June 9, 2003

Mr. Shaminder Chawla
New York State Department of Environmental Conservation
Division of Environmental Remediation
Region 2
47-40 21st Street
Long Island City, New York 10011

Re: Submittal of Site B Investigation Report and Work Plan
Pfizer Inc, Site B, Brooklyn, New York

Dear Mr. Chawla:

On behalf of Pfizer Inc, Roux Associates, Inc. and Remedial Engineering, P.C. are submitting the Interim Remedial Measure and Limited Site Investigation Results Report and Supplemental Site Investigation Work Plan for Pfizer Inc, Site B in Brooklyn, New York, for your review.

We would like to set up a meeting with the New York State Department of Environmental Conservation and the New York State Department of Health to discuss the results of the investigations/remediation recently completed, the scope of work for the next phase of work activities, and any report/work plan comments.

Please call if you have any questions or require additional information.

Sincerely,

ROUX ASSOCIATES, INC.

Scott J. Glash, C.P.G.
Senior Hydrogeologist
Project Manager

Attachments

cc: Dan Walsh, NYSDEC Region 2
Michael Lesser, Esq., NYSDEC Central Office
Stephanie Selmer, NYSDOH
John Keith, Pfizer Inc
Merrill Fliederbaum, Esq., Pfizer Inc
Manuel Lopez, Pfizer Inc

INTERIM REMEDIAL MEASURE AND LIMITED SITE INVESTIGATION RESULTS REPORT AND SUPPLEMENTAL SITE INVESTIGATION WORK PLAN SITE B

Pfizer Inc
Brooklyn, New York

June 9, 2003

Prepared for:

Pfizer Inc
630 Flushing Avenue
Brooklyn, New York

Prepared by:

ROUX ASSOCIATES, INC.

and

REMEDIAL ENGINEERING, P.C.
209 Shafter Street
Islandia, New York 11749

ROUX

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1.0 INTRODUCTION

On behalf of Pfizer Inc (Pfizer), Roux Associates, Inc. (Roux Associates) and our associated engineering firm, Remedial Engineering, P.C. (Remedial Engineering) have prepared this report summarizing the Interim Remedial Measure (IRM) and the Phase I and II Limited Site Investigations (LSI) conducted at the Site B, Pfizer facility in Brooklyn, New York (Site; Figure 1). The results of the IRM and LSI were used to develop a current description of the subsurface environmental conditions at Site B.

Additionally, this report will also provide the scope of work for a Supplemental Site Investigation Work Plan (SSIWP) to address additional data needs to complete the Site characterization.

1.1 Site History Overview

In 1954, Pfizer began leasing the western portion of Site B (59-71 Gerry Street; Lot 1) from the then current owner, Mr. Meyer Fine (Figure 2). This portion of Site B is currently owned by Ruth Fine, Paul Fine, and Ruth Apfelbaum, heirs of Mr. Meyer Fine. The western portion of Site B was either vacant (1954 through 1970s and late-1980s through 1996) or used as a parking lot (1970s through late-1980s and 1996 to present).

On April 2, 1964, Pfizer took ownership of the eastern portion of Site B (73-87 Gerry Street; Lot 46). This portion of Site B consisted of a vacant building that was not utilized by Pfizer until the 1970s (where a former garage and truck renting facility were owned and operated by previous Site B owners). Pfizer utilized the building, which covered the majority of its property, as a warehouse for the storage of raw materials/dry goods, spare equipment parts, and packaging materials. Additionally, a basement was present that contained a boiler and a 1,000-gallon capacity fuel oil tank, which was not used by Pfizer (i.e., the tank was not active). The use of the building as a warehouse continued until the late-1980s, when Pfizer leased the building to Arlington Press, Inc. (Arlington Press) for the parking of employees' vehicles in the building. Arlington Press, which had its employees use the building for parking, is a business that is located across Gerry Street.

