SUMMARY REPORT OF

PHASE II

ENVIRONMENTAL SERVICES

performed on the property located at

98-116 SOUTH 4th STREET
BOROUGH OF BROOKLYN
KINGS COUNTY, NEW YORK

NYSDEC Spill Number: 9611887

January 23, ~~1996~~ 1997

ECOSYSTEMS STRATEGIES, INC.
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ESI File Number: PB96146.20

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January 23, 1996

Prepared By:

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Prepared For:

El Puente
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Brooklyn, NY 11211

The undersigned has reviewed this Report and certifies to El Puente that the information provided in this document is accurate as of the date of issuance by this office.

Any and all questions or comments, including requests for additional information, should be submitted to the undersigned.

Paul H. Ciminello
President

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1.0 Introduction

1.1 Purpose

This Summary Report of Phase II Environmental Services ("Report") summarizes all environmental investigative services performed by Ecosystems Strategies, Inc. personnel on the property located at 98-116 South 4th Street in the Borough of Brooklyn, Kings County, New York (see Section 1.3, below). The work summarized in this Report was performed to address previously identified environmental concerns which have the potential to represent a financial liability. The field work performed by this office is consistent with the recommendations made in the December 2, 1996 Environmental Audit Phase I ("Audit") prepared by this office and in the Environmental Services Proposal ("Proposal") prepared by this office on December 15, 1996.

The specific objectives of this Report are as follows: to document the presence or absence of petroleum contamination and/or hazardous substances in subsurface soils as a result of the past on-site storage, use, or disposal of these materials on the subject property; to document the presence or absence of asbestos-containing materials and/or lead-based paint on the subject property; to document the presence or absence of hazardous materials requiring special handling prior to off-site disposal; and to provide cost estimates for further investigative and/or remedial work as they concern identified potential liabilities.

The conclusions and analytical data drawn from the environmental services summarized herein resulted in the need to develop a remediation strategy for the subject property in support of the ultimate closure of the spill file with the NYSDEC.

1.2 Limitations

This written analysis is an assessment of the investigative work conducted on the property located at 98-116 South 4th Street in the Borough of Brooklyn, Kings County, New York and is not relevant to other portions of this property or any other property. It is a representation of those portions of the property analyzed as of their respective dates of field work. This Report cannot be held accountable for activities or events resulting in contamination after the dates of field work.

Services summarized in this Report were performed in accordance with generally accepted practices and established NYSDEC protocols. Unless specifically noted, the findings and conclusions contained herein must be considered not as scientific certainties, but as probabilities based on professional judgement.

This Report is intended for the sole use of El Puente and must be used in its entirety.

1.3 General Site Location and Description

The subject property as defined in this Report is the property located at 98-116 South 4th Street in the Borough of Brooklyn, Kings County, New York (see the Site Location Map, Page 3). The subject property is comprised of a single tax lot (Tax Identification Number: Block 2443, Lot 13). The subject property is a rectangularly-shaped parcel located along the southern side of South 4th Street between Berry Street and Bedford Avenue. Occupying almost the entirety of the subject property is an abandoned multi-story structure comprised of a central seven-story structure flanked by two one-story structures. All three buildings were constructed in the early to mid 1900s and are currently in varying stages of deterioration. The on-site multi-story structure was formerly occupied with various manufacturing uses including an electroplating laboratory and a former glue factory. Immediately south of the multi-story structure is a small paved courtyard area.

Based on available information all three of the on-site structures (the seven-story and the two one-story structures) are connected to the Borough of Brooklyn central water and sewer systems. The on-site one-story structure located on the eastern portion of the subject property is herein referred to as Building #1. The on-site seven-story structure formerly occupied by Camin Laboratories (see, below) is herein referred to as Building #2 and the on-site one-story building formerly occupied by a glue factory (see, below) is herein referred to as Building #3. See the Field Work Map on Page 18 of this Report for the location of these buildings.

1.4 Previous Environmental Investigations

At least three (3) environmental investigations have been conducted on the subject property since 1992; an Order of Compliance and a Technical Report issued by the New York City Department of Environmental Protection (NYCDEP) for the Camin Laboratories, Inc. facility in 1991; an Environmental Site Assessment prepared on a portion of the subject property by Soil Mechanics Environmental Services in 1994; and a Phase I Environmental Audit prepared on the subject property by Ecosystems Strategies, Inc. in 1996. Provided below is relevant information obtained from these available documents.

According to information provided to this office by Pratt Institute for Community and Environmental Development ("Pratt Institute"), the one-story structure located on the western portion of the subject property (98-102 South 4th Street) was most recently occupied by a glue and adhesives factory (Van-Man Adhesives) and the seven-story structure located on the central portion of the property (104-114 South 4th Street) was partially occupied by a former electroplating laboratory (Camin Laboratories, Inc.). No information regarding the most recent occupant of 116 South 4th Street was available.

NYCDEP Order of Compliance and Technical Report

Additional information provided by the Client indicates that in 1992 a Technical Report was prepared by the New York City Department of Environmental Protection Division of Hazardous Materials Management as a result of the identified presence of "... a release or substantial threat of a release of hazardous substances (abandoned electroplating solutions)" on the second floor of the seven-story structure previously occupied by Camin Laboratories, Inc. An Order of Compliance was issued by the New York City Department of Environmental Protection (NYCDEP) in 1992 that included provisions for the clean-up, treatment and disposal of all abandoned hazardous materials present within the Camin Laboratories, Inc. facility by February 14, 1992. Based on observations made during the November 1996 site inspection performed by Ecosystems Strategies, Inc. this work was never completed by Camin Laboratories, Inc.

A preliminary survey of the abandoned Camin facility including sampling of suspected hazardous substances was conducted by the NYCDEP as part of the 1992 Technical Report. This preliminary survey identified the presence of sixteen open chemical vessels and numerous bottles and boxes of chemicals; sampling of liquids within the reaction vessels identified the liquids to be acidic. An inventory of all hazardous substances present within this facility was conducted by the NYCDEP; this inventory was not included in documents provided by the Pratt Institute. The NYCDEP concluded in 1992 that the subject property should be considered a potential environmental and human health hazard.

MAP FROM DELORME MAP EXPERT, FREEPORT, ME.

Site Location Map

98-116 South 4th Street
Borough of Brooklyn, Kings County, New York

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ESI File Number: **PB96146.20**

January 1997

Environmental Site Assessment

Provided to this office for review was an Environmental Site Assessment (Assessment) prepared on a portion of the subject property by Soil Mechanics Environmental Services ("Soil Mechanics") in September 1994. During the course of the site inspection performed by Soil Mechanics, the following conditions were noted with respect to the interior of the on-site seven-story building: miscellaneous debris (including household trash); an abandoned automobile and automobile parts; several unlabeled, empty 55 and 30 gallon drums and one cylinder of compressed gas; numerous 55 and 30 gallon metal and plastic drums, a one-gallon drum labeled "Sulfuric Acid"; large fiberglass and metal vats containing an unidentified liquid, and oil-like staining in the laboratory area; indications of major flooding; and evidence of peeling/flaking paint.

Due to identified on-site environmental conditions which have the potential to represent an potential liability, Soil Mechanics recommended that additional investigative and remedial action be conducted on the subject property including the installation of two monitoring wells. According to available information, no monitoring wells are known to have been installed on the subject property and none of the recommended investigative work is known to have been performed.

Phase I Environmental Audit

On November 26, 1996 Ecosystems Strategies, Inc. conducted an environmental investigation on the subject property as part of the preparation of a Phase I Environmental Audit ("Audit") dated December 2, 1996. This investigation involved the review of available maps and documents including an analysis of Sanborn Fire Insurance Company Maps; a review of federal and state computer databases and printed records for documentation of potential liabilities; and a visual inspection of the subject property ("site inspection").

HISTORIC DOCUMENTS AND REGULATORY AGENCY RECORDS

A review of available Sanborn Fire Insurance Company Maps indicated that the subject property has been occupied by manufacturing facilities since at least the early 1900s until the late 1980s. The currently existing on-site structures were constructed in the early 1900s (Buildings #1 and #2) and in approximately 1950 (Building #3). No on-site petroleum or chemical bulk storage tanks were noted in any of the Sanborn maps reviewed.

A review of regulatory agency records indicated that the subject property under Camin Industries, Inc. (a former occupant of Building #2) is registered with the United States Environmental Protection Agency (USEPA) as a large quantity generator (LQG) of the following hazardous wastes: undefined hazardous wastes, ignitable hazardous wastes, corrosive hazardous wastes, reactive hazardous wastes, chromium, lead and cyanides. A number of open containers, drums and vats containing potential hazardous materials were noted during the site inspection.

According to NYSDEC records, the subject property is not registered with the NYSDEC as a petroleum bulk storage facility. New York City Fire Department (NYCFD) records contain information regarding: the installation of two 10,000-gallon underground fuel oil storage tanks; a permit dated 1949 regarding an application for a fuel oil permit; an application dated 1949 regarding the plumbing and mechanical equipment associated with the installation of the tank; an application from 1973 regarding the approval for oil burning installation and the storage of fuel oil; and records regarding fuel oil specifications. Observations made during the November 26, 1996 site inspection indicated the presence of two (2) vaulted fuel oil tanks estimated to be 10,000 gallons in capacity located in the basement of Building #2 and two (2) 275-gallon aboveground storage tanks (ASTs) located on the first floor of Building #3. The two 10,000-gallon tanks are likely to be the same two tanks identified in NYC Fire Department records. Observations indicate that these two 10,000-gallon tanks may have been previously closed.

SITE INSPECTION

Due to the deteriorated condition of Building #1 (i.e., the roof had collapsed and the interior was filled with debris), the interior of this building could not be inspected during the November 1996 site inspection.

The visual inspection of the interior of Building #2 identified conditions similiar to conditions previously identified by Soil Mechanics in 1994. Ecosystems Strategies, Inc. identified large quantities of debris materials in the basement and first floor of the building including materials and liquids which may require special handling, abandoned laboratory equipment including open drums, vats and containers of unknown liquids that may require special handling and the likely presence of asbestos containing materials and surfaces covered with lead-based paint. A faint sulphur odor was noted in the abandoned laboratory on the second floor of Building #2.

The visual inspection of Building #3 identified large quantities of debris in the basement some of which may require special handling, abandoned manufacturing equipment associated with the former usage of the building as a glue and adhesives factory (including glue mixing vats, a compressor and a boiler), and areas of standing water located on the first floor. Approximately 40 55-gallon drums containing unidentified materials were noted on the first floor of the former glue factory. These drums were contained within a spill containment area suggesting the possible presence of hazardous materials within these drums. Many of the drums viewed by this office were in varying stages of deterioration. Almost the entire floor of Building #3 is covered and stained with thick paste-like materials and a strong chemical odor permeates throughout the interior of the former factory.

1.5 Specified Objectives

Previous investigations performed by Ecosystems Strategies, Inc. on the subject property identified environmental conditions which have the potential to represent a financial liability (see, above). The objectives of the environmental services summarized herein were to determine the presence or absence of contaminated subsurface soil and/or groundwater beneath the former glue factory; determine the presence or absence or asbestos-containing materials and/or lead-based paint within the on-site structures; and to provide further recommendations and cost estimates for site remediation (if appropriate).

Field work summarized in this Report was performed by Ecosystems Strategies, Inc. and designated subcontractors from December 10 to December 11, 1996. The subsurface investigation (boring extension) was performed by Soiltesting, Inc. ("Soiltesting"), the asbestos was conducted by Adelaide Environmental Health Associates, Inc. ("Adelaide"), and the lead paint survey was conducted by SBP Technologies ("SBP"). This Report documents all field work, field screening results, sample collection procedures, resulting analytical data from collected samples and conclusions and recommendations drawn from the field work and analytical data.

2.0 Summary of Field Work

2.1 Overview of Services

Field work documented in this Report was performed by Ecosystems Strategies, Inc. personnel and designated subcontractors on December 10 and 11, 1996. Specifically, the following work was conducted by this office and designated subcontractors:

- coordinated the completion of an asbestos survey on the subject property to identify the presence or absence of asbestos-containing materials within the on-site structures and if present identify the quantity, condition and likely cost estimates for removal;
- coordinated the completion of a lead-based paint survey on the subject property to identify the presence or absence of lead-based paint and if present identify the quantity, condition and likely cost estimates for removal;
- coordinated and supervised the extension of two (2) borings within the former glue factory and documented through field screening, sampling and laboratory analyses the presence or absence of contaminated subsurface soils and/or groundwater;
- documented through sampling and laboratory analyses the presence or absence of petroleum and/or hazardous materials in the standing water present in the basement of Building #3 and on the first floor of Building #3;
- documented through sampling and laboratory analyses the presence or absence of petroleum and/or hazardous materials in the water present in the two vats located on the second floor of Building #2 (abandoned laboratory);
- suggested (if appropriate) further investigative and/or remedial actions pertaining to the presence or absence of asbestos-containing materials, lead-based paint, subsurface contamination, and/or materials that may require special handling; and
- prepared a Report documenting all field work procedures, resulting analytical data, current site conditions and related conclusions and recommendations.

This Report is divided into individual sections documenting the completion of an asbestos survey on the subject property (Section 2.2); completion of a lead-based paint survey on the subject property (Section 2.3); extension of borings within the former glue factory (Section 2.4); sampling of standing water present within the on-site structures (Section 2.5); sampling of water present within chemical vats (Section 2.6); and conclusions and recommendations (Section 3.0). Each referenced Section, where applicable, includes discussions on field observations, field screening results, sample collection procedures, analytical data and conclusions drawn from the field work and analytical results.

2.2 Asbestos Survey

On December 10, 1996 Adelaide Environmental Health Associates, Inc. ("Adelaide") personnel conducted an asbestos survey within the on-site structures to determine the presence or absence of asbestos-containing materials (ACMs) and, if present, determine the quantity, condition and cost estimates for removal of all identified ACMs. The following is a summary of information obtained from a Site Survey Report ("Asbestos Survey") prepared by Adelaide. A copy of the Asbestos Survey is provided as Appendix A to this Report. This section of the Report is divided into individual sections documenting field work observations (Section 2.2.1) and cost estimates for removal of identified ACMs (Section 2.2.2).

2.2.1 Field Work Observations

Adelaide personnel identified asbestos-containing materials in all of the on-site structures that could be inspected (Building #1 could not be inspected as the roof had collapsed rendering the building unsafe to enter). Provided below is a summary of the asbestos-containing materials identified within each of the on-site structures.

BUILDING #2

Asbestos-containing pipe insulation was observed on all floors of this building; this pipe insulation was in poor condition and severely damaged. The pipe insulation totaled approximately 735 linear feet. Asbestos-containing floor tiles in poor and damaged condition were observed on all floors of this building except on the first floor; asbestos-containing floor tiles totaled approximately 1,200 square feet. Approximately 600 square feet of asbestos-containing transite panels in poor and damaged condition were noted on the seventh floor of this building. Approximately 10,000 square feet of asbestos-containing roofing material and approximately 2,000 square feet of asbestos-containing flashing was noted on the roof of this building. Wire insulation, resilient flooring material, window caulk and plasterboard walls were sampled and found not to contain asbestos. Due to the presence of significant quantities of debris on the first floor of this building, no statement could be made regarding the presence or absence of asbestos-containing floor tiles. Due to the deterioration of pipe insulation on this floor, Adelaide determined that debris had become contaminated with asbestos and may therefore require special handling.

BUILDING #3

Approximately 270 linear feet of asbestos-containing pipewrap in poor and damaged condition was noted in the basement and first floor of this building. Approximately 575 square feet of surface insulation (i.e., exhaust breaching, tank and boiler insulation) was noted in the basement of this building. This insulation was in poor and damaged condition and had fallen into the standing water (approximately 1,000 cubic feet) present within the boiler pit thereby contaminating the water. Approximately 500 square feet of asbestos-containing debris is also estimated to be present within this standing water. Approximately 210 square feet of deteriorated floor tile was noted on the first floor of the building. Approximately 6,000 square feet of asbestos-containing roofing material and flashing was observed on the roof of this building. Plasterboard on the first floor was sampled and found not to contain asbestos.

See Appendix A for a more complete discussion of the type, condition and quantity of all identified on-site asbestos-containing materials.

2.2.2 Cost Estimate

Adelaide estimates the total cost for asbestos removal not including air monitoring and project supervision to be $94,888.75.

2.3 Lead Paint Survey

On December 11, 1996 SBP Technologies, Inc. ("SBP") personnel in conjunction with Adelaide conducted a lead paint survey within the on-site structures to determine the presence or absence of lead-based paint and, if present, determine the quantity, condition and cost estimates for removal of all identified lead paint. The following is a summary of information obtained from a Lead Based Paint Survey prepared by SBP. A copy of the Lead Based Paint Survey is provided as Appendix B to this Report. This section of the Report is divided into individual sections documenting field work observations (Section 2.3.1) and cost estimates for removal of identified lead based paint (Section 2.3.2).

2.3.1 Field Work Observations

SBP personnel identified lead-based paint in all of the on-site structures that could be inspected. Building #1 could not be inspected as the roof had collapsed rendering the building unsafe to enter and the basements of both Buildings #2 and #3 were not inspected as these areas were deemed unsafe to enter. SBP's survey was comprised of a site inspection and on-site analysis of suspected lead-based paint with a portable X-Ray Fluorescence Spectrum Analyzer (XRF Analyzer); no confirmatory bulk laboratory testing was performed as part of the investigation. SBP conducted the survey in accordance with the US Department of Housing and Urban Development (HUD) and The City of New York Department of Health (NYCDOH) guidelines. Provided below is a summary of the surfaces identified as being covered with lead-based paint.

BUILDING #2 AND #3

The lead based paint survey included 116 individual test assays throughout the site. Of these 116 tested areas, twenty-three (23) assays indicated the presence of lead at levels above the NYCDOH-established action level of 0.7 milligrams of lead per square centimeter of surface area (0.7 mg/cm^2) and sixty-five (65) assays did not indicate the presence of lead-based paint. Twenty-eight (28) of the 116 assays were inconclusive; however, based on SBP's observations, these inconclusive results should be considered as positive results in the absence of confirmatory laboratory testing. Based on the results of this survey, it is estimated that lead-based paint covers approximately 8,000 square feet of surface area in the inspected on-site structures and on the two fire escapes.

See the Lead Based Paint Survey in Appendix B of this Report for a complete discussion of the type, condition and quantity of on-site areas covered with lead-based paint.

2.3.2 Cost Estimate

SBP estimates the total cost for lead abatement to be $65,000.00.

2.4 Extension of Borings

On December 13, 1996 Ecosystems Strategies, Inc. personnel supervised the extension of two (2) borings within the former glue factory (Building #3) to determine the presence or absence of subgrade soil and/or groundwater contamination as a result of historic on-site operations and/or current conditions. The original boring program detailed in the December 4, 1996 Proposal had to be modified during field work preparation as site conditions prevented the extension of any further borings using available equipment (see Sections below).

2.4.1 Field Work Methodology

Prior to initiation of field work, a request for a complete utility markout of the subject property was submitted by Ecosystems Strategies, Inc., as required by New York State Department of Labor regulations; confirmation of underground utility locations was secured and a field check of the utility markout was conducted prior to tank excavation.

A Thermal Instruments 580B photoionization detector (PID) calibrated to read parts per million gas equivalents of isobutylene (ppm-ge) was utilized by Ecosystems Strategies, Inc. personnel to screen all encountered material for the presence of any volatile organic vapors. The PID was also utilized to monitor the air within the building for any volatile organic vapors.

The extension of the borings was performed by Soiltesting, Inc. ("Soiltesting) using a trailer-mounted drilling rig equipped with a 4-inch inside diameter hallow stem auger. Split spoon sampling was conducted at each boring location at depths ranging from 2 to 17 feet below surface grade or to the groundwater interface. Boring logs documenting the physical characteristics of encountered soils were maintained by Soiltesting. Ecosystems Strategies, Inc. personnel maintained independent field logs documenting the physical characteristics, PID readings and any field indications of contamination for all encountered material at each boring location.

Relevant information from Ecosystems Strategies, Inc. logs for each boring location is summarized in Section 2.4.2, below. Copies of the boring logs prepared by Soiltesting are included in Appendix D of this Report. A Field Work Map indicating the boring locations and associated selected site features is provided on Page 18 of this Report.

All soil samples were collected in a manner consistent with USEPA and NYSDEC sample collection protocols. Each of the soil samples were collected in sample jars sterilized at the laboratory. Dedicated gloves were used at each sample location to place the material into jars. After sample collection, the sample containers were placed in a cool (4°C), dry place prior to their transport to the laboratory. On the same day of sample collection, the soil samples were transported via overnight delivery to Matrix Analytical, Inc., a New York State Department of Health approved laboratory (ELAP certification Number: 11116) for analyses. Appropriate chain of custody procedures were followed. All sample collection equipment was properly decontaminated prior to the initiation of sampling and between sample locations to avoid cross-contamination.

2.4.2 Field Work Observations

The entire floor of the former glue factory (Building #3) is covered with a variety of materials associated with the operation of the structure as a glue factory (e.g., glues, resins, adhesives). The presence of these materials resulted in a strong odor that permeated throughout the interior of the glue factory thereby distorting natural senses. Site conditions and available equipment prevented the extension of more than two borings within the building. Provided below is a description of each boring location. See the Field Work Map on Page 18 of this Report for the location of the two borings.

