B	34A	34B	35B	36B
Arsenic	4.4	9.5	14	9.6	7.5	16	85	6.0	8.6	31	5.6
Antimony	<2.5	<6.2	<6.2	<2.8	<2.0	<6.2	<6.2	<2.7	<2.8	<4.9	1.9
Barium	150	120	730	<140	<100	<120	400	<140	<140	280	110
Beryllium	<12	<12	<12	<14	<10	<12	<12	<14	<14	<14	<9.4
Cadmium	<12	<12	<12	<14	<10	<12	<12	<14	<14	<24	<9.4
Chromium	<25	72	55	59	60	110	6500	27	290	220	80
Copper	49	60	230	280	58	65	150	36	180	1370	520
Lead	<25	42	510	150	74	98	380	<27	250	1140	380
Mercury	0.033	0.63	0.53	0.98	0.18	0.58	1.1	0.13	0.66	1.4	0.23
Nickel	32	38	45	53	35	46	510	19	110	110	73
Selenium	<2.5	<2.5	<2.5	17	<2.0	<2.5	<2.5	<2.7	<2.8	<4.9	<1.9
Silver	<12	<12	<12	<14	<10	<12	<12	<14	<14	<24	<9.4
Thallium	<140	<120	<120	<140	<100	<120	<120	<140	<140	<240	<94
Zinc	69	160	1050	120	110	100	720	60	490	1220	920
Cyanide	<12	<12	-	-	-	-	-	-	-	-	-
pH	7.6	9.9	8.9	7.1	7.6	7.8	7.4	7.3	7.1	6.0	7.4

932630212

TABLE A-11 (Continued)

	37A	37A DUPLICATE	37B	37B DUPLICATE	38A	38B	39A	39B
Arsenic	10.	4.9	9.3	6.3	<2.5	13	4.8	12
Antimony	<3.1	<3.1	<2.5	<2.9	<2.6	<2.8	<2.3	<2.7
Barium	<160	<150	<120	190	<130	<140	<120	<160
Beryllium	<16	<15	<12	<14	<13	<14	<12	<14
Cadmium	<16	<15	<12	<14	<13	<14	<11	<14
Chromium	84	74	5830	<29	26	5060	<23	220
Copper	78	46	210	43	13	250	13	130
Lead	110	99	190	66	<26	230	<26	280
Mercury	0.27	0.27	0.42	0.081	0.26	1.5	0.26	0.82
Nickel	22	22	290	23	16	230	18	36
Selenium	<3.1	5.2	<2.5	<2.9	7.7	<2.8	<2.3	<2.7
Silver	<14	<15	<12	<14	<13	<14	<11	<14
Thallium	<160	<150	<120	<140	<130	<140	<120	<140
Zinc	110	86	800	150	32	290	96	230
Cyanide	-	-	-	-	-	-	-	-
pH	7.4	8.3	8.1	8.1	7.4	7.6	7.4	6.9

TABLE A-12

RESULTS OF ANALYSES FROM FIFTH SAMPLING ROUND

CONDUCTED MAY 2-10, 1985

Sampling Location	Arsenic µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Zinc µg/g	Total Cyanide µg/g	VOA µg/g
4-8-Y	-	-	-	-	-	-	-	3.0
4-8-Z	-	-	-	-	-	-	-	<0.7
4-9-Y	-	-	-	-	-	-	-	13.4
4-9-Z	-	-	-	-	-	-	-	4.0
4-10-Y	-	-	-	-	-	-	-	44.0
4-10-Z	-	-	-	-	-	-	-	<0.7
33-Y	27	2000	84	280	110	360	BDL	<0.7
33-Z	16	150	140	240	56	200	BDL	<0.7
33-9-Y	22	280	120	220	74	300	4.3	<0.7
33-9-Z	15	74	210	300	51	220	0.79	<0.7
33-10-Y	12	27,000	1,600	2,000	6,600	10,000	180	<0.7
33-10-Z	6.1	1,200	120	110	280	520	12	<0.7
33-11-Y	18	820	170	340	180	1,400	3.6	<0.7
33-11-Z	8.4	17	58	83	37	130	1.2	<0.7
33-12-Y	20	600	12,000	700	160	700	10	1.4
33-12-Z	5.6	22	67	BDL	29	62	BDL	<0.7

X = surface sample

Y = 18" grab sample

Z = 36" grab sample

BDL = Below Detection Limit

932630214

TABLE A-12

RESULTS OF ANALYSES FROM FIFTH SAMPLING ROUND

CONDUCTED MAY 2-10, 1985

Sampling Location	Arsenic µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Zinc µg/g	Total Cyanide µg/g	VOA µg/g
33-13-Y	13	460	120	500	100	510	2.2	3.9
33-13-Z	2.3	13	BDL	BDL	BDL	BDL	BDL	<0.7
33-14-Y	50	62	200	440	42	750	BDL	4.2
33-14-Z	38	200	2300	1900	300	13,000	BDL	0.8
34-1-Y	22	46	94	200	34	290	4.1	1.8
34-1-Z	36	280	1800	1200	220	8600	2.7	<0.7
34-2-Y	8.2	240	130	220	92	460	8 8	<0.7
34-2-Z	15	180	290	420	82	690	BDL	<0.7
34-3-X	3.5	250	220	420	54	740	-	<0.7
34-3 Y	1.6	320	260	450	130	680	BDL	<0.7
34-3-Z	12	180	82	460	32	140	23	<0.7
34-4-Y	4.9	3900	210	150	1400	330	18	<0.7
34-4-Z	25	5100	610	270	1500	4100	57	<0.7
34-5-Y	6.3	19,000	1100	1200	4600	12,000	160	<0.7
34-5-Z	8.3	5800	430	440	1400	3500	61	<0.7
34-6-Y	7.1	2100	190	300	530	1400	9.3	<0.7
34-6-Z	4.4	650	210	420	240	1300	7.7	4.7

X = surface sample

Y = 18" grab sample

Z = 36" grab sample

BDL = Below Detection Limit

TABLE 1

RESULTS OF ANALYSES FROM FIFTH SAMPLING ROUND

CONDUCTED MAY 2-10, 1985

Sampling Location	Arsenic µg/g	Chromium µg/g	Copper µg/g	Lead µg/g	Nickel µg/g	Zinc µg/g	Total Cyanide µg/g	VOA µg/g
34-7-X	11	160	86	94	68	210	8.4	<0.7
34-7-Y	11	88	85	100	52	310	16	<0.7
34-7-Z	5.2	BDL	24	BDL	20	150	21	<0.7
45-6-X	-	-	-	95	-	-	-	-
45-6-Y	-	-	-	390	-	-	-	-
45-6-Z	-	-	-	340	-	-	-	-
45-7-X	-	-	-	200	-	-	-	-
45-7-Y	-	-	-	230	-	-	-	-
45-7 Z	-	-	-	250	-	-	-	-
45-8-X	-	-	-	120	-	-	-	-
45-8-Y	-	-	-	120	-	-	-	-
45-8-Z	-	-	-	74	-	-	-	-
45-9-X	-	-	-	150	-	-	-	-
45-9-Y	-	-	-	81	-	-	-	-
45-9-Z	-	-	-	83	-	-	-	-

X = surface sample

Y = 18" grab sample

Z = 36" grab sample

932630216

TANK AND LOCATION DATA

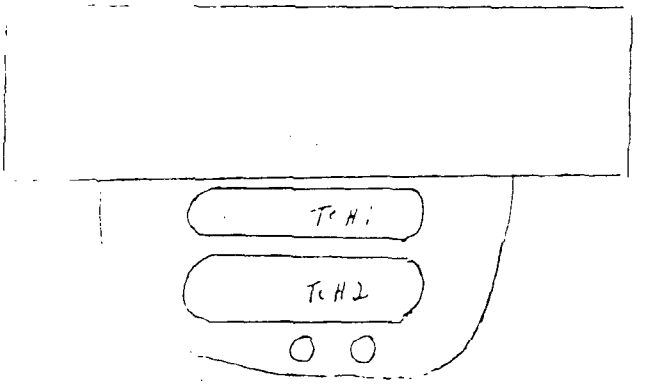
DATE _____

CITY _____

STATE _____

WEATHER	TIME	TEMPERATURE	COMMENTS

SCHEMATIC



	PRODUCT/TANK NO										
BEFORE DELIVERY	LEVEL	Fill	Gauge	Fill	Gauge	Fill	Gauge	Fill	Gauge	Fill	Gauge
	GALLONS										
	WATER										
	TOP OF RISER										
	GRADE										
	DROP TUBE										
	CAPACITY GALLONS										
	DIAMETER INCHES										
	MATERIAL										
	PUMP TYPE										
	TYPE OF COVER										
	AGE OF TANK										
	SIPHON										
	TANK OPENINGS										
	EXTRACTORS										
VAPOR RECOVERY	TYPE										
	VENT CONFIGURATION										
	P/V VENT VALVE TYPE										

REPLACEMENT PARTS

PART #	DESCRIPTION	QUANTITY	PRICE

ADDITIONAL CHARGES (pumpovers, overtime, etc.) _____

*Data obtained from ☐ Station ☐ LL Charts ☐ Other _____

EXHIBIT A-7

932630217

HUNTER ENVIRONMENTAL SERVICES, INC.

GREAT VALLEY PARKWAY SUITE 6
MALVERN PA 19355
215 296-7300 800 523 4370

leak lokator...

TEST RESULTS

DATE OF TEST: AUGUST 30, 1994

LOCATION: AT&T

NAME

ADDRESS: 100 CENTRAL AVE

CITY: KEARNY STATE: NJ

TEST RESULTS SUMMARY

No.	SYSTEM PRODUCT	TANK SIZE GALLONS	DIAMETER	WATER INCHES	LEAK LOKATOR RESULTS* LEVEL	ALR	CONCLUSION	RECOMMENDATIONS	
1	TANK #1	10,000	96	3 1/4"	139	-0.019	T		T T T
2	TANK #2	10,000	96	2"	137	-0.380	L		L T T
					110	+0.036	T		

FOR FURTHER INFORMATION

FINAL REPORT

PRODUCT LINES – HYDROSTATIC PRESSURE TEST RESULTS

No.	SYSTEM PRODUCT	TYPE OF PUMP REMOTE	SUCTION	# APPLIED	MINUTES APPLIED	PRODUCT LOSS CC'S	PRODUCT LOSS GPH	CONCLUSION RESULT
1	TANK #1		WAYNE	N/A				
2	TANK #2		WAYNE	N/A				

NOTE: On suction pumps NEVER pressure than 15 psi on any pump system

THE CONTRACTOR'S OWNER REPRESENTATIVES PRESENT

DETAIL OF TEST RESULTS

No.	PRODUCT	LEVEL	TIME			LEAK RATE CC/DAY	CC/MIN	ALR	CC/MIN	CC/MIN	GPH	CONCLUSION
1	TANK #1	139	1127	33 min	2.324	-1.313	-0.02	-7.161	-1.205	-0.019	N	
2	TANK #2	137	1324	30 MIN	2.342	+22.816	+0.003	+1.102	+23.815	+0.380	N	
		110	1445	30 MIN	2.135	+3.076	+0.052	+0.781	+2.265	+0.036	N	

* LEVEL – INCHES FROM TANK BOTTOM TO TEST LEVEL
ALR – ABSOLUTE LEAK RATE (MEASURED LEAK RATE – TEMPERATURE COMPENSATION) IN GALLONS PER HOUR
CONCLUSION – NFPA CRITERION OF +/-0.05 GPH IS USED TO CERTIFY TIGHTNESS

CERTIFICATION: It is to certify that the above described tank systems were tested, using the HUNTER ENVIRONMENTAL SERVICES, INC. LEAK LOKATOR according to all standard operating procedures. Those indicated as tight meet the criteria established by the National Fire Protection Association Pamphlet 329 for Precision Testing.

TEST CONDUCTED BY		CERTIFIED BY	
LL-13	TANK TESTING SPECIALIST	SIGNATURE / NAME	DATE / TITLE

EXHIBIT A-7 Continued

932630218

796-3390
796-3391
796-3392

LOMBARDO EQUIPMENT CO.

Service Station Installation and Maintenance

BUSHES LANE, P. O. BOX 62 ELMWOOD PARK, N. J. 07407

TO ERT CORP
696 VIRGINIA RD
CONCORD MASS, 01742

5386

DATE BILLED 10/5/84

INVOICE NO. 5511

TERMS: NET

YOUR ORDER No.

DESCRIPTION	AMOUNT
LOCATION OF WORK: ERT CORP 100 CENTRAL AVE KEARNY, N.J.	
7/24 TESTED 3-10M TANKS. 2 GAS AND 1 DIESEL. 1 DIESEL TESTED TIGHT. 2 GAS WERE NOT TIGHT, BECAUSE OF LEAKS IN REMOTE FILLS.	
TESTED 3 TANKS.	[illegible]
6% TAX	[illegible]
TOTAL	$ [illegible]

RECEIVED
OCT 05 1984
ERT
ACCOUNTING DEPT.

EXHIBIT A-7 Continued

932630219

APPENDIX B

SAMPLING & ANALYSIS METHODOLOGY

APPENDIX B

TEST METHODOLOGY AND QUALITY ASSURANCE INFORMATION

1. Test Methodologies

Methodologies for soil testing and tank testing are identified below.

1.1 Priority Pollutant Metals

Interim Methods for the Sampling and Analysis of Priority Pollutants in Sediment and Fish Tissue (EPA, 1980).

1.2 Characteristic of EP Toxicity

Methodology: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. EPA, SW-846, July 1982, 2nd ed. Method #1310 & 3010

1.3 Cyanide

Interim Methods for the Sampling and Analysis of Priority Pollutants in Sediment and Fish Tissue (EPA, 1980).

1.4 Volatile Organic Compounds

Methodology: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. EPA, SW-846, July 1982, 2nd ed.

Method No.: 5030, 8010, 8020 & 8030.

Note: A list of volatile organic compounds tested for is given in Table B-1.

TABLE B-1

VOLATILE ORGANIC PRIORITY POLLUTANTS

COMPOUNDS

*acrolein
*acrylonitrile
benzene
carbon tetrachloride
chlorobenzene
1,1-dichloroethane
1,2-dichloroethane
1,1,1-trichloroethane
1,1,2-trichloroethane
1,1,2,2-tetrachloroethane
chloroethane
2-chloroethylvinyl ether
chloroform
1,1-dichloroethylene
trans-1,2-dichloroethylene
1,2-dichloropropane
1,3-dichloropropene (cis & trans)
ethylbenzene
methylene chloride
methyl chloride
methyl bromide
bromoform
dichlorobromomethane
trichlorofluoromethane
chlorodibromomethane
tetrachloroethylene
toluene
trichloroethylene
vinyl chloride

1.5 Petroleum Hydrocarbons

Analyses of petroleum hydrocarbons were conducted by Chyun Associates, Princeton, NJ. A description of the analytical methodology follows.

PETROLEUM HYDROCARBONS

CHYUN ASSOCIATES METHOD #02600-2

1. Scope and Application

1.1 This method is applicable to soils, sludges as liquid organic wastes.

2. Summary of Method

2.1 The acidified sample is extracted with freon in a milk dilution bottle, polar compounds are removed by silica gel absorbtion. Total Hydrocarbons in the resulting extract are determined by Infrared Spectrophotometry.

Interferences

3.1 Silica gel has the ability to absorb polar materials. If a solution of hydrocarbons and fatty materials is mixed in freon with silica gel the fatty acids are selectively removed from solution. The materials not eliminated by silica gel adsorption are designated hydrocarbons by this test. The more polar hydrocarbons, such as the complex aromatic compounds and the hydrocarbon derivatives of chlorine, sulfur, and nitrogen, may be adsorbed by the silica gel. Any compounds other than hydrocarbons and fatty matter recovered by the procedures for the determination of grease and oil also interfere.

4. Apparatus and Materials

4.1 Milk dilution bottles, 100 ml with teflon lined caps.

4.2 Infrared spectrophotometer, double beam, recording.

4.3 IR Cells, quartz

4.4 Analytical balance

5. Reagents

5.1 Hydrochloric Acid, 5% solution.

5.2 Freon (1,1,2-trichloro-1,2,2-trifluoethane)

5.3 Reference Hydrocarbon: 37.5% isoctane, 37.5% hexadecane and 25.0% benzene. (All % by volume).

5.4 Standard Hydrocarbon solution: Dilute 50ml of reference Hydrocarbon (5.3) to 50.0 mls with Freon (5.2)

5.5 Silica Gel, 60-200 mesh.

6. Sample Collection and Handling

6.1 Collection of a homogeneous portion of the material to be collected is imperative. Sample is to be collected in a glass container.

6.2 Store the unpreserved sample at low temperature.

7. Procedure

7.1 To the milk dilution bottle add 25.0 grams of sample (record weight to 0.01 grams) and 25.0 mls of 5% HCl solution. Mix thoroughly.

7.2 Add 25.0 mls freon to the sample mix, cap, and shake vigorously for five (5) minutes. Allow to settle for ten (10) minutes.

7.3 Carefully remove about ten-fifteen milliliters of the freon layer with a pasteur pipet. Centrifuge the extract and transfer the clear freon portion to a small glass test tube. Add 1.0 gram silica gel to the freon and mix well.

7.4 Scan samples and standards from 3,200/cm to 2,700/cm with an extract blank (25.0 mls HCl/ 25.0 mls freon which has been prepared in the same manner as the samples) in the reference beam. All determinations are to be performed with a 2 cm path length cell.

7.5 Measure the absorbances of samples and standards by conducting a straight baseline over the range of the scan and measure the sum of the absorbance of the peaks at 2930/cm and 2857/cm and subtracting the baseline absorbance at that point. If the absorbance exceeds 0.8 for either peak the sample is to be diluted. Use the scans of prepared standards (from reagent 5.3) in freon to prepare a calibration curve.

7.6 Spikes are prepared by adding 0.5 mls (372 µg) of reagent 5.4 to the 25 grams sample aliquot before the extraction procedure.

8. Calculations

$$\text{Petroleum Hydrocarbons (mg/kg)} = \frac{A \times 25}{B}$$

A = Concentration of hydrocarbons in freon extract as determined from the calibration curve.

B = Sample size (grams).

9. QA Protocal

9.1 Duplicates are to be performed every five (5) samples or at least one for each batch if less than five samples are analyzed.

9.2 A minimum of four (4) standards and one (1) blank are to be analyzed with each batch.

1.6 Total Organic Carbon

Total organic carbon analyses were conducted by Stablex-Reutter, Inc. of Cherry Hill, NJ. A description of the methodology used follows.

DETERMINATION OF TOTAL ORGANIC CARBON

IN SEDIMENTS AND SOILS

Oceanography International Corporation's Total Carbon System can be used to determine Total Organic Carbon (TOC) in sediment and soil samples. The ampule method is used. The procedure for preparing the ampules is changed slightly from the procedure given in the Operating and Procedures Manual. The following is a brief outline of the procedure:

1. Sediment sample must be dried (105°C) and homogenized to a fine powder. (Ball mill or grinder) *
2. Weigh a precombusted ampule to the nearest 0.00001 gram. (Better to nearest 0.000001 gram)
3. Add sediment to pre-weighed ampule using a disposable glass pipette as a funnel.

   NOTE: *The amount of soil to add depends upon the carbon concentration of the soil. Fifty to one hundred micrograms of carbon is desirable.*

CONVERSION CHART

Estimated Percent Carbon in Sediment	Weight of Carbon in Sediment (Micrograms C/milligram sediment)
0.1%	1
1.0%	10
2.0%	20
3.0%	30
4.0%	40
5.0%	50
10.0%	100

* Step #1 omitted by Stablex-Reutter, Inc.

4. Re-weigh ampule with sediment added to obtain weight of sediment.

5. Add 1.0 ml, ~~6%~~ 10% v/v phosphoric acid solution to ampule.

6. Add 2.0 ml distilled water. (Inject water into ampule in a manner so that sides of the ampule are washed and all the sample and acid are carried to the bottom.)

7. Cover ampules with aluminum foil and let stand for 30 minutes. (This allows adequate time for the HCO_3^- and $CO_3^= \rightarrow CO_2 \uparrow$ conversion.)

8. Add ~~0.2 g $K_2S_2O_8$~~ 20 ml saturated $K_2S_2O_8$ solution to ampule with dipper measure.

9. Add 2.0 ml distilled water to ampule. (Inject water in a manner such that the $K_2S_2O_8$ is washed to the bottom of the ampule.)

10. Purge ampule contents of inorganic carbon for six minutes.

11. Use several drops of CO_2-free distilled water to wash sediment adhering to purge tube back into ampule if necessary.

12. Seal ampule.

13. Convert organic material contained in sediment sample to carbon dioxide by placing sealed ampule in autoclave for a minimum of ~~four hours~~ 1/2 hour at 130°C. If a pressure vessel is used, OIC Cat. No. 0512VZ, place pressure vessel containing sealed ampules in a dry oven for a minimum of six hours at 175°C. (The pressure vessel at 175°C is recommended for quantitative conversion of some organic compounds to CO_2.)

14. Determine carbon content of sediment sample in glass ampule by procedure given in Procedures Manual, Section III using the Ampule Analyzer Unit. (Set IR analyzer coarse gain attenuator pin on XI

setting.)

15. Prepare several reagent blank ampules using the above procedure omitting the dried sample.

1.7 Lombardo Equipment Company Fuel Tank Detection

A description of Lombardo's leak detection system follows:

BASIC PRINCIPLES OF TANK TIGHTNESS TESTING

WHAT IS A LEAK? AND WHAT MAY SEEM TO BE A LEAK?

A leak is a product getting out of a tank system or ground water entering that system. Thus, it may result in less product remaining in the tank so exact measurement of this remainder should reveal the loss.

Over a sufficient period of time such a loss can be detected by exact tank sticking and INVENTORY CONTROL computations and records. However, such computed losses may also be due to other causes: variations in meter calibrations, delivery differences, theft, etc.

With a Heath Petro Tite Tank Tester these causes of shortage do not exist during the period of the test. By completely filling the tank and also filling the Petro Tite standpipe installed in a tank opening any loss can be observed and measured to one hundredth of a gallon or even thousandths. (This would reveal a loss of a few millionths of the tank capacity.) A pre-calculated elevation of this standpipe will also eliminate ground water entry.

When the tank is in operation, and also under test, two additional things occur which can resemble a leak (cause apparent loss of product) and one of them can even conceal a leak.

1. Whenever a tank of usual steel construction with flat ends receives a load of product the added depth applies increased pressure to the tank ends bulging them outward into the surrounding soil. (Fiberglas tanks bulge between the ribs.) This change of shape slightly increases the volume the tank can hold. This increase occurs gradually as the soil yields to the increased pressure. When a standpipe raises the product above the tank top this capacity increase is still greater. Therefore, the Heath Petro Tite test method is capable of measuring and stopping DEFLECTION after a certain time (usually 2 hours).

2. The other variable which can resemble, or conceal, a leak is changing temperature. Petroleum like almost all gases, liquids and solids, contracts if cooled and expands if heated.

Any cooling and resulting contraction would show a loss of product resembling a leak even though no liquid left the tank. It simply becomes heavier and occupies less space. However, if the product becomes warmer it would expand and this could conceal a real leak.

The Heath Petro Tite Tank Tester incorporates unique equipment and methods to measure temperature, and to precisely compute contraction or expansion so these temperature caused volume changes can be eliminated and true leakage only measured. For details see sections on TANK DEFLECTION and TEMPERATURE

HEATH PETRO TITE TANK TESTER

EQUIPMENT FUNCTIONS

The various components of the Petro Tite are essential for a test result meeting NFPA "final test" criteria of accuracy for a tight tank of five one hundredths of a gallon (.05) per hour. This is not a permissible leak but is rather a minimum allowance for variations in tank capacity, coefficients of expansion, and instrument precision. The latter is so exact that variations are slight or entirely eliminated by the Heath Petro Tite instrumentation. For variations in "capacities" and "coefficients" see sections TANK CAPACITY and TEMPERATURE.

The Standpipe, together with the 1 gal. graduate, permits exact control of the pressure on the tank ends. The tank ends are pushed outward causing an apparent loss at the beginning of a test. The reasons for this end bulging, its extent, and the means of controlling it are discussed in the section on HYDROSTATIC PRESSURE.

The 1 gal. graduate is used to measure the exact amount of gasoline added to, or drained from the Standpipe to maintain a constant level, and therefore a uniform pressure. The data on the quantities involved, permit quickly eliminating the apparent loss by end deflection. This usually requires two hours.

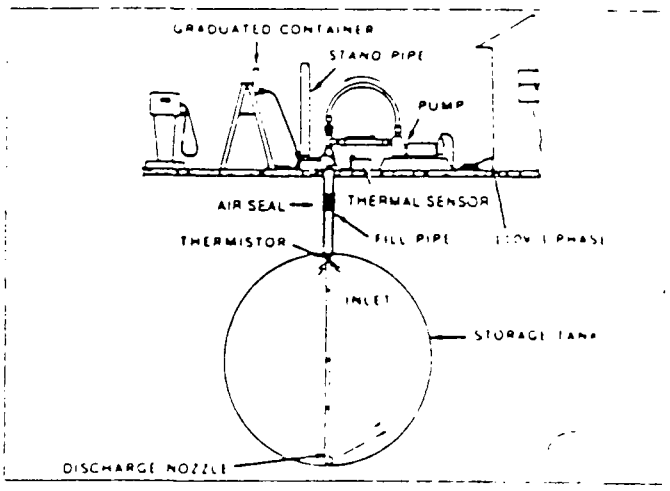


FIGURE 1

The circulating p gasoline from 6", or more, below the tank he suction tube, which is lengthened if ne the hose extension. This gasoline is dis der approximately 25 psi pressure thru the ose into the sections of tubing which have b together to place the outlet jet at the bottom This jet, which is adjusted to be above any wa nk and below any drop tube, is directed at 45 er line of the long end of the tank. The jet is at an upward angle of 45°. These alignmen corkscrew-like swirling motion in the ta g a uniform temperature throughout.

The uniform tem ained by circulation, is electrically measur mistor in the bottom of the suction tube. T the suction tube of the Air Seal carries the electrical signal thru the amphenol connectors on the top of the Air Seal to the Thermal Sensor where the technician adjusts the dial. He then enters any temperature change on his data chart. Temperature changes are constantly taking place and frequently are substantial. The Heath Petro Tite Thermal Sensor and data chart precisely measure contraction or expansion as it takes place in the entire contents of the tank. Wh these precise temperature changes are converted volume, they are subtracted from changes in volum measured in the graduate due to tank end deflection or leakage.

Any loss, after tank end deflection is eliminated (2 hrs. approximately), is probably leakage. It can be measured precisely, and if this is within .05 gals. per hr. the tank may be certified as tight. See section on TEMPERATURE.

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1.8 Hunter Environmental Services Fuel Tank Leak Detection

A description of Hunter's leak detection system follows:

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leak lokator™ LD 2000

tests in virtually any size underground tank system with 2" (50mm) or larger opening

LEAK LOKATOR...MUCH MORE THAN JUST EQUIPMENT

No one else offers anything like it! This innovative, highly accurate tank testing system—available only through Hunter — REQUIRES NO EXCAVATION. Furthermore, all Leak Lokator testing is performed by teams of experienced professionals who are thoroughly trained in the use of the equipment and testing procedures.

TESTS ALL UNDERGROUND INDUSTRIAL AND SERVICE STATION TANKS

Leak Lokator applications are as varied as underground tank applications. Tests have been successfully conducted on a multiplicity of liquids. Size of tank has no effect on test results. In addition to service station tanks, Leak Lokator applications include industrial plants, chemical plants, airfields, schools and hospitals.

All tests are certified to meet criteria established by NFPA (National Fire Protection Association) Pamphlet 329 for 0.05 gph accuracy or better.

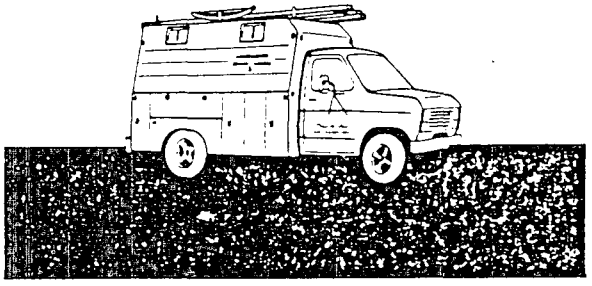
BUOYANCY . . . A TIME TESTED PHYSICAL THEORY

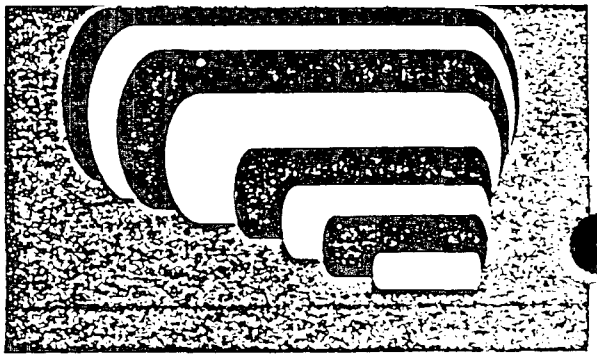
The Leak Lokator operates on Archimedes "Principle of Buoyancy" which states that the apparent loss in weight of any object submerged in a liquid is equal to the weight of the displaced volume of the liquid. Based on this proven theory, the Leak Lokator measures tank leakage by sensing weight changes in a sensor which is suspended in the liquid level of the tank.

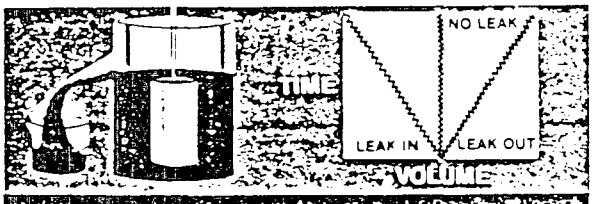
The Leak Lokator LD2000 consists of a sensor (inserted into the tank during test), an analytical balance (weighing scale), electronic transmitting circuitry and a recorder (for permanent record of test). The sensor is placed in the tank liquid and is suspended from the analytical balance. The weight of the sensor is equal to its actual weight minus the buoyancy force of the liquid in the tank. Any change in liquid level (due to leakage out or in) will change the buoyancy force on the sensor and hence, the weight of the sensor. The weight change is monitored by the analytical balance which sends a "signal" to the recorder. The angle and length of the line drawn by the recorder is directly correlated to the quantity and rate of product lost.

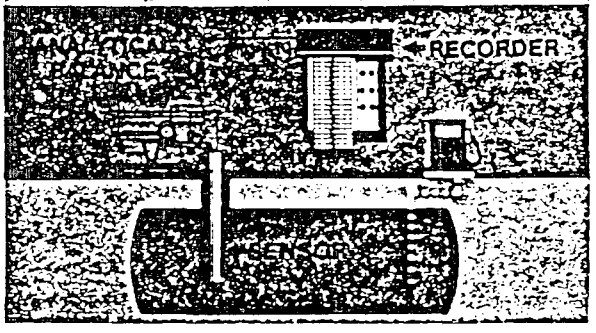
The test can be conducted at any liquid level which submerges the leak, however, for the greatest sensitivity, testing is conducted with the liquid in a riser above grade. Piping leaks can be easily differentiated from tank leaks by conducting the test both above grade and just below the tank top. No excavation is required.

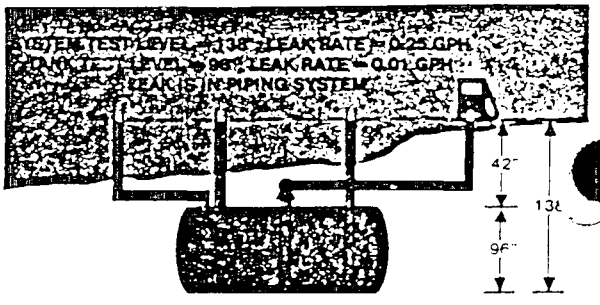
Tests can be affected by many variables including: calibration; evaporation; temperature; tank-end deflection; and vapor pockets. The following section explains how the Leak Lokator method adjusts for all these variables and results in unparalleled accuracy in successful leak detection.











2. Quality Assurance Information

2.1 Environmental Research and Technology

LABORATORY QUALITY ASSURANCE MANUAL

CHEMICAL SERVICES SECTION

ENVIRONMENTAL CHEMISTRY CENTER

OF

ENVIRONMENTAL RESEARCH & TECHNOLOGY

Copy Control Number_____

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TABLE OF CONTENTS

1. Introduction

1.1 Corporate Statement of Quality Assurance Policy

1.1.1 Introduction

1.1.2 Policy

1.1.3 Corporate Quality Organization

1.2 Laboratory QA Organization and Reporting

1.2.1 Personnel

1.2.2 Objectives

2. General Laboratory QA Topics

2.1 Personnel and Training

2.2 Instrumentation

2.2.1 Maintenance and Repair

2.2.2 Instrument Record Book

2.3 Glassware Cleaning

2.3.1 General Procedure

2.3.2 Special Glassware

2.4 Laboratory Work Areas

2.5 Water Supply

2.6 Chemicals

2.7 Reagents and Stock Standard Solutions

3. Documentation and Records

3.1 Summary of Quality Control Documentation

3.2 Data and Records Keeping

3.3 Sample Numbering System

3.4 Standard Operating Procedures

3.5 Report Format

3.6 Notebook Audits

3.7 Notebook - Data Sheet Requirements

3.8 QA Audits and Corrective Action Forms

TABLE OF CONTENTS (Continued)

4. Quality Control Data and Data Evaluation

4.1 Quality Control Charts

4.2 Precision Determination

4.2.1 Data Evaluation

4.2.2 General Laboratory Guidelines

4.2.3 Guidelines for Precision Determinations

4.3 Accuracy Determination

5. Reference Samples

5.1 EPA Water Ampules

5.2 Other EPA Reference Samples

5.3 NBS Reference Samples

5.4 Interlaboratory Comparisons

1.0 INTRODUCTION

1.1 Corporate Statement of Quality Assurance

1.1.1 Introduction

This document defines ERT Corporate philosphy and policy on Quality Assurance and Quality Control and provides the organization to effect this policy. ERT is dedicated to the concept that all technical work must be accomplished in accordance with accepted quality assurance practices. ERT assures its clients of thorough and cost-effective quality assurance programs designed to fill specific project needs by appending quality assurance documents of appropriate operational groups or units to ~~this~~ Corporate Statement of Quality ~~Assurance~~ Policy and Organization when formulating project Quality Assurance Plans.

1.1.2 Policy

ERT is committed to the philosophy that quality operations results from quality planning, design, and work performance by skilled operational personnel. ERT's policy is to perform its varied types of technical work in accordance with standard quality assurance practices such as those defined by Code of Federal Regulations, Title 10, Part 50, Appendix B, "Statement of Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants" and the U.S. Environmental Protection Agency's "Quality Assurance Handbook for Air Pollution Measurement Systems," as appropriate. Furthermore, ERT takes full cognizance of state and federal guidelines such as the U.S. Environmental Protection Agency's "Ambient Monitoring Guidelines for Preventional of Significant Deterioration (PSD)" to assure clients of high-quality products that are suitable to the client's needs as defined in contracts and quality assurance plans. In lieu of specific guidelines, best scientific judgment and engineering practices are followed.

1.1.3 Corporate Quality Organization

The ERT Quality Assurance Department is completely independent of line function. Its manager reports directly and exclusively to the ERT Executive Vice President. Members of the QA Department are called Quality Assurance Officers.

Quality Control Officers are appointed by operational division or department managers to maintain departmental quality programs. Activities of QC Officers are coordinated by the QA Manager.

1.2 Laboratory Quality Organization

1.2.1 Personnel

The divisional quality control officer is responsible for verifying that all provisions in this manual are carried out on a routine basis. He is a member of one of the other sections of the division other than the chemistry laboratory.

The quality control coordinator is a member of the laboratory staff who is responsible for the maintenance of standard operating procedures and quality control documentation.

Each laboratory worker is responsible for checking standard operating procedures when necessary; following those procedures during routine analyses, recording quality control information required by those procedures in the proper location, and suspending analyses when quality control criteria are not met.

1.2.2 Objectives

- To provide a quality organization independent of the pressures of project performance with the responsibility and authority for auditing and recommending corrective action.
- To provide a quality organization with clear paths of communication with corporate and project management.
- To perform regularly scheduled audits and thereby document an objective evaluation of quality-related practices.
- To promptly identify variances and implement corrective actions.
- To maintain readily identifiable and retrievable records to provide documentary evidence of the quality of activities performed.
- To provide procedures for implementing project-specific quality plans.
- To define responsibility and authority for developing and implementing quality plans.
- To provide quality reference documentation for each project.

2.0 GENERAL LABORATORY QUALITY TOPICS

2.1 Personnel and Training

Laboratory personnel at ERT are hired only after (1) demonstrating that they have the qualifications and background required on the appropriate job description form and (2) attending individual interviews with the prospective supervisor, laboratory manager and other laboratory personnel. New employees receive detailed information concerning safety practices, laboratory protocol, and general company policies. Training periods vary according to each job's requirements and previous experience of the employee, but several general rules apply for routine laboratory training:

2.1.1 The analyst is provided with an up to-date set of written procedures and encouraged to read back up reference material.

2.1.2 Each procedure is performed on a set of standards and a few test samples, with the supervision of a senior technician, or an experienced professional.

2.1.3 Accurate, precise results on the trial analysis indicate provisional proficiency and this procedure can be run by the analyst with a careful check made by the supervisor on calculations and data generated.

2.1.4 New employees in particular are urged to advise the supervisor of any unusual sample conditions or response during the analysis.

2.2 Instrumentation

2.2.1 Maintenance and Repair

Repairs are performed only by authorized servicemen, recommended or supplied by the instrument manufacturer when possible. Repairmen are requested to briefly describe in writing what adjustments or repairs were necessary, so that ERT's records are kept complete. Key instruments are kept on an annual or semiannual servicing contract which is arranged through the manufacturer or his representative. A description of this maintenance work is also kept on record. The frequency of factory maintenance is determined for each instrument individually.

2.2.2 Instrument Record Book

An Instrument Record Book is maintained as part of the QA program. Refer to this book for information regarding:

instrument names and models,

date of installation,

accessories,

authorized operators,

spare parts,

service and repair records, and

calibration schedule.

Figure 2.1 is a copy of the form used in the Instrument Record Book.

2.3 Glassware Cleaning

2.3.1 General requirements

1. Glassware is prerinsed to remove solids, outer labels and markings, and general residue.

2. Glassware is washed either by hand or using an automatic washer. Laboratory cleaning products such as Versene or Alconox are used rather than soap or commercial detergents.

3. Final rinse is with deionized water.

4. Glassware is drained and dried in a clean, protected area.

2.3.2 Special requirements

When special glassware preparation and cleaning are required for a specific procedure, detailed instructions are included in the appropriate Standard Operating Procedure (SOP).

2.4 Laboratory Work Areas

2.4.1 General Guidelines

1. Clean and dirty glassware should be stored in separate areas.

2. Dirty glassware should be collected in one central location near the sink or dishwasher.

3. Bench tops should not be used for storage of glassware, chemicals, samples, or supplies.

4. Each analyst is responsible for the maintenance of his entire work area. At the end of each day time should be set aside for clean up.

5. The laboratory work areas should be maintained in a safe, organized manner, with clear aisles, easy access to hood

NOTICE ABOUT UNSCANNABLE MAP

THIS MAP CAN BE FOUND IN THE SITE FILE LOCATED AT: U.S. EPA SUPERFUND RECORDS CENTER, 290 BROADWAY, 18TH FLOOR, NY, NY 10007. TO MAKE AN APPOINTMENT TO VIEW THE MATERIAL PLEASE CONTACT THE RECORD CENTER AT (212) 637-4308.

NO.	REVISIONS	BY	CKD.	APP.	DATE

ERT ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.
696 VIRGINIA ROAD, CONCORD, MASSACHUSETTS 01742

TITLE: AT & T - KEARNY, NJ
Soil Sampling Locations and Data

DRAWN: M. McCARTNEY	DATE: 3·25·85	DRAWING NO.
CHECKED:	SCALE: 1" = 100'	Fig. 2-1
APPROVED:		

932630243

NOTICE ABOUT UNSCANNABLE MAP

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ERT ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.
696 VIRGINIA ROAD, CONCORD, MASSACHUSETTS 01742

TITLE SOIL ANALYTICAL DATA
OCTOBER SAMPLING TOUR
AT&T, KEARNY, NJ

SIZE		DRAWING NO.	REV.
D		FIGURE 2-2	

SCALE see dwgs.		SHEET OF

E

932630245

LUCENT TECHNOLOGIES, INC.

TAB E

October 27, 1981 RCRA and PCB Plant Compliance Inspection at the Kearny Works. Confirms non-compliances with regard to storage of hazardous substances and potential discharges thereof.

MEMORANDUM FOR RECORD

Re: RCRA and PCB Inspection at the Kearny Works

On October 27, 1981, Terry Hunter and I visited the Kearny Works for the purpose of conducting a RCRA and PCB plant compliance survey. Chris Tranchetti and Angelo Basile hosted the RCRA tour of the plant and Bruce Rapp conducted the PCB portion.

RCRA Compliance Survey

We used the RCRA checklist and reviewed each item in turn as follows:

1. Manifest - Kearny sends the bulk of their hazardous waste
   1. Manifests
   the N.J.
   part document
   story in this
   es for unsigned
   waste shipment.

2. Containers - The shipping containers and drums we saw were in good condition with proper DOT labels and the EPA hazardous label (photostat attached) filled out and attached to every drum of waste. We saw no placards as there were no trucks evident.

3. Written Inspection Plans for Storage Area - They do not have any.

4. Contingency Plans - They are using the coordinators indicated in the NJ spill control plan, and are just finishing drafting the plan (copy attached).

5. Personnel Records, Job Description and Training - A training program has been prepared and implemented for two people for the receival, handling, storage, and disposal of hazardous waste. (copy attached)

6. Additional Records - 1) Exception reports; are applicable when manifests are not returned by disposer, Kearny keeps records and uses 35 days as time limit before following up. 2) Test results on wastes - routine tests are performed on all wastes by an outside laboratory. 3) Descriptions and reports of incidents resulting from hazardous waste management. - None to date.

NOV 6 1981

7. Storage Facilities

A. RCRA Permit or "Interim Status" - Kearny has filed for "Interim Status" as a storage facility.

B. Storage Area - The storage area, (Pad) 135' x 85' is open to the weather and fenced in with an 8' chain link fence. The area is diked with a concrete curb which varies from 6" to 18" depending upon the ground slope. The area has a large warning sign on the fence identifying the enclosure as a storage area. There are no fire extinguisners as yet in the storage area but they have been ordered. The storage area is 75 feet from the plant security police and fire control stations.

C. Spill Collection System - Their spill control plan consists of covering potential spills with "speedi-dri" and calling their scavenger in for clean up.

D. Drainage - The storage area has a large drainage pit in the approximate center. The pit is equipped with a manual valve and the drain leads to the river. The storage area can be drained within four hours after a heavy rain with this system. RCRA requires that drums stand in rainwater no more than one hour after a rain. Kearny has the drums stored on pallets and therefore meets this one hour requirement.

E. Closure Plan - Copy attached

In conclusion, we feel that the Kearny Works satisfactorily meets the RCRA requirements for a generator and storer of hazardous waste. We also feel there is weakness in several areas as follows:

1. The collection system for spills could allow hazardous waste into the storm drain.

2. The storage area should really be roofed over to keep rainwater etc. off the drums and out of the area.

3. The drain system and valve could be a problem in freezing weather.

4. Asphalt pad is cracked and should be impervious.

PCB Inspection

Kearny has 13 PCB transformers on site using "pyranol" and "abestol" as the dielectric fluid. Of these transformers, seven are inside installations and the remaining six are outside, two of which are not functioning and considered storage tanks. They also have a drum storage area inside with a total of twelve 30 gallon drums containing virgin PCB liquid used for transformer make-up.

NOV 5 19

We reviewed their annual PCB summary record and the transformer inspection record under the "Interim Measures Program". These records were satisfactory and up to date. Following this, we reviewed the PCB marking and storage requirements and looked at all transformers and the drum storage area. During this review, we found several items in these areas which were not in compliance with the PCB final rule (40 CFR Part 761).

These non compliance areas are as follows:

1. No label on the east unit transformer at the waste treatment plant.

2. The (2) transformers in outside storage at building 170 south are not diked.

3. The (2) transformers in outside storage at building 170 south do not have "adequate roof and walls to prevent rain water from reaching the stored PCB items."

4. The storage area in the basement of Building 32 is below the 100 year flood level.

5. The storage area is not adequately marked with mark "ML" which is the specified label. However, the area is identified as a PCB storage area with a non standard label.

6. The storage area is not diked.

7. The stored drums have no labels.

The non compliance items were reviewed with Bruce Rapp who informed his supervisor Mr. Chikowski. I was assured that these items would be corrected as soon as possible.

A. H. STAHELI
Senior Engineer

Atts.

rb

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LUCENT TECHNOLOGIES, INC.

TAB F

September 12, 1997 letter from USEPA to Western Electric Company regarding receipt of NPDES Discharge Monitoring Report and indication of non-compliance with certain effluent limitations specified in permit.

Pa.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10007

12 SEP 1977

SINGLE COPY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Western Electric Company
100 Central Avenue
Kearny, New Jersey 07032

Re: Violation of Effluent Limitations
NPDES Permit No. NJ0020443

Dear Sir:

This office has received your National Pollutant Discharge Elimination System (NPDES) Discharge Monitoring Report for the reporting period ending July 31, 1977.

Our review of the report indicates that the discharge may not comply with certain effluent limitations specified in your permit (see attachment).

Pursuant to the conditions of your NPDES permit, it is required that you provide the Regional Administrator and the appropriate State agency with information concerning any apparent non-compliance, action taken to correct it, and action to be taken to prevent continuation or recurrence of the situation. This information must be received in this office within 14 days after your receipt of this letter. We strongly advise that you inspect the facility carefully to be assured that it is being operated properly or that necessary corrective actions are undertaken.

Failure to comply with the requirements of this letter could result in EPA requiring you to perform additional intensive tests as authorized under Section 308 of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500). Should you have any questions concerning this matter, please contact the Permit Compliance Group at (212) 264-9880.

SEP 29 1977

Yours truly,

Richard A. Baker
Chief
Status of Compliance Branch
Enforcement Division

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U... ENVIRONMENTAL PROTEC
LOCAL EFFLUENT D
NPDES VIOLATIO

WESTERN ELECTRIC CO
100 CENTRAL AVE.
KEARNY
NJ 07032

NJ002044
F
DISCHARGE

	LIMIT	REPORTED		FREQ OF ANAL REQ	REP	SAMPL RQ	RP	E X	COMPL. FACTOR
PH						EFFLUENT GROSS			SU
MIN	6.00	8.50	*	CONT.		GR			8.50
AVE	*	8.70	*	CONT.		GR			0.00
MAX	9.00	9.00	*	CONT.		GR			9.00
SOLIDS, TOTAL		SUSPENDED				EFFLUENT GROSS			E KG/DAY
MIN	*	0.26	*	1/030		24	24		0.00
AVE	*	0.90	*	1/030		24	24		0.00
MAX	3.79	1.55	*	1/030		24	24		0.40
SOLIDS, TOTAL		SUSPENDED				EFFLUENT GROSS			E MG/L
MIN	*	0.30	*	1/030		24	24		0.00
AVE	*	1.00	*	1/030		24	24		0.00
MAX	10.00	1.80	*	1/030		24	24		0.18
* OIL AND GREASE						EFFLUENT GROSS			E KG/DAY
MIN	*	4.29	*	1/030		GR	GR		0.00
AVE	*	4.29	*	1/030		GR	GR		0.00
MAX	3.79	4.29	*	1/030		GR	GR		1.13
OIL AND GREASE						EFFLUENT GROSS			E MG/L
MIN	*	5.00	*	1/030		GR	GR		0.00
AVE	*	5.00	*	1/030		GR	GR		0.00
MAX	10.00	5.00	*	1/030		GR	GR		0.50
* CYANIDE, FREE						EFFLUENT GROSS			E KG/DAY
MIN	*	0.02	*	1/030		24	24		0.00
AVE	*	0.02	*	1/030		24	24		0.00
MAX	0.01	0.02	*	1/030		24	24		2.00
CYANIDE, FREE						EFFLUENT GROSS			E MG/L
MIN	*	0.03	*	1/030		24	24		0.00
AVE	*	0.03	*	1/030		24	24		0.00
MAX	0.03	0.03	*	1/030		24	24		1.00
CHROMIUM, HEX-VAL		(AS CR)				EFFLUENT GROSS			E KG/DAY
MIN	*	0.00	*	1/030		24	24		0.00
AVE	*	0.00	*	1/030		24	24		0.00
MAX	0.01	0.00	*	1/030		24	24		0.00
CHROMIUM, HEX-VAL		(AS CR)				EFFLUENT GROSS			E MG/L
MIN	*	0.01	*	1/030		24	24		0.00
AVE	*	0.01	*	1/030		24	24		0.00
MAX	0.05	0.01	*	1/030		24	24		0.20
CHROMIUM, TOTAL		(AS CR)				EFFLUENT GROSS			E KG/DAY
MIN	*	0.03	*	1/030		24	24		0.00

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TION AGENCY-REGION 2
TA SYSTEM
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REPORT PERIOD= 770501-770731 3 GP AT MI
PASSAIC RIVER 71 6 J
KEARNY TOWN
02 PROCESS WASTE

PREVIOUS COMPLIANCE FACTORS

1	2	3	4	5	6
8.20					
8.60					
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WESTERN ELECTRIC CO
100 CENTRAL AVE.
KEARNY
NJ 07032

NJ0020443
F
DISCHARGE 00

	LIMIT	REPORTED	FREQ OF ANAL REQ	REP	SAMPL RQ	RP	E X	COMPL. FACTOR
AVE	*	0.03	*	1/030	24	24		0.00
MAX	0.00	0.04	*	1/030	24	24		0.50
CHROMIUM, TOTAL		(AS CR)		EFFLUENT GROSS			E	MG/L
MIN	*	0.04	*	1/030	24	24		0.00
AVE	*	0.04	*	1/030	24	24		0.00
MAX	0.25	0.05	*	1/030	24	24		0.20
COPPER, SOLUBLE		(CU-SOLUBLE)		EFFLUENT GROSS			E	KG/DAY
MIN	*	0.08	*	1/030	24	24		0.00
AVE	*	0.08	*	1/030	24	24		0.00
MAX	0.20	0.08	*	1/030	24	24		0.40
COPPER, SOLUBLE		(CU-SOLUBLE)		EFFLUENT GROSS			E	MG/L
MIN	*	0.09	*	1/030	24	24		0.00
AVE	*	0.10	*	1/030	24	24		0.00
MAX	0.19 1.20	0.10	*	1/030	24	24		0.52
COPPER, TOTAL		(AS CU)		EFFLUENT GROSS			E	KG/DAY
MIN	*	0.09	*	1/030	24	24		0.00
AVE	*	0.10	*	1/030	24	24		0.00
MAX	0.45	0.10	*	1/030	24	24		0.22
COPPER, TOTAL		(AS CU)		EFFLUENT GROSS			E	MG/L
MIN	*	0.11	*	1/030	24	24		0.00
AVE	*	0.12	*	1/030	24	24		0.00
MAX	1.19 1.2	0.12	*	1/030	24	24		0.10
IRON, TOTAL		(AS FE)		EFFLUENT GROSS			E	KG/DAY
MIN	*	0.03	*	1/030	24	24		0.00
AVE	*	0.13	*	1/030	24	24		0.00
MAX	0.56	0.22	*	1/030	24	24		0.39
IRON, TOTAL		(AS FE)		EFFLUENT GROSS			E	MG/L
MIN	*	0.04	*	1/030	24	24		0.00
AVE	*	0.15	*	1/030	24	24		0.00
MAX	1.50	0.25	*	1/030	24	24		0.16
IRON, DISSOLVED		FERROUS+FERRIC		EFFLUENT GROSS			E	KG/DAY
MIN	*	0.01	*	1/030	24	24		0.00
AVE	*	0.05	*	1/030	24	24		0.00
MAX	0.19	0.08	*	1/030	24	24		0.42
IRON, DISSOLVED		FERROUS+FERRIC		EFFLUENT GROSS			E	MG/L
MIN	*	0.02	*	1/030	24	24		0.00
AVE	*	0.06	*	1/030	24	24		0.00
MAX	0.50	0.10	*	1/030	24	24		0.20

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AGENCY-REGION 2
SYSTEM
PORT

REPORT PERIOD= 770501-770731 3 GP AT MI
PASSAIC RIVER 71 6 J
KEARNY TOWN
PROCESS WASTE

PREVIOUS COMPLIANCE FACTORS

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NPDES VIOLATIO

WESTERN ELECTRIC CO
100 CENTRAL AVE.
KEARNY
NJ 07032

NJ002044
F
DISCHARGE

	LIMIT	REPORTED	FREQ OF ANAL REQ	REP	SAMPL RQ	RP	E X	COMPL. FACTOR
* LEAD,DISSOLVED		(AS PB)			EFFLUENT	GROSS	E	KG/DAY
MIN	*	0.01	*	1/030	24	24		0.00
AVE	*	0.02	*	1/030	24	24		0.00
MAX	0.01	0.02	*	1/030	24	24		2.00
LEAD,DISSOLVED		(AS PB)			EFFLUENT	GROSS	E	MG/L
MIN	*	0.02	*	1/030	24	24		0.00
AVE	*	0.02	*	1/030	24	24		0.00
MAX	0.05	0.03	*	1/030	24	24		0.60
LEAD,TOTAL		(AS PB)			EFFLUENT	GROSS	E	KG/DAY
MIN	*	0.01	*	1/030	24	24		0.00
AVE	*	0.05	*	1/030	24	24		0.00
MAX	0.39	0.05	*	1/030	24	24		0.20
LEAD,TOTAL		(AS PB)			EFFLUENT	GROSS	E	MG/L
MIN	*	0.02	*	1/030	24	24		0.00
AVE	*	0.06	*	1/030	24	24		0.00
MAX	1.05	0.10	*	1/030	24	24		0.09
NICKEL, SOLUBLE		(AS NI)			EFFLUENT	GROSS	E	KG/DAY
MIN	*	0.17	*	1/030	24	24		0.00
AVE	*	0.17	*	1/030	24	24		0.00
MAX	0.37	0.17	*	1/030	24	24		0.45
NICKEL, SOLUBLE		(AS NI)			EFFLUENT	GROSS	E	MG/L
MIN	*	0.20	*	1/030	24	24		0.00
AVE	*	0.20	*	1/030	24	24		0.00
MAX	1.00	0.20	*	1/030	24	24		0.20
NICKEL,TOTAL		(AS NI)			EFFLUENT	GROSS	E	KG/DAY
MIN	*	0.17	*	1/030	24	24		0.00
AVE	*	0.17	*	1/030	24	24		0.00
MAX	0.75	0.17	*	1/030	24	24		0.22
NICKEL,TOTAL		(AS NI)			EFFLUENT	GROSS	E	MG/L
MIN	*	0.20	*	1/030	24	24		0.00
AVE	*	0.20	*	1/030	24	24		0.00
MAX	2.00	0.20	*	1/030	24	24		0.10
FLOW					EFFLUENT	GROSS	E	MGD
MIN	*	0.18	*	CONT.	*			0.00
AVE	*	0.22	*	CONT.	*			0.00
MAX	1.10	0.27	*	CONT.	*			0.24
* TEMPERATURE-SUMMER					EFFLUENT	GROSS	E	DEG C
MIN	*	23.30	*	CONT	GR			0.00

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GENCY-REGION 2
STEM
RT

REPORT PERIOD= 770501-770731 3 GP AT MI
PASSAIC RIVER 71 6 J
KEARNY TOWN
PROCESS WASTE

PREVIOUS COMPLIANCE FACTORS
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U.S. ENVIRONMENTAL PROTECTION A
LOCAL EFFLUENT DATA SY
NPDES VIOLATION REPO

WESTERN ELECTRIC CO
100 CENTRAL AVE.
KEARNY
NJ 07032

NJ0020443
E
DISCHARGE 002

	LIMIT	REPORTED	FREQ OF ANAL REQ	REP	SAMPL RQ	RP	E X	COMPL. FACTOR
AVE	12.80	25.00	*	CONT	GR			25.00
MAX	15.60	26.70	*	CONT	GR			26.70

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CY-REGION 2

REPORT PERIOD= 770501-770731 3 GP AT MI
PASSAIC RIVER 71 5 J
KEARNY TOWN
PROCESS WASTE

PREVIOUS COMPLIANCE FACTORS
2 3 4 5 6

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LUCENT TECHNOLOGIES, INC.

TAB G

February 5, 1997 letter from Lucent Technologies to NJDEP forwarding Subsurface Soil Investigation Report which identifies the presence of volatile organics in the soils below the former drum storage area.

Lucent Technologies
Bell Labs Innovations

Lucent Technologies Inc.
131 Morristown Road
Basking Ridge, NJ 07920-1650

February 5, 1997

NJDEPE
INDUSTRIAL SITE
EVALUATION ELEMENT
CN028
TRENTON, NJ 08625
FEB 06 1997

Mr. Peter Latimer
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Environmental Evaluation, Cleanup &
Responsibility Assessment
401 East State Street - 5th Floor
CN 432
Trenton, New Jersey 08625-0432

RE: Subsurface Soil Investigation Report
Former Western Electric Facility - Kearny Works
Kearny Town, Hudson County, NJ
ISRA Case # 84025

Dear Mr. Lattimer:

Enclosed, please find three copies of the above referenced report. In addition, please find one complete laboratory analytical report.

Lucent Technologies, Inc. will submit a Remedial Action Selection (RAS) report to NJDEP for review. The Remedial Action Work Plan will be submitted following review and approval of the RAS.

A schedule of these activities will be sent to you as soon as it becomes available. If you have any questions or comments, please call me at (908) 630-2768.

Very truly yours,

Nicholas W Capuano

Nicholas W. Capuano
Kearny Cleanup Manager

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TABLE OF CONTENTS

Page No.

1.0 INTRODUCTION 1

1.1 Area of Concern 1
1.2 Background 1

2.0 SOIL BORING SAMPLING AND ANALYSIS METHODS 2

2.1 Soil Boring Drilling 2
2.2 Soil Headspace Screening 3
2.3 Soil Sampling and Analysis 3
2.4 Quality Assurance/Quality Control (QA/QC) 3

3.0 RESULTS OF SOIL BORING SAMPLING AND ANALYSIS 3

3.1 Site Geology and Hydrogeology 4
3.2 Soil Headspace Screening Results 4
3.3 Analytical Results 4
3.3.1 Initial Characterization and Vertical Delineation Sampling 5
3.3.2 Horizontal Delineation Sampling 6
3.4 Estimation of the Volume of Contaminated Soil 7

4.0 SUMMARY OF RESULTS 7

List of Tables

Table 1 Field Headspace Screening Results
Table 2 Soil Sampling Result Summary
Table 3 Estimation of the Volume of Contaminated Soil

List of Figures

Figure 1 Site Location Map
Figure 2 Site Plan, Soil Boring, and Cross Section Location Map
Figure 3 Total CHCs Isopleth Map: A- A' Cross-Section - Vertical Delineation
Figure 4 Total CHCs Isopleth Map: B- B' Cross-Section - Vertical Delineation
Figure 5 Total CHCs Isopleth Map: C- C' Cross-Section - Vertical Delineation
Figure 6 Total CHCs Isopleth Map - Horizontal Delineation

Attachments

Attachment A Soil Boring Logs
Attachment B Laboratory Analytical Report

1.0 INTRODUCTION

J M Sorge, Inc. (JMS) was retained by Lucent Technologies Inc. (Lucent) to conduct a subsurface soil investigation at the former Western Electric facility located at 100 Central Avenue, Kearny, New Jersey. The soil investigation consisted of a focused soil boring and sampling program around the former drum storage area. The purpose of the soil boring and sampling program was to identify residual soil contamination, if any, below the depth of the former excavations in the former drum storage area. The former drum storage area is the only remaining area of concern at the property in connection with the Western Electric ISRA case.

The former Western Electric facility is located in Hudson County, New Jersey, on the peninsula bounded on the east by the Hackensack River and on the west by the Passaic River (Figure 1). The confluence of these rivers at the southern tip of the peninsula produces the body of water known as Newark Bay.

1.1 Area of Concern

The former drum storage pad area is located approximately 150 feet north of the southern property line (Figure 2). This area originally consisted of a concrete pad upon which drummed materials were stored.

The former drum storage area is located approximately 1,200 feet from the Passaic River. There are no potable wells located on the Kearny Point peninsula; consequently, there are no potable receptors located downgradient to, or within 0.5 miles of, the former drum storage area.

1.2 Background

After triggering an ECRA investigation in 1984, Western Electric initiated investigative and remedial activities of the entire property, including the installation and sampling of 17 monitoring wells and the remediation of greater than 40,000 cubic yards of contaminated soil.

AT&T removed approximately 7,000 cubic yards of contaminated soil from the vicinity of the former drum storage pad area in August 1985. The catch basins in the concrete pad were vacuumed, scoured out, and washed clean. Following the initial soil remediation, a groundwater recovery and treatment system was installed in late 1985 and operated from August 1986 to 1991. The treatment and recovery system was terminated after the groundwater contaminant concentrations appeared to stabilize. However, during the following two (2) years, contaminant concentrations increased. In September 1993, the concrete pad, which served as the drum storage area along with an additional 1,800 cubic yards of soil were removed. The excavated soils were remediated on-site and were used to backfill the excavation in October 1994, following receipt of approval from NJDEP. Figure 2 shows the approximate limits of the 1985 and 1993 excavations.

On April 12, 1996, JMS submitted a report to NJDEP providing a complete summary of all historic groundwater analysis results obtained from the wells in this area. Within the April 1996 report, JMS provided sufficient documentation to conclude that aromatic hydrocarbon and chlorinated methane contaminants are no longer a concern at this site. The NJDEP concurred that aromatics and methanes were no longer a concern by the letter dated August 29, 1996. Also, reductions were observed regarding the extent of the dissolved-phase contamination plume in connection with chlorinated ethanes and chlorinated ethylenes. In addition, JMS demonstrated that this pollutant transport velocities for chlorinated ethanes and ethylenes at the site are extremely slow. It has also been confirmed that there is no potential threat to human health or the environment because the facility is not located within a groundwater use area.

On August 12, 1996, JMS submitted a progress report to NJDEP providing a complete summary of all groundwater analyses results obtained during the June 27, 1996 groundwater sampling event. Within the August 1996 submittal, contamination degradation was confirmed and bioattenuating conditions were identified at the former Western Electric site. In addition, contaminant reductions observed at MW-14 served to document that contaminant degradation is occurring more rapidly than contaminant migration.

The most recent correspondence received by Lucent from the NJDEP was dated August 29, 1996. In this letter, the Department expressed concern that the analytical "data reported to date indicate that there is a continuing source of contamination at the site", which Lucent must proactively address. In response, Lucent proposed a focused soil boring and sampling program in the former drum storage area to confirm the absence or presence of residual soil contamination below the depth of the former excavation. The details of the proposal are in the JMS letter dated October 23, 1996. The following provides a presentation of the results of the soil boring and sampling program.

2.0 SOIL BORING SAMPLING AND ANALYSIS METHODS

The soil investigation activities were conducted in accordance with N.J.A.C. 7:26E-3.6 and 4.1. A total of 17 soil borings were installed; the boring locations are shown on Figure 2. Drilling services were provided by Milltown Environmental Services, Inc. of Somerville, New Jersey, a New Jersey-licensed driller, under the supervision of a JMS geologist.

2.1 Soil Boring Drilling

The soil borings were advanced using a truck-mounted drill rig and 4-inch hollow-stem augers. Split spoon samples were collected continuously from the backfill/native soil interface (approximately 4.5 feet) to the top of the confining clay layer in the former drum storage area. The soil borings were extended to depths ranging from 10 to 12 feet below the surface depending on the depth to the top of the confining layer. All soils obtained via split spoon samplers were described by a JMS geologist and recorded on soil boring logs. The soil boring logs are presented as Attachment A of this report.

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2.2 Soil Headspace Screening

Soil samples were collected at 6-inch increments, observed for visual and olfactory indications of contamination and field screened utilizing a photoionization detector (PID). Field observations and PID measurements were recorded by the JMS geologist on the soil boring logs (Attachment A).

Selected soil samples were placed in sealed containers for soil headspace screening measurements. The results of the PID measurements and/or visual signs of contamination were used to select the soil samples submitted for laboratory analyses.