In 1996, Pfizer had the building demolished with the intention of redeveloping the eastern portion of Site B (Lot 46). After the building was demolished, the western portion of Site B (Lot 1) was turned into a parking lot for the Arlington Press employees.

After Pfizer completed the demolition of the building in preparation for redevelopment, a limited environmental investigation (Roux Associates, 1996) was performed. This investigation included developing a summary of the Site B history, which included the review of available Sanborn™ maps and aerial photographs. During the review, a 550-gallon capacity underground storage tank (UST) was noted on a 1935 Sanborn™ map, located in the southeastern corner of the former garage (portion of Lot 46). This UST existed up to approximately 29 years prior to Pfizer's ownership of Site B.

Additionally, after the demolition of the building was completed and during routine maintenance of the Site (i.e., litter removal) in 1998, three fill ports for three 275-gallon capacity USTs were identified. These USTs were located in the northeast corner of Site B in the vicinity of the former truck renting facility (portion of Lot 46), which was present at Site B from approximately 1947 through 1964. These USTs existed up to approximately 17 years prior to Pfizer's ownership of Site B.

As part of the limited investigation, Pfizer determined the subsurface environmental conditions at Site B. Based on the results of this 1996 investigation, Pfizer had determined that petroleum-related impacts were present in the subsurface.

1.2 Summary of Work

A brief description of the previous and current work activities is presented below and in Table 1.

1.2.1 Previous Work Activities Overview

- The data developed from the Environmental Site Assessment (Roux Associates, 1996) and the Supplemental Investigation (Roux Associates, 1997) were used to develop the April 5, 2000 Work Plan (see Appendix A), and was previously reviewed by the NYSDEC and the New York State Department of Health (NYSDOH). The purpose of the Work Plan was to complete the Site characterization.

- The NYSDEC and the NYSDOH provided comments (NYSDEC, 2000) regarding the Work Plan that included a request for additional investigation activities (Table 1). These

additional investigation activities included the performance of a geophysical survey to search for possible USTs, a test pit program to confirm the geophysical survey, a soil sampling program for further characterization in the western portion of Site B, a soil vapor sampling program near the offsite apartment building and in the southwestern corner of the Site towards the nearby school, and a qualitative risk assessment (QRA).

- Additionally, the NYSDEC (July 10, 2002 meeting; see Appendix A) requested the characterization of Site B groundwater.

1.2.2 Current Work Activities Overview

- An IRM was performed in accordance with the August 19, 2002 document titled "Site B Interim Remedial Measure Work Plan" (Roux Associates, 2002a). The IRM was completed in December 2002, which included the removal of 4,735 tons of petroleum-related impacted soil and 18,449 gallons of groundwater (including perched groundwater). Additionally, nine USTs and two other subsurface structures (i.e., tank-like structures) were removed and disposed offsite accordingly. Details of the IRM are presented in Sections 3.0 and 4.0.

  Based on an evaluation of the IRM results (see Section 4.0) and previous discussions with the NYSDEC regarding additional investigation activities (see Appendix A), data gaps were identified. However, prior to the development of the SSIWP, additional information was needed.

- A Phase I and II LSI were performed in February 2003 and April 2003, respectively, to obtain the additional information (see Section 5.0). The Phase I LSI included the performance of a geophysical survey, a test pit program, and a groundwater quality characterization program. The Phase II LSI included the performance of offsite (i.e., upgradient) groundwater characterization, confirmatory groundwater characterization program (onsite), and vertical delineation of groundwater impacts (onsite).

- Based on the results of the IRM and the Phase I and II LSI (see Sections 4.0 and 5.0) coupled with the previous discussions with the NYSDEC regarding investigation activities, the SSIWP was developed to address the remaining data needs to complete the Site characterization (see Section 6.0; Table 1).

- A Voluntary Cleanup Program (VCP) application was submitted to the NYSDEC on February 20, 2003, and an approval into the VCP is pending.