Boring B-1

Boring B-1 was extended in the southern end of the former glue factory approximately 18 feet north of the southern wall and approximately 15 feet east of the western wall. B-1 was extended to a depth of 17 feet below grade; shallow groundwater was encountered at a depth of approximately 15 feet and 7 inches below grade. The initial recovery (0-2 feet below grade) consisted of gravel and fill material grading into a brown fine grained sand and silt. Recovery between 5 and 7 feet below grade consisted of a light brown fine grained sand and silt grading to a dark brown/black silt at 7 feet below grade. Recovery between 10 and 12 feet below grade consisted of a dark brown/black silt grading into a gray silt and clay. At the 12 foot depth the soil consisted of a reddish brown/gray silt and clay. The soil was moist at the 10 foot depth. Recovery between 15 and 17 feet below grade consisted of a fine grained brown sand with traces of medium grained sand and silt grading into a fine grained sand and silt with some rock fragments at the 17 foot depth. Shallow groundwater was encountered at approximately 15 feet and 7 inches below grade.

No material exhibiting any field indications of contamination (e.g., stained discolored or odorous soils) was encountered during the extension of Boring B-1; however, site conditions prevented a definitive determination as to the presence of any odors specific to the samples. Only minimal instrument indications of contamination using the PID (less than 5 ppm-ge) were encountered throughout the boring. Samples were collected at all intervals identified above; however, as no field or instrument indications of contamination were identified only the sample from 0 to 2 feet below grade and the recovery between 15 and 17 feet below grade (the groundwater interface) were analyzed at the laboratory.

Boring B-2

Boring B-2 was extended in the northern end of the former glue factory approximately 9 feet south of the northern wall (roll-up garage door) and approximately 7.5 feet west of the drum storage area (B-2 was extended approximately 60 feet north of B-1). B-1 was extended to a depth of approximately 14 feet below grade; site conditions prevented the extension of the boring to further depths. Shallow groundwater was not encountered during the extension of this boring. The initial recovery (0-2 feet below grade) consisted of fill material with brick fragments; a strong glue odor was noted within this recovery. Recovery between 5 and 7 feet below grade consisted of a combination of fill material and a red/brown silt and clay; an odor was also noted within this recovery. Recovery between 10 and 12 feet below grade consisted of a uniform light brown/reddish brown fine grained sand and silt; no odor was noted within this recovery. Recovery between 12 and 14 feet below grade consisted of a brown fine grained sand and silt; no odor was noted in this recovery.

Material exhibiting a chemical odor resembling glue was noted in soils recovered between 0-2 feet below grade and 5-7 feet below grade; however, the soils did not appear to be stained or discolored. Instrument indications of contamination using the PID were encountered from 0 to 7 feet below grade with the maximum reading encountered from the recovery between 0 and 2 feet below grade (35 ppm-ge). These readings decreased to 16 ppm-ge in soils from 5-7 feet below grade, 3.7 ppm-ge in soils from 3.7 ppm-ge and to 1.6 ppm-ge in soils from 12-14 feet below grade.

Samples were collected at all intervals identified above; however, only the samples from 0 to 2 feet below grade, from 5 to 7 feet below grade, and from 12 to 14 feet below grade were sent for laboratory analyses.

2.4.3 Analytical Results

Each sample for laboratory analysis was collected in a manner consistent with USEPA and NYSDEC sample collection protocols. All soil samples were collected in sample jars sterilized at the laboratory. Upon completion of sample collection, the five soil samples were shipped on ice via overnight delivery to Matrix Analytical, Inc. Appropriate chain of custody procedures were followed. The five soil samples were analyzed for the presence of volatile organic compounds (VOCs) using USEPA Method 8240. The two samples from B-1 and the 0-2 feet sample from B-2 were also analyzed for the presence of polycyclic aromatic hydrocarbons (PAHs) using USEPA Method 8270.

Action Levels

The term "action level," as defined in this Report, is the concentration of a particular contaminant above which remedial actions are considered more likely. The overall objective of setting action levels is to assess the integrity of on-site soils and groundwater relative to conditions which are likely to present a threat to public health, given the existing and probable future uses of the site. On-site soils and groundwater with contaminant levels exceeding these action levels are considered more likely to warrant remediation. The action levels identified in this Report for soils are determined based on the NYSDEC's Spill Technology and Remediation Series (STARS) Memo #1 Petroleum-Contaminated Soil Guidance Policy (August 1992) and on the NYSDEC's Division Technical and Administrative Guidance Memorandum (TAGM) on Determination of Soil Cleanup Objectives and Cleanup Levels (January 24, 1994). In accordance with standards set forth in the above-referenced document, all compounds referenced in Section 2.4.4, below are presented with their respective action levels.

2.4.4 Discussion of Analytical Results

Analytical results of the two (2) soil samples collected from specified depths in B-1 and the three (3) soil samples collected from specified depths in B-2 are provided in the paragraphs below and in Table 1, below. Complete laboratory results are provided in Appendix C of this Report.

Boring B-1

Laboratory analysis of the sample collected from the 0-2 foot interval did not identify the presence of any volatile organic compounds (VOCs) at levels above NYSDEC-designated action levels. However, chlorinated solvents were identified within the 0-2 foot interval. Specifically, laboratory analysis identified the presence of 170 μg/kg of tetrachloroethane and 170 μg/kg of trichloroethane in the soil from 0-2 feet below grade. These levels are below the NYSDEC-designated action levels for tetrachlorethane (1,400 μg/kg) and trichloroethane (700 μg/kg). No BTEX compounds (benzene, toluene, ethylbenzene or xylene) were detected in the soil between 0 and 2 feet below grade. Laboratory analysis identified the presence of elevated levels of PAHs in the sample collected from 0-2 feet below grade. All of these identified PAHs were detected at levels exceeding NYSDEC-designated action levels.

Laboratory analysis of the soil sample collected from the 15-17 foot interval in B-1 did not identify the presence of any detectable levels of chlorinated solvents or petroleum hydrocarbons; all specified compounds were non-detected. The 15 foot depth is likely to be at or below the invert of the two on-site 10,000-gallon underground fuel oil storage tanks (USTs). Based on the non-detectable levels of PAHs documented in the soils between 15 and 17 feet below grade, it is unlikely that product has been released from either of the two on-site USTs.

Boring B-2

Laboratory analysis of the sample collected from the 0-2 foot interval identified the presence of elevated levels of chlorinated solvents (5,500 µg/kg of tetrachlorethane and 3,700 µg/kg of trichloroethane). These concentrations are at levels significantly higher than those detected in B-1 and at levels above NYSDEC-designated action levels. No BTEX compounds (benzene, toluene, ethylbenzene or xylene) were detected in the soil between 0 and 2 feet below grade; however, elevated detection limits may be masking concentrations of these compounds. Laboratory analysis further identified the presence or elevated levels of PAHs; all detected compounds were present at levels exceeding NYSDEC-designated action levels.

Laboratory analysis of the soil sample collected from the 5-7 foot interval did not identify the presence of any elevated levels of chlorinated solvents. However, 71 µg/kg of 1,1,1-trichloroethane was identified; this level is below the designated action level for 1,1,1-trichloroethane (800 µg/kg). Laboratory analysis identified the presence of an elevated level of toluene (1,400 µg/kg) within soil collected between 5 and 7 feet below grade. Laboratory analysis of the soil sample collected from the 12-14 foot interval did not identify the presence of any detectable levels of any chlorinated solvents or BTEX compounds. No detectable concentrations of trichloroethane or tetrachloroethane were identified in samples collected from 5-7 feet below grade or from 12-14 feet below grade. Analysis for the presence or absence of PAHs was not performed at the 5-7 foot or 12-14 foot intervals in Boring B-2.

Available laboratory data generated to date suggest that the vertical extent of contamination extends along the surface soils beneath the concrete floor to a depth of approximately 2 feet below grade; however, contaminated soils may extend to depths of at least 4 feet below grade. These data tentatively support the conclusion that documented on-site contamination has not impacted groundwater.

No statement can be made as to whether the identified levels are "peak" levels and no reasonable estimation of "hot spots" can be made with the existing data. Due to the insufficient amount of data, a delineation as to the horizontal extent of contamination cannot be made at this time.

The source of the identified chlorinated solvents and polycyclic aromatic hydrocarbons present in the subgrade surface soils is unknown at this time. However, based on the non-detectable levels of PAHs documented in soils from between 15 and 17 feet below grade in B-1 (likely to be either at or below the invert of the two on-site USTs), it is unlikely that the elevated levels of PAHs identified in surface soils are the result of a release of product from either of the two USTs.

2.4.5 Cost Estimate

Investigative costs are estimated at between $12,000 and $20,000 depending on the number of borings extended within the building. Remediation costs are currently estimated to be in the range of $40,000 to $80,000, based on limited information. A more accurate estimate of remediation costs can be provided after recommended investigations have been completed.

Table 1: Laboratory Analyses of Soil Samples
(Results in **bold** exceed designated action levels. All results measured in μg/kg.)

	Compound	Action Level[1&2]	Sample Location				
			B-1 (0-2')	B-1 (15-17')	B-2 (0-2')	B-2 (5-7')	B-2 (12-14')
VOCs	Toluene	100 μg/kg	ND[3]	ND	ND	**1,400**	ND
	Tetrachloroethane	1,400 μg/kg	170	ND	**5,500**	ND	ND
	1,1,1-Trichloroethane	800 μg/kg	ND	ND	ND	71	ND
	Trichloroethane	700 μg/kg	170	ND	**3,700**	NA[4]	ND
PAHs	Acenaphthene	400 μg/kg	**1,400**	ND	ND	NA	NA
	Acenaphthylene	Not Available	ND	ND	ND	NA	NA
	Anthracene	1,000 μg/kg	**3,000**	ND	**1,200**	NA	NA
	Benzo (a) Anthracene	.04 μg/kg	**7,900**	ND	**3,300**	NA	NA
	Benzo (a) Pyrene	.04 μg/kg	**6,000**	ND	**2,900**	NA	NA
	Benzo (b) Fluoranthene	.04 μg/kg	**7,100**	ND	**4,000**	NA	NA
	Benzo (k) Fluoranthene	.04 μg/kg	**2,500**	ND	**1,500**	NA	NA
	Benzo (g,h,i) Perylene	.04 μg/kg	**2,300**	ND	**1,500**	NA	NA
	Chrysene	.04 μg/kg	**9,000**	ND	**3,500**	NA	NA
	Fluoranthene	1,000 μg/kg	**14,000**	ND	**7,300**	NA	NA
	Indeno (1,2,3-cd) Pyrene	.04 μg/kg	**1,900**	ND	**1,300**	NA	NA
	Naphthalene	200 μg/kg	**3,400**	ND	ND	NA	NA
	Phenanthrene	1,000 μg/kg	**19,000**	ND	**6,100**	NA	NA
	Pyrene	1,000 μg/kg	**19,000**	ND	**6,100**	NA	NA

Notes:
1. Source: NYSDEC STARS Memo #1 (July 1993)
2. Source: NYSDEC TAGM (January 24, 1994)
3. ND = Not Detected
4. NA = Not Analyzed

2.5 Areas of Standing Water in Building # 3

On December 13, 1996 Ecosystems Strategies, Inc. personnel collected two (2) samples of the on-site areas of standing water present on the floors of the on-site structure. One (1) sample was collected from the area of standing water located in the southern end of the former glue factory (Building #3) and one (1) sample was collected from the area of standing water located in the boiler pit in the basement.

2.5.1 Field Work Methodology

A Thermal Instruments 580B photoionization detector (PID) calibrated to read parts per million gas equivalents of isobutylene (ppm-ge) was utilized by Ecosystems Strategies, Inc. personnel to screen all encountered material for the presence of any volatile organic vapors. The PID was also utilized to monitor the air within the building for any volatile organic vapors.

All water samples were collected in a manner consistent with USEPA and NYSDEC sample collection protocols. Each of the water samples were collected in sample vials sterilized at the laboratory. After sample collection, the sample vials were placed in a cool (4°C), dry place prior to their transport to the laboratory. On the same day of sample collection, the samples were transported via overnight delivery to Matrix Analytical, Inc., a New York State Department of Health approved laboratory (ELAP certification Number: 11116) for analyses. Appropriate chain of custody procedures were followed. All sample collection equipment was properly decontaminated prior to the initiation of sampling and between sample locations to avoid cross-contamination. The water samples were analyzed for the presence of volatile organic compounds (VOCs) using USEPA Method 8240.

2.5.2 Field Work Observations

First Floor of Glue Factory

Between 500 and 1,000 gallons of standing water was present in the southern portion of the former glue factory; initial observations made during the November 1996 site inspection identified between 4,000 and 7,000 gallons of water in this area. Based on these observations, the water present in this area is likely the result of rainwater entering the building through the roof. No sheen was noted on the surface of this water.

The entire floor of the former glue factory including the area beneath the standing water is covered with a thick coat of a variety of materials associated with the former operation of the structure as a glue factory (e.g., glues, resins, adhesives). The presence of these materials resulted in a strong odor that permeated throughout the interior of the glue factory thereby distorting natural senses. The standing water was sampled as rainwater runoff over the floor of the glue factory may have contaminated this standing water. The PID did not detect the presence of any volatile organic vapors within the area of standing water.

Basement in Boiler Pit

Approximately 7,500 gallons of standing water is present in the boiler room located in the partial basement beneath the glue factory; this water is present within the pit that houses the two boiler units. No sheen was noted on the water present within this pit and no indications of contamination with the PID were recorded. It is believed that the water present within this pit is the result of rainwater percolating through the floor and collecting in the concrete pit.

2.5.3 Analytical Results

Action Levels

The term "action level," as defined in this Report, is the concentration of a particular contaminant above which remedial actions are considered more likely. The overall objective of setting action levels is to assess the integrity of on-site groundwater relative to conditions which are likely to present a threat to public health, given the existing and probable future uses of the site. On-site groundwater with contaminant levels exceeding these action levels are considered more likely to warrant remediation. The action levels identified in this Report for groundwater are determined based on the NYSDEC's Division Technical and Administrative Guidance Memorandum (TAGM) on Determination of Soil Cleanup Objectives and Cleanup Levels (January 24, 1994). In accordance with standards set forth in the above-referenced document, all compounds referenced in Section 2.5.4, below are presented with their respective action levels.

2.5.4 Discussion of Analytical Results

Laboratory analysis of the water sample collected from the southern portion of the former glue factory and from the boiler pit did not document the presence of any detectable levels of VOCs; however, elevated detection limits may be masking low levels of acetone and methyl ethyl ketone in the areas of standing water. Detection limits for all other analyzed compounds were either at or below designated action levels. Complete laboratory results are provided in Appendix C of this Report.

Based on these laboratory results, the standing water present within the former glue factory does not require any special handling. However, according to the Asbestos Survey prepared by Adelaide (see Section 1.4, above), approximately 500 square feet of asbestos insulation from the boilers has fallen off into the water in the pit, thereby contaminating the water within this pit. Based on the presence of asbestos-containing material present in the water, this water will require special handling prior to and during disposal. Adelaide estimates that the removal of this contaminated water will cost approximately $2,000.

2.5.5 Cost Estimate

No additional costs are anticipated to be incurred for disposal of this water as a result of the presence of any organic constituents. Additional cost incurred to remove this water because of the presence of asbestos ($2,000) is included in the estimates provided above (see Section 2.1).

2.6 Water in Abandoned Chemical Vats

On December 11, 1996 Ecosystems Strategies, Inc. personnel collected one (1) water sample from each of the chemical vats located in the abandoned laboratory on the second floor of Building #2 to determine the presence or absence of trace metals in the water and determine whether the water is to be considered a hazardous waste.

2.6.1 Field Work Methodology

All water samples were collected in a manner consistent with USEPA and NYSDEC sample collection protocols. Each of the water samples were collected in sample vials sterilized at the laboratory. After sample collection, the sample vials were placed in a cool (4°C), dry place prior to their transport to the laboratory. On the same day of sample collection, the samples were transported via overnight delivery to Matrix Analytical, Inc., a New York State Department of Health approved laboratory (ELAP certification Number: 11116) for analyses. Appropriate chain of custody procedures were followed. All sample collection equipment was properly decontaminated prior to the initiation of sampling and between sample locations to avoid cross-contamination. The water samples were analyzed for the presence or absence of the Resource Conservation and Recovery Act (RCRA) metals and pH.

2.6.2 Field Work Observations

A strong sulphur odor was noted permeating throughout the abandoned laboratory and open drums of unknown chemicals were noted. Approximately 300-500 gallons of water was present in the two vats located within the laboratory. No sheen was present on the water within either of the two chemical vats.

2.6.3 Analytical Results

Action Levels

The term "action level," as defined in this Report, is the concentration of a particular contaminant above which remedial actions are considered more likely. The overall objective of setting action levels is to assess whether the wastes should be considered as hazardous. Wastes with contaminant levels exceeding these action levels are considered more likely to warrant remediation. The regulatory levels identified in this Report for wastes are determined based on the United States Code of Federal Regulations 40 CFR, Parts 260-299 (revised as of July 1, 1991). In accordance with standards set forth in the above-referenced document, all compounds referenced in Section 2.6.4, below are presented with their respective regulatory levels.

2.6.4 Discussion of Analytical Results

Laboratory analysis of the water sample collected from the smaller of the two vats located within the abandoned laboratory identified residual levels of trace metals below designated action levels; minimal concentrations of barium, cadmium and nickel were identified within the water. Laboratory analysis of the water sample collected from the larger of the two vats also identified residual concentrations of barium, cadmium and nickel. The pH of the water in the smaller vat was 7.4 and the pH of the water in the larger vat was 7.6 indicating that the water is neutral. Results for the water samples collected from within the two vats are summarized in Table 2, below. Complete laboratory results are provided in Appendix C of this Report.

Available laboratory data suggests that the water present within both vats is most likely to be rainwater with residual concentration of metals. Based on these laboratory results, the standing water present within the two vats does not require any special handling.

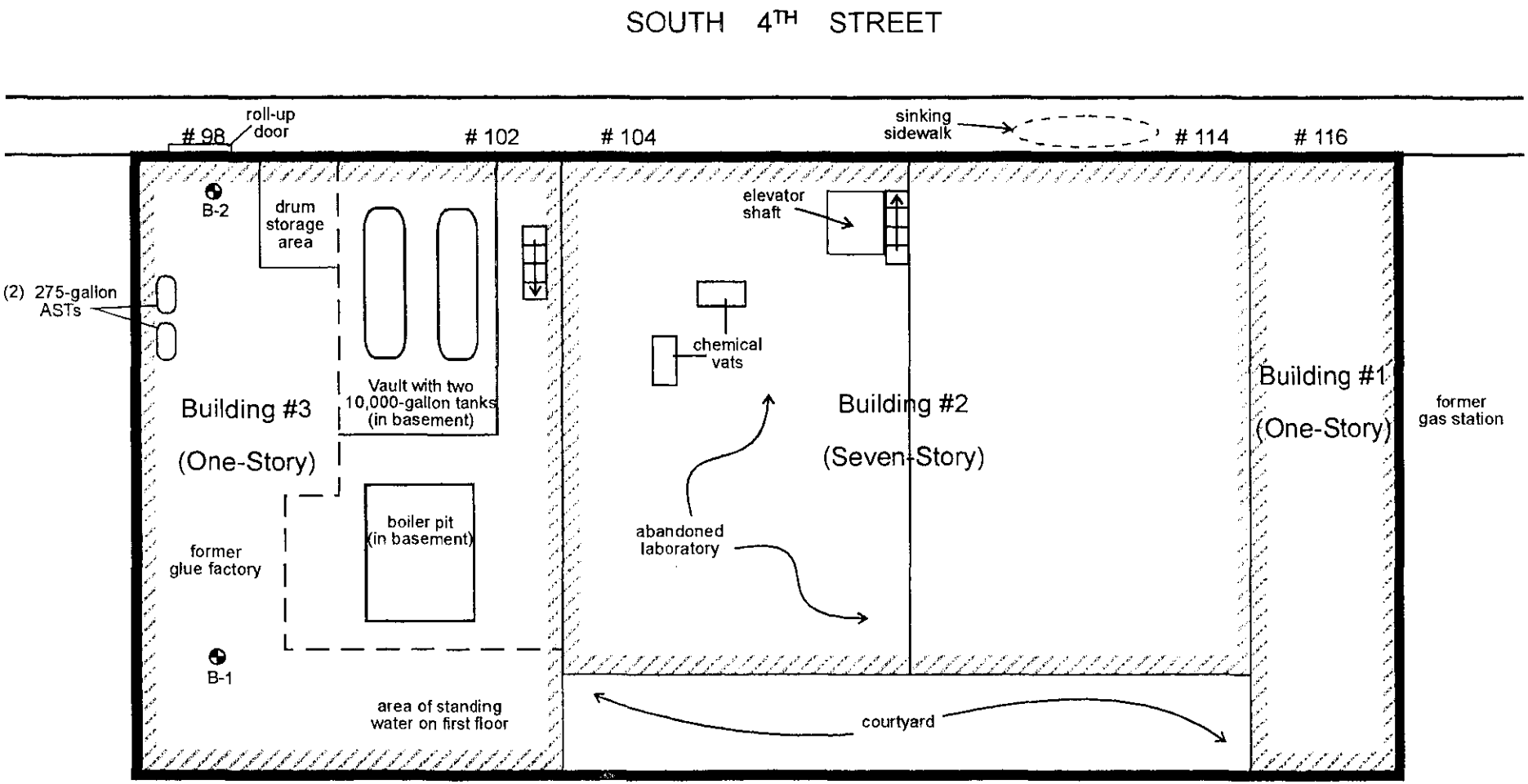
2.6.5 Cost Estimate

No additional cost are anticipated to remove this water.

Table 2: Laboratory Analyses of Water Within Abandoned Vats
(Results in **bold** exceed designated action levels. All results measured in parts per million mg/l.)