2.3 Soil Sampling and Analysis

All samples were collected by JMS personnel, and were analyzed for volatile organics plus library search (VO+10) by Envirotech Research, Inc., a NJDEP-certified laboratory (#12543). The USEPA Method 8240B, as specified in the EPA publication *Test Methods for Evaluating Solid Wastes* (SW-846, 3rd Edition), was used for the VO+10 analyses. The laboratory analyses were conducted in accordance with the appropriate QA/QC procedures as outlined in N.J.A.C. 7:26E-1 et seq. The laboratory data is reported in the ISRA Reduced Deliverables format, and a copy of the laboratory analysis report is presented as Attachment B.

2.4 Quality Assurance/Quality Control (QA/QC)

During implementation of the soil boring program, all sampling and analyses were conducted in accordance with the Quality Assurance/Quality Control (QA/QC) procedures outlined in N.J.A.C 7:26E-2.1 and the Department's *Field Sampling Procedures Manual* (FSPM, May 1992). Field and trip blank samples were collected in the field, in accordance with applicable NJDEP guidelines, and analyzed for volatile organic compounds plus a forward library search (VO+10).

Sampling equipment was thoroughly decontaminated between soil sample collection to minimize the potential for cross-contamination as specified within the Department's FSPM. The decontamination procedure consisted of a potable water and Alconox solution wash using a brush to remove any adhered soil, followed with a potable water rinse. The equipment was then rinsed with acetone and allowed to air dry. A final rinse with distilled water was applied, and the equipment was air dried prior to use. All collected samples were properly stored in a sample cooler containing wet ice for transport to the laboratory. Standard chain-of-custody procedures were followed throughout the transportation of the collected samples.

3.0 RESULTS OF SOIL BORING SAMPLING AND ANALYSIS

The following presents the results of the focused soil boring and sampling program conducted in the former drum storage area.

3.1 Site Geology and Hydrogeology

The geology and hydrogeology in the vicinity of the former drum storage pad area has been characterized by previous investigations through installing wells and wells points, collecting soil boring samples, and performing infiltration and aquifer characterization tests.

Generally, the geologic units at the site consist of unconsolidated alluvial deposits overlying bedrock of the Passaic Formation (formerly called the Brunswick Shale) which begins at a depth of 60 to 80 feet below ground surface (bgs). The overlying unconsolidated deposits are, from shallow to deep: surficial fill, sandy silt, silt/clay, and interbedded sands and silts.

The soils encountered during the soil boring program performed by JMS are consistent with the soils observed during previous investigations. The surficial fill materials constitute an approximately 3-6 feet thick layer of sand, loam, gravel and various man-made materials. Underlying the fill material is a 1.5-4.5 feet thick sand layer, which grades into a silty clay, organic-rich layer, identified as meadow mat. Beneath the meadow mat layer, approximately 30 feet thick is a layer of relatively impermeable silt or silty clay, which acts as a semi-confining layer. A water table aquifer occurs in the man-made fill and alluvial deposits above the confining layer, at a depth of approximately 4 feet bgs. Within the following we refer to the shallow aquifer as the "perched water". A confined aquifer, encountered in previous investigations, occurs in the interbedded sand and silt layer beneath the confining layer.

3.2 Soil Headspace Screening Results

Table 1 presents the results of the soil headspace screening conducted in the field at the time of the split spoon sample collection. As shown on Table 1, PID readings of greater than 100 ppm were found in 8 of the 17 soil borings. The highest readings (greater than 300 ppm) were found in borings B-8, B-9, and B-10, all located approximately equal distance from monitoring wells MW-11, MW-16, and MW-17R (Figure 2). In general, the soil interval which contained elevated PID readings in these borings was the sand and sandy silt meadow mat layer located above the silty clay confining layer and below the former excavation depth (Refer to Figures 3, 4, and 5).

Based on the field headspace screening measurements, JMS selected the borings and sample intervals from which the "initial characterization and vertical delineation samples" and the "horizontal delineation samples" were collected for laboratory analysis. As stated previously, the soils with the highest PID readings and/or visual signs of contamination were selected for VO+10 analysis.

3.3 Analytical Results

A total of 13 soil samples were collected from 11 soil borings and analyzed for VO+10. The following is a discussion of the analytical results and the extent of soil contamination in the former drum storage area.

3.3.1 Initial Characterization and Vertical Delineation Sampling

Based on the soil headspace screening results, soil samples submitted for laboratory analyses as the initial characterization samples were collected from borings B-9, B-10, and B-13. Samples B-9D and B-10D were collected at a depth of 9.0-9.5 feet below ground surface from borings B-9 and B-10, respectively. Sample B-13B was collected from boring B-13 at a depth of 7.5-8.0 ft bgs.

Samples B-9F and B-10E were collected as the vertical delineation samples from borings B-9 and B-10 at a depth of 11.5-12.0 ft bgs. All five soil samples collected for initial characterization and vertical delineation were analyzed for VO+10; the analytical results are summarized in the following table:

Volatile Organics (ppm)	Initial Characterization Samples			Vertical Delineation Samples	
Sample Number:	**B-9D**	**B-10D**	**B-13B**	**B-9F**	**B-10E**
Sample Depth (ft bgs)	**9.0-9.5**	**9.0-9.5**	**7.5-8.0**	**11.5-12.0**	**11.5-12.0**
PCE	5,300	9,400	4,600	520	1,100
TCE	1,000	2,200	610	84	310
c-DCE	95	77	71	26	ND
1,1,1-TCA	31	ND	30	ND	ND
1,1-DCA	ND	ND	ND	ND	ND
Methylene Chloride	ND	450	ND	7.4	72
Vinyl Chloride	36	ND	ND	ND	ND
Freon 113	860	1,400	5,311	760	1,482
Ethylbenzene	36	91	18	4	10
Toluene	58	150	33	5	19
Xylene	72	170	43	7.1	20

As shown in the analytical table above, elevated concentrations of tetrachloroethylene (PCE) and trichloroethylene (TCE), the source contaminants, were detected in the soils below the depth of the previous excavations conducted in the former drum storage area. The PCE/TCE concentrations comprised over 95 percent of the total chlorinated VOCs concentrations. Several PCE/TCE degradation (aka transformation) intermediates, including cis 1,2-dichloroehtylene, were also detected, but at relatively low concentrations. Also detected in the soil samples were Freon 113 and BTEX compounds.

The vertical delineation samples (B-9F and B-10E) satisfy the NJDEP requirements for delineation since they contain contaminant concentrations of less than 20% of the concentrations detected in the initial characterization samples (B-9D, B-10D, and B-13B). Therefore, the vertical extent of soil contamination in the former drum storage area has been delineated in

accordance with N.J.A.C. 7:26E-4.2(b). The vertical extent of soil contamination in the former drum storage area is shown graphically in cross sections A-A', B-B', and C-C' presented as Figures 3, 4, and 5.

3.3.2 Horizontal Delineation Sampling

Based on the soil headspace screening of the three (3) initial characterization boring locations, 14 additional soil borings were drilled and field screened to define the extent of horizontal contamination. Soil samples were collected from each boring and held at the laboratory for contingency analysis until after the initial sample results were evaluated.

Based on the analytical results of the initial characterization samples, eight (8) horizontal delineation samples were selected from eight (8) borings and analyzed for VO+10. These samples were located south (B-3B, from 5.0-5.5 ft bgs), southeast (B-4C, from 7.0-7.5 ft bgs, and B-6C, from 6.5-7.0 ft bgs), northeast (B-12B, from 7.0-7.5 ft bgs, and B-16B, from 7.0-7.5 ft bgs), north (B-14A, from 5.5-6.0 ft bgs), northwest (B-11B, from 7.0-7.5 ft bgs), and southwest (B-17A, from 6.0-6.5 ft bgs) of the contaminated area. The analytical results are summarized in the following table:

Volatile Organics (ppm)	Horizontal Delineation Samples							
Sample Number:	**B-3B**	**B-4C**	**B-6C**	**B-11B**	**B-12B**	**B-14A**	**B-16B**	**B-17A**
Sample Depth (ft bgs):	5.0-5.5	7.0-7.5	6.5-7.0	7.0-7.5	7.0-7.5	5.5-6.0	7.0-7.5	6.0-6.5
Direction Relative to the Contaminated Area *	S	SE	SE	NW	NE	N	NE	SW
PCE	<0.1	300	<0.1	<0.1	340	0.73	<0.1	<0.1
TCE	<0.1	120	<0.1	<0.1	79	0.29	<0.1	ND
c-DCE	<0.1	40	<0.1	0.15	31	6.4	<0.1	1.20
1,1,1-TCA	ND	18	ND	ND	30	ND	ND	ND
1,1-DCA	<0.1	6	ND	<0.1	ND	ND	ND	<0.1
Methylene Chloride	<0.1	3	<0.1	<0.1	ND	1	<0.1	ND
Vinyl Chloride	<0.1	7	<0.1	<0.1	ND	0.27	ND	0.20
Freon 113	ND	240	ND	ND	63	ND	ND	ND
Ethylbenzene	<0.1	7	<0.1	<0.1	ND	ND	ND	ND
Toluene	ND	6	<0.1	<0.1	6	0.16	ND	ND
Xylene	ND	15	<0.1	<0.1	3	ND	ND	ND

* S: south, SE: southeast, NE: northeast, N: north, NW: northwest, SW: southwest.

As shown in the table above, contaminant concentrations in the horizontal delineation samples are significantly lower than the concentrations detected in the initial characterization samples.

Contaminants were either not detected or detected at very low concentrations in these horizontal delineation samples, except samples B-4C and B-12B, both located east of the initial characterization borings. Samples B-4C and B-12B had elevated concentrations of PCE, TCE and their degradation compounds, and Freon 113 and BTEX compounds, but at concentrations over one order of magnitude lower than in the initial samples.

In order to fully delineate the horizontal extent of contamination, samples B-6C and B-16B were collected approximately 40 ft southeast of B-4C and 60 ft northeast or B-12B, respectively. The analytical results indicated that no contaminant concentrations exceeded the most stringent NJDEP soil cleanup criteria in samples B-6C or B-16B.

The "horizontal delineation samples", including B-4C and B-12B, satisfy the NJDEP requirements for soil delineation since they contain contaminant concentrations of less than 20% of the concentrations detected in the initial characterization samples. Therefore, the horizontal extent of contamination has been delineated in accordance with N.J.A.C. 7:26E-4.2(b). Figure 6 illustrates the horizontal extent of the soil contamination in the former drum storage area.

3.4 Estimation of the Volume of Contaminated Soil

As discussed in the previous section, the vertical and horizontal extent of soil contamination have been completely delineated. Based upon this information, JMS estimates the volume of contaminated soil to range from 920 to 1210 cubic yards. Please refer to Table 3 for a summary of the total volume of contaminated soil at the former drum storage pad area.

4.0 SUMMARY OF RESULTS

JMS has completed the subsurface soil investigation in the former drum storage area of the former Western Electric facility. This investigation identified the presence of volatile organics in the soils below the depth of the former excavations in this area. The primary constituents are PCE and TCE, and minor amounts of PCE/TCE degradation compounds and BTEX compounds.

The vertical extent of the contaminated soil has been defined and is illustrated on the cross-sections provided as Figures 3, 4, and 5. The horizontal extent of the soil contamination has also been defined and is illustrated on Figure 6. A total of approximately 920-1210 cubic yards of soil containing elevated concentrations of chlorinated hydrocarbons have been delineated. Consequently, the presence of contaminated soil beneath the water table to the north of MW-11 is considered probable.

It should be noted that although the presence of contaminated soil below the depth of the former excavations has been documented, the groundwater data previously submitted indicates that degradation of groundwater contamination is occurring more rapidly than groundwater contaminant migration.

Table 1
Field Headspace Screening Results: Oct. 29-30, 1996
Former Western Electric Company
Kearny, New Jersey

Boring Number	Depth (feet)	PID Readings (ppm)
B-1	4.5	1
	5	5
	6	3
	6.5-13	0
B-2	2	0
	3	0
	4.5-5	30
	5.5-6	35
	7-7.5	30
	7.5-10.5	1
	11.5-12	2
B-3	0-4	0
	4.5-5	5
	6	2
	6.5-7	0
	7.5-8	0
	9.5-10	0
	11.5-12	0
B-4	0-4	0
	4	5
	6	14
	8	20
	4.5-5	0
	5.5-6	14
	7-7.5	100
	7.5-8	20
	9-9.5	5
	11.5-12	0
B-5	4	200
	4.5-5	10
	5.5-6	10
	6.5-7	10
	7.5-8	5
	9.5-10	1
B-6	3-4	0
	5	1
	8	2
	10	0
	4.5-5	1
	5.5-6	1
	6.5-7	1
	7-7.5	1
	8-8.5	0
B-7	4	3
	4.5-5	5
	6.5-7	300
	7-7.5	250
	8.5-9	50
	9.5-10	180
	10-12	30
	10.5-11	30
B-8	0-1	0
	1-5	150
	1.5-2	130
	4.5-5	30
	6.5-7	350
	7.5-8	300
	8.5-9	400
	9.5-10	350
	10.5-11	250
B-9	2	50
	5.5-6	2
	6.5-7	10
	7.5-8	35
	9-9.5	400
	9.5-10	300
	11.5-12	300
B-10	2	150
	5.5-7.5	30
	4.5-5	30
	7.5-9	300
	7-7.5	300
	8-8.5	300
	9-9.5	350
	11.5-12	300
	9-12	300-350
B-11	0-3	0
	4.5-5	1
	7-7.5	2
	9-9.5	1
B-12	0-4	0
	4.5-5	300
	7-7.5	250
	8.5-9	4
B-13	3	10
	5-5.5	200
	7.5-8	250
	8-8.5	10
B-14	5.5-6	5
	6-8	1
	8-8.5	2
B-15	5.5-6	150
	5-7.5	150-200
	7.5-8	5
B-16	5-7.5	2
	5-5.5	2
	6.5	20
	7-7.5	2
	8-8.5	1
B-17	2-4	0
	4.5	5
	6	2
	6-6.5	18
	6.5-8	1
	7.5-8	1
	8-8.5	1
	8-10	1

Table 2
Soil Sampling Result Summary: Oct. 29-30, 1996
Former Western Electric Company
Kearny, New Jersey

	Initial Characterization			Vertical Delineation		Horizontal Delineation							
Boring Number	B-10	B-9	B-13	B-10	B-9	B-3	B-4	B-6	B-11	B12	B-14	B-16	B-17
Sample Number	10D	9D	13B	10E	9F	3B	4C	6C	11B	12B	14A	16B	17A
Lab Sample Number	67678	67676	67688	68001	67677	67674	67675	67685	67679	67680	67689	67691	67681
Sample Depth (ft bgs)	9.0-9.5	9.0-9.5	7.5-8.0	11.5-12.0	11.5-12.0	5.0-5.5	7.0-7.5	6.5-7.0	7.0-7.5	7.0-7.5	5.5-6.0	7.0-7.5	6.0-6.5
Sample Date	10/29/96	10/29/96	10/30/96	10/29/96	10/29/96	10/29/96	10/29/96	10/29/96	10/30/96	10/30/96	10/30/96	10/30/96	10/30/96
Chlorinated Hydrocarbons (ppm)													
PCE	9,400	5,300	4,600	1,100	520	<0.1	300	<0.1	<0.1	340	0.73	<0.1	<0.1
TCE	2,200	1,000	610	310	84	<0.1	120	<0.1	<0.1	79	0.29	<0.1	ND
c-DCE	77	95	71	ND	26	<0.1	40	<0.1	0.15	31	6.4	<0.1	1.20
1,1,1-TCA	ND	31	30	ND	ND	ND	18	ND	ND	30	ND	ND	ND
1,1-DCA	ND	ND	ND	ND	ND	<0.1	6	ND	<0.1	ND	ND	ND	<0.1
Methylene Chloride	450	36	ND	72	7	<0.1	3	<0.1	<0.1	ND	ND	<0.1	ND
Vinyl Chloride	ND	ND	ND	ND	ND	<0.1	7	<0.1	<0.1	ND	0.27	ND	0.20
Total Chlorinated Hydrocarbons:	12,127	6,462	5,311	1,482	637	-	494	-	0.15	480	7.7	-	1.4
Freon 113 (ppm)	1,400	860	760	82	67	ND	240	ND	ND	63	ND	ND	ND
BTEX (ppm)													
Benzene	ND	ND	ND	ND	ND	ND	ND	<0.1	ND	ND	ND	ND	ND
Ethylbenzene	91	36	18	10	4	<0.1	7	<0.1	<0.1	ND	ND	ND	ND
Toluene	150	58	33	19	5	ND	6	<0.1	<0.1	6	0.16	ND	ND
Xylene	170	72	43	20	7	ND	15	<0.1	<0.1	3	ND	ND	ND
Total BTEX:	411	166	94	49	16	-	28	-	-	9	0.16	-	-

Notes:
ND: Not Detected

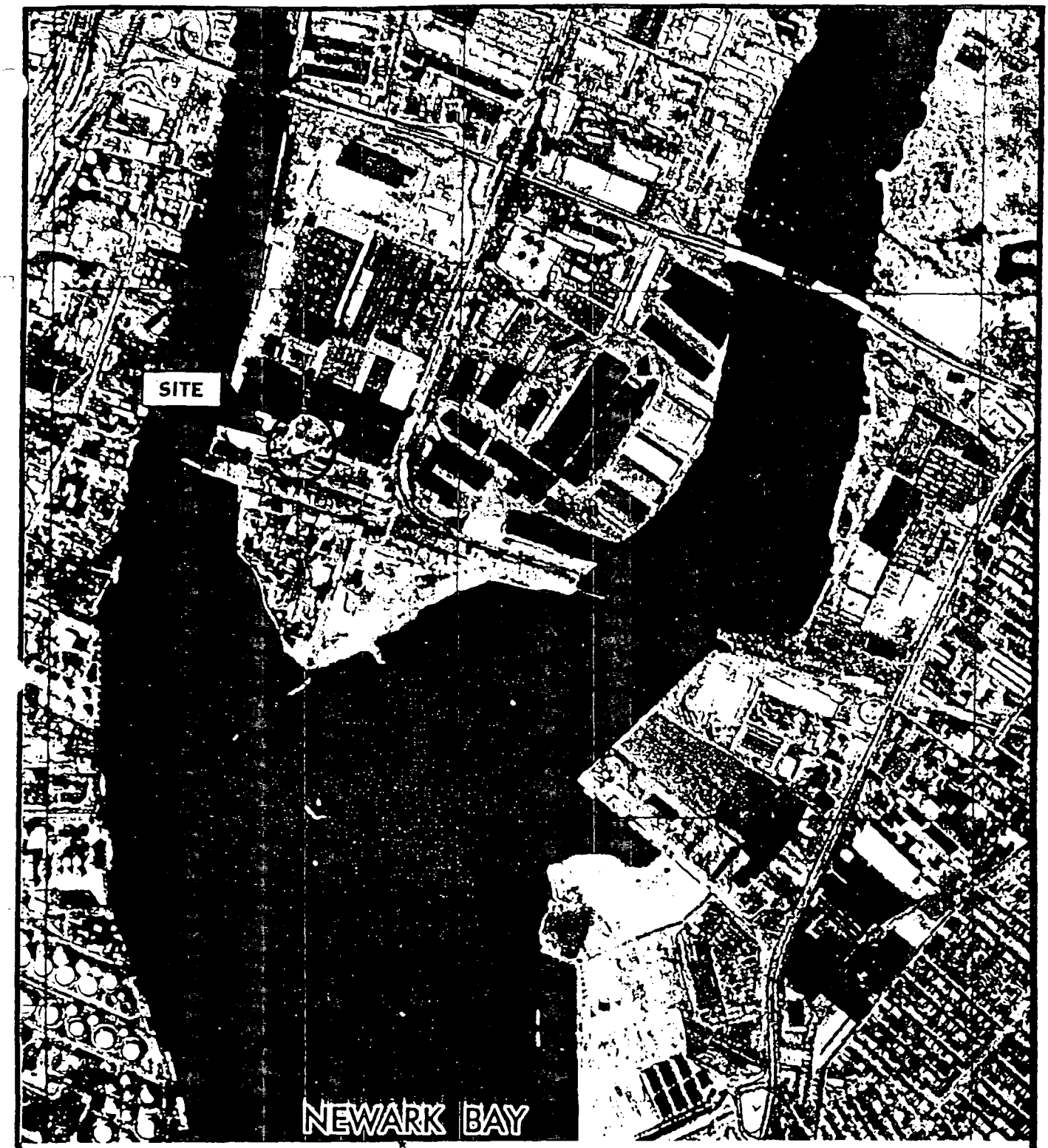
932630273

Table 3
Volume of the Contaminated Soil Estimation
Former Western Electric Company
Kearny, New Jersey

Total CHC Concentration in Contaminated Soil	Horizontal Contaminated Soil Area (ft2) *	Estimated Thickness from Three Cross Sections			Estimated Contaminated Soil Volume **		
		Average (ft)	Maximum (ft)	Minimum (ft)	Average (yd3)	Maximum (yd3)	Minimum (yd3)
>5000 ppm	3149.75	2.59	3.01	1.87	302.14	351.14	218.15
<5000 ppm and >500 pp	2763.25	2.06	2.38	1.77	210.83	243.58	181.15
<500 ppm and >100 ppm	2383.7	1.87	2.14	1.69	165.09	188.93	149.20
<100 ppm and >10 ppm	2656.3	1.67	1.84	1.66	164.63	181.02	163.31
<10 ppm and >1 ppm	3394	1.85	1.96	1.67	232.97	246.38	209.93
				Total:	1075.66	1211.05	921.74

Total CHC Concentration in Contaminated Soil	Estimated Average Thickness ***		
	A-A'	B-B'	C-C'
>5000 ppm	3.01	1.87	2.89
<5000 ppm and >500 pp	2.38	2.03	1.77
<500 ppm and >100 ppm	1.78	1.69	2.14
<100 ppm and >10 ppm	1.66	1.84	1.52
<10 ppm and >1 ppm	1.93	1.67	1.96

Notes:
Estimation is based on the Cross Section Maps Figures 3, 4, and 5 and the horizontal CHC Isopleth Map Figure 6.
* Based on Figure 6.
** Contaminated Soil Volume = (Horizontal Contaminated Soil Area) * (Estimated Thickness of 3 Cross Sections)
***Estimated Average Thickness of contaminated soil of each cross section = (Estimated area based on the Cross Section Map) / (Estimated horizontal length based on the Cross Section Map)



SOURCE:
PHOTOQUAD BASEMAP
STATE OF NEW JERSEY
DEPARTMENT OF
ENVIRONMENTAL PROTECTION
JERSEY CITY NJ–NY

13.0°
231 MILS

1992 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

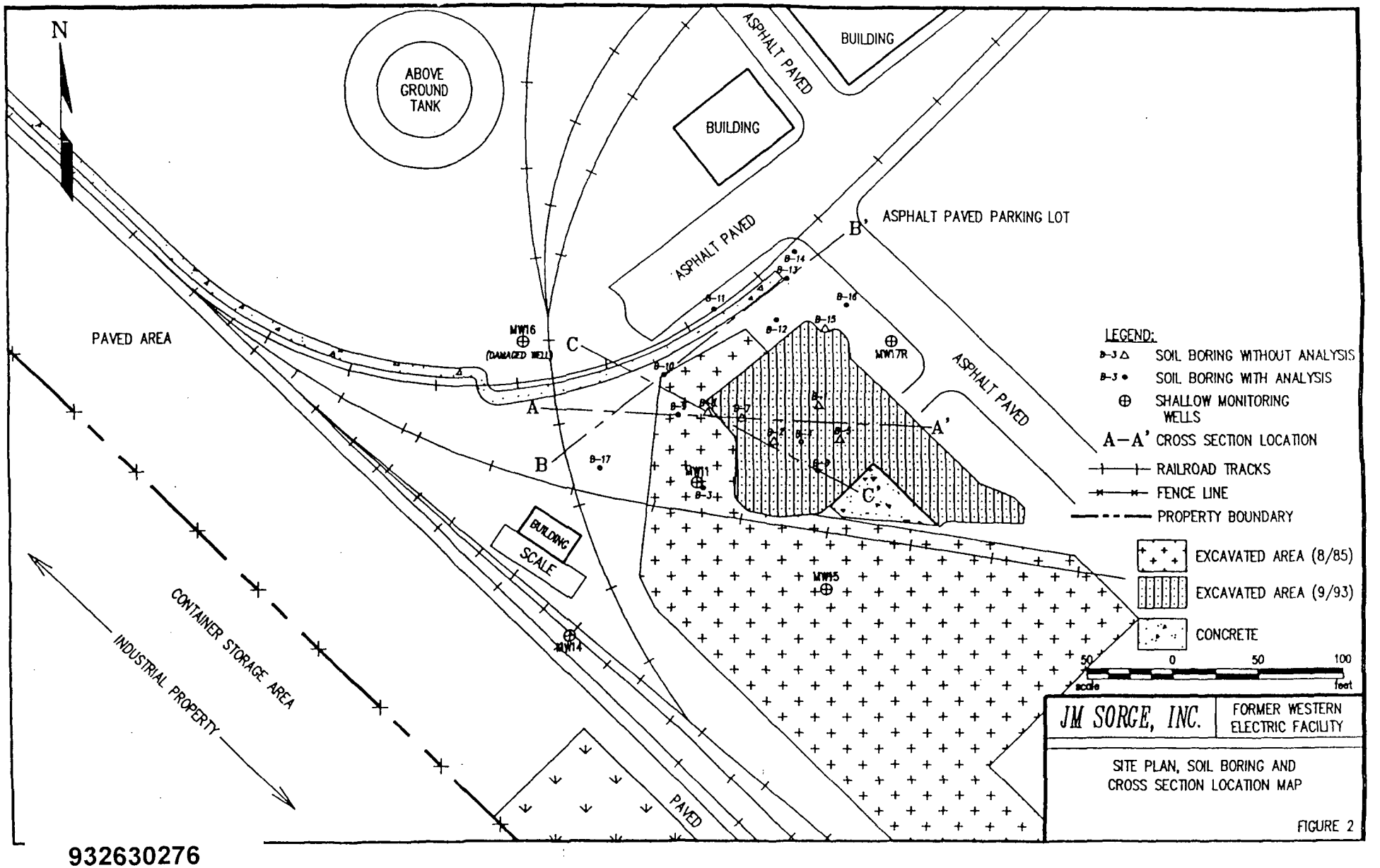
SCALE: 1" = 1,500

JM SORGE, INC.	FORMER WESTERN ELECTRIC FACILITY

SITE LOCATION MAP

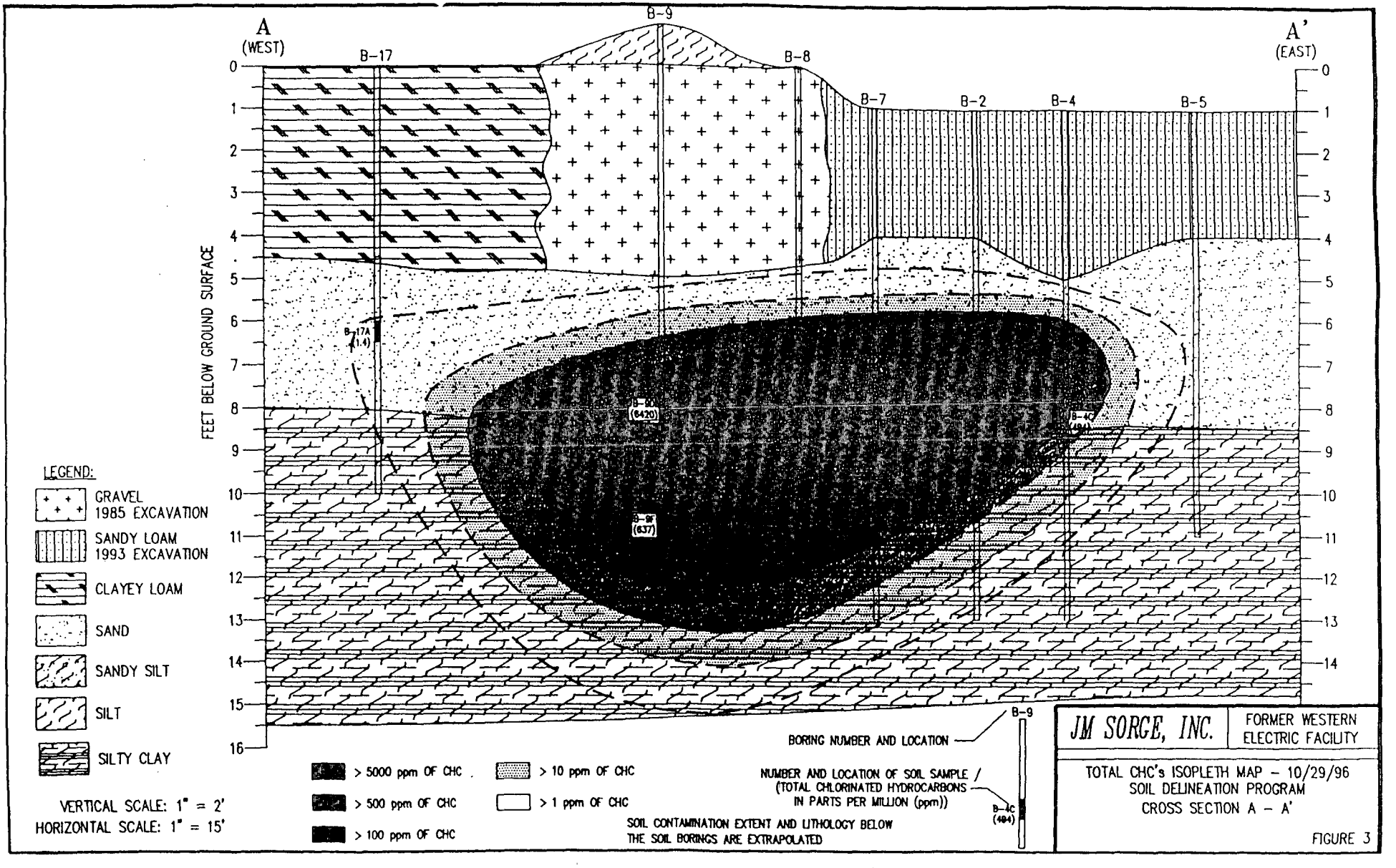
FIGURE 1

932630275

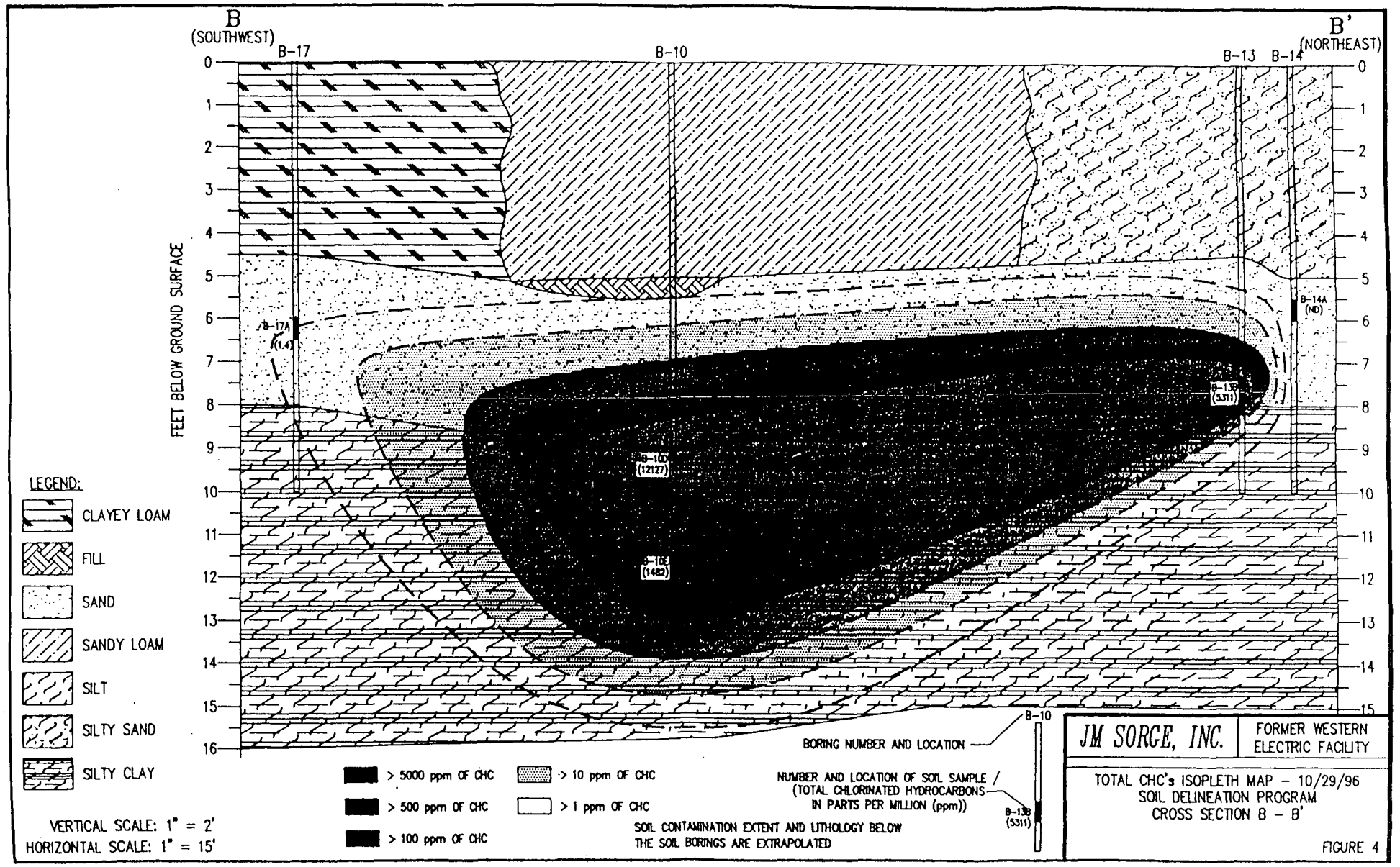

N
ABOVE GROUND TANK
BUILDING
BUILDING
ASPHALT PAVED
ASPHALT PAVED
ASPHALT PAVED PARKING LOT
ASPHALT PAVED
PAVED AREA
MW16
(DAMAGED WELL)
MW17R
MW1
MW15
MW14
B-3
B-10
B-11
B-12
B-13
B-14
B-15
B-16
B-17
A
A'
B
B'
C
C'
BUILDING
SCALE
CONTAINER STORAGE AREA
INDUSTRIAL PROPERTY
PAVED
LEGEND:
B-3 △ SOIL BORING WITHOUT ANALYSIS
B-3 • SOIL BORING WITH ANALYSIS
⊕ SHALLOW MONITORING WELLS
A—A' CROSS SECTION LOCATION
RAILROAD TRACKS
FENCE LINE
PROPERTY BOUNDARY
EXCAVATED AREA (8/85)
EXCAVATED AREA (9/93)
CONCRETE
50 0 50 100
scale feet
JM SORGE, INC.
FORMER WESTERN ELECTRIC FACILITY
SITE PLAN, SOIL BORING AND CROSS SECTION LOCATION MAP
FIGURE 2

932630276

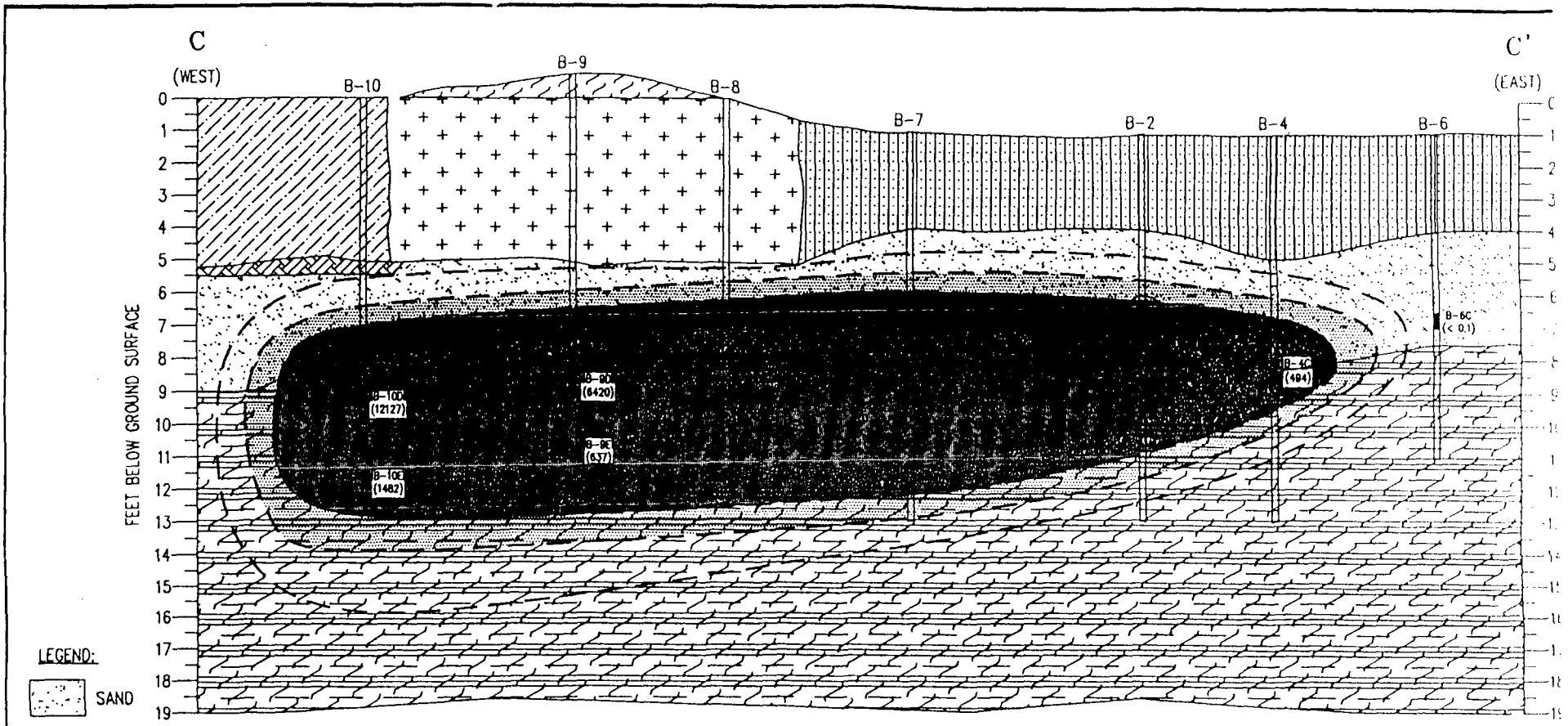
932630277


A
(WEST)
A'
(EAST)
B-17
B-9
B-8
B-7
B-2
B-4
B-5
FEET BELOW GROUND SURFACE
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
B-17A (1.4)
B-9C (6420)
B-9B (637)
B-4C (494)
LEGEND:
GRAVEL
1985 EXCAVATION
SANDY LOAM
1993 EXCAVATION
CLAYEY LOAM
SAND
SANDY SILT
SILT
SILTY CLAY
VERTICAL SCALE: 1" = 2'
HORIZONTAL SCALE: 1" = 15'
> 5000 ppm OF CHC
> 500 ppm OF CHC
> 100 ppm OF CHC
> 10 ppm OF CHC
> 1 ppm OF CHC
SOIL CONTAMINATION EXTENT AND LITHOLOGY BELOW THE SOIL BORINGS ARE EXTRAPOLATED
BORING NUMBER AND LOCATION
NUMBER AND LOCATION OF SOIL SAMPLE / (TOTAL CHLORINATED HYDROCARBONS IN PARTS PER MILLION (ppm))
B-9
B-4C (494)
JM SORGE, INC.
FORMER WESTERN ELECTRIC FACILITY
TOTAL CHC's ISOPLETH MAP - 10/29/96
SOIL DELINEATION PROGRAM
CROSS SECTION A - A'
FIGURE 3

932630278


B
(SOUTHWEST)
B'
(NORTHEAST)
B-17
B-10
B-13
B-14
FEET BELOW GROUND SURFACE
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
B-17A
(1.4)
B-10C
(12127)
B-10B
(1482)
B-13B
(5311)
B-14A
(ND)
LEGEND:
CLAYEY LOAM
FILL
SAND
SANDY LOAM
SILT
SILTY SAND
SILTY CLAY
> 5000 ppm OF CHC
> 500 ppm OF CHC
> 100 ppm OF CHC
> 10 ppm OF CHC
> 1 ppm OF CHC
SOIL CONTAMINATION EXTENT AND LITHOLOGY BELOW THE SOIL BORINGS ARE EXTRAPOLATED
BORING NUMBER AND LOCATION
NUMBER AND LOCATION OF SOIL SAMPLE / (TOTAL CHLORINATED HYDROCARBONS IN PARTS PER MILLION (ppm))
B-10
B-13B
(5311)
VERTICAL SCALE: 1" = 2'
HORIZONTAL SCALE: 1" = 15'
JM SORGE, INC.
FORMER WESTERN ELECTRIC FACILITY
TOTAL CHC's ISOPLETH MAP - 10/29/96
SOIL DELINEATION PROGRAM
CROSS SECTION B - B'
FIGURE 4

932630279



LEGEND:

- SAND
- CLAYEY LOAM
- SANDY LOAM
- SANDY SILT
- SILT
- SILTY CLAY
- GRAVEL 1985 EXCAVATION
- SANDY LOAM 1993 EXCAVATION
- > 5000 ppm OF CHC
- > 500 ppm OF CHC
- > 100 ppm OF CHC
- > 10 ppm OF CHC
- > 1 ppm OF CHC

VERTICAL SCALE: 1" = 3'
HORIZONTAL SCALE: 1" = 10'

BORING NUMBER AND LOCATION — B-9

NUMBER AND LOCATION OF SOIL SAMPLE / (TOTAL CHLORINATED HYDROCARBONS IN PARTS PER MILLION (ppm)) — B-9E (637)

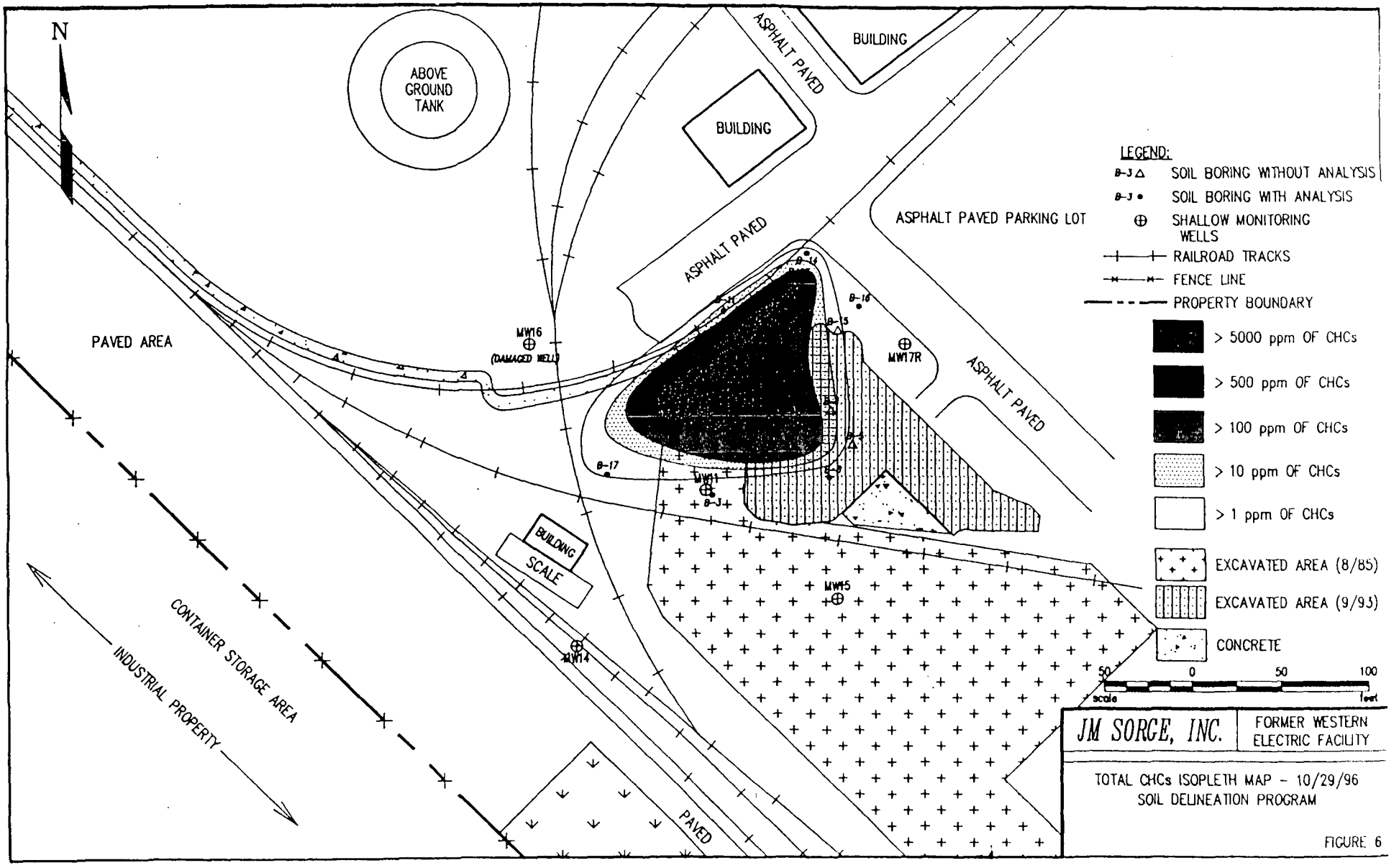
SOIL CONTAMINATION EXTENT AND LITHOLOGY BELOW THE SOIL BORINGS ARE EXTRAPOLATED

JM SORGE, INC.	FORMER WESTERN ELECTRIC FACILITY

TOTAL CHC's ISOPLETH MAP - 10/29/96
SOIL DELINEATION PROGRAM
CROSS SECTION C - C'

FIGURE 5

932630280


N
ABOVE GROUND TANK
BUILDING
BUILDING
ASPHALT PAVED
ASPHALT PAVED
ASPHALT PAVED PARKING LOT
ASPHALT PAVED
PAVED AREA
MW16
(DAMAGED WELL)
MW17R
MW11
MW15
MW14
B-14
B-16
B-15
B-17
B-J
BUILDING
SCALE
CONTAINER STORAGE AREA
INDUSTRIAL PROPERTY
PAVED
LEGEND:
B-J △ SOIL BORING WITHOUT ANALYSIS
B-J • SOIL BORING WITH ANALYSIS
⊕ SHALLOW MONITORING WELLS
RAILROAD TRACKS
FENCE LINE
PROPERTY BOUNDARY
> 5000 ppm OF CHCs
> 500 ppm OF CHCs
> 100 ppm OF CHCs
> 10 ppm OF CHCs
> 1 ppm OF CHCs
EXCAVATED AREA (8/85)
EXCAVATED AREA (9/93)
CONCRETE
50 0 50 100
scale feet
JM SORGE, INC.
FORMER WESTERN ELECTRIC FACILITY
TOTAL CHCs ISOPLETH MAP - 10/29/96
SOIL DELINEATION PROGRAM
FIGURE 6

932630281

BORING LOG

JM SORGE, INC.

BORING LOG B-2
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/29/96	DATE COMPLETED 10/29/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb	DROP 30"	TOTAL DEPTH 12'
WATER LEVEL ENCOUNTERED ▽	STABILIZED ▼		

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Black Sandy Loam Some Gravel / Some Glass	
				2			Hnu = 0 ppm
				3			Hnu = 3 ppm
				4		Black Sand, wet @ 4.5'	
				5	▽		Hnu = 30 ppm
				6		Black Sandy Silt	Hnu = 35 ppm
				7			Hnu = 30 ppm
				8		Dark Brown Silty Clay Organic Matter, meadow mat	Hnu = 1 ppm
				9			
				10			
				11		Black Silty Clay, Organic stiff.	
				12		End of Boring	
				13			
				14			
				15			
				16			
				17			
				18			

932630282

BORING LOG

JM SORGE, INC.

BORING LOG B-3
SHEET 1 OF 1

JOB No.	CLIENT	PROJECT
96073	LUC	Former Western Electric

LOCATION	ELEVATION AND DATUM
100 Central Avenue, Kearny, New Jersey	—

DRILLING CONTRACTOR	DRILLER	SAMPLER	INSPECTOR
Milltown Environmental Services	A. Untamo	R. Grundman	R. Meehan

DRILLING RIG TYPE	SIZE & TYPE OF BIT	DATE STARTED	DATE COMPLETED
SIMCO-2800	4" ID H.S.A.		

SAMPLER TYPE	HAMMER	DROP	TOTAL DEPTH	WATER LEVEL ENCOUNTERED ▽	WATER LEVEL STABILIZED ▼
Split Spoon	140 lb	30"			

BORING/CONSTRUCTION	SAMPLES No.	SAMPLES RECOVERY feet	SAMPLES BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Brown Sandy Loam, Gravel, moist to Wet	Hnu = 0 ppm
				2			
				3			
				4		Brown Sand, some Gravel	Hnu = 5 ppm
				5			
				6		Black Silty Clay, some Sand	Hnu = 2 ppm
				7			Hnu = 0 ppm
				8			Hnu = 0 ppm
				9		Grey Silty Clay	
				10			Hnu = 0 ppm Hnu = 0 ppm
				11			
				12			Hnu = 0 ppm
				13		End of Boring	
				14			
				15			
				16			
				17			
				18			

932630283

BORING LOG

JM SORGE, INC.

BORING LOG B-4
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC	PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey		ELEVATION AND DATUM —

DRILLING CONTRACTOR	DRILLER	SAMPLER	INSPECTOR
Milltown Environmental Services	A. Untamo	R. Grundman	R. Meehan

DRILLING RIG TYPE	SIZE & TYPE OF BIT	DATE STARTED	DATE COMPLETED
SIMCO-2800	4" ID H.S.A.	10/29/96	10/29/96

SAMPLER TYPE	HAMMER	DROP	TOTAL DEPTH	WATER LEVEL ENCOUNTERED ▽	WATER LEVEL STABILIZED ▼
Split Spoon	140 lb	30"	12'		

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Brown/Black Sandy Loam, Gravel	Hnu = 0 ppm
				2			
				3			
				4	▽		Hnu = 0 ppm
						Brown/Black Sand, moist	Hnu = 5 ppm
				5			Hnu = 0 ppm
				6			Hnu = 14 ppm Hnu = 14 ppm
				7			Hnu = 100 ppm
						Black Silty Clay, moist	Hnu = 20 ppm Hnu = 20 ppm
				8			
				9		Grey Silty clay, meadowmat, organic matter, moist	Hnu = 5 ppm
				10			
				11			
				12		Grey Silty Clay	Hnu = 0 ppm
						End of Boring	
				13			
				14			
				15			
				16			
				17			
				18			

932630284

BORING LOG

JM SORGE, INC.

BORING LOG B-5
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/29/96	DATE COMPLETED 10/29/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb / DROP 30"	TOTAL DEPTH 10'	WATER LEVEL ENCOUNTERED ▽ / STABILIZED ▼

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Brown Sandy Loam	
				2			
				3		Black Sand, Wet	
				4			Hnu = 200 ppm
				5			Hnu = 10 ppm
				6			Hnu = 10 ppm
				7			Hnu = 10 ppm
				8		Black Silty Clay	Hnu = 5 ppm
				9		Grey Silty Clay, meadowmat	Hnu = 1 ppm
				10		End of Boring	
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			

932630285

BORING LOG

JM SORGE, INC.

BORING LOG B-6
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/29/96	DATE COMPLETED 10/29/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb	DROP 30"	TOTAL DEPTH 10'
WATER LEVEL ENCOUNTERED ▽	STABILIZED ▼		

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
						Brown Sandy Loam	
				1			
				2			
				3			
						Black Sand, wet	Hnu = 0ppm
				4	▽		
							Hnu = 1ppm
				5			Hnu = 1 ppm
				6			Hnu = 1 ppm
							Hnu = 1ppm
				7		Black Silty Clay	Hnu = 2 ppm
				8			Hnu = 0 ppm
				9			
				10		End of Boring	Hnu = 0ppm
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			

932630286

BORING LOG

JM SORGE, INC.

BORING LOG B-7
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/29/96	DATE COMPLETED 10/29/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb / DROP 30"	TOTAL DEPTH 12'	WATER LEVEL ENCOUNTERED ▽ / STABILIZED ▼

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Brown Sandy Loam	
				2			
				3		Black Sand, wet	
				4			Hnu = 3 ppm
				5			Hnu = 5 ppm
				6			
				7			Hnu = 300 ppm
						Black Silty Clay; moist	Hnu = 250 ppm
				8			
				9			Hnu = 50 ppm
				10			Hnu = 180 ppm
						Grey Silty Clay meadowmat	
				11			Hnu = 30 ppm
				12		End of Boring	
				13			
				14			
				15			
				16			
				17			
				18			

932630287

BORING LOG

JM SORGE, INC.

BORING LOG B-8
SHEET 1 OF ___

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/29/96	DATE COMPLETED 10/29/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb	DROP 30"	TOTAL DEPTH 12'
WATER LEVEL ENCOUNTERED ▽	STABILIZED ▼		

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
						Brown Silt, some Gravel	Hnu = 0 ppm
				1			
						Crushed Grey Gravel	Hnu = 150 ppm
				2			Hnu = 130 ppm
				3			
				4			
					▽		
				5			Hnu = 30 ppm
						Black Sand, some Gravel, Wet	
				6			
				7			Hnu = 350 ppm
							Hnu = 300 ppm
				8			
						Grey Silty Clay Meadowmat	Hnu = 400 ppm
				9			Hnu = 350 ppm
				10			Hnu = 350 ppm
							Hnu = 250 ppm
				11			
				12			
						End of Boring	
				13			
				14			
				15			
				16			
				17			
				18			

932630288

BORING LOG

JM SORGE, INC.

BORING LOG B-9
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/29/96	DATE COMPLETED 10/29/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb	DROP 30"	TOTAL DEPTH 12'
WATER LEVEL ENCOUNTERED ▽	STABILIZED ▼		

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
						Brown Silt, Some Gravel Some Brick	
				1		Crushed Grey Gravel	
				2			Hnu = 50ppm
				3			
				4			
				5			
				6			Hnu = 2 ppm
						Black Sand, Wet	
				7			Hnu = 10ppm
				8			Hnu = 350ppm
				9			Hnu = 400ppm
				10		Grey Silty Clay, Meadowmat	Hnu = 300 ppm Hnu = 300 ppm
				11			
				12			Hnu = 300ppm
						End of Boring	
				13			sheen on water on rods @ 8'~12'
				14			
				15			
				16			
				17			
				18			

932630289

BORING LOG

JM SORGE, INC.

BORING LOG B-10
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/29/96	DATE COMPLETED 10/29/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb / DROP 30"	TOTAL DEPTH 12'	WATER LEVEL ENCOUNTERED ▽ / STABILIZED ▼

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Brown Sandy Loam, Gravel Debris	
				2			Hnu = 150 ppm
				3			
				4			
				5			Hnu = 30 ppm
						Fill, Gravel, Brick	
				6		Black Sand	Hnu = 30 ppm
				7			Hnu = 300 ppm
				8		Black Silty Sand, some clay	Hnu = 300 ppm
				9		Grey Silty Clay, Meadow mat	Hnu = 350 ppm
				10			
				11			
				12			Hnu = 300 ppm
						End of Boring	
				13			
				14			
				15			
				16			
				17			
				18			

932630290

BORING LOG

JM SORGE, INC.

BORING LOG B-11
SHEET 1 OF 1

JOB No.	CLIENT	PROJECT
96073	LUC	Former Western Electric

LOCATION	ELEVATION AND DATUM
100 Central Avenue, Kearny, New Jersey	—

DRILLING CONTRACTOR	DRILLER	SAMPLER	INSPECTOR
Milltown Environmental Services	A. Untamo	R. Grundman	R. Meehan

DRILLING RIG TYPE	SIZE & TYPE OF BIT	DATE STARTED	DATE COMPLETED
SIMCO-2800	4" ID H.S.A.	10/30/96	10/30/96

SAMPLER TYPE	HAMMER	DROP	TOTAL DEPTH	WATER LEVEL ENCOUNTERED ▽	WATER LEVEL STABILIZED ▼
Split Spoon	140 lb	30"	10'		

BORING/CONSTRUCTION	SAMPLES No.	SAMPLES RECOVERY feet	SAMPLES BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Brown Sandy Loam, Gravel	Hnu = 0 ppm
				2			
				3			
				4		Black Sand; some Gravel	Hnu = 1 ppm
				5			
				6			
				7			Hnu = 2 ppm
				8		Grey Silty Clay, Meadowmat	
				9			Hnu = 1 ppm
				10		End of Boring	No sheen or Significant Odor.
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			

932630291

BORING LOG

JM SORGE, INC.

BORING LOG B-12
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/30/96	DATE COMPLETED 10/30/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb	DROP 30"	TOTAL DEPTH 10'
WATER LEVEL ENCOUNTERED ▽	STABILIZED ▼		

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Black Silty Sand, Gravel	Hnu = 0 ppm
				2			
				3			
				4			
				5		Grey Sand, some Gravel	Hnu = 300 ppm
				6			Hnu = 300 ppm
				7			Hnu = 250 ppm
				8		Grey Silty Clay Meadowmat Hnu = 4 ppm	Sheen on Soil No odor or sheen
				9			
				10		End of Boring	
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			

932630292

BORING LOG

JM SORGE, INC.

BORING LOG B-13
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC	PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey		ELEVATION AND DATUM —

DRILLING CONTRACTOR	DRILLER	SAMPLER	INSPECTOR
Milltown Environmental Services	A. Untamo	R. Grundman	R. Meehan

DRILLING RIG TYPE	SIZE & TYPE OF BIT	DATE STARTED	DATE COMPLETED
SIMCO-2800	4" ID H.S.A.	10/30/96	10/30/96

SAMPLER TYPE	HAMMER	DROP	TOTAL DEPTH	WATER LEVEL ENCOUNTERED ▽	WATER LEVEL STABILIZED ▼
Split Spoon	140 lb	30"	10'		

BORING/CONSTRUCTION	SAMPLES No.	SAMPLES RECOVERY feet	SAMPLES BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Black / Brown Silty Sand, Gravel	
				2			
				3			Hnu = 10 ppm
				4			
				5		Grey Sand, moist to wet	Hnu = 200 ppm
				6			Sheen on Sand Strong Solvent Odor in Spoon
				7			Hnu = 250 ppm
				8		Grey Silty Clay, Meadowmat	Hnu = 10 ppm
				9			
				10		End of Boring	
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			

932630293

BORING LOG

JM SORGE, INC.

BORING LOG B-14
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/30/96	DATE COMPLETED 10/30/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb / DROP 30"	TOTAL DEPTH 10'	WATER LEVEL ENCOUNTERED ▽ / STABILIZED ▼

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Black/Brown Silty Sand, Gravel	
				2			
				3			
				4		Gravel	
				5		Grey Sand, Wet	Hnu = 5 ppm
				6			Hnu = 1 ppm
				7			
				8		Grey Silty Clay, Meadowmat	Hnu = 2 ppm
				9			
				10		End of Boring	
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			

932630294

BORING LOG

JM SORGE, INC.

BORING LOG B-15
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC	PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey		ELEVATION AND DATUM —

DRILLING CONTRACTOR	DRILLER	SAMPLER	INSPECTOR
Milltown Environmental Services	A. Untamo	R. Grundman	R. Meehan

DRILLING RIG TYPE	SIZE & TYPE OF BIT	DATE STARTED	DATE COMPLETED
SIMCO-2800	4" ID H.S.A.	10/30/96	10/30/96

SAMPLER TYPE	HAMMER	DROP	TOTAL DEPTH	WATER LEVEL ENCOUNTERED ▽	WATER LEVEL STABILIZED ▼
Split Spoon	140 lb	30"	8'		

BORING/CONSTRUCTION	SAMPLES No.	SAMPLES RECOVERY feet	SAMPLES BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
						Brown Silty Loam, Gravel	
				1		Black Gravel, some Sand	
				2			
				3			
				4			
				5		Black / Grey sand, wet	
				6			Hnu = 150 ppm
				7			
				8		Grey Silty Clay, Meadowmat	Hnu = 5 ppm
						End of Boring	
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			

932630295

BORING LOG

JM SORGE, INC.

BORING LOG B-16
SHEET 1 OF 1

JOB No. 96073	CLIENT LUC	PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey		ELEVATION AND DATUM —

DRILLING CONTRACTOR	DRILLER	SAMPLER	INSPECTOR
Milltown Environmental Services	A. Untamo	R. Grundman	R. Meehan

DRILLING RIG TYPE	SIZE & TYPE OF BIT	DATE STARTED	DATE COMPLETED
SIMCO-2800	4" ID H.S.A.	10/30/96	10/30/96

SAMPLER TYPE	HAMMER	DROP	TOTAL DEPTH	WATER LEVEL ENCOUNTERED	WATER LEVEL STABILIZED
Split Spoon	140 lb	30"	10'	▽	▼

BORING/CONSTRUCTION	SAMPLES No.	SAMPLES RECOVERY feet	SAMPLES BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
						Brown Silty Loam, Gravel	
				1			
				2		Black Gravel, some Sand	[illegible] ppm
				3			
				4			
				5		Black/Grey Sand	
				6			Hnu = 2 ppm
				7			Sheen on Spoon Hnu = 2 ppm Hnu = 2 ppm
				8		Grey Silty Clayey Meadowmat, Clean	Hnu = 1 ppm
				9			
				10		End of Boring	
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			

932630296

BORING LOG

JM SORGE, INC.

BORING LOG B-17
SHEET 1 OF ___

JOB No. 96073	CLIENT LUC		PROJECT Former Western Electric
LOCATION 100 Central Avenue, Kearny, New Jersey			ELEVATION AND DATUM —
DRILLING CONTRACTOR Milltown Environmental Services	DRILLER A. Untamo	SAMPLER R. Grundman	INSPECTOR R. Meehan
DRILLING RIG TYPE SIMCO-2800	SIZE & TYPE OF BIT 4" ID H.S.A.	DATE STARTED 10/30/96	DATE COMPLETED 10/30/96
SAMPLER TYPE Split Spoon	HAMMER 140 lb / DROP 30"	TOTAL DEPTH 10'	WATER LEVEL ENCOUNTERED ▽ / STABILIZED ▼

BORING/CONSTRUCTION	SAMPLES No.	RECOVERY feet	BLOW/6"	DEPTH feet	WATER	DESCRIPTION OF SOILS	REMARKS
				1		Brown Clayey Loam	
				2			Hnu = 0 ppm
				3			
				4			Hnu = 0 ppm
				5		Black Sand, some Brick wet	Hnu = 5 ppm
				6			Hnu = 2 ppm
				7		Grey Sand, moist	Hnu = 18 ppm
				8			Hnu = 1 ppm
				9		Grey Silty Clay. Meadowmat	Hnu = 1 ppm Hnu = 1 ppm
				10		End of Boring	
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			

932630297

ENVIROTECH RESEARCH, INC.

Client ID: B-10E
Site: Lucent Technologies

Lab Sample No: 68001
Lab Job No: Q950

Date Sampled: 10-29-96
Date Received: 11-04-96
Date Analyzed: 11-09-96
GC Column: DB624
Instrument ID: VOAMS3
Lab File ID: c8908.d

Matrix: SOIL
Level: HIGH
Sample Weight: 4.0 g
Methanol Ext. Volume: 10.0 ml
Ext. Dilution Factor: 2500.0
% Moisture: 16

VOLATILE ORGANICS - GC/MS
METHOD 8240B

Parameter	Analytical Result Units: ug/kg (Dry Weight)	Quantitation Limit Units: ug/kg
Chloromethane	ND	7500
Bromomethane	ND	7500
Vinyl Chloride	ND	7500
Chloroethane	ND	7500
Methylene Chloride	72000	7500
Acetone	ND	37000
Carbon Disulfide	ND	7500
1,1-Dichloroethene	ND	7500
1,1-Dichloroethane	ND	7500
trans-1,2-Dichloroethene	ND	7500
cis-1,2-Dichloroethene	ND	7500
Chloroform	ND	7500
1,2-Dichloroethane	ND	7500
2-Butanone	ND	37000
1,1,1-Trichloroethane	ND	7500
Carbon Tetrachloride	ND	7500
Bromodichloromethane	ND	7500
1,2-Dichloropropane	ND	7500
cis-1,3-Dichloropropene	ND	7500
Trichloroethene	310000	7500
Dibromochloromethane	ND	7500
1,1,2-Trichloroethane	ND	7500
Benzene	ND	7500
trans-1,3-Dichloropropene	ND	7500
Bromoform	ND	7500
4-Methyl-2-Pentanone	ND	37000
2-Hexanone	ND	37000
Tetrachloroethene	1100000	7500
1,1,2,2-Tetrachloroethane	ND	7500
Toluene	19000	7500
Chlorobenzene	ND	7500
Ethylbenzene	10000	7500
Styrene	ND	7500
Xylene (Total)	20000	7500

ENVIROTECH RESEARCH, INC.