The remainder of this report is organized into the following sections:

- Section 2.0: Background and Setting;
- Section 3.0: IRM Scope of Work;
- Section 4.0: IRM Results, Findings, and Conclusions;
- Section 5.0: Phase I and II Limited Site Investigations;
- Section 6.0: Supplemental Site Investigation Work Plan; and
- Section 7.0: References.

2.0 BACKGROUND AND SETTING

A summary of the Site B setting and history is presented below. A brief description of the previous investigations and Site activities is also presented below, while the details of these investigations and activities are presented in Appendix A. Additionally, a description of the potential future intended use of Site B is presented below.

2.1 Site Setting

Site B is located at 59-71 (Lot 1) and 73-87 (Lot 46) Gerry Street, between Harrison and Throop Avenues in Brooklyn, New York (Figure 1). Specifically, Site B is located in the eastern portion of the Pfizer facility, and is bordered on the north by a poultry market and vacant land, an apartment building, and a former auto body garage and yard; on the south by Gerry Street; on the east by a vacant lot; and on the west by Harrison Avenue (Figure 2).

2.2 Site History

A summary of the history of Site B is presented in this section. The summary was based on:

- a review of available Sanborn™ maps (1887, 1904, 1918, 1935, 1947, and 1950);
- a review of available aerial photographs (1951, 1959, 1961, 1966, 1970, 1976, and 1980);
- a review of the local Building Department files;
- a review of the New York City Fire Department files;
- interviews with Pfizer personnel;
- a historical directory search;
- a property title search; and
- an internet search.

Additionally, the librarian of the Williamsburg Branch of the Brooklyn Public Library in Brooklyn, New York was contacted to determine if historic information would be available regarding Site B. The librarian stated that there are no records available regarding specific properties.

The historical directory search was performed by Superior Data, a data information search firm located in Brooklyn, New York.

According to the property title reviewed, Site B has been divided into two lots. Lot 46 is located on the eastern portion of Site B (73-87 Gerry Street), while Lot 1 is located on the western portion of Site B (59-71 Gerry Street).

A description of Site B's history based on the available information is presented below.

Pre-1887

- There were no records available regarding the operations and ownership of Site B (Lots 1 and 46) prior to 1887.

1887

- Site B was occupied by residential buildings (Lots 1 and 46), with the exception of a fur factory and bakery located in the eastern portion of the property (Lot 46). A bowling alley and a truck maker were present adjacent to the northeast portion of Site B (located offsite).

- There were no available records regarding the names of the operators and/or owners of Site B during this time period.

1904

- The eastern portion of Site B remained mostly residential, with the addition of a storage and carriage repository facility (Lot 46). The fur factory and bakery were no longer present. The western portion of Site B was occupied by a bottling distributor, several residential buildings, a school, and a business named "Atlantic Gardens" (Lot 1). The Atlantic Gardens may have been a pub. A knitting mill was present adjacent to the northeast portion of Site B (located offsite).

- The Atlantic Gardens were the operators at 67 Gerry Street (Lot 1). According to the 1904 Sanborn™ map, K. Ress appeared to operate the storage facility at 77-79 Gerry Street (see Year 1911 for further information of K. Ress). There were no available records regarding the remaining names of the operators and/or owners of Site B during this time period.

1911

- According to the historical directory search by Superior Data, the eastern portion of Site B (Lot 46) was owned by Mr. Kalmen Ress. No additional information regarding the subject's ownership was available.

1918

- The eastern portion of Site B was occupied by residential buildings and a wholesale grocer (Lot 46). The wholesale grocer may have been a supermarket. The storage and carriage repository facilities were no longer present. The western portion of Site B was occupied by residential buildings, Atlantic Gardens, and a soda-water factory (Lot 1). The bottling distributor and the school were no longer present. A slipper facility and an auto shop were present adjacent or near the northeast portion of the Site (located offsite).