	Compound	Regulatory Level[1]	Sample Location	
			Vat #1	Vat #2
RCRA Metal	Arsenic	5.0 mg/l	ND	ND
	Barium	100 mg/l	0.01	0.01
	Cadmium	1.0 mg/l	0.013	0.002
	Chromium	5.0 mg/l	ND	ND
	Lead	5.0 mg/l	ND	ND
	Mercury	0.2 mg/l	ND	ND
	Nickel	Not Available	0.13	0.07
	Selenium	1.0 mg/l	ND	ND
	Silver	5.0 mg/l	ND	ND
pH			7.4	7.6

Notes: 1. Source: 40 CFR, Part 261 (July 1991)
2. ND = Not Detected



Feature locations are approximate.

Field Work Map

98 - 116 South 4th Street
Borough of Brooklyn, Kings County, New York

N

Legend:
property border
basement border
building outline

ESI File Number: PB96146.20
January 1997
Not to Scale
Page 18

3.0 Conclusions and Recommendations

This office has completed the services summarized in Section 2.1 on the property located at 98-116 South 4th Street in the Borough of Brooklyn, Kings County, New York. Based on the services provided and data generated to date, the following conclusions and recommendations (in **bold**) are made regarding the subject property. Cost estimates for proposed remedial work are provided in *italics*.

1. An asbestos survey was conducted in Buildings #2 and #3; Building #1 could not be inspected due to unsafe conditions. Asbestos-containing materials (ACMs) were identified in both buildings in the form of floor tiles (approximately 2,500 square feet), pipe insulation (approximately 1,000 linear feet), roofing materials (approximately 15,000 square feet) and flashing (approximately 3,000 square feet); these identified ACMs were in poor condition. Asbestos-containing transite panels (approximately 600) in poor and damaged condition were also noted on the seventh floor of Building #2. Asbestos-containing materials in poor and deteriorated condition were also identified in the basement: tank insulation (125 square feet), boiler insulation (250 square feet), exhaust breaching (200 square feet), contaminated water (approximately 1,000 cubic feet), and contaminated debris (500 square feet).

   It is recommended that all identified asbestos-containing materials in Buildings #2 and #3 be removed from the subject property prior to any renovation and/or demolition activities. This abatement should be conducted in accordance with applicable regulations.

   It is estimated that the removal of all on-site asbestos-containing materials in Buildings #2 and #3 including project supervision and air monitoring could be completed in approximately 30 days for a total cost of approximately $111,358.75. Additional costs may be associated with ACM removal in Building #1.

2. A lead-based paint survey was conducted in Buildings #2 and #3; Building #1 and the basement could not be inspected due to unsafe conditions. The lead based paint survey included 116 individual test assays throughout the site. Based on the results of the lead paint survey, it is estimated that lead-based paint covers approximately 8,000 square feet of surface area in the inspected on-site structures and on the two fire escapes. All identified areas covered with lead based paint were in poor and deteriorating condition.

   It is recommended that all identified lead-based paint in Buildings #2 and #3 be removed from the subject property prior to any renovation and/or demolition activities. It is further recommended that this abatement be conducted in accordance with applicable regulations.

   It is estimated that the removal of all lead-based paint in Buildings #2 and #3 including project supervision and air monitoring could be completed for a total cost of approximately $67,910.00. Additional costs may be associated with lead paint removal in Building #1.

3. Two (2) borings were extended within the former glue factory (Building #3) to determine the presence or absence of subgrade soil and/or groundwater contamination as a result of historic on-site operations and current conditions.

   Laboratory analysis did not identify the presence of any volatile organic compounds (VOCs) at levels above NYSDEC-designated action levels in Boring B-1; however, chlorinated solvents (tetrachloroethane and trichloroethane) were identified within the 0-2 foot interval but at levels below designated action levels. Laboratory analysis identified the presence of elevated levels of PAHs in the soil extending from 0-2 feet below grade; all of these compounds were identified at levels exceeding NYSDEC-designated action levels.

Laboratory analysis of the soil sample collected from the 15-17 foot interval in B-1 (the groundwater interface) did not identify the presence of any detected levels of chlorinated solvents or petroleum hydrocarbons; all specified compounds were non-detected.

Laboratory analysis of samples collected from the 0 to 2 foot interval in Boring B-2 identified elevated levels of tetrachlorethane and trichloroethane above designated action levels; these concentrations are at levels significantly higher than those detected in B-1 and at levels above NYSDEC-designated action levels. Laboratory results further identified the presence of elevated levels of PAHs from 0-2 feet below grade; all detected compounds were present at levels exceeding NYSDEC-designated action levels. Laboratory analysis also identified the presence of an elevated level of toluene within soil collected between 5 and 7 feet below grade. No detectable levels of any chlorinated solvents or BTEX compounds were detected from 12-14 feet below grade.

Available laboratory data generated to date, suggests that the vertical extent of contamination extends along the surface soils beneath the concrete floor of the dormer glue factory to a depth of approximately 2 feet below grade; however, contaminated soils may extend to depths of at least 4 feet below grade. No statement can be made as to whether these identified levels are "peak" levels. Due to the insufficient amount of data, a delineation as to the horizontal extent of contamination cannot be made at this time.

The source of the identified chlorinated solvents and polycyclic aromatic hydrocarbons present in the subgrade soils is unknown at this time. Based on the non-detectable levels of PAHs documented in soils from between 15 and 17 feet below grade in B-1 (likely to be either at or below the invert of the two on-site USTs), it is unlikely that the elevated levels of PAHs identified in surface soils are the result of a release of product from either of the two on-site USTs.

Remediation of subgrade soils is likely to be required, based on this preliminary information. The volume of material subject to remediation and the optimal remedial strategy cannot be determined without further investigations. Existing data support a conclusion that groundwater quality has not been impacted by this site.

It is recommended that a second series of borings be extended within the former glue factory to document the horizontal extent of contamination and to document any variations in the previously identified vertical extent of contaminated soil. Based on data generated to date, these borings should be extended to depths of no greater than 10 feet below grade. Split spoon sampling should be conducted at two foot intervals within each boring to document the extent of subsurface contaminated soil.

The estimated cost for the proposed investigation is between $12,000 and $20,000. A preliminary estimate of subgrade soil remediation is between $40,000 and $80,000.

4. Based on the presence of petroleum hydrocarbons and chlorinated solvents at levels above NYSDEC-designated action levels this contaminated soil was considered to be evidence of a release reportable to the NYSDEC as specified in 6 NYCRR, Part 613. This spill event was reported to the NYSDEC and assigned Spill Number: 9611887.

   It is recommended that the NYSDEC be made aware of any further investigative and/or remedial action to be completed on the subject property in support of the ultimate closure of the spill file with the NYSDEC.

5. Ecosystems Strategies, Inc. personnel collected two (2) samples of the on-site areas of standing water present on the floors of the on-site structure. One (1) sample was collected from the area of standing water located in the southern end of the former glue factory (Building #3) and one (1) sample was collected from the area of standing water located in the boiler pit in the basement.

Laboratory analysis of the water sample collected from the southern portion of the former glue factory and from the boiler pit did not document the presence of detectable levels of VOCs. Based on these laboratory results, the standing water present within the former glue factory does not require any special handling. However, according to the Asbestos Survey, approximately 500 square feet of asbestos insulation from the boilers has fallen off into the water in the pit, thereby contaminating the water within this pit.

Based on the presence of asbestos-containing material present in the standing water present within the boiler pit, this water will require special handling prior to and during disposal.

It is estimated that the cost for the removal of this contaminated water will be approximately $2,000.

6. The water present within the two vats located on the second floor of Building #3 (abandoned laboratory) was sampled and found to contain residual concentrations of the trace metal barium, cadmium, and nickel at levels below federal regulatory levels. Available laboratory data suggest that the water present within both vats should not to be considered as a hazardous waste and is most likely to be rainwater. Based on these laboratory results, the standing water present within the two vats does not require any special handling.

   No further investigation and/or remedial action is recommended.

7. A number of environmental conditions that have not as of yet been addressed but may represent a financial liability remain on the subject property. Provided below is a brief discussion of these remaining potential liabilities and associated recommendations:

   - Both Buildings #2 and #3 contain multiple open drums and containers of unknown products and materials that may require special handling prior to their disposal. A preliminary estimate of containers is between 35 and 40 55-gallon drums containing materials used in adhesive manufacturing; a more comprehensive assessment could not be conducted at this time. A majority of the floor in Building #3 is covered with a variety of products associated with the operation of the building as a glue factory (i.e., glues, adhesives, resins); these products may require special handling.

     It is recommended that an inventory of all on-site drums and containers be completed to document the presence of any hazardous materials that may require special handling. Any suspect material (including all liquids contained in the drums and products spilled on the floor of Building #3) should be appropriately disposed of in accordance with local and state regulations. Proper documentation of the removal of all hazardous materials from the subject property should be maintained.

     It is estimated that the costs associated with the characterization of the material contained in the drums and products spilled onto the floor will be between $4,000 and $7,000. Current Estimate of Removal Costs: $18,000 - $30,000.

   - Observations made during the November 1996 site inspection indicate the presence two (2) 10,000-gallon vaulted tanks within a vaulted are located beneath Building #3 and two (2) 275-gallon aboveground storage tanks (ASTs) located within Building #3. Observations indicate that the two 10,000-gallon tanks may have been previously closed and that the two 275-gallon ASTs are not in use. Borings conducted on the site do not document any evidence of petroleum release from the two vaulted tanks.

     It is recommended that all on-site tanks be permanently closed in accordance with the requirements of 6 NYCRR, parts 612-614.

     It is estimated that the costs associated with the proper closure of the on-site tanks will be between $15,000 and $20,000.

- Observations made during the November 1996 site inspection indicate the presence of large quantities of debris within all three on-site structures. Among the materials noted by this office were building materials, wood, metal items, automotive parts, laboratory and mechanical equipment, office equipment and materials and storage containers.

  It is recommended that all on-site debris be segregated into that which can be disposed of as solid waste and that which requires special handling. This work should be coordinated with work recommended in the Paragraph above.

  No cost estimate for debris removal can be provided at this time.

APPENDIX A

Asbestos Survey

Adelaide Environmental Health Associates, Inc.

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Site Survey Report
and
Cost Estimate
For
El Puente

Property Located
At
98-116 South 4 th Street
Brooklyn, New York

Site survey conducted by:
Ronald Bielinski N.Y.C. Asbestos Investigator - DEP Certificate Number - 59887-1097
N.Y.S. Asbestos Inspector - DOL Certificate Number - AH 88 07324
and
Vernon C. Rohde II N.Y.S. Asbestos Inspector - DOL Certificate Number - AH 89-01729

Date of Survey: 10 December 1996

Report Prepared by: Vernon C Rohde II
Date of Report: 11 December 1996

Introduction

Adelaide Environmental Health Associates was requested to conduct an inspection and bulk survey for lead and asbestos, of the Buildings located at 98 - 116 South 4th street in Brooklyn, New York. Adelaide's representative's, Ronald Bielinski and Vernon Rohde, met with Joan Byron of Pratt Architectural & Planning Collaborative, at 9:30 AM on 10 December 1996 at the site. The purpose of this survey was to determine if asbestos containing materials and/or lead paint were present, assess there condition, and develop a cost estimate for the removal of identified materials. Attached to this document are copies of the asbestos and lead survey report.

Asbestos

The first building (114 South 4th) is a 6,000 square foot, one floor structure, with a partial basement. The building has been vacant for several years. Following is a description of the conditions observed and asbestos containing materials present on the day of our inspection.

Basement — The basement serves as the boiler room for this, and the main building. There are two boilers and various other heating plant components abandoned in-place. The boilers are set in a lower section of the basement, which currently contains approximately 1,000 cubic feet of water, estimated to be eight feet deep. It is also estimated that 500 square feet of asbestos insulation from the boilers has fallen off in the water. Asbestos was observed as pipe insulation, tank insulation, exhaust breaching, and boiler surface insulation (above the water-line!).

First Floor — The area appears to have been mainly used as a chemical manufacturing area, with sections for small offices, and a laboratory. Asbestos was observed as floor tiles, and pipe insulation.

Roof — The building has a flat, built-up roof, and is presumed to be asbestos containing. The parapets along the perimeter are also presumed to contain asbestos. There was no safe access and safe support on the roof during our inspection. Therefore, based on the results of the main facility, we presumed this roof to be asbestos containing.

The second building (104 South 4th St.) is a 70,000 square foot, seven floor structure. This building has also been abandoned for several years. Following is a description of the conditions observed and asbestos containing materials found to be present on the day of our inspection. Electrical wire insulation and window caulking was sampled, and found not be asbestos containing.

First Floor — The floor is heavily littered with debris, including a car body, metal ductwork, furniture, et.al. The debris covers significant portions of the floor, and is of a

size and weight that cannot be easily moved aside. Asbestos was observed as pipe insulation. The pipe insulation was severely damaged and the debris within this space is contaminated with asbestos from the pipe insulation.

Second Floor Asbestos was observed as pipe insulation and floor tiles. All materials observed were significantly damaged. Significant debris as mechanical equipment and furniture was present. Abandoned tanks are filled with water from building leaks totalling several hundred gallons.

Third Floor Asbestos was observed as pipe insulation and floor tiles. All materials observed were significantly damaged.

Fourth Floor Asbestos was observed as pipe insulation and floor tiles. All materials observed were significantly damaged.

Fifth Floor Asbestos was observed as pipe insulation and floor tiles. All materials observed were significantly damaged.

Sixth Floor Asbestos was observed as pipe insulation and floor tiles. All materials observed were significantly damaged.

Seventh floor Asbestos was observed as pipe insulation, floor tiles, and "transite boards". The transite is used as the outer office wall separating the office area from the plant. All materials observed were severely damaged. Other suspect materials sampled, but negative for asbestos content include ceiling tiles and wallboard.

Roof The building has a flat built up roof with parapet and bulkhead flashing, all of which is asbestos containing.

The third building (98 South 4th) is a 5,000 square foot, one floor structure. This building has also been abandoned for several years, and sections of the roof have collapsed into the building. The building is unsafe to enter and physically assess internally. However, the main roof and flashing are presumed to be asbestos containing material. Additional materials likely to be present within the building and contain asbestos include floor tiles and pipe insulation.

Table - 1 Quantities and Location of asbestos containing materials

Location	Material Description	Quantity	Unit Cost to remove	Total Removal Cost
One Story Building, Basement	Pipe Line Insulation	250 LF	$10.00	$2,500.00
	Tank Insulation	125 SF	$10.00	$1,250.00
	Boiler Insulation	250 SF	$10.00	$2,500.00
	Exhaust Breaching	200 SF	$10.00	$2,000.00
	Contaminated Water	1,000 CF	Flat Rate	$2,000.00
	Debris in Water	500 SF	$15.00	$7,500.00
One Story Building, First Floor	Floor Tile	210 SF	$2.75	$577.50
	Pipe Line Insulation	20 LF	$10.00	$200.00
One Story Building, Roof	General Roofing	5,000 SF	$3.00	$15,000.00
	Flashing Roofing	1,000 SF	$4.00	$4,000.00
Seven Story Building, First Floor	Pipe Line Insulation	300 LF	$10.00	$3,000.00
Seven Story Building, Second Floor	Floor Tile	450 SF	$2.75	$1,237.50
	Pipe Line Insulation	10 LF	$10.00	$100.00
Seven Story Building, Third Floor	Floor Tile	180 SF	$2.75	$495.00
	Pipe Line Insulation	60 LF	$10.00	$600.00
Seven Story Building, Fourth Floor	Floor Tile	265 SF	$2.75	$728.75
	Pipe Line Insulation	70 LF	$10.00	$700.00
Seven Story Building, Fifth Floor	Floor Tile	200	$2.75	$550.00
	Pipe Line Insulation	275	$10.00	$2,750.00
	Wire Insulation	400	$1.00	$400.00
Seven Story Building, Sixth Floor	Pipe Line Insulation	10	$10.00	$100.00

Location	Material Description	Quantity	Unit Cost to remove	Total Removal Cost
Seven Story Building, Seventh Floor	Floor Tile	1,200	$2.75	$3,300.00
	Transite Panels	600	$4.00	$2,400.00
Seven Story Building, Roof	General Roofing	10,000 SF	$3.00	$30,000.00
	Flashing Roofing	2,000 SF	$4.00	$8,000.00
Whole Project	Contractor's Fillings	1	$2,000.00	$2,000.00
Total Cost to Remove Asbestos				$93,888.75

Lead Paint

Lead paint was found to cover approximately 8,000 square feet of surfaces between the two buildings surveyed and the two fire escapes. At all locations, the paint was flaking and peeling off the substrate.

The fire escapes can be abated for approximately $2,500 each. Lead painted interior surfaces can be abated for approximately $ 7.50 per square foot. The cost of the lead paint abatement would therefore be $7.50/SF x 8,000 SF for a cost of $ 60,000 plus $ 5,000 for the fire escapes. The total cost of the lead abatement will be **$ 65,000.00**.

Summary

All thermal system insulation observed was in poor condition and should be removed as part of any renovation in the areas where it was found. The floor tiles and other materials were included in the estimate for the fact that they are also in poor condition. All lead paint was in poor condition, flaking off the substrate.

Cost Estimate

Total cost of asbestos removal from the table above is $ 94,888.75
Total cost of lead abatement from previous page is $ 65,000.00

The asbestos abatement operation could be performed in approximately 30 days. Air monitoring in accordance with New York State regulations would also have to be performed over the duration of the project. On average the air monitoring will require approximately 12 Phase Contrast Microscopy (PCM) samples per day per work crew.

No third party monitoring is required during the lead abatement unless this project falls under HUD guidelines. It is our recommendation that swipe samples be collected at the conclusion of the project to verify completeness of the abatement.

The cost estimate for air monitoring services is as follows.

Asbestos Removal Phase

Project Supervision 1 IH x 405.00/day x 30 days	$ 12,150.00
Air Samples (PCM) $ 12.00/smp x 12 smps/day x 30 days	$ 4,320.00
Cost for Asbestos Removal Phase	$ 16,470.00

Lead Abatement Phase

Industrial Hygienist 1 IH x 405.00/day x 2 days	$ 810.00
Lead Swipe Samples 105 samples x 4 20.00/sample	$ 2,100.00
Cost for Lead Abatement Phase	$ 2,910.00
Total Cost for project supervision and air monitoring	$ 19,380.00
The total project cost estimate is	**$ 179,268.75**

If this work will proceed, Adelaide can develop the plans and specifications (contract documents) for the bidding and construction process for $ 14,341.50. This fee is based on 8.0 % of the total construction cost. If less or more work will be undertaken, our design fee would decrease or increase accordingly. The design package would include preparation of specifications, development of drawings on Autocad 13, managing the pre-bid meeting, walk through of the facility, pre-construction meeting, and occasional site visits during abatement to oversee the project and enforce adherence to the specifications by the selected contractor.

State law requires the air monitoring firm be a separate entity from the abatement firm. Adelaide can perform the air monitoring portion of the work and will be able to perform these functions in accordance with the rates used in the Project Estimate above, of $ 12.00 per sample, and $ 405.00 per 8 hour day. In addition, if Adelaide performs the air monitoring and specifications (eliminating duplicative efforts), the specification fee can be reduced by 20 %, to a new value of $ 11,473.20. The main reduction in cost is, as "air monitor", Adelaide would have a person on site at all times, and this person could also perform the construction inspection duties covered under the specification fee.

Adelaide Environmental Health Associates, Inc.

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908.826.1153

914.949.8103

Facsimile
607.771.0752

908.826.1153

City of New York - Asbestos Investigation
Asbestos Survey Protocol and Compliance Record

1. Facility Name & Address

98-116 South 4th St._____

Brooklyn, NY_____

_____

_____

2. Facility Owner Name & Address, Contact Person, Telephone

_____

_____

_____

_____

_____

3. Location of Area Inspected

One-Story Former Adhesive_____
Mfg. Plant interior
Seven-Story Former Machined___
Parts Plant interior and roof

_____

4. Other items in the immediate vicinity of the survey location which may affect the scope of work for an asbestos project

Total Facility demolition may reveal hidden asbestos materials.

_____

Debris Components may have asbestos parts within (e.g. brake shoes), or material hidden under the debris.

_____

Additional asbestos under the water-filled cavities may be possible._____

5. Scope of Work (include ALL details which affect ALL components)

Total Interior and exterior___
demolition, exclusive of foundations.