Client ID: B-10E
Site: Lucent Technologies

Lab Sample No: 68001
Lab Job No: Q950

Date Sampled: 10-29-96
Date Received: 11-04-96
Date Analyzed: 11-09-96
GC Column: DB624
Instrument ID: VOAMS3
Lab File ID: C8908.D

Matrix: SOIL
Level: HIGH
Sample Weight: 4.0 g
Methanol Ext. Volume: 10.0 ml
Ext. Dilution Factor: 2500.0
% Moisture: 16

VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME	RT	EST. CONC. ug/kg	Q
1. Ethane, 1,1,2-trichloro-1,2,2-trifluoro-	5.84	82000	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			

TOTAL ESTIMATED CONCENTRATION 82000

932630298

ENVIROTECH RESEARCH, INC.

Client ID: B-14A
Site: Lucent Technologies

Lab Sample No: 67689
Lab Job No: Q888

Date Sampled: 10-30-96
Date Received: 10-30-96
Date Analyzed: 11-22-96
GC Column: DB624
Instrument ID: VOAMS3
Lab File ID: c9202.d

Matrix: SOIL
Level: HIGH
Sample Weight: 4.0 g
Methanol Ext. Volume: 10.0 ml
Ext. Dilution Factor: 50.0
% Moisture: 26

VOLATILE ORGANICS - GC/MS
METHOD 8240B

Parameter	Analytical Result Units: ug/kg (Dry Weight)	Quantitation Limit Units: ug/kg
Chloromethane	ND	170
Bromomethane	ND	170
Vinyl Chloride	270	170
Chloroethane	ND	170
Methylene Chloride	ND	170
Acetone	1000	840
Carbon Disulfide	ND	170
1,1-Dichloroethene	ND	170
1,1-Dichloroethane	ND	170
trans-1,2-Dichloroethene	ND	170
cis-1,2-Dichloroethene	6400	170
Chloroform	ND	170
1,2-Dichloroethane	ND	170
2-Butanone	ND	840
1,1,1-Trichloroethane	ND	170
Carbon Tetrachloride	ND	170
Bromodichloromethane	ND	170
1,2-Dichloropropane	ND	170
cis-1,3-Dichloropropene	ND	170
Trichloroethene	290	170
Dibromochloromethane	ND	170
1,1,2-Trichloroethane	ND	170
Benzene	ND	170
trans-1,3-Dichloropropene	ND	170
Bromoform	ND	170
4-Methyl-2-Pentanone	ND	840
2-Hexanone	ND	840
Tetrachloroethene	730	170
1,1,2,2-Tetrachloroethane	ND	170
Toluene	160J	170
Chlorobenzene	ND	170
Ethylbenzene	ND	170
Styrene	ND	170
Xylene (Total)	ND	170

ENVIROTECH RESEARCH, INC.

Client ID: B-16B
Site: Lucent Technologies

Lab Sample No: 67691
Lab Job No: Q888

Date Sampled: 10-30-96
Date Received: 10-30-96
Date Analyzed: 11-22-96
GC Column: DB624
Instrument ID: VOAMS1
Lab File ID: a6421.d

Matrix: SOIL
Level: LOW
Sample Weight: 5.0 g
Purge Volume: 5.0 ml
% Moisture: 21

VOLATILE ORGANICS - GC/MS
METHOD 8240B

Parameter	Analytical Result Units: ug/kg (Dry Weight)	Quantitation Limit Units: ug/kg
Chloromethane	ND	1.3
Bromomethane	ND	1.3
Vinyl Chloride	ND	1.3
Chloroethane	ND	1.3
Methylene Chloride	0.9J	1.3
Acetone	4.8J	6.3
Carbon Disulfide	ND	1.3
1,1-Dichloroethene	ND	1.3
1,1-Dichloroethane	ND	1.3
trans-1,2-Dichloroethene	ND	1.3
cis-1,2-Dichloroethene	5.4	1.3
Chloroform	ND	1.3
1,2-Dichloroethane	ND	1.3
2-Butanone	ND	6.3
1,1,1-Trichloroethane	ND	1.3
Carbon Tetrachloride	ND	1.3
Bromodichloromethane	ND	1.3
1,2-Dichloropropane	ND	1.3
cis-1,3-Dichloropropene	ND	1.3
Trichloroethene	2.2	1.3
Dibromochloromethane	ND	1.3
1,1,2-Trichloroethane	ND	1.3
Benzene	ND	1.3
trans-1,3-Dichloropropene	ND	1.3
Bromoform	ND	1.3
4-Methyl-2-Pentanone	ND	6.3
2-Hexanone	ND	6.3
Tetrachloroethene	5.1	1.3
1,1,2,2-Tetrachloroethane	ND	1.3
Toluene	ND	1.3
Chlorobenzene	ND	1.3
Ethylbenzene	ND	1.3
Styrene	ND	1.3
Xylene (Total)	ND	1.3

ENVIROTECH RESEARCH, INC.

Client ID: B-16B
Site: Lucent Technologies

Lab Sample No: 67691
Lab Job No: Q888

Date Sampled: 10-30-96
Date Received: 10-30-96
Date Analyzed: 11-22-96
GC Column: DB624
Instrument ID: VOAMS1
Lab File ID: A6421.D

Matrix: SOIL
Level: LOW
Sample Weight: 5.0 g
Purge Volume: 5.0 ml
% Moisture: 21

VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME	RT	EST. CONC. ug/kg	Q
1. C8H16 Cycloalkane	13.25	28	
2. C10H22 Alkane	14.76	55	
3. Unknown Alkane	14.92	56	
4. C10H20 Cycloalkane	15.53	80	
5. C11H24 Alkane	15.75	120	
6. C10H20 Cycloalkane	16.19	110	
7. Decahydronaphthalene isomer	16.81	62	
8. C11H22 Cycloalkane	17.01	42	
9. Decahydromethylnaphthalene isomer	17.51	58	
10. C12H26 Alkane	17.82	32	
11.			
12.			
13.			
14.			
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28.			
29.			
30.			

TOTAL ESTIMATED CONCENTRATION 643

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H

932630302

LUCENT TECHNOLOGIES, INC.

TAB H

May 20, 1996 Affidavit of Daniel Bartel, plumber and inspector of the Western Electric Company facility (1952-1985). Bartel's affidavit identifies the source of discharge into the Passaic River from specific outfalls, plating waste water through the storm sewers, and two drains located within the drum storage area through the storm sewers.

AFFIDAVIT OF DANIEL BARTEL

STATE OF NEW JERSEY §
§
COUNTY OF BERGEN §

Daniel Bartel upon his oath deposes and says:

1. I, Daniel Bartel, am a former employee of the Western Electric Company ("Western Electric") facility formerly located at 100 Central Avenue, Kearny, NJ. I was employed at the Western Electric facility during the period 1952 to 1985. During this time I held the position of plumber and inspector and had the opportunity to work in a number of areas within the facility.

2. Some of the products manufactured at the Western Electric facility included: cables (insulated with lead and polyethylene), telephone switch boards, copper wire, and transformers. The transformers were manufactured at the facility for approximately twenty five (25) years. The Western Electric facility also utilized plating operations. The plating operations were originally performed in buildings #170 and ~~#30~~ #32 but were subsequently moved to building #185 upon completion of Western Electric's waste water treatment plant circa 1973.

3. Because of my position as a plumber I become very knowledgeable of the sanitary and storm sewers at the Western Electric facility. The outfalls identified on the attached map as #001, #002, #003, #004, #005 and #006 all discharged to the Passaic River. Outfall #001 was a cooling water drain for the facility power plant condenser. Outfalls #003, #004, #005, and #006 were storm sewer drains. Outfall #002 was used to discharge treated waste water that was being generated from the facility waste water treatment plant.

4. Prior to the waste water treatment plant coming on line at the Western Electric facility all process waste water generated from the plating operations within buildings #170 and

#32 ~~#30~~ were treated and discharged to the Passaic River through the storm sewers. I did not know how this plating waste water was treated.

5. I have marked upon the enclosed map the approximate locations where waste lines from building #170 and #32 ~~#30~~ were connected to facility storm sewer lines.

6. There were two drains located within the drum storage area which was located at the southern end of the facility. These two drains discharged to the Passaic River through the facility's storm sewers. I have marked upon the enclosed map the location of this drum storage area.

7. On occasions the Western Electric facility would flood. The flooding which was caused by the combination of heavy rains and the high tides from the Passaic River would back up the facility storm sewers.

Daniel Bartel

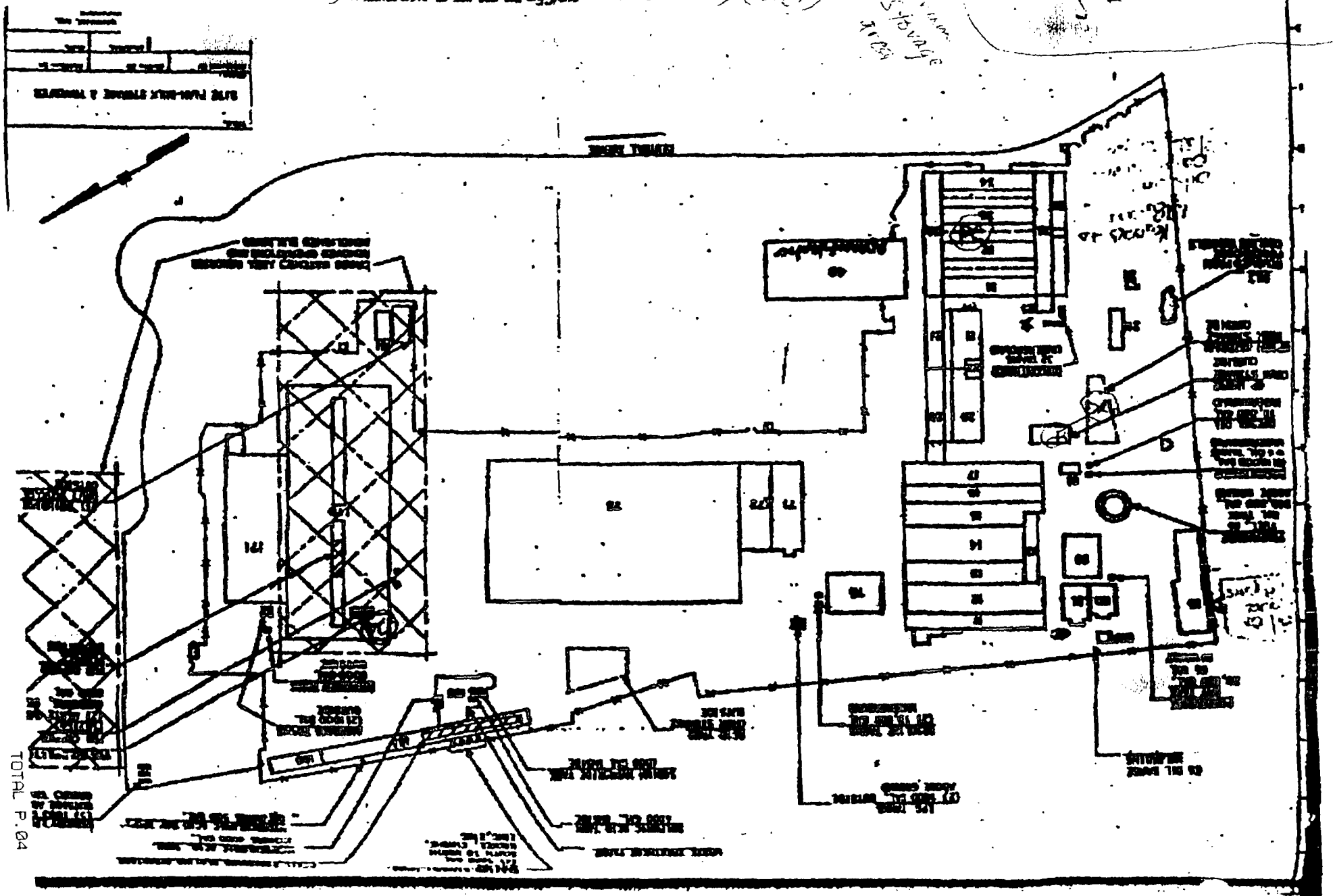
Sworn to before me this 20 day of May, 1996

Notary Public

State Of New Jersey
Notary Public Commission
Michael W. Boyle
My Commission Expires 10/31/00
Notary ID# 2038395

(?) approximate location of plating process waste connections to storm sewers

5-20-96



932630306

932630307

LUCENT TECHNOLOGIES, INC.

TAB I

October 8, 1997 letter from John Dugdale of Andrews & Kurth L.L.P. to Amelia Wagner, Assistant Regional Counsel, USEPA, regarding issuance of additional notice letters to PRPs associated with the PRSA. Documentation in support of same attached, including documentation of numerous hazardous substances at the site.

February 1993 Remedial Proposal for Contaminated Soil at Former Drum Storage Pad. Confirms hazardous substances, such as metals and solvents, detected in soils taken within the drum storage pad area.

RECEIVED
FILE COPY OCT 09 1997
A & on
ENVIRONMENTAL

ANDREWS & KURTH
L.L.P.
ATTORNEYS

1717 MAIN STREET
SUITE 3700
DALLAS, TEXAS 75201

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JOHNDUGDALE@ANDREWS-KURTH.COM

October 8, 1997

Amelia M. Wagner
Assistant Regional Counsel
Office of Regional Counsel
US EPA Region 2
290 Broadway, 17th Fl.
New York, NY 10007-1866

Re: *Passaic River Study Area*

Dear Amelia:

When we last spoke at any length in early September, you indicated that, while the Region would likely issue additional notice letters to potentially responsible parties (PRPs) associated with the Passaic River Study Area (PRSA), ensuring that the Region met its Fiscal Year 1997 (FY '97) commitments might prevent the issuance of such letters until after the September 30 end of FY '97. I am also hopeful that the conclusion of the fiscal year now allows you some additional time to direct to the notification of additional PRPs.

On June 11, 1997 Chemical Land Holdings, Inc. (CLH) submitted to the Region liability evidence summaries concerning, among others, Lucent Technologies (Lucent) as the direct successor to Western Electric Company and AT&T, which had operated the Kearny Works from 1925 to 1984. In that June 11 submission, CLH included an affidavit from Daniel Bartel, a former Western Electric employee, in which he discussed direct discharge mechanisms from the former Western Electric facility to the Passaic River. Specifically, Mr. Bartel discussed waste lines that led from Buildings 170 and 32 to facility storm sewer lines, which then led to the Passaic. Mr. Bartel also discussed drains from a drum storage area located at the southern end of the facility that likewise led to facility storm sewers that discharged to the Passaic.

After further review of available evidence, CLH believes that material submitted to the Environmental Protection Agency (EPA) pursuant to information request letters issued pursuant to Section 104(e) of the Comprehensive Environmental Response, Compensation and Liability Act

(CERCLA), 42 U.S.C. § 9604(e), further strengthens CLH's June 11 submission concerning Lucent's CERCLA liabilities.

Specifically, a November 6, 1981 Western Electric Memorandum for Record entitled "RCRA and PCB Inspection at the Kearny Works" and submitted to EPA by Lucent in a March 11, 1997 supplemental 104(e) response discusses the drainage system associated with the drum storage area described in Mr. Bartel's affidavit. That memorandum, enclosed as Exhibit 1, further substantiates the existence of direct discharge mechanisms from the drum storage area to the River and expands upon Mr. Bartel's statement that "two drains located within the drum storage area... discharged to the Passaic River through the facility's storm sewers." In pertinent part, the memorandum states:

> Drainage - The storage area has a large drainage pit in the approximate center. The pit is equipped with a manual valve and the drain leads to the river. The storage area can be drained within four hours after a heavy rain with this system.

In addition, an August 11, 1992 letter to AT&T's Environmental Cleanup Responsibility Act (ECRA) manager from a New Jersey Department of Environmental Protection and Energy (NJDEPE) ECRA Section Chief discusses briefly the results of an ECRA inspection of the Kearny facility's drum storage area. That letter is enclosed as Exhibit 2. In pertinent part, the letter states:

> During the inspection approximately eleven drains, with unknown discharge points, were observed in the former drum storage pad. When a photo ionization detector screened the water inside the discharge pipe of one of the drains, total volatile organic compounds were detected at 22 parts per million. Due to the potential impact to the environment, Western Electric shall determine the discharge point of the former drum storage pad drains (plumbing diagrams, dye test, etc.). Western Electric shall submit documentation on the method used to determine the discharge points and the location of the outfalls to the NJDEPE, within 30 days of receipt of this letter.

Notwithstanding NJDEPE's request that Western Electric/AT&T determine the discharge point of the drum storage pad drains, AT&T's September 3, 1992 response fails to provide any information regarding the requested discharge points. See Exhibit 3. Finally, AT&T's ECRA contractor, ENSR Consulting and Engineering, prepared a report entitled "Remedial Proposal for Contaminated Soil at Former Drum Storage Pad ECRA Case Nol 84025," dated February 1993. Portions of that report, enclosed as Exhibit 4, discuss analyses of soil samples taken within the drum storage pad area. The hazardous substances found therein included solvents and metals. Although the ECRA investigation

did not include sampling of the River sediments[1], AT&T's own internal memorandum documents the fact that the drum storage area's drainage pit discharges directly to the River and can be drained within four hours time following a heavy rain. Hazardous substances detected in soil samples adjacent to the drum storage pad, as well as drum storage pad catch basin sediments, include mercury, copper, zinc, arsenic, cadmium, lead, selenium, and cyanide. Those hazardous substances directly correlate to compounds found in Passaic River Study Area (PRSA) sediments sampled immediately adjacent to the Kearny facility. See enclosed core sample summary table, Exhibit 5, and map indicating core locations, enclosed as Exhibit 6, and enclosed Exhibit 7, which is figure 2-2, Exhibit Q, taken from River Terminal Development Company 104(e) response.

In addition, CLH has already submitted to the Region on June 11 a 1963 plumbing diagram included in the 104(e) information request response tendered by River Terminal Development Company, which provides support to Mr. Bartel's statements in his affidavit regarding discharges from Building 170, in which the facility's plating shop was located. While AT&T's ECRA materials are silent with regard to Building 170's plumbing, and while no sediment sampling was involved in the ECRA investigation of the Kearny facility, the plumbing diagram and Mr. Bartel's affidavit refute aspects of Lucent Technologies' 104(e) response.

Specifically, in response to 104(e) Question No. 6(a), Lucent stated that process waste waters generated at the Kearny facility were discharged to the municipal sewer, and that the waste stream was not treated prior to discharge. In contrast, Mr. Bartel stated in his affidavit that all process wastes generated from plating operations conducted in Buildings 170 and 32 were discharged to the Passaic through storm sewers. Furthermore, the 1963 plumbing diagram CLH included in its June 11 submittal clearly indicated that Building 170 floor drains discharged to the Passaic.

---

[1] It should be noted that AT&T's initial "Written Notice of Decision to Close Operations for the Kearny Works Location of A.T.&T. Technologies, Inc. (Formerly Western Electric Co., Inc.)" presented to NJDEP on February 6, 1984 included the following statement at page 2-3:

> ... sampling from the river is of no value. There are no known or suspected sources of river contamination which will continue after site operations have been discontinued.

Obviously, CLH disputes the merits of that statement. Furthermore, the mere fact that Lucent's predecessor chose not to perform River sediment sampling could not serve a valid basis for Lucent subsequently to object to the use of CLH's sediment data to establish Lucent's CERCLA liability. Finally, the statement also indicates that AT&T plant management acknowledged that sources of River contamination existed *prior to* the cessation of AT&T operations at the Kearny facility.

Finally, analyses of the sediment samples collected adjacent to the AT&T facility confirm the presence in the sediments of hazardous substances associated with this facility. For illustrative purposes, enclosed is a table showing analyses of several metals known to have been used in the plant operations and demonstrated to be present at the facility in the reports of soil and catch basin sediment contamination referenced above. Also enclosed is a map illustrating that the three southernmost transects of the sampling plan for the remedial investigation/feasibility study (RI/FS) for the Passaic River Study Area (PRSA) are offshore of the AT&T facility. On those transects, Cores 203, 206 and 209 were taken directly adjacent to the facility, while Cores 201, 204, and 207 were taken from the opposite side of the River.

In addition, the enclosed table illustrates the likely impact of AT&T operations on River sediments. The samples have been grouped to reflect the results of chemical analyses performed on sediments estimated to represent years during which the plant operated (1925 - 1984) versus samples of sediments taken reflecting years that followed the cessation of AT&T operations at the Kearny facility. The estimated dates of sediment deposition are derived from the radio dating analyses required for the RI/FS. The critical results are for Cores 203, 206, and 209.

The mean hazardous substance concentration levels found in sediments deposited during the years of the AT&T facility's operation far exceed the mean concentrations found in samples taken following the facility's closure. In addition, those samples reflective of the years of operation similarly far exceed the mean concentrations of hazardous substances found in sediment samples collected directly across the River from the facility. This disparity in hazardous substance concentrations found in River sediments clearly indicates that hazardous substances known to have been associated with AT&T's operations, for which a number of discharge pathways to the River have been established, and that are believed to have been deposited during the years the facility operated, are present in high levels in sediments found close to the facility.

In light of the above and prior submissions to EPA, CLH believes that the issuance of a notice letter to Lucent is appropriate at this time. While CLH appreciates the Region's procedure of issuing supplemental information request letters prior to issuing a notice letter to allow a PRP an opportunity to provide an explanation in instances where a *prima facie* liability case is circumstantial, that is not the case at hand. AT&T's own internal documents and an ECRA investigation establish a direct discharge mechanism to the Passaic from the facility's drum storage area and the presence of hazardous substances within that discharge system. In addition, a 1963 plumbing diagram and a credible affidavit describing historical use of floor drains for plating process waste disposal within Building 170 establish hazardous substance discharges to the River as well. With regard to both discharge cases, CLH's sediment sampling and radio dating presented in the enclosed table correlates the presence of hazardous substances in the River sediments with those used at the Kearny facility.

Should you require additional information concerning this matter, please do not hesitate to contact me. Thank you for your attention to this matter.

Very truly yours,

John Dugdale

Enclosures (7)

cc: Mel Skaggs, CLH (w/o enclosures)
Paul Herring, CLH (w/o enclosures)
Richard McNutt, CLH
Paul Bohannon, Firm
Dennis Farley, Kroll

EXHIBITS TO OCTOBER 8, 1997 LETTER PERTAINING TO CHEMICAL LAND HOLDINGS, INC. EVIDENTIARY SUBMISSION REGARDING LUCENT TECHNOLOGIES

932630314

MEMORANDUM FOR RECORD

Re: RCRA and PCB Inspection at the Kearny Works

On October 27, 1981, Terry Hunter and I visited the Kearny Works for the purpose of conducting a RCRA and PCB plant compliance survey. Chris Tranchetti and Angelo Basile hosted the RCRA tour of the plant and Bruce Rapp conducted the PCB portion.

RCRA Compliance Survey

We used the RCRA checklist and reviewed each item in turn as follows:

1. Manifest - Kearny sends the bulk of their hazardous waste
   a. Manifests
   the N.J.
   part document
   story in this
   es for unsigned
   waste shipment.

2. Containers - The shipping containers and drums we saw were in good condition with proper DOT labels and the EPA hazardous label (photostat attached) filled out and attached to every drum of waste. We saw no placards as there were no trucks evident.

3. Written Inspection Plans for Storage Area - They do not have any.

4. Contingency Plans - They are using the coordinators indicated in the NJ spill control plan, and are just finishing drafting the plan (copy attached).

5. Personnel Records, Job Description and Training - A training program has been prepared and implemented for two people for the receival, handling, storage, and disposal of hazardous waste. (copy attached)

6. Additional Records - 1) Exception reports; are applicable when manifests are not returned by disposer, Kearny keeps records and uses 35 days as time limit before following up. 2) Test results on wastes - routine tests are performed on all wastes by an outside laboratory. 3) Descriptions and reports of incidents resulting from hazardous waste management. - None to date.

7. Storage Facilities

A. RCRA Permit or "Interim Status" - Kearny has filed for "Interim Status" as a storage facility.

B. Storage Area - The storage area, (Pad) 135' x 85' is open to the weather and fenced in with an 8' chain link fence. The area is diked with a concrete curb which varies from 6" to 18" depending upon the ground slope. The area has a large warning sign on the fence identifying the enclosure as a storage area. There are no fire extinguishers as yet in the storage area but they have been ordered. The storage area is 75 feet from the plant security police and fire control stations.

C. Spill Collection System - Their spill control plan consists of covering potential spills with "speedi-dri" and calling their scavenger in for clean up.

D. Drainage - The storage area has a large drainage pit in the approximate center. The pit is equipped with a manual valve and the drain leads to the river. The storage area can be drained within four hours after a heavy rain with this system. RCRA requires that drums stand in rainwater no more than one hour after a rain. Kearny has the drums stored on pallets and therefore meets this one hour requirement.

E. Closure Plan - Copy attached

In conclusion, we feel that the Kearny Works satisfactorily meets the RCRA requirements for a generator and storer of hazardous waste. We also feel there is weakness in several areas as follows:

1. The collection system for spills could allow hazardous waste into the storm drain.

2. The storage area should really be roofed over to keep rainwater etc. off the drums and out of the area.

3. The drain system and valve could be a problem in freezing weather.

4. Asphalt pad is cracked and should be impervious.

PCB Inspection

Kearny has 13 PCB transformers on site using "pyranol" and "abestol" as the dielectric fluid. Of these transformers, seven are inside installations and the remaining six are outside, two of which are not functioning and considered storage tanks. They also have a drum storage area inside with a total of twelve 30 gallon drums containing virgin PCB liquid used for transformer make-up.

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

AUG 11 1992

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Nicholas W. Capuano
AT & T
131 Morristown Road
Basking Ridge, NJ 07920

RE: Western Electric Co., Inc. - Kearny Works (Western Electric)
Kearny Town, Hudson County
ECRA Case #84025

Dear Mr. Capuano:

As part of the Environmental Cleanup Responsibility Act review process, Western Electric was inspected by a representative of the Bureau of Environmental Evaluation and Cleanup Responsibility Assessment on July 22, 1992. The inspection was conducted to ensure that sampling was conducted in accordance with the NJDEPE's letter dated June 9, 1992. All sampling was performed in accordance with said letter.

During the inspection approximately eleven drains, with unknown discharge points, were observed in the former drum storage pad. When a photo ionization detector screened the water inside the discharge pipe of one of the drains, total volatile organic compounds were detected at 22 parts per million. Due to the potential impact to the environment, Western Electric shall determine the discharge point of the former drum storage pad drains (plumbing diagrams, dye test, etc.). Western Electric shall submit documentation on the method used to determine the discharge points and the location of the outfalls to the NJDEPE, within 30 days of the receipt of this letter.

If you have any questions regarding this letter, please contact the Case Manager, Carol Lynn J. Heck, at (609) 633-7141.

Sincerely,

Carolyn K. Scott, for

Tessie W. Fields Section Chief
Bureau of Environmental Evaluation and
Cleanup Responsibility Assessment

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AT&T

131 Morristown Road
Basking Ridge, NJ 07920

September 3, 1992

N.J. Department of Environmental Protection & Energy
Division of Responsible Party Site Remediation
Ms. Carol Lynn Heck
CN - 028
Trenton, New Jersey 08625-0028

Re: **AT&T Kearny Works**
Kearny, NJ
ECRA Case #84025

Dear Ms. Heck:

In response to your August 11, 1992 inquiry concerning the drains located in the former drum storage pad, I have enclosed the following documentation as prepared by ENSR Consulting and Engineering for AT&T:

Attachment No. 1: This attachment identifies the fourteen catch basins that were cleaned on the subject concrete pad.

Attachment No. 2: Included in this attachment are copies of the relevant pages of the certification document (Document Number 888-40, February 1986) submitted to and approved by the NJDEPE. Item No. 3 on page 2-1 certifies ERT observations that the peripheral soil was removed, the concrete pad was swept off, and the catch basins were vacuumed, roto rooted, and jet cleaned. All residual material was collected and disposed of off-site in a permitted landfill.

Attachment No. 3: This attachment includes copies of the relevant pages of ERT's daily field log. The text marked with asterisks on page 151 document my observations of the catch basin cleaning procedures.

932630321

Attachment No. 4: This attachment includes a copy of the contractor's daily work log that identifies the snaking and jetting of the subject catch basins was completed.

The enclosed documentation should answer your concerns to these drains. As the documents demonstrate all these drains were cleaned out and all waste removed from the site and disposed according to regulatory requirements.

Attachment No. 2 provides the certification that the clean up of "Other Clean Up" has been completed according to the NJDEP approved Environmental Clean Up Plan.

If you have any questions or comments, please call me at (908) 204-8268.

Sincerely,

Nicholas W. Capuano

Nicholas W. Capuano
Kearny ECRA Clean Up
Manager

ATTACHMENT NO. 1

NO.	REVISIONS	BY	CKD.	APP.	DATE
4	AS BUILT	SD	RNR	RNR	12
3	CHANGES TO AREAS 33 & 34 ; ADDED IN PLACE VOLUMES	SD	RNR		10-8-85
2	CHANGE TO AREAS (4,5,6), 7, 8A, 8B, 11A, 11B, 14, (21, 22A), (21, 22B), 31, 37, 38, 9				8-9-85
1	CHANGES TO AREAS 11, 15, 21, 22, 26, 44, 48, 49	MEM	JML		5-20-85

ERT ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.
696 VIRGINIA ROAD, CONCORD, MASSACHUSETTS 01742

TITLE:

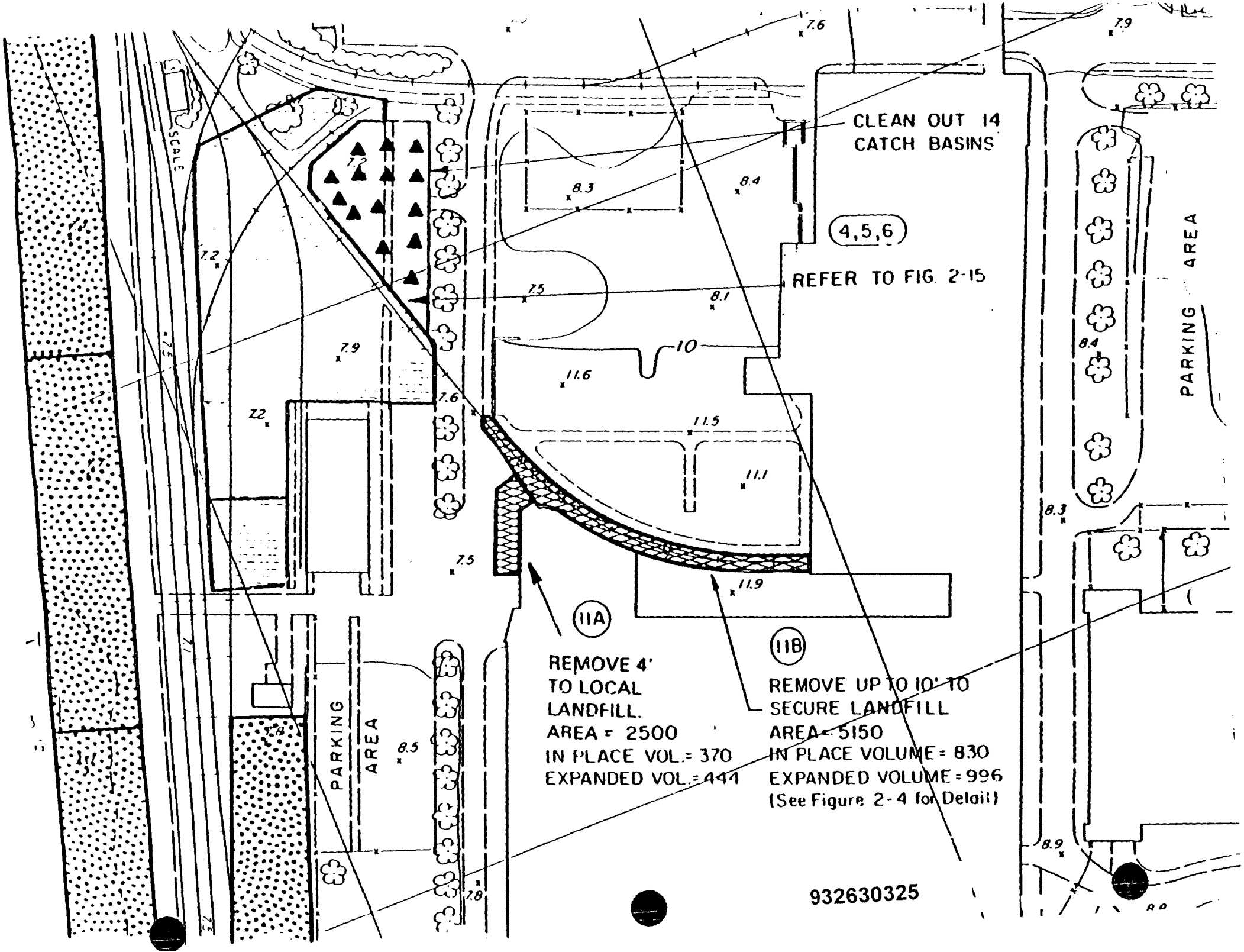
COMPLETED SOIL EXCAVATION
AT&T KEARNY WORKS

WILLIAM A. DUVEL
Professional Engineer

Wm A Duvel 1/21/87
N.J. Lic. No. GE 28465

DRAWN: M. McCARTNEY	DATE: 3-22-85	DRAWING NO.
CHECKED:	SCALE: 1" = 100'	FIG. 2-16
APPROVED:		

932630324


CLEAN OUT 14
CATCH BASINS
4,5,6
REFER TO FIG. 2-15
PARKING AREA
PARKING AREA
11A
REMOVE 4'
TO LOCAL
LANDFILL.
AREA = 2500
IN PLACE VOL.= 370
EXPANDED VOL.= 444
11B
REMOVE UP TO 10' TO
SECURE LANDFILL
AREA = 5150
IN PLACE VOLUME = 830
EXPANDED VOLUME = 996
(See Figure 2-4 for Detail)
SCALE
7.6
7.9
7.2
8.3
8.4
7.5
8.1
10
11.6
11.5
11.1
11.9
8.5
7.8
8.9

932630325

ATTACHMENT NO. 2

CERTIFICATION OF ECRA OTHER CLEANUP
AT&T KEARNY WORKS

Document Number 888-440

February 1986

ERT
ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.
ATLANTA · CHICAGO · CONCORD, MA – FORT COLLINS, CO
HOUSTON · LOS ANGELES · PITTSBURGH · WASHINGTON, DC

932630327

CERTIFICATION OF ECRA OTHER CLEANUP
AT&T KEARNY WORKS

Document Number 888-440

February 1986

Prepared for

AT&T TECHNOLOGIES, INC.

Prepared by

ERT, A Resource Engineering Company
696 Virginia Road, Concord, Massachusetts 01742

5797D PC888-430

932630328

CERTIFICATION OF OTHER CLEANUP

ERT certifies that it has carried out a quality assurance and inspection program for the site cleanup activities conducted by various contractors engaged by AT&T Technologies, Inc. (AT&T) to effect the cleanup of AT&T's Kearny Works, as described in the Amended Environmental Cleanup Plan, Kearny Works, AT&T Technologies, Inc. (ERT Document D367-200). This Plan was prepared by ERT and approved by the New Jersey Department of Environmental Protection (NJDEP) on July 8, 1985. The quality assurance and inspection plans followed by ERT are attached. On the basis of the work conducted by ERT in accordance with these plans, ERT has determined that the cleanup work conducted by the various contractors for Other Cleanup* has been completed and is in conformance with the requirements of the Amended Environmental Cleanup Plan. This document describes the work conducted by ERT and presents the basis for this certification.

Wm A Duvel Jr 3/1/86

Dr. William A. Duvel, Jr., P.E.
Senior Program Manager

*Separate Certifications for (1) Soil Cleanup, and (2) Ground Water Cleanup.

5797D 888-430

2. STORAGE FACILITIES

The following paragraphs discuss the activities taken in the following storage facilities in a clockwise order of rotation beginning in the lower left corner of Drawing 8452-120579-D (see back pocket).

1. Building 25, Grid Index J-4, has 32 adjacent underground tanks. Each of these tanks had been emptied and filled with sand/cement at some time unrecorded in the past. To verify that this condition was true, AT&T opened the manholes accessing the tanks and found they do contain sand/cement materials to the top and contain no liquids. ERT reviewed an AT&T memo dated July 5, 1985, that requested an additional week of work for the person opening the manhole accessing the tank. A spot check by ERT of two manholes showed they are filled with sand/cement.

2. Silt pumped from Powerhouse cooling water tunnels was deposited at Grid Index J-2 several years ago. The area where the silt was deposited was excavated and removed in conjunction with Area 2 soil excavation. See Certification of ECRA Soil Cleanup, ERT Document No. D888-430, for details of ERT certification of soil removal.

3. Two storage pads:

   a) Concrete pad adjacent to soil area 4, 5, 6. ERT observations document that the periferal soil was removed, the concrete pad was swept off, and the catch basins were vacuumed, roto rooted, and jet cleaned. All residual material was collected and disposed of off-site in a permitted landfill as required by state and federal solid waste regulations (see also soil excavation in Area 4, 5, 6 in Certification of ECRA

Soil Cleanup, ERT Document No. D888-430 for details of ERT certification of soil removals and catch basin cleanout).

b) RCRA storage area. ERT observations document that residues and standing liquids in this area were mechanically removed by scraping and vacuuming. The area was further cleaned by high pressure water washing and vacuuming the wash water. A review of AT&T Work Orders SP926 and W-47156 document pre-cleanup measures. The pre-cleanup measures included the identification and disposal of all drums by Chemical Waste Management (CWM), Newark, N.J. (ref. manifest listing March 1985 to July 1985).

4. Four 10,000-gallon underground tanks located south of Building 83 at Grid Index H-3. Three tanks were drained and filled with sand approximately 15 years ago and required no action. The fourth tank contained diesel oil. The tank was water/steam cleaned, nitrogen purged, excavated, and cut up by CWM, and removed from the area for salvage by the new owner. The residual oils were removed and sent to Flowen Oil Company for reclaiming. The above work was performed by CWM and witnessed by ERT.

5. 840,000-gallon oil tank at Grid Index G-3. ERT observed the removal of residual sludge and oil, venting and cleaning the tank using high pressure water/steam, and flushing the underground transfer lines with water to and from the day tank and the powerhouse. ERT inspected the interior of the tank to verify that it was clean. Review of 14 NJA manifests labeled "Waste Oil and water, recycle #6 Fuel Oil," to Flowen Oil Company documents the disposal of the tank cleanout. Review of 12 NJA manifests labeled "Hazardous Waste Liquid (N.O.S)" identifies that the residual sludges and washdown materials were disposed of at the SCA (Newark) treatment plant.

ENSR

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February 12, 1993

Mr. Nicholas Capuano
Corporate Environmental Engineering
AT&T
Room B2162
131 Morristown Road
Basking Ridge, New Jersey 07920

Re: Cleanup Plan Implementation Schedule
Former AT&T Kearny Works, Kearny, New Jersey
ECRA Case No. 84025

Dear Nick:

Enclosed are four copies of the Remedial Proposal for Contaminated Soil at Former Drum Storage Pad and three copies of the Cleanup Plan Implementation Schedule and the Summary of Historical Data. An additional copy of all documents will be sent to Alan Chesler.

The Remedial Proposal has incorporated comments from you and Mr. Angelo Basile. Most significantly, Mr. Basile indicated that reclassification of the aquifer should be considered which could potentially result in less stringent soil cleanup standards.

The Implementation Schedule is presented in two figures. Figure 1 is a recapitulation of all past soil cleanup activities conducted pursuant to the ECRA program at Kearny. Figure 2 is a schedule for proposed future remediation in the area of the concrete pad. This is the same schedule shown in the Remedial Proposal.

If you have any questions or concerns regarding these materials, please call.

Sincerely,

Stephen Byrne

for Frank Myerski
Project Manager

FM/gk

Reference No. (524)LETTER.FM

Enclosure

cc: B. Duvel
S. Byrne
D. Hessemer

0550-263-400

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AT&T

Kearny, New Jersey

Remedial Proposal for Contaminated Soil at Former Drum Storage Pad ECRA Case No. 84025

ENSR Consulting and Engineering

February 1993

Document Number 0550-263-400(524)

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CONTENTS

1.0 INTRODUCTION 1-1

2.0 SITE DESCRIPTION 2-1
- 2.1 Site Geology 2-1
- 2.2 Previous Remedial Activities 2-1
- 2.3 Soil Characterization 2-4

3.0 REGULATORY CONSIDERATIONS 3-1
- 3.1 Target Cleanup Limits 3-1
- 3.2 Land Disposal Restrictions 3-2
- 3.3 Hazardous Debris Final Rule 3-2
- 3.4 RCRA Treatment Permit 3-3
- 3.5 Soil Reuse 3-4

4.0 PROPOSED REMEDIAL ACTION 4-1
- 4.1 Recommended Remedial Alternative 4-1
- 4.2 Debris Remediation 4-1
  - 4.2.1 Debris Sampling 4-1
  - 4.2.2 Concrete Remediation Design 4-2
- 4.3 Soil Remediation Using On-Site SVE 4-4
  - 4.3.1 Additional Soil Delineation Sampling 4-4
  - 4.3.2 Soil Remediation Design 4-5
    - 4.3.2.1 Treatment System Description and Layout 4-5
    - 4.3.2.2 Post-Excavation Sampling 4-10
    - 4.3.2.3 Post-Treatment Sampling and Disposal 4-10
    - 4.3.2.4 Remediation Sequence and System Operation 4-10
- 4.4 Permitting 4-12

5.0 HEALTH AND SAFETY 5-1
- 5.1 Controlling Factors 5-1
- 5.2 Health and Safety Methodology 5-1

6.0 SCHEDULE 6-1

7.0 REFERENCES 7-1

932630335

LIST OF TABLES

2-1 Summary of Soil Sampling Results at Kearny 2-5

LIST OF FIGURES

2-1	Hydrogeologic Units in the Vicinity of Well ATT11	2-2
2-2	Soil Sample Locations Map	2-3
2-3	Surface Soil Isopleth Map for DCE	2-7
2-4	Subsurface Soil Isopleth Map for DCE	2-8
2-5	Surface Soil Isopleth Map for PCE	2-9
2-6	Subsurface Soil Isopleth Map for PCE	2-10
2-7	Surface Soil Isopleth Map for TCA	2-11
2-8	Subsurface Soil Isopleth Map for TCA	2-12
2-9	Surface Soil Isopleth Map for TCE	2-13
2-10	Subsurface Soil Isopleth Map for TCE	2-14
2-11	Areal Extent of Contaminated Soil Requiring Remediation	2-16
4-1	Excavation Area and Sample Location	4-3
4-2	Soil Remediation Process Schematic	4-6
4-3	Remediation Area Plot Plan	4-7
4-4	Soil Remediation Equipment Layout	4-8
4-5	Sprung Structure Diagram	4-9

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1.0 INTRODUCTION

ENSR Consulting and Engineering (ENSR) was retained by AT&T Technologies, Inc. (AT&T) to develop a proposal to remediate contaminated soil located in the Former Drum Storage Pad Area of the Former Kearny Works in Kearny, New Jersey. This proposal was prepared in response to the New Jersey Department of Environmental Protection and Energy's (NJDEPE) November 25, 1992 letter. This remediation plan was required in the November 25, 1992 letter in response to the soil investigation conducted by AT&T in July 1992.

Section 2.0 of this document provides a general overview of site conditions, including soil sampling results and previous soil and groundwater remediation activities. This section also includes contaminant isopleth maps from soil samples collected on July 22, 1992. Areas of constituent concentrations above NJDEPE proposed soil cleanup standards are overlayed onto the isopleth maps and form the basis for determining the known extent of soil contamination.

Regulations affecting remedial activities in New Jersey have recently undergone significant changes. For example, NJDEPE recently decided not to adopt the proposed soil cleanup standards specified in the February 3, 1992 New Jersey Register, and has instead decided to await the outcome of a recently proposed ECRA reform bill. In the absence of official standards, this remedial proposal has been based on the February 3, 1992 proposed standards. This can be considered a conservative approach for this site since the proposed cleanup standards are based upon soil overlying Class I and IIA aquifers. The shallow water bearing unit at the Kearny site has low yields and is not used as a potable water supply. Therefore, reclassification of the groundwater and the consequent impact on cleanup standards needs to be reevaluated. Section 3.0 presents additional discussion on the pertinent regulatory considerations for the proposed remedial alternative.

Based on regulatory, technical, and economic considerations, four remedial alternatives were evaluated as potential options to remediate the Former Drum Storage Pad Area soils. Section 4.0 provides the recommended remedial alternative and includes additional soil delineation sampling, post-excavation sampling, and permitting issues. Section 5.0 presents considerations which will be included in a site-specific health and safety plan.

A project schedule for implementing the proposed remedial activities is provided in Section 6.0.

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2.0 SITE DESCRIPTION

2.1 Site Geology

The subsurface lithology in the vicinity of the Former Drum Storage Pad Area has been investigated by installing monitoring wells (DRAI, 1985) and well points, and conducting infiltration and aquifer characterization tests (ERT, 1985).

The soils at the site consist of unconsolidated deposits overlying the Brunswick Shale bedrock. Bedrock begins at a depth of 60 to 80 feet below land surface (bls). As shown on Figure 2-1, the overlying unconsolidated formations are, from shallow to deep: imported surficial fill, sandy silt, silt/clay, and interbedded sands and silts.

The surficial fill section consists of sand with some concrete, bricks, and cinders emplaced for general site grading purposes, and occurs throughout the site. In the vicinity of the Drum Storage Pad Area, the fill is 4 to 6 feet thick.

Beneath the fill is a generally 1- to 3-foot layer of sandy silt grading into organic silt. Observations made during a trench excavation near the pad indicated that silver grey sandy silt occupied the 6- to 8-foot depth interval. The fill-sandy silt contact of this unit is quite distinct. However, the lower boundary grades imperceptibly into the grey silt/clay.

2.2 Previous Remedial Activities

Two significant remedial activities have been conducted in the Former Drum Storage Pad Area, to fulfill requirements authorized by NJDEPE in the approved Amended Environmental Cleanup Plan (1985). First, in 1985, soil adjacent to the southern border of the concrete pad was excavated to a depth of approximately 3 feet (depth to groundwater). The excavation was then backfilled with clean fill (i.e., crushed quarry stone). This area is depicted in Figure 2-2. Second, due to groundwater contamination detected in five monitoring wells in the concrete pad area, a groundwater remediation system was designed by ENSR in 1985 and installed and operated beginning August 1986. After five years of operation, AT&T was authorized by NJDEPE in July 1991 to cease groundwater remediation activities, since contamination from the monitoring wells at the site declined substantially over time and stabilized.

Not true

2.3 Soil Characterization

To delineate the soil contamination in the Former Drum Storage Pad Area, a soil gas survey was conducted in June 1990. Based on the soil gas survey, four soil borings were advanced in August 1991 and soil samples were analyzed for priority pollutant volatile organic compounds (VOC) via GC/MS. Seventeen additional soil borings were advanced and soil samples were collected in July 1992. The locations of these soil gas survey points and soil sample locations are also shown on Figure 2-2. The numeric values indicated represent the concentration of total VOCs, in parts per million (ppm), from the soil gas survey.

A summary of soil sample results from the July 1992 sampling effort is provided by Table 2-1. All samples were analyzed for the following five targeted VOCs via GC/MS: trans-1,2-dichloroethylene, tetrachloroethylene, toluene, 1,1,1-trichloroethane, and trichloroethylene. These analytes were among those targeted in the June 1990 soil gas survey because they appeared at the highest concentrations most consistently in the groundwater during seven years of groundwater monitoring. Further, these five volatile compounds were the only VOCs detected above detection limits in the August 1991 soil sampling event. Sample number designations correspond to the sampling grid depicted on Figure 2-2.

NJDEPE has proposed three sets of cleanup standards for soil: residential surface soil, non-residential surface soil, and subsurface soil. These standards were proposed for Class I and IIA aquifers in the February 3, 1992 New Jersey Register. After one year, NJDEPE decided not to adopt the proposed standards but to continue to use them as guidelines. These guidelines, hereafter referred to as proposed standards, for the contaminants of concern in the Drum Storage Area are listed in Table 2-2.

Contaminant isopleth maps for four of the targeted compounds, at two depths, are presented in Figures 2-3 through 2-10. An isopleth map for toluene has not been included, due to the limited number of detected concentrations. Areas of soil contamination that exceed NJDEPE proposed cleanup levels are indicated on the isopleth maps by cross-hatching.

The isopleth maps indicate and differentiate between concentrations above proposed standards for residential and non-residential surface soils. Use of residential standards resulted in the addition of three sample locations over those above non-residential standards for tetrachloroethylene and trichloroethylene, and one location for 1,1,1-trichloroethane.

As shown on Figure 2-3, none of the surface soil samples exceeded the proposed non-residential or residential surface soil standard for trans-1,2-dichloroethylene (DCE). One sample location (E-7) exceeded the proposed subsurface soil standard for DCE (see Figure 2-4).

TABLE 2-1

Summary of Soil Sampling Results at Kearny
July 1992

Sample No.	Compound Detected (ppb)				
	trans-1,2 dichloroethene	tetrachloroethene	toluene	1,1,1-trichloroethane	trichloroethene
D5-C (12 - 18) inch increment	ND[a]	1,500	ND	ND	750
D5-F (30 - 36) inch increment	140 J[b]	2,700	ND	ND	1,600
D6-C (12 - 18) inch increment	14	160	ND	ND	13
D6-F (30 - 36) inch increment	ND	5.7	ND	ND	ND
D7-C (12 - 18) inch increment	26,000	29,000	ND	910 J	50,000
D7-F (30 - 36) inch increment	4,600	1,300	ND	290 J	830
E5-C (12 - 18) inch increment	590 J	32,000	ND	360 J	14,000
E5-F (30 - 36) inch increment	ND	6,600	ND	190 J	5,200
E6-B (6 - 12) inch increment[c]	500,000	5,500,000	48,000 J	520,000	130,000
E7-C (12 - 18) inch increment	110,000	4,900 J	ND	2,200 J	170,000
E7-E (30 - 36) inch increment	87,000	4,900 J	ND	1,800 J	130,000
E8-C (12 - 18) inch increment[d]	2.5 J	2.5 J	ND	ND	ND
E8-F (30 - 36) inch increment[e]	4.7 J	2.5 J	2.4 J	ND	2.7 J
E10-C (12 - 18) inch increment	ND	ND	ND	ND	ND
E10-F (30 - 36) inch increment	ND	ND	ND	ND	ND
E11-C (12 - 18) inch increment	2,400	13,000	ND	510 J	49,000
E11-F (30 - 36) inch increment	2,500	10,000	ND	350 J	42,000
F5-B (6 - 12) inch increment	710	2,000	ND	ND	8,600
F5-F (30 - 36) inch increment	2,500	5,800	ND	950 J	32,000
F6-C (12 - 18) inch increment	18,000	40,000	1,100 J	6,400	100,000
F6-E (24 - 30) inch increment	16,000	29,000	780 J	5,400	78,000
F7-B (6 - 12) inch increment	48,000	76,000	ND	2,400 J	70,000
F7-F (30 - 36) inch increment	85	85	1.3 J	5.3	44
F8-B (6 - 12) inch increment	810	1,700	ND	4,600	690
F8-F (30 - 36) inch increment	890	310 J	1,300	630	580 J
F8-H (30 - 36) inch increment[f]	4,400	1,400	4,600	3,000	3,100
F10-C (6 - 12) inch increment	160 J	300 J	ND	350 J	2,500

(524)-2-1.TAB 0550-236-400

TABLE 2-1

Summary of Soil Sampling Results at Kearny
July 1992

Sample No.	Compound Detected (ppb)				
	trans-1,2 dichloroethene	tetrachloroethene	toluene	1,1,1-trichloroethane	trichloroethene
F10-F (30 - 36) inch increment	6,400	2,800	ND	4,700	71,000
F11-F (30 - 36) inch increment[d]	ND	92,000	ND	ND	6,600
F12-C (12 - 18) inch increment	ND	580 J	ND	ND	4,700
F12-F (30 - 36) inch increment	590 J	5,000	ND	320 J	29,000
G11-E (12 - 18) inch increment	74	380	ND	11	240
G11-F (30 - 36) inch increment	890	5,200	ND	ND	2,600
Trip Blank[d]	ND	ND	ND	ND	ND
Field Blank[d]	ND	ND	ND	ND	ND

(a) Indicates no compounds were detected.
(b) Indicates result is less than the specified detection limit but greater than zero.
(c) This sample was analyzed for GC/MS volatiles plus a forward library search - other compounds detected included ethyl benzene (670,000 ug/kg) and total xylenes (4,500,000 ug/kg).
(d) This sample was analyzed for GC/MS volatiles plus a forward library search - no other compounds were detected.
(e) This sample was analyzed for GC/MS volatiles plus a forward library search - other compounds detected include: benzene (5.7 ug/kg), chloroethane (16 ug/kg), ethylbenzene (3.0 ug/kg), methylene chloride (4.7 ug/kg), and total xylenes (11 ug/kg).
(f) Field duplicate to sample number F8-F.

TABLE 2-2

NJDEPE Proposed Cleanup Standards for Contaminants of Concern in Drum Storage Area

	Surface[a][b] Residential (ppm)	Surface Non-Residential (ppm)	Subsurface[c] (ppm)
Trans-1,2-Dichloroethylene	960	10,000	50
Tetrachloroethylene	9	37	1
Toluene	1,000	1,000	500
1,1,1-Trichloroethane	210	3,800	50
Trichloroethylene	23	100	1

(a) This assumes that the shallow water bearing unit at the Kearny site is appropriately classified as a Class IIA aquifer. Further, these proposed standards were not adopted and are not expected to be adopted in the near future.
(b) Surface is defined as 0 - 2 feet interval.
(c) Subsurface is defined as 2 feet to groundwater interval. Note, groundwater depth is approximately 3 feet in the Drum Storage Area.

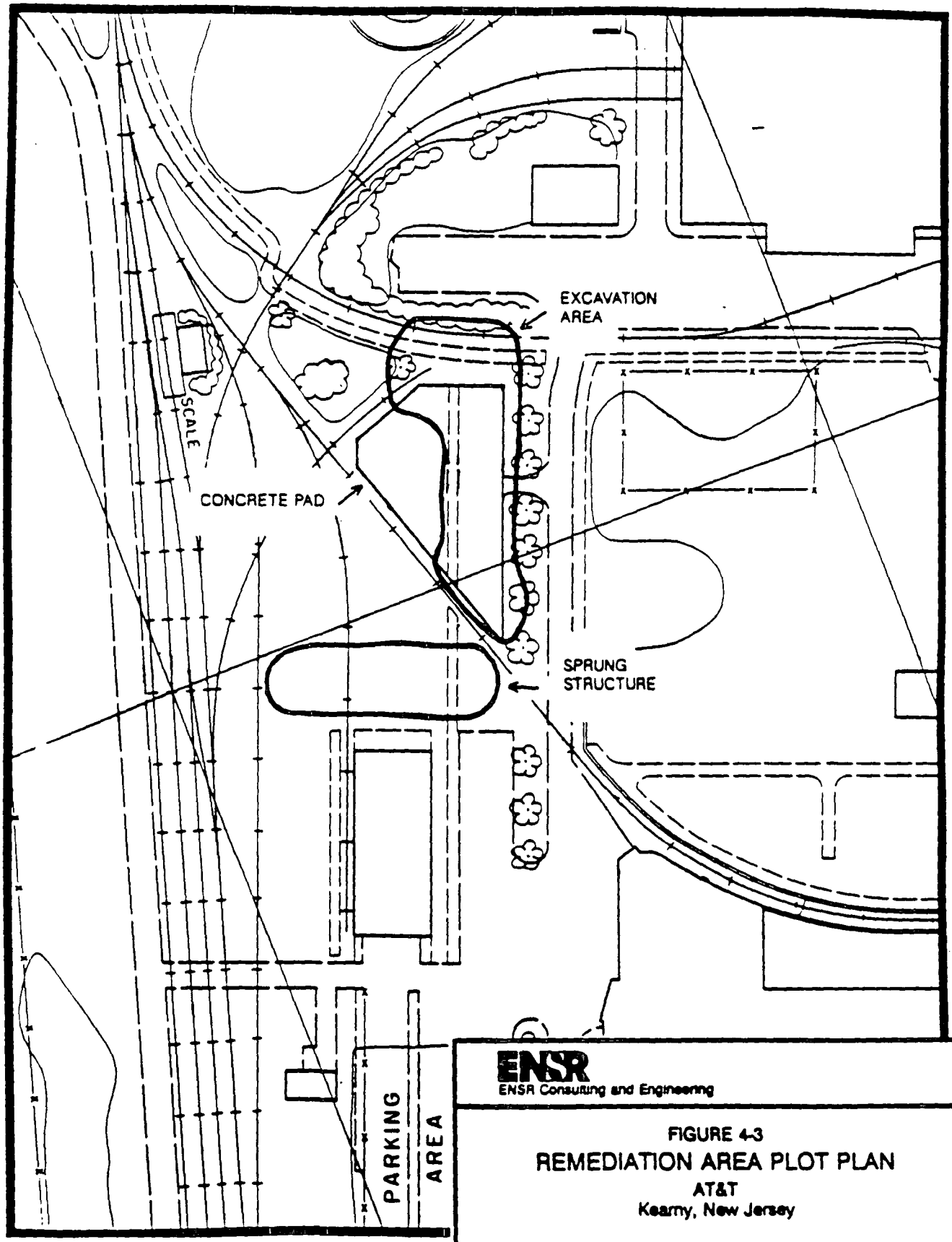

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FIGURE 4-3
REMEDIATION AREA PLOT PLAN
AT&T
Kearny, New Jersey

DRAWN:	DATE: February 5, 1993	PROJECT NO.:	REV:
FILE NO.:	CHECKED:	0550-263-400	0

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Figure 2-5 shows that surface soil concentrations of tetrachloroethylene (PCE) above the proposed non-residential cleanup standard (37 ppm) are limited to the north and west sides of the concrete pad area. One sample in this area (E-6) contained 5,500 ppm of PCE. These results correspond to field observations made during the sampling effort, which indicated a strong solvent odor during the installation of borings in this portion of the pad area. The areal extent of surface soils above the residential cleanup standard is slightly larger, primarily in the northwest corner of the pad and at a small location on the east side of the pad. As shown on Figure 2-6, all but three of the subsurface soil samples exceeded the proposed subsurface soil cleanup standards for PCE.

The surface soil and subsurface soil isopleth maps for 1,1,1-trichloroethane (TCA) are presented in Figures 2-7 and 2-8. Only one of the soil samples (E-6) exceeded the proposed residential surface soil cleanup standard for TCA. Non-residential surface cleanup standards and the subsurface standard for TCA were not exceeded.

Figure 2-9 shows that three surface soil samples exceeded the proposed non-residential cleanup standard for trichloroethene (TCE). The area exceeding the residential cleanup standard is slightly larger. Most of the subsurface samples exceeded the proposed cleanup standards for TCE (see Figure 2-10).

Figure 2-11 shows the approximate areas in the Former Drum Storage Pad Area that exceed NJDEPE proposed cleanup standards. Note that this area corresponds to soil samples above subsurface standards. Since the subsurface standards are more stringent for the contaminant of concern, the use of residential or non-residential surface standards has no effect on the area requiring remediation. In this case, the subsurface soil standards apply from the surface down to the water table and will be used to determine the extent of soil requiring remediation. Soil located beneath the southern portion of the concrete pad has not been observed to exceed the proposed cleanup standards.

FORMER AT&T KEARNY WORKS

SUMMARY PRESENTATION OF HISTORICAL DATA

Background

During 1984 and 1985 AT&T conducted an ECRA investigation of potential soil and groundwater contamination at the former Kearny Works in Kearny, New Jersey. This work, which was conducted in accordance with work plans approved by the NJDEPE, involved the sampling and analysis of soils from across the entire site. Sampling was conducted using both hand augers and hollow-stem augers (during installation of monitoring wells). Based on the results of this sampling, in July 1985, NJDEPE approved an Amended Environmental Cleanup Plan (AECP) which specified the excavation and off-site disposal of contaminated soils from various areas around the site. The excavations were backfilled with clean fill meeting the cleanup criteria specified by NJDEPE. The general areas of excavation are shown in the attached Figure 1 (see pocket) from the AECP.

As part of the excavation, most of the soils in the areas where samples were taken were removed from the site. However, samples from "clean" areas remained on site. Also, a limited number of confirmatory samples were taken as part of the excavation. Consequently, these sample data are available.

On June 26, 1987, NJDEPE submitted a letter to AT&T stating that the soil cleanup addressed by the AECP was approved as complete. At that time, NJDEPE stated that the only area requiring additional remediation was the groundwater in the area of the former drum storage pad. A copy of the June 26 letter is provided in Appendix A.

In 1991, additional soil sampling was conducted in the vicinity of the concrete pad shown as the boxed area on Figure 2 (see pocket).

Data Tables

Historical site data are presented in this document in two sections. Section 1 contains a summary of analytical data from **excavated areas**. For each sample location within an excavated area (see Figure 1), data have been tabulated for the deepest sample collected, unless samples were collected deeper than the base of the excavation. Data for samples collected below the base of the excavation are presented in Section 2.

The data tables presented in Section 2 contain sample results from **unexcavated areas** (including samples below excavated areas) and confirmatory sampling. These data are divided into three subsections:

- Pre-cleanup delineation sampling - samples collected in 1984 and 1985 for preparation of the AECP.
- Soil boring samples associated with installation of monitoring wells.
- Soil samples collected in the vicinity of the concrete pad in 1991.

Data presented on the tables contained in Section 2 have been compared to residential and non-residential, surface and subsurface standards. These standards were proposed by NJDEPE on February 3, 1992. A copy of the NJDEPE proposal is provided in Appendix B.

The NJDEPE has recently announced that it will not adopt the proposed soil cleanup standards. However, it is our understanding that at this time NJDEPE will continue to use a modified version of the proposed standards as guidelines. For purposes of this document, the standards proposed in February 1992 have been used as the basis for comparison of the data.

The cleanup standards as proposed by NJDEPE did not include subsurface standards for metals and various other parameters. Therefore, no comparison of subsurface metals data was made.

In general, in situations where the soil sample interval included soils both above and below the two foot depth (which distinguishes surface soil from subsurface soil), the data were compared to surface soil standards. An exception to this categorization was made in the case of volatile organics. For volatile organic compounds, the proposed subsurface standards are more stringent than the surface standards. Therefore, volatile organic sample intervals containing both surface and subsurface soil were compared to subsurface standards.

Each sample presented in Section 1 and in the first subsection of Section 2 has been numbered according to the area from which it was collected. For example, sample numbers 1A, 1-2-A, and 1-9-X would all represent samples collected in Area 1. The excavated areas shown on Figure 1 are identified by the area number.

For data in both Section 1 and Section 2, values followed by a "U" qualifier represent parameters that were not detected. For example, a value of 5U indicates that the parameter was not detected at a detection limit of 5 ppm. Blank spaces indicate that no data were available for the associated parameter. Detected values are followed by an indication of whether the concentration was above, below, or equal to the associated proposed standard. All values are presented in ppm.

Data Summary

Figure 2 (see pocket) has been prepared as a summary of data contained in Section 2. This figure shows sample locations where measured analytical data exceed the proposed cleanup standards.