- According to the historical directory search by Superior Data, a public garage (Lot 46) was present (although it is not shown on the 1918 Sanborn™ map), and owned by Mr. Charles P. Cannella. There were no available records regarding additional information of operators/owners of the Site during this time period. The Atlantic Gardens were the operators at 67 Gerry Street (Lot 1).

1935

- The eastern portion of Site B was occupied by a 75-car garage (73-79 Gerry Street) and several residential buildings (Lot 46). A 550-gallon capacity gasoline UST was present in the southeast corner of Site B within the garage. It is important to note that Pfizer was not the owner of Site B in 1935 and, therefore, Pfizer was not the owner or operator of this UST. Additionally, Pfizer had no knowledge of this UST during the first 32 years of its ownership of Site B, which began in 1964. Pfizer discovered the possible presence of this UST during the initial phases of the Site B redevelopment in 1996. The wholesale grocer was no longer present. The western portion of Site B was occupied by a dance hall, several residential buildings, and a junk lot (Lot 1). Atlantic Gardens and the soda-water factory were no longer present. A manufacturer of folding boxes was present adjacent to the north-central portion of the Site (located offsite).

- According to the historical directory search by Superior Data, the western portion of Site B (Lot 1) was owned by Mr. Louis J. Cohen. No additional information regarding the subject's ownership was available. There were no available records regarding the names of the operators and/or owners of eastern portion of Site B (Lot 46) during this time period.

1947

- The eastern portion of Site B was occupied by a 75-car garage (73-79 Gerry Street) and a truck renting facility (81-85 Gerry Street) (Lot 46). The 550-gallon capacity gasoline UST, identified in the 1935 Sanborn ™ map, was still present in the southeast corner of the garage in 1947. As stated above, Pfizer was not the owner of Site B during this time period and, therefore, Pfizer was not the owner or operator of this UST. The residential buildings were no longer present. The western portion of Site B was vacant; all previously existing structures had been removed (Lot 1). A lumberyard was present adjacent to the northwest portion of the Site (located offsite).

- There were no available records regarding the names of the operators and/or owners of Site B during this time period.

1950

- The eastern portion of Site B was occupied by a 75-car garage and a truck renting facility (Lot 46). The 550-gallon UST, first identified in the 1935 Sanborn ™ map, was still present in the southeast corner of the garage in 1950. As stated above, Pfizer was not the owner of Site B during this time period and, therefore, Pfizer was not the owner or operator of this UST. The western portion of Site B was occupied by a lumberyard (Lot 1), which was located at 59-71 Gerry Street. The lumberyard, which was identified in the 1947 Sanborn™ map and located adjacent to the Site's northwest corner (i.e., offsite), had expanded throughout Lot 1 of Site B.

- There were no available records regarding the names of the operators and/or owners of Site B during this time period.

1954

- Pfizer began leasing the western portion of Site B (Lot 1) from the owner Mr. Meyer Fine. No additional information regarding the subject's ownership was available including origination date of ownership. The lumberyard was no longer present in the western portion of Site B (Lot 1); this portion of the Site was vacant and not utilized by Pfizer.

1964

- On April 2, 1964, Pfizer takes ownership of the eastern portion of Site B (Lot 46). The previous owner of the property was Fan Bar Realty Corp, which appears to have been a real estate firm. Additionally, there was no available information indicating the origination date when Fan Bar Realty Corp took ownership of Lot 46. The 75-car garage and truck renting facility was no longer in operation on the eastern portion of Site B. These buildings were apparently vacant during this time period. The western portion of Site B (Lot 1) remained vacant.

1970s

- Pfizer begins to use the building on Lot 46 as a warehouse and Lot 1 as a parking lot. Based on Pfizer's knowledge coupled with the available information for Site B, Pfizer, at no time installed or utilized USTs as an operator of a warehouse (i.e., for the storage of raw material/dry goods, spare parts, and packaging materials).