_____

_____

_____

_____

_____

_____

_____

6. Inventory of all surfacing material within the scope of work and the immediate vicinity, including all normally nonfriable ACM and all friable (NESHAP CAT I & CATII ACM, and regulated ACM [40CFR61.141])

98-102 South 4th Street, Brooklyn, NY (One-Story Adhesive Plant)

Code	Material	Quantity	Size	Location	Friable Now?	Friable During Project?	
B-BR-SI-A (+)	surface insulation	575 SF		tanks, boilers, exhaust breaching	Y	Y	significant water and weather damage
B-BR-PI-A (+)	pipe insulation	250 LF	< = 6" dia		Y	Y	significant water and weather damage
B-BR-OTA (*)	contaminated water	1000 CF		lower level	Y	Y	approx. 8 ft deep water pool within boiler space
B-BR-OTB (*)	debris	500 SF		within water	Y	Y	assumed material within water pool delaminated from mechanical equipment
1-BR-FT-A (+)	floor tile	210 SF	12"x12"	entrance vestibule	Y	Y	worn and damaged, color unrecognizable
1-BR-PB-A (-)	plasterboard	60 SF		lab area	Y	Y	pipe enclosure
R-BR-GRA (*)	general roof	5000 SF		roof	N	N	roof has fallen ductwork and open penetrations; unsafe to traverse
R-BR-FRA (*)	flashing	1000 SF		roof	N	N	

[+] = Sample positive for asbestos (greater than 1% in at least one sample per set)
[-] = Sample negative for asbestos (less than 1% or non-detected in all samples of this set)
[?] = Sample requires TEM for negative/positive declaration (shows no ACM or less than 1% by PLM-GRAV)
[*] = Sample declared to be asbestos containing without sampling (similar to other positive samples)
Sample Code: Building - Floor - Room Name/Number - Material Code - Sample Sequence

6. Inventory of all surfacing material within the scope of work and the immediate vicinity, including all normally nonfriable ACM and all friable (NESHAP CAT I & CATII ACM, and regulated ACM [40CFR61.141])

104-114 South 4th Street, Brooklyn, NY (Former Machined Parts Plant)

Code	Material	Quantity	Size	Location	Friable Now?	Friable During Project?	
1-MB-PIA (+)	pipe insulation	300 LF	= <6" dia.	dip tank and bathroom	Y	Y	significant damage and fallout throughout (aircell type)
2-MB-PIA (+)	pipe insulation	10 LF	= <6" dia.	bathroom	Y	Y	significant damage
2-MB-FT-A (+)	floor tile	450 SF	9"x9"	lab area	Y	Y	grey tiles over red tiles
2-MB-MF-A (-)	window caulk						
2-MB-MFB-A (-)	wire insulation						cloth covered wiring located throughout
2-MB-MN-A (-)	resilient flooring						grey rubber cloth encased flooring
3-MB-PIA (+)	pipe insulation	60 LF	= <6" dia.	bathroom	Y	Y	significant damage
3-MB-FT (*)	floor tile	180 SF	9"x9"	near front stairs	N	Y	wood pattern
4-MB-PIA (+)	pipe insulation	70 LF	= <6" dia.	bathroom	Y	Y	significant damage
4-MB-FTB-A (+)	floor tile	265 SF	9"x9"	near front stairs	N	N	red

[+] = Sample positive for asbestos (greater than 1% in at least one sample per set)
[-] = Sample negative for asbestos (less than 1% or non-detected in all samples of this set)
[?] = Sample requires TEM for negative/positive declaration (shows no ACM or less than 1% by PLM-GRAV)
[*] = Sample declared to be asbestos containing without sampling (similar to other positive samples)
Sample Code: Building - Floor - Room Name/Number - Material Code - Sample Sequence

APPENDIX B

Lead-Based Paint Survey

6. Inventory of all surfacing material within the scope of work and the immediate vicinity, including all normally nonfriable ACM and all friable (NESHAP CAT I & CATII ACM, and regulated ACM [40CFR61.141])

104-114 South 4th Street, Brooklyn, NY (Former Machined Parts Plant)

Code	Material	Quantity	Size	Location	Friable Now?	Friable During Project?	
5-MB-PIA (+)	pipe insulation	275 LF	= <6" dia.	bathroom	Y	Y	significant damage
5-MB-FTC-A (+)	floor tile	200 SF	9"x9"	near front stairs	N	N	white
6-MB-PIA (+)	pipe insulation	10 LF	= <6" dia.	bathroom	Y	Y	significant damage
7-MB-PBB-A,B,C,D,E (-)	plasterboard walls			back office area			
7-MB-CTA,B,C,D,E (-)	ceiling tiles			back office area			suspended
7-MB-MNB-A (+)	transite panels	600 SF		back office	Y	Y	outer wall between office and mfg. space, broken
R-GRA-A (+)	general roofing	10000 SF		roof	N	N	appearance is similar for all three properties, and assumed for other two adjacent roofs.
R-FRA-A (+)	flashing	1600 SF		roof	N	N	
R-FRB-A (+)	flashing	400 SF		roof	N	N	

[+] = Sample positive for asbestos (greater than 1% in at least one sample per set)
[-] = Sample negative for asbestos (less than 1% or non-detected in all samples of this set)
[?] = Sample requires TEM for negative/positive declaration (shows no ACM or less than 1% by PLM-GRAV)
[*] = Sample declared to be asbestos containing without sampling (similar to other positive samples)
Sample Code: Building - Floor - Room Name/Number - Material Code - Sample Sequence

6. Inventory of all surfacing material within the scope of work and the immediate vicinity, including all normally nonfriable ACM and all friable (NESHAP CAT I & CATII ACM, and regulated ACM [40CFR61.141])

116 South 4th Street, Brooklyn, NY (collapsed roof, one story structure)

Facility was not survey because of mechanical and structural failure.

7. Samples of FRIABLE surfacing materials of unknown asbestos content or not assumed to be ACM.
[A: 3 ea. for <1000 SF, B: 5 ea. for 1000 - 5000 SF, C: 7 ea. for >5000 SF, D: ea. for SF.]

Material Code	Sample Nos.	Total	Sampler	Signature
SI	B-BR-SI-A	1	Ronald Bielinski	
PI	B-BR-PI-A	1		
FT	1-BR-FT-A, 2-MB-FT-A	2		
FTB	4-MB-FTM-A	1		
FTC	5-MB-FTC-A	1		
PB,PBB	1-BR-PB-A; 7-MB-PBB-A,B,C,D,E	6		
CTA	7-MB-CTA,A,B,C,D,E	5		
MF	2-MB-MF-A	1		
MFB	2-MB-MFB-A	1		
MN	2-MB-MN-A	1		
MNB	7-MB-MNB-A	1		
GRA	R-GRA-A	1		
FRA	R-FRA-A	1		
FRB	R-FRB-A	1		

Material Codes:

AP-applied plaster
CK-caulking
CT-ceiling tiles
OT-other
PB-plasterboard (sheetrock)
PC-applied plaster ceiling
PI-pipe insulation (straight runs)
PF-pipe fittings(elbows, joints, valves)
PW-applied plaster wall
PP-patching plaster
SO-sprayed-on material
AD-adhesives
CM-cement/cementitious
FR-flashing on roof
FT-floor tiles
GR-general roofing
PN-panel boards (transite)
TC-transite cooling tower
PR-patches on roof
SI-surface insulation (tanks,boilers,ductwork)

Space Description Codes:

sub-basement - SB basement - B
floor number - 1, 2, 3, etc.
crawlspace - CS attic - AT
hallway - HA auditorium - AU
office - OF classroom - CR
gymnasium - GY
multi-purpose room - MP
bathrooms / toilets (male/female) - MT/FT

8. Reasons for taking TOO FEW or NO samples of Friable Materials

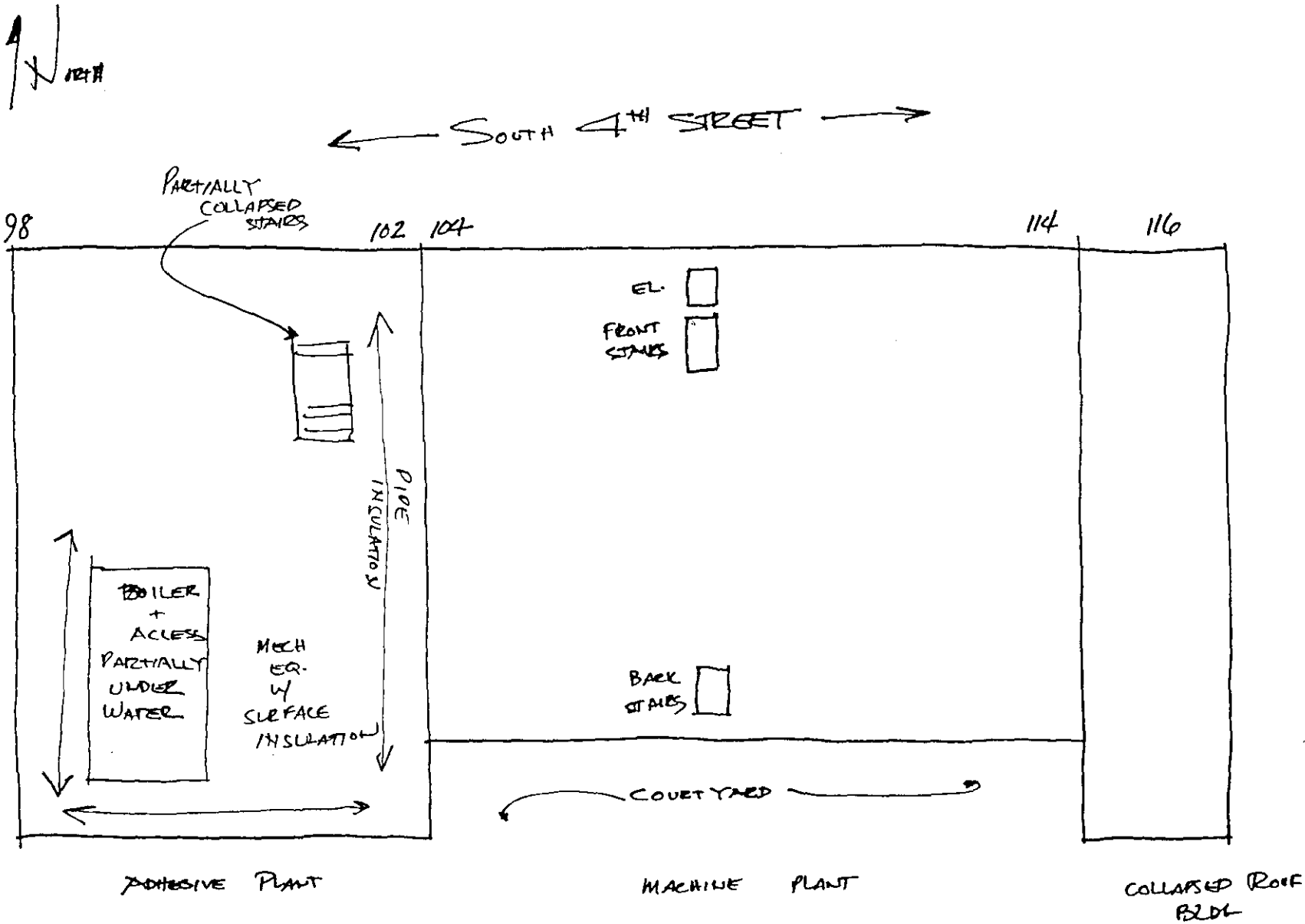
Pipe insulation assumed to be positive after first positive.

Locations under water or in collapsed sections of the facility were assumed positive.

9. Hidden or Buried ACM, of any type or quantity, known or suspected to be in or adjacent to the Scope of Work of this investigation / project

There is significant debris throughout all three properties that may contain asbestos as building or mechanical materials.

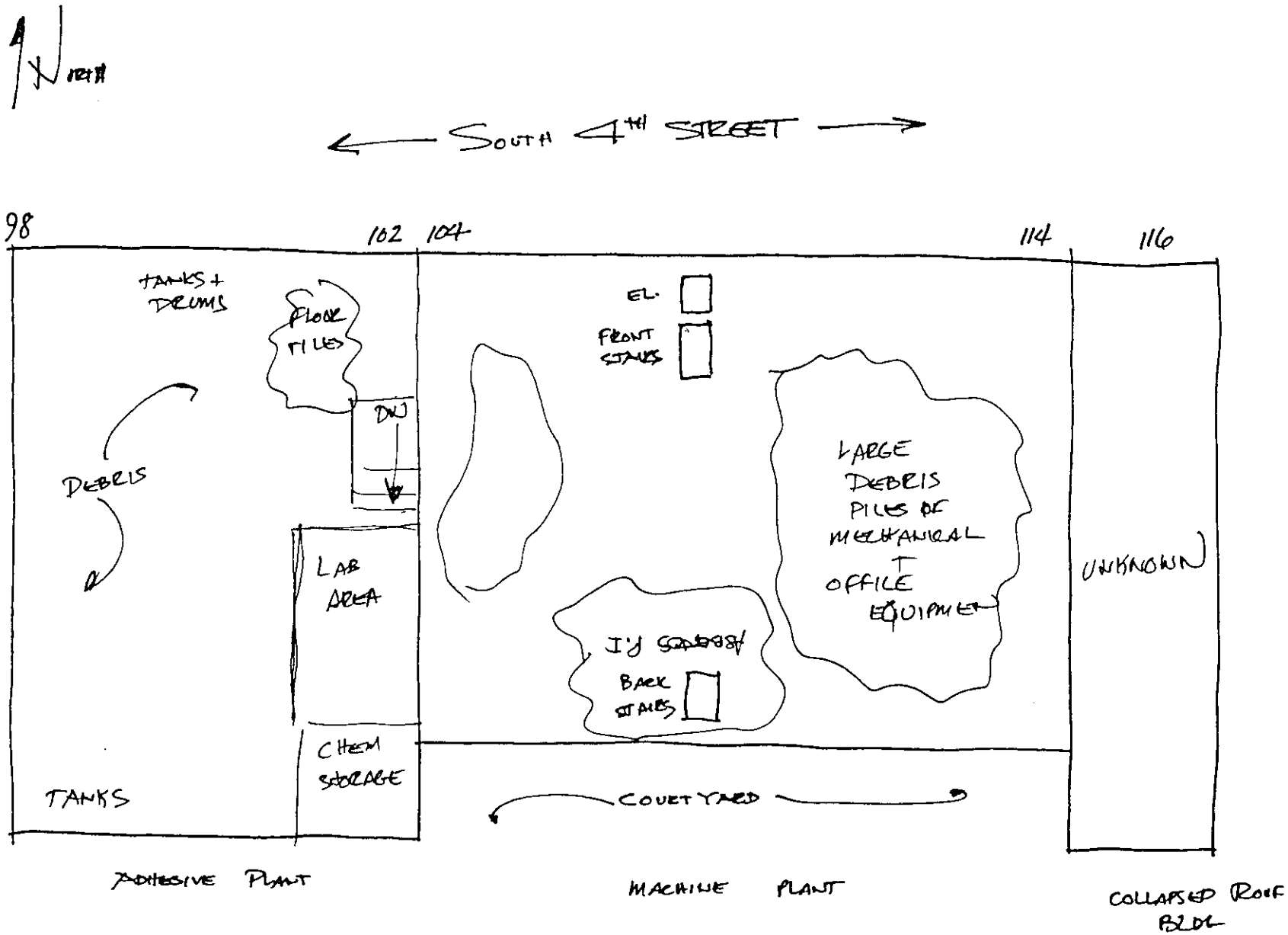
10. Sketches/Sample Locations/Work Areas/Material Placement



BASEMENT LEVEL

10 DEC 96
RONALD BIELINSKI, PE

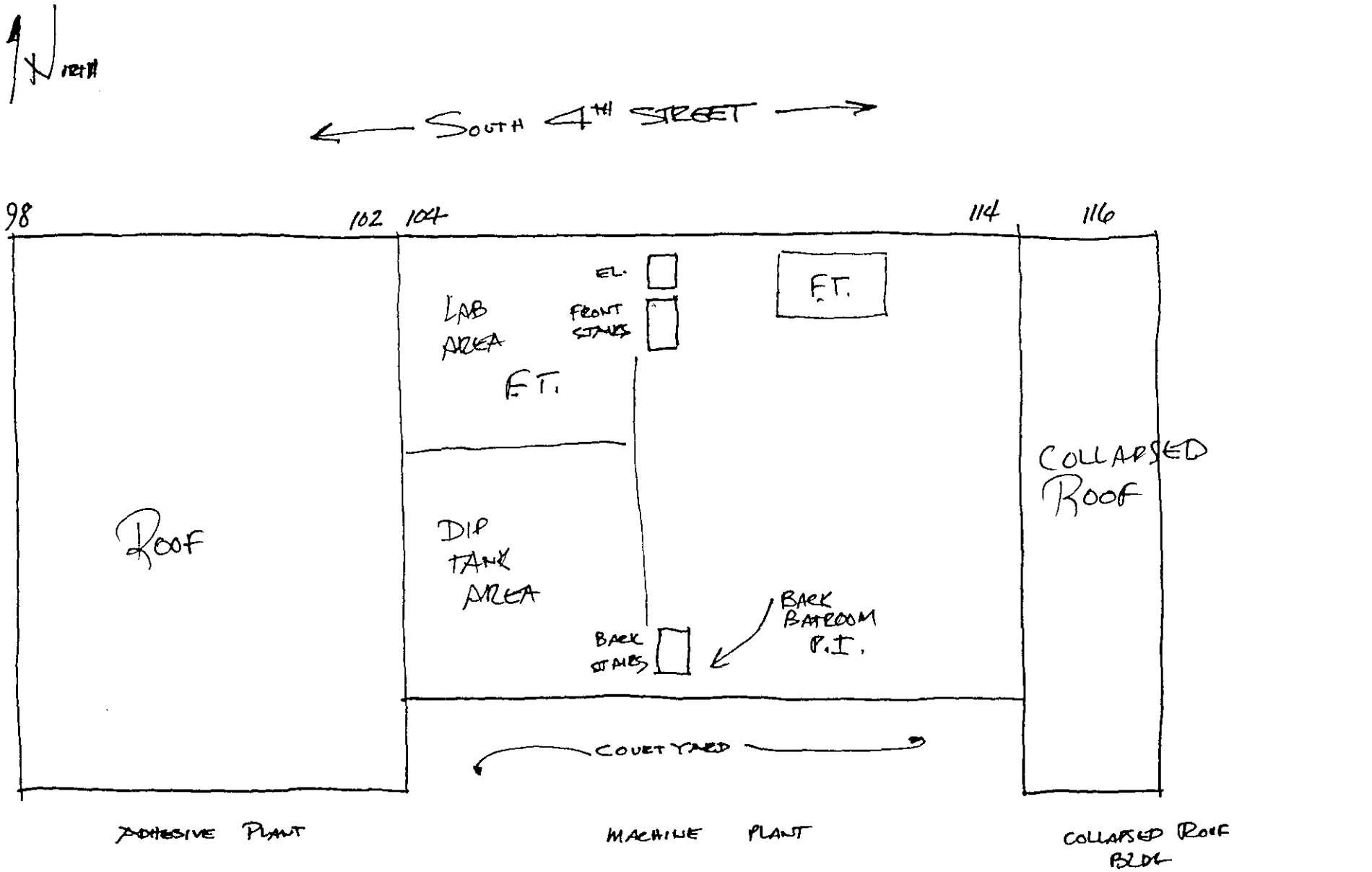
ASBESTOS SURVEY SITE SKETCH
98-116 S. 4th ST
BROOKLYN NY 11