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	1-1-B	1-2-B	1-3-B	1-4-B	1-5-B	1-6-B
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	200	530	110	59	70	700
Cadmium	0.33	0.25U	0.52	0.37	-0.74	0.25U
Chromium	74	150	68	64	76	320
Copper	240	220	180	150	140	250
Lead	250	600	290	190	190	630
Selenium	3	1.4U	1.4U	1.2U	1.2U	1.3U
Miscellaneous Parameters						
Cyanide	2.6					

Sample ID:	1-7-B	1-8-B	1-9-B	1-10-X	1-11-X	1-12-X
Sample Depth (in.):	0	0	0 (DUP)	0	0	0
Metals						
Arsenic	* 510	110	110	140	42	18
Cadmium	0.38	0.36	0.42			
Chromium	160	75	60	* 1500	160	250
Copper	280	150	250	200	111	160
Lead	590	220	200	680	300	380
Nickel				170	61	35
Selenium	1.4U	1.3U	1.2U			
Zinc				560	200	92

Sample ID:	1-13-X	1-14-X	1-15-X	1-17-X	1-18-X
Sample Depth (in.):	0	0	0	0	0
Metals					
Arsenic	* 24	15	66	51	23
Chromium	* 45	200	1000	1100	170
Copper	97	120	560	620	110
Lead	* 270	310	780	790	510
Nickel	23	77	77	74	41
Zinc	90	380	240	260	94

AS
Cr

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	2-1-X	2-2-X	2-2-X	2-3-X	2-4-X
Sample Depth (in.):	0	0	0 (DUP)	0	0
Metals					
Arsenic	* 16	46	45	22	26
Chromium	* 220	660	620	180	190
Copper	130	600	600	580	270
Lead	* 180	730	760	530	330
Nickel	31	92	100	240	70
Zinc	77	380	440	1200	120

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Summary of Data for Excavated Areas
Data in ppm

Sample ID:	3-1-X	3-2-X	3-3-X	3-4-X	3-5-X
Sample Depth (in.):	0	0	0	0	0
Metals					
Arsenic	23	21	22	6.7	15
Chromium	120	58	280	1400	50
Copper	270	230	220	140	200
Lead	610	430	300	130	270
Nickel	100	100	120	190	29
Zinc	170	96	380	240	160

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Summary of Data for Excavated Areas
Data in ppm

Sample ID:	4A	4-5-Z	4-6-Z	4-7-Z	
Sample Depth (in.):	12-36	36	36	36	
Volatile Organics					
Chloromethane		0.6U	0.6U	2U	
Bromomethane		0.6U	0.6U	2U	
Vinyl Chloride		0.6U	0.6U	2U	
Chloroethane		0.6U	0.6U	2U	
Methylene Chloride	0.017	0.6U	0.6U	2U	10
Trichlorofluoromethane		0.6U	0.6U	2U	
1,1-Dichloroethylene		0.6U	0.6U	2U	
1,1-Dichloroethane		0.6U	0.6U	2U	
Trans-1,2-dichloroethylene	0.042	0.6U	0.6U	2U	
Chloroform	0.038	0.6U	0.6U	3.2	* 50
1,2-Dichloroethane		0.6U	0.6U	2U	
1,1,1-Trichloroethane	0.013	3U	3U	16	* 50
Carbon Tetrachloride	0.01	0.6U	0.6U	2U	1
Bromodichloromethane		0.6U	0.6U	2U	
1,1-Dichloropropane		0.6U	0.6U	2U	
Trans-1,3-dichloropropene		0.6U	0.6U	2U	
Trichloroethylene	1.83	0.6U	0.6U	2U	
Dibromochloromethane		0.6U	0.6U	2U	
Cis-1,3-dichloropropene		0.6U	0.6U	2U	
1,1,2-Trichloroethane		0.6U	0.6U	2U	
Benzene		0.6U	1.4	2U	* 1
1-Chloroethyl-vinyl ether		0.6U	0.6U	2U	
Bromoform		0.6U	0.6U	2U	
Tetrachloroethene	0.6	0.6U	0.6U	2U	
1,1,2,2-Tetrachloroethane		0.6U	0.6U	2U	
Toluene		0.6U	1.2	2U	500
Chlorobenzene		0.6U	0.6U	2U	
Ethylbenzene		0.6U	0.6U	3.9	< 100

cis

932630351

Summary of Data for Excavated Areas
Data in ppm

Sample ID:		4A	4-1-A	4-1-A	4-2-A	4-3-B	4-4-A
Sample Depth (in.):		12-36	12-36	12-36 (DUP)	12-36	0	12-36
Metals							
Antimony	14	2.9U					
Arsenic		8.7	26	22	20	67	28
Barium	700	140U					
Beryllium	1	14U					
Cadmium	1		0.25U	0.25U	0.52	4.1	0.25U
Chromium	10/500	100	400	220	85	6300	58
Copper	1000	35	68	67	88	380	300
Lead	100	41	59	91	91	780	110
Mercury	19/270	1.5					
Nickel	240	20					
Selenium	10/1000	2.9U	1.2U	1.2U	2.2	1.1U	1.8U
Silver	10	14U					
Thallium	2	140U					
Zinc		49					
Miscellaneous Parameters							
Cyanide			13	5.3	2.7	2.2	410

Sample ID:	4-5-Z	4-5-Z	4-6-Z	4-7-Z
Sample Depth (in.):	36	36 (DUP)	36	36
Metals				
Arsenic	7.2	7.9	9.2	7.9
Chromium	15	21	17	37
Copper	38	56	23	18
Lead	120	120	0.25U	25U
Nickel	27	32	12U	13
Zinc	50	820	160	160

932630352

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	GA-1-A	GA-2-A	GA-3-A	GA-4-A	GA-5-B	GA-5-B
Sample Depth (in.):	12-36	12-36	12-36	12-36	0	0 (DUP)
Metals						
Arsenic	30	16	34	42	19	27
Cadmium	0.25U	0.37	0.55	0.5	2.5	2.6
Chromium	3200	470	110	860	13000	8000
Copper	95	57	110	89	180	190
Lead	460	84	150	160	330	400
Selenium	4.6	3	3.9	2.6	1.4U	1.5U
Miscellaneous Parameters						
Cyanide	4.1U	2.7U	2.2U	2.2	2.4	10

Sample ID:	GA-6-A	GA-7-A
Sample Depth (in.):	12-36	12-36
Metals		
Arsenic	8.5	21
Cadmium	0.25U	0.92U
Chromium	140	440
Copper	36	74
Lead	47	130
Selenium	2.7	7.1
Miscellaneous Parameters		
Cyanide	13	12

932630353

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	5A	5-8-Z	5-8-Z	5-9-Z	
Sample Depth (in.):	12-36	36	36 (DUP)	36	
Volatile Organics					
Chloromethane		0.6U	2U	2U	
Bromomethane		0.6U	2U	2U	
Vinyl Chloride		0.6U	2U	2U	
Chloroethane		0.6U	2U	2U	
Methylene Chloride	0.034	0.6U	2U	4.6	
Trichlorofluoromethane		0.6U	2U	2U	
1,1-Dichloroethylene	0.007	0.6U	2U	2U	
1,1-Dichloroethane	0.006	0.6U	2U	2U	
Trans-1,2-dichloroethylene	0.061	0.6U	2U	2U	
Chloroform	0.02	0.6U	2U	2U	
1,2-Dichloroethane		0.6U	2U	2U	
1,1,1-Trichloroethane	0.143	3U	5U	5.5	*
Carbon Tetrachloride		0.6U	2U	2U	
Bromodichloromethane		0.6U	2U	2U	
1,1-Dichloropropane		0.6U	2U	2U	
Trans-1,3-dichloropropene		0.6U	2U	2U	
Trichloroethylene	2.96	5	4.4	7.4	* 1 ppm STD
Dibromochloromethane		0.6U	2U	2U	
Cis-1,3-dichloropropene		0.6U	2U	2U	
1,1,2-Trichloroethane		0.6U	2U	2U	
Benzene		1.1	2U	2U	
1-Chloroethyl-vinyl ether		0.6U	2U	2U	
Bromoform		0.6U	2U	2U	
Tetrachloroethene	1.5	0.6U	2U	12	* 1 ppm
1,1,2,2-Tetrachloroethane		0.63	2U	2U	
Toluene		3.4	2U	2U	
Chlorobenzene		0.6U	2U	2U	
Ethylbenzene		0.6U	2U	4	100

932630354

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	5A	5-1-A	5-2-A	5-3-A	5-4-A	5-5-A
Sample Depth (in.):	12-36	12-36	12-36	12-36	12-36	12-36
Metals						
Antimony	2.7U					
Arsenic	* 8.7	13	130	1200	590	13
Barium	140U					
Beryllium	* 14U					
Cadmium		0.25U	0.25U	0.37	0.36	0.25U
Chromium	49	19	21	14	25	18
Copper	100	39	43	99	71	68
Lead	* 54	83	150	640	280	110
Mercury	0.81					
Nickel	46					
Selenium	2.7U	1.4U	1.8U	7.3	1.4U	1.5U
Silver	14U					
Thallium	* 140U					
Zinc	520					
Miscellaneous Parameters						
Cyanide			110	12	2.3U	2U

Sample ID:	5-6-A	5-7-A	5-8-Z	5-9-Z
Sample Depth (in.):	12-36	12-36	36	36
Metals				
Arsenic	* 28	200	33	7.7
Cadmium	0.25U	0.25U		
Chromium	* 19	580	17	13
Copper	54	36	45	38
Lead	38	33	25U	25U
Nickel			28	15
Selenium	1.6U	1.4U		
Zinc			470	130
Miscellaneous Parameters				
Cyanide	2.2U	2.1U		

932630355

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	6A	6-8-Z
Sample Depth (in.):	12-36	36
Volatile Organics		
Chloromethane		3U
Bromomethane		3U
Vinyl Chloride		3U
Chloroethane		3U
Methylene Chloride	26	3U
Trichlorofluoromethane		3U
1,1-Dichloroethylene	0.76	3U
1,1-Dichloroethane	0.59	3U
Trans-1,2-dichloroethylene	25	3U
Chloroform	0.32	3U
1,2-Dichloroethane		3U
1,1,1-Trichloroethane	18	9.5
Carbon Tetrachloride		280
Bromodichloromethane	0.38	3U
1,1-Dichloropropane		3U
Trans-1,3-dichloropropene		3U
Trichloroethylene		230
Dibromochloromethane		3U
Cis-1,3-dichloropropene		3U
1,1,2-Trichloroethane		3U
Benzene	0.18	3U
1-Chloroethyl-vinyl ether		3U
Bromoform		3U
Tetrachloroethene		150
1,1,2,2-Tetrachloroethane		8.7
Toluene	39	3U
Chlorobenzene		3U
Ethylbenzene	3.2	3U

Summary of Data for Excavated Areas
Data in ppm

Sample ID:		6A	6-1-A	6-2-A	6-3-A	6-4-A	6-5-A
Sample Depth (in.):		12-36	12-36	12-36	12-36	12-36	12-36
Metals							
Antimony	14	6.2U					
Arsenic	2	29	120	20	28	11	7.2
Barium	70	120U					
Beryllium	1	12U					
Cadmium	1/100		0.25U	0.25U	0.64	2.2	8.1
Chromium	10/500	52	24	22	54	16	19
Copper	600	90	98	84	170	320	120
Lead	100/500	120	200	81	210	150	100
Mercury	14	0.58					
Nickel	[illegible]	25U					
Selenium	-	2.5U	1.8	1.6U	1.1U	1.6U	1.3U
Silver	100	12U					
Thallium	2	120U					
Zinc		920					
Miscellaneous Parameters							
Cyanide		54	2.6U	2.8U	1.8	2U	1.7U

Sample ID:	6-6-A	6-7-A	6-8-Z
Sample Depth (in.):	12-36	12-36	36
Metals			
Arsenic	35	12	27
Cadmium	0.25U	0.25U	
Chromium	26	15	17
Copper	52	32	42
Lead	170	56	25U
Nickel			34
Selenium	1.4U	1.4U	
Zinc			420
Miscellaneous Parameters			
Cyanide	1.3U	1.9U	

932630357

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	7-1-X	7-2-X
Sample Depth (in.):	0	0
Metals		
Arsenic	47	34
Chromium	250	
Copper		190
Lead	540	180

932630358

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	8A	8-5-Z
Sample Depth (in.):	12-36	36
Metals		
Antimony	3.4	
Arsenic	7.6	
Barium	240	
Beryllium	14U	
Cadmium	0.25U	
Chromium	28U	
Copper	90	450
Lead	360	150
Mercury	0.35	
Nickel	28	
Selenium	2.8U	
Silver	14U	
Thallium	140U	
Zinc	87	

932630359

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	11A	11-2-A	11-3-A	11-4	11-4	11-10
Sample Depth (in.):	12-36	12-36	12-36	48-72	48-72 (DUP)	0-6
Miscellaneous Paramaters						
PCBs				1.5	1U	85
TPHC	5500	10300	11400		–	

Sample ID:	11-11	11-18	11-19	11-20	11-21
Sample Depth (in.):	120-132	48-72	84-96	132-144	132-144
Miscellaneous Paramaters					
PCBs	5U	5.5	6.2	5U	5U

932630360

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	14-1-A	14-2-A	14-3-A	14-4-A	14-5-A	14-6-A
Sample Depth (in.):	12-36	12-36	12-36	12-36	12-36	12-36
Metals						
Arsenic	35	17	15	8.4	5.8	14
Cadmium	0.25U	0.35	0.5	2	0.28	0.25U
Chromium	38	27	34	38	25	40
Copper	87	88	45	79	53	53
Lead	110	93	160	110	130	80
Selenium	1.3U	1.3U	1.4U	1.3U	1.3U	1.3U
Miscellaneous Paramaters						
TPHC	5U	42	26	56	5U	5U

Sample ID:	14-7-A	14-9-A
Sample Depth (in.):	12-36	12-36
Metals		
Arsenic	23	16
Cadmium	0.25U	0.38
Chromium	19	36
Copper	77	58
Lead	190	150
Selenium	1.3U	1.3U
Miscellaneous Paramaters		
TPHC	5U	180

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	15A	15-5-Z	15-6-Z	15-7-Z	15-8-Z
Sample Depth (in.):	12-36	36	36	36	36
Volatile Organics					
Chloromethane		0.6U	0.6U	0.6U	0.6U
Bromomethane		0.6U	0.6U	0.6U	0.6U
Vinyl Chloride		0.6U	0.6U	0.6U	0.6U
Chloroethane		0.6U	0.6U	0.6U	0.6U
Methylene Chloride		0.6U	0.6U	0.6U	0.6U
Trichlorofluoromethane		0.6U	0.6U	0.6U	0.6U
1,1-Dichloroethylene		0.6U	0.6U	0.6U	0.6U
1,1-Dichloroethane		0.6U	0.6U	0.6U	0.6U
Trans-1,2-dichloroethylene		0.6U	0.6U	0.6U	0.6U
Chloroform		0.6U	0.6U	0.6U	0.6U
1,2-Dichloroethane		0.6U	0.6U	0.6U	0.6U
1,1,1-Trichloroethane		3U	3U	3U	3U
Carbon Tetrachloride		0.6U	0.6U	0.6U	0.6U
Bromodichloromethane		0.6U	0.6U	0.6U	0.6U
1,1-Dichloropropane		0.6U	0.6U	0.6U	0.6U
Trans-1,3-dichloropropene		0.6U	0.6U	0.6U	0.6U
Trichloroethylene		0.6U	0.6U	0.6U	0.6U
Dibromochloromethane		0.6U	0.6U	0.6U	0.6U
Cis-1,3-dichloropropene		0.6U	0.6U	0.6U	0.6U
1,1,2-Trichloroethane		0.6U	0.6U	0.6U	0.6U
Benzene	1.6	0.6U	0.6U	0.6U	0.6U
1-Chloroethyl-vinyl ether		0.6U	0.6U	0.6U	0.6U
Bromoform		0.6U	0.6U	0.6U	0.6U
Tetrachloroethene		0.6U	0.6U	0.6U	0.6U
1,1,2,2-Tetrachloroethane		0.6U	0.6U	0.6U	0.6U
Toluene	0.65	0.6U	0.6U	0.6U	0.6U
Chlorobenzene		0.6U	0.6U	0.6U	0.6U
Ethylbenzene		0.6U	0.6U	0.6U	1.1

Sample ID:	15A	15-1-A	15-2-A	15-3-A	15-5-Z
Sample Depth (in.):	12-36	12-36	12-36	12-36	36
Miscellaneous Paramaters					
TPHC	110	36	11	30	8200

Sample ID:	15-6-Z	15-7-Z	15-8-Z
Sample Depth (in.):	36	36	36
Miscellaneous Paramaters			
TPHC	1100	100	290

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	16A	16-9-Z	16-10-Z
Sample Depth (in.):	12-36	36	36
Volatile Organics			
Chloromethane		0.6U	0.6U
Bromomethane		0.6U	0.6U
Vinyl Chloride	0.61	0.6U	0.6U
Chloroethane		0.6U	0.6U
Methylene Chloride		0.7	0.6U
Trichlorofluoromethane		0.6U	0.6U
1,1-Dichloroethylene	0.71	0.6U	0.6U
1,1-Dichloroethane		0.6U	0.6U
Trans-1,2-dichloroethylene	39	0.6U	0.6U
Chloroform		0.6U	0.6U
1,2-Dichloroethane *	193	0.6U	0.6U
1,1,1-Trichloroethane	0.37	3U	3U
Carbon Tetrachloride		0.6U	0.65
Bromodichloromethane		0.6U	0.6U
1,1-Dichloropropane		0.6U	0.6U
Trans-1,3-dichloropropene		0.6U	0.6U
Trichloroethylene		0.6U	14
Dibromochloromethane		0.6U	0.6U
Cis-1,3-dichloropropene		0.6U	0.6U
1,1,2-Trichloroethane		0.6U	0.6U
Benzene	0.54	0.6U	0.6U
1-Chloroethyl-vinyl ether		0.6U	0.6U
Bromoform		0.6U	0.6U
Tetrachloroethene		0.6U	1.5
1,1,2,2-Tetrachloroethane		0.6U	0.6U
Toluene		0.6U	2.3
Chlorobenzene	0.27	0.6U	0.6U
Ethylbenzene	0.2	0.6U	0.6U

500

932630363

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	16A	16-1-A	16-2-A	16-3-A	16-4-A	16-5-A
Sample Depth (in.):	12-36	12-36	12-36	12-36	12-36	12-36
Metals						
Antimony	2.7U					
Arsenic	12	10	57	28	28	63
Barium	910					
Beryllium	14U					
Cadmium	14U	0.25U	2.3	1.3	0.25U	1.5
Chromium	1160	500	630	590	1200	730
Copper	220	78	360	2300	86	85
Lead	380	200	1000	3000	180	300
Mercury	0.85					
Nickel	170					
Selenium	26	2.4	1.2U	1.3U	1.4U	1.4U
Silver	14U					
Thallium	140U					
Zinc	390					

Sample ID:	16-6-A	16-7-A	16-8-A	16-9-Z	16-10-Z
Sample Depth (in.):	12-36	12-36	12-36	36	36
Metals					
Arsenic	33	24	10		9.6
Cadmium	0.8	2.4	0.25U		
Chromium	160	9000	1300	110	31
Copper	94	140	120	74	120
Lead	65	170	120	55	180
Nickel				34	29
Selenium	12	2.4	1.4U		
Zinc				200	120

932630364

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	17A	17-1-Z	17-2-Z	17-2-Z
Sample Depth (in.):	12-36	36	36	36 (DUP)
Volatile Organics				
Chloromethane		0.6U	0.6U	0.6U
Bromomethane		0.6U	0.6U	0.6U
Vinyl Chloride		0.6U	0.6U	0.6U
Chloroethane		0.6U	0.6U	0.6U
Methylene Chloride		0.9	0.6U	0.69
Trichlorofluoromethane		0.6U	0.6U	0.6U
1,1-Dichloroethylene		0.6U	0.6U	0.6U
1,1-Dichloroethane		0.6U	0.6U	0.6U
Trans-1,2-dichloroethylene		0.6U	0.6U	0.6U
Chloroform		0.6U	0.69	0.6U
1,2-Dichloroethane		0.6U	0.6U	0.6U
1,1,1-Trichloroethane		3U	6.5	5.5
Carbon Tetrachloride		0.6U	1	0.94
Bromodichloromethane		0.6U	0.6U	0.6U
1,1-Dichloropropane		0.6U	0.6U	0.6U
Trans-1,3-dichloropropene		0.6U	0.6U	0.6U
Trichloroethylene		0.6U	0.63	0.6U
Dibromochloromethane		0.6U	0.6U	0.6U
Cis-1,3-dichloropropene		0.6U	0.6U	0.6U
1,1,2-Trichloroethane		0.6U	0.6U	0.6U
Benzene		0.6U	0.6U	0.6U
1-Chloroethyl-vinyl ether		0.6U	0.6U	0.6U
Bromoform		0.6U	0.6U	0.6U
Tetrachloroethene		0.6U	27	19
1,1,2,2-Tetrachloroethane		0.6U	1.6	0.6U
Toluene		1.9	2.6	1.8
Chlorobenzene		0.6U	0.6U	0.6U
Ethylbenzene		0.6U	0.68	0.6U
Metals				
Antimony	6.2U			
Arsenic	4.2	7	17	
Barium	120U			
Beryllium	12U			
Cadmium	0.25U			
Chromium	25U	19	140	
Copper	88	38	410	
Lead	25U	73	170	
Mercury	0.13			
Nickel	25U	14	83	
Selenium	2.5U			
Silver	12U			
Thallium	120U			
Zinc	48	62	430	

932630365

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	21A	21B	21-1-A	21-2-A	21-3-A	21-6-A
Sample Depth (in.):	12-36	0	24-36	24-36	24-36	24-36
Volatile Organics						
Methylene Chloride		0.031				
1,1,1-Trichloroethane		0.008			–	
Metals						
Antimony	6.2U					
Arsenic	10					
Barium	120U					
Beryllium	12U					
Chromium	50					
Copper	55					
Lead	250					
Mercury	0.1					
Nickel	25U					
Selenium	2.5U					
Silver	12U					
Thallium	120U					
Zinc	130					
Miscellaneous Paramaters						
Cyanide	12U					
PCBs	1.1		2.3	1.6	1U	2.5

Sample ID:	21-7-Z	21-8-X	21-9-X	21-10-Z
Sample Depth (in.):	36	0	0	36
Metals				
Copper		38		
Lead	490		50	96
Nickel		100		
Zinc	350		140	300
Miscellaneous Paramaters				
Cyanide	U	1.7	U	U

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	22B	22-10-X	22-11-X	22-12-Z
Sample Depth (in.):	0	0	0	36
Volatile Organics				
Methylene Chloride	0.013			
Chloroform	0.018			
Metals				
Antimony	6.2U			
Arsenic	12			
Barium	200			
Beryllium	12U			
Chromium	50			
Copper	78			
Lead	410	65	51	150
Mercury	0.12			
Nickel	38			
Selenium	2.5U			
Silver	12U			
Thallium	120U			
Zinc	350	160	120	400

Sample ID:	22B	22-1-A	22-2-A	22-3-A	22-4-A	22-5-A
Sample Depth (in.):	0	24-36	24-36	24-36	24-36	24-36
Miscellaneous Paramaters						
Cyanide	12U					
PCBs	21	19.8	2.9	9.6	5.8	5.4

Sample ID:	22-6-A	22-7-B	22-7-B	22-8-B	22-9-A
Sample Depth (in.):	24-36	0	0 (DUP)	0	24-36
Miscellaneous Paramaters					
PCBs	10U	2.7	4.4	16.5	10U

Sample ID:	22-10-X	22-11-X	22-12-Z
Sample Depth (in.):	0	0	36
Miscellaneous Paramaters			
PCBs	U	U	1.3

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	25A	25-1-Y	25-2-Y	25-3-X
Sample Depth (in.):	12-36	12-36	12-36	0
Metals				
Antimony	6.2U			
Arsenic	5			
Barium	120U			
Beryllium	12U			
Chromium	25U			
Copper	150			
Lead	88	460	130	
Mercury	0.44			
Nickel	25U			
Selenium	2.5U			
Silver	12U			
Thallium	120U			
Zinc	750	100	310	350
Miscellaneous Parameters				
Cyanide	12U			

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	26A
Sample Depth (in.):	12–36
Metals	
Antimony	2.9U
Arsenic	8.1
Barium	140U
Beryllium	14U
Chromium	1580
Copper	170
Lead	230
Mercury	0.81
Nickel	126
Selenium	2.9U
Silver	14U
Thallium	140U
Zinc	1370
Miscellaneous Parameters	
Cyanide	12U

Sample Depth (in.):	12-36
Metals	
Antimony	2.9U
Arsenic	8.1
Barium	140U
Beryllium	14U
Chromium	1580
Copper	170
Lead	230
Mercury	0.81
Nickel	126
Selenium	2.9U
Silver	14U
Thallium	140U
Zinc	1370
Miscellaneous Parameters	
Cyanide	12U

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	33A	33Z	33-1-B	33-2-B	33-3-B	33-4-B
Sample Depth (in.):	12-36	36	0	0	0	0
Metals						
Antimony	6.2U					
Arsenic	16	16	30	42	40	51
Barium	120U					
Beryllium	12U					
Cadmium			1	1.5	1.6	2
Chromium	110	150	5300	11000	8500	9900
Copper	65	140	490	730	620	740
Lead	98	240	880	1400	1100	1000
Mercury	0.58					
Nickel	48	56				
Selenium	2.5U		1.4U	1.4U	1.3U	11
Silver	12U					
Thallium	120U					
Zinc	100	200				
Miscellaneous Parameters						
Cyanide		U	160			

Sample ID:	33-5-B	33-6-B	33-7-B	33-8-B	33-9-Z	33-10-Z
Sample Depth (in.):	0	0	0	0	36	36
Metals						
Arsenic	26	35	54	40	15	6.1
Cadmium	2.8	1.6	1.2	1.8		
Chromium	19000	4800	8600	11000	74	1200
Copper	1200	430	620	750	210	120
Lead	1900	900	1100	1400	300	110
Nickel					51	280
Selenium	14	3.1	1.5	1.5U		
Zinc					220	520
Miscellaneous Parameters						
Cyanide					0.79	12

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Summary of Data for Excavated Areas
Data in ppm

Sample ID:	33-11-Z	33-12-Z	33-13-Z	33-14-Z
Sample Depth (in.):	36	36	36	36
Metals				
Arsenic	8.4	5.6	2.3	38
Chromium	17	22	13	200
Copper	58	67	U	2300
Lead	83	U	U	1900
Nickel	37	29	U	300
Zinc	130	62	U	13000
Miscellaneous Parameters				
Cyanide	1.2	U	U	U

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Summary of Data for Excavated Areas
Data in ppm

Sample ID:	34A	34-1-Z	34-2-Z	34-3-Z	34-4-Z	34-5-Z
Sample Depth (in.):	12-36	36	36	36	36	36
Metals						
Antimony	2.7U					
Arsenic	6	36	15	12	25	8.3
Barium	140U					
Beryllium	14U					
Chromium	27	280	180	180	5000	5800
Copper	36	1800	290	82	610	430
Lead	27U	1200	420	460	270	440
Mercury	0.13					
Nickel	19	220	82	32	1500	1400
Selenium	2.7U					
Silver	14U					
Thallium	140U					
Zinc	60	8600	690	140	4100	3500
Miscellaneous Parameters						
Cyanide		2.7	U	23	57	61

Sample ID:	34-6-Z	34-7-Z
Sample Depth (in.):	36	36
Metals		
Arsenic	4.4	5.2
Chromium	650	U
Copper	210	24
Lead	420	U
Nickel	240	20
Zinc	1300	150
Miscellaneous Parameters		
Cyanide	7.7	21

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	37-1-B	37-2-B	37-3-B	37-4-B	37-5-B	37-6-B
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	11	14	20	17	14	16
Cadmium	2.6	3.2	4.5	1.3	2.1	2.9
Chromium	310	370	5000	1900	480	290
Copper	220	201	150	130	80	120
Lead	220	250	340	200	160	1400
Selenium	0.98U	1.3U	1.6U	1.3U	1.4U	6.3
Miscellaneous Parameters						
Cyanide	34					

Sample ID:	37-7-B	37-8-B	37-9-B	37-10-B	37-10-B (DUP)	37-11-B
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	11	16	14	23	140	13
Cadmium	2.6	3	2.2	3.4	13U	2.6
Chromium	75	1500	1300	6300	5500	540
Copper	220	140	320	180	600	200
Lead	150	240U	280	290	330	240
Selenium	1.2U	1.3U	1.3U	1.4U	1.3U	1.3U

Sample ID:	37-12-B	37-13-B	37-13-B (DUP)
Sample Depth (in.):	0	0	0
Metals			
Arsenic	17	15	17
Cadmium	4.8	29	1.6
Chromium	3000	470	2700
Copper	270	230	240
Lead	330	300	440
Selenium	1.4U	1.2	1.9U

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	38-1-B	38-2-B	38-3-B	38-4-B	38-5-B	38-6-B
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	17	34	54	30	20	25
Cadmium	3.3	0.7	1.7	1.7	- 1.6	1.2
Chromium	1500	6300	7400	8300	3000	8200
Copper	350	110	170	530	220	130
Lead	270	210	340	240	240	280
Selenium	1.2U	1.2U	1.3U	1.5U	1.2U	1.4U
Miscellaneous Parameters						
Cyanide	100					

Sample ID:	38-7-B	38-8-B	38-9-B	38-10-B	38-11-B
Sample Depth (in.):	0	0	0	0	0
Metals					
Arsenic	12	82	28	44	21
Cadmium	0.5	0.83	1.9	2.6	4.1
Chromium	8200	9300	1100	5600	680
Copper	90	130	180	140	220
Lead	140	300	340	320	400
Selenium	1.4U	4.6	2	1.4U	2

Sample ID:	38-12-X	38-12-X
Sample Depth (in.):	0	0
Metals		
Arsenic	51	59
Chromium	480	1100
Copper	410	60
Lead	740	89
Nickel	140	92
Zinc	480	180
Miscellaneous Parameters		
Cyanide	3.1U	3.1

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	39-2-X	39-3-X	39-4-X	39-7-X	39-7-X
Sample Depth (in.):	0	0	0	0	0 (DUP)
Metals					
Chromium	200	210	88	110	91
Lead	350	250	260	300	280

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	44B	44-2-X
Sample Depth (in.):	0	0
Metals		
Arsenic	29	
Cadmium	2	
Chromium	770	160
Copper	130	
Lead	290	520
Nickel	110	
Selenium	1.3U	
Zinc	200	
Miscellaneous Paramaters		
Cyanide	2.5U	
TPHC	26	

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Summary of Data for Excavated Areas
Data in ppm

Sample ID:	45A	45-1-Z	45-6-Z	45-7-Z	45-9-Z
Sample Depth (in.):	12-36	36	36	36	36
Metals					
Arsenic	29				
Cadmium	0.78				–
Chromium	46				
Copper	68				
Lead	300	560	340	250	83
Nickel	47				
Selenium	1.3U				
Zinc	230				
Miscellaneous Paramaters					
Cyanide	2.5U				
TPHC	5.1				

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	47B	47-3-X	47-4-X	47-5-X	47-6-X	47-7-X
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	39					
Cadmium	0.58				–	
Chromium	120	120	240	120	91	110
Copper	66					
Lead	310	460	400	380	240	320
Nickel	50					
Selenium	1.3U					
Zinc	75					
Miscellaneous Paramaters						
Cyanide	2.5U					
TPHC	14					

Sample ID:	47-7-X	47-8-X
Sample Depth (in.):	0 (DUP)	0
Metals		
Chromium	83	250
Lead	260	450

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Remedial Proposal for Contaminated Soil at Former Drum Storage Pad ECRA Case No. 84025

ENSR Consulting and Engineering

February 1993

Document Number 0550-263-400(524)

Figures

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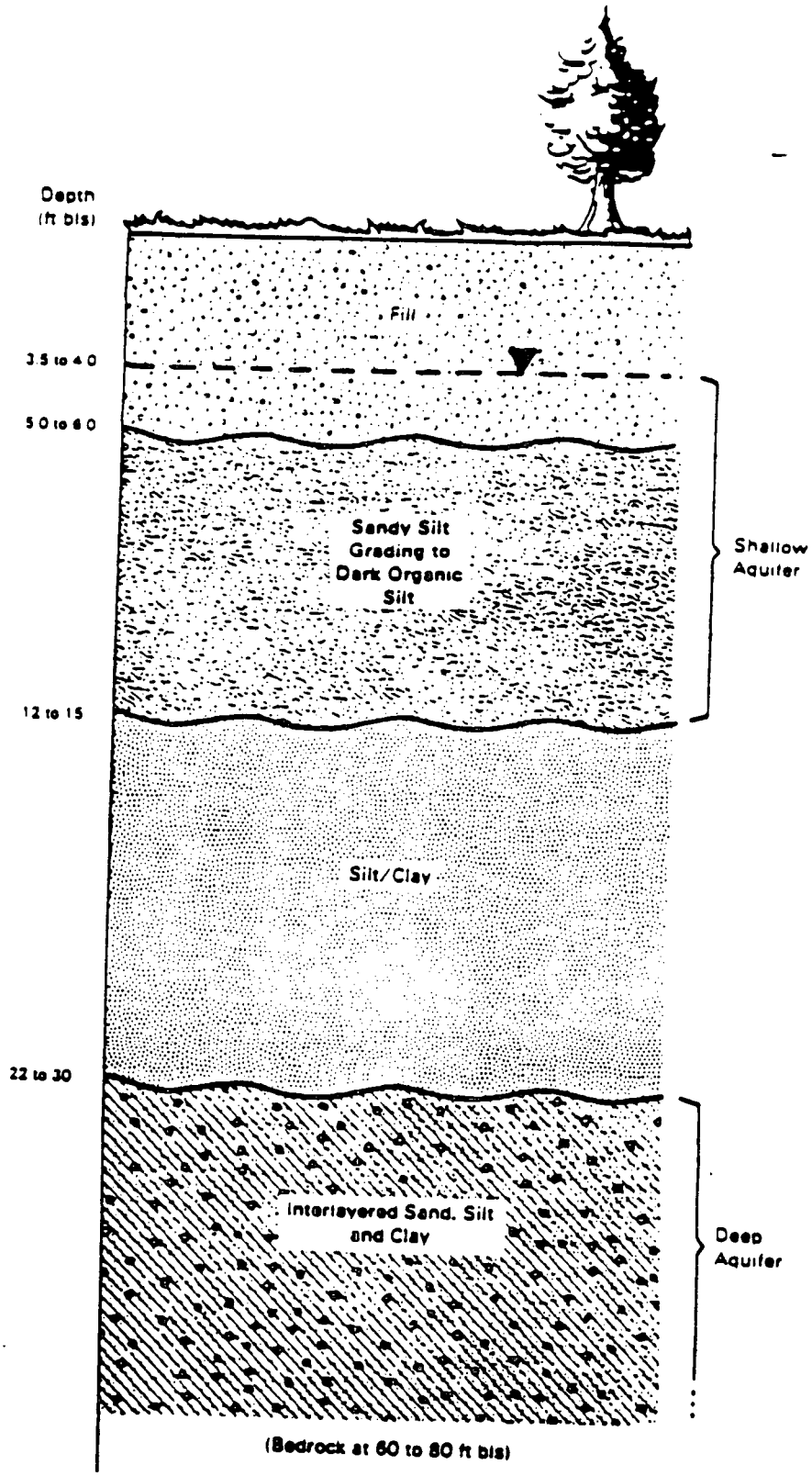

FIGURE 2-1
Hydrogologic Units in the Vicinity of Well ATT11

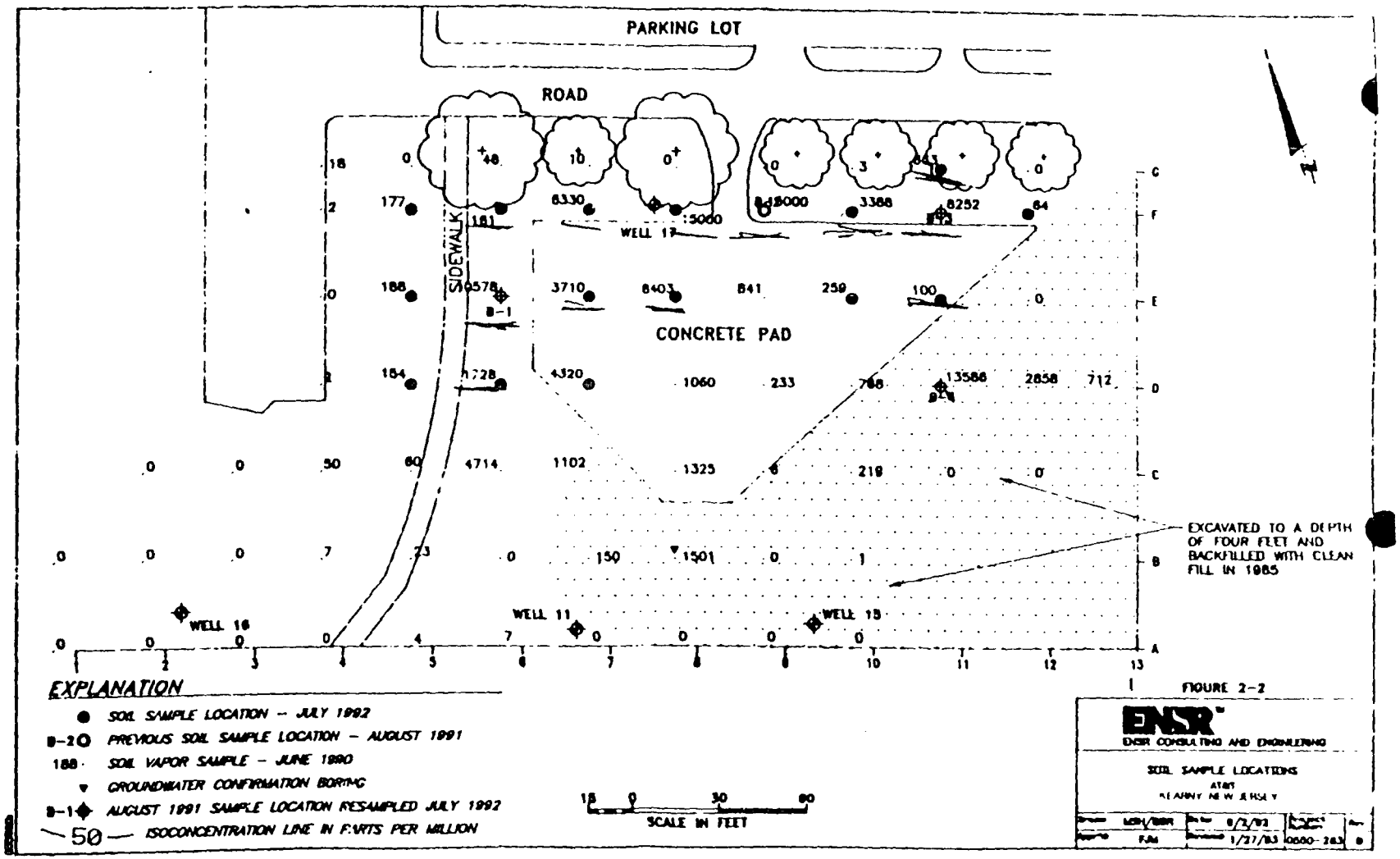

FIGURE 2-2

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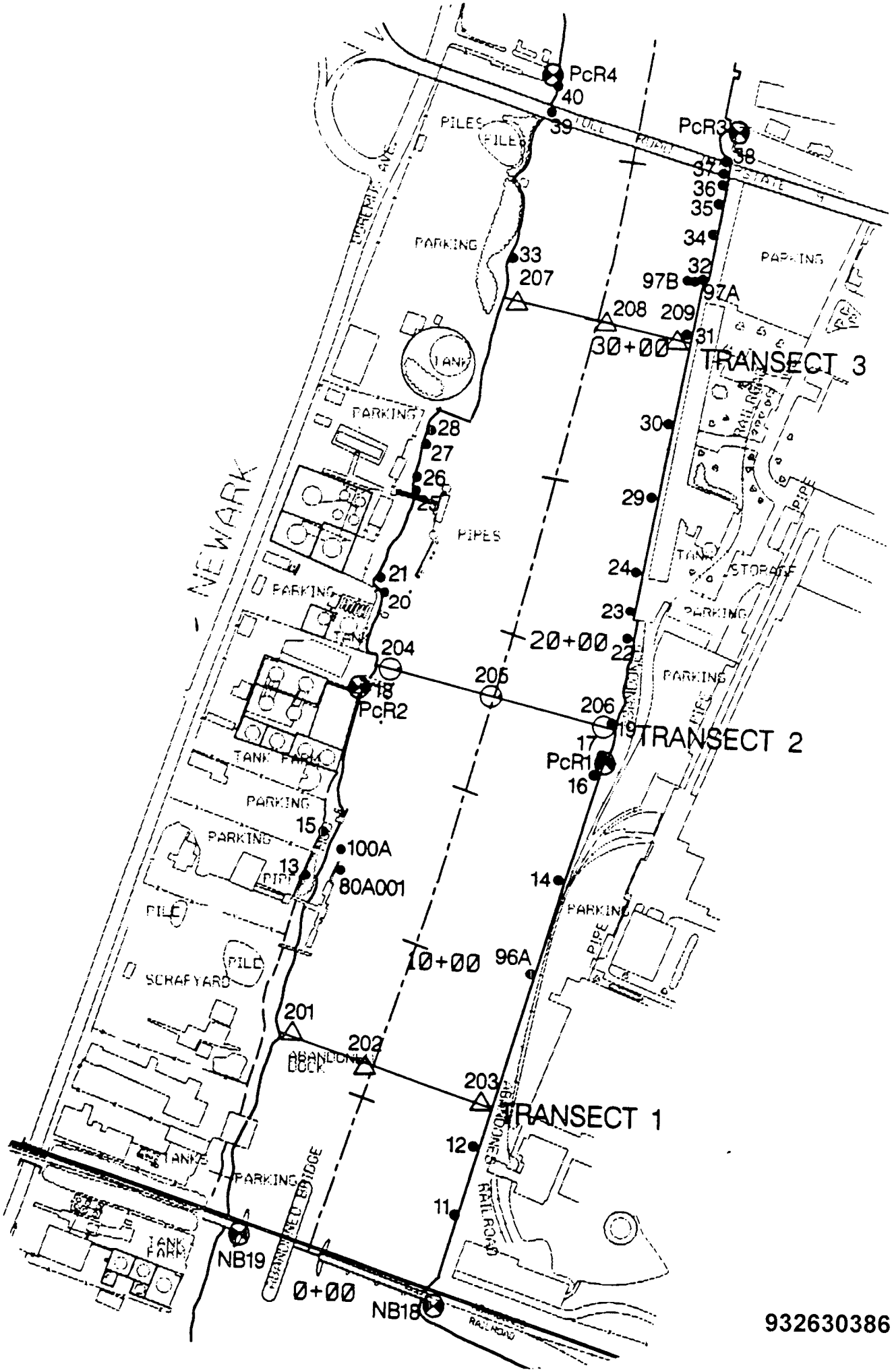
SEDIMENT CORE DATA - AT&T KEARNY FACILITY

Units are expressed as milligrams/kilogram (mg/kg)	Core 203	Core 206	Core 209	Core 201	Core 204	Core 207
Mercury:						
Mean - operating years	**13.3**	**16**	**11.7**	5	10.3	9.5
Mean - post-closure years	4.2	5.4	3.6	3.6	3.2	4.8
Lead:						
Mean - operating years	**525**	**638**	**623**	265	372	539
Mean - post-closure years	263	352	235	225	218	341
Copper:						
Mean - operating years	**474**	**572**	**475**	223	368	371
Mean - post-closure years	218	240	192	197	169	248
Zinc:						
Mean - operating years	**1145**	**1306**	**1059**	491	1115	956
Mean - post-closure years	490	605	430	449	390	675


PcR4
40
39
PILES
PILE
PcR3
38
37
36
35
34
32
97B
97A
PARKING
33
207
208
209
31
30+00
TRANSECT 3
TANK
PARKING
28
27
26
25
30
29
PIPES
NEWARK
21
20
24
23
22
20+00
204
205
206
19
18
PcR2
TRANSECT 2
17
PcR1
16
TANK FARM
15
100A
13
80A001
14
PILE
10+00
96A
SCRAPYARD
201
202
203
TRANSECT 1
12
11
TANKS
NB19
0+00
NB18
RAILROAD

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OVERSIZED MAP AVAILABLE UPON REQUEST

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AT&T

Kearny, New Jersey

ENSR

Remedial Proposal for Contaminated Soil at Former Drum Storage Pad ECRA Case No. 84025

ENSR Consulting and Engineering

February 1993

Document Number 0550-263-400(524)

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February 12, 1993

Mr. Nicholas Capuano
Corporate Environmental Engineering
AT&T
Room B2162
131 Morristown Road
Basking Ridge, New Jersey 07920

Re: Cleanup Plan Implementation Schedule
Former AT&T Kearny Works, Kearny, New Jersey
ECRA Case No. 84025

Dear Nick:

Enclosed are four copies of the Remedial Proposal for Contaminated Soil at Former Drum Storage Pad and three copies of the Cleanup Plan Implementation Schedule and the Summary of Historical Data. An additional copy of all documents will be sent to Alan Chesler.

The Remedial Proposal has incorporated comments from you and Mr. Angelo Basile. Most significantly, Mr. Basile indicated that reclassification of the aquifer should be considered which could potentially result in less stringent soil cleanup standards.

The Implementation Schedule is presented in two figures. Figure 1 is a recapitulation of all past soil cleanup activities conducted pursuant to the ECRA program at Kearny. Figure 2 is a schedule for proposed future remediation in the area of the concrete pad. This is the same schedule shown in the Remedial Proposal.

If you have any questions or concerns regarding these materials, please call.

Sincerely,

Stephen Byrne

for Frank Myerski
Project Manager

FM/gk

Reference No. (524)LETTER.FM

Enclosure

cc: B. Duvel
S. Byrne
D. Hessemer

0550-263-400

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AT&T

Kearny, New Jersey

Remedial Proposal for Contaminated Soil at Former Drum Storage Pad ECRA Case No. 84025

ENSR Consulting and Engineering

February 1993

Document Number 0550-263-400(524)

932630391

CONTENTS

1.0 INTRODUCTION 1-1

2.0 SITE DESCRIPTION 2-1
- 2.1 Site Geology 2-1
- 2.2 Previous Remedial Activities 2-1
- 2.3 Soil Characterization 2-4

3.0 REGULATORY CONSIDERATIONS 3-1
- 3.1 Target Cleanup Limits 3-1
- 3.2 Land Disposal Restrictions 3-2
- 3.3 Hazardous Debris Final Rule 3-2
- 3.4 RCRA Treatment Permit 3-3
- 3.5 Soil Reuse 3-4

4.0 PROPOSED REMEDIAL ACTION 4-1
- 4.1 Recommended Remedial Alternative 4-1
- 4.2 Debris Remediation 4-1
  - 4.2.1 Debris Sampling 4-1
  - 4.2.2 Concrete Remediation Design 4-2
- 4.3 Soil Remediation Using On-Site SVE 4-4
  - 4.3.1 Additional Soil Delineation Sampling 4-4
  - 4.3.2 Soil Remediation Design 4-5
    - 4.3.2.1 Treatment System Description and Layout 4-5
    - 4.3.2.2 Post-Excavation Sampling 4-10
    - 4.3.2.3 Post-Treatment Sampling and Disposal 4-10
    - 4.3.2.4 Remediation Sequence and System Operation 4-10
- 4.4 Permitting 4-12

5.0 HEALTH AND SAFETY 5-1
- 5.1 Controlling Factors 5-1
- 5.2 Health and Safety Methodology 5-1

6.0 SCHEDULE 6-1

7.0 REFERENCES 7-1

LIST OF TABLES

2-1 Summary of Soil Sampling Results at Kearny 2-5

LIST OF FIGURES

2-1 Hydrogeologic Units in the Vicinity of Well ATT11 2-2
2-2 Soil Sample Locations Map 2-3
2-3 Surface Soil Isopleth Map for DCE 2-7
2-4 Subsurface Soil Isopleth Map for DCE 2-8
2-5 Surface Soil Isopleth Map for PCE 2-9
2-6 Subsurface Soil Isopleth Map for PCE 2-10
2-7 Surface Soil Isopleth Map for TCA 2-11
2-8 Subsurface Soil Isopleth Map for TCA 2-12
2-9 Surface Soil Isopleth Map for TCE 2-13
2-10 Subsurface Soil Isopleth Map for TCE 2-14
2-11 Areal Extent of Contaminated Soil Requiring Remediation 2-16

4-1 Excavation Area and Sample Location 4-3
4-2 Soil Remediation Process Schematic 4-6
4-3 Remediation Area Plot Plan 4-7
4-4 Soil Remediation Equipment Layout 4-8
4-5 Sprung Structure Diagram 4-9

1.0 INTRODUCTION

ENSR Consulting and Engineering (ENSR) was retained by AT&T Technologies, Inc. (AT&T) to develop a proposal to remediate contaminated soil located in the Former Drum Storage Pad Area of the Former Kearny Works in Kearny, New Jersey. This proposal was prepared in response to the New Jersey Department of Environmental Protection and Energy's (NJDEPE) November 25, 1992 letter. This remediation plan was required in the November 25, 1992 letter in response to the soil investigation conducted by AT&T in July 1992.

Section 2.0 of this document provides a general overview of site conditions, including soil sampling results and previous soil and groundwater remediation activities. This section also includes contaminant isopleth maps from soil samples collected on July 22, 1992. Areas of constituent concentrations above NJDEPE proposed soil cleanup standards are overlayed onto the isopleth maps and form the basis for determining the known extent of soil contamination.

Regulations affecting remedial activities in New Jersey have recently undergone significant changes. For example, NJDEPE recently decided not to adopt the proposed soil cleanup standards specified in the February 3, 1992 New Jersey Register, and has instead decided to await the outcome of a recently proposed ECRA reform bill. In the absence of official standards, this remedial proposal has been based on the February 3, 1992 proposed standards. This can be considered a conservative approach for this site since the proposed cleanup standards are based upon soil overlying Class I and IIA aquifers. The shallow water bearing unit at the Kearny site has low yields and is not used as a potable water supply. Therefore, reclassification of the groundwater and the consequent impact on cleanup standards needs to be reevaluated. Section 3.0 presents additional discussion on the pertinent regulatory considerations for the proposed remedial alternative.

Based on regulatory, technical, and economic considerations, four remedial alternatives were evaluated as potential options to remediate the Former Drum Storage Pad Area soils. Section 4.0 provides the recommended remedial alternative and includes additional soil delineation sampling, post-excavation sampling, and permitting issues. Section 5.0 presents considerations which will be included in a site-specific health and safety plan.

A project schedule for implementing the proposed remedial activities is provided in Section 6.0.

2.0 SITE DESCRIPTION

2.1 Site Geology

The subsurface lithology in the vicinity of the Former Drum Storage Pad Area has been investigated by installing monitoring wells (DRAI, 1985) and well points, and conducting infiltration and aquifer characterization tests (ERT, 1985).

The soils at the site consist of unconsolidated deposits overlying the Brunswick Shale bedrock. Bedrock begins at a depth of 60 to 80 feet below land surface (bls). As shown on Figure 2-1, the overlying unconsolidated formations are, from shallow to deep: imported surficial fill, sandy silt, silt/clay, and interbedded sands and silts.

The surficial fill section consists of sand with some concrete, bricks, and cinders emplaced for general site grading purposes, and occurs throughout the site. In the vicinity of the Drum Storage Pad Area, the fill is 4 to 6 feet thick.

Beneath the fill is a generally 1- to 3-foot layer of sandy silt grading into organic silt. Observations made during a trench excavation near the pad indicated that silver grey sandy silt occupied the 6- to 8-foot depth interval. The fill-sandy silt contact of this unit is quite distinct. However, the lower boundary grades imperceptibly into the grey silt/clay.

2.2 Previous Remedial Activities

Two significant remedial activities have been conducted in the Former Drum Storage Pad Area, to fulfill requirements authorized by NJDEPE in the approved Amended Environmental Cleanup Plan (1985). First, in 1985, soil adjacent to the southern border of the concrete pad was excavated to a depth of approximately 3 feet (depth to groundwater). The excavation was then backfilled with clean fill (i.e., crushed quarry stone). This area is depicted in Figure 2-2. Second, due to groundwater contamination detected in five monitoring wells in the concrete pad area, a groundwater remediation system was designed by ENSR in 1985 and installed and operated beginning August 1986. After five years of operation, AT&T was authorized by NJDEPE in July 1991 to cease groundwater remediation activities, since contamination from the monitoring wells at the site declined substantially over time and stabilized.

not true

2.3 Soil Characterization

To delineate the soil contamination in the Former Drum Storage Pad Area, a soil gas survey was conducted in June 1990. Based on the soil gas survey, four soil borings were advanced in August 1991 and soil samples were analyzed for priority pollutant volatile organic compounds (VOC) via GC/MS. Seventeen additional soil borings were advanced and soil samples were collected in July 1992. The locations of these soil gas survey points and soil sample locations are also shown on Figure 2-2. The numeric values indicated represent the concentration of total VOCs, in parts per million (ppm), from the soil gas survey.

A summary of soil sample results from the July 1992 sampling effort is provided by Table 2-1. All samples were analyzed for the following five targeted VOCs via GC/MS: trans-1,2-dichloroethylene, tetrachloroethylene, toluene, 1,1,1-trichloroethane, and trichloroethylene. These analytes were among those targeted in the June 1990 soil gas survey because they appeared at the highest concentrations most consistently in the groundwater during seven years of groundwater monitoring. Further, these five volatile compounds were the only VOCs detected above detection limits in the August 1991 soil sampling event. Sample number designations correspond to the sampling grid depicted on Figure 2-2.

NJDEPE has proposed three sets of cleanup standards for soil: residential surface soil, non-residential surface soil, and subsurface soil. These standards were proposed for Class I and IIA aquifers in the February 3, 1992 New Jersey Register. After one year, NJDEPE decided not to adopt the proposed standards but to continue to use them as guidelines. These guidelines, hereafter referred to as proposed standards, for the contaminants of concern in the Drum Storage Area are listed in Table 2-2.

Contaminant isopleth maps for four of the targeted compounds, at two depths, are presented in Figures 2-3 through 2-10. An isopleth map for toluene has not been included, due to the limited number of detected concentrations. Areas of soil contamination that exceed NJDEPE proposed cleanup levels are indicated on the isopleth maps by cross-hatching.

The isopleth maps indicate and differentiate between concentrations above proposed standards for residential and non-residential surface soils. Use of residential standards resulted in the addition of three sample locations over those above non-residential standards for tetrachloroethylene and trichloroethylene, and one location for 1,1,1-trichloroethane.

As shown on Figure 2-3, none of the surface soil samples exceeded the proposed non-residential or residential surface soil standard for trans-1,2-dichloroethylene (DCE). One sample location (E-7) exceeded the proposed subsurface soil standard for DCE (see Figure 2-4).

TABLE 2-1

Summary of Soil Sampling Results at Kearny
July 1992

Sample No.	Compound Detected (ppb)				
	trans-1,2 dichloroethene	tetrachloroethene	toluene	1,1,1-trichloroethane	trichloroethene
D5-C (12 - 18) inch increment	ND[a]	1,500	ND	ND	750
D5-F (30 - 36) inch increment	140 J[b]	2,700	ND	ND	1,600
D6-C (12 - 18) inch increment	14	160	ND	ND	13
D6-F (30 - 36) inch increment	ND	5.7	ND	ND	ND
D7-C (12 - 18) inch increment	26,000	29,000	ND	910 J	50,000
D7-F (30 - 36) inch increment	4,600	1,300	ND	290 J	830
E5-C (12 - 18) inch increment	590 J	32,000	ND	360 J	14,000
E5-F (30 - 36) inch increment	ND	6,600	ND	190 J	5,200
E6-B (6 - 12) inch increment[c]	500,000	5,500,000	48,000 J	520,000	130,000
E7-C (12 - 18) inch increment	110,000	4,900 J	ND	2,200 J	170,000
E7-E (30 - 36) inch increment	87,000	4,900 J	ND	1,800 J	130,000
E8-C (12 - 18) inch increment[d]	2.5 J	2.5 J	ND	ND	ND
E8-F (30 - 36) inch increment[e]	4.7 J	2.5 J	2.4 J	ND	2.7 J
E10-C (12 - 18) inch increment	ND	ND	ND	ND	ND
E10-F (30 - 36) inch increment	ND	ND	ND	ND	ND
E11-C (12 - 18) inch increment	2,400	13,000	ND	510 J	49,000
E11-F (30 - 36) inch increment	2,500	10,000	ND	350 J	42,000
F5-B (6 - 12) inch increment	710	2,000	ND	ND	8,600
F5-F (30 - 36) inch increment	2,500	5,800	ND	950 J	32,000
F6-C (12 - 18) inch increment	18,000	40,000	1,100 J	6,400	100,000
F6-E (24 - 30) inch increment	16,000	29,000	780 J	5,400	78,000
F7-B (6 - 12) inch increment	48,000	76,000	ND	2,400 J	70,000
F7-F (30 - 36) inch increment	85	85	1.3 J	5.3	44
F8-B (6 - 12) inch increment	810	1,700	ND	4,600	690
F8-F (30 - 36) inch increment	890	310 J	1,300	630	580 J
F8-H (30 - 36) inch increment[f]	4,400	1,400	4,600	3,000	3,100
F10-C (6 - 12) inch increment	160 J	300 J	ND	350 J	2,500

TABLE 2-1

Summary of Soil Sampling Results at Kearny
July 1992

Sample No.	Compound Detected (ppb)				
	trans-1,2 dichloroethene	tetrachloroethene	toluene	1,1,1-trichloroethane	trichloroethene
F10-F (30 - 36) inch increment	6,400	2,800	ND	4,700	71,000
F11-F (30 - 36) inch increment[d]	ND	92,000	ND	ND	6,600
F12-C (12 - 18) inch increment	ND	580 J	ND	ND	4,700
F12-F (30 - 36) inch increment	590 J	5,000	ND	320 J	29,000
G11-E (12 - 18) inch increment	74	380	ND	11	240
G11-F (30 - 36) inch increment	890	5,200	ND	ND	2,600
Trip Blank[d]	ND	ND	ND	ND	ND
Field Blank[d]	ND	ND	ND	ND	ND

(a) Indicates no compounds were detected.
(b) Indicates result is less than the specified detection limit but greater than zero.
(c) This sample was analyzed for GC/MS volatiles plus a forward library search - other compounds detected included ethyl benzene (670,000 ug/kg) and total xylenes (4,500,000 ug/kg).
(d) This sample was analyzed for GC/MS volatiles plus a forward library search - no other compounds were detected.
(e) This sample was analyzed for GC/MS volatiles plus a forward library search - other compounds detected include: benzene (5.7 ug/kg), chloroethane (16 ug/kg), ethylbenzene (3.0 ug/kg), methylene chloride (4.7 ug/kg), and total xylenes (11 ug/kg).
(f) Field duplicate to sample number F8-F.

TABLE 2-2

NJDEPE Proposed Cleanup Standards for Contaminants of Concern in Drum Storage Area

	Surface[a][b] Residential (ppm)	Surface Non-Residential (ppm)	Subsurface[c] (ppm)
Trans-1,2-Dichloroethylene	960	10,000	50
Tetrachloroethylene	9	37	1
Toluene	1,000	1,000	500
1,1,1-Trichloroethane	210	3,800	50
Trichloroethylene	23	100	1

(a) This assumes that the shallow water bearing unit at the Kearny site is appropriately classified as a Class IIA aquifer. Further, these proposed standards were not adopted and are not expected to be adopted in the near future.
(b) Surface is defined as 0 - 2 feet interval.
(c) Subsurface is defined as 2 feet to groundwater interval. Note, groundwater depth is approximately 3 feet in the Drum Storage Area.

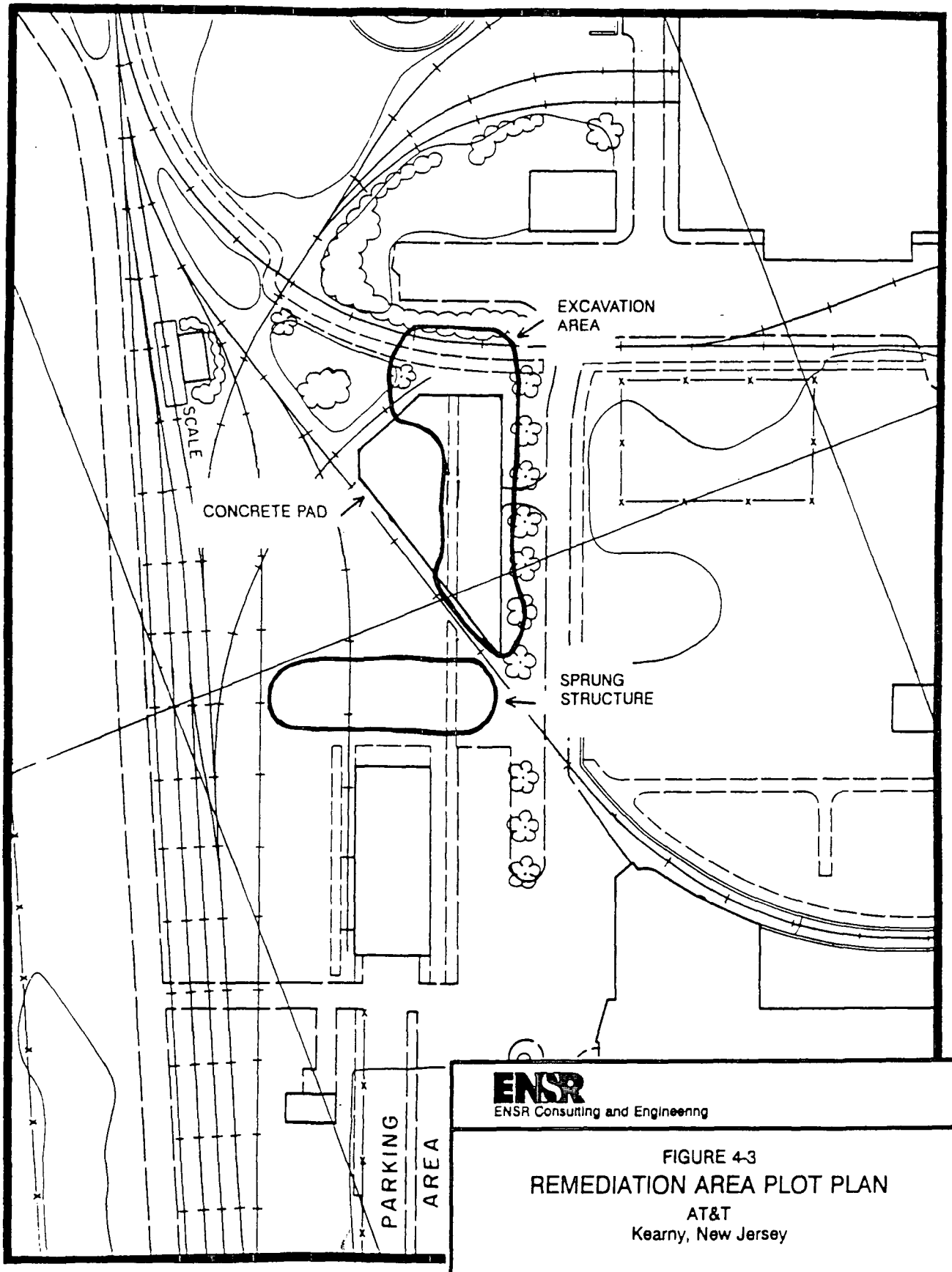

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FIGURE 4-3
REMEDIATION AREA PLOT PLAN
AT&T
Kearny, New Jersey

DRAWN:	DATE: February 5, 1993	PROJECT NO.:	REV:
FILE NO.:	CHECKED:	0550-263-400	0

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Figure 2-5 shows that surface soil concentrations of tetrachloroethylene (PCE) above the proposed non-residential cleanup standard (37 ppm) are limited to the north and west sides of the concrete pad area. One sample in this area (E-6) contained 5,500 ppm of PCE. These results correspond to field observations made during the sampling effort, which indicated a strong solvent odor during the installation of borings in this portion of the pad area. The areal extent of surface soils above the residential cleanup standard is slightly larger, primarily in the northwest corner of the pad and at a small location on the east side of the pad. As shown on Figure 2-6, all but three of the subsurface soil samples exceeded the proposed subsurface soil cleanup standards for PCE.