First Floor

Asbestos Survey Site Sketch
98-116 S. 4th St
Brooklyn NY 11

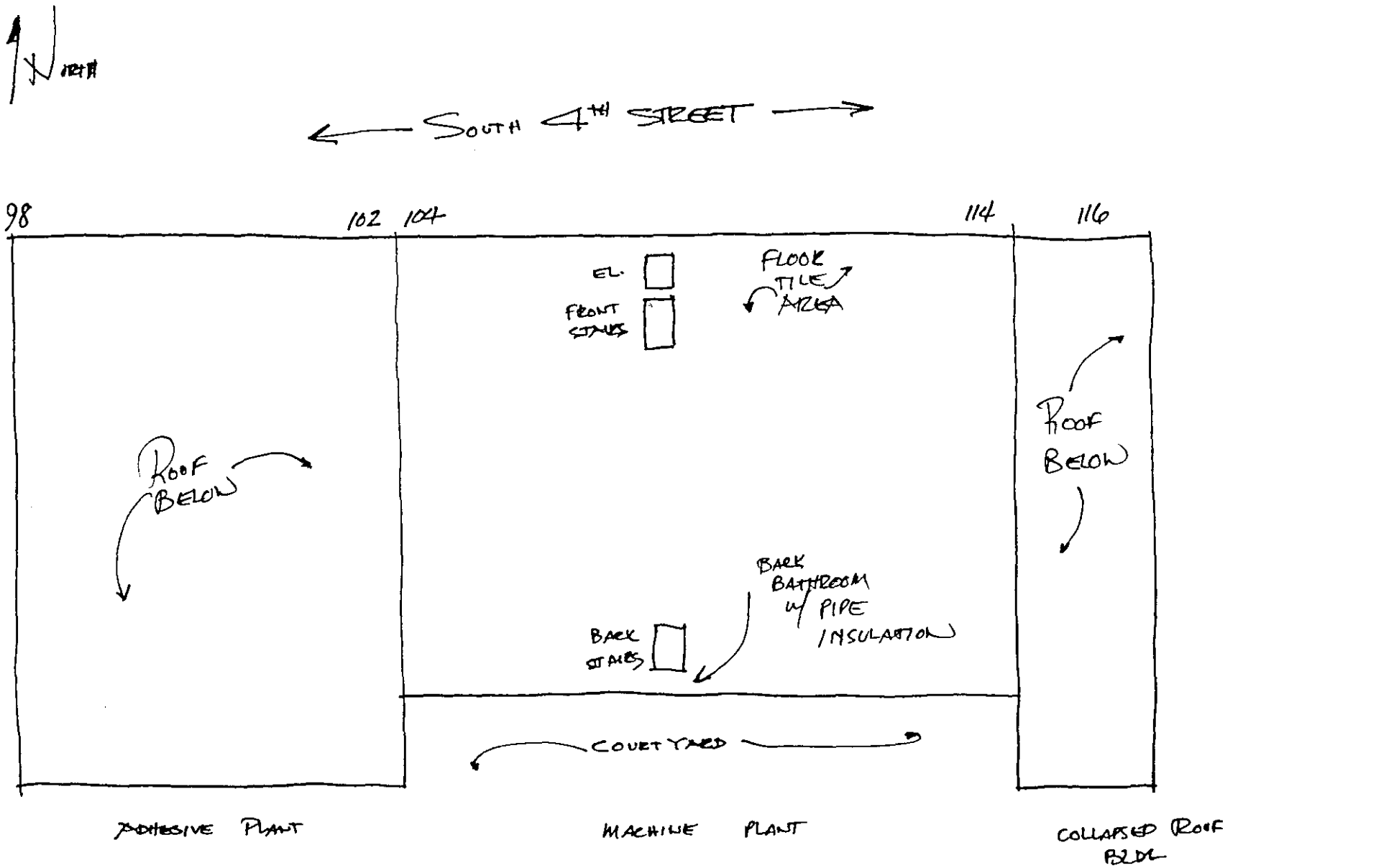
10 Dec 96
Ronald Bielibo, PE



SECOND FLOOR

10 DEC 96
RONALD BIELINSKI, PE

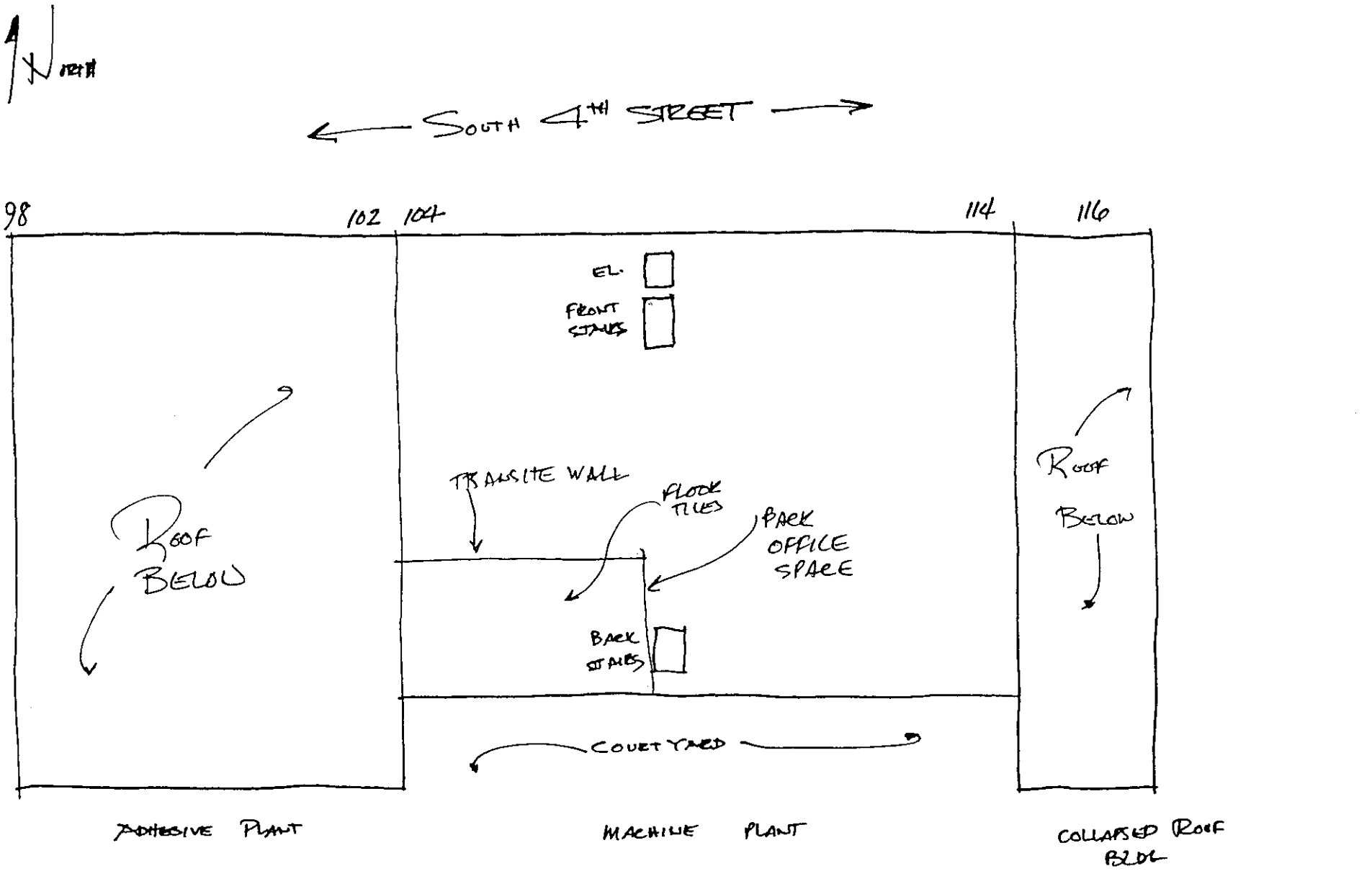
ASBESTOS SURVEY SITE SKETCH
98-116 S. 4th ST
BROOKLYN NY 11



Third
Fourth
Fifth +
Sixth Floors

10 Dec 96
Ronald Bielisz, PE

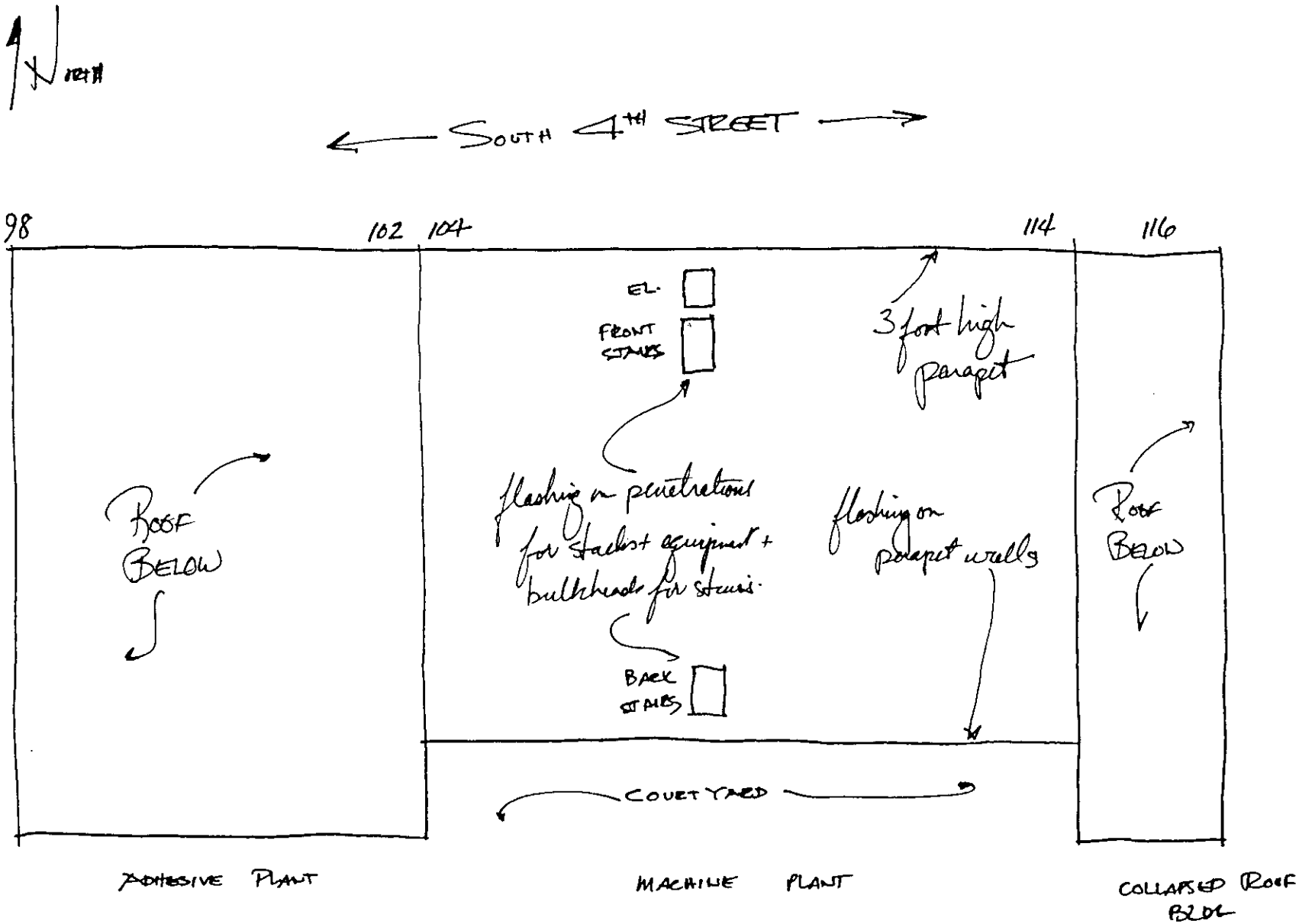
Asbestos Survey Site Sketch
98-116 S. 4th St
Brooklyn NY 11



SEVENTH FLOOR

Asbestos Survey Site Sketch
98-116 S. 4th St
Ronkonkoma, NY 11

10 Dec 96
Ronald Bielinski, PE



Machine Plant Roof

10 Dec 96
Ronald Bielisko, PE

Asbestos Survey Site Sketch
98-116 S. 4th St
Brooklyn NY 11

11. Areas Inaccessible, problems encountered, follow-up information, additional notes, etc.

The debris should be inspected as it is being removed for disposal to observe any suspect asbestos containing materials.

Date of Survey _10 December 1996___

NYC Certified Asbestos Investigator: _Ronald E. Bielinski, P.E._____

NYS Asbestos Inspector Number: __AH 88-07324____

NYC Asbestos Investigator Number: _59887-1097___

Signature and Seal

NYC INVESTIGATOR NO. 42158-1095

SciLab
Environmental Lab Services

SCIENTIFIC LABORATORIES, INC.
117 E. 30th Street New York, NY 10016 212/679-8600 FAX: 212/679-9392

PLM Bulk Asbestos Report

Adelaide Environmental Health Assoc.
Attn: Vernon Rohde
690 N. Broadway Suite GL3
White Plains, NY 10603

Date Received 12/11/96
Date Examined 12/12/96
ELAP Number 11480
RE: 104 S. 4th St.

SciLab Job No. 12965700
P.O. # N/A
Page 1 **of** 4

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B-BR-SI-A	12965700-01	*Yes*	25 %

Location: Bulk Material

Description: Off White, Homogeneous, Bulk Material
Asbestos Types: Chrysotile 25. %
Other Material: Cellulose 60. %, Non-fibrous 15. %

B-BR-PI-A	12965700-02	*Yes*	29 %

Location: Bulk Material

Description: Grey/Tan, Homogeneous, Bulk Material
Asbestos Types: Chrysotile 29. %
Other Material: Cellulose 35. %, Non-fibrous 36. %

1-BR-PB-A	12965700-03	*No*	NAD

Location: Bulk Material

Description: Off White, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 20. %, Non-fibrous 80. %

2-MB-MFB-A	12965700-04	*No*	NAD

Location: Bulk Material

Description: Black, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 50. %, Other Fibers 10. %, Non-fibrous 40. %

2-MB-MF-A	12965700-05	*No*	NAD

Location: Bulk Material

Description: Off White, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Non-fibrous 100. %

SciLab

Environmental Lab Services

SCIENTIFIC LABORATORIES, INC.

117 E. 30th Street New York, NY 10016 212/679-8600 FAX: 212/679-9392

PLM Bulk Asbestos Report

Adelaide Environmental Health Assoc.
Attn: Vernon Rohde
690 N. Broadway Suite GL3
White Plains, NY 10603

Date Received 12/11/96
Date Examined 12/12/96
ELAP Number 11480
RE: 104 S. 4th St.

SciLab Job No. 12965700
P.O. # N/A

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
7-MB-MNB-A	12965700-06	*Yes*	18 %

Location: Bulk Material

Description: Grey, Homogeneous, Bulk Material
Asbestos Types: Chrysotile 18. %
Other Material: Cellulose 40. %, Non-fibrous 42. %

7-MB-CTA-A	12965700-07	*No*	NAD

Location: Bulk Material

Description: Tan, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 95. %, Non-fibrous 5. %

7-MB-CTA-B	12965700-08	*No*	NAD

Location: Bulk Material

Description: Tan, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 95. %, Non-fibrous 5. %

7-MB-CTA-C	12965700-09	*No*	NAD

Location: Bulk Material

Description: Tan, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 95. %, Non-fibrous 5. %

7-MB-CTA-D	12965700-10	*No*	NAD

Location: Bulk Material

Description: Tan, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 95. %, Non-fibrous 5. %

SciLab

Environmental Lab Services

SCIENTIFIC LABORATORIES, INC.

117 E. 30th Street New York, NY 10016 212/679-8600 FAX: 212/679-9392

PLM Bulk Asbestos Report

Adelaide Environmental Health Assoc.
Attn: Vernon Rohde
690 N. Broadway Suite GL3
White Plains, NY 10603

Date Received 12/11/96
Date Examined 12/12/96
ELAP Number 11480
RE: 104 S. 4th St.

SciLab Job No. 12965700
P.O. # N/A

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
7-MB-CTA-E	12965700-11	*No*	NAD

Location: Bulk Material

Description: Tan, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 95. %, Non-fibrous 5. %

7-MB-PBB-A	12965700-12	*No*	NAD

Location: Bulk Material

Description: Off White, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 20. %, Non-fibrous 80. %

7-MB-PBB-B	12965700-13	*No*	NAD

Location: Bulk Material

Description: Off White, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 20. %, Non-fibrous 80. %

7-MB-PBB-C	12965700-14	*No*	NAD

Location: Bulk Material

Description: Off White, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 20. %, Non-fibrous 80. %

7-MB-PBB-D	12965700-15	*No*	NAD

Location: Bulk Material

Description: Off White, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 20. %, Non-fibrous 80. %

Environmental Lab Services

SCIENTIFIC LABORATORIES, INC.

117 E. 30th Street New York, NY 10016 212/679-8600 FAX: 212/679-9392

PLM Bulk Asbestos Report

Adelaide Environmental Health Assoc.
Attn: Vernon Rohde
690 N. Broadway Suite GL3
White Plains, NY 10603

Date Received 12/11/96
Date Examined 12/12/96
ELAP Number 11480
RE: 104 S. 4th St.

SciLab Job No. 12965700
P.O. # N/A

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
7-MB-PBB-E	12965700-16	***No***	NAD

Location: Bulk Material

Description: Off White, Homogeneous, Bulk Material
Asbestos Types:
Other Material: Cellulose 20. %, Non-fibrous 80. %

Reporting Notes:

Analyzed by: Scott Krefetz ____

*NAD/NSD = no asbestos detected; NA = not analyzed; Bulk Asbestos Analysis per 40 CFR 763, Subpart F, Appendix A and ELAP Analysis Protocols 198.1/198.4 for New York samples; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (see also EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full with the approval of the laboratory. This report relates ONLY to the items tested.

Reviewed By: ____

SCIENTIFIC LABORATORIES, INC.

477 Southlake Blvd.
Richmond, Virginia 23236
Phone #: 804/379-1084
Fax #: 804/379/1087

117 East 30th Street
New York, New York 10016
Phone #: 212/679-8600
Fax #: 212/679-9392

12965700

Company: Adelaide	Address:	P.O.#:

Project Information

Name: 104 S. 4th Street

Number: 16

Manager: V. Rohde

Site (City/State): Brooklyn

Analysis Type	Turnaround Time 6-8hr	12hr	24hr	48hr	72hr	5day	other	Air Filter Information	
TEM/AHERA								MCE	
TEM/Level II								PC	
TEM/Chatfield	[redacted]							25mm	
TEM/Dust								37mm	
TEM/Water								0.45µm	
PCM								0.80µm	
PLM			X					other:	
Lead									
Other									

Results to: V. Rohde

Invoice to: V. Rohde

Written report to: V. Rohde

Return Samples Yes ___ No ✓

Phone 914 / 949 3109
Fax 914 / 949 8103
Pager ~~914~~ /

COMMENTS:

Sample I.D.	Sample Location (I)nside/(O)utside/(B)lank/(P)ersonal/(E)xcursion	Start Time	Stop Time	Total Time	x	Liters / Min.	=	AIR Volume	Date Collected
B - BR - SI - A									
B - BR - PI - A									
1 - BR - PB - A									
2 - MB - MFB - A									
2 - MB - MF - A									
7 - MB - MNB - A									
7 - MB - CTA - A									
" " B									
" " C									
" " D									
" " E									
7 - MB - PEB - A									
B									
C									
D									
E									

Relinquished By (Signature)	Date	Received By (Signature)	Date
Ronald Post	10 Dec 96	Chris Obst 1140 (10)	12/11/96

SciLab Job#: **12-96-5701**
Client Name: Adelaide Environmental Health Assoc.

Table I
Summary of Bulk Asbestos Analysis Results
104 S. 4th St.

SciLab Sample #	Client Sample# Location	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS ELAP # 11480	** Asbestos % by TEM ELAP # 11480
01	R-FRA-A Bulk Material		0.514	41.83	-5.84	52.01	NA	Chrysotile 12.0
02	2-MB-MN-A Bulk Material		0.54	80.19	13.70	6.11	NA	NAD
03	1-BR-FT-A Bulk Material		0.53	33.21	47.17	12.62	NA	Chrysotile 7.0
04	2-MB-FT-A Bulk Material		0.406	25.12	33.74	29.13	NA	Chrysotile 12.0
05	4-MB-FTB-A Bulk Material		0.34	27.35	30.29	32.35	NA	Chrysotile 10.0
06	5-MB-FTC-A Bulk Material		0.455	22.20	56.92	12.88	NA	Chrysotile 8.0
07	B-FRB-A Bulk Material		0.587	69.68	5.45	14.87	NA	Chrysotile 10.0
08	R-GRA-A Bulk Material		0.476	45.38	12.61	30.02	NA	Chrysotile 12.0

Reviewed by: _____

PLM analyst: _____; TEM analyst: Emmanuel Salud _____

Quantification should be considered qualitative only (positive or negative) for beginning sample weights of less than 0.1 grams. NAD = no asbestos detected; NA = not analyzed; Trace = <1%; Bulk Asbestos Analysis - PLM per 40 CFR 763, Subpt F, Appd A; - TEM by Chatfield and ELAP Analysis Protocol PLM-198.1/TEM-198.4 for New York samples; Note: TEM resolves all asbestos fibers whereas PLM typically will not resolve fibers <~0.2 microns in diameter.

Reviewed By: _____

SCIENTIFIC LABORATORIES, INC.
477 Southlake Blvd.
Richmond, Virginia 23236
Phone #: 804/379-1084
Fax #: 804/379/1087

117 East 30th Street
New York, New York 10016
Phone #: 212/679-8600
Fax #: 212/679-9392

12965701

Company: Adelaide

Address:

P.O.#:

Project Information

Name: 104 S. 4th Street

Number:

Manager: V. Rohde

Site (City/State): Brooklyn

Analysis Type #	Turnaround Time 6-8hr	12hr	24hr	48hr	72hr	5day	other	Air Filter Information	
TEM/AHERA								MCE	
TEM/Level II								PC	
TEM/Chatfield	[redacted]							25mm	
TEM/Dust								37mm	
TEM/Water								0.45µm	
PCM								0.80µm	
PLM								other:	
Lead									
Other NYDOB TEM only			X						

Results to: V. Rohde

Return Samples Yes ___ No ✓

Invoice to: V. Rohde

Phone 914 / 949 3109

Fax 914 / 949 8103

Written report to: V. Rohde

Pager ___ / ___

COMMENTS:

Sample I.D.	Sample Location (I)nside/(O)utside/(B)lank/(P)ersonal/(E)xcursion	Start Time	Stop Time	Total Time	x	Liters / Min.	=	AIR Volume	Date Collected
R-FRA-A									
2-MB-MN-A									
1-BR-FT-A									
2-MB-FT-A									
4-MB-FTB-A									
5-MB-FTC-A									
R-FRB-A									
R-GRA-A									

Relinquished By (Signature)	Date	Received By (Signature)	Date
[signature]	10 Dec 96	[signature] 11.40	12/11/96

LEAD BASED PAINT SURVEY

AT

98-116 SOUTH 4th STREET
BROOKLYN, NEW YORK

PREPARED FOR:

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES
690 NORTH BROADWAY - SUITE GL3
WHITE PLAINS, NEW YORK 10603

PREPARED BY:

SBP TECHNOLOGIES, INC.
106 CORPORATE PARK DRIVE
WHITE PLAINS, NEW YORK 10604

SBP # N7557.10

REPORT DATE: DECEMBER, 1996

TABLE OF CONTENTS

I. INTRODUCTION

SBP Technologies, Inc. (SBP), located at 106 Corporate Park Drive in White Plains, New York, was retained to perform a lead in paint investigation of the buildings located at 98-116 South 4th Street, Brooklyn, New York. SBP performed testing at the above mentioned premises on December 11, 1996.

II. SITE DESCRIPTION

The site consisted of a two building complex encompassing a seven (7) floor building adjacent to a one (1) story boiler room facility, both with basements. The buildings had several painted surfaces that were analyzed, including but not limited to door and wall components.

III. DEFINITION OF THE LEAD-BASED PAINT HAZARD

The U.S. Department of Housing and Urban Development (HUD) defines the action level for lead-based paint as a lead content equal to or greater than 1.0 milligrams of lead per square centimeter of painted surface ($\geq$ 1.0 mg Pb/cm^2) when measured with an XRF analyzer, or 0.5 percent by weight when chemically tested. This definition is described in the HUD "Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing, September 1990." The State of New York's definition of the action level for lead-based paint is consistent with the level established by HUD.

The City of New York Department of Health defines the action level for lead-based paint as a lead content equal to or greater than 0.7 mg Pb/cm^2 when measured by an XRF analyzer, or 0.5 percent by weight when chemically tested.

IV. INVESTIGATION METHODOLOGY

Using the U.S. Department of Housing and Urban Development (HUD), September 1990 guidelines for detection of lead based paint, SBP selected painted surfaces for the presence/non-presence of lead based paint.

SBP utilizes a portable X-Ray Fluorescence (XRF) Spectrum Analyzer, manufactured by the SciTec corporation, to determine the lead content of selected painted surfaces. Calibration checks of the XRF at the time of testing indicated proper functioning of the instrument. SBP's Radioactive Materials License number is 2587-3834.

The SciTec XRF analyzer, like all XRF analyzers, yields some variability in multiple readings from the same assayed surface. This variability can be reduced by increasing the time of a particular assay. Readings from the SciTec XRF are classified as follows:

Screen	Positive:	$\geq$ 1.3 mg/cm^2.
(~15 Sec.)	Negative:	< 0.1 mg/cm^2.
	Inconclusive:	0.1 to 1.2 mg/cm^2.
Test	Positive:	$\geq$ 1.0 mg/cm^2.
(~60 Sec.)	Negative:	< 0.4 mg/cm^2.
	Inconclusive:	0.4 to 0.9 mg/cm^2.
Confirm	Positive:	$\geq$ 0.85 mg/cm^2.
(~240 Sec.)	Negative:	< 0.55 mg/cm^2.
	Inconclusive:	0.55 to 0.84 mg/cm^2.

(Note: For an inconclusive assay, a bulk confirmatory sample is required for laboratory analysis.)

SBP's definition regarding the presence of lead based paint is in accordance with HUD's action level of 1.0 milligrams of lead per square centimeter of surface area (1.0 mg/cm^2). However, since the testing was performed in the City of New York, SBP will abide by NYC standards following an action level of 0.7 milligrams of lead per square centimeter of surface area (0.7 mg/cm^2).

State-of-the-art methods for testing and abatement of leaded paint are described by HUD in **Lead Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing, September 1990**, referred to as the "HUD Guidelines." The HUD Guidelines are applicable to federally financed housing projects, and SBP's lead testing methods are similar to those presented in the Guidelines.

V. LIMITATIONS OF INVESTIGATION

This report represents only the areas tested and does not exclude the possibility of the presence of lead elsewhere. It assumes that one component represents all corresponding like components tested in that particular room. Further examination of any inconclusive readings is recommended for complete results, especially if work is planned which may disturb these surfaces. Lead testing results are applicable for the time that testing was conducted and for the condition of surfaces at the time they were tested.

Upon evaluation by SBP site inspector, both basements were considered unsafe for single person entry for inspection. The stairwell to the boiler room basement was missing several stairs and the basement under the main building was a severe slip/trip hazard due to loose debris and rubble.

VI. RESULTS

This inspection included 116 individual test assays throughout the site. Twenty-three (23) showed positive results, 65 were negative and twenty-eight (28) were inconclusive (see appendix A for individual results). SBP did not perform confirmatory testing of the inconclusive results. Therefore, any inconclusives found should be considered positive.

VII. RECOMMENDATIONS

SBP recommends that those positive surfaces in high friction areas (window and door components) and those components that were in unsatisfactory condition be abated or encapsulated to prevent the release of hazardous lead dust particles. If a change in condition occurs, or renovation is planned in these areas, these surfaces should also be abated. SBP also recommends that inconclusive test results be confirmed by bulk laboratory testing.

APPENDIX A

SUMMARY OF XRF READINGS

ID #	Floor	Location and Component	Condition	Reading (mg/cm2) K Shell	Reading (mg/cm2) L Shell	Substrate	Result
		Calibration before testing					
		Red Test Block	Satisfactory	0.8	1.1	Wood	Calibrated
		Red Test Block	Satisfactory	0.9	1	Wood	Calibrated
1	Boiler Room	1st Door, Brown	Unsatisfactory	1	0.3	Metal	Inconclusive
2	Boiler Room	2nd Door, Brown	Unsatisfactory	0.3	-0.1	Metal	Inconclusive
3	Boiler Room	Entry, North Wall	Unsatisfactory	-0.9	-0.2	Concrete	Negative
4	Boiler Room	1st Door, Door Frame	Unsatisfactory	0.9	0.1	Metal	Inconclusive
5	Boiler Room	Men's Bathroom, Door	Unsatisfactory	0.6	0.3	Metal	Inconclusive
6	Boiler Room	Men's Bathroom, Door Frame, Gray	Unsatisfactory	-0.8	0.1	Metal	Negative
7	Boiler Room	Men's Bathroom, Stall, Black	Unsatisfactory	0.4	-0.1	Metal	Inconclusive
8	Boiler Room	Men's Bathroom, East Wall, Gray	Unsatisfactory	24.7	2	Concrete	Positive
9	Boiler Room	Men's Bathroom, West Wall, White	Unsatisfactory	-2	-0.4	Concrete	Negative
10	Boiler Room	East wall outside of locker-room	Unsatisfactory	0.5	0	Wood	Inconclusive
11	Boiler Room	Back room, North Wall, Brown	Unsatisfactory	-0.5	-0.1	Metal	Negative
12	Boiler Room	Back room, North Wall, Molding, White	Unsatisfactory	0	-0.1	Wood	Negative
13	Boiler Room	Outside of Building, South Wall	Satisfactory	-0.5	-0.2	Brick	Negative
14	Boiler Room	Garage Frame	Unsatisfactory	1.7	0.2	Metal	Positive
15	Boiler Room	Main Room, North Wall, Gray	Unsatisfactory	-0.4	-0.3	Concrete	Negative
16	Boiler Room	Main Room, North Wall, White	Unsatisfactory	-0.4	-0.3	Concrete	Negative
		MAIN BUILDING					
17	1st	Entrance, East Wall, Gray	Unsatisfactory	0.4	0.1	Concrete	Inconclusive
18	1st	Entrance, Ceiling, White	Unsatisfactory	0.5	0.2	Concrete	Inconclusive
19	2nd	Stairwell, Gray	Unsatisfactory	-0.3	-0.2	Concrete	Negative
20	2nd	Stairwell, White	Unsatisfactory	-0.6	-0.2	Concrete	Negative
21	2nd	West side of stairs (WS), Door Frame	Unsatisfactory	20.2	1.5	Metal	Positive
22	2nd	WS, Front of Building, East Wall, Brown	Unsatisfactory	0.7	-0.3	Concrete	Inconclusive
23	2nd	WS, Front of Building, East Wall, White	Unsatisfactory	0.5	0	Concrete	Inconclusive
24	2nd	WS, 2nd Room, West Wall, Brown	Unsatisfactory	0.4	-0.1	Metal	Inconclusive
25	2nd	WS, 3rd Room, South Room, Brown	Unsatisfactory	-0.2	-0.1	Metal	Negative
26	2nd	WS, Northwest most column	Unsatisfactory	-2.9	-0.1	Concrete	Negative
27	2nd	East side of stairs (ES), North Wall	Unsatisfactory	0	0.4	Concrete	Negative

28	2nd	ES, South Wall	Unsatisfactory	-0.3	-0.3	Concrete	Negative
29	2nd	ES, East Wall	Unsatisfactory	-1.3	-0.2	Brick	Negative
30	2nd	ES, West Wall	Unsatisfactory	-2	-0.1	Concrete	Negative
31	2nd	ES, Northwest Column, Gray	Unsatisfactory	-2.2	-0.2	Concrete	Negative
32	2nd	WS, Lab Area, South East Room, Outer Wall, Gray	Unsatisfactory	0.6	-0.1	Wood	Inconclusive
33	2nd	ES, Door Frame	Unsatisfactory	-0.6	-0.3	Metal	Negative
34	3rd	WS, North Wall	Unsatisfactory	-2	-0.2	Concrete	Negative
35	3rd	WS, South Wall	Unsatisfactory	-1.3	-0.3	Concrete	Negative
36	3rd	WS, East Wall	Unsatisfactory	-1.6	-0.1	Concrete	Negative
37	3rd	WS, West Wall	Unsatisfactory	0.4	0.1	Brick	Inconclusive
38	3rd	WS, Door Frame	Unsatisfactory	0.3	-0.3	Metal	Inconclusive
39	3rd	WS, Northwest Column	Unsatisfactory	0.4	0.3	Concrete	Inconclusive
40	3rd	Room next to rear stairs, East Wall	Unsatisfactory	7.9	0.7	Concrete	Positive
41	3rd	Room next to rear stairs, Door	Unsatisfactory	0.4	-0.1	Wood	Inconclusive
42	3rd	Room next to rear stairs, Door Frame	Unsatisfactory	24.1	6.7	Wood	Positive
43	3rd	ES, Door Frame	Unsatisfactory	0.4	-0.1	Metal	Inconclusive
44	3rd	ES, North Wall	Unsatisfactory	-2.2	-0.1	Concrete	Negative
45	3rd	ES, South Wall	Unsatisfactory	-2.2	-0.3	Concrete	Negative
46	3rd	ES, East Wall	Unsatisfactory	-1.5	-0.1	Brick	Negative
47	3rd	ES, West Wall	Unsatisfactory	-2.1	-0.2	Concrete	Negative
48	3rd	ES, Northeast Column	Unsatisfactory	-1.3	-0.2	Concrete	Negative
49	4th	WS, North Wall	Unsatisfactory	-1.2	-0.2	Concrete	Negative
50	4th	WS, South Wall	Unsatisfactory	-0.7	-0.1	Concrete	Negative
51	4th	WS, East Wall	Unsatisfactory	5.9	1.6	Concrete	Positive
52	4th	WS, West Wall	Unsatisfactory	-1.1	-0.3	Brick	Negative
53	4th	WS, Door Frame	Unsatisfactory	0.3	-0.1	Metal	Inconclusive
54	4th	WS, Northwest Column	Unsatisfactory	-0.5	-0.3	Concrete	Negative
55	4th	ES, North Wall	Unsatisfactory	-1.4	-0.4	Concrete	Negative
56	4th	ES, South Wall	Unsatisfactory	-0.8	-0.3	Concrete	Negative
57	4th	ES, East Wall	Unsatisfactory	0.1	-0.3	Brick	Inconclusive
58	4th	ES, West Wall	Unsatisfactory	0.1	-0.2	Concrete	Inconclusive
59	4th	ES, Northeast Column	Unsatisfactory	-1.4	-0.2	Concrete	Negative
60	4th	ES, Door Frame	Unsatisfactory	-0.5	-0.5	Metal	Negative
61	4th	Room next to rear stairs, Door	Unsatisfactory	20.8	7.9	Wood	Positive
62	4th	Room next to rear stairs, Door Frame	Unsatisfactory	21.3	1.6	Wood	Positive

63	4th	Room next to rear stairs, East Wall	Unsatisfactory	-1.5	0.3	Concrete	Negative
64	5th	WS, North Wall	Unsatisfactory	40.9	5.1	Concrete	Positive
65	5th	WS, South Wall	Unsatisfactory	-1.5	-0.1	Concrete	Negative
66	5th	WS, East Wall	Unsatisfactory	28.9	7.3	Concrete	Positive
67	5th	WS, West Wall	Unsatisfactory	49.1	4.2	Concrete	Positive
68	5th	WS, Northwest Column	Unsatisfactory	3.3	1.4	Concrete	Positive
69	5th	WS, Door Frame	Unsatisfactory	-0.1	-0.4	Metal	Negative
70	5th	ES, Door Frame	Unsatisfactory	-0.2	-0.3	Metal	Negative
71	5th	ES, North Wall	Unsatisfactory	0	-1.4	Concrete	Negative
72	5th	ES, South Wall	Unsatisfactory	-0.2	-1.3	Concrete	Negative
73	5th	ES, East Wall	Unsatisfactory	0.2	-0.2	Concrete	Inconclusive
74	5th	ES, West Wall	Unsatisfactory	-0.7	-0.4	Concrete	Negative
75	5th	ES, Northeast Column	Unsatisfactory	-2.1	-0.5	Concrete	Negative
76	5th	Room next to rear stairs, Door Frame	Unsatisfactory	36.2	5.8	Wood	Positive
77	5th	Room next to rear stairs, East Wall	Unsatisfactory	5.6	1.6	Concrete	Positive
78	6th	WS, North Wall	Unsatisfactory	2	-0.1	Concrete	Positive
79	6th	WS, South Wall	Unsatisfactory	-2.3	-0.3	Concrete	Negative
80	6th	WS, East Wall	Unsatisfactory	0.2	-0.3	Concrete	Inconclusive
81	6th	WS, West Wall	Unsatisfactory	-3.8	-0.2	Concrete	Negative
82	6th	WS, Northwest Column	Unsatisfactory	-1.8	-0.3	Concrete	Negative
83	6th	WS, Door Frame	Unsatisfactory	-0.4	-0.1	Metal	Negative
84	6th	ES, Door Frame	Unsatisfactory	0	0.3	Metal	Negative
85	6th	ES, North Wall	Unsatisfactory	-0.3	-0.2	Concrete	Negative
86	6th	ES, South Wall	Unsatisfactory	0	-0.1	Concrete	Negative
87	6th	ES, East Wall	Unsatisfactory	-1.4	-0.3	Concrete	Negative
88	6th	ES, West Wall	Unsatisfactory	-1.4	-0.1	Concrete	Negative
89	6th	ES, Northeast Column	Unsatisfactory	-2.5	-0.4	Concrete	Negative
90	6th	Room next to rear stairs, Door	Unsatisfactory	30.8	6.4	Wood	Positive
91	6th	Room next to rear stairs, Door Frame	Unsatisfactory	30.8	5.3	Wood	Positive
92	6th	Room next to rear stairs, East Wall	Unsatisfactory	1.1	0.6	Concrete	Inconclusive
93	7th	WS, Door Frame	Unsatisfactory	-1.8	-0.3	Metal	Negative
94	7th	WS, North Wall	Unsatisfactory	-3.8	-0.2	Concrete	Negative
95	7th	WS, South Wall	Unsatisfactory	0.2	-0.3	Concrete	Inconclusive
96	7th	WS, East Wall	Unsatisfactory	-2.3	-0.3	Concrete	Negative

97	7th	WS, West Wall	Unsatisfactory	-0.3	-0.2	Concrete	Negative
98	7th	WS, Northwest Column	Unsatisfactory	0.1	-0.1	Concrete	Inconclusive
99	7th	WS, Floor	Unsatisfactory	-1.1	-0.1	Concrete	Negative
100	7th	ES, North Wall	Unsatisfactory	-0.2	-0.1	Drywall	Negative
101	7th	ES, South Wall	Unsatisfactory	0.3	-0.1	Concrete	Inconclusive
102	7th	ES, East Wall	Unsatisfactory	-0.8	-0.1	Concrete	Negative
103	7th	ES, West Wall	Unsatisfactory	0.1	-0.2	Concrete	Inconclusive
104	7th	ES, Northeast Column	Unsatisfactory	0.2	0.4	Concrete	Inconclusive
105	7th	ES, 1st Room off stairs, East Wall	Unsatisfactory	-0.8	-0.2	Drywall	Negative
106	7th	ES, 1st Room off stairs, Gray Door	Unsatisfactory	-0.1	-0.2	Metal	Negative
107	7th	Room next to rear stairs, Door Frame	Unsatisfactory	25.4	4.5	Wood	Positive
108	7th	Room next to rear stairs, East Wall	Unsatisfactory	2.3	0.4	Concrete	Positive
109	7th	ES, 2nd Room, South Wall	Unsatisfactory	-0.3	-0.3	Drywall	Negative
110	7th	ES, North Wall from Big Room	Unsatisfactory	-0.5	-0.3	Drywall	Negative
111	7th	ES, 2nd Room, Door Frame	Unsatisfactory	-0.1	-0.1	Wood	Negative
112	Ground-level	Outside, Entrance, Door, Gray	Satisfactory	2.5	1.1	Concrete	Positive
113	Ground-level	Outside, Frame of Entrance, Gray	Satisfactory	17.3	1.6	Concrete	Positive
114	Ground-level	Outside of Building	Satisfactory	-1.4	-0.4	Concrete	Negative
115		Fire Escape, Front	Unsatisfactory	10.8	1.5	Metal	Positive
116		Fire Escape, Rear	Unsatisfactory	8.6	2.3	Metal	Positive
		Calibration after testing					
		Red Test Block	Satisfactory	0.9	1	Wood	Calibrated
		Red Test Block	Satisfactory	0.8	1.1	Wood	Calibrated
		Red Test Block	Satisfactory	0.9	1.1	Wood	Calibrated

WS = West Side Of Stairs
ES = East Side Of Stairs

APPENDIX B

MAINTENANCE OF LEAD PAINTED SURFACES

MAINTENANCE OF LEAD PAINTED SURFACES

Government agencies stipulate that even intact lead painted surfaces pose a health threat, and therefore should be abated. However, measures can be taken, short of abatement, to significantly reduce the risk of lead dust contamination from painted surfaces. A regular maintenance program of intact (good condition) lead based paint can lower potential exposure to lead particles. Below are a few guidelines for in-place management of lead painted surfaces.

Maintenance: Friction with lead painted surfaces can release lead dust particles. This dust is the main contaminant of children in homes. Toxic concentrations of lead dust can be avoided by regularly cleaning known lead painted surface with a solution of phosphate based detergent and water. **Avoid** the use of vacuum cleaners, they can spread the lead particles to other non-contaminated areas. Should the intact lead paint deteriorate, it should be abated. It is difficult to determine if lead dust is present without proper dust sampling. A detailed description of this procedure is presented below.

Monitoring: Unfortunately children's blood levels reflect the actual risk of lead contamination. Therefore, as part of a lead paint maintenance program, children's blood levels should be periodically checked for elevated lead levels.

The information provided above are general provisions for dealing with lead based paint risks. Free detailed information on lead poisoning and avoiding its risk can be obtained from:

The National Center for Education in Maternal and Child Health
38th and R Street, N.W.
Washington, DC 20057
(202) 625-8400

APPENDIX C

Laboratory Results

MATRIX

ANALYTICAL DATA SUMMARY

Report Date: 12/20/96

Account: Ecosystems Strategies
Address: 60 Worrall Ave.
Poughkeepsie, NY 12603
914-452-1658

Project Manager: Brad Fisher
Project Name: PB96146.20 (12-13-96)
Project No.: PB96146.20

Sample Information:

Laboratory ID	Client/Field ID	Laboratory ID	Client/Field ID
63486660-001	B-1(0-2')	63486660-007	SW-2
63486660-002	B-1(15-17')	63486660-008	VAT #1
63486660-003	B-2(0-2')	63486660-009	VAT #2
63486660-004	B-2(5-7')	63486660-010	QC Report-Soil
63486660-005	B-2(12-14')	63486660-011	QC Report-Water
63486660-006	SW-1		

Reviewed by

Christine A. Larkin
Laboratory Manager

Lab Certifications

EPA ID: No. MA059
Massachusetts: No. M-MA059
Maine: Reciprocity
Rhode Island: No. 87
South Carolina: No. 88011
Florida(DEP): QA Plan No. 900437G
Florida(HRS): No. E87290
Connecticut: No. PH0515
New York: ELAP No. 11116
New Hampshire: No. 2041

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

F I N A L R E P O R T

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-001	Date Sampled:	12/11/96 14:00
Client ID:	B-1(0-2')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
Acetone	ND	ug/kg	100	8240A	db	12/14/96
Benzene	ND	ug/kg	1	8240A	db	12/14/96
Bromodichloromethane	ND	ug/kg	5	8240A	db	12/14/96
Bromoform	ND	ug/kg	5	8240A	db	12/14/96
Bromomethane	ND	ug/kg	5	8240A	db	12/14/96
Carbon Tetrachloride	ND	ug/kg	5	8240A	db	12/14/96
Chlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
Chloroethane	ND	ug/kg	5	8240A	db	12/14/96
Chloroform	ND	ug/kg	5	8240A	db	12/14/96
Chloromethane	ND	ug/kg	5	8240A	db	12/14/96
Dibromochloromethane	ND	ug/kg	5	8240A	db	12/14/96
1,2-Dichlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
1,3-Dichlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
1,4-Dichlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
1,1-Dichloroethane	ND	ug/kg	5	8240A	db	12/14/96
1,2-Dichloroethane	ND	ug/kg	5	8240A	db	12/14/96
1,1-Dichloroethene	ND	ug/kg	5	8240A	db	12/14/96
cis-1,2-Dichloroethene	120	ug/kg	5	8240A	db	12/14/96
trans-1,2-Dichloroethene	ND	ug/kg	5	8240A	db	12/14/96
1,2-Dichloropropane	ND	ug/kg	5	8240A	db	12/14/96
cis-1,3-Dichloropropene	ND	ug/kg	5	8240A	db	12/14/96
trans-1,3-Dichloropropene	ND	ug/kg	5	8240A	db	12/14/96
Ethylbenzene	ND	ug/kg	5	8240A	db	12/14/96
Methylene Chloride	ND	ug/kg	5	8240A	db	12/14/96
Methyl Ethyl Ketone	ND	ug/kg	100	8240A	db	12/14/96