The surface soil and subsurface soil isopleth maps for 1,1,1-trichloroethane (TCA) are presented in Figures 2-7 and 2-8. Only one of the soil samples (E-6) exceeded the proposed residential surface soil cleanup standard for TCA. Non-residential surface cleanup standards and the subsurface standard for TCA were not exceeded.

Figure 2-9 shows that three surface soil samples exceeded the proposed non-residential cleanup standard for trichloroethene (TCE). The area exceeding the residential cleanup standard is slightly larger. Most of the subsurface samples exceeded the proposed cleanup standards for TCE (see Figure 2-10).

Figure 2-11 shows the approximate areas in the Former Drum Storage Pad Area that exceed NJDEPE proposed cleanup standards. Note that this area corresponds to soil samples above subsurface standards. Since the subsurface standards are more stringent for the contaminant of concern, the use of residential or non-residential surface standards has no effect on the area requiring remediation. In this case, the subsurface soil standards apply from the surface down to the water table and will be used to determine the extent of soil requiring remediation. Soil located beneath the southern portion of the concrete pad has not been observed to exceed the proposed cleanup standards.

3.0 REGULATORY CONSIDERATIONS

3.1 Target Cleanup Limits

The New Jersey Department of Environmental Protection and Energy (NJDEPE) proposed cleanup standards for contaminated sites in the February 3, 1992, New Jersey Register (N.J.A.C. 7:26D). These standards are intended to restore sites to levels which protect human health and the environment, and provide a mechanism which will allow consistent cleanup decisions to be applied to various regulatory programs. The NJDEPE has developed both surface and subsurface soil standards. The development of surface soil standards was based on a two-tier approach. The "residential" surface soil standards will allow for unrestricted future use of the subject property. The "non-residential" surface soil standards may be applied when the person responsible for conducting the cleanup and the property owner agree to limit future property uses to non-residential activities. However, whenever non-residential surface soil standards are to be used, then institutional controls must be applied to limit future use. Institutional controls include deed restrictions and access controls.

Subsurface soil standards are intended primarily for the protection of groundwater and are based on contaminant mobility to groundwater and protection of groundwater uses. There is no differentiation between residential and non-residential use for subsurface soil standards. There is, however, the requirement that if the subsurface standard for a contaminant is more stringent than the surface standard, then that subsurface soil cleanup standard will apply to both the surface and subsurface soil. This would apply to the volatile organic compounds present in soils at the Former Drum Storage Pad Area. As such, the application of subsurface soil standards for this area would eliminate the requirement for institutional controls. An additional target cleanup consideration for this area of concern includes a total volatile organic standard of 1,000 ppm for both surface and subsurface soils.

The NJDEPE has recently announced that it will not adopt the proposed soil cleanup standards. The decision was made due to the large number of comments received by the NJDEPE during the public comment period, and because the State Legislature is currently debating an ECRA reform bill. The NJDEPE has decided to await the outcome of the ECRA reform bill before re-proposing the cleanup standards; however, at this time, they will continue to use them as guidelines. For planning purposes, the standards proposed in February 1992 have been used as the basis for the remedial actions described in this proposal. These standards assume that the groundwater is appropriately classified as a Class IIA aquifer as implied in the Groundwater Quality Standards, published in the February 1, 1993 New Jersey Register. Since the shallow

water bearing unit at the Kearny site has low yields and is not used as a potable water supply, a reclassification of this groundwater needs to be reevaluated.

3.2 Land Disposal Restrictions

The U.S. EPA, under 40 CFR 268, has identified specific hazardous wastes which are restricted from land disposal. The restricted wastes can only be land disposed if the constituent concentrations meet the standards of the regulations.

If excavated, soil in the area of the concrete pad could be classified as F002, due to the presence of spent halogenated solvents (tetrachloroethylene, 1,1,1-trichloroethane, and trichloroethylene), and F005, due to the presence of non-halogenated solvents (toluene). These wastes are specifically prohibited from land disposal unless the waste extracts (obtained by the TCLP) meet the following treatment standards:

- Tetrachloroethylene - 0.05 mg/ℓ
- 1,1,1-Trichloroethane - 0.41 mg/ℓ
- Trichloroethylene - 0.091 mg/ℓ
- Toluene - 0.33 mg/ℓ

Although TCLP testing has not yet been conducted on the area soils, they are not expected to meet the standards prior to treatment due to the levels of contamination observed. Note that the fifth compound (trans-1,2-dichloroethylene) analysis in the July 1992 soil sampling program is not restricted from land disposal.

3.3 Hazardous Debris Final Rule

On August 18, 1992, the EPA promulgated a final rule for the treatment of hazardous debris, prohibited from land disposal (57 Federal Register 37221). This would potentially apply if the concrete pad were removed. Under this rule, hazardous debris must be treated by specified treatment technologies based on the debris type and contaminant type, or use the best demonstrated available technology (BDAT) treatment standards that apply to the waste contaminating the debris. If the first option is used, no testing of the treated debris is required and, if it is treated using an approved extraction or destruction technology, it can be disposed of as non-hazardous. The second option requires that the treated debris be tested and that it be managed as hazardous.

Seventeen treatment technologies have been identified as BDAT for hazardous debris. These technologies fall under three general categories: extraction, destruction, and immobilization.

Extraction is the broadest category and includes 10 types of physical, chemical, and thermal extraction technologies. According to the Debris Rule, any technology may be used to treat any debris type; however, the technology must be applicable to each contaminant subject to treatment. In addition, there are performance, design, and operating standards that vary for many technologies depending on the debris type.

The performance standards for physical extraction technologies, which include scarification, spalling, and abrasive blasting, are based on removal of the contaminated surface layer of hazardous debris. For porous material, such as concrete, the debris must be treated to a "clean debris surface" and at least 0.6 cm of the surface layer must be removed. There are no contaminant restrictions applicable to physical extraction technologies.

The use of chemical extraction technologies, such as water washing or solvent extraction, places a size restriction on porous debris. Porous debris must be no more than 0.5 inch thick. The contaminants being treated must be soluble to 5 percent by weight in the extraction medium. If thermal extraction is used, the maximum debris thickness is 4 inches, and the treated debris must be separated from other residues. The residues must meet the treatment standards for the organic compounds in the waste contaminating the debris. Anyone using thermal desorption to treat hazardous debris must also obtain an "equivalent technology" approval from EPA which demonstrates that the technology treats the contaminants to a level equivalent to that required by the performance and design and operating standards for other technologies.

When biological or chemical destruction processes are used as treatment, an "equivalent technology" approval must also be obtained. In addition, porous debris thickness must not be greater than 0.5-inch thick. If the treated residues do not meet BDAT standards, then neither the separated treated debris nor the residues can be land disposed. This last requirement also applies to thermal destruction (incineration).

Immobilization technologies such as encapsulation and sealing require that debris contaminated with a listed waste must be disposed of in a Subtitle C facility after treatment because the contaminants are not removed or destroyed.

No permits are required to treat hazardous debris if the treatment occurs in an on-site container, tank, or containment building; the debris is treated within 90 days of generation; and the treatment unit complies with 40 CFR 264 and 265 standards.

3.4 RCRA Treatment Permit

Facilities that treat, store, or dispose of hazardous waste are required, under 40 CFR 270, to obtain a RCRA permit. As defined under this regulation, treatment includes, but is not limited to, any activity designed to change the physical or chemical character or composition of a hazardous waste so as to render it non-hazardous or less hazardous. New facilities are required to submit permit applications at least 180 days prior to beginning construction. The RCRA permitting process can be time consuming and costly. At the present time, it appears that an exemption may be obtained for this project for soil vapor extraction of contaminated soils.

The NJDEPE has recently adopted a policy that "separation/extraction of a hazardous waste from media does not constitute treatment." This policy is based upon the premise that the media itself is not considered a solid waste, and only the RCRA regulated constituents, when separated from the media, are considered a RCRA hazardous waste. Therefore, separation/extraction of the constituents from the media should not require a RCRA treatment facility permit. Soil vapor extraction technology relies on separating the hazardous constituents (volatile organics) from the soil, and should meet the requirements for the exemption.

3.5 Soil Reuse

Depending on how the contaminated soil in the area of the concrete pad is treated and to what extent the hazardous constituents are removed by treatment, the treated soil may be appropriate for reuse. The NJDEPE currently will consider proposals for reuse of non-hazardous ID 27 soils. Obtaining approval to reuse a soil contaminated with a listed waste is currently handled on a case-by-case basis and will require negotiation with the NJDEPE.

4.0 PROPOSED REMEDIAL ACTION

4.1 Recommended Remedial Alternative

Based on the delineated soil contamination in the Former Drum Storage Pad Area previously described in Section 2.3, the following remedial alternatives were considered for this site:

- Incineration
- On-Site Thermal Desorption
- On-Site Soil Vapor Extraction
- In-Situ Soil Vapor Extraction

A detailed technical and economic analysis was conducted to evaluate these technologies for applicability to the Kearny site. Incineration and thermal desorption options were not selected, due to high remediation costs. In-situ soil vapor extraction was also not chosen, due to shallow groundwater conditions (i.e., approximately 3 feet deep), which would severely limit the vertical and horizontal influence of an extraction trench, due to the likelihood of shortcircuiting the process (i.e., air channelling to the surface). Further, potential flooding of the in-situ SVE system by the induced vacuum could limit the system's effectiveness.

The on-site soil vapor extraction (SVE) process was selected as the preferred remedial option at the Kearny site due to comparatively low cost, the high probability of success, and the minimization of future liability.

The remainder of this section describes the on-site SVE process chosen for the Kearny site, along with the anticipated delineation and post-excavation soil sampling efforts, soil reuse or disposal options, and permitting requirements. Also discussed are the remediation procedures for the portion of the concrete pad that will need to be removed. These procedures were developed in accordance with the Hazardous Debris Rule, as described in Section 3.3, and are presented below.

4.2 Debris Remediation

4.2.1 Debris Sampling

Prior to excavation of the concrete pad, a waste classification determination will be made in order to assure proper handling and disposal of the material. According to EPA's Debris Rule,

concrete is considered as hazardous debris if it contains a listed waste or exhibits a RCRA hazardous characteristic. In general, EPA's "contained-in policy" states that environmental media, including soil and groundwater, contaminated with a RCRA listed hazardous waste must be managed as a hazardous waste until the media no longer contains the hazardous waste. Indications are that this policy is also generally applied to debris, and that the NJDEPE is currently authorized by EPA to make this decision on a case-by-case basis.

The solvents previously stored on the concrete pad, and currently present in the underlying soil, are appropriately classified as listed hazardous wastes. In order to determine whether the concrete contains this material, concrete chip samples will be obtained from four locations of the pad proposed to be removed. Two samples will be located adjacent to previous soil boring location points D-7 and E-7, which exhibited TCE and TCA soil concentrations above proposed subsurface cleanup standards. Two additional samples will be collected from the northeast portion of the pad approximately 10 feet inward from the edge of the pad. Two concrete samples will also be collected from the portion of the sidewalk to be excavated. Figure 4-1 provides the locations of proposed concrete pad samples.

Samples will be collected using an electric hammer to remove a block of concrete from the pad. Loose soil will be removed from the concrete by means of a stiff wire brush. Concrete samples will then be chipped from both sides of the pad for laboratory analysis. Samples will be analyzed for target volatile compounds using the Toxicity Characteristics Leaching Procedure (TCLP).

4.2.2 Concrete Remediation Design

The concrete sampling effort previously described will aid in determining the required remedial activity for the concrete debris. If the concrete is classified as non-hazardous, all excavated concrete will be transported directly to a concrete recycler. If, however, the concrete debris is classified as hazardous, all excavated concrete will be remediated in accordance with the Hazardous Debris Rule (described in Section 3.3), as detailed below.

Of the 17 treatment technologies described in the Debris Rule, the most cost-effective approach for remediating surface contamination of concrete is to use a physical technology. Assuming that both the top and bottom surfaces of the concrete are contaminated, the most feasible physical technology is sandblasting. If the upper surface is found to be contaminated, this surface will be treated prior to excavation. If necessary, the bottom side of the concrete slab will be sandblasted as part of the excavation process. As required by the Debris Rule, a minimum of 0.6 cm will be removed from each surface requiring treatment. The concrete slab will be cut or broken up into sections and flipped onto the remaining portion of the slab for sandblasting. This approach will minimize the mixing of concrete debris and soil.

To prevent human exposure to wind-blown contaminated debris, the sandblasting will either be conducted within a temporary containment structure or by using a vacuum blasting process. Either process would prevent sand, debris, and dust from being wind blown offsite. Subsequent to these activities, all concrete will be inspected to confirm the "clean debris surface" performance standard has been met.

After physical removal of the surface contamination, the concrete rubble will be transported to a concrete recycler. Sand and debris particles (dust and flakes) will be combined with the excavated soil and treated with the on-site SVE process described in the next section.

4.3 Soil Remediation Using On-Site SVE

The recommended alternative for soil remediation at the former drum storage pad area of the AT&T Kearny site is on-site SVE. SVE will be conducted by excavating soil impacted with VOCs, spreading the soil into a pile over a piping network, and applying a vacuum to the piping network to extract VOCs from the soil. Figure 4-1 illustrates the area of soil requiring remediation. This area was delineated during the soil sampling investigations described in Section 2.3. The areal extent of the impacted area is approximately 14,500 ft^2. The impacted soil extends to a depth of approximately three (3) feet below the surface, or average depth to groundwater. The volume of impacted soil is estimated to be approximately 1,600 yd^3.

4.3.1 Additional Soil Delineation Sampling

As discussed in Section 2.3, the majority of soil samples collected during the July 1992 sampling event contained at least one chlorinated volatile compound at levels exceeding the proposed NJDEPE soil cleanup standards for subsurface soils. The horizontal extent of the proposed soil excavation has been based primarily on the locations of these samples, and by the crushed quarry stone backfill along the eastern side of the concrete pad. In order to establish "clean zones" on the northern, western, and southwestern sides of the pad prior to the proposed excavation, additional soil delineation samples will be collected and analyzed. Proposed sample locations are illustrated in Figure 4.1.

Soil borings will be advanced to the groundwater table at grid points G-4 to G-10, G-12, F-4, E-4, D-4, and C-4 to C-6. An additional boring will be advanced north of G-11, adjacent to the road. The borings will be advanced using a drill rig and will be collected from split spoon samplers.

One soil sample will be collected from each boring location. A split spoon sampler will be used to collect a soil core from 0-24 inches. Disregarding the 0-6 inch surface interval, the remainder

of the core will be field screened using a photoionization detector (PID). The 6-inch interval exhibiting the highest PID reading will be collected for laboratory analysis. If no detectable readings are obtained, a sample will be collected from the 18- to 24-inch interval.

All soil samples will be analyzed for the five target VOC compounds by a New Jersey certified laboratory, using Method 8240 from U.S. EPA SW-846. Additional quality assurance samples will consist of field blanks and field duplicates which will also be analyzed for the target compounds. Field blank and duplicate soil samples will be collected at a frequency of 5 percent. Trip blanks will accompany each shipment to the laboratory.

All sampling and decontamination procedures will be performed in accordance with the NJDEPE Field Sampling Procedures Manual dated May 1992.

4.3.2 Soil Remediation Design

4.3.2.1 Treatment System Description and Layout

Figure 4-2 is a schematic of the proposed SVE system. Plastic sheeting (40 mil thickness) will be spread out as a floor for the remediation soil pile. A piping network will be constructed using 4-inch diameter Schedule 40 PVC pipe. Slotted sections of pipe 35 feet in length will extend across the width of the remediation soil pile. The dimensions of the soil pile are estimated to be approximately 116 feet in length by 35 feet in width by 12 feet high. The slotted pipe sections will be placed within the soil pile at a height of approximately 0.5 feet above the ground. Number 8 pea gravel will be placed around the pipe at a diameter of approximately 1 foot to prevent soil from clogging the slotted pipe sections. Each end of the slotted pipe will be connected to solid 4-inch diameter Schedule 40 PVC pipe extending the length of the soil pile. Valves will be placed on both ends of the slotted pipe sections as illustrated in Figures 4-2 and 4-4 to control the flow of air through the piping sections. Sample ports to monitor VOC concentrations and air velocity will also be installed at each valve connection. Air will be withdrawn through a knock-out drum to remove moisture and through two 2,000 pound vapor phase activated carbon canisters to remove VOCs. A 30 hp blower will be used apply the vacuum on the soil pile through the piping network and activated carbon canisters. This blower will be capable of maintaining a maximum vacuum of 144 inches water, with a maximum air flow rate of 920 standard cubic feet per minute (SCFM).

A sprung structure cover will be constructed over the soil pile, piping network, and vapor treatment equipment. Figure 4-3 illustrates the proposed dimensions of the sprung structure cover, which are approximately 170 feet in length by 50 feet in width and 24 feet high at the

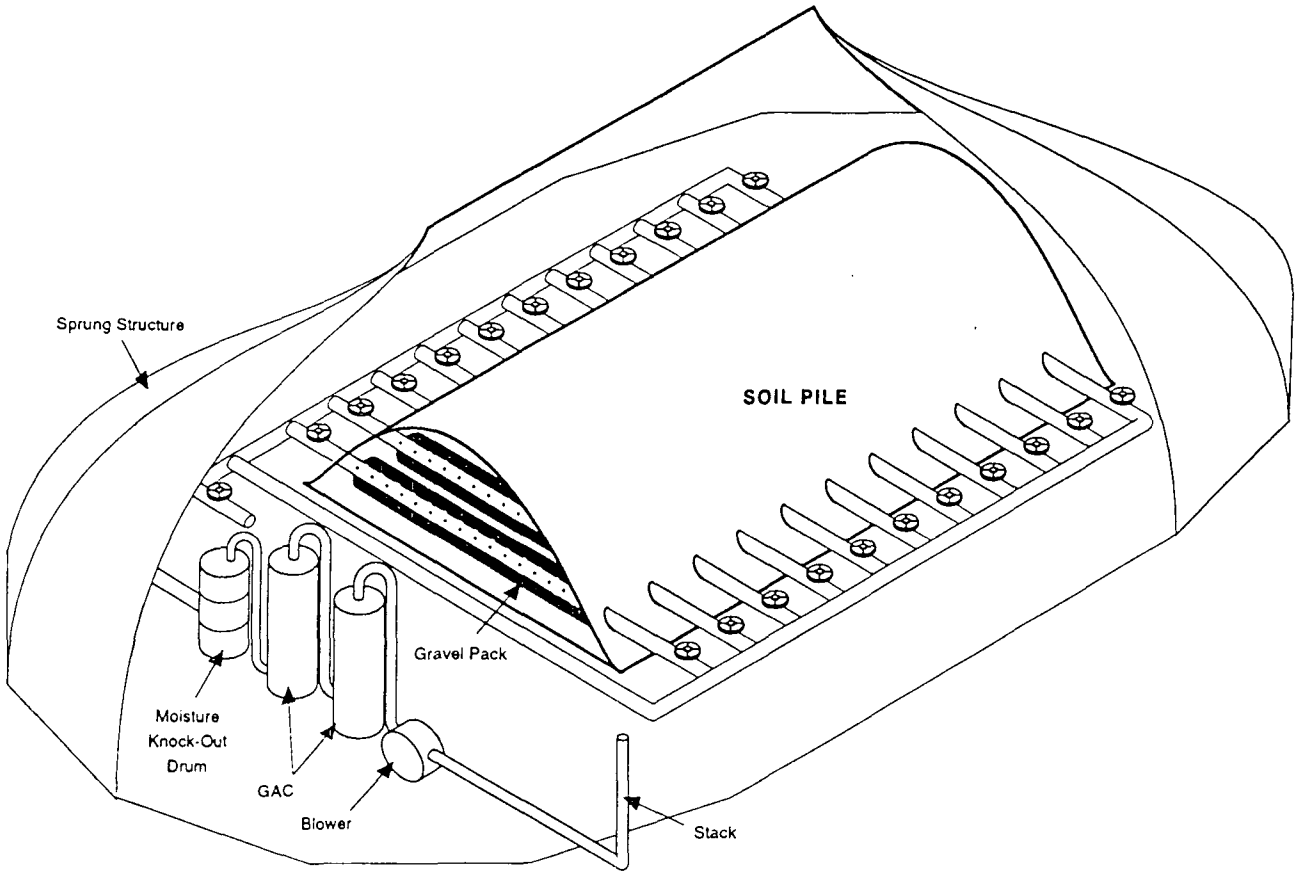

FIGURE 4-2
Process Schematic

center. Figure 4-4 illustrates the equipment layout within the structure, and Figure 4-5 is a schematic of the sprung structure.

4.3.2.2 Post-Excavation Sampling

In order to document that soil has been excavated to the "clean zones", post-remediation soil samples will be collected. Since soil will be excavated to the depth of the water table, no bottom samples are proposed. However, sidewall samples will be collected to confirm that the horizontal extent of contamination above subsurface cleanup standards has been removed.

A total of 14 sidewall soil samples are anticipated, which consist of one sample for every 30 linear feet of sidewall. Proposed post-excavation sample locations are shown in Figure 4-1. No sidewall samples are proposed for the eastern side of the excavation since this side is bounded by crushed stone backfill which was placed in 1985.

Samples will be laboratory analyzed for the five target VOCs on a "fast turnaround" basis to guide further excavation efforts if necessary. Field blanks, trip blanks, and duplicates will be collected at the same frequency as discussed in Section 4.3.1 for additional soil delineation sampling.

4.3.2.3 Post-Treatment Sampling and Disposal

The SVE air stream will be monitored at least twice weekly to determine the concentration of VOCs in the extracted air before and after each granular activated carbon canister. VOC concentrations will be monitored with a portable PID and verified monthly with tedlar bag samples analyzed by GC. This monitoring program will determine when carbon canisters will require replacement. When the concentration of VOCs in the SVE air stream are reduced to detection limit levels, ten soil samples will be randomly taken from the remediation soil pile and analyzed for the five target VOCs to verify that cleanup standards have been met.

The preferred option for disposal of the remediated soil is to use it as clean fill on-site. The feasibility of on-site reuse will be determined based upon the results of post-treatment sampling. If the proposed cleanup standards cannot be reached, the alternative soil disposal option is to dispose of the remediated soil off-site at a non-hazardous landfill. If off-site disposal is required, representative samples of the soil will be analyzed for the target VOCs using the TCLP to ensure that the soil is appropriate for a non-hazardous landfill.

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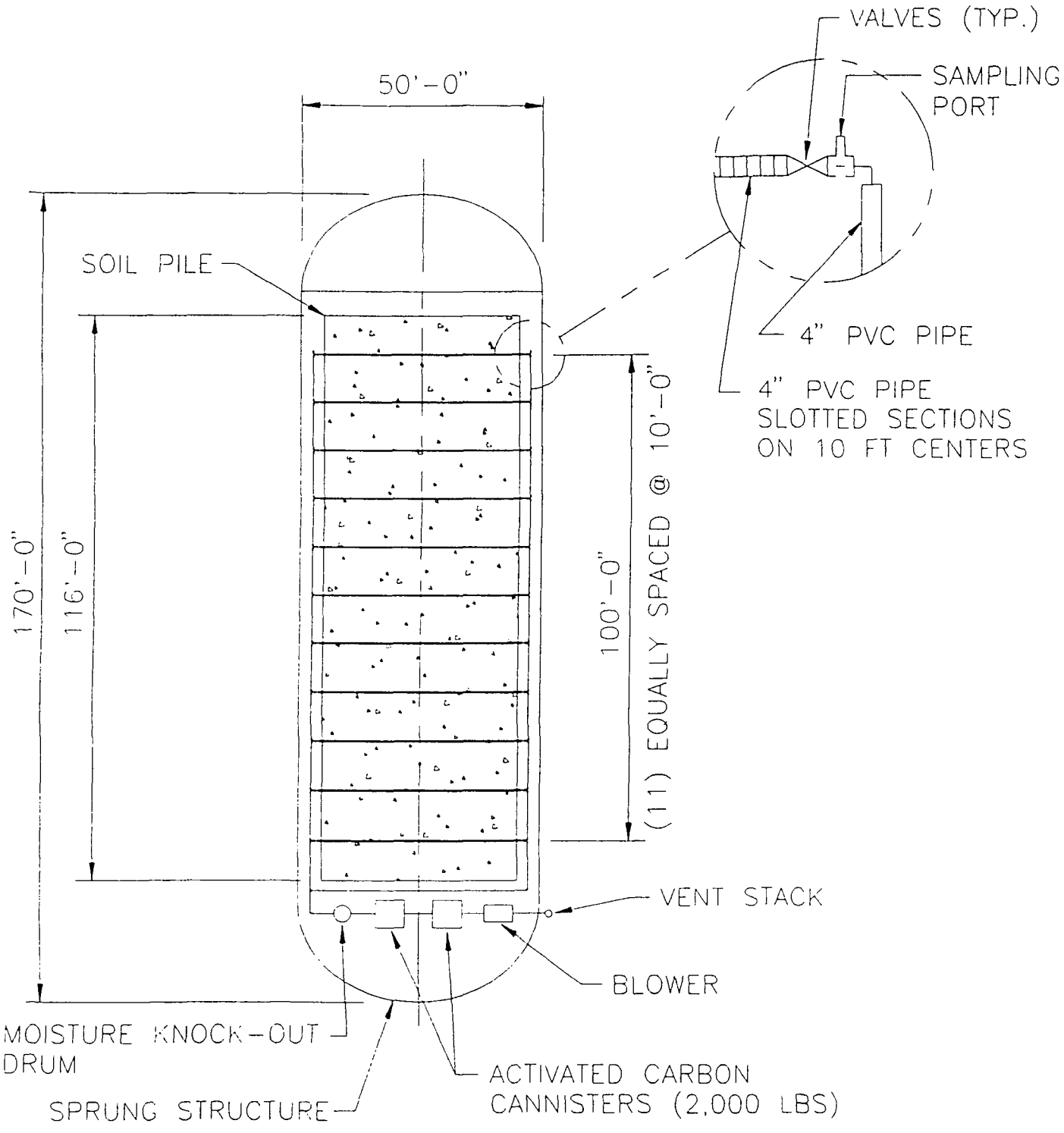

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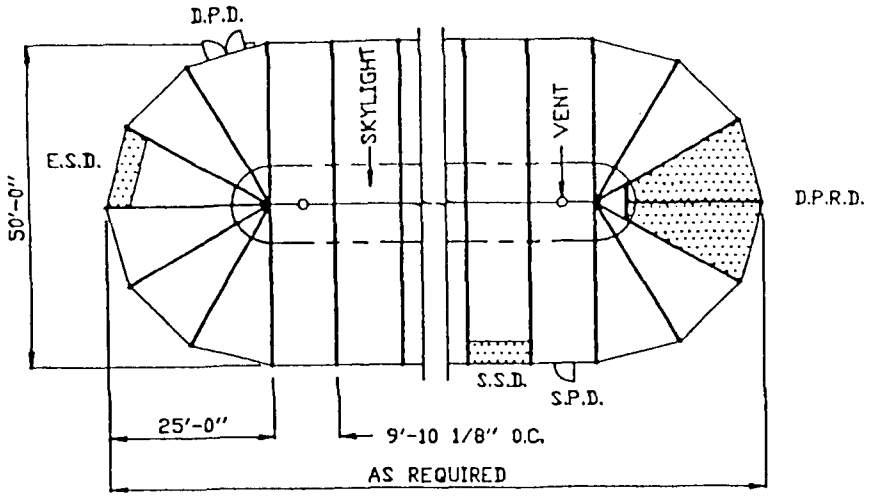
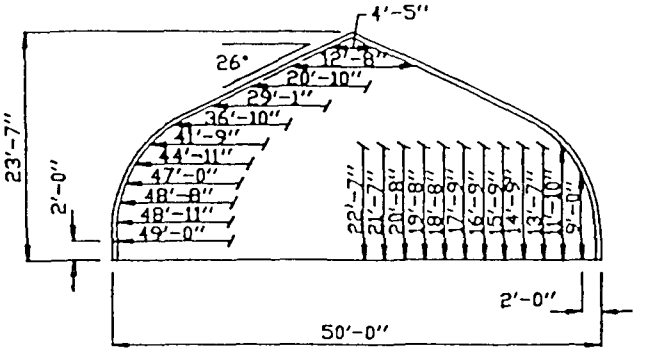
FIGURE 4-4
A T & T KEARNY NEW JERSEY
REMEDIATION SYSTEM
EQUIPMENT LAYOUT

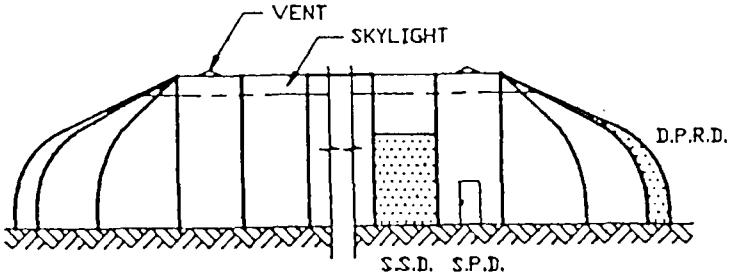
DRAWN BY: CASTILLO	DATE: 2/4/93	ENGINEER: S. BYRNE
CHECKED	APPROVED.	DATE:
PROJECT NO.: 0550-263	SCALE. 1" = 30'-0"	
FILE NAME. AT1001AA	PLOT DATA 002-CASTILLO-2/5/93	
DWG NO.: AT263-A1001		REV.: A



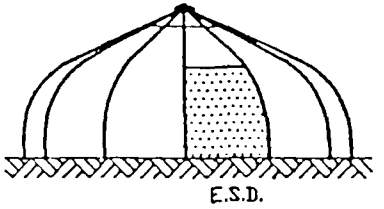
PLAN



SECTION
SCALE: 1"=20'



ELEVATION



END ELEVATION

NOTES:

1. DOOR SIZES AVAILABLE.

	HEIGHT	BASE WIDTH	TOP WIDTH
E.S.D. - END SLIDING DOOR	14'-0"	12'-3"	9'-2"
S.S.D. - SIDE SLIDING DOOR	14'-0"	9'-6"	9'-6"
D.P.R.D. - DOUBLE PANEL ROLLING DOOR	20'-0"	24'-0"	6'-0"
D.P.D. - DOUBLE PERSONNEL DOOR	6'-8"	6'-0"	6'-0"
S.P.D. - SINGLE PERSONNEL DOOR	6'-8"	3'-0"	3'-0"

FIGURE 4-5

SPRUNG INSTANT STRUCTURES

50'-0" STRUCTURE

SCALE:	DATE:	DRAWING #
1"=30'-0"	MARCH 30, 1990	S-50

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4.3.2.4 Remediation Sequence and System Operation

The remedial action will be conducted in the following sequence:

1. Plastic sheeting (40 mil thickness) will be spread to serve as a floor for the remediation soil pile.

2. The remediation equipment and piping network will be constructed and installed.

3. Gravel packing will be placed around each slotted PVC pipe.

4. The surface of the concrete slab will be sandblasted, if necessary.

5. The concrete slab will be broken up and staged.

6. A temporary containment structure will be built surrounding the staged concrete rubble.

7. All concrete debris will be sandblasted to a clean surface.

8. Demobilization of sandblasting equipment will occur as concrete debris is transported off site for recycling.

9. Soil erosion control measures will be implemented surrounding the area to be excavated.

10. Impacted soil will be excavated and placed over the previously constructed piping network. Post-excavation soil samples will be collected from the walls of the excavation and analyzed for target VOCs (EPA Method 8240) to ensure that the remaining soil is below the cleanup levels. The cleanup levels for this project are the following proposed NJDEPE cleanup standards for subsurface soil. Note that these standards were not promulgated and are not expected to be promulgated in the near future.

VOC	Cleanup Standard (ppm)
Trans-1,2-Dichloroethylene	50
Tetrachloroethylene	1
Toluene	500

1,1,1-Trichloroethane	50
Trichlorethylene	1

11. A sprung structure will be constructed to cover the soil pile and the remediation equipment.

12. The excavation will be backfilled with crushed quarry stone.

13. The SVE system will be operated to remove VOCs from the soil. The extracted air will be monitored at least twice weekly for VOCs using a photoionization detector (PID) to evaluate the remediation progress and whether the first granular activated carbon canister needs replacement. The PID measurements will be verified with monthly tedlar bag samples analyzed by GC.

14. The soil pile will be mixed monthly with an excavator to ensure that the soil is uniformly treated.

15. Completion of SVE will be inferred from the PID monitoring (and GC verified) of extracted air. When VOC levels in the extracted air have been reduced to PID detection limit levels, ten soil samples from the remediated soil pile will be collected and analyzed, as described in Section 4.3.2.3. The estimated completion time for the SVE remediation process is three to six months.

16. After end-of-treatment criteria have been met, the sprung structure and remediation system will be withdrawn.

17. Treated soil will be disposed appropriately.

4.4 Permitting

Based on the remediation process described above, the following permits will be required:

- Permit to Construct/Install/Alter Air Quality Control Apparatus/Equipment. This permit and the subsequent Operating Certificate will be required in order to operate the SVE treatment system. The timeframe for completion of this application is expected to be 90 days.

- Soil Erosion and Sediment Control Plan Certification. Since the remedial activity will disturb more than 5,000 square feet of surface area, this certification will be acquired from the Hudson County Soil Conservation District.

- Township Construction Permit. The local municipality will require a construction permit to conduct the proposed remedial activity.

- Soil Reuse Approval. A soil reuse plan will be submitted to NJDEPE including a detailed description of the treated soil characteristics, the proposed soil reuse, and the restoration activities involved in the reuse of the treated soil on the Kearny site.

Since the on-site SVE treatment system will be conducted within a sprung structure and on a plastic liner, potential pathways to impact groundwater during treatment would be eliminated. Therefore, a New Jersey Pollutant Discharge Elimination System Permit (NJPDES) will not be required.

5.0 HEALTH AND SAFETY

5.1 Controlling Factors

The primary controlling factors which affect the planning and implementation of an on-site health and safety program are as follows:

- Contaminant type and concentration
- Contaminant matrix
- Site physical conditions
- Potential exposure routes
- Operational conditions
- Personnel expertise
- Weather and schedule
- Potential contingencies

To the best extent possible, the program planning will be performed so as to minimize the impacts of these factors on site operational efficiencies and on-site personnel.

5.2 Health and Safety Methodology

A site-specific Health and Safety Plan (HASP) will be developed prior to commencement of field activities to establish the health and safety procedures required to minimize any potential risk to personnel who will perform remediation and sampling activities at the site. The provisions of this plan will apply to all personnel who will potentially be exposed to safety and/or health hazards related to activities described in Section 4.0 of this document. The procedures in this plan will be developed based on current knowledge regarding the specific chemical and physical hazards which are known or anticipated for the operations to be conducted at this site.

This HASP will be written to comply with the requirements of the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). All activities covered by this HASP must be conducted in complete compliance with this HASP and with all applicable federal, state, and local health and safety regulations, including 29 CFR 1910.120. Personnel covered by this HASP who cannot or will not comply will be excluded from site activities. Subcontractors may develop their own HASP related to their specific on-site activities. This HASP must minimally be as protective as the site HASP.

6.0 SCHEDULE

The projected schedule has been depicted in Figure 6-1. Note that the schedule has included ample time for NJDEPE review. Since this schedule results in system operation during the colder months of the year, it would be advantageous to accelerate the review process.

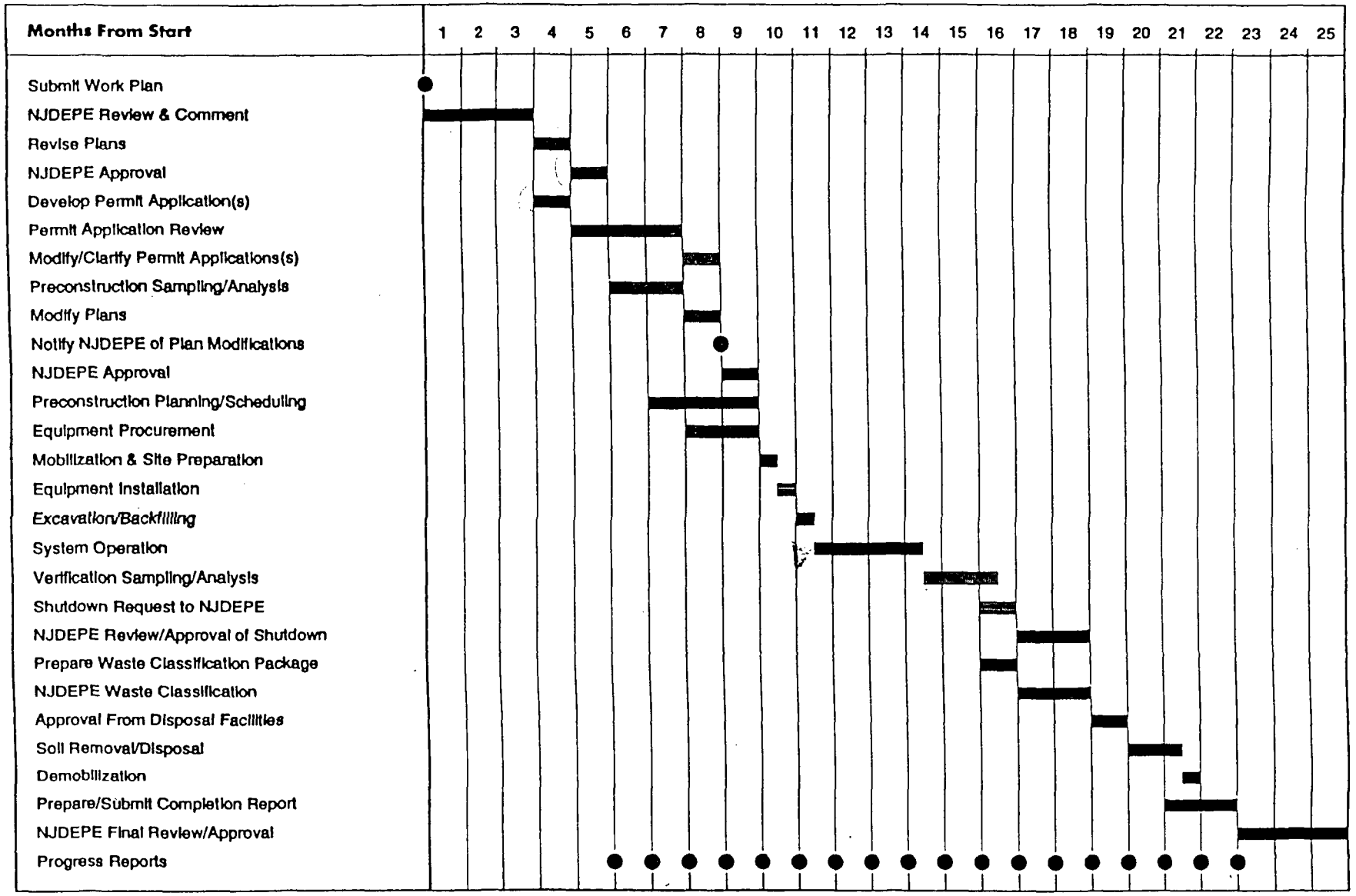

FIGURE 6-1

Projected Schedule for Soil Cleanup at Concrete Pad
Former AT&T Kearny Works

932630420

7.0 REFERENCES

ERT, Inc., 1985. Design of Ground-Water Extraction and Recharge Systems for AT&T Technologies, Kearny Works, and Report on Field Studies Adjacent to Well ATT11, Document D-888-201, December 1985.

DRAI, 1985. Site Hydrogeologic Conditions, Kearny Works, AT&T Technologies, Inc., March 25 (rev. June 17), 2 vols.

FORMER AT&T KEARNY WORKS

SUMMARY PRESENTATION OF HISTORICAL DATA

Background

During 1984 and 1985 AT&T conducted an ECRA investigation of potential soil and groundwater contamination at the former Kearny Works in Kearny, New Jersey. This work, which was conducted in accordance with work plans approved by the NJDEPE, involved the sampling and analysis of soils from across the entire site. Sampling was conducted using both hand augers and hollow-stem augers (during installation of monitoring wells). Based on the results of this sampling, in July 1985, NJDEPE approved an Amended Environmental Cleanup Plan (AECP) which specified the excavation and off-site disposal of contaminated soils from various areas around the site. The excavations were backfilled with clean fill meeting the cleanup criteria specified by NJDEPE. The general areas of excavation are shown in the attached Figure 1 (see pocket) from the AECP.

As part of the excavation, most of the soils in the areas where samples were taken were removed from the site. However, samples from "clean" areas remained on site. Also, a limited number of confirmatory samples were taken as part of the excavation. Consequently, these sample data are available.

On June 26, 1987, NJDEPE submitted a letter to AT&T stating that the soil cleanup addressed by the AECP was approved as complete. At that time, NJDEPE stated that the only area requiring additional remediation was the groundwater in the area of the former drum storage pad. A copy of the June 26 letter is provided in Appendix A.

In 1991, additional soil sampling was conducted in the vicinity of the concrete pad shown as the boxed area on Figure 2 (see pocket).

Data Tables

Historical site data are presented in this document in two sections. Section 1 contains a summary of analytical data from **excavated areas**. For each sample location within an excavated area (see Figure 1), data have been tabulated for the deepest sample collected, unless samples were collected deeper than the base of the excavation. Data for samples collected below the base of the excavation are presented in Section 2.

The data tables presented in Section 2 contain sample results from **unexcavated areas** (including samples below excavated areas) and confirmatory sampling. These data are divided into three subsections:

- Pre-cleanup delineation sampling - samples collected in 1984 and 1985 for preparation of the AECP.
- Soil boring samples associated with installation of monitoring wells.
- Soil samples collected in the vicinity of the concrete pad in 1991.

Data presented on the tables contained in Section 2 have been compared to residential and non-residential, surface and subsurface standards. These standards were proposed by NJDEPE on February 3, 1992. A copy of the NJDEPE proposal is provided in Appendix B.

The NJDEPE has recently announced that it will not adopt the proposed soil cleanup standards. However, it is our understanding that at this time NJDEPE will continue to use a modified version of the proposed standards as guidelines. For purposes of this document, the standards proposed in February 1992 have been used as the basis for comparison of the data.

The cleanup standards as proposed by NJDEPE did not include subsurface standards for metals and various other parameters. Therefore, no comparison of subsurface metals data was made.

In general, in situations where the soil sample interval included soils both above and below the two foot depth (which distinguishes surface soil from subsurface soil), the data were compared to surface soil standards. An exception to this categorization was made in the case of volatile organics. For volatile organic compounds, the proposed subsurface standards are more stringent than the surface standards. Therefore, volatile organic sample intervals containing both surface and subsurface soil were compared to subsurface standards.

Each sample presented in Section 1 and in the first subsection of Section 2 has been numbered according to the area from which it was collected. For example, sample numbers 1A, 1-2-A, and 1-9-X would all represent samples collected in Area 1. The excavated areas shown on Figure 1 are identified by the area number.

For data in both Section 1 and Section 2, values followed by a "U" qualifier represent parameters that were not detected. For example, a value of 5U indicates that the parameter was not detected at a detection limit of 5 ppm. Blank spaces indicate that no data were available for the associated parameter. Detected values are followed by an indication of whether the concentration was above, below, or equal to the associated proposed standard. All values are presented in ppm.

Data Summary

Figure 2 (see pocket) has been prepared as a summary of data contained in Section 2. This figure shows sample locations where measured analytical data exceed the proposed cleanup standards.

Summary of Data for Excavated Areas
Data in ppm

Sample ID:		1-1-B	1-2-B	1-3-B	1-4-B	1-5-B	1-6-B
Sample Depth (in.):		0	0	0	0	0	0
Metals							
Arsenic	2	200	530	110	59	70	700
Cadmium	1 / 120	0.33	0.25U	0.52	0.37	0.74	0.25U
Chromium	10 / 500	74	150	68	64	76	320
Copper	600	240	220	180	150	140	250
Lead	100 / 600	250	600	290	190	190	630
Selenium	63 / 3100	3	1.4U	1.4U	1.2U	1.2U	1.3U
Miscellaneous Parameters							
Cyanide		2.6					

Sample ID:	1-7-B	1-8-B	1-8-B (DUP)	1-10-X	1-11-X	1-12-X
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	* 510	110	110	140	42	18
Cadmium	0.38	0.36	0.42			
Chromium	160	75	60	* 1500	160	250
Copper	280	150	250	200	111	160
Lead	* 590	220	200	680	300	380
Nickel				170	61	35
Selenium	1.4U	1.3U	1.2U			
Zinc				560	200	92

Sample ID:	1-13-X	1-14-X	1-16-X	1-17-X	1-18-X
Sample Depth (in.):	0	0	0	0	0
Metals					
Arsenic	* 24	15	66	51	23
Chromium	* 45	200	1000	1100	170
Copper	97	120	560	620	110
Lead	* 270	310	780	790	510
Nickel	23	77	77	74	41
Zinc	90	380	240	260	94

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Summary of Data for Excavated Areas
Data in ppm

Sample ID:		4A	4-1-A	4-1-A	4-2-A	4-3-B	4-4-A
Sample Depth (in.):		12-36	12-36	12-36 (DUP)	12-36	0	12-36
Metals							
Antimony	14	2.9U					
Arsenic	X	8.7	26	22	20	67	28
Barium	700 X	140U					
Beryllium	1 X	14U					
Cadmium	1 X		0.25U	0.25U	0.52	4.1	0.25U
Chromium	10/500 X	100	400	220	85	6300	58
Copper	1000	35	68	67	88	380	300
Lead	10 X	41	59	91	91	780	110
Mercury	19/200	1.5					
Nickel	200	20					
Selenium	10/1000	2.9U	1.2U	1.2U	2.2	1.1U	1.8U
Silver	100	14U					
Thallium	2	140U					
Zinc		49					
Miscellaneous Parameters							
Cyanide			13	5.3	2.7	2.2	410

Sample ID:		4-5-Z	4-5-Z	4-6-Z	4-7-Z
Sample Depth (in.):		36	36 (DUP)	36	36
Metals					
Arsenic	X	7.2	7.9	9.2	7.9
Chromium		15	21	17	37
Copper		38	56	23	18
Lead		120	120	0.25U	25U
Nickel		27	32	12U	13
Zinc		50	820	160	160

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	GA-1-A	GA-2-A	GA-3-A	GA-4-A	GA-5-B	GA-5-B
Sample Depth (in.):	12-36	12-36	12-36	12-36	0	0 (DUP)
Metals						
Arsenic	30	16	34	42	19	27
Cadmium	0.25U	0.37	0.55	0.5	2.5	2.6
Chromium	3200	470	110	860	13000	8000
Copper	95	57	110	89	180	190
Lead	460	84	150	160	330	400
Selenium	4.6	3	3.9	2.6	1.4U	1.5U
Miscellaneous Parameters						
Cyanide	4.1U	2.7U	2.2U	2.2	2.4	10

Sample ID:	GA-6-A	GA-7-A
Sample Depth (in.):	12-36	12-36
Metals		
Arsenic	8.5	21
Cadmium	0.25U	0.92U
Chromium	140	440
Copper	36	74
Lead	47	130
Selenium	2.7	7.1
Miscellaneous Parameters		
Cyanide	13	12

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	5A	5-8-Z	5-8-Z	5-9-Z	
Sample Depth (in.):	12-36	36	36 (DUP)	36	
Volatile Organics					
Chloromethane		0.6U	2U	2U	
Bromomethane		0.6U	2U	2U	
Vinyl Chloride		0.6U	2U	2U	
Chloroethane		0.6U	2U	2U	
Methylene Chloride	0.034	0.6U	2U	4.6	
Trichlorofluoromethane		0.6U	2U	2U	
1,1-Dichloroethylene	0.007	0.6U	2U	2U	
1,1-Dichloroethane	0.006	0.6U	2U	2U	
Trans-1,2-dichloroethylene	0.061	0.6U	2U	2U	
Chloroform	0.02	0.6U	2U	2U	
1,2-Dichloroethane		0.6U	2U	2U	
1,1,1-Trichloroethane	0.143	3U	5U	5.5	*
Carbon Tetrachloride		0.6U	2U	2U	
Bromodichloromethane		0.6U	2U	2U	
1,1-Dichloropropane		0.6U	2U	2U	
Trans-1,3-dichloropropene		0.6U	2U	2U	
Trichloroethylene	2.96	5	4.4	7.4	* 1ppm STD
Dibromochloromethane		0.6U	2U	2U	
Cis-1,3-dichloropropene		0.6U	2U	2U	
1,1,2-Trichloroethane		0.6U	2U	2U	
Benzene		1.1	2U	2U	
1-Chloroethyl-vinyl ether		0.6U	2U	2U	
Bromoform		0.6U	2U	2U	
Tetrachloroethene	1.5	0.6U	2U	12	* 1ppm
1,1,2,2-Tetrachloroethane		0.63	2U	2U	
Toluene		3.4	2U	2U	
Chlorobenzene		0.6U	2U	2U	
Ethylbenzene		0.6U	2U	4	100

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	5A	5-1-A	5-2-A	5-3-A	5-4-A	5-5-A
Sample Depth (in.):	12-36	12-36	12-36	12-36	12-36	12-36
Metals						
Antimony	2.7U					
Arsenic	* 8.7	13	130	1200	590	13
Barium	140U					
Beryllium	* 14U					
Cadmium		0.25U	0.25U	0.37	0.36	0.25U
Chromium	49	19	21	14	25	18
Copper	100	39	43	99	71	68
Lead	* 54	83	150	640	280	110
Mercury	0.81					
Nickel	46					
Selenium	2.7U	1.4U	1.8U	7.3	1.4U	1.5U
Silver	14U					
Thallium	* 140U					
Zinc	520					
Miscellaneous Parameters						
Cyanide			110	12	2.3U	2U

Sample ID:	5-6-A	5-7-A	5-8-Z	5-9-Z
Sample Depth (in.):	12-36	12-36	36	36
Metals				
Arsenic	* 28	200	33	7.7
Cadmium	0.25U	0.25U		
Chromium	* 19	580	17	13
Copper	54	36	45	38
Lead	38	33	25U	25U
Nickel			28	15
Selenium	1.6U	1.4U		
Zinc			470	130
Miscellaneous Parameters				
Cyanide	2.2U	2.1U		

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	6A	6-8-Z
Sample Depth (in.):	12-36	36
Volatile Organics		
Chloromethane		3U
Bromomethane		3U
Vinyl Chloride		3U
Chloroethane		3U
Methylene Chloride	26	3U
Trichlorofluoromethane		3U
1,1-Dichloroethylene	0.76	3U
1,1-Dichloroethane	0.59	3U
Trans-1,2-dichloroethylene	25	3U
Chloroform	0.32	3U
1,2-Dichloroethane		3U
1,1,1-Trichloroethane	18	9.5
Carbon Tetrachloride		280
Bromodichloromethane	0.38	3U
1,1-Dichloropropane		3U
Trans-1,3-dichloropropene		3U
Trichloroethylene		230
Dibromochloromethane		3U
Cis-1,3-dichloropropene		3U
1,1,2-Trichloroethane		3U
Benzene	0.18	3U
1-Chloroethyl-vinyl ether		3U
Bromoform		3U
Tetrachloroethene		150
1,1,2,2-Tetrachloroethane		8.7
Toluene	39	3U
Chlorobenzene		3U
Ethylbenzene	3.2	3U

Summary of Data for Excavated Area
Data in ppm

Sample ID:		6A	6-1-A	6-2-A	6-3-A	6-4-A	6-5-A
Sample Depth (in.):		12-36	12-36	12-36	12-36	12-36	12-36
Metals							
Antimony	14	6.2U					
Arsenic	2	29	120	20	28	11	7.2
Barium	70	120U					
Beryllium	1	12U					
Cadmium	1/100		0.25U	0.25U	0.64	2.2	8.1
Chromium	10/500	52	24	22	54	16	19
Copper	600	90	98	84	170	320	120
Lead	100/500	120	200	81	210	150	100
Mercury	14	0.58					
Nickel	[illegible]	25U					
Selenium	[illegible]	2.5U	1.8	1.6U	1.1U	1.6U	1.3U
Silver	100	12U					
Thallium	2	120U					
Zinc		920					
Miscellaneous Parameters							
Cyanide		54	2.6U	2.8U	1.8	2U	1.7U

Sample ID:	6-6-A	6-7-A	6-8-Z
Sample Depth (in.):	12-36	12-36	36
Metals			
Arsenic	35	12	27
Cadmium	0.25U	0.25U	
Chromium	26	15	17
Copper	52	32	42
Lead	170	56	25U
Nickel			34
Selenium	1.4U	1.4U	
Zinc			420
Miscellaneous Parameters			
Cyanide	1.3U	1.9U	

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	7-1-X	7-2-X
Sample Depth (in.):	0	0
Metals		
Arsenic	47	34
Chromium	250	
Copper		190
Lead	540	180

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	8A	8-5-Z
Sample Depth (in.):	12-36	36
Metals		
Antimony	3.4	
Arsenic	7.6	
Barium	240	
Beryllium	14U	
Cadmium	0.25U	
Chromium	28U	
Copper	90	450
Lead	360	150
Mercury	0.35	
Nickel	28	
Selenium	2.8U	
Silver	14U	
Thallium	140U	
Zinc	87	

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Summary of Data for Excavated Areas
Data in ppm

Sample ID:	11A	11-2-A	11-3-A	11-4	11-4	11-10
Sample Depth (in.):	12-36	12-36	12-36	48-72	48-72 (DUP)	0-6
Miscellaneous Paramaters						
PCBs				1.5	1U	85
TPHC	5500	10300	11400			

Sample ID:	11-11	11-18	11-19	11-20	11-21
Sample Depth (in.):	120-132	48-72	84-96	132-144	132-144
Miscellaneous Paramaters					
PCBs	5U	5.5	6.2	5U	5U

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Summary of Data for Excavated Areas
Data in ppm

Sample ID:	14-1-A	14-2-A	14-3-A	14-4-A	14-5-A	14-6-A
Sample Depth (in.):	12-36	12-36	12-36	12-36	12-36	12-36
Metals						
Arsenic	35	17	15	8.4	5.8	14
Cadmium	0.25U	0.35	0.5	2	0.28	0.25U
Chromium	38	27	34	38	25	40
Copper	87	88	45	79	53	53
Lead	110	93	160	110	130	80
Selenium	1.3U	1.3U	1.4U	1.3U	1.3U	1.3U
Miscellaneous Paramaters						
TPHC	5U	42	26	56	5U	5U

Sample ID:	14-7-A	14-9-A
Sample Depth (in.):	12-36	12-36
Metals		
Arsenic	23	16
Cadmium	0.25U	0.38
Chromium	19	36
Copper	77	58
Lead	190	150
Selenium	1.3U	1.3U
Miscellaneous Paramaters		
TPHC	5U	180

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	15A	15-5-Z	15-6-Z	15-7-Z	15-8-Z
Sample Depth (in.):	12-36	36	36	36	36
Volatile Organics					
Chloromethane		0.6U	0.6U	0.6U	0.6U
Bromomethane		0.6U	0.6U	0.6U	0.6U
Vinyl Chloride		0.6U	0.6U	0.6U	0.6U
Chloroethane		0.6U	0.6U	0.6U	0.6U
Methylene Chloride		0.6U	0.6U	0.6U	0.6U
Trichlorofluoromethane		0.6U	0.6U	0.6U	0.6U
1,1-Dichloroethylene		0.6U	0.6U	0.6U	0.6U
1,1-Dichloroethane		0.6U	0.6U	0.6U	0.6U
Trans-1,2-dichloroethylene		0.6U	0.6U	0.6U	0.6U
Chloroform		0.6U	0.6U	0.6U	0.6U
1,2-Dichloroethane		0.6U	0.6U	0.6U	0.6U
1,1,1-Trichloroethane		3U	3U	3U	3U
Carbon Tetrachloride		0.6U	0.6U	0.6U	0.6U
Bromodichloromethane		0.6U	0.6U	0.6U	0.6U
1,1-Dichloropropane		0.6U	0.6U	0.6U	0.6U
Trans-1,3-dichloropropene		0.6U	0.6U	0.6U	0.6U
Trichloroethylene		0.6U	0.6U	0.6U	0.6U
Dibromochloromethane		0.6U	0.6U	0.6U	0.6U
Cis-1,3-dichloropropene		0.6U	0.6U	0.6U	0.6U
1,1,2-Trichloroethane		0.6U	0.6U	0.6U	0.6U
Benzene	1.6	0.6U	0.6U	0.6U	0.6U
1-Chloroethyl-vinyl ether		0.6U	0.6U	0.6U	0.6U
Bromoform		0.6U	0.6U	0.6U	0.6U
Tetrachloroethene		0.6U	0.6U	0.6U	0.6U
1,1,2,2-Tetrachloroethane		0.6U	0.6U	0.6U	0.6U
Toluene	0.65	0.6U	0.6U	0.6U	0.6U
Chlorobenzene		0.6U	0.6U	0.6U	0.6U
Ethylbenzene		0.6U	0.6U	0.6U	1.1

Sample ID:	15A	15-1-A	15-2-A	15-3-A	15-5-Z
Sample Depth (in.):	12-36	12-36	12-36	12-36	36
Miscellaneous Paramaters					
TPHC	110	36	11	30	8200

Sample ID:	15-6-Z	15-7-Z	15-8-Z
Sample Depth (in.):	36	36	36
Miscellaneous Paramaters			
TPHC	1100	100	290

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Summary of Data for Excavated Areas
Data in ppm

Sample ID:	16A	16-9-Z	16-10-Z
Sample Depth (in.):	12-36	36	36
Volatile Organics			
Chloromethane		0.6U	0.6U
Bromomethane		0.6U	0.6U
Vinyl Chloride	0.61	0.6U	0.6U
Chloroethane		0.6U	0.6U
Methylene Chloride		0.7	0.6U
Trichlorofluoromethane		0.6U	0.6U
1,1-Dichloroethylene	0.71	0.6U	0.6U
1,1-Dichloroethane		0.6U	0.6U
Trans-1,2-dichloroethylene	39	0.6U	0.6U
Chloroform		0.6U	0.6U
1,2-Dichloroethane *	193	0.6U	0.6U
1,1,1-Trichloroethane	0.37	3U	3U
Carbon Tetrachloride		0.6U	0.65
Bromodichloromethane		0.6U	0.6U
1,1-Dichloropropane		0.6U	0.6U
Trans-1,3-dichloropropene		0.6U	0.6U
Trichloroethylene		0.6U	14
Dibromochloromethane		0.6U	0.6U
Cis-1,3-dichloropropene		0.6U	0.6U
1,1,2-Trichloroethane		0.6U	0.6U
Benzene	0.54	0.6U	0.6U
1-Chloroethyl-vinyl ether		0.6U	0.6U
Bromoform		0.6U	0.6U
Tetrachloroethene		0.6U	1.5
1,1,2,2-Tetrachloroethane		0.6U	0.6U
Toluene		0.6U	2.3
Chlorobenzene	0.27	0.6U	0.6U
Ethylbenzene	0.2	0.6U	0.6U

500

932630437

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	16A	16-1-A	16-2-A	16-3-A	16-4-A	16-5-A
Sample Depth (in.):	12-36	12-36	12-36	12-36	12-36	12-36
Metals						
Antimony	2.7U					
Arsenic	12	10	57	28	28	63
Barium	910					
Beryllium	14U					
Cadmium	14U	0.25U	2.3	1.3	0.25U	1.5
Chromium	1160	500	630	590	1200	730
Copper	220	78	360	2300	86	85
Lead	380	200	1000	3000	180	300
Mercury	0.85					
Nickel	170					
Selenium	26	2.4	1.2U	1.3U	1.4U	1.4U
Silver	14U					
Thallium	140U					
Zinc	390					

Sample ID:	16-6-A	16-7-A	16-8-A	16-9-Z	16-10-Z
Sample Depth (in.):	12-36	12-36	12-36	36	36
Metals					
Arsenic	33	24	10		9.6
Cadmium	0.8	2.4	0.25U		
Chromium	160	9000	1300	110	31
Copper	94	140	120	74	120
Lead	65	170	120	55	180
Nickel				34	29
Selenium	12	2.4	1.4U		
Zinc				200	120

932630438

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	17A	17-1-Z	17-2-Z	17-2-Z
Sample Depth (in.):	12-36	36	36	36 (DUP)
Volatile Organics				
Chloromethane		0.6U	0.6U	0.6U
Bromomethane		0.6U	0.6U	0.6U
Vinyl Chloride		0.6U	0.6U	0.6U
Chloroethane		0.6U	0.6U	0.6U
Methylene Chloride		0.9	0.6U	0.69
Trichlorofluoromethane		0.6U	0.6U	0.6U
1,1-Dichloroethylene		0.6U	0.6U	0.6U
1,1-Dichloroethane		0.6U	0.6U	0.6U
Trans-1,2-dichloroethylene		0.6U	0.6U	0.6U
Chloroform		0.6U	0.69	0.6U
1,2-Dichloroethane		0.6U	0.6U	0.6U
1,1,1-Trichloroethane		3U	6.5	5.5
Carbon Tetrachloride		0.6U	1	0.94
Bromodichloromethane		0.6U	0.6U	0.6U
1,1-Dichloropropane		0.6U	0.6U	0.6U
Trans-1,3-dichloropropene		0.6U	0.6U	0.6U
Trichloroethylene		0.6U	0.63	0.6U
Dibromochloromethane		0.6U	0.6U	0.6U
Cis-1,3-dichloropropene		0.6U	0.6U	0.6U
1,1,2-Trichloroethane		0.6U	0.6U	0.6U
Benzene		0.6U	0.6U	0.6U
1-Chloroethyl-vinyl ether		0.6U	0.6U	0.6U
Bromoform		0.6U	0.6U	0.6U
Tetrachloroethene		0.6U	27	19
1,1,2,2-Tetrachloroethane		0.6U	1.6	0.6U
Toluene		1.9	2.6	1.8
Chlorobenzene		0.6U	0.6U	0.6U
Ethylbenzene		0.6U	0.68	0.6U
Metals				
Antimony	6.2U			
Arsenic	4.2	7	17	
Barium	120U			
Beryllium	12U			
Cadmium	0.25U			
Chromium	25U	19	140	
Copper	88	38	410	
Lead	25U	73	170	
Mercury	0.13			
Nickel	25U	14	83	
Selenium	2.5U			
Silver	12U			
Thallium	120U			
Zinc	48	62	430	

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	21A	21B	21-1-A	21-2-A	21-3-A	21-6-A
Sample Depth (in.):	12-36	0	24-36	24-36	24-36	24-36
Volatile Organics						
Methylene Chloride		0.031				
1,1,1-Trichloroethane		0.008				
Metals						
Antimony	6.2U					
Arsenic	10					
Barium	120U					
Beryllium	12U					
Chromium	50					
Copper	55					
Lead	250					
Mercury	0.1					
Nickel	25U					
Selenium	2.5U					
Silver	12U					
Thallium	120U					
Zinc	130					
Miscellaneous Paramaters						
Cyanide	12U					
PCBs	1.1		2.3	1.6	1U	2.5

Sample ID:	21-7-Z	21-8-X	21-9-X	21-10-Z
Sample Depth (in.):	36	0	0	36
Metals				
Copper		38		
Lead	490		50	96
Nickel		100		
Zinc	350		140	300
Miscellaneous Paramaters				
Cyanide	U	1.7	U	U

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	22B	22-10-X	22-11-X	22-12-Z
Sample Depth (in.):	0	0	0	36
Volatile Organics				
Methylene Chloride	0.013			
Chloroform	0.018			
Metals				
Antimony	6.2U			
Arsenic	12			
Barium	200			
Beryllium	12U			
Chromium	50			
Copper	78			
Lead	410	65	51	150
Mercury	0.12			
Nickel	38			
Selenium	2.5U			
Silver	12U			
Thallium	120U			
Zinc	350	160	120	400

Sample ID:	22B	22-1-A	22-2-A	22-3-A	22-4-A	22-5-A
Sample Depth (in.):	0	24-36	24-36	24-36	24-36	24-36
Miscellaneous Paramaters						
Cyanide	12U					
PCBs	21	19.8	2.9	9.6	5.8	5.4

Sample ID:	22-6-A	22-7-B	22-7-B	22-8-B	22-9-A
Sample Depth (in.):	24-36	0	0 (DUP)	0	24-36
Miscellaneous Paramaters					
PCBs	10U	2.7	4.4	16.5	10U

Sample ID:	22-10-X	22-11-X	22-12-Z
Sample Depth (in.):	0	0	36
Miscellaneous Paramaters			
PCBs	U	U	1.3

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	25A	25-1-Y	25-2-Y	25-3-X
Sample Depth (in.):	12-36	12-36	12-36	0
Metals				
Antimony	6.2U			
Arsenic	5			
Barium	120U			
Beryllium	12U			
Chromium	25U			
Copper	150			
Lead	88	460	130	
Mercury	0.44			
Nickel	25U			
Selenium	2.5U			
Silver	12U			
Thallium	120U			
Zinc	750	100	310	350
Miscellaneous Parameters				
Cyanide	12U			

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	26A
Sample Depth (in.):	12-36
Metals	
Antimony	2.9U
Arsenic	8.1
Barium	140U
Beryllium	14U
Chromium	1580
Copper	170
Lead	230
Mercury	0.81
Nickel	126
Selenium	2.9U
Silver	14U
Thallium	140U
Zinc	1370
Miscellaneous Parameters	
Cyanide	12U

Sample ID:	26A
Sample Depth (in.):	12–36
Metals	
Antimony	2.9U
Arsenic	8.1
Barium	140U
Beryllium	14U
Chromium	1580
Copper	170
Lead	230
Mercury	0.81
Nickel	126
Selenium	2.9U
Silver	14U
Thallium	140U
Zinc	1370
Miscellaneous Parameters	
Cyanide	12U

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	33A	33Z	33-1-B	33-2-B	33-3-B	33-4-B
Sample Depth (in.):	12-36	36	0	0	0	0
Metals						
Antimony	6.2U					
Arsenic	16	16	30	42	40	51
Barium	120U					
Beryllium	12U					
Cadmium			1	1.5	1.6	2
Chromium	110	150	5300	11000	8500	9900
Copper	65	140	490	730	620	740
Lead	98	240	880	1400	1100	1000
Mercury	0.58					
Nickel	48	56				
Selenium	2.5U		1.4U	1.4U	1.3U	11
Silver	12U					
Thallium	120U					
Zinc	100	200				
Miscellaneous Parameters						
Cyanide		U	160			

Sample ID:	33-5-B	33-6-B	33-7-B	33-8-B	33-9-Z	33-10-Z
Sample Depth (in.):	0	0	0	0	36	36
Metals						
Arsenic	26	35	54	40	15	6.1
Cadmium	2.8	1.6	1.2	1.8		
Chromium	19000	4800	8600	11000	74	1200
Copper	1200	430	620	750	210	120
Lead	1900	900	1100	1400	300	110
Nickel					51	280
Selenium	14	3.1	1.5	1.5U		
Zinc					220	520
Miscellaneous Parameters						
Cyanide					0.79	12

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	33-11-Z	33-12-Z	33-13-Z	33-14-Z
Sample Depth (in.):	36	36	36	36
Metals				
Arsenic	8.4	5.6	2.3	38
Chromium	17	22	13	200
Copper	58	67	U	2300
Lead	83	U	U	1900
Nickel	37	29	U	300
Zinc	130	62	U	13000
Miscellaneous Parameters				
Cyanide	1.2	U	U	U

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	34A	34-1-Z	34-2-Z	34-3-Z	34-4-Z	34-5-Z
Sample Depth (in.):	12-36	36	36	36	36	36
Metals						
Antimony	2.7U					
Arsenic	6	36	15	12	25	8.3
Barium	140U					
Beryllium	14U					
Chromium	27	280	180	180	5000	5800
Copper	36	1800	290	82	610	430
Lead	27U	1200	420	460	270	440
Mercury	0.13					
Nickel	19	220	82	32	1500	1400
Selenium	2.7U					
Silver	14U					
Thallium	140U					
Zinc	60	8600	690	140	4100	3500
Miscellaneous Parameters						
Cyanide		2.7	U	23	57	61

Sample ID:	34-6-Z	34-7-Z
Sample Depth (in.):	36	36
Metals		
Arsenic	4.4	5.2
Chromium	650	U
Copper	210	24
Lead	420	U
Nickel	240	20
Zinc	1300	150
Miscellaneous Parameters		
Cyanide	7.7	21

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	37-1-B	37-2-B	37-3-B	37-4-B	37-5-B	37-6-B
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	11	14	20	17	14	16
Cadmium	2.6	3.2	4.5	1.3	2.1	2.9
Chromium	310	370	5000	1900	480	290
Copper	220	201	150	130	80	120
Lead	220	250	340	200	160	1400
Selenium	0.98U	1.3U	1.6U	1.3U	1.4U	6.3
Miscellaneous Parameters						
Cyanide	34					

Sample ID:	37-7-B	37-8-B	37-9-B	37-10-B	37-10-B (DUP)	37-11-B
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	11	16	14	23	140	13
Cadmium	2.6	3	2.2	3.4	13U	2.6
Chromium	75	1500	1300	6300	5500	540
Copper	220	140	320	180	600	200
Lead	150	240U	280	290	330	240
Selenium	1.2U	1.3U	1.3U	1.4U	1.3U	1.3U

Sample ID:	37-12-B	37-13-B	37-13-B (DUP)
Sample Depth (in.):	0	0	0
Metals			
Arsenic	17	15	17
Cadmium	4.8	29	1.6
Chromium	3000	470	2700
Copper	270	230	240
Lead	330	300	440
Selenium	1.4U	1.2	1.9U

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	38-1-B	38-2-B	38-3-B	38-4-B	38-5-B	38-6-B
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	17	34	54	30	20	25
Cadmium	3.3	0.7	1.7	1.7	1.6	1.2
Chromium	1500	6300	7400	8300	3000	8200
Copper	350	110	170	530	220	130
Lead	270	210	340	240	240	280
Selenium	1.2U	1.2U	1.3U	1.5U	1.2U	1.4U
Miscellaneous Parameters						
Cyanide	100					

Sample ID:	38-7-B	38-8-B	38-9-B	38-10-B	38-11-B
Sample Depth (in.):	0	0	0	0	0
Metals					
Arsenic	12	82	28	44	21
Cadmium	0.5	0.83	1.9	2.6	4.1
Chromium	8200	9300	1100	5600	680
Copper	90	130	180	140	220
Lead	140	300	340	320	400
Selenium	1.4U	4.6	2	1.4U	2

Sample ID:	38-12-X	38-12-X
Sample Depth (in.):	0	0
Metals		
Arsenic	51	59
Chromium	480	1100
Copper	410	60
Lead	740	89
Nickel	140	92
Zinc	480	180
Miscellaneous Parameters		
Cyanide	3.1U	3.1

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	39-2-X	39-3-X	39-4-X	39-7-X	39-7-X
Sample Depth (in.):	0	0	0	0	0 (DUP)
Metals					
Chromium	200	210	88	110	91
Lead	350	250	260	300	280

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	44B	44-2-X
Sample Depth (in.):	0	0
Metals		
Arsenic	29	
Cadmium	2	
Chromium	770	160
Copper	130	
Lead	290	520
Nickel	110	
Selenium	1.3U	
Zinc	200	
Miscellaneous Paramaters		
Cyanide	2.5U	
TPHC	26	

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	45A	45-1-Z	45-6-Z	45-7-Z	45-9-Z
Sample Depth (in.):	12-36	36	36	36	36
Metals					
Arsenic	29				
Cadmium	0.78				
Chromium	46				
Copper	68				
Lead	300	560	340	250	83
Nickel	47				
Selenium	1.3U				
Zinc	230				
Miscellaneous Paramaters					
Cyanide	2.5U				
TPHC	51				

Summary of Data for Excavated Areas
Data in ppm

Sample ID:	47B	47-3-X	47-4-X	47-5-X	47-6-X	47-7-X
Sample Depth (in.):	0	0	0	0	0	0
Metals						
Arsenic	39					
Cadmium	0.58					
Chromium	120	120	240	120	91	110
Copper	66					
Lead	310	460	400	380	240	320
Nickel	50					
Selenium	1.3U					
Zinc	75					
Miscellaneous Paramaters						
Cyanide	2.5U					
TPHC	14					

Sample ID:	47-7-X	47-8-X
Sample Depth (in.):	0 (DUP)	0
Metals		
Chromium	83	250
Lead	260	450

APPENDIX A

NJDEPE CLEANUP APPROVAL LETTER

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
John J. Trela, Ph.D., Director
401 East State St.
CN 028
Trenton, N.J. 08625
609 - 633 - 1408

JUN 26 1987

Christopher Tranchetti
100 Central Avenue, Bldg. 85
South Kearny, NJ 07932

Dear Mr. Tranchetti:

Re: Western Electric, Inc. - Kearny Works
Kearny Town, Hudson County
ECRA Case #84025

This letter is in response to the inspection conducted on June 18, 1987 by Arthur Trenham of the drainline in Building #185 at the referenced facility.

This Department has determined based on this inspection that the drainlines from the plating operation are clean in accordance with the approved Cleanup Plan. Further, this Department finds that both Section 2 (soil cleanup) and Section 4 (other cleanup) of the approved Cleanup Plan are complete with only Section 3 (ground water) still to be remediated.

If you have any questions regarding this matter, please contact Arthur Trenham at 609-633-7141.

Sincerely,

for Barbara Stotts
Thomas R. Kearns, Chief
Bureau of ECRA Applicability
and Compliance

E41:dg
cc: Brian Sogorka, BEERA

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932630455

AT&T

Kearny, New Jersey

ENSR

Remedial Proposal for Contaminated Soil at Former Drum Storage Pad ECRA Case No. 84025

ENSR Consulting and Engineering

February 1993

Document Number 0550-263-400(524)

Figures

932630456

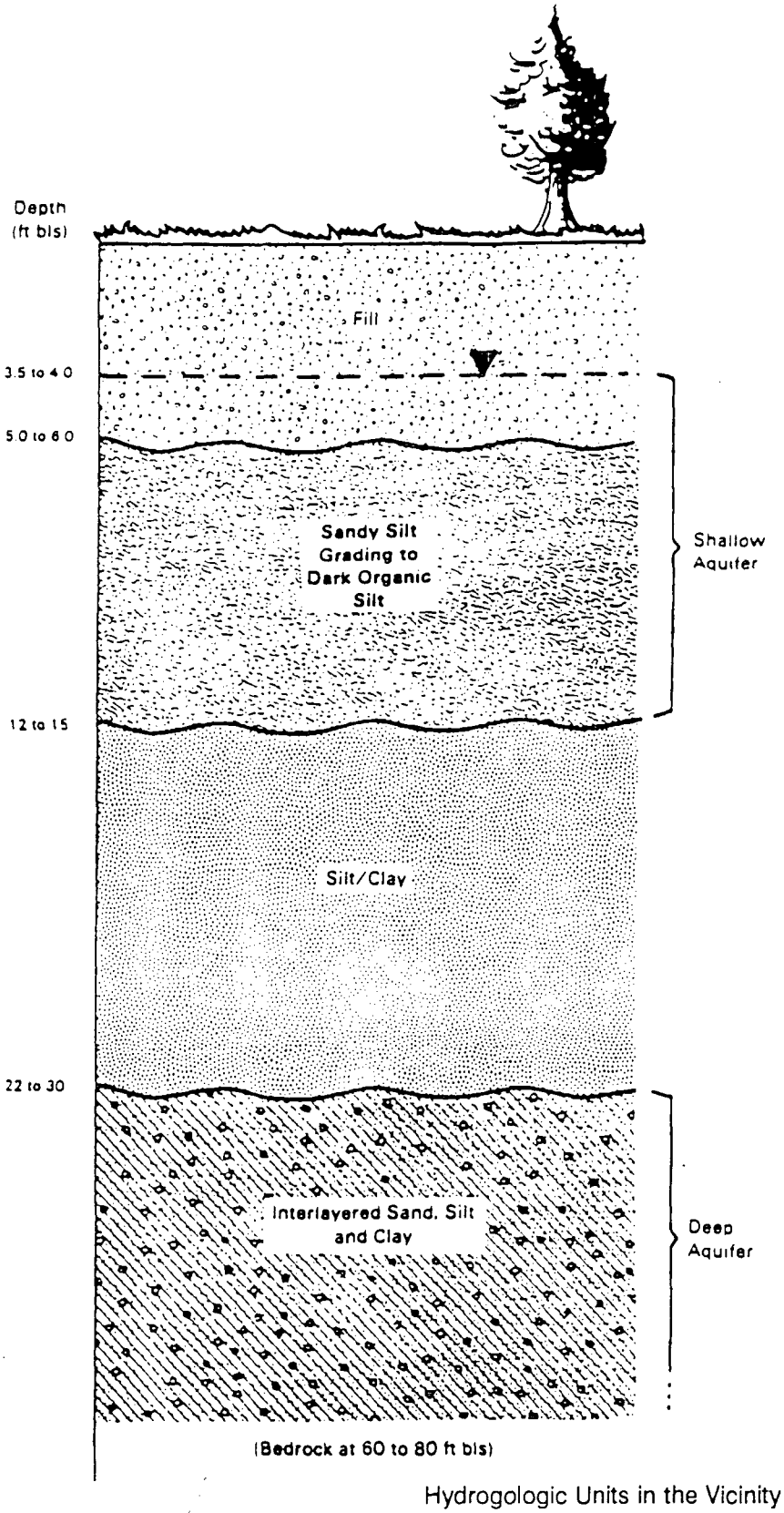


FIGURE 2-1
Hydrogologic Units in the Vicinity of Well ATT11

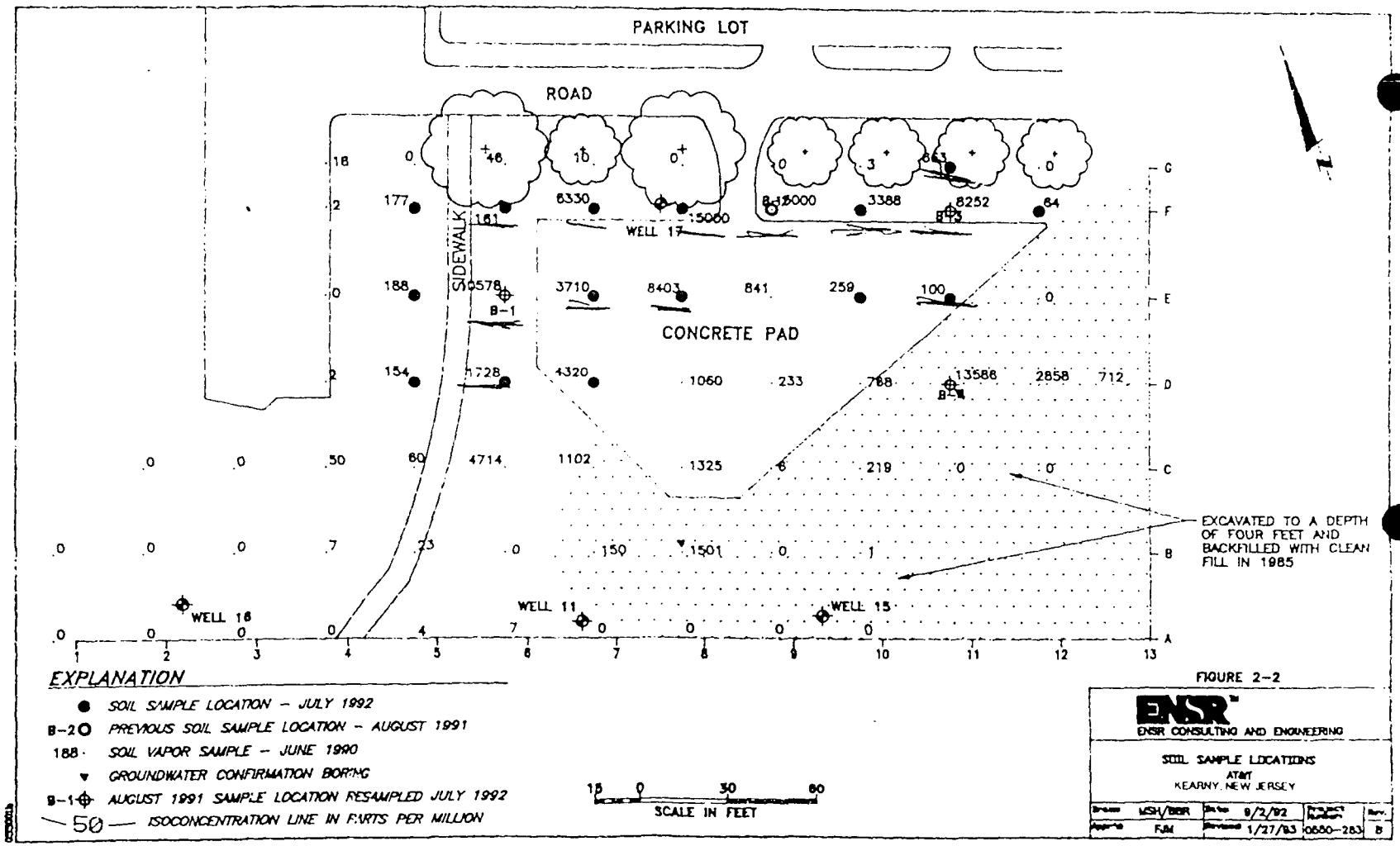
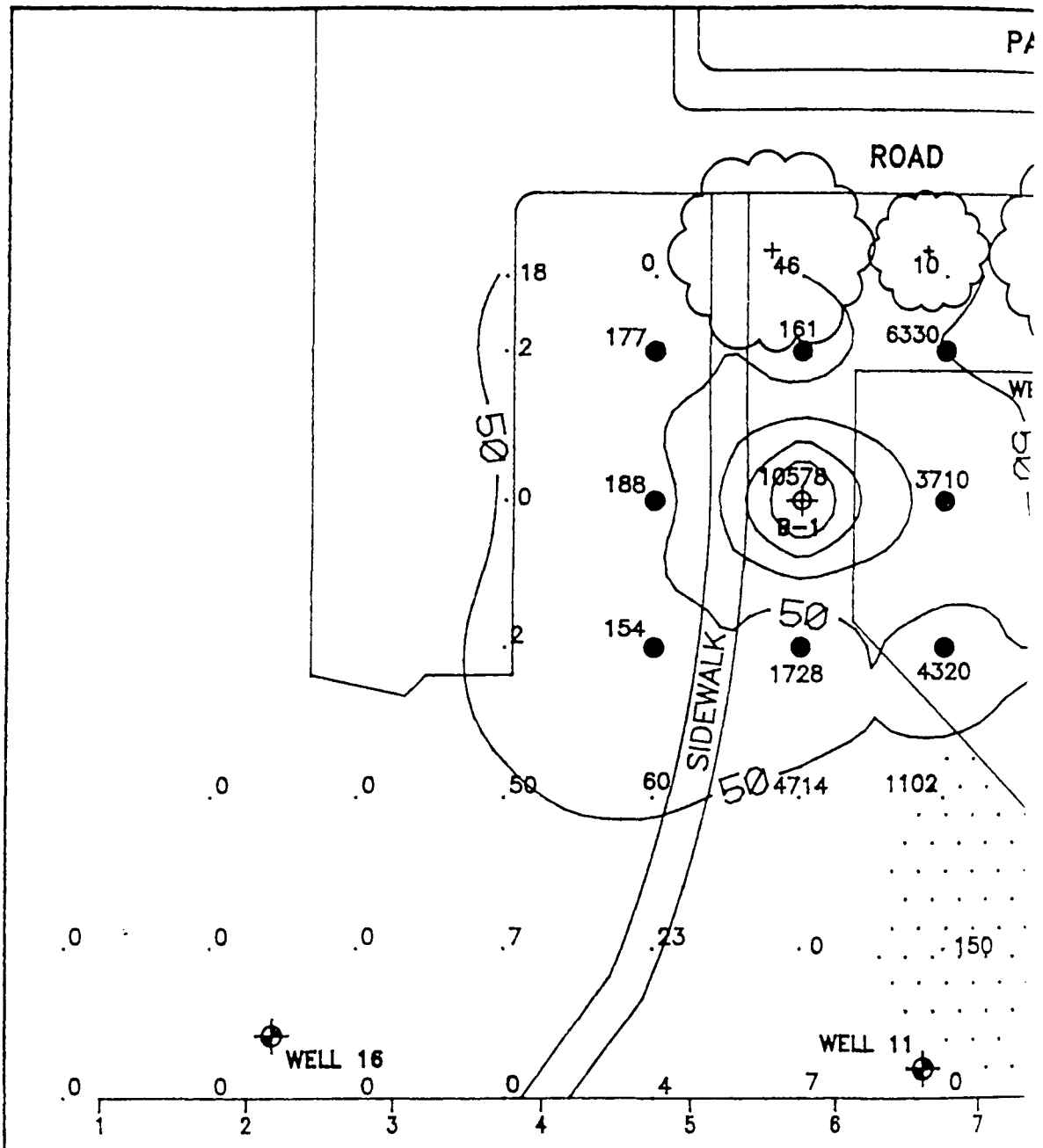


FIGURE 2-2

932630458

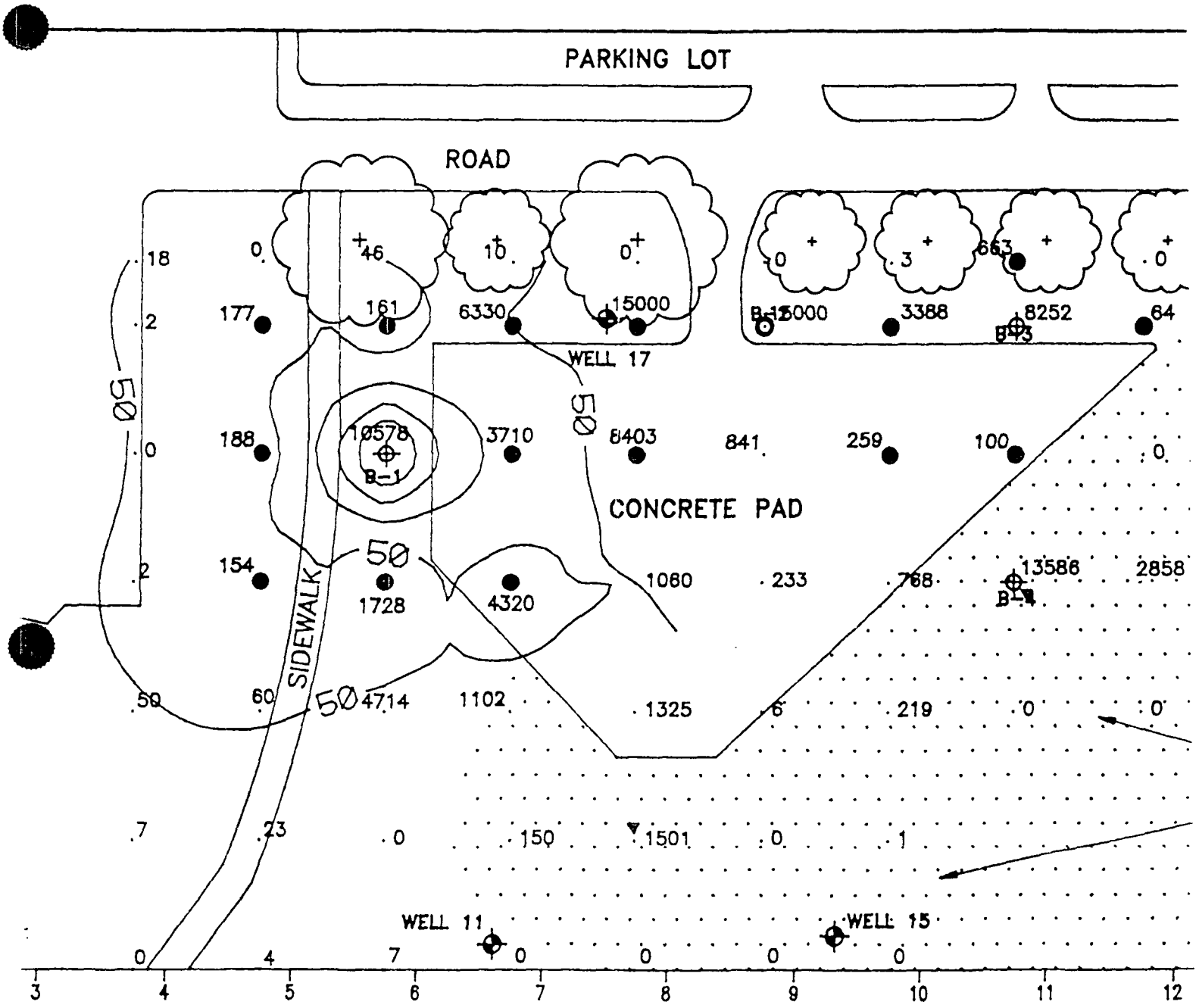


EXPLANATION

- ● SOIL SAMPLE LOCATION – JULY 1992
- B-2 ○ PREVIOUS SOIL SAMPLE LOCATION – AUGUST 1991
- 188 · SOIL VAPOR SAMPLE – JUNE 1990
- ▼ GROUNDWATER CONFIRMATION BORING
- B-1 ⊕ AUGUST 1991 SAMPLE LOCATION RESAMPLED JULY 1992
- 50 — ISOCONCENTRATION LINE IN PARTS PER MILLION
- INDICATES CLEAN-U
- INDICATES CLEAN-U

15 0

932630459



ON – JULY 1992

PLE LOCATION – AUGUST 1991

– JUNE 1990

IRMATION BORING

LE LOCATION RESAMPLED JULY 1992

ION LINE IN PARTS PER MILLION

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS FOR NONRESIDENTIAL SURFACE SOILS

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS FOR RESIDENTIAL SURFACE SOILS

15 0 30 60

SCALE IN FEET

932630460

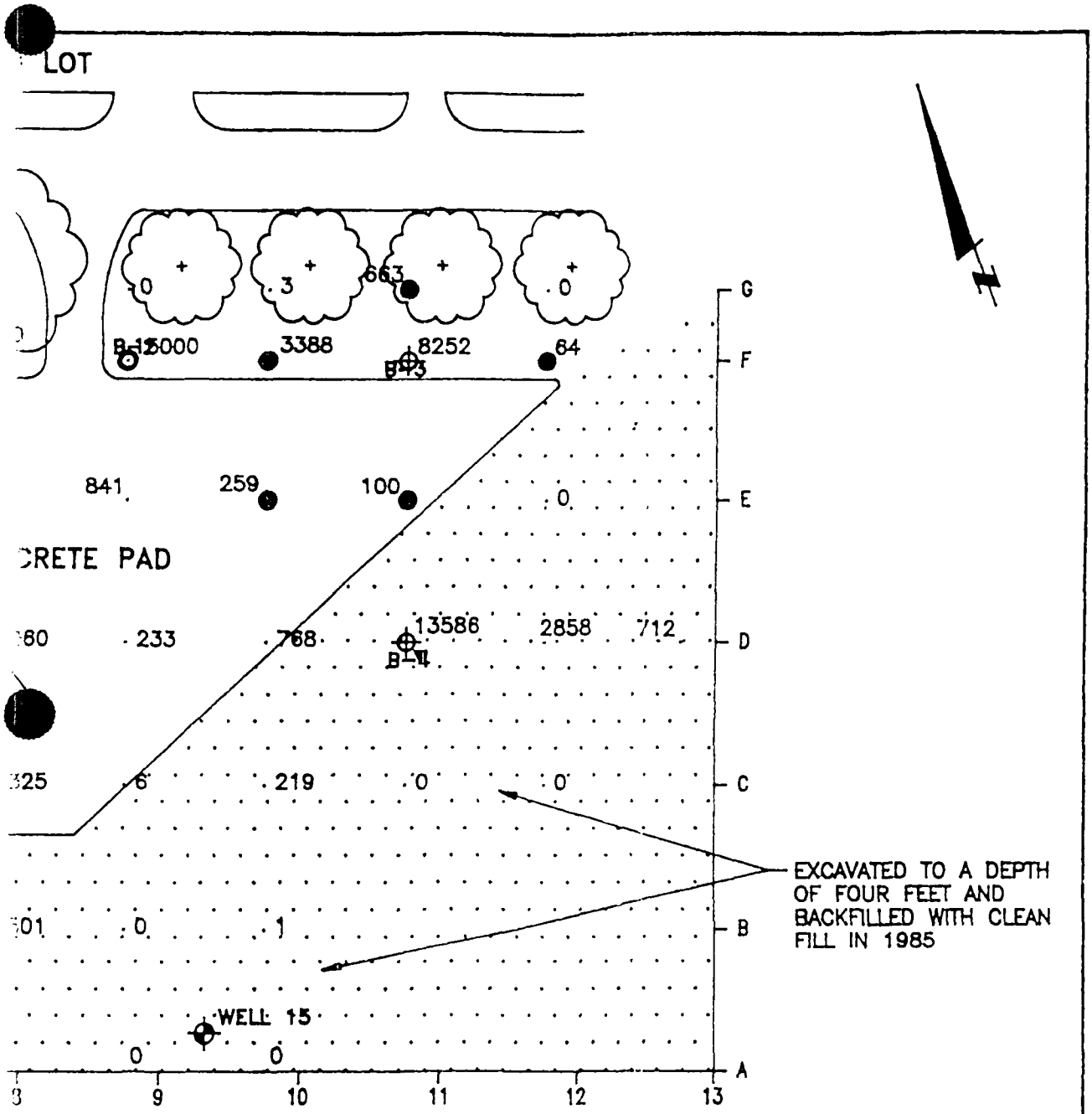


FIGURE 2-3

STIMATED AREA ABOVE NJDEPE PROPOSED DARDS FOR NONRESIDENTIAL SURFACE SOILS

STIMATED AREA ABOVE NJDEPE PROPOSED DARDS FOR RESIDENTIAL SURFACE SOILS

30 60

FEET

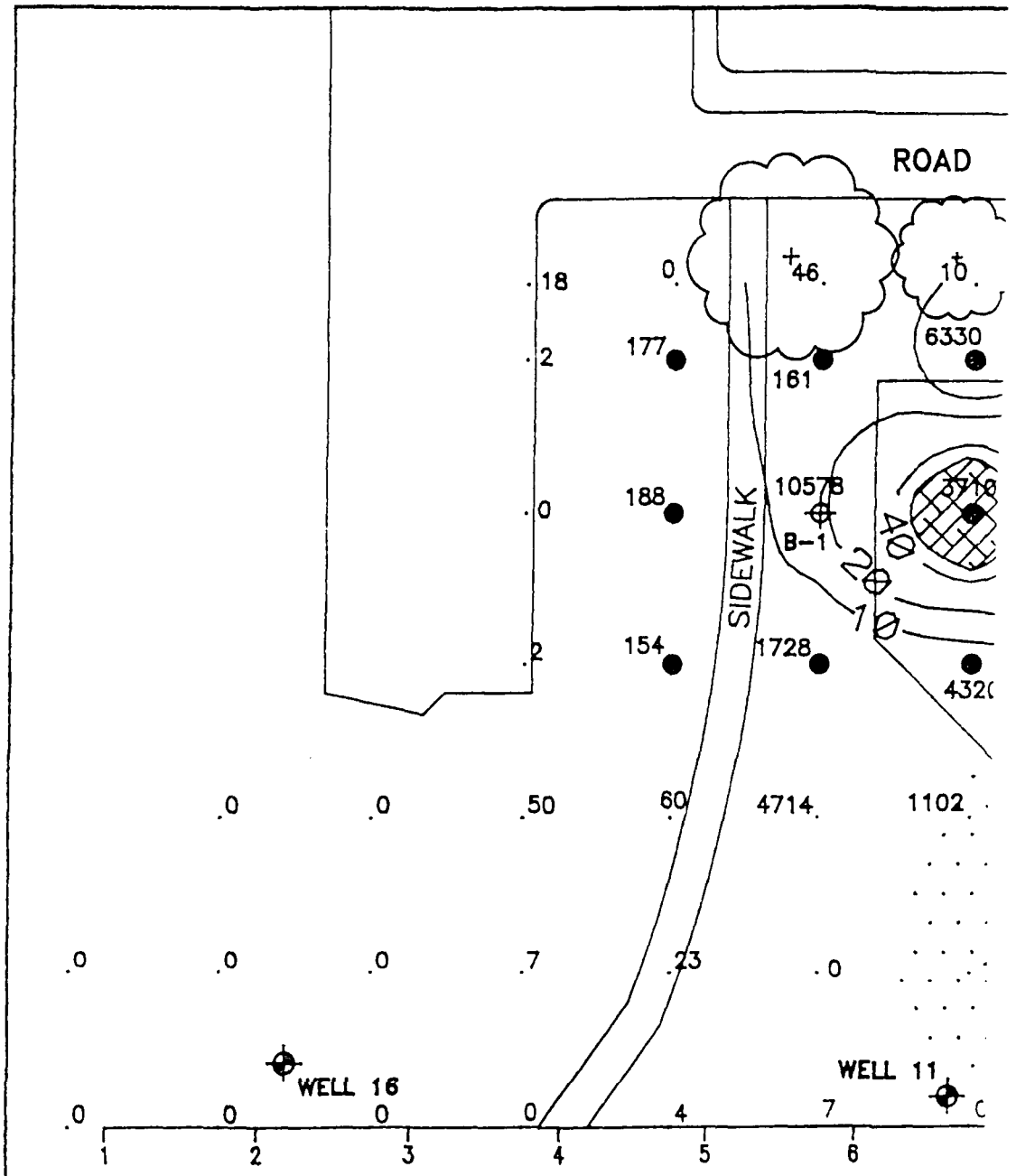
ENSR™

ENSR CONSULTING AND ENGINEERING

TRANS-1,2 DICHLOROETHENE
SURFACE SOIL CONCENTRATION
CONTOURS (0 TO 240)
AT&T
KEARNY, NEW JERSEY

Drawn	MSH/BBR	Date	9/2/92	Project Number	Rev.
Appr'd	FJM	Revised	1/27/93	0550-263	B

932630461



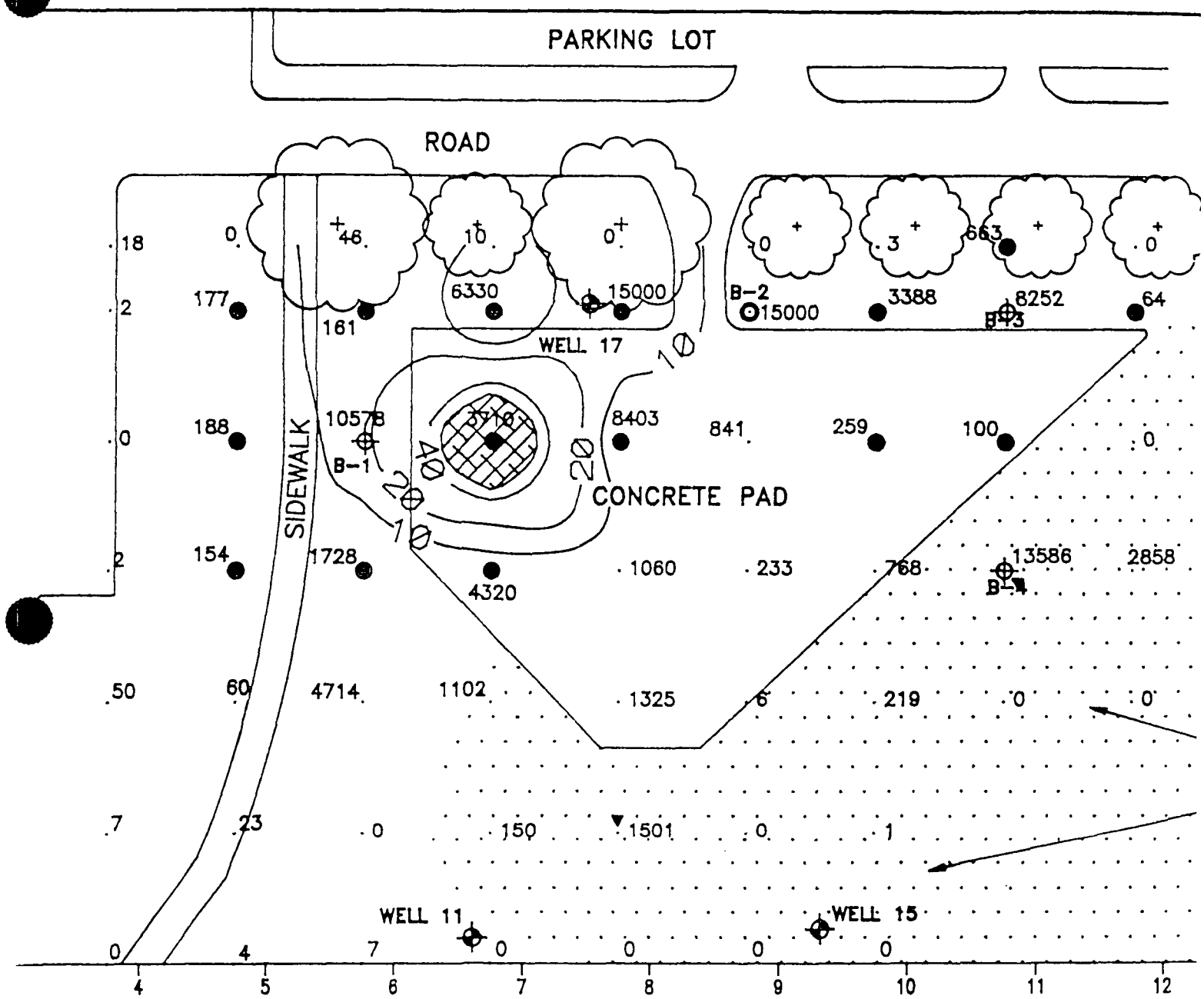
EXPLANATION

- ● SOIL SAMPLE LOCATION – JULY 1992
- B-2 ○ PREVIOUS SOIL SAMPLE LOCATION – AUGUST 1991
- 188 · SOIL VAPOR SAMPLE – JUNE 1990
- ▼ GROUNDWATER CONFIRMATION BORING
- B-1 ⊕ AUGUST 1991 SAMPLE LOCATION RESAMPLED JULY 1992
- — 50 — ISOCONCENTRATION LINE IN PARTS PER MILLION

IN
CL

15

932630462



V – JULY 1992

E LOCATION – AUGUST 1991

– JUNE 1990

MATION BORING

LOCATION RESAMPLED JULY 1992

UNE IN PARTS PER MILLION

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS

15 0 30 60

SCALE IN FEET

932630463

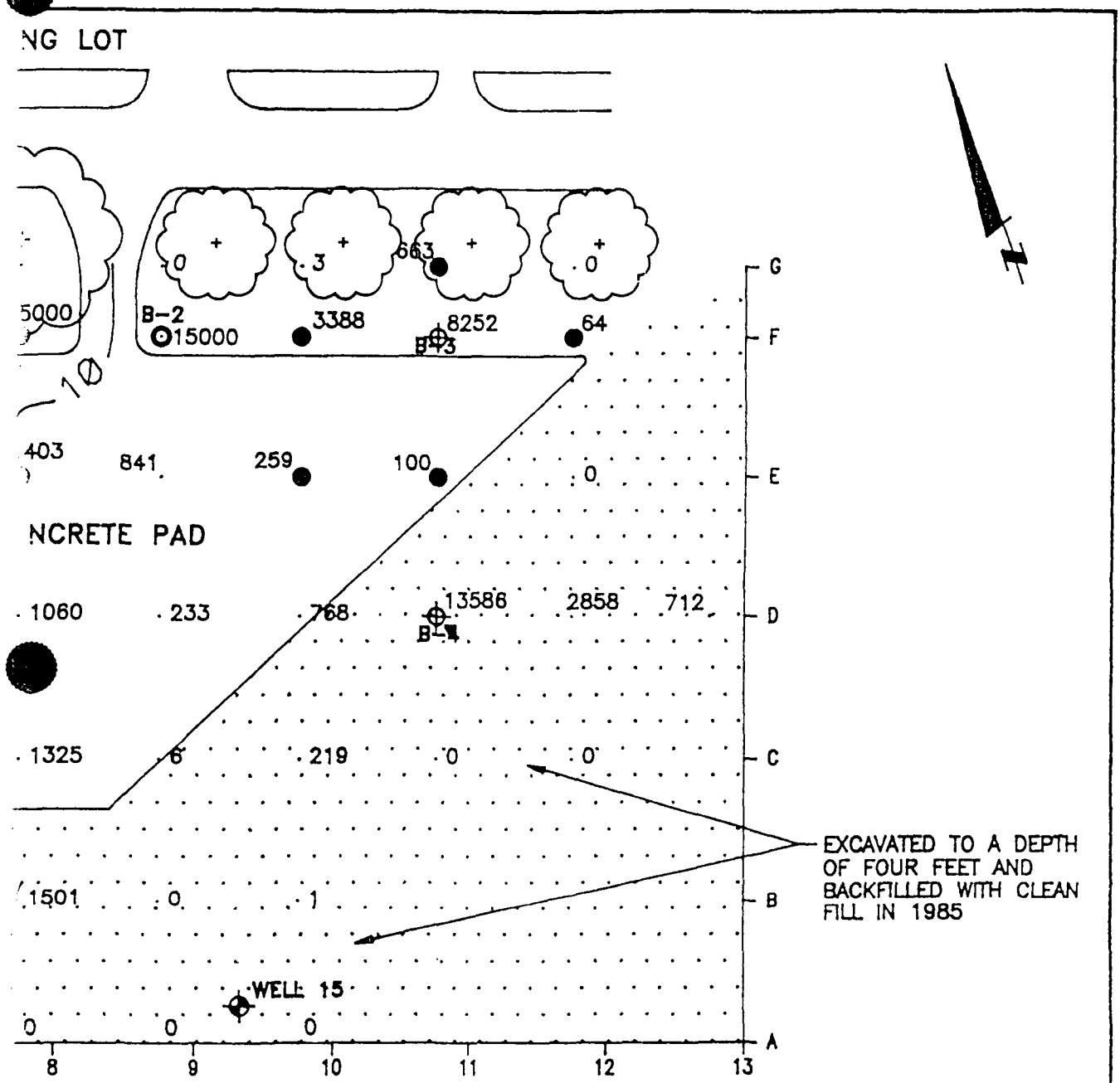


FIGURE 2-4

ESTIMATED AREA ABOVE NJDEPE PROPOSED
NDARDS

30 60
N FEET

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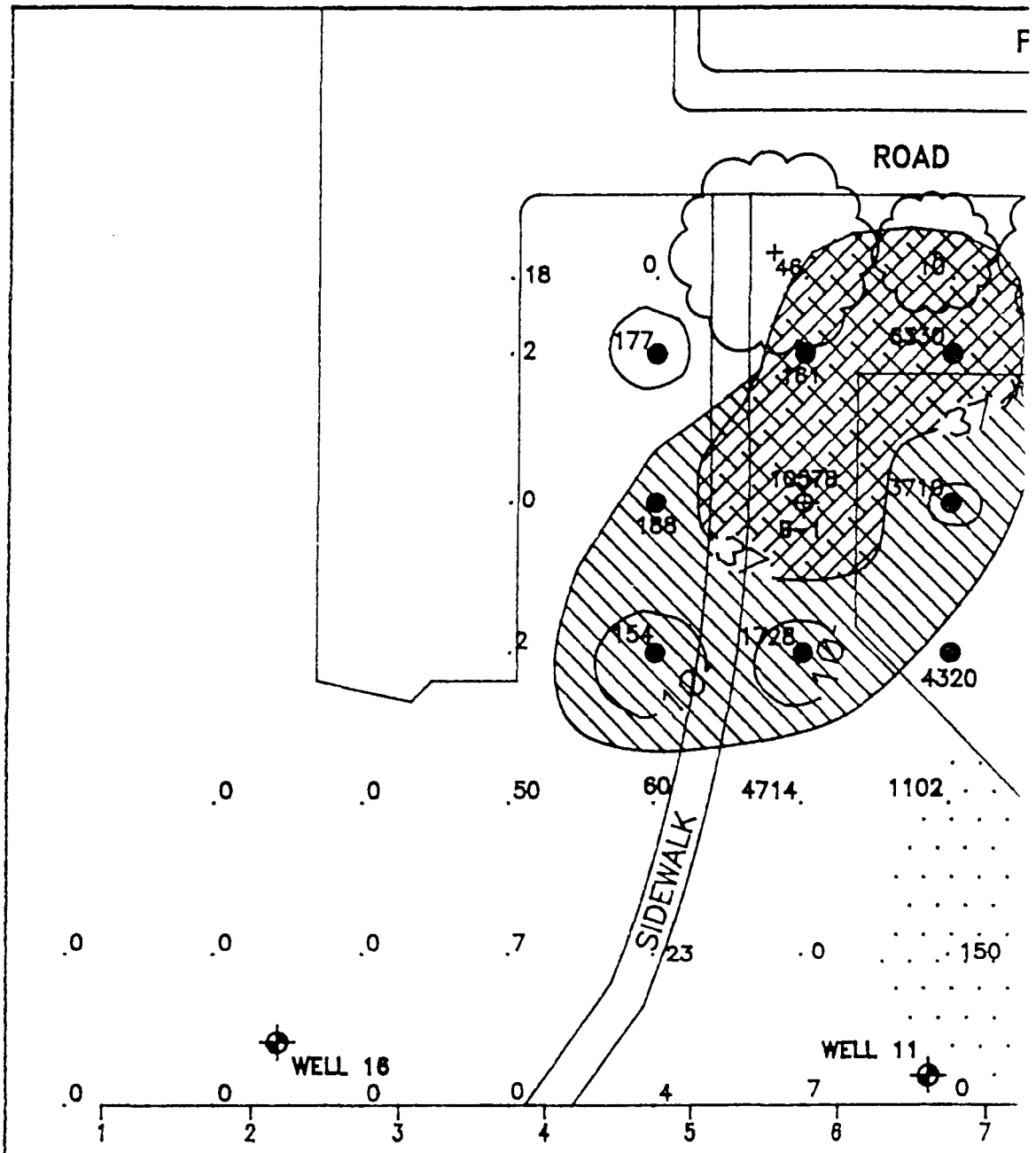
ENSR CONSULTING AND ENGINEERING

TRANS-1,2 DICHLOROETHENE
SUBSURFACE SOIL CONCENTRATION
CONTOURS (24 TO 36')
AT&T
KEARNY, NEW JERSEY

Drawn	MSH/BBR	Date 9/2/92	Project Number	Rev.
Appr'd	FJM	Revised 1/27/93	0550-263	B

932630464

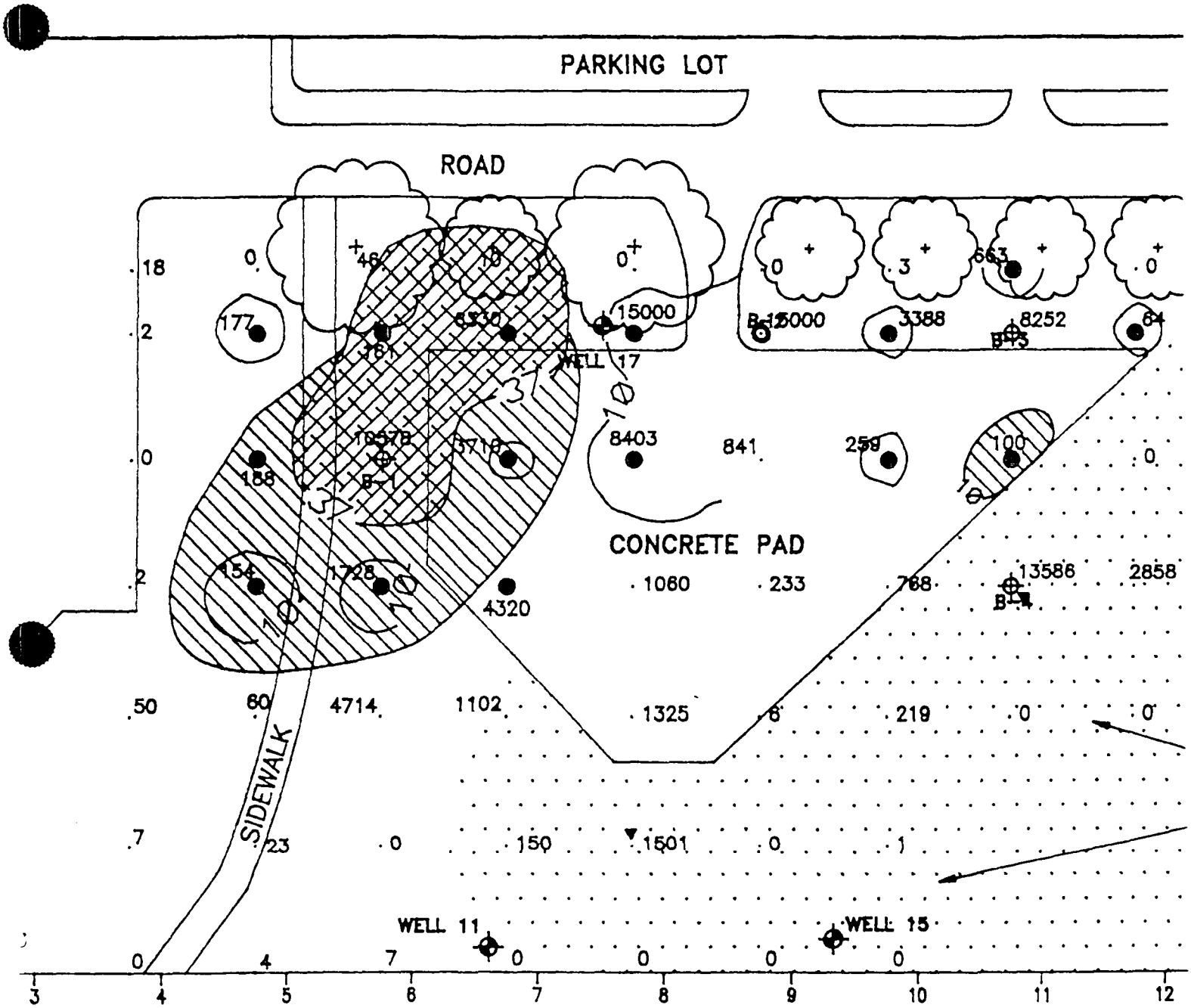


EXPLANATION

- ● SOIL SAMPLE LOCATION – JULY 1992
- B-2 ○ PREVIOUS SOIL SAMPLE LOCATION – AUGUST 1991
- 188 · SOIL VAPOR SAMPLE – JUNE 1990
- ▼ GROUNDWATER CONFIRMATION BORING
- B-1 ⊕ AUGUST 1991 SAMPLE LOCATION RESAMPLED JULY 1992
- 50 ISOCONCENTRATION LINE IN PARTS PER MILLION
- INDICAT. CLEAN–
- INDICAT. CLEAN–

15

932630465



ON – JULY 1992

PLE LOCATION – AUGUST 1991

– JUNE 1990

FIRMATION BORING

LE LOCATION RESAMPLED JULY 1992

LINE IN PARTS PER MILLION

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS FOR NONRESIDENTIAL SURFACE SOILS

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS FOR RESIDENTIAL SURFACE SOILS

15 0 30 60

SCALE IN FEET

932630466

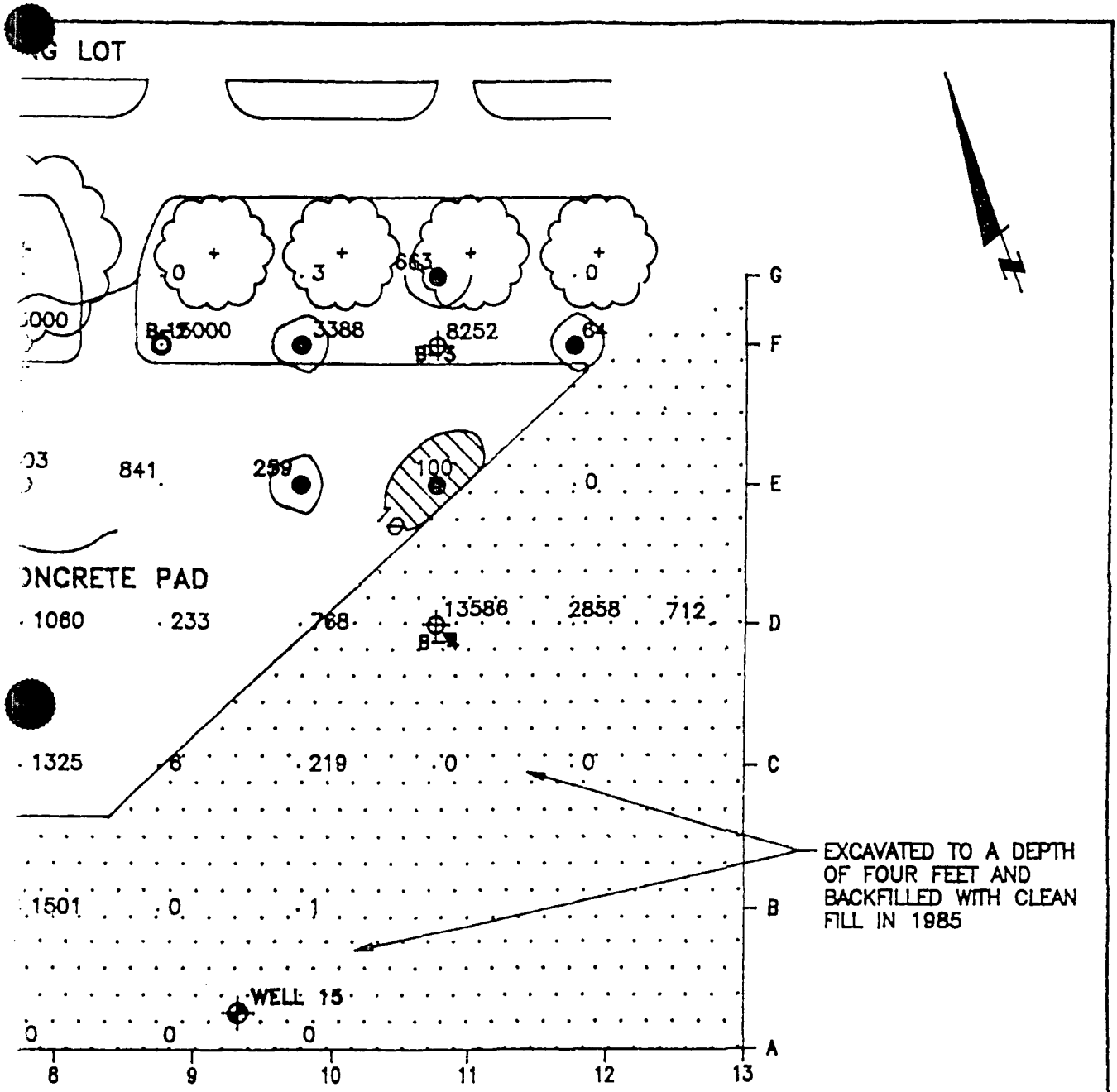


FIGURE 2-5

ESTIMATED AREA ABOVE NJDEPE PROPOSED NDARDS FOR NONRESIDENTIAL SURFACE SOILS

ESTIMATED AREA ABOVE NJDEPE PROPOSED NDARDS FOR RESIDENTIAL SURFACE SOILS

30 60

E IN FEET

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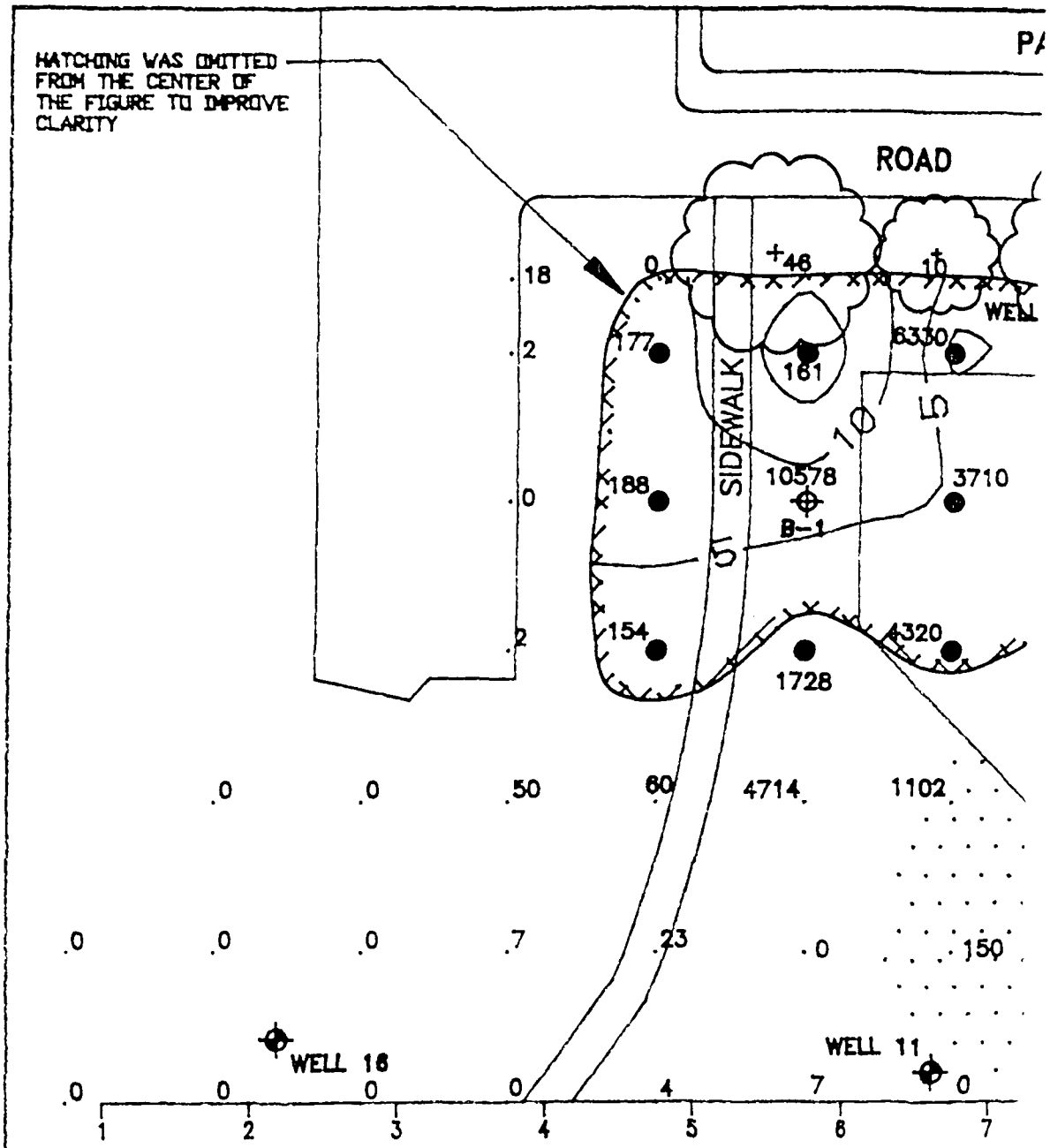
ENSR CONSULTING AND ENGINEERING

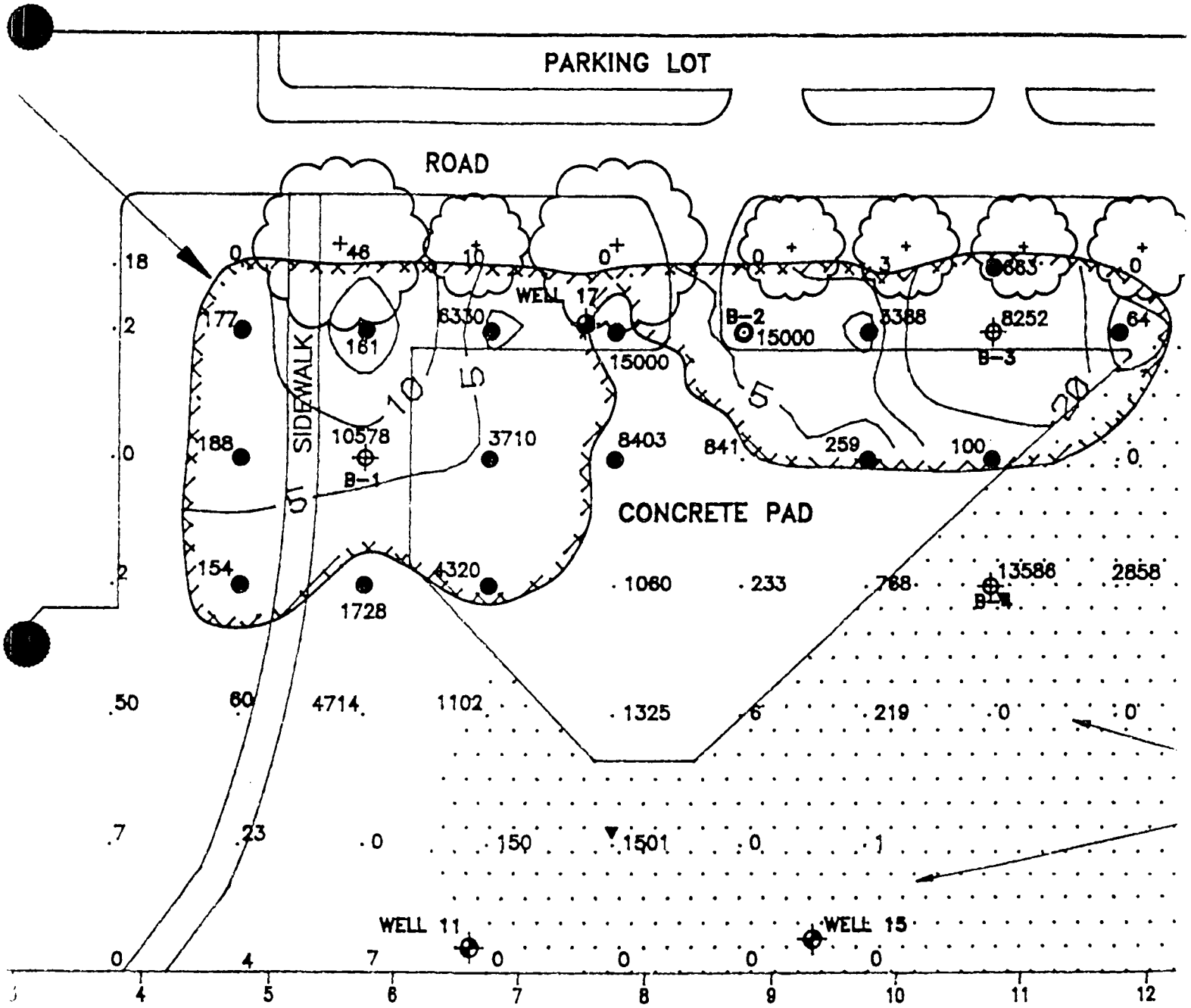
TETRACHLOROETHENE
SURFACE SOIL CONCENTRATION
CONTOURS (0 TO 840)
AT&T
KEARNY, NEW JERSEY

Drawn	MSH	Date 9/2/92	Project Number	Rev.
Appr'd	FJM	Revised 1/27/93	0550-283	B

932630467


HATCHING WAS OMITTED FROM THE CENTER OF THE FIGURE TO IMPROVE CLARITY
ROAD
SIDEWALK
WELL
177
161
6330
188
10578
B-1
3710
154
1728
4320
4714
1102
150
WELL 16
WELL 11
EXPLANATION
SOIL SAMPLE LOCATION – JULY 1992
B-2 PREVIOUS SOIL SAMPLE LOCATION – AUGUST 1991
188 SOIL VAPOR SAMPLE – JUNE 1990
GROUNDWATER CONFIRMATION BORING
B-1 AUGUST 1991 SAMPLE LOCATION RESAMPLED JULY 1992
50 ISOCONCENTRATION LINE IN PARTS PER MILLION
INDICAT
CLEAN-
15