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106 South Street
Hopkinton, MA 01748-2295
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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-001	Date Sampled:	12/11/96 14:00
Client ID:	B-1(0-2')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
MIBK	ND	ug/kg	50	8240A	db	12/14/96
MTBE	ND	ug/kg	5	8240A	db	12/14/96
1,1,2,2-Tetrachloroethane	ND	ug/kg	5	8240A	db	12/14/96
Tetrachloroethene	170	ug/kg	5	8240A	db	12/14/96
Toluene	ND	ug/kg	5	8240A	db	12/14/96
1,1,1-Trichloroethane	ND	ug/kg	5	8240A	db	12/14/96
1,1,2-Trichloroethane	ND	ug/kg	5	8240A	db	12/14/96
Trichloroethene	170	ug/kg	5	8240A	db	12/14/96
Trichlorofluoromethane	ND	ug/kg	5	8240A	db	12/14/96
Vinyl Chloride	ND	ug/kg	2	8240A	db	12/14/96
Xylene	ND	ug/kg	5	8240A	db	12/14/96
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene	86	Percent			db	12/14/96
1,2-Dichloroethane-D	95	Percent			db	12/14/96
Toluene-D	96	Percent			db	12/14/96
PAH's						
Extraction Date:	12/13/96				dr	
Acenaphthene	1,400	ug/kg	1000	8270A	jp	12/15/96
Acenaphthylene	ND	ug/kg	1000	8270A	jp	12/15/96
Anthracene	3,000	ug/kg	1000	8270A	jp	12/15/96
Benzo (a) Anthracene	7,900	ug/kg	1000	8270A	jp	12/15/96
Benzo (a) Pyrene	6,000	ug/kg	1000	8270A	jp	12/15/96
Benzo (b) Fluoranthene	7,100	ug/kg	1000	8270A	jp	12/15/96

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Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-001	Date Sampled:	12/11/96 14:00
Client ID:	B-1(0-2')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
PAH's						
Benzo (k) Fluoranthene	2,500	ug/kg	1000	8270A	jp	12/15/96
Benzo (g,h,i) Perylene	2,300	ug/kg	1000	8270A	jp	12/15/96
Chrysene	9,000	ug/kg	1000	8270A	jp	12/15/96
Dibenzo (a,h) Acridine	ND	ug/kg	1000	8270A	jp	12/15/96
Dibenzo (a,j) Acridine	ND	ug/kg	1000	8270A	jp	12/15/96
Dibenzo (a,h) Anthracene	ND	ug/kg	1000	8270A	jp	12/15/96
7H-Dibenzo (c,g) Carbazole	ND	ug/kg	1000	8270A	jp	12/15/96
Dibenzo (a,e) Pyrene	ND	ug/kg	2500	8270A	jp	12/15/96
Dibenzo (a,i) Pyrene	ND	ug/kg	2500	8270A	jp	12/15/96
Dibenzo (a,h) Pyrene	ND	ug/kg	2500	8270A	jp	12/15/96
Fluoranthene	14,000	ug/kg	1000	8270A	jp	12/15/96
Fluorene	ND	ug/kg	1000	8270A	jp	12/15/96
Indeno (1,2,3-cd) Pyrene	1,900	ug/kg	1000	8270A	jp	12/15/96
2-Methyl Naphthalene	ND	ug/kg	1000	8270A	jp	12/15/96
3-Methylcholanthrene	ND	ug/kg	1000	8270A	jp	12/15/96
1-Methyl Naphthalene	ND	ug/kg	1000	8270A	jp	12/15/96
Naphthalene	3,400	ug/kg	1000	8270A	jp	12/15/96
Phenanthrene	19,000	ug/kg	1000	8270A	jp	12/15/96
Pyrene	19,000	ug/kg	1000	8270A	jp	12/15/96
The detection limit reported is based on a X10 dilution of the sample.						
SURROGATE STUDIES - BASE NEUTRALS						
2-Fluorobiphenyl	81	Percent			jp	12/15/96

Matrix Analytical, Inc.
106 South Street
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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-001	Date Sampled:	12/11/96 14:00
Client ID:	B-1(0-2')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
SURROGATE STUDIES - BASE NEUTRALS						
Nitrobenzene-D5	74	Percent			jp	12/15/96
p-Terphenyl-D14	94	Percent			jp	12/15/96
MISCELLANEOUS TESTING						
Percent Moisture	22.6	Percent			rw	12/16/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-002	Date Sampled:	12/11/96 14:30
Client ID:	B-1(15-17')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
Acetone	ND	ug/kg	100	8240A	db	12/14/96
Benzene	ND	ug/kg	1	8240A	db	12/14/96
Bromodichloromethane	ND	ug/kg	5	8240A	db	12/14/96
Bromoform	ND	ug/kg	5	8240A	db	12/14/96
Bromomethane	ND	ug/kg	5	8240A	db	12/14/96
Carbon Tetrachloride	ND	ug/kg	5	8240A	db	12/14/96
Chlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
Chloroethane	ND	ug/kg	5	8240A	db	12/14/96
Chloroform	ND	ug/kg	5	8240A	db	12/14/96
Chloromethane	ND	ug/kg	5	8240A	db	12/14/96
Dibromochloromethane	ND	ug/kg	5	8240A	db	12/14/96
1,2-Dichlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
1,3-Dichlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
1,4-Dichlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
1,1-Dichloroethane	ND	ug/kg	5	8240A	db	12/14/96
1,2-Dichloroethane	ND	ug/kg	5	8240A	db	12/14/96
1,1-Dichloroethene	ND	ug/kg	5	8240A	db	12/14/96
cis-1,2-Dichloroethene	ND	ug/kg	5	8240A	db	12/14/96
trans-1,2-Dichloroethene	ND	ug/kg	5	8240A	db	12/14/96
1,2-Dichloropropane	ND	ug/kg	5	8240A	db	12/14/96
cis-1,3-Dichloropropene	ND	ug/kg	5	8240A	db	12/14/96
trans-1,3-Dichloropropene	ND	ug/kg	5	8240A	db	12/14/96
Ethylbenzene	ND	ug/kg	5	8240A	db	12/14/96
Methylene Chloride	ND	ug/kg	5	8240A	db	12/14/96
Methyl Ethyl Ketone	ND	ug/kg	100	8240A	db	12/14/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-002	Date Sampled:	12/11/96 14:30
Client ID:	B-1(15-17')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
MIBK	ND	ug/kg	50	8240A	db	12/14/96
MTBE	ND	ug/kg	5	8240A	db	12/14/96
1,1,2,2-Tetrachloroethane	ND	ug/kg	5	8240A	db	12/14/96
Tetrachloroethene	ND	ug/kg	5	8240A	db	12/14/96
Toluene	ND	ug/kg	5	8240A	db	12/14/96
1,1,1-Trichloroethane	ND	ug/kg	5	8240A	db	12/14/96
1,1,2-Trichloroethane	ND	ug/kg	5	8240A	db	12/14/96
Trichloroethene	ND	ug/kg	5	8240A	db	12/14/96
Trichlorofluoromethane	ND	ug/kg	5	8240A	db	12/14/96
Vinyl Chloride	ND	ug/kg	2	8240A	db	12/14/96
Xylene	ND	ug/kg	5	8240A	db	12/14/96
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene	94	Percent			db	12/14/96
1,2-Dichloroethane-D	96	Percent			db	12/14/96
Toluene-D	97	Percent			db	12/14/96
PAH's						
Extraction Date:	12/13/96				dr	
Acenaphthene	ND	ug/kg	100	8270A	jp	12/15/96
Acenaphthylene	ND	ug/kg	100	8270A	jp	12/15/96
Anthracene	ND	ug/kg	100	8270A	jp	12/15/96
Benzo (a) Anthracene	ND	ug/kg	100	8270A	jp	12/15/96
Benzo (a) Pyrene	ND	ug/kg	100	8270A	jp	12/15/96
Benzo (b) Fluoranthene	ND	ug/kg	100	8270A	jp	12/15/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-002	Date Sampled:	12/11/96 14:30
Client ID:	B-1(15-17')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
PAH's						
Benzo (k) Fluoranthene	ND	ug/kg	100	8270A	jp	12/15/96
Benzo (g,h,i) Perylene	ND	ug/kg	100	8270A	jp	12/15/96
Chrysene	ND	ug/kg	100	8270A	jp	12/15/96
Dibenzo (a,h) Acridine	ND	ug/kg	100	8270A	jp	12/15/96
Dibenzo (a,j) Acridine	ND	ug/kg	100	8270A	jp	12/15/96
Dibenzo (a,h) Anthracene	ND	ug/kg	100	8270A	jp	12/15/96
7H-Dibenzo (c,g) Carbazole	ND	ug/kg	100	8270A	jp	12/15/96
Dibenzo (a,e) Pyrene	ND	ug/kg	250	8270A	jp	12/15/96
Dibenzo (a,i) Pyrene	ND	ug/kg	250	8270A	jp	12/15/96
Dibenzo (a,h) Pyrene	ND	ug/kg	250	8270A	jp	12/15/96
Fluoranthene	ND	ug/kg	100	8270A	jp	12/15/96
Fluorene	ND	ug/kg	100	8270A	jp	12/15/96
Indeno (1,2,3-cd) Pyrene	ND	ug/kg	100	8270A	jp	12/15/96
2-Methyl Naphthalene	ND	ug/kg	100	8270A	jp	12/15/96
3-Methylcholanthrene	ND	ug/kg	100	8270A	jp	12/15/96
1-Methyl Naphthalene	ND	ug/kg	100	8270A	jp	12/15/96
Naphthalene	ND	ug/kg	100	8270A	jp	12/15/96
Phenanthrene	ND	ug/kg	100	8270A	jp	12/15/96
Pyrene	ND	ug/kg	100	8270A	jp	12/15/96
SURROGATE STUDIES - BASE NEUTRALS						
2-Fluorobiphenyl	53	Percent			jp	12/15/96
Nitrobenzene-D5	52	Percent			jp	12/15/96
p-Terphenyl-D14	93	Percent			jp	12/15/96
MISCELLANEOUS TESTING						
Percent Moisture	13.3	Percent			rw	12/16/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-003	Date Sampled:	12/11/96 15:30
Client ID:	B-2(0-2')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
Acetone	ND	ug/kg	10000	8240A	db	12/14/96
Benzene	ND	ug/kg	100	8240A	db	12/14/96
Bromodichloromethane	ND	ug/kg	500	8240A	db	12/14/96
Bromoform	ND	ug/kg	500	8240A	db	12/14/96
Bromomethane	ND	ug/kg	500	8240A	db	12/14/96
Carbon Tetrachloride	ND	ug/kg	500	8240A	db	12/14/96
Chlorobenzene	ND	ug/kg	500	8240A	db	12/14/96
Chloroethane	ND	ug/kg	500	8240A	db	12/14/96
Chloroform	ND	ug/kg	500	8240A	db	12/14/96
Chloromethane	ND	ug/kg	500	8240A	db	12/14/96
Dibromochloromethane	ND	ug/kg	500	8240A	db	12/14/96
1,2-Dichlorobenzene	ND	ug/kg	500	8240A	db	12/14/96
1,3-Dichlorobenzene	ND	ug/kg	500	8240A	db	12/14/96
1,4-Dichlorobenzene	ND	ug/kg	500	8240A	db	12/14/96
1,1-Dichloroethane	ND	ug/kg	500	8240A	db	12/14/96
1,2-Dichloroethane	ND	ug/kg	500	8240A	db	12/14/96
1,1-Dichloroethene	ND	ug/kg	500	8240A	db	12/14/96
cis-1,2-Dichloroethene	ND	ug/kg	500	8240A	db	12/14/96
trans-1,2-Dichloroethene	ND	ug/kg	500	8240A	db	12/14/96
1,2-Dichloropropane	ND	ug/kg	500	8240A	db	12/14/96
cis-1,3-Dichloropropene	ND	ug/kg	500	8240A	db	12/14/96
trans-1,3-Dichloropropene	ND	ug/kg	500	8240A	db	12/14/96
Ethylbenzene	ND	ug/kg	500	8240A	db	12/14/96
Methylene Chloride	ND	ug/kg	500	8240A	db	12/14/96
Methyl Ethyl Ketone	ND	ug/kg	10000	8240A	db	12/14/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-003	Date Sampled:	12/11/96 15:30
Client ID:	B-2(0-2')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
MIBK	ND	ug/kg	5000	8240A	db	12/14/96
MTBE	ND	ug/kg	500	8240A	db	12/14/96
1,1,2,2-Tetrachloroethane	ND	ug/kg	500	8240A	db	12/14/96
Tetrachloroethene	5,500	ug/kg	500	8240A	db	12/14/96
Toluene	ND	ug/kg	500	8240A	db	12/14/96
1,1,1-Trichloroethane	ND	ug/kg	500	8240A	db	12/14/96
1,1,2-Trichloroethane	ND	ug/kg	500	8240A	db	12/14/96
Trichloroethene	3,700	ug/kg	500	8240A	db	12/14/96
Trichlorofluoromethane	ND	ug/kg	500	8240A	db	12/14/96
Vinyl Chloride	ND	ug/kg	200	8240A	db	12/14/96
Xylene	ND	ug/kg	500	8240A	db	12/14/96
The detection limit reported is based on a X100 dilution of the sample.						
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene	102	Percent			db	12/14/96
1,2-Dichloroethane-D	92	Percent			db	12/14/96
Toluene-D	98	Percent			db	12/14/96
PAH's						
Extraction Date:	12/13/96				dr	
Acenaphthene	ND	ug/kg	1000	8270A	jp	12/15/96
Acenaphthylene	ND	ug/kg	1000	8270A	jp	12/15/96
Anthracene	1,200	ug/kg	1000	8270A	jp	12/15/96

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FINAL REPORT

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Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-003	Date Sampled:	12/11/96 15:30
Client ID:	B-2(0-2')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
PAH's						
Benzo (a) Anthracene	3,300	ug/kg	1000	8270A	jp	12/15/96
Benzo (a) Pyrene	2,900	ug/kg	1000	8270A	jp	12/15/96
Benzo (b) Fluoranthene	4,000	ug/kg	1000	8270A	jp	12/15/96
Benzo (k) Fluoranthene	1,500	ug/kg	1000	8270A	jp	12/15/96
Benzo (g,h,i) Perylene	1,500	ug/kg	1000	8270A	jp	12/15/96
Chrysene	3,500	ug/kg	1000	8270A	jp	12/15/96
Dibenzo (a,h) Acridine	ND	ug/kg	1000	8270A	jp	12/15/96
Dibenzo (a,j) Acridine	ND	ug/kg	1000	8270A	jp	12/15/96
Dibenzo (a,h) Anthracene	ND	ug/kg	1000	8270A	jp	12/15/96
7H-Dibenzo (c,g) Carbazole	ND	ug/kg	1000	8270A	jp	12/15/96
Dibenzo (a,e) Pyrene	ND	ug/kg	2500	8270A	jp	12/15/96
Dibenzo (a,i) Pyrene	ND	ug/kg	2500	8270A	jp	12/15/96
Dibenzo (a,h) Pyrene	ND	ug/kg	2500	8270A	jp	12/15/96
Fluoranthene	7,300	ug/kg	1000	8270A	jp	12/15/96
Fluorene	ND	ug/kg	1000	8270A	jp	12/15/96
Indeno (1,2,3-cd) Pyrene	1,300	ug/kg	1000	8270A	jp	12/15/96
2-Methyl Naphthalene	ND	ug/kg	1000	8270A	jp	12/15/96
3-Methylcholanthrene	ND	ug/kg	1000	8270A	jp	12/15/96
1-Methyl Naphthalene	ND	ug/kg	1000	8270A	jp	12/15/96
Naphthalene	ND	ug/kg	1000	8270A	jp	12/15/96
Phenanthrene	6,100	ug/kg	1000	8270A	jp	12/15/96
Pyrene	6,100	ug/kg	1000	8270A	jp	12/15/96

The detection limit reported is based on a X10 dilution of the sample.

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-003	Date Sampled:	12/11/96 15:30
Client ID:	B-2(0-2')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
SURROGATE STUDIES - BASE NEUTRALS						
2-Fluorobiphenyl	72	Percent			jp	12/15/96
Nitrobenzene-D5	78	Percent			jp	12/15/96
p-Terphenyl-D14	82	Percent			jp	12/15/96
MISCELLANEOUS TESTING						
Percent Moisture	10.3	Percent			rw	12/16/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-004	Date Sampled:	12/11/96 15:40
Client ID:	B-2(5-7')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
Acetone	ND	ug/kg	1000	8240A	db	12/16/96
Benzene	ND	ug/kg	10	8240A	db	12/16/96
Bromodichloromethane	ND	ug/kg	50	8240A	db	12/16/96
Bromoform	ND	ug/kg	50	8240A	db	12/16/96
Bromomethane	ND	ug/kg	50	8240A	db	12/16/96
Carbon Tetrachloride	ND	ug/kg	50	8240A	db	12/16/96
Chlorobenzene	ND	ug/kg	50	8240A	db	12/16/96
Chloroethane	ND	ug/kg	50	8240A	db	12/16/96
Chloroform	ND	ug/kg	50	8240A	db	12/16/96
Chloromethane	ND	ug/kg	50	8240A	db	12/16/96
Dibromochloromethane	ND	ug/kg	50	8240A	db	12/16/96
1,2-Dichlorobenzene	ND	ug/kg	50	8240A	db	12/16/96
1,3-Dichlorobenzene	ND	ug/kg	50	8240A	db	12/16/96
1,4-Dichlorobenzene	ND	ug/kg	50	8240A	db	12/16/96
1,1-Dichloroethane	ND	ug/kg	50	8240A	db	12/16/96
1,2-Dichloroethane	ND	ug/kg	50	8240A	db	12/16/96
1,1-Dichloroethene	ND	ug/kg	50	8240A	db	12/16/96
cis-1,2-Dichloroethene	ND	ug/kg	50	8240A	db	12/16/96
trans-1,2-Dichloroethene	ND	ug/kg	50	8240A	db	12/16/96
1,2-Dichloropropane	ND	ug/kg	50	8240A	db	12/16/96
cis-1,3-Dichloropropene	ND	ug/kg	50	8240A	db	12/16/96
trans-1,3-Dichloropropene	ND	ug/kg	50	8240A	db	12/16/96
Ethylbenzene	ND	ug/kg	50	8240A	db	12/16/96
Methylene Chloride	ND	ug/kg	50	8240A	db	12/16/96
Methyl Ethyl Ketone	ND	ug/kg	1000	8240A	db	12/16/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-004	Date Sampled:	12/11/96 15:40
Client ID:	B-2(5-7')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
MIBK	ND	ug/kg	500	8240A	db	12/16/96
MTBE	ND	ug/kg	50	8240A	db	12/16/96
1,1,2,2-Tetrachloroethane	ND	ug/kg	50	8240A	db	12/16/96
Tetrachloroethene	ND	ug/kg	50	8240A	db	12/16/96
Toluene	1,400	ug/kg	50	8240A	db	12/16/96
1,1,1-Trichloroethane	71	ug/kg	50	8240A	db	12/16/96
1,1,2-Trichloroethane	ND	ug/kg	50	8240A	db	12/16/96
Trichloroethene	ND	ug/kg	50	8240A	db	12/16/96
Trichlorofluoromethane	ND	ug/kg	50	8240A	db	12/16/96
Vinyl Chloride	ND	ug/kg	20	8240A	db	12/16/96
Xylene	ND	ug/kg	50	8240A	db	12/16/96
The detection limit reported is based on a X10 dilution of the sample.						
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene	101	Percent			db	12/16/96
1,2-Dichloroethane-D	105	Percent			db	12/16/96
Toluene-D	100	Percent			db	12/16/96
MISCELLANEOUS TESTING						
Percent Moisture	13.4	Percent			rw	12/16/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-005	Date Sampled:	12/11/96 16:20
Client ID:	B-2(12-14')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
Acetone	ND	ug/kg	100	8240A	db	12/14/96
Benzene	ND	ug/kg	1	8240A	db	12/14/96
Bromodichloromethane	ND	ug/kg	5	8240A	db	12/14/96
Bromoform	ND	ug/kg	5	8240A	db	12/14/96
Bromomethane	ND	ug/kg	5	8240A	db	12/14/96
Carbon Tetrachloride	ND	ug/kg	5	8240A	db	12/14/96
Chlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
Chloroethane	ND	ug/kg	5	8240A	db	12/14/96
Chloroform	ND	ug/kg	5	8240A	db	12/14/96
Chloromethane	ND	ug/kg	5	8240A	db	12/14/96
Dibromochloromethane	ND	ug/kg	5	8240A	db	12/14/96
1,2-Dichlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
1,3-Dichlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
1,4-Dichlorobenzene	ND	ug/kg	5	8240A	db	12/14/96
1,1-Dichloroethane	ND	ug/kg	5	8240A	db	12/14/96
1,2-Dichloroethane	ND	ug/kg	5	8240A	db	12/14/96
1,1-Dichloroethene	ND	ug/kg	5	8240A	db	12/14/96
cis-1,2-Dichloroethene	ND	ug/kg	5	8240A	db	12/14/96
trans-1,2-Dichloroethene	ND	ug/kg	5	8240A	db	12/14/96
1,2-Dichloropropane	ND	ug/kg	5	8240A	db	12/14/96
cis-1,3-Dichloropropene	ND	ug/kg	5	8240A	db	12/14/96
trans-1,3-Dichloropropene	ND	ug/kg	5	8240A	db	12/14/96
Ethylbenzene	ND	ug/kg	5	8240A	db	12/14/96
Methylene Chloride	ND	ug/kg	5	8240A	db	12/14/96
Methyl Ethyl Ketone	ND	ug/kg	100	8240A	db	12/14/96