932630468



W – JULY 1992

LE LOCATION – AUGUST 1991

– JUNE 1990

RMATION BORING

E LOCATION RESAMPLED JULY 1992

LINE IN PARTS PER MILLION

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS

15 0 30 60

SCALE IN FEET

932630469

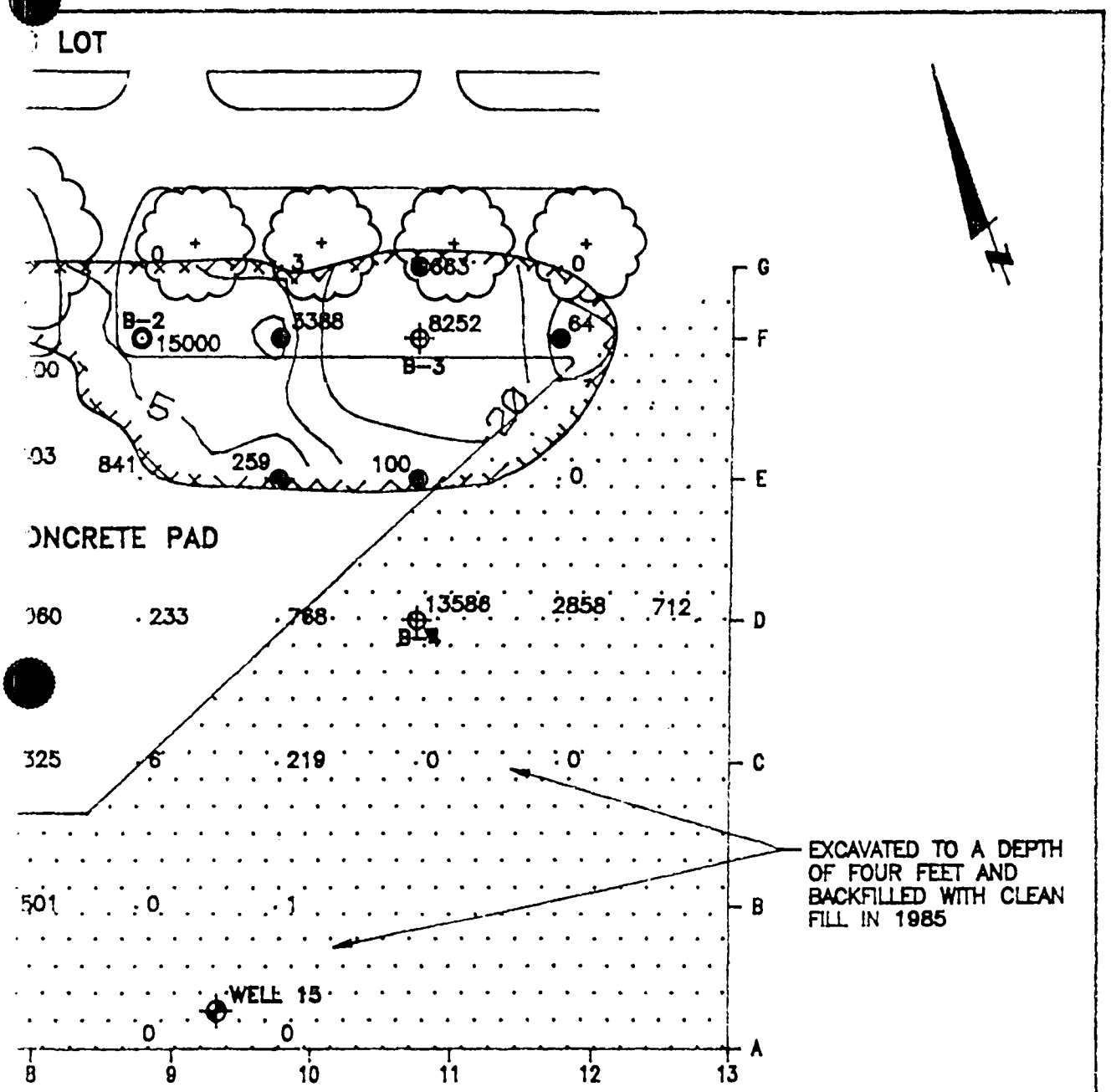


FIGURE 2-6

ESTIMATED AREA ABOVE NJDEPE PROPOSED STANDARDS

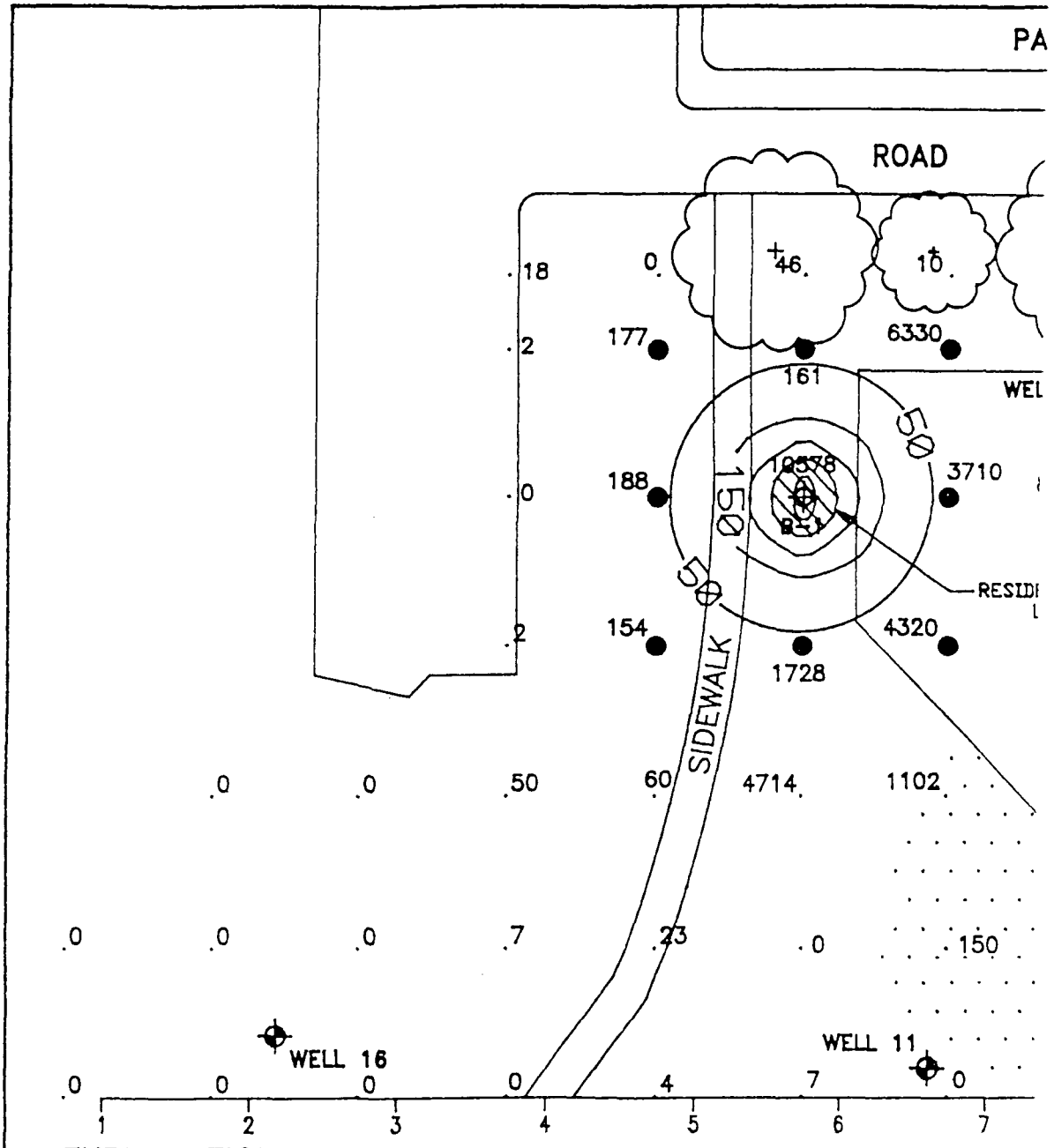
30 60
FEET

ENSR™
ENSR CONSULTING AND ENGINEERING

TETRACHLOROETHENE
SUBSURFACE SOIL CONCENTRATION
CONTOURS (84 TO 360)
AT&T
KEARNY, NEW JERSEY

Drawn	MSH/BBR	Date 9/2/92	Project Number	Rev.
Appr'd	FJM	Revised 1/27/93	0650-263	B

932630470



EXPLANATION

- SOIL SAMPLE LOCATION – JULY 1992
- B-2 PREVIOUS SOIL SAMPLE LOCATION – AUGUST 1991
- 188 SOIL VAPOR SAMPLE – JUNE 1990
- GROUNDWATER CONFIRMATION BORING
- B-1 AUGUST 1991 SAMPLE LOCATION RESAMPLED JULY 1992
- 50 ISOCONCENTRATION LINE IN PARTS PER MILLION

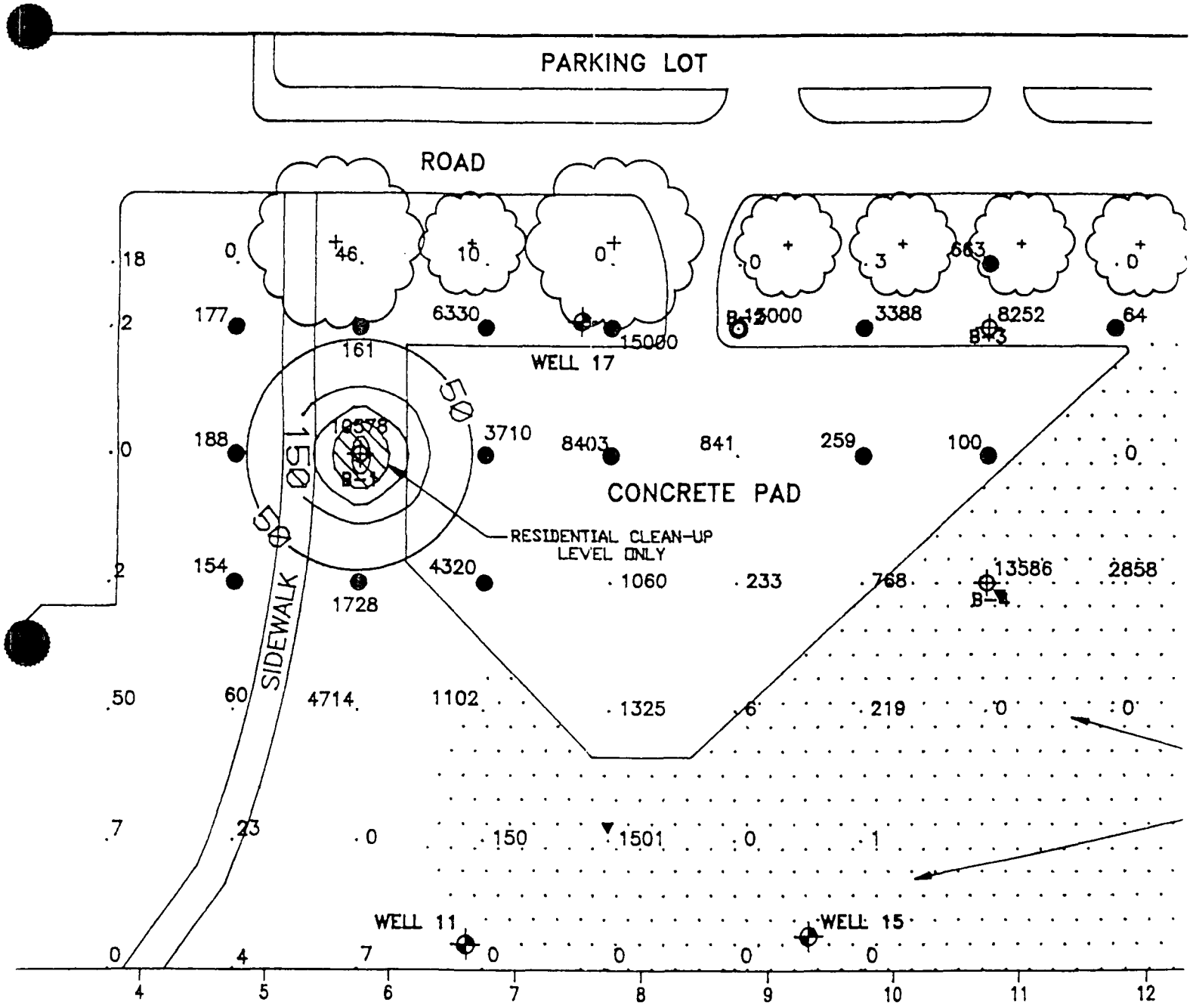
INDICATES CLEAN-U

INDICATES CLEAN-U

15 0

05550036

932630471



N – JULY 1992

E LOCATION – AUGUST 1991

– JUNE 1990

MATION BORING

LOCATION RESAMPLED JULY 1992

LINE IN PARTS PER MILLION

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS FOR NONRESIDENTIAL SURFACE SOILS

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS FOR RESIDENTIAL SURFACE SOILS

15 0 30 60

SCALE IN FEET

932630472

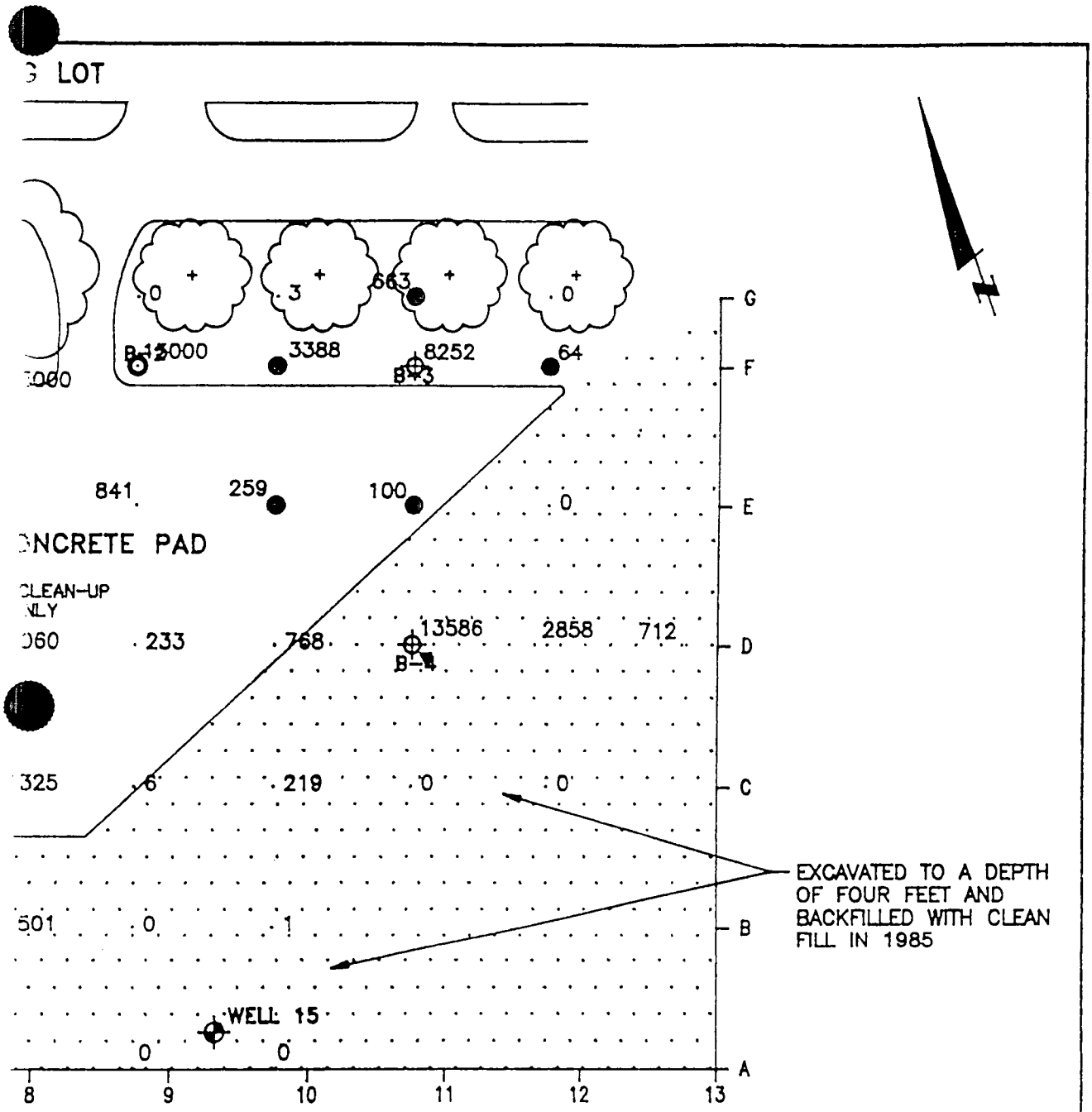


FIGURE 2-7

ESTIMATED AREA ABOVE NJDEPE PROPOSED STANDARDS FOR NONRESIDENTIAL SURFACE SOILS

ESTIMATED AREA ABOVE NJDEPE PROPOSED STANDARDS FOR RESIDENTIAL SURFACE SOILS

30 60
FEET

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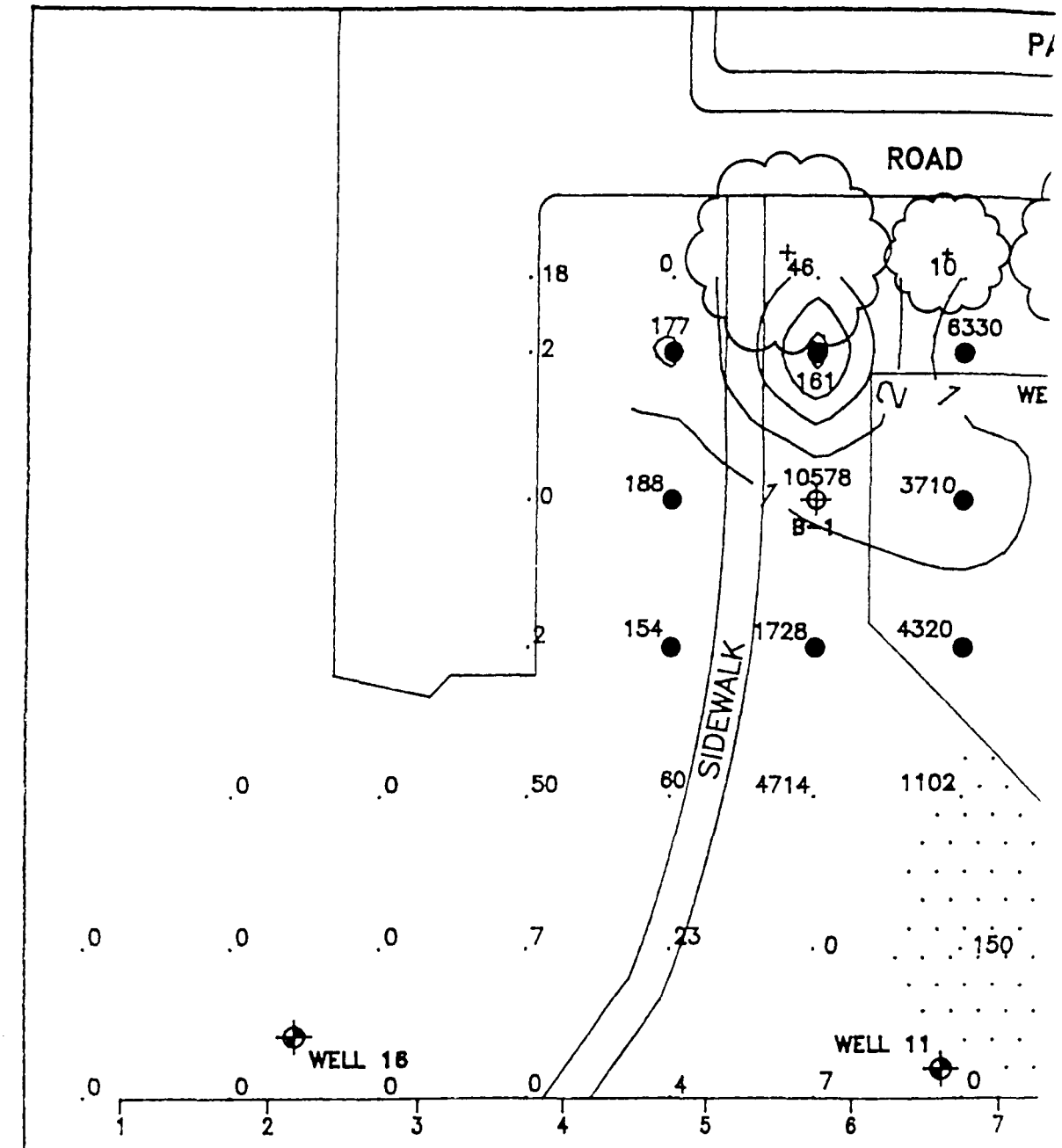
1,1,1-TRICHLOROETHANE
SURFACE SOIL CONCENTRATION
CONTOURS (0 TO 242)
AT&T
KEARNY, NEW JERSEY

Drawn:	MSH/BBR	Date:	9/2/92	Project Number:	Rev.
Appr'd:	FJM	Revised:	1/27/93	0550-283	B

932630473



EXPLANATION

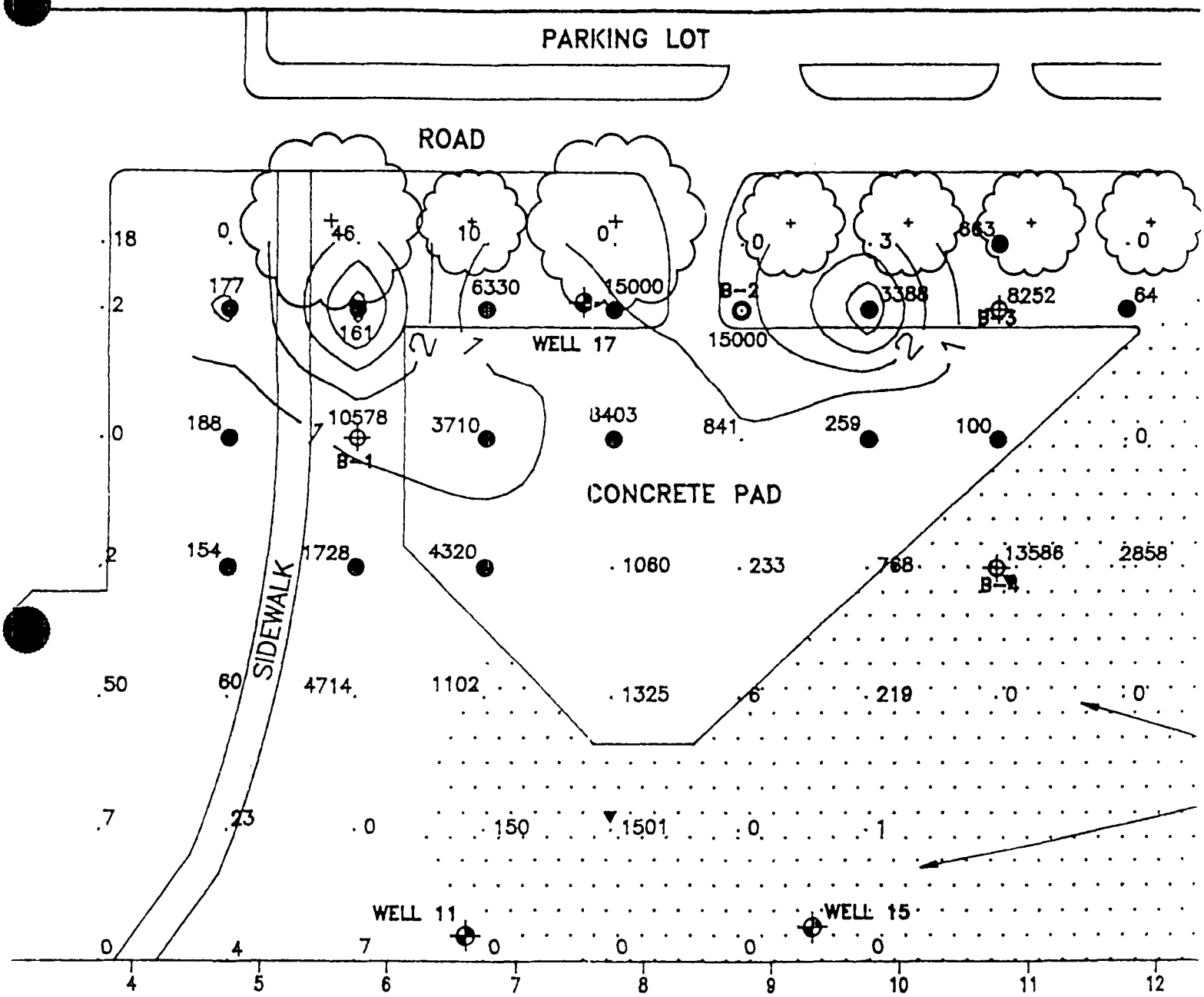
- ● SOIL SAMPLE LOCATION – JULY 1992
- B-2 ○ PREVIOUS SOIL SAMPLE LOCATION – AUGUST 1991
- 188 · SOIL VAPOR SAMPLE – JUNE 1990
- ▼ GROUNDWATER CONFIRMATION BORING
- B-1 ⊕ AUGUST 1991 SAMPLE LOCATION RESAMPLED JULY 1992
- 50 — ISOCONCENTRATION LINE IN PARTS PER MILLION

INDICATE
CLEAN-

15

055004b

932630474



J – JULY 1992

E LOCATION – AUGUST 1991

– JUNE 1990

ATION BORING

LOCATION RESAMPLED JULY 1992

LINE IN PARTS PER MILLION

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS

15 0 30 60

SCALE IN FEET

932630475

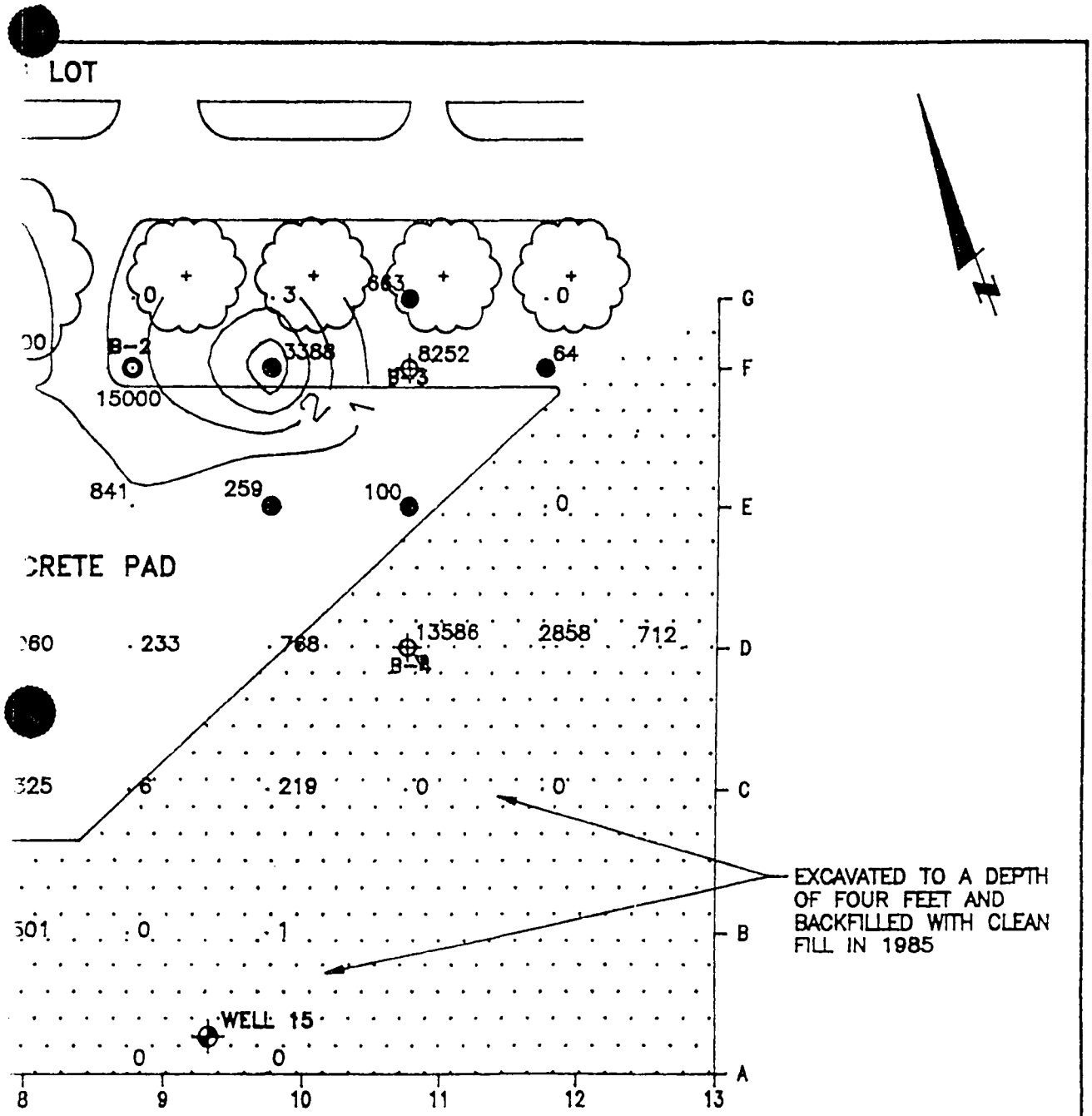


FIGURE 2-8

ESTIMATED AREA ABOVE NJDEPE PROPOSED
DARDS

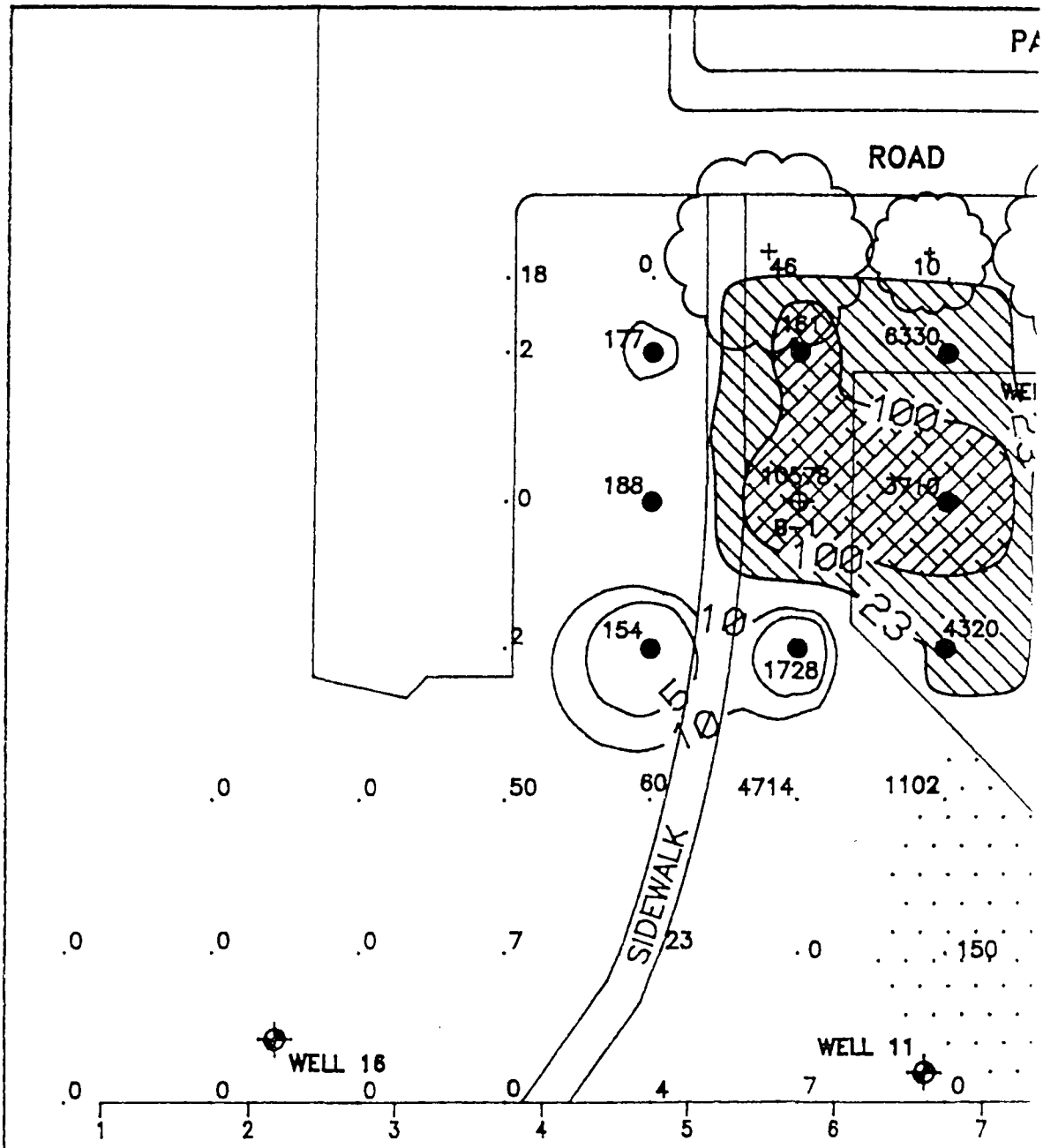
30 60
FEET

ENSR™
ENSR CONSULTING AND ENGINEERING

1,1,1-TRICHLOROETHANE
SUBSURFACE SOIL CONCENTRATION
CONTOURS (24 TO 360)
AT&T
KEARNY, NEW JERSEY

Drawn	MSH/BBR	Date	9/2/92	Project Number	Rev.
Appr'd	FJM	Revised	1/27/93	0550-263	B

932630476



EXPLANATION

- ● SOIL SAMPLE LOCATION – JULY 1992
- B-2 ○ PREVIOUS SOIL SAMPLE LOCATION – AUGUST 1991
- 188 · SOIL VAPOR SAMPLE – JUNE 1990
- ▼ GROUNDWATER CONFIRMATION BORING
- B-1 ⊕ AUGUST 1991 SAMPLE LOCATION RESAMPLED JULY 1992
- 50 — ISOCONCENTRATION LINE IN PARTS PER MILLION

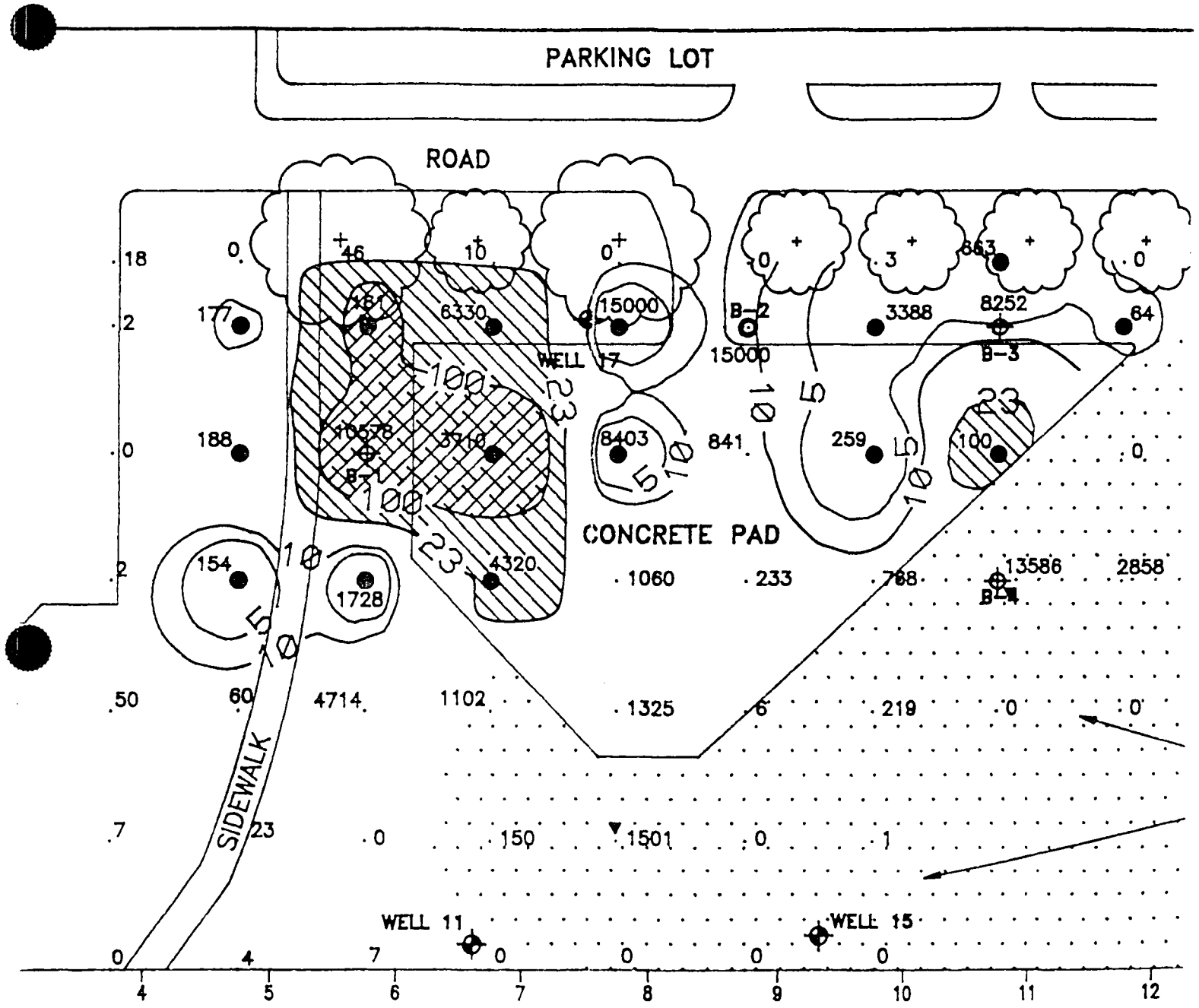
INDICATES CLEAN-U

INDICATES CLEAN-U

15 0

05S0007b

932630477



'I – JULY 1992

.E LOCATION – AUGUST 1991

– JUNE 1990

'IATION BORING

: LOCATION RESAMPLED JULY 1992

'N LINE IN PARTS PER MILLION

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS FOR NONRESIDENTIAL SURFACE SOILS

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS FOR RESIDENTIAL SURFACE SOILS

15 0 30 60

SCALE IN FEET

932630478

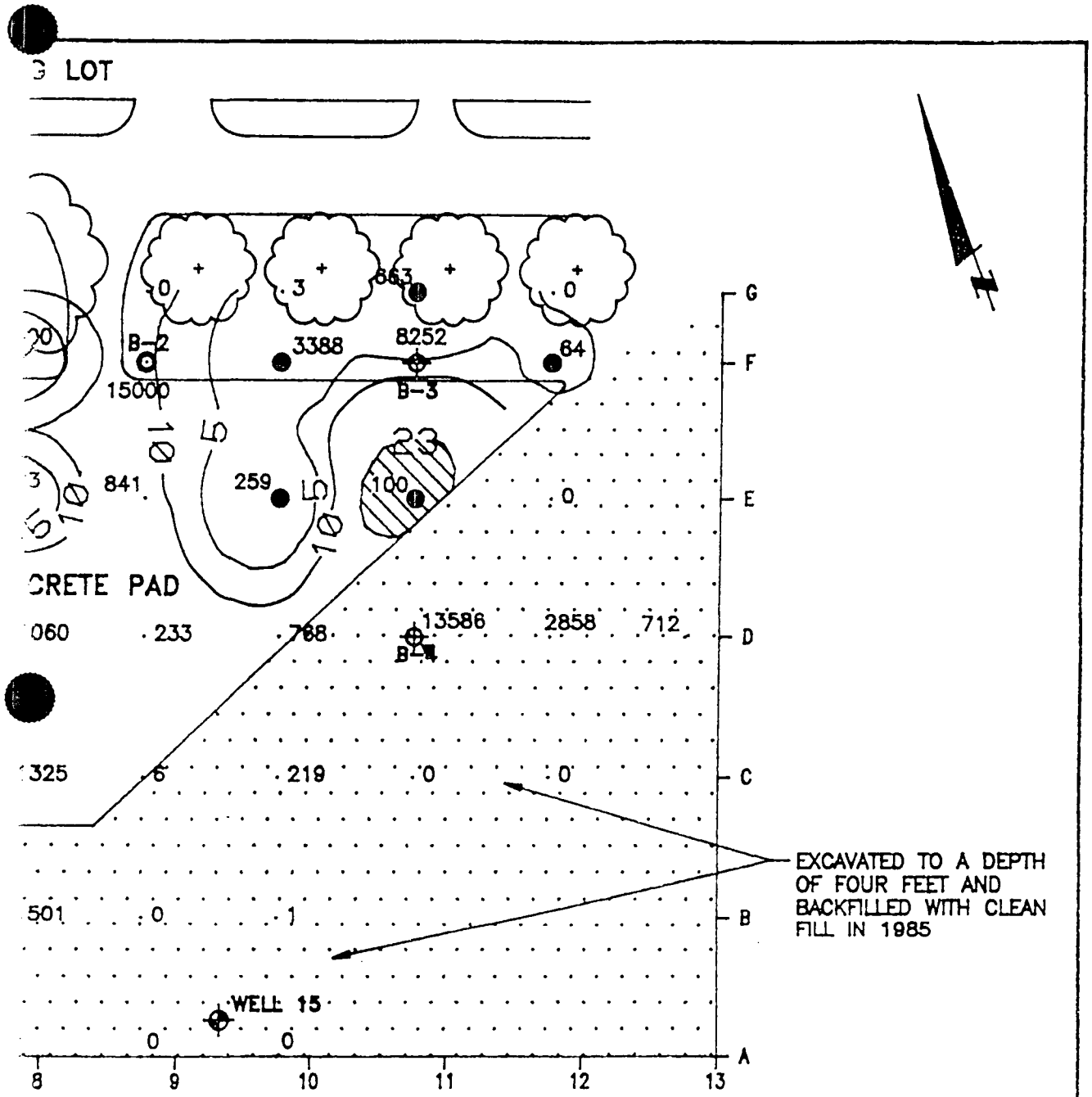


FIGURE 2-9

ESTIMATED AREA ABOVE NJDEPE PROPOSED STANDARDS FOR NONRESIDENTIAL SURFACE SOILS

ESTIMATED AREA ABOVE NJDEPE PROPOSED STANDARDS FOR RESIDENTIAL SURFACE SOILS

30 60
FEET

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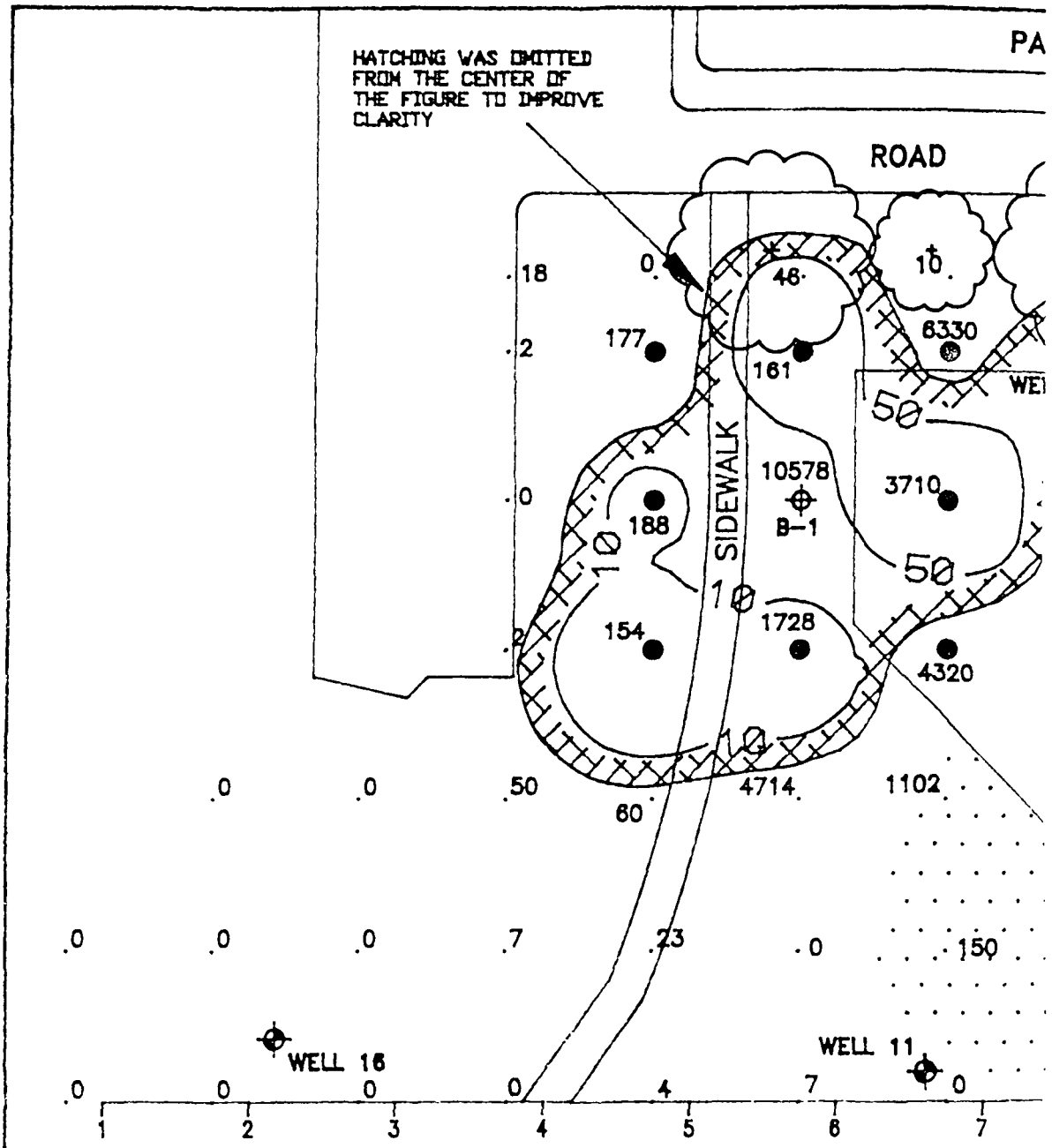
TRICHLOROETHENE
SURFACE SOIL CONCENTRATION
CONTOURS (0 TO 840)
AT&T
KEARNY, NEW JERSEY

Drawn	MSH/BBR	Date 9/2/92	Project Number	Rev.
Appr'd	FJM	Revised 1/27/93	0550-263	B

932630479



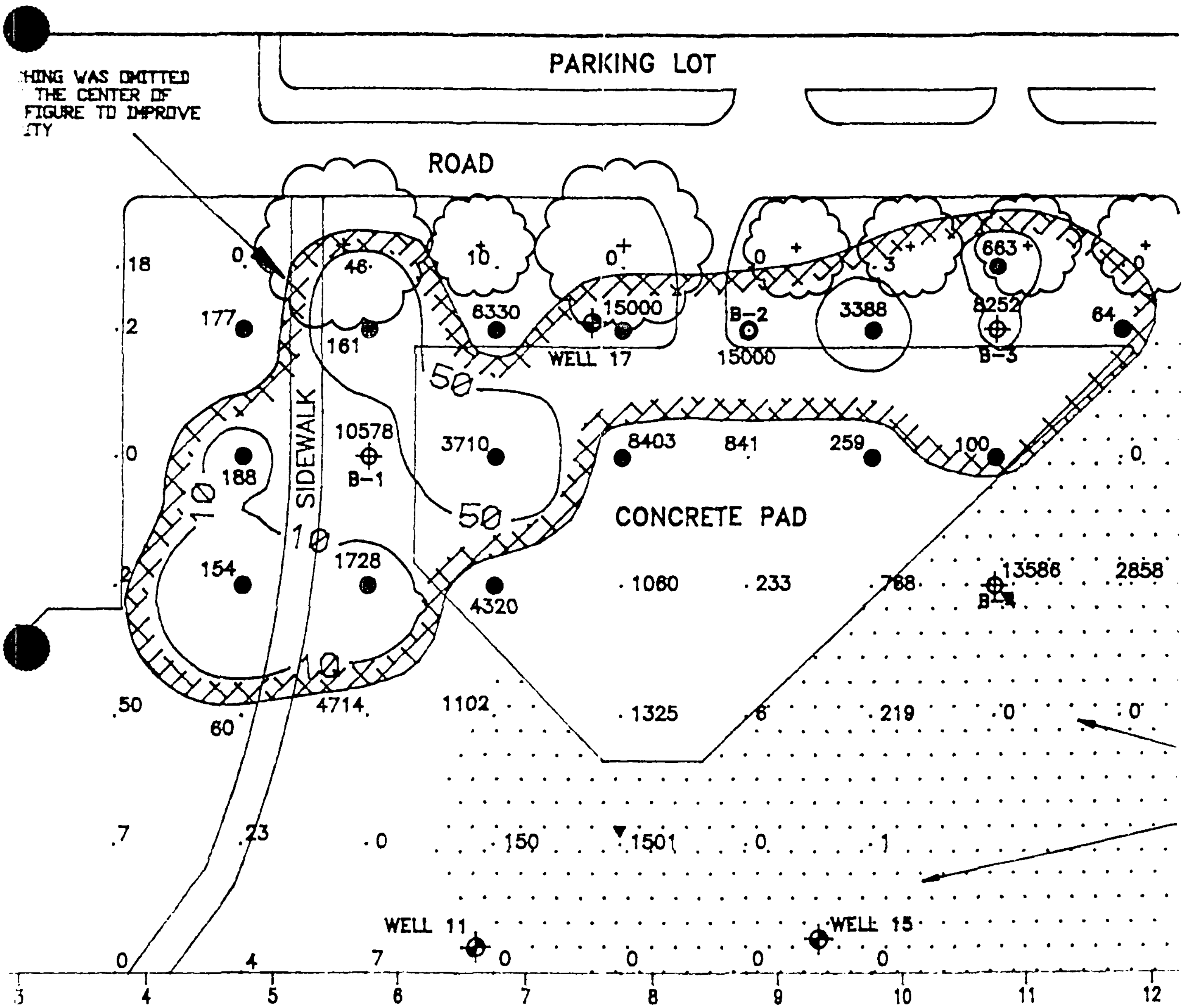
EXPLANATION

- ● SOIL SAMPLE LOCATION – JULY 1992
- B-2 ○ PREVIOUS SOIL SAMPLE LOCATION – AUGUST 1991
- 188 · SOIL VAPOR SAMPLE – JUNE 1990
- ▼ GROUNDWATER CONFIRMATION BORING
- B-1 ⊕ AUGUST 1991 SAMPLE LOCATION RESAMPLED JULY 1992
- 50 — ISOCONCENTRATION LINE IN PARTS PER MILLION

INDICATES CLEAN-UP

15 0

932630480



ON – JULY 1992

LE LOCATION – AUGUST 1991

– JUNE 1990

RMATION BORING

E LOCATION RESAMPLED JULY 1992

LINE IN PARTS PER MILLION

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS

15 0 30 60
SCALE IN FEET

932630481

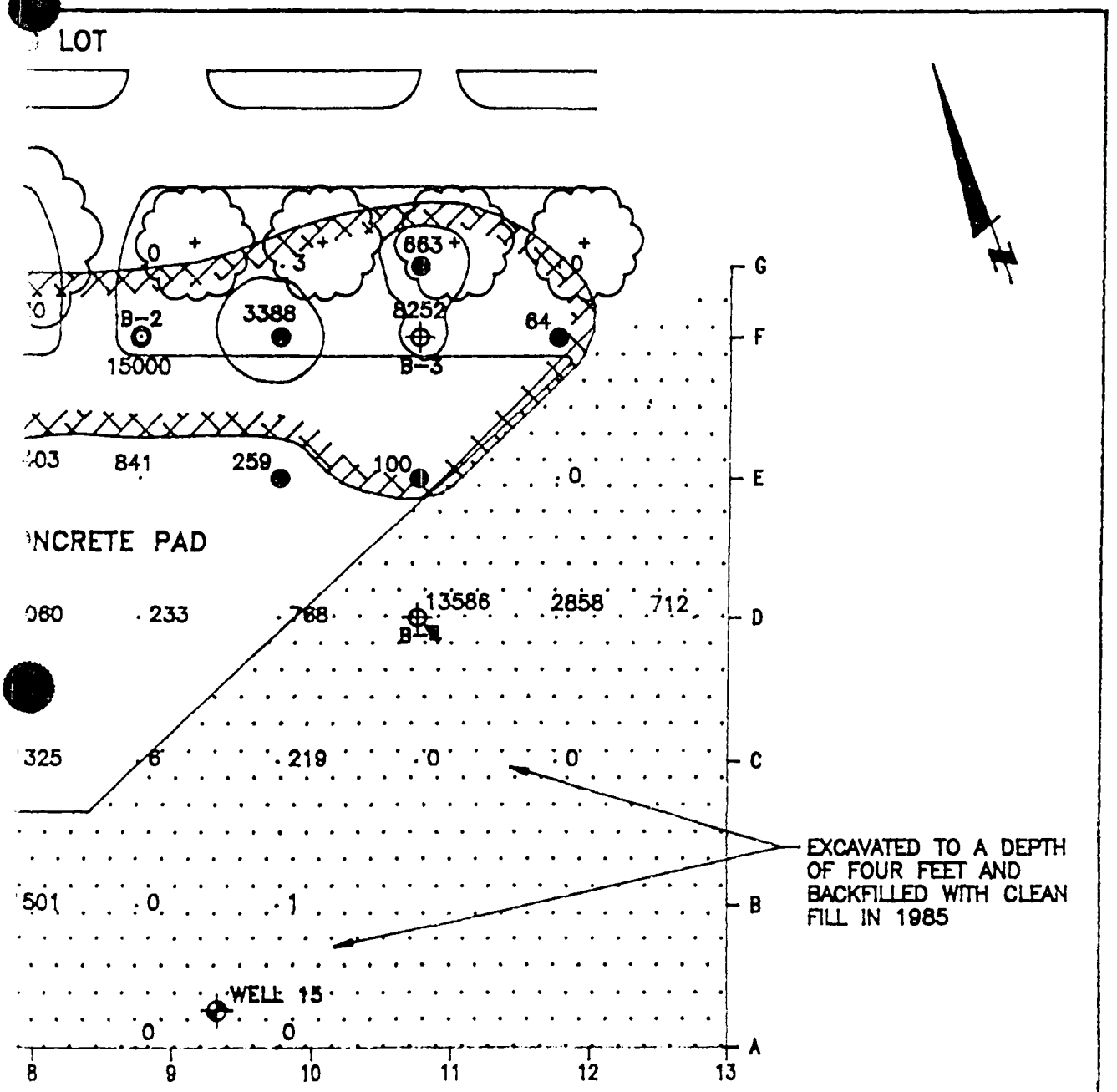


FIGURE 2-10

ESTIMATED AREA ABOVE NJDEPE PROPOSED DARDS

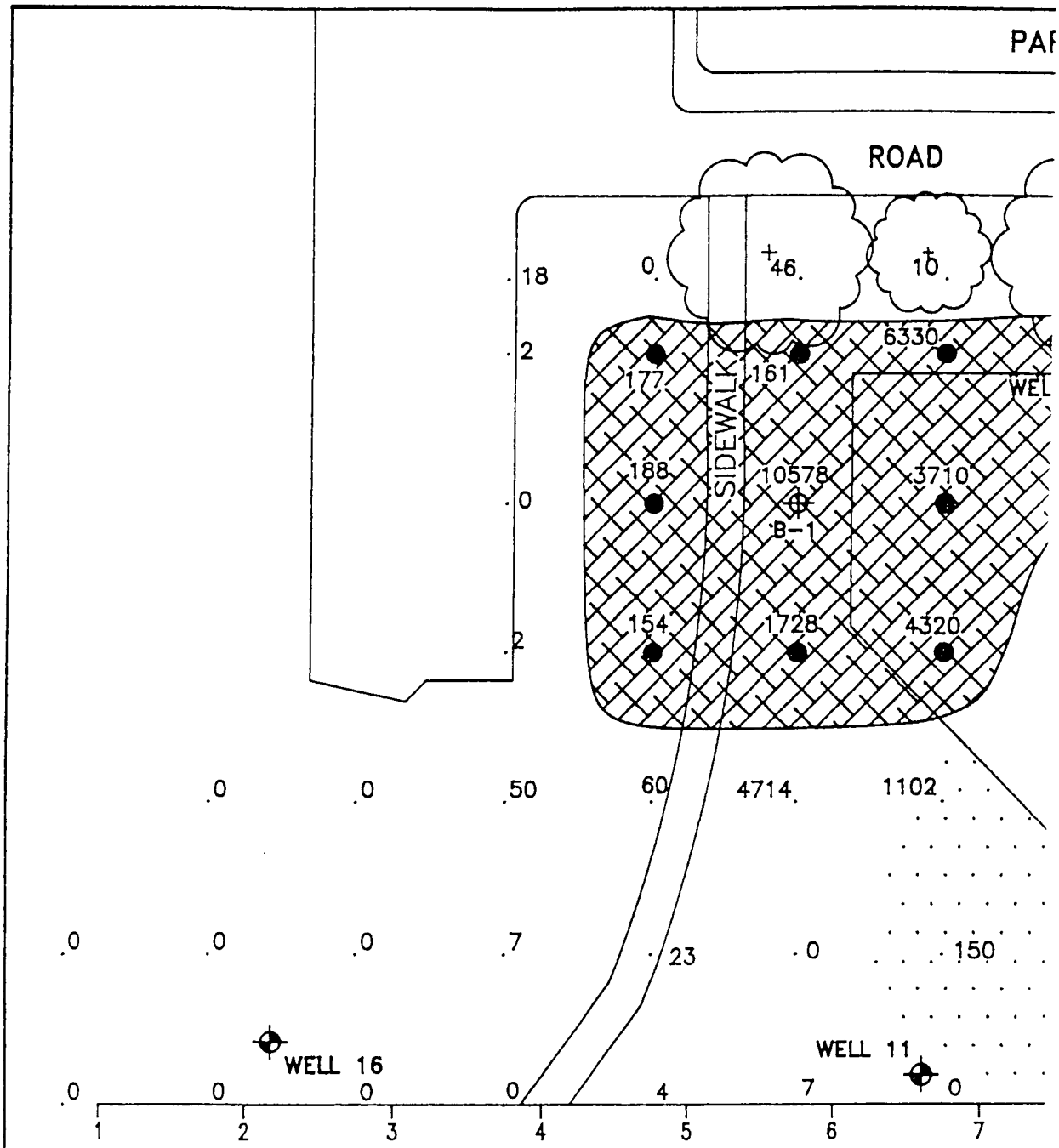
30 60
FEET

ENSR CONSULTING AND ENGINEERING

TRICHLOROETHENE
SUBSURFACE SOIL CONCENTRATION
CONTOURS (84 TO 36?)
AT&T
KEARNY, NEW JERSEY

Drawn	MSH/BBR	Date 9/2/92	Project Number	Rev.
Appr'd	FJM	Revised 1/27/93	0550-263	B

932630482



EXPLANATION

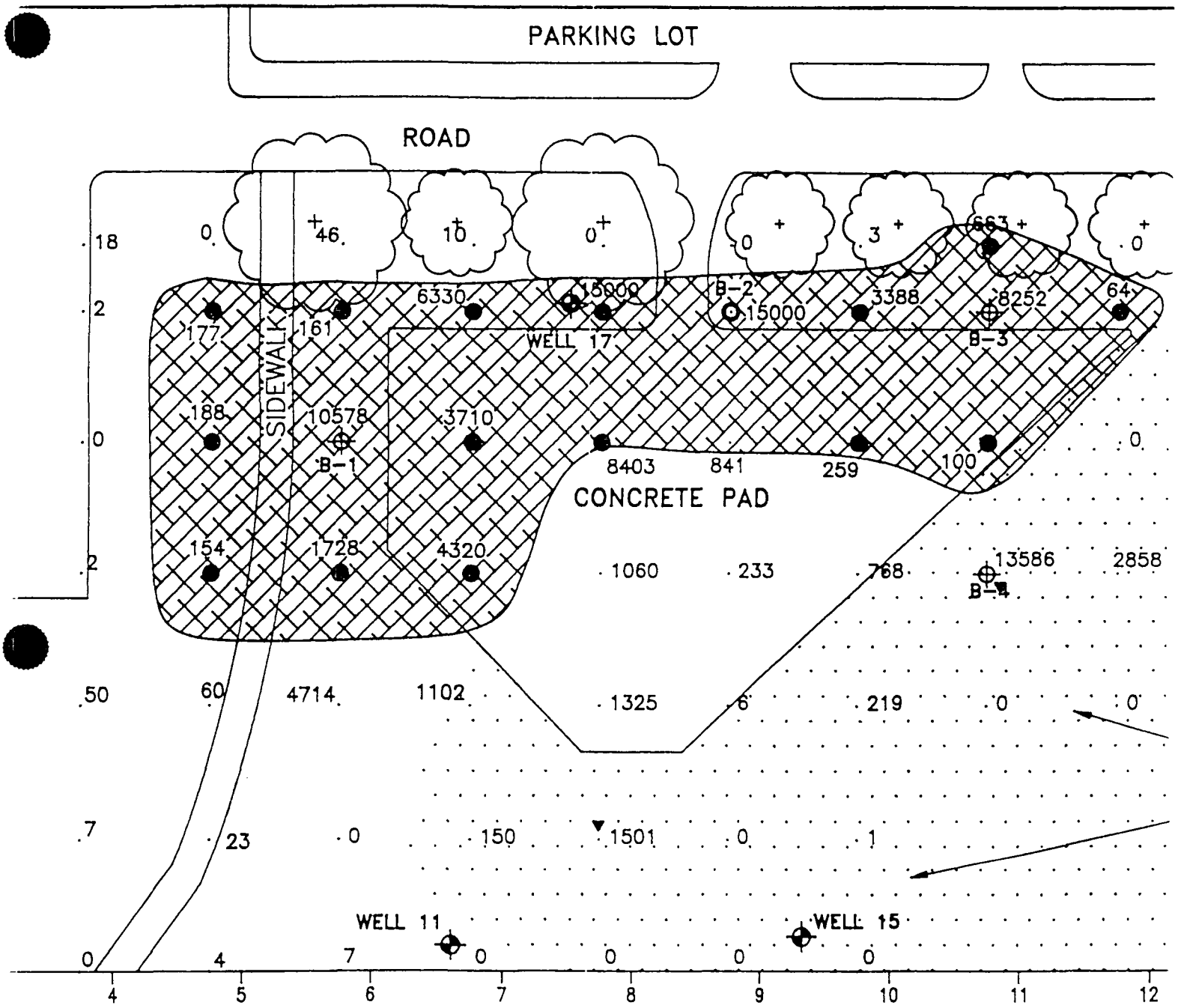
- ● SOIL SAMPLE LOCATION – JULY 1992
- B-2 ○ PREVIOUS SOIL SAMPLE LOCATION – AUGUST 1991
- 188 · SOIL VAPOR SAMPLE – JUNE 1990
- ▼ GROUNDWATER CONFIRMATION BORING
- B-1 ⊕ AUGUST 1991 SAMPLE LOCATION RESAMPLED JULY 1992
- 50 ISOCONCENTRATION LINE IN PARTS PER MILLION

INDICATES CLEAN-UP

15 0

0553011b

932630483



– JULY 1992

LOCATION – AUGUST 1991

JUNE 1990

TION BORING

OCATION RESAMPLED JULY 1992

E IN PARTS PER MILLION

INDICATES THE ESTIMATED AREA ABOVE NJDEPE PROPOSED CLEAN-UP STANDARDS FOR NONRESIDENTIAL SURFACE SOILS

15 0 30 60

SCALE IN FEET

932630484

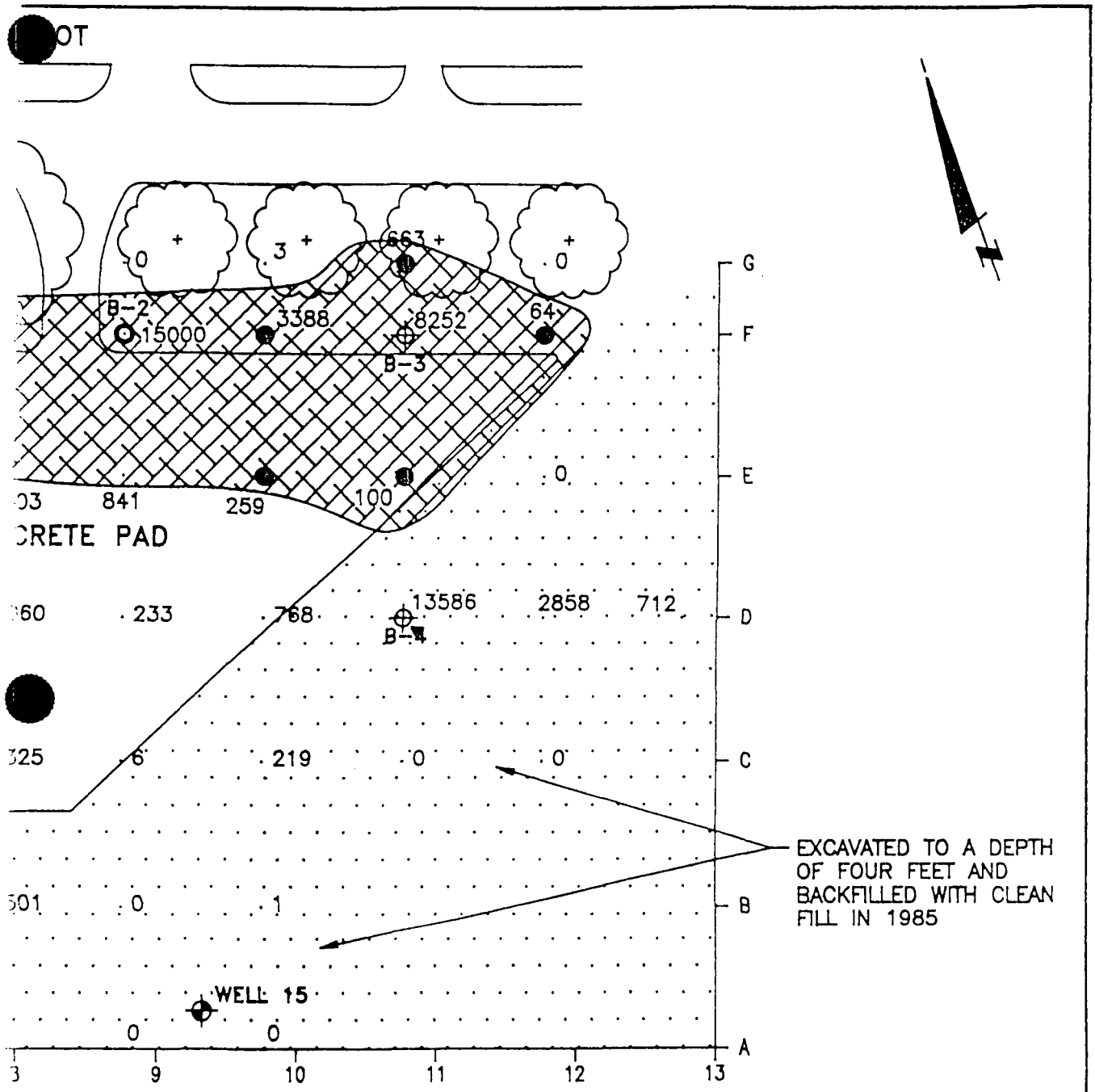


FIGURE 2-11

STIMATED AREA ABOVE NJDEPE PROPOSED
CARDS FOR NONRESIDENTIAL SURFACE SOILS

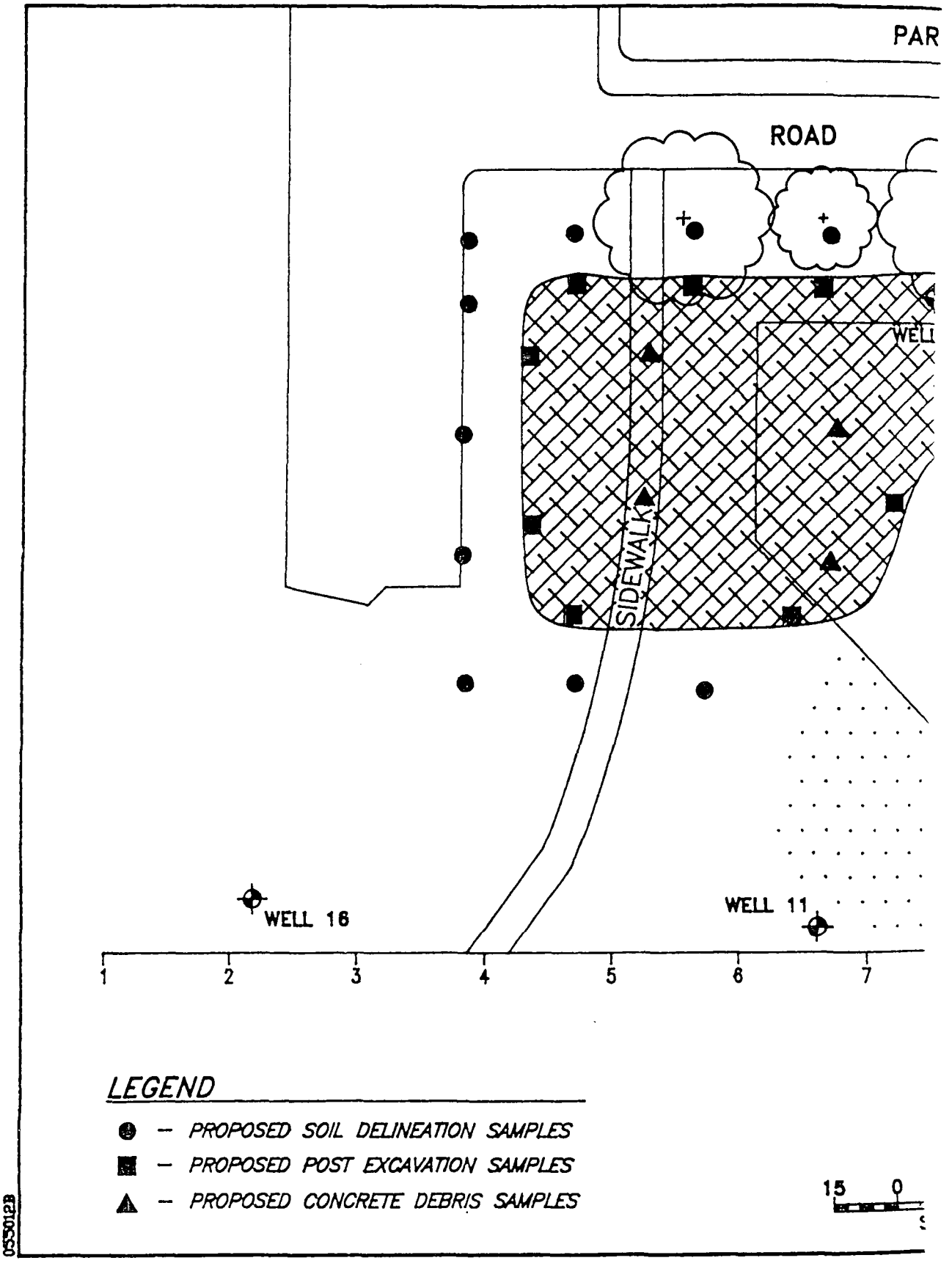
30 60
FEET

ENSR™
ENSR CONSULTING AND ENGINEERING

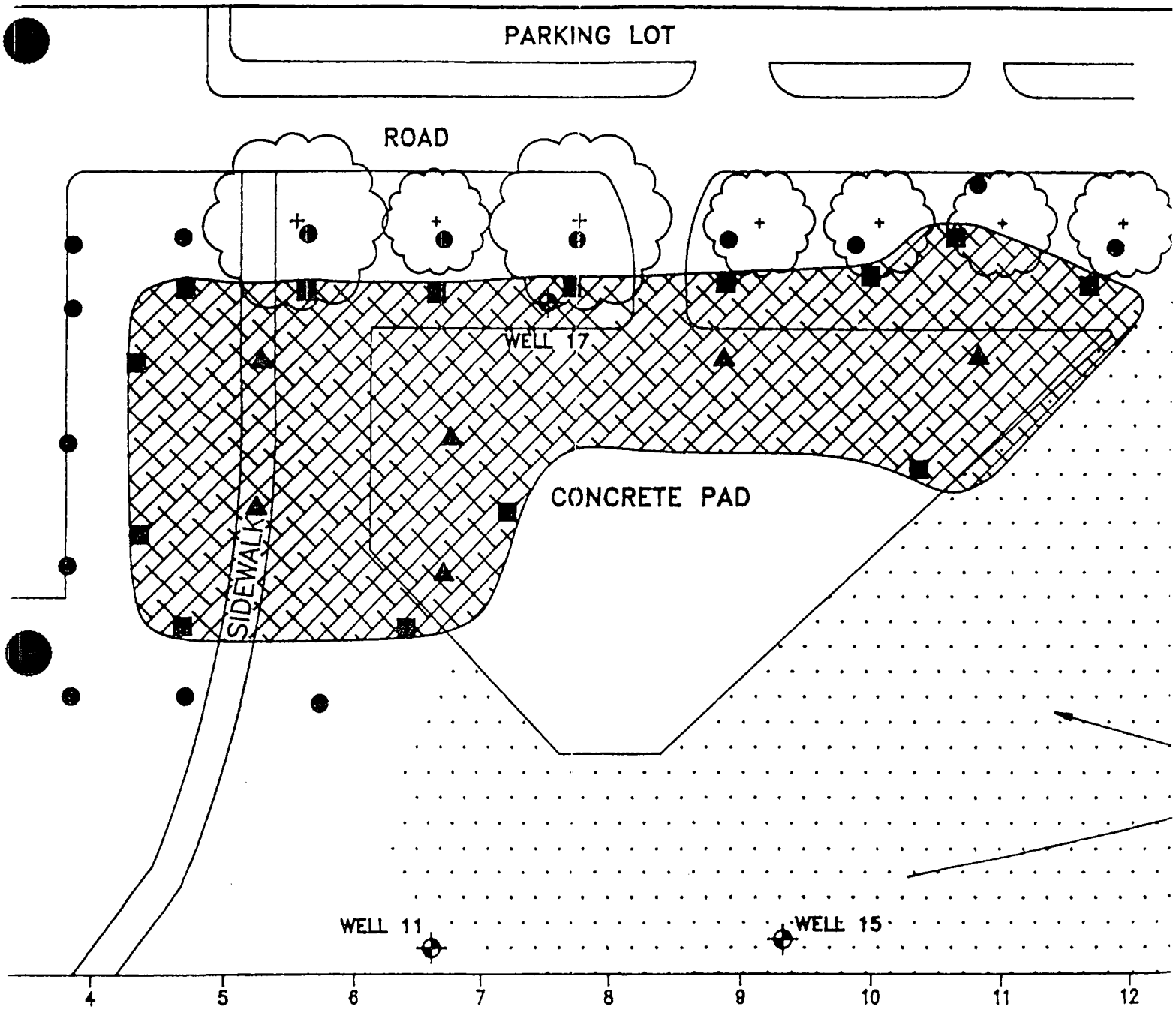
AREAL EXTENT ABOVE NJDEPE PROPOSED CLEANUP STANDARDS FOR SUBSURFACE SOILS
AT&T
KEARNY, NEW JERSEY

Drawn	MSH/BBR	Date 9/2/92	Project Number	Rev.
Appr'd	FJM	Revised 2/5/93	0550-283	B

932630485


PAR
ROAD
WELL
SIDEWALK
WELL 16
WELL 11
1
2
3
4
5
6
7
LEGEND
– PROPOSED SOIL DELINEATION SAMPLES
– PROPOSED POST EXCAVATION SAMPLES
– PROPOSED CONCRETE DEBRIS SAMPLES
15
0

932630486



EATION SAMPLES
VATION SAMPLES
DEBRIS SAMPLES

15 0 30 60
SCALE IN FEET

932630487

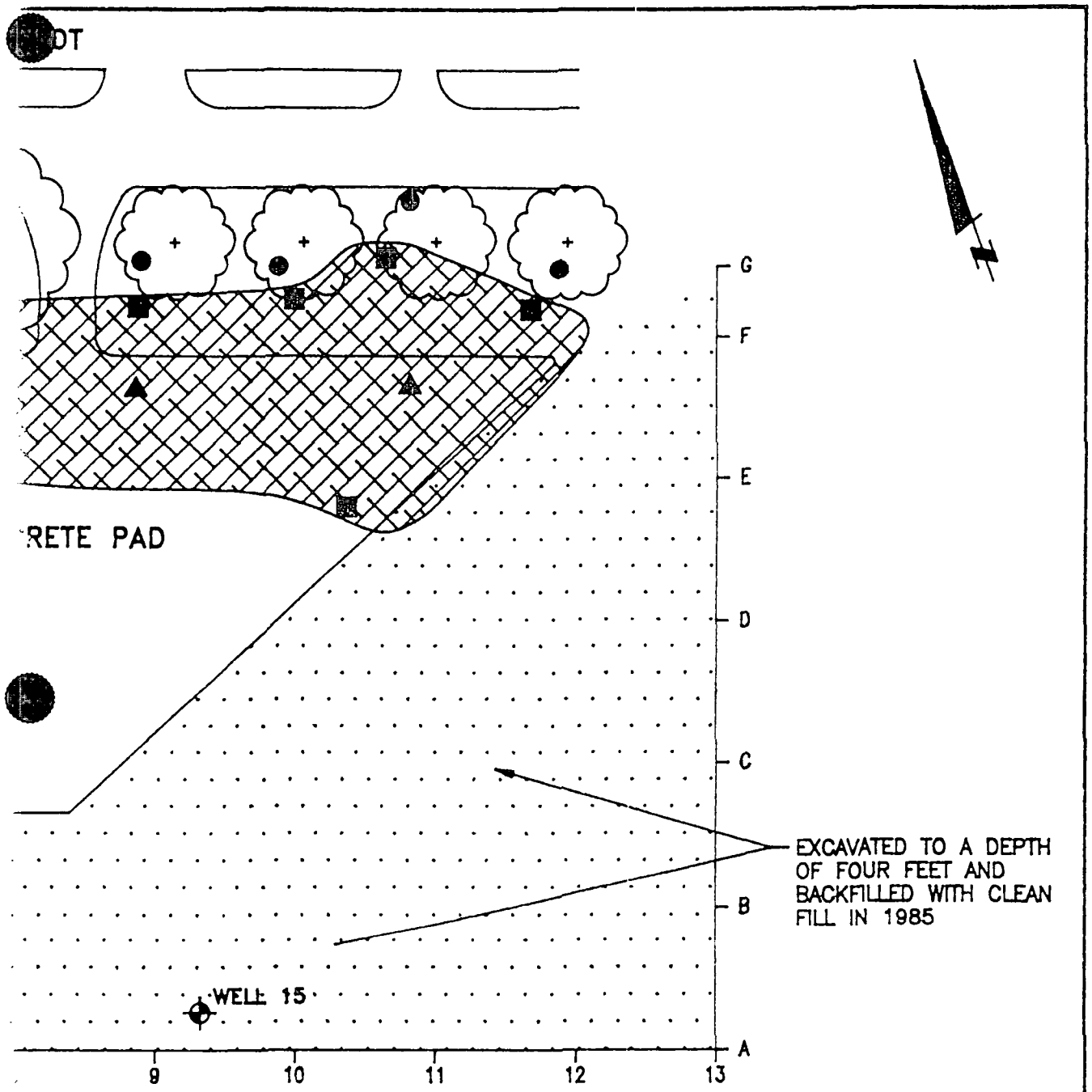


FIGURE 4.1

ENSR™
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EXCAVATION AREA & SAMPLE LOCATION MAP
AT&T
KEARNY, NEW JERSEY

Drawn	MSH/BBR	Date	9/2/92	Project Number	Rev.
Appr'd	FJM	Revised	2/5/93	0550-263	B

30 60
EET

932630488

932630489

LUCENT TECHNOLOGIES, INC.

TAB J

Sediment data table indicating that the same types of substances known to be at the facility have been detected at significant levels in Passaic River sediments near the facility.

Western [illegible]ctric
Transects 1-3 and [illegible]ples 96 and 97
PCBs

Contaminant	Site Use	Core 201	Years	Core 202	Core 203	Years	Core 204	Core 205	Years	Core 206	Years
Aroclor 1248	Documented	330	1995-1991	326	173	1995-1992	388	ND	1995-1993	357	1995-1991
(ug/Kg)	**Admitted**	428	1991-1983		249	1992-1986	210	800	1993-1957	2020	1991-1983
		405	1983-1976	386			380	665	1957-1951	2250	1983-1974
mean: 1986	89,000,000	295	1976-1968		260	1986-1980	382	ND	1951-1946	4490	1974-1966
high: 21900	*total PCBs*	586	1968-1960	1070			8910			4720	1966-1958
	in site soils	3150	1960-1953	1280	414	1980-1974	21900**			ND	1958-1949
top 20											
above mean					2850	1974-1969					
** # 1 in river					3250	1969-1963					
Aroclor 1254	Documented	301	1995-1991	457	172	1995-1992	435	442	1995-1993	221	1995-1991
(ug/Kg)	**Admitted**	491	1991-1983		262	1992-1986	321	765	1993-1957	909	1991-1983
		368	1983-1976	334			384	368	1957-1951	ND	1983-1974
mean: 1575	89,000,000	262	1976-1968		211	1986-1980	554	ND	1951-1946	2370	1974-1966
high: 18100	*total PCBs*	485	1968-1960	1050			2040			2970	1966-1958
	in site soils	ND	1960-1953	1120	254	1980-1974	7070			ND	1958-1949
** # 1 in river											
					1450	1974-1969					
					1670	1969-1963					
Aroclor 1260	Documented	ND	1995-1991	ND	ND	1995-1992	ND	ND	1995-1993	ND	1995-1991
(ug/Kg)	**Admitted**	ND	1991-1983		ND	1992-1986	ND	ND	1993-1957	ND	1991-1983
		ND	1983-1976	ND			ND	ND	1957-1951	1080	1983-1974
mean:1230	89,000,000	ND	1976-1968		ND	1986-1980	ND	ND	1951-1946	ND	1974-1966
high: 4290	*total PCBs*	ND	1968-1960	ND			ND			ND	1966-1958
	in site soils	ND	1960-1953	ND	ND	1980-1974	ND			ND	1958-1949
*** higher than											
#1 PRSA hit					ND	1974-1969					
						1969-1963					

ND = Non detect
Chronology poor for Cores 205 and 206 *blank spaces in the data indicate no information for the sample

932630491

Western Electric
Transects 1-3 and nples 96 and 97
PCBs

Contaminant	Site Use	Core 207	Years	Core 208	Years	Core 209	Years	Sample 96	Year	Sample 97	Year
Aroclor 1248	Documented	714	1995-1985	372	1995-1994	325	1995-1991	1110	1993	997	1993
(ug/Kg)	**Admitted**	1640	1985-1965	2570	1994-1955	6270	1991-1983	3280	1987	ND	1958
		5100	1965-1945	ND	1955-1949	1580	1983-1976	1160	1977	ND	1948
mean: 1986	89,000,000	5310	1945-1925	ND	1949-1946	2500	1976-1968	ND	1967	ND	1941
high: 21900	*total PCBs*	ND	1925-1905			4320	1968-1960				
	in site soils	ND	1905-1885			608	1960-1953				
top 20 above mean											
** # 1 in river											
Aroclor 1254	Documented	735	1995-1985	304	1995-1994	303	1995-1991	ND	1993	ND	1993
(ug/Kg)	**Admitted**	ND	1985-1965	1410	1994-1955	1290	1991-1983	ND	1987	ND	1958
		5630	1965-1945	ND	1955-1949	1180	1983-1976	ND	1977	ND	1948
mean: 1575	89,000,000	18100**	1945-1925	ND	1949-1946	1570	1976-1968	ND	1967	ND	1941
high: 18100	*total PCBs*	ND	1925-1905			2530	1968-1960				
	in site soils	95	1905-1885			ND	1960-1953				
** # 1 in river											
Aroclor 1260	Documented	ND	1995-1985	ND	1995-1994	ND	1995-1991	ND	1993	ND	1993
(ug/Kg)	**Admitted**	2110	1985-1965	ND	1994-1955	ND	1991-1983	ND	1987	ND	1958
		ND	1965-1945	ND	1955-1949	ND	1983-1976	765	1977	ND	1948
mean:1230	89,000,000	ND	1945-1925	ND	1949-1946	ND	1976-1968	8730***	1967	ND	1941
high: 4290	*total PCBs*	ND	1925-1905	ND		ND	1968-1960				
	in site soils	148	1905-1885	ND		ND	1960-1953				
*** higher than #1 PRSA hit											

ND = Non detect
Chronology poor for Cores 205 and 206 *blank spaces in the data indicate no information for the sample

932630492

Western Electric
Transects 1-3 and Samples 96 and 97
Inorganics

Contaminant	Site Use	Core 201	Years	Core 202	Core 203	Years	Core 204	Core 205	Years	Core 206	Years
Arsenic	Driver	10.2	1995-1991	10.1	11.9	1995-1992	12.6	11.9	1995-1993	16.6	1995-1991
(mg/Kg)	Suspected	9	1991-1983		13	1992-1986	9.6	14.3	1993-1957	[redacted]	1991-1983
		10	1983-1976	11.5			16.8	9.2	1957-1951	[redacted]	1983-1974
mean: 20	1300	10.4	1976-1968		17.6	1986-1980	13.1	ND	1951-1946	[redacted]	1974-1966
high: 125	in site soils	14.9	1968-1960	16.6			[redacted]			[redacted]	1966-1958
		[redacted]	1960-1953	15.1	17	1980-1974	75.1			106	1958-1949
top 20											
above mean					[redacted]	1974-1969					
					[redacted]	1969-1963					
Cadmium	Suspected	2.9	1995-1991	4.5	4.3	1995-1992	3.9	4.7	1995-1993	5.8	1995-1991
(mg/Kg)		3.6	1991-1983		5.4	1992-1986	4.5	7.2	1993-1957	[redacted]	1991-1983
	20	3.6	1983-1976	5.9			4.3	3.9	1957-1951	[redacted]	1983-1974
mean: 11.8	in site soils	3.7	1976-1968		5.7	1986-1980	6.3	ND	1951-1946	[redacted]	1974-1966
high: 39.6		5.9	1968-1960	[redacted]			10.9			[redacted]	1966-1958
		6.2	1960-1953	11.4	9.6	1980-1974	39.6**			[redacted]	1958-1949
** #1 in river											
					21.3	1974-1969					
					21.5	1969-1963					
Chromium	Driver	158	1995-1991	129	181	1995-1992	136	122	1995-1993	227	1995-1991
(mg/Kg)	Raw Material	141	1991-1983		200	1992-1986	136	217	1993-1957	[redacted]	1991-1983
	Admitted	161	1983-1976	180			159	147	1957-1951	[redacted]	1983-1974
mean: 307		136	1976-1968		233	1986-1980	178	3.6	1951-1946	[redacted]	1974-1966
high: 2160	19000	248	1968-1960	[redacted]			[redacted]			1190	1966-1958
	in site soils	306	1960-1953	[redacted]	[redacted]	1980-1974	2160**			[redacted]	1958-1949
** #1 in river											
					[redacted]	1974-1969					
					[redacted]	1969-1963					

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

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Western ctric
Transects 1-3 and Samples 96 and 97
Inorganics

Contaminant	Site Use	Core 201	Years	Core 202	Core 203	Years	Core 204	Core 205	Years	Core 206	Years
Copper	Driver	197	1995-1991	192	202	1995-1992	169	195	1995-1993	240	1995-1991
(mg/Kg)	Raw Material	195	1991-1983		234	1992-1986	198	253	1993-1957	615	1991-1983
	Admitted	184	1983-1976	244			196	118	1957-1951	479	1983-1974
mean: 312		168	1976-1968		233	1986-1980	225	4.8	1951-1946	497	1974-1966
high: 3020	2300	263	1968-1960	352			317			634	1966-1958
	in site soils	306	1960-1953	364	407	1980-1974	902			633	1958-1949
*** higher than											
#1 PRSA hit					605	1974-1969					
					652	1969-1963					
Lead	Raw Material	225	1995-1991	287	238	1995-1992	218	269	1995-1993	352	1995-1991
(mg/Kg)	**Admitted**	254	1991-1983		288	1992-1986	274	362	1993-1957	652	1991-1983
		219	1983-1976	335			249	199	1957-1951	732	1983-1974
mean: 462	3000	199	1976-1968		252	1986-1980	284	1.9	1951-1946	347	1974-1966
high: 17900	in site soils	301	1968-1960	698			354			600	1966-1958
		354	1960-1953	588	424	1980-1974	698			569	1958-1949
					670	1974-1969					
					753	1969-1963					
Magnesium	Suspected	8920	1995-1991	6720	9440	1995-1992	8040	6890	1995-1993	6600	1995-1991
(mg/Kg)		7690	1991-1983		9610	1992-1986	7360	6760	1993-1957	7480	1991-1983
		8490	1983-1976	7290			7670	3650	1957-1951	7440	1983-1974
mean: 5472		7810	1976-1968		9400	1986-1980	8290	1810	1951-1946	8150	1974-1966
high: 60000		8800	1968-1960	6280			7450			7460	1966-1958
		9030	1960-1953	6410	8520	1980-1974	8020			60000**	1958-1949
** #1 in river											
					8250	1974-1969					
					7980	1969-1963					

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

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Western Electric
Transects 1-3 and Samples 96 and 97
Inorganics

Contaminant	Site Use	Core 201	Years	Core 202	Core 203	Years	Core 204	Core 205	Years	Core 206	Years
Mercury	Driver	3.6	1995-1991	3	3.9	1995-1992	3.2	3.5	1995-1993	5.4	1995-1991
(mg/Kg)	Suspected	3.6	1991-1983		4.4	1992-1986	4.9	5.4	1993-1957	27.8	1991-1983
		3.7	1983-1976	4			3.8	3	1957-1951	97	1983-1974
mean: 6.92	3.10	3.4	1976-1968		5.6	1986-1980	4.2	ND	1951-1946	12.8	1974-1966
high: 28.3	in site soils	6.7	1968-1960	7.8			10.5			14	1966-1958
		7.4	1960-1953	8.2	11.2	1980-1974	28.3			16	1958-1949
					16.1	1974-1969					
					20.4	1969-1963					
Nickel	Raw Material	42.2	1995-1991	38.8	41.4	1995-1992	34.7	37.7	1995-1993	47.1	1995-1991
(mg/Kg)	**Admitted**	39.5	1991-1983		46.3	1992-1986	40.6	47.7	1993-1957	147	1991-1983
		44.8	1983-1976	45.6			37.2	24.8	1957-1951	75.9	1983-1974
mean: 56.7	2300	33.6	1976-1968		43.5	1986-1980	43.5	4.1	1951-1946	71.2	1974-1966
high: 369	in site soils	44.4	1968-1960	65.5			62.6			85	1966-1958
		50	1960-1953	67.3	83.1	1980-1974	229			53.5	1958-1949
					97.2	1974-1969					
					124	1969-1963					
Selenium	Suspected	ND	1995-1991	ND	ND	1995-1992	ND	ND	1995-1993		1995-1991
(mg/Kg)		ND	1991-1983		ND	1992-1986	1.1	1.3	1993-1957		1991-1983
	42	ND	1983-1976	1.3			ND	ND	1957-1951		1983-1974
no sorted data	in site soils	0.99	1976-1968		1.1	1986-1980	ND	ND	1951-1946		1974-1966
		1.3	1968-1960	1.4			1.7				1966-1958
		1.7	1960-1953	1.3	1.6	1980-1974	3.7			4.2	1958-1949
					2.1	1974-1969					
					2	1969-1963					

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

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Western Electric
Transects 1-3 an[illegible] mples 96 and 97
Inorganics

Contaminant	Site Use	Core 201	Years	Core 202	Core 203	Years	Core 204	Core 205	Years	Core 206	Years
Silver	Raw Material	4.7	1995-1991	4.8	5.2	1995-1992			1995-1993	5.9	1995-1991
(mg/Kg)		4.9	1991-1983		ND	1992-1986			1993-1957	12.6	1991-1983
	29	4.7	1983-1976	7.6					1957-1951	9.8	1983-1974
mean: 8.4	in site soils	4.8	1976-1968		6.4	1986-1980			1951-1946	10.4	1974-1966
high: 21.4		7.8	1968-1960	8.6						11.4	1966-1958
		6.8	1960-1953	7.8	10.6	1980-1974	19			11.3	1958-1949
					12.5	1974-1969					
					15.7	1969-1963					
Zinc	Raw Material	449	1995-1991	556	440	1995-1992	390	545	1995-1993	605	1995-1991
(mg/Kg)	**Admitted**	495	1991-1983		540	1992-1986	558	645	1993-1957	1580	1991-1983
		414	1983-1976	634			472	315	1957-1951	1810	1983-1974
mean: 770	13000	393	1976-1968		482	1986-1980	550	10.8	1951-1946	1800	1974-1966
high: 3110	in site soils	541	1968-1960	1980			884			1840	1966-1958
		613	1960-1953	1010	937	1980-1974	3110**			1000	1958-1949
** #1 in river											
					1480	1974-1969					
					1680	1969-1963					
Cyanide	Raw Material	ND	1995-1991	ND	ND	1995-1992	ND	ND	1995-1993		1995-1991
(mg/Kg)	**Admitted**	ND	1991-1983		ND	1992-1986	ND	ND	1993-1957		1991-1983
		ND	1983-1976	ND			ND	ND	1957-1951		1983-1974
mean: 1.24	410	ND	1976-1968		ND	1986-1980	ND		1951-1946		1974-1966
high: 2.7	in site soils	ND	1968-1960	ND			ND			ND	1966-1958
		ND	1960-1953	ND	ND	1980-1974	2.7**				1958-1949
** #1 in river											
					1.1	1974-1969					
					ND	1969-1963					

ND = Non detect
Chronology poor for Cores 205 and 206 *blank spaces in the data indicate no information for the sample

Western Electric
Transects 1-3 and Samples 96 and 97
Inorganics

Contaminant	Site Use	Core 207	Years	Core 208	Years	Core 209	Years	Sample 96	Year	Sample 97	Year
Arsenic	Driver	12.5	1995-1985	11.1	1995-1994	11	1995-1991	13.4	1993	19.9	1993
(mg/Kg)	Suspected	21.9	1985-1965	33.4	1994-1955	11.6	1991-1983	14.8	1987	27.8	1958
		35.2	1965-1945	3.6	1955-1949	19.7	1983-1976	15.3	1977	60.1	1948
mean: 20	1300	29.3	1945-1925	ND	1949-1946	28.8	1976-1968	67.8	1967	26.9	1941
high: 125	in site soils	35.8	1925-1905			36.6	1968-1960				
		18.9	1905-1885			62.3	1960-1953				
top 20											
above mean											
Cadmium	Suspected	6.8	1995-1985	5.5	1995-1994	5.1	1995-1991	9.1	1993	9.2	1993
(mg/Kg)		13.5	1985-1965	16.5	1994-1955	8.4	1991-1983	19	1987	8.2	1958
	20	12.1	1965-1945	ND	1955-1949	12.9	1983-1976	9.8	1977	6.1	1948
mean: 11.8	in site soils	5.3	1945-1925	ND	1949-1946	13.9	1976-1968	13.8	1967	4.7	1941
high: 39.6		3.4	1925-1905			20.1	1968-1960				
		1.6	1905-1885			22.1	1960-1953				
** #1 in river											
Chromium	Driver	216	1995-1985	154	1995-1994	163	1995-1991	167	1993	199	1993
(mg/Kg)	Raw Material	442	1985-1965	567	1994-1955	296	1991-1983	437	1987	417	1958
	Admitted	560	1965-1945	52.5	1955-1949	175	1983-1976	310	1977	167	1948
mean: 307		276	1945-1925	3.7	1949-1946	65	1976-1968	412	1967	115	1941
high: 2160	19000	198	1925-1905			1190	1968-1960				
	in site soils	104	1905-1885			1270	1960-1953				
** #1 in river											

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

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Western Electric
Transects 1-3 a Samples 96 and 97
Inorganics

Contaminant	Site Use	Core 207	Years	Core 208	Years	Core 209	Years	Sample 96	Year	Sample 97	Year
Copper	Driver	248	1995-1985	214	1995-1994	192	1995-1991	247	1993	224	1993
(mg/Kg)	Raw Material	431	1985-1965	452	1994-1955	320	1991-1983	487	1987	366	1958
	Admitted	375	1965-1945	67.5	1955-1949	373	1983-1976	4700***	1977	289	1948
mean: 312		306	1945-1925	4.2	1949-1946	421	1976-1968	739	1967	250	1941
high: 3020	2300	238	1925-1905			1554	1968-1960				
	in site soils	112	1905-1885			707	1960-1953				
*** higher than #1 PRSA hit											
Lead	Raw Material	341	1995-1985	288	1995-1994	235	1995-1991	264	1993	254	1993
(mg/Kg)	**Admitted**	614	1985-1965	510	1994-1955	449	1991-1983	574	1987	400	1958
		534	1965-1945	70.9	1955-1949	837	1983-1976	665	1977	295	1948
mean: 462	3000	470	1945-1925	1.7	1949-1946	604	1976-1968	694	1967	254	1941
high: 17900	in site soils	317	1925-1905			686	1968-1960				
		153	1905-1885			740	1960-1953				
Magnesium	Suspected	7310	1995-1985	7770	1995-1994	8190	1995-1991	8900	1993	8690	1993
(mg/Kg)		7790	1985-1965	7170	1994-1955	7340	1991-1983	8040	1987	6740	1958
		7140	1965-1945	2560	1955-1949	6740	1983-1976	3210	1977	6140	1948
mean: 5472		6020	1945-1925	1870	1949-1946	7700	1976-1968	6720	1967	4480	1941
high: 60000		6080	1925-1905			7016	1968-1960				
		4520	1905-1885			7560	1960-1953				
** #1 in river											

ND = Non detect
Chronology poor for Cores 205 and 206 *blank spaces in the data indicate no information for the sample

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Western Electric
Transects 1-3 and ıples 96 and 97
Inorganics

Contaminant	Site Use	Core 207	Years	Core 208	Years	Core 209	Years	Sample 96	Year	Sample 97	Year
Mercury	Driver	4.8	1995-1985	3.6	1995-1994	3.6	1995-1991	3.5	1993	2.3	1993
(mg/Kg)	Suspected	11.6	1985-1965	17.5	1994-1955	6.8	1991-1983	7.3	1987	4.7	1958
		11.1	1965-1945	0.36	1955-1949	7.9	1983-1976	2.8	1977	3.2	1948
mean: 6.92	3.10	5.9	1945-1925	ND	1949-1946	9.5	1976-1968	8.1	1967	7.2	1941
high: 28.3	in site soils	4.9	1925-1905			15.9	1968-1960				
		1	1905-1885			18.9	1960-1953				
Nickel	Raw Material	55	1995-1985	44.2	1995-1994	42.3	1995-1991	41.4	1993	39.6	1993
(mg/Kg)	**Admitted**	89.2	1985-1965	84.9	1994-1955	50.2	1991-1983	76.1	1987	40	1958
		62.9	1965-1945	13.8	1955-1949	31.7	1983-1976	35.3	1977	43.2	1948
mean: 56.7	2300	36	1945-1925	ND	1949-1946	69.6	1976-1968	49	1967	36.9	1941
high: 369	in site soils	36.1	1925-1905			81	1968-1960				
		23.5	1905-1885			75.8	1960-1953				
Selenium	Suspected	ND	1995-1985	1.3	1995-1994	0.97	1995-1991	2.2	1993	1.7	1993
(mg/Kg)		1.4	1985-1965	ND	1994-1955	1	1991-1983	1.9	1987	3.2	1958
	42	2	1965-1945	ND	1955-1949	1.7	1983-1976	4.1	1977	1.7	1948
no sorted data	in site soils	2.5	1945-1925	ND	1949-1946	1.6	1976-1968	4.3	1967	ND	1941
		1.4	1925-1905			5	1968-1960				
		0.64	1905-1885			4.3	1960-1953				

ND = Non detect
Chronology poor for Cores 205 and 206 *blank spaces in the data indicate no information for the sample

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Transects 1-3 and [illegible]mples 96 and 97
Inorganics

Contaminant	Site Use	Core 207	Years	Core 208	Years	Core 209	Years	Sample 96	Year	Sample 97	Year
Silver	Raw Material	ND	1995-1985		1995-1994		1995-1991	ND	1993	ND	1993
(mg/Kg)		8.6	1985-1965	9.9	1994-1955		1991-1983	3	1987	ND	1958
	29	ND	1965-1945	ND	1955-1949		1983-1976	15.4	1977	ND	1948
mean: 8.4	in site soils		1945-1925	ND	1949-1946	8.2	1976-1968	ND	1967	ND	1941
high: 21.4			1925-1905				1968-1960				
		ND	1905-1885			13.1	1960-1953				
Zinc	Raw Material	675	1995-1985	551	1995-1994	430	1995-1991	515	1993	495	1993
(mg/Kg)	**Admitted**	1190	1985-1965	1270	1994-1955	850	1991-1983	1200	1987	770	1958
		1000	1965-1945	129	1955-1949	974	1983-1976	876	1977	442	1948
mean: 770	13000	678	1945-1925	12.7	1949-1946	1140	1976-1968	1030	1967	414	1941
high: 3110	in site soils	534	1925-1905			1160	1968-1960				
		267	1905-1885			1170	1960-1953				
** #1 in river											
Cyanide	Raw Material	ND	1995-1985	ND	1995-1994	ND	1995-1991				
(mg/Kg)	**Admitted**	ND	1985-1965	1.9	1994-1955	ND	1991-1983				
		ND	1965-1945	ND	1955-1949	ND	1983-1976				
mean: 1.24	410	ND	1945-1925	ND	1949-1946	ND	1976-1968				
high: 2.7	in site soils	ND	1925-1905			1.5	1968-1960				
		ND	1905-1885			ND	1960-1953				
** #1 in river											

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

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Western Electric
Transects 1-3 and Samples 96 and 97
VOAs

Contaminant	Site Use	Core 201	Years	Core 202	Core 203	Years	Core 204	Core 205	Years	Core 206	Years
Carbon	Suspected	ND	1995-1991	ND	ND	1995-1992	ND	ND	1995-1993	ND	1995-1991
Disulfide		ND	1991-1983		ND	1992-1986	ND	ND	1993-1957	ND	1991-1983
(ug/Kg)		ND	1983-1976	ND			ND	ND	1957-1951	ND	1983-1974
		ND	1976-1968		39	1986-1980	ND	ND	1951-1946	ND	1974-1966
		ND	1968-1960	ND			ND			ND	1966-1958
		ND	1960-1953	ND	ND	1980-1974	ND			ND	1958-1949
					ND	1974-1969					
					ND	1969-1963					
2-Butanone	Suspected	ND	1995-1991	ND	ND	1995-1992	ND	ND	1995-1993	ND	1995-1991
(MEK)		210	1991-1983		91	1992-1986	ND	ND	1993-1957	ND	1991-1983
(ug/Kg)		220	1983-1976	ND			ND	ND	1957-1951	ND	1983-1974
		140	1976-1968		ND	1986-1980	ND	ND	1951-1946	ND	1974-1966
		230	1968-1960	44			35			ND	1966-1958
		310	1960-1953	22	47	1980-1974	72			ND	1958-1949
					82	1974-1969					
					70	1969-1963					
Benzene	Raw Material	ND	1995-1991	ND	ND	1995-1992	ND	ND	1995-1993	ND	1995-1991
(ug/Kg)		ND	1991-1983		ND	1992-1986	ND	ND	1993-1957	ND	1991-1983
	1600	ND	1983-1976	ND			ND	ND	1957-1951	ND	1983-1974
	in site soils	ND	1976-1968		ND	1986-1980	ND	ND	1951-1946	ND	1974-1966
		140	1968-1960	ND			57			ND	1966-1958
		300	1960-1953	ND	ND	1980-1974	49			ND	1958-1949
					ND	1974-1969					
					ND	1969-1963					

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

Western Electric
Transects 1-3 and Samples 96 and 97
VOAs

Contaminant	Site Use	Core 201	Years	Core 202	Core 203	Years	Core 204	Core 205	Years	Core 206	Years
Toluene	Raw Material	ND	1995-1991	ND	ND	1995-1992	ND	ND	1995-1993	ND	1995-1991
(ug/Kg)		ND	1991-1983		ND	1992-1986	ND	ND	1993-1957	ND	1991-1983
	48000	ND	1983-1976	ND			ND	ND	1957-1951	ND	1983-1974
	in site soils	ND	1976-1968		ND	1986-1980	ND	ND	1951-1946	ND	1974-1966
		ND	1968-1960	ND			74			ND	1966-1958
		380	1960-1953	ND	ND	1980-1974	220			ND	1958-1949
					ND	1974-1969					
					ND	1969-1963					
Chlorobenzene	Suspected	ND	1995-1991	ND	ND	1995-1992	ND	ND	1995-1993	ND	1995-1991
(ug/Kg)		ND	1991-1983		ND	1992-1986	ND	ND	1993-1957	33	1991-1983
	270	ND	1983-1976	ND			ND	ND	1957-1951	ND	1983-1974
	in site soils	ND	1976-1968		ND	1986-1980	ND	ND	1951-1946	ND	1974-1966
		ND	1968-1960	ND			ND			ND	1966-1958
		ND	1960-1953	ND	ND	1980-1974	ND			ND	1958-1949
					ND	1974-1969					
					67	1969-1963					
Xylenes	Raw Material	ND	1995-1991	26	ND	1995-1992	ND	ND	1995-1993	ND	1995-1991
(ug/Kg)	**Admitted**	ND	1991-1983		ND	1992-1986	ND	ND	1993-1957	45	1991-1983
		ND	1983-1976	ND			ND	ND	1957-1951	ND	1983-1974
		ND	1976-1968		ND	1986-1980	ND	ND	1951-1946	88	1974-1966
		940	1968-1960	ND			130			120	1966-1958
		780	1960-1953	ND	ND	1980-1974	330			ND	1958-1949
					90	1974-1969					
					130	1969-1963					

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

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Transects 1-3 and S..nples 96 and 97
VOAs

Contaminant	Site Use	Core 207	Years	Core 208	Years	Core 209	Years	Sample 96	Year	Sample 97	Year
Carbon	Suspected	ND	1995-1985	ND	1995-1994	ND	1995-1991	ND	1993	ND	1993
Disulfide		ND	1985-1965	ND	1994-1955	ND	1991-1983	8	1987	ND	1958
(ug/Kg)		ND	1965-1945	ND	1955-1949	ND	1983-1976	ND	1977	ND	1948
		ND	1945-1925	ND	1949-1946	ND	1976-1968	6	1967	ND	1941
		ND	1925-1905	ND		ND	1968-1960				
		ND	1905-1885	ND		40	1960-1953				
2-Butanone	Suspected	83	1995-1985	57	1995-1994	ND	1995-1991	ND	1993	37	1993
(MEK)		75	1985-1965	180	1994-1955	54	1991-1983	110	1987	120	1958
(ug/Kg)		81	1965-1945	ND	1955-1949	95	1983-1976	47	1977	88	1948
		74	1945-1925	ND	1949-1946	140	1976-1968	73	1967	ND	1941
		ND	1925-1905			130	1968-1960				
		ND	1905-1885			240	1960-1953				
Benzene	Raw Material	ND	1995-1985	ND	1995-1994	ND	1995-1991	ND	1993	ND	1993
(ug/Kg)		ND	1985-1965	ND	1994-1955	ND	1991-1983	22	1987	ND	1958
	1600	ND	1965-1945	ND	1955-1949	ND	1983-1976	ND	1977	ND	1948
	in site soils	22	1945-1925	ND	1949-1946	ND	1976-1968	ND	1967	ND	1941
		ND	1925-1905			ND	1968-1960				
		ND	1905-1885			37	1960-1953				

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

Western Electric
Transects 1-3 and Samples 96 and 97
VOAs

Contaminant	Site Use	Core 207	Years	Core 208	Years	Core 209	Years	Sample 96	Year	Sample 97	Year
Toluene	Raw Material	ND	1995-1985	ND	1995-1994	ND	1995-1991	ND	1993	ND	1993
(ug/Kg)		ND	1985-1965	ND	1994-1955	ND	1991-1983	ND	1987	ND	1958
	48000	ND	1965-1945	ND	1955-1949	ND	1983-1976	ND	1977	ND	1948
	in site soils	20	1945-1925	ND	1949-1946	ND	1976-1968	ND	1967	ND	1941
		ND	1925-1905			28	1968-1960				
		ND	1905-1885			ND	1960-1953				
Chlorobenzene	Suspected	ND	1995-1985	ND	1995-1994	ND	1995-1991	ND	1993	ND	1993
(ug/Kg)		ND	1985-1965	ND	1994-1955	ND	1991-1983	24	1987	ND	1958
	270	ND	1965-1945	ND	1955-1949	ND	1983-1976	ND	1977	ND	1948
	in site soils	ND	1945-1925	ND	1949-1946	ND	1976-1968	ND	1967	ND	1941
		ND	1925-1905			ND	1968-1960				
		ND	1905-1885			ND	1960-1953				
Xylenes	Raw Material	ND	1995-1985	ND	1995-1994	ND	1995-1991	ND	1993	ND	1993
(ug/Kg)	**Admitted**	51	1985-1965	33	1994-1955	ND	1991-1983	160	1987	ND	1958
		150	1965-1945	ND	1955-1949	32	1983-1976	ND	1977	44	1948
		320	1945-1925	ND	1949-1946	140	1976-1968	ND	1967	71	1941
		ND	1925-1905			280	1968-1960				
		ND	1905-1885			140	1960-1953				

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

Western :tric
Transects 1-3 and Samples 96 and 97
Dioxin and Semi-VOAs

Contaminant	Site Use	Core 201	Years	Core 202	Core 203	Years	Core 204	Core 205	Years	Core 206	Years
2,3,7,8-TCDD	Suspected	169	1995-1991	248	228	1995-1992	169	195	1995-1993	235	1995-1991
(ng/Kg)		442	1991-1983		288	1992-1986	236	456	1993-1957	886	1991-1983
		272	1983-1976	433			255	516	1957-1951	842	1983-1974
mean: 6596		1000	1976-1968		520	1986-1980	277	ND	1951-1946	3170	1974-1966
high: 932000		378	1968-1960	883			2080			[redacted]	1966-1958
		356	1960-1953	947	403	1980-1974	[redacted]			6240	1958-1949
top 20											
[redacted]					4650	1974-1969					
					2350	1969-1963					
Bis (2ethylhexyl)	Suspected	11000	1995-1991	12000	13000	1995-1992	10000	10000	1995-1993	24000	1995-1991
phthalate		15000	1991-1983		19000	1992-1986	11000	[redacted]	1993-1957	[redacted]	1991-1983
		14000	1983-1976	[redacted]			15000	16000	1957-1951	140000	1983-1974
mean: 34101		20000	1976-1968		[redacted]	1986-1980	23000	ND	1951-1946	[redacted]	1974-1966
high: 280000		[redacted]	1968-1960	[redacted]			28000			33000	1966-1958
		[redacted]	1960-1953	120000	140000	1980-1974	[redacted]			4800	1958-1949
					3300	1974-1969					
					280000	1969-1963					

ND = Non detect
Chronology poor for Cores 205 and 206 *blank spaces in the data indicate no information for the sample

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Western Electric
Transects 1-3 an[illegible]mples 96 and 97
Dioxin and Semi-VOAs

Contaminant	Site Use	Core 207	Years	Core 208	Years	Core 209	Years	Sample 96	Year	Sample 97	Year
2,3,7,8-TCDD	Suspected	275	1995-1985	204	1995-1994	208	1995-1991	1909	1993	180	1993
(ng/Kg)		776	1985-1965	1910	1994-1955	2840	1991-1983	660	1987	47	1958
		28450	1965-1945	0.07	1955-1949	757	1983-1976	540	1977	7.2	1948
mean: 6596		3010	1945-1925	0.55	1949-1946	2440	1976-1968	5.9	1967	19	1941
high: 932000		4.25	1925-1905			9140	1968-1960				
		2.39	1905-1885			17400	1960-1953				
top 20											
above mean											

Bis (2ethylhexyl)	Suspected	52000	1995-1985	29000	1995-1994	17000	1995-1991	13000	1993	16000	1993
phthalate		140000	1985-1965	60000	1994-1955	81000	1991-1983	120000	1987	540	1958
		75000	1965-1945	ND	1955-1949	200000	1983-1976	29000	1977	ND	1948
mean: 34101		34000	1945-1925	ND	1949-1946	56000	1976-1968	ND	1967	ND	1941
high: 280000		ND	1925-1905			63000	1968-1960				
		ND	1905-1885			22000	1960-1953				

ND = Non detect
Chronology poor for Cores 205 and 206

*blank spaces in the data indicate no information for the sample

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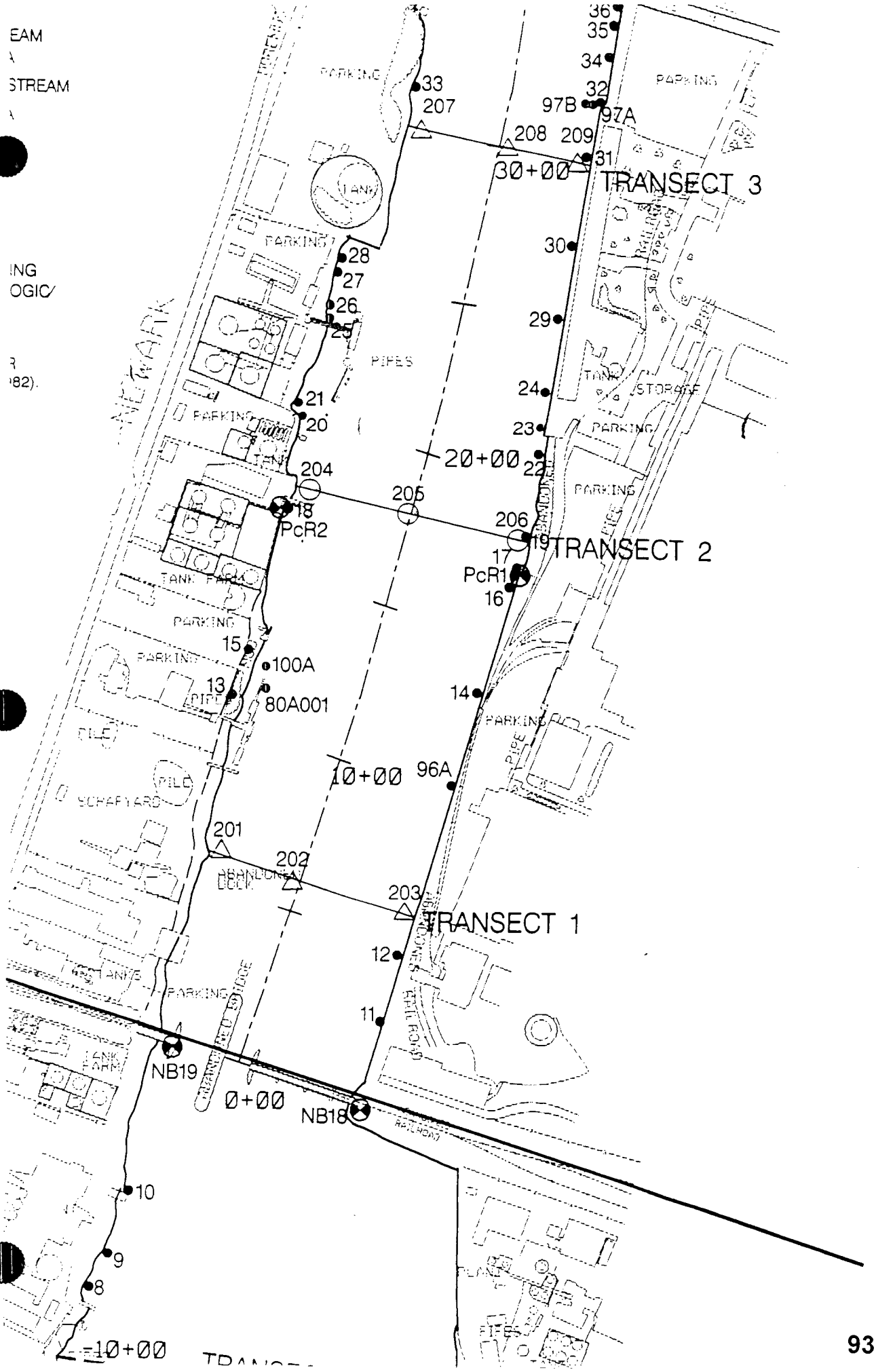

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LUCENT TECHNOLOGIES, INC.

TAB K

July 26, 2000 New Jersey Department of the Treasury, Division of Revenue, Status Report for Lucent Technologies, Inc.

New Jersey Department of the Treasury, Division of Revenue

Status Report For:

Business Name	Business ID Number	Transaction Number, Seq	Report Date
LUCENT TECHNOLOGIES INC.	0100650027	111044 : 1	7/26/2000

Business Type:	FOREIGN PROFIT CORPORATION
Status:	ACTIVE

Filing Date:	01/04/1996	**Home Jurisdiction:**	DE
Status Change Date (If dissolved, withdrawn or canceled):		**Stock Amount:**	0
DOR Suspension Start Date:		**DOR Suspension End Date:**	
Tax Suspension Start Date:		**Tax Suspension End Date:**	
Annual Report Month:	4	**Last Annual Report Filed:** **For Last AR Paid Year:**	02/18/1999 1999

Incorporator:	
Agent:	PRENTICE HALL CORP
Agent Address:	830 BEAR TAVERN ROAD WEST TRENTON, NJ 08628 0000
Office Address Status:	Deliverable

Main Business Address:	475 SOUTH ST ROOM 25214 MORRISTOWN, NJ 07962 1776
Principal Business Address:	475 SOUTH ST ROOM 25214 MORRISTOWN, NJ 07962 1776

Associated Names:

Name	Type Description
AT&T CONSUMER LEASE SERVICES	FICTITIOUS NAME
NS-MPG INC.	PREVIOUS NAME

Next Status Report | Order Additional Business Information

Session Account Status | Transaction Detail Report

Home Page | Done

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LUCENT TECHNOLOGIES, INC.

TAB L

September 12, 1977 letter from USEPA to Western Electric Company regarding Violation of Effluent Limitations, NPDES Permit No. NJ0020443.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10007

12 SEP 1977

SAME COPY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Western Electric Company
100 Central Avenue
Kearny, New Jersey 07032

Re: Violation of Effluent Limitations
NPDES Permit No. NJ0020443

Dear Sir:

This office has received your National Pollutant Discharge Elimination System (NPDES) Discharge Monitoring Report for the reporting period ending July 31, 1977.

Our review of the report indicates that the discharge may not comply with certain effluent limitations specified in your permit (see attachment).

Pursuant to the conditions of your NPDES permit, it is required that you provide the Regional Administrator and the appropriate State agency with information concerning any apparent non-compliance, action taken to correct it, and action to be taken to prevent continuation or recurrence of the situation. This information must be received in this office within 14 days after your receipt of this letter. We strongly advise that you inspect the facility carefully to be assured that it is being operated properly or that necessary corrective actions are undertaken.

Failure to comply with the requirements of this letter could result in EPA requiring you to perform additional intensive tests as authorized under Section 308 of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500). Should you have any questions concerning this matter, please contact the Permit Compliance Group at (212) 264-9880.

SEP 29 1977

Yours truly,

Richard A. Baker
Chief
Status of Compliance Branch
Enforcement Division

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U... ENVIRONMENTAL PROTEC
LOCAL EFFLUENT D
NPDES VIOLATIO

WESTERN ELECTRIC CO
100 CENTRAL AVE.
KEARNY
NJ 07032

NJ002044
F
DISCHARGE

	LIMIT	REPORTED		PERIOD OF ANAL REQ	REP	SAMPL PO RP	E X	COMPL. FACTOR
PH						EFFLUENT GROSS		SU
MIN	6.00	8.50	*	CONT.		GR		8.50
AVE	*	8.70	*	CONT.		GR		0.00
MAX	9.00	9.00	*	CONT.		GR		9.00
SOLIDS, TOTAL SUSPENDED						EFFLUENT GROSS		E KG/DAY
MIN	*	0.26	*	1/030		24 24		0.00
AVE	*	0.90	*	1/030		24 24		0.00
MAX	3.79	1.55	*	1/030		24 24		0.40
SOLIDS, TOTAL SUSPENDED						EFFLUENT GROSS		E MG/L
MIN	*	0.30	*	1/030		24 24		0.00
AVE	*	1.00	*	1/030		24 24		0.00
MAX	10.00	1.80	*	1/030		24 24		0.18
* OIL AND GREASE						EFFLUENT GROSS		E KG/DAY
MIN	*	4.29	*	1/030		GR GR		0.00
AVE	*	4.29	*	1/030		GR GR		0.00
MAX	3.79	4.29	*	1/030		GR GR		1.13
OIL AND GREASE						EFFLUENT GROSS		E MG/L
MIN	*	5.00	*	1/030		GR GR		0.00
AVE	*	5.00	*	1/030		GR GR		0.00
MAX	10.00	5.00	*	1/030		GR GR		0.50
* CYANIDE, FREE						EFFLUENT GROSS		E KG/DAY
MIN	*	0.02	*	1/030		24 24		0.00
AVE	*	0.02	*	1/030		24 24		0.00
MAX	0.01	0.02	*	1/030		24 24		2.00
CYANIDE, FREE						EFFLUENT GROSS		E MG/L
MIN	*	0.03	*	1/030		24 24		0.00
AVE	*	0.03	*	1/030		24 24		0.00
MAX	0.03	0.03	*	1/030		24 24		1.00
CHROMIUM, HEX-VAL (AS CR)						EFFLUENT GROSS		E KG/DAY
MIN	*	0.00	*	1/030		24 24		0.00
AVE	*	0.00	*	1/030		24 24		0.00
MAX	0.01	0.00	*	1/030		24 24		0.00
CHROMIUM, HEX-VAL (AS CR)						EFFLUENT GROSS		E MG/L
MIN	*	0.01	*	1/030		24 24		0.00
AVE	*	0.01	*	1/030		24 24		0.00
MAX	0.05	0.01	*	1/030		24 24		0.20
CHROMIUM, TOTAL (AS CR)						EFFLUENT GROSS		E KG/DAY
MIN	*	0.03	*	1/030		24 24		0.00

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TA SYSTEM
REPORT

REPORT PERIOD= 770501-770731 3 GP AT MI
PASSAIC RIVER 71 6 J
KEARNY TOWN
02 PROCESS WASTE

PREVIOUS COMPLIANCE FACTORS

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LOCAL EFFLUENT DAT
NPDES VIOLATION

WESTERN ELECTRIC CO
100 CENTRAL AVE.
KEARNY
NJ 07032

NJ0020443
F
DISCHARGE 00

	LIMIT	REPORTED	FREQ OF ANAL REQ	REP	SAMPL RQ	RP	E X	COMPL. FACTOR
AVE	*	0.03	*	1/030	24	24		0.00
MAX	0.03	0.04	*	1/030	24	24		0.50
CHROMIUM,TOTAL		(AS CR)			EFFLUENT GROSS			E MG/L
MIN	*	0.04	*	1/030	24	24		0.00
AVE	*	0.04	*	1/030	24	24		0.00
MAX	0.25	0.05	*	1/030	24	24		0.20
COPPER, SOLUBLE		(CU-SOLUBLE)			EFFLUENT GROSS			E KG/DAY
MIN	*	0.08	*	1/030	24	24		0.00
AVE	*	0.08	*	1/030	24	24		0.00
MAX	0.20	0.08	*	1/030	24	24		0.40
COPPER, SOLUBLE		(CU-SOLUBLE)			EFFLUENT GROSS			E MG/L
MIN	*	0.09	*	1/030	24	24		0.00
AVE	*	0.10	*	1/030	24	24		0.00
MAX	0.19	0.10	*	1/030	24	24		0.52
COPPER,TOTAL		(AS CU)			EFFLUENT GROSS			E KG/DAY
MIN	*	0.09	*	1/030	24	24		0.00
AVE	*	0.10	*	1/030	24	24		0.00
MAX	0.45	0.10	*	1/030	24	24		0.22
COPPER,TOTAL		(AS CU)			EFFLUENT GROSS			E MG/L
MIN	*	0.11	*	1/030	24	24		0.00
AVE	*	0.12	*	1/030	24	24		0.00
MAX	1.19	0.12	*	1/030	24	24		0.10
IRON,TOTAL		(AS FE)			EFFLUENT GROSS			E KG/DAY
MIN	*	0.03	*	1/030	24	24		0.00
AVE	*	0.13	*	1/030	24	24		0.00
MAX	0.56	0.22	*	1/030	24	24		0.39
IRON,TOTAL		(AS FE)			EFFLUENT GROSS			E MG/L
MIN	*	0.04	*	1/030	24	24		0.00
AVE	*	0.15	*	1/030	24	24		0.00
MAX	1.50	0.25	*	1/030	24	24		0.16
IRON,DISSOLVED		FERROUS+FERRIC			EFFLUENT GROSS			E KG/DAY
MIN	*	0.01	*	1/030	24	24		0.00
AVE	*	0.05	*	1/030	24	24		0.00
MAX	0.19	0.08	*	1/030	24	24		0.42
IRON,DISSOLVED		FERROUS+FERRIC			EFFLUENT GROSS			E MG/L
MIN	*	0.02	*	1/030	24	24		0.00
AVE	*	0.06	*	1/030	24	24		0.00
MAX	0.50	0.10	*	1/030	24	24		0.20

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AGENCY-REGION 2
SYSTEM
REPORT

REPORT PERIOD= 770501-770731 3 GP AT MI
PASSAIC RIVER 71 6 J
KEARNY TOWN
PROCESS WASTE

PREVIOUS COMPLIANCE FACTORS

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U.S. ENVIRONMENTAL PROTEC
LOCAL EFFLUENT D
NPDES VIOLATIO

WESTERN ELECTRIC CO
100 CENTRAL AVE.
KEARNY
NJ 07032

NJ002044
F
DISCHARGE

	LIMIT	REPORTED		FREQ OF ANAL REQ	REP	SAMPL RQ RP	E X	COMPL. FACTOR
* LEAD,DISSOLVED (AS PB)						EFFLUENT GROSS		E KG/DAY
MIN	*	0.01	*	1/030		24 24		0.00
AVE	*	0.02	*	1/030		24 24		0.00
MAX	0.01	0.02	*	1/030		24 24		2.00
LEAD,DISSOLVED (AS PB)						EFFLUENT GROSS		E MG/L
MIN	*	0.02	*	1/030		24 24		0.00
AVE	*	0.02	*	1/030		24 24		0.00
MAX	0.05	0.03	*	1/030		24 24		0.60
LEAD,TOTAL (AS PB)						EFFLUENT GROSS		E KG/DAY
MIN	*	0.01	*	1/030		4 24		0.00
AVE	*	0.05	*	1/030		24 24		0.00
MAX	0.39	0.05	*	1/030		24 24		0.20
LEAD,TOTAL (AS PB)						EFFLUENT GROSS		E MG/L
MIN	*	0.02	*	1/030		24 24		0.00
AVE	*	0.06	*	1/030		24 24		0.00
MAX	1.05	0.10	*	1/030		24 24		0.09
NICKEL, SOLUBLE (AS NI)						EFFLUENT GROSS		E KG/DAY
MIN	*	0.17	*	1/030		24 24		0.00
AVE	*	0.17	*	1/030		24 24		0.00
MAX	0.37	0.17	*	1/030		24 24		0.45
NICKEL, SOLUBLE (AS NI)						EFFLUENT GROSS		E MG/L
MIN	*	0.20	*	1/030		24 24		0.00
AVE	*	0.20	*	1/030		24 24		0.00
MAX	1.00	0.20	*	1/030		24 24		0.20
NICKEL,TOTAL (AS NI)						EFFLUENT GROSS		E KG/DAY
MIN	*	0.17	*	1/030		24 24		0.00
AVE	*	0.17	*	1/030		24 24		0.00
MAX	0.75	0.17	*	1/030		24 24		0.22
NICKEL,TOTAL (AS NI)						EFFLUENT GROSS		E MG/L
MIN	*	0.20	*	1/030		24 24		0.00
AVE	*	0.20	*	1/030		24 24		0.00
MAX	2.00	0.20	*	1/030		24 24		0.10
FLOW						EFFLUENT GROSS		E MGD
MIN	*	0.18	*	CONT.		*		0.00
AVE	*	0.22	*	CONT.		*		0.00
MAX	1.10	0.27	*	CONT.		*		0.24
* TEMPERATURE-SUMMER						EFFLUENT GROSS		E DEG C
MIN	*	23.30	*	CONT		GR		0.00

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REPORT PERIOD= 770501-770731 3 GP AT MI
PASSAIC RIVER 71 6 J
KEARNY TOWN
PROCESS WASTE

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LOCAL EFFLUENT DATA SY
NPDES VIOLATION REPO

WESTERN ELECTRIC CO
100 CENTRAL AVE.
KEARNY
NJ 07032

NJ0020443
E
DISCHARGE 002

	LIMIT	REPORTED	FREQ OF ANAL REQ	REP	SAMPL RQ	RP	E X	COMPL. FACTOR
AVE	12.80	25.00	0	CONT	GR			25.00
MAX	15.60	26.70	0	CONT	GR			26.70

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CY-REGION 2

REPORT PERIOD= 770501-770731 3 GP AT MI
PASSAIC RIVER 71 5 J
KEARNY TOWN
PROCESS WASTE

PREVIOUS COMPLIANCE FACTORS
2 3 4 5 6

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