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-005	Date Sampled:	12/11/96 16:20
Client ID:	B-2(12-14')	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
MIBK	ND	ug/kg	50	8240A	db	12/14/96
MTBE	ND	ug/kg	5	8240A	db	12/14/96
1,1,2,2-Tetrachloroethane	ND	ug/kg	5	8240A	db	12/14/96
Tetrachloroethene	ND	ug/kg	5	8240A	db	12/14/96
Toluene	ND	ug/kg	5	8240A	db	12/14/96
1,1,1-Trichloroethane	ND	ug/kg	5	8240A	db	12/14/96
1,1,2-Trichloroethane	ND	ug/kg	5	8240A	db	12/14/96
Trichloroethene	ND	ug/kg	5	8240A	db	12/14/96
Trichlorofluoromethane	ND	ug/kg	5	8240A	db	12/14/96
Vinyl Chloride	ND	ug/kg	2	8240A	db	12/14/96
Xylene	ND	ug/kg	5	8240A	db	12/14/96
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene	95	Percent			db	12/14/96
1,2-Dichloroethane-D	96	Percent			db	12/14/96
Toluene-D	97	Percent			db	12/14/96
MISCELLANEOUS TESTING						
Percent Moisture	3.8	Percent			rw	12/16/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-006	Date Sampled:	12/11/96 11:00
Client ID:	SW-1	Date Received:	12/13/96 : 0
Matrix:	Water	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
Acetone	ND	ug/l	100	8240A	db	12/18/96
Benzene	ND	ug/l	1	8240A	db	12/18/96
Bromodichloromethane	ND	ug/l	5	8240A	db	12/18/96
Bromoform	ND	ug/l	5	8240A	db	12/18/96
Bromomethane	ND	ug/l	5	8240A	db	12/18/96
Carbon Tetrachloride	ND	ug/l	5	8240A	db	12/18/96
Chlorobenzene	ND	ug/l	5	8240A	db	12/18/96
Chloroethane	ND	ug/l	5	8240A	db	12/18/96
Chloroform	ND	ug/l	5	8240A	db	12/18/96
Chloromethane	ND	ug/l	5	8240A	db	12/18/96
Dibromochloromethane	ND	ug/l	5	8240A	db	12/18/96
1,2-Dichlorobenzene	ND	ug/l	5	8240A	db	12/18/96
1,3-Dichlorobenzene	ND	ug/l	5	8240A	db	12/18/96
1,4-Dichlorobenzene	ND	ug/l	5	8240A	db	12/18/96
1,1-Dichloroethane	ND	ug/l	5	8240A	db	12/18/96
1,2-Dichloroethane	ND	ug/l	5	8240A	db	12/18/96
1,1-Dichloroethene	ND	ug/l	5	8240A	db	12/18/96
cis-1,2-Dichloroethene	ND	ug/l	5	8240A	db	12/18/96
trans-1,2-Dichloroethene	ND	ug/l	5	8240A	db	12/18/96
1,2-Dichloropropane	ND	ug/l	5	8240A	db	12/18/96
cis-1,3-Dichloropropene	ND	ug/l	5	8240A	db	12/18/96
trans-1,3-Dichloropropene	ND	ug/l	5	8240A	db	12/18/96
Ethylbenzene	ND	ug/l	5	8240A	db	12/18/96
Methylene Chloride	ND	ug/l	5	8240A	db	12/18/96
Methyl Ethyl Ketone	ND	ug/l	100	8240A	db	12/18/96

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-006	Date Sampled:	12/11/96 11:00
Client ID:	SW-1	Date Received:	12/13/96 : 0
Matrix:	Water	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
MIBK	ND	ug/l	50	8240A	db	12/18/96
MTBE	ND	ug/l	5	8240A	db	12/18/96
1,1,2,2-Tetrachloroethane	ND	ug/l	5	8240A	db	12/18/96
Tetrachloroethene	ND	ug/l	5	8240A	db	12/18/96
Toluene	ND	ug/l	5	8240A	db	12/18/96
1,1,1-Trichloroethane	ND	ug/l	5	8240A	db	12/18/96
1,1,2-Trichloroethane	ND	ug/l	5	8240A	db	12/18/96
Trichloroethene	ND	ug/l	5	8240A	db	12/18/96
Trichlorofluoromethane	ND	ug/l	5	8240A	db	12/18/96
Vinyl Chloride	ND	ug/l	2	8240A	db	12/18/96
Xylene	ND	ug/l	5	8240A	db	12/18/96
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene	98	Percent			db	12/18/96
1,2-Dichloroethane-D	100	Percent			db	12/18/96
Toluene-D	100	Percent			db	12/18/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-007	Date Sampled:	12/11/96 11:15
Client ID:	SW-2	Date Received:	12/13/96 : 0
Matrix:	Water	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
Acetone	ND	ug/l	100	8240A	lj	12/18/96
Benzene	ND	ug/l	1	8240A	lj	12/18/96
Bromodichloromethane	ND	ug/l	5	8240A	lj	12/18/96
Bromoform	ND	ug/l	5	8240A	lj	12/18/96
Bromomethane	ND	ug/l	5	8240A	lj	12/18/96
Carbon Tetrachloride	ND	ug/l	5	8240A	lj	12/18/96
Chlorobenzene	ND	ug/l	5	8240A	lj	12/18/96
Chloroethane	ND	ug/l	5	8240A	lj	12/18/96
Chloroform	ND	ug/l	5	8240A	lj	12/18/96
Chloromethane	ND	ug/l	5	8240A	lj	12/18/96
Dibromochloromethane	ND	ug/l	5	8240A	lj	12/18/96
1,2-Dichlorobenzene	ND	ug/l	5	8240A	lj	12/18/96
1,3-Dichlorobenzene	ND	ug/l	5	8240A	lj	12/18/96
1,4-Dichlorobenzene	ND	ug/l	5	8240A	lj	12/18/96
1,1-Dichloroethane	ND	ug/l	5	8240A	lj	12/18/96
1,2-Dichloroethane	ND	ug/l	5	8240A	lj	12/18/96
1,1-Dichloroethene	ND	ug/l	5	8240A	lj	12/18/96
cis-1,2-Dichloroethene	ND	ug/l	5	8240A	lj	12/18/96
trans-1,2-Dichloroethene	ND	ug/l	5	8240A	lj	12/18/96
1,2-Dichloropropane	ND	ug/l	5	8240A	lj	12/18/96
cis-1,3-Dichloropropene	ND	ug/l	5	8240A	lj	12/18/96
trans-1,3-Dichloropropene	ND	ug/l	5	8240A	lj	12/18/96
Ethylbenzene	ND	ug/l	5	8240A	lj	12/18/96
Methylene Chloride	ND	ug/l	5	8240A	lj	12/18/96
Methyl Ethyl Ketone	ND	ug/l	100	8240A	lj	12/18/96

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-007	Date Sampled:	12/11/96 11:15
Client ID:	SW-2	Date Received:	12/13/96 : 0
Matrix:	Water	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
MIBK	ND	ug/l	50	8240A	lj	12/18/96
MTBE	ND	ug/l	5	8240A	lj	12/18/96
1,1,2,2-Tetrachloroethane	ND	ug/l	5	8240A	lj	12/18/96
Tetrachloroethene	ND	ug/l	5	8240A	lj	12/18/96
Toluene	ND	ug/l	5	8240A	lj	12/18/96
1,1,1-Trichloroethane	ND	ug/l	5	8240A	lj	12/18/96
1,1,2-Trichloroethane	ND	ug/l	5	8240A	lj	12/18/96
Trichloroethene	ND	ug/l	5	8240A	lj	12/18/96
Trichlorofluoromethane	ND	ug/l	5	8240A	lj	12/18/96
Vinyl Chloride	ND	ug/l	2	8240A	lj	12/18/96
Xylene	ND	ug/l	5	8240A	lj	12/18/96
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene	98	Percent			lj	12/18/96
1,2-Dichloroethane-D	102	Percent			lj	12/18/96
Toluene-D	101	Percent			lj	12/18/96

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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-008	Date Sampled:	12/11/96 11:30
Client ID:	VAT #1	Date Received:	12/13/96 : 0
Matrix:	Water	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
SAMPLE PREPARATION						
Metal Digestion	12/16/96			3015		
Mercury Digestion	12/19/96			7470/7471		
TRACE METALS						
Arsenic	ND	mg/l	0.005	206.2	kb	12/18/96
Barium	0.01	mg/l	0.01	200.7	th	12/17/96
Cadmium	0.013	mg/l	0.001	213.2	kb	12/18/96
Chromium	ND	mg/l	0.02	200.7	th	12/17/96
Lead	ND	mg/l	0.001	239.2	kb	12/19/96
Mercury	ND	mg/l	0.001	245.1	mm	12/19/96
Nickel	0.13	mg/l	0.01	200.7	th	12/17/96
Selenium	ND	mg/l	0.005	270.2	kb	12/18/96
Silver	ND	mg/l	0.007	200.7	th	12/17/96
MISCELLANEOUS TESTING						
pH	7.4			9045	mo	12/13/96

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	Brad Fisher

Sample Information

Lab ID:	63486660-009	Date Sampled:	12/11/96 11:40
Client ID:	VAT #2	Date Received:	12/13/96 : 0
Matrix:	Water	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
SAMPLE PREPARATION						
Metal Digestion	12/16/96			3015		
Mercury Digestion	12/19/96			7470/7471		
TRACE METALS						
Arsenic	ND	mg/l	0.005	206.2	kb	12/18/96
Barium	0.01	mg/l	0.01	200.7	th	12/17/96
Cadmium	0.002	mg/l	0.001	213.2	kb	12/18/96
Chromium	ND	mg/l	0.02	200.7	th	12/17/96
Lead	ND	mg/l	0.001	239.2	kb	12/19/96
Mercury	ND	mg/l	0.001	245.1	mm	12/19/96
Nickel	0.07	mg/l	0.01	200.7	th	12/17/96
Selenium	ND	mg/l	0.005	270.2	kb	12/18/96
Silver	ND	mg/l	0.007	200.7	th	12/17/96
MISCELLANEOUS TESTING						
pH	7.6			9045	mo	12/13/96

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	

Sample Information

Lab ID:	63486660-010	Date Sampled:	/ / :
Client ID:	QC Report-Soil	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
METHOD BLANKS						
Method Blank - Semi Volatile	ND	ug/l		625/8270A		
Method Blank - Volatile	ND	ug/l		8240A		
MATRIX SPIKE STUDIES - VOLATILES						
Sample ID:	6589-002					
Benzene	104	Percent				
Chlorobenzene	102	Percent				
1,1-Dichloroethene	93	Percent				
Toluene	98	Percent				
Trichloroethene	100	Percent				

METHOD SUMMARIES

Acid/Base Neutral analysis is performed using H/P 5970 GC/MS systems with autosampler. Analysis is performed with J&W megabore column. Tuning is based on DFTPP criteria. Procedural guidelines described in SW846 are used for all analysis. Data reduction is accomplished using H/P RTE 1000 computer systems.

NOTE: Analytical results have been corrected and are reported on a dry weight basis. If required, detection limits can also be corrected to dry weight using the percent moisture data included in this report.

Volatile organic analysis is performed using H/P 5995 or 5970 GC/MS, Tekmar purge and trap, and ALS autosampler. Chromatography incorporates packed and megabore columns. Data reduction is performed on RTE 1000 and ChemStation systems. Tuning is based on BFB standards. Procedural guidelines follow EPA or SW846 for all analyses.

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F I N A L R E P O R T

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	

Sample Information

Lab ID:	63486660-010	Date Sampled:	/ / :
Client ID:	QC Report-Soil	Date Received:	12/13/96 : 0
Matrix:	Soil	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846. November 1986.
2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACF., 18th Edition. 1992.
4. EPA Methods For The Determination of Organic Compounds in Drinking Water.

Matrix Analytical, Inc.
106 South Street
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FINAL REPORT

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	

Sample Information

Lab ID:	63486660-011	Date Sampled:	/ / :
Client ID:	QC Report-Water	Date Received:	12/13/96 : 0
Matrix:	Water	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
DUPLICATE STUDIES						
Arsenic ID:	6637-001					
Arsenic Variance:	0	Percent				
Barium ID:	6637-001					
Barium Variance:	0	Percent				
Cadmium ID:	6637-001					
Cadmium Variance:	0	Percent				
Chromium ID:	6637-001					
Chromium Variance:	0	Percent				
Lead ID:	6637-001					
Lead Variance:	0	Percent				
Mercury ID:	6660-008					
Mercury Variance:	0	Percent				
Nickel ID:	6637-001					
Nickel Variance:	0	Percent				
Selenium ID:	6637-001					
Selenium Variance:	0	Percent				
Silver ID:	6641-001					
Silver Variance:	0	Percent				
MATRIX SPIKE STUDIES - METALS						
Arsenic ID:	6637-001					
Arsenic Recovery:	88	Percent				
Barium ID:	6637-001					
Barium Recovery:	85	Percent				
Cadmium ID:	6637-001					

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F I N A L R E P O R T

Client Information

Account:	Ecosystems Strategies	Project Name:	PB96146.20 (12-13-96)
Address:	60 Worrall Ave.	Project Number:	PB96146.20
	Poughkeepsie, NY 12603	Project Manager:	Brad Fisher
		Sampler Name:	

Sample Information

Lab ID:	63486660-011	Date Sampled:	/ / :
Client ID:	QC Report-Water	Date Received:	12/13/96 : 0
Matrix:	Water	Date Reported:	12/20/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
MATRIX SPIKE STUDIES - METALS						
Cadmium Recovery:	107	Percent				
Chromium ID:	6637-001					
Chromium Recovery:	86	Percent				
Lead ID:	6637-001					
Lead Recovery:	97	Percent				
Mercury ID:	6660-008					
Mercury Recovery:	90	Percent				
Nickel ID:	6637-001					
Nickel Recovery:	84	Percent				
Selenium ID:	6637-001					
Selenium Recovery:	87	Percent				
Silver ID:	6641-001					
Silver Recovery:	90	Percent				

METHOD SUMMARIES

Metal analysis is performed on digested extracts using Atomic Absorption or ICP Spectroscopy. AA samples are atomized using FASTAC auto deposition and are automatically deposited into graphite cells. Mercury is determined by Cold Vapor AA. ICP samples are automatically sampled, nebulized, and transported into the plasma torch. Final results are produced by auto data/reduction and graphics printer.

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846. November 1986.
2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACF., 18th Edition. 1992.
4. EPA Methods For The Determination of Organic Compounds in Drinking Water.

Project Information

Project Name: PB96146.20
Project No.: PB96146.20
Project Location: —
Project Manager: BRAD FISHER
Sampler(s): BRAD FISHER
PO #: Lab Quote #:
Turn-Around: ☐ Standard 10 business days ☑ Other (specify): RUSH FOR SOILS
Note: Less than 10 days must be pre-approved!

Client Information

Send Reports to: BRAD FISHER
Company: ECOSYSTEM STRATEGIES
Address: 60 WORRALL AV
POUGHKEEPSIE, NY 12603
Phone: 914 485-1658
Fax: 914 485-2083
Account # (Lab Use Only)
Final Report: ☑ Mail ☐ Overnight ☑ Fax
☐ EDT Diskette (If checked, call for pricing)
Disk format:

Form No. | Page 1

FILTRATION (0.45 um) & PRESERVATION INFORMATION

FILTRATION	PRESERVATION
☐ DONE	☐ DONE
☐ NOT NEEDED	☐ NOT NEEDED
☐ LAB TO DO*	☐ LAB TO DO*

**Please specify which samples need to be filtered and/or preserved by the lab.*

IF SPECIAL OR NON-ROUTINE DETECTION LIMITS ARE REQUIRED, PLEASE CALL THE LAB.

Lab ID (Lab Use Only)	Client/Field Sample ID	Collection Date	Collection Time	Sample Source / Matrix	8240	PAH's	pH	RCRA METALS + NICKEL	Sample Remarks (below)	TOTAL # OF BOTTLES
	B-1 (0-2')	12/11/96	2^00	SOIL	X	X			RUSH	2
	B-1 (15-17')	12/11/96	2^30	SOIL	X	X			RUSH	2
	B-2 (0-2')	12/11/96	3^30	SOIL	X	X			RUSH	2
	B-2 (5-7')	12/11/96	~~3^30~~ 3^40	SOIL	X				RUSH	1
	B-2 (12-14')	12/11/96	4^20	SOIL	X				RUSH	1
	SW-1	12/11/96	11^00	WATER	X					2
	SW-2	12/11/96	11^15	WATER	X					2
	VAT #1	12/11/96	11^30	WATER			X	X		1
	VAT #2	12/11/96	11^40	WATER			X	X		1

Analyses (write test methods above & "x's" below for each sample to be tested)

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748
Phone: (800) 362-8749
Fax: (508) 435-2497

NOTES:

CHAIN-OF-CUSTODY RECORD

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	12/12/96 3^00	[signature]	12-13-96/2^00

Condition of Samples Upon Arrival
☐ Okay ☐ Problem(s)

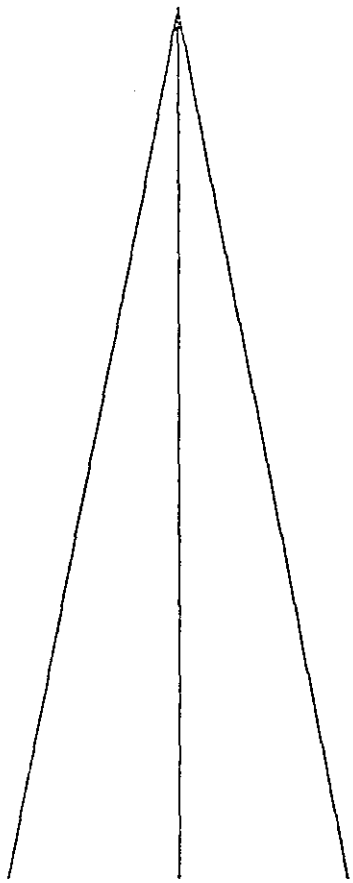
Distribution of Copies
White-Lab Yellow-Report Pink-Client

APPENDIX D

Boring Logs (Soiltesting)

SOILTESTING, INC.

TO Ecosystems Strategies Inc. DATE December 12, 1996
ADDRESS 60 Worrall Avenue - Poughkeepsie, New York 12603
SITE LOCATION 98-116 South 4th Street - Brooklyn, New York
REPORT SENT TO Paul Ciminello
SAMPLES SENT TO Picked up @ site by client



140 Oxford Road
Oxford, Conecticut 06478
203-888-4531

Branch Office:
White Plains, New York 10607
914-946-4850

JOB NO. 4674

SOILTESTING, INC.
140 OXFORD RD.
OXFORD, CT 06478
CT (203) 888-4531
N.Y. (914) 946-4850

FOREMAN - DRILLER: KB/rc

INSPECTOR:

GROUND WATER OBSERVATIONS
AT 15' FT AFTER 0 HOURS
AT ____ FT AFTER ____ HOURS

CLIENT: Ecosystems Strategies Inc.

PROJECT NO.: E214-4674-96

PROJECT NAME: 98-116 South 4th Street

LOCATION: Brooklyn, New York

	CASING	SAMPLER	CORE BAR
TYPE	HSA	SS	
SIZE I.D.	2¼"	1 3/8"	
HAMMER WT.		140#	BIT
HAMMER FALL		30"	

SHEET 1 OF 1
HOLE NO. B-1

BORING LOCATIONS: as directed

OFFSET:

DATE START 12-11-96 DATE FIN. 12-11-96
SURFACE ELEV.:
GROUND WATER ELEV.:

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE TYPE	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN. ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												6"	CONCRETE
		1	ss	24"	12"	3'0"	8	9			dry		BRICK,CONCRETE,COBBLES,Brn F-SAND,(fill)
							10	10			compact		tr silt
5		2	ss	24"	16"	7'0"	10	12					
							12	11					
												10'0"	
10		3	ss	24"	12"	12'0"	9	13			moist		Gry SILT,tr clay,tr F-sand
							10	12			v-dense		
												15'0"	
15		4	ss	24"	12"	17'0"	12	13			wet		Brn F-SAND
							20	15			dense	17'0"	E.O.B.
20													
25													
30													
35													E.O.B. 17'0"
40													

GROUND SURFACE TO ____ FT. USED ____ CASING THEN ____ CASING TO ____ FT

HOLE NO. B-1

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER
C = COARSE M = MEDIUM F = FINE
PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50%

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FOREMAN - DRILLER: KB/rc
INSPECTOR:

GROUND WATER OBSERVATIONS
AT none FT AFTER 0 HOURS
AT ____ FT AFTER ____ HOURS

CLIENT: Ecosystems Strategies Inc.
PROJECT NO.: E214-4674-96
PROJECT NAME: 98-116 South 4th Street
LOCATION: Brooklyn, New York

	CASING	SAMPLER	CORE BAR
TYPE	HSA	SS	
SIZE I.D.	2¼"	1 3/8"	
HAMMER WT.		140#	BIT
HAMMER FALL		30"	

SHEET 1 OF 1
HOLE NO. B-2

BORING LOCATIONS: as directed
OFFSET:

DATE START 12-11-96 DATE FIN. 12-11-96
SURFACE ELEV.:
GROUND WATER ELEV.:

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE TYPE	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN. ON SAMPLER (FORCE ON TUBE) 0-6	6-12	12-18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST MOIST	STRATA CHANGE DEPTH ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												6"	CONCRETE
		1	ss	24"	18"	3'0"	5	9			dry compact		BRICK,CONCRETE,COBBLES,Brn SAND (fill)
							10	12					
5		2	ss	24"	12"	7'0"	10	10					
							9	10					
												10'0"	
10		3	ss	24"	12"	12'0"	13	12			dry compact		Brn F-SAND
							13	15					
		4	ss	24"	15"	15'0"	7	12			dry compact		SAME
15							12	12				15'0"	E.O.B.
20													
25													
30													
35													E.O.B. 15'0"
40													

GROUND SURFACE TO ____ FT. USED ____ CASING THEN ____ CASING TO ____ FT

HOLE NO. B-2

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM
PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50% F = FINE