1973

- Lot 1 (i.e., western portion of Site B; 59-71 Gerry Street) was owned by Mr. Meyer Fine, and was being used as a parking lot by Pfizer. As part of Mr. Fine's last will and testament, Rose Fine, Paul Fine, and Ruth Apfelbaum were deeded this portion of Site B, and are the current owners of the western portion of Site B (Lot 1).

Late 1980s

- Pfizer discontinued its use of the building as a warehouse at Site B (Lot 46). At this time, the warehouse was turned back into a garage (i.e., parking for vehicles only) for the Arlington Press facility employees. Arlington Press is a business located across

Gerry Street. Lot 1, located in the western portion of Site B, was no longer used by Pfizer as a parking lot and was vacant.

1996 to 2002

- In February 1996, the building (eastern portion of the Site; Lot 46) was demolished by Garito Contracting, Inc. (Garito), leaving only the concrete slab intact. As part of the building demolition, a 1,000-gallon capacity fuel oil tank and boiler were removed from the basement of the garage. According to Garito, the tank was intact and there was no indication that the tank or associated piping had a release. After the building was demolished, the eastern portion of Site B (Lot 46) was vacant. The western portion of Site B, which was vacant at the time (Lot 1), was made into a parking lot for the Arlington Press employees.

2.3 Previous Investigations and Other Pertinent Site Activities

As part of the redevelopment of the Pfizer facility, Roux Associates conducted several investigations at Site B. A brief description of these investigations and other pertinent Site activities is provided below, and the details are provided in Appendix A.

1996

- Environmental Site Assessment (ESA) - The objective of the ESA was to identify any environmental concerns associated with Site B that may present a risk to human health or the environment. The results of the Site B ESA were reported in the document titled "Environmental Site Assessment on Site B." Based on the Site inspection results, four areas of Site B were identified by Roux Associates for further investigation during the ESA. These areas included the vacant lot currently being used by Arlington Press, Inc. as an employee parking lot, the southwest portion of the concrete slab, the location of the former aboveground fuel oil tank (located in the former basement), and the location of a former roof drain pipe (located in the eastern portion of Site B).

1997

- Supplemental Investigation at Site B – The objective of this investigation was to address data gaps identified in the ESA. The results were reported in the document titled "Results of the Supplemental Investigation at Site B." The results indicate that volatile organic compounds (VOCs) and metals were detected in the fill material and perched groundwater. Additionally, the fill material was determined to be non-hazardous. The results of the Limited Risk Assessment (LRA) indicate that the presence of chemicals at the concentrations detected in the fill material at Site B do not pose a current or future risk under occupational or construction activities.

- A meeting was held between Pfizer and the NYSDEC regarding the environmental investigations completed at Site B. The NYSDEC requested that further delineation of the petroleum-related impacts at Site B be conducted. The results of the delineation work at Site B were reported in a September 4, 1997 Technical Memorandum: Summary of Toxicity Characteristic Leaching Procedure Testing Delineation Soil Borings at Site B.

1998

- During routine maintenance of Site B (i.e., cleanup of litter), fill ports to three USTs in the northeast portion of Site B (within the former truck renting facility) were found (Lot 46). The fill ports were opened, and product and sludge were present in the USTs. The three USTs were uncovered and each was determined to be approximately 275 gallons in capacity. Pfizer registered the USTs with the NYSDEC on October 15, 1998. The USTs were cleaned out, and the product and sludge drummed and disposed offsite accordingly.

2000

- Pfizer submits first Voluntary Cleanup Program (VCP) application, and then worked with the NYSDEC on completing a Voluntary Cleanup Agreement (VCA), for which the April 5, 2000 Site B Investigation and Remediation Work Plan would be attached.

- The NYSDEC and the NYSDOH provides comments to the April 5, 2000 Work Plan (November 2000), and Pfizer responds to the comments in a letter dated December 20, 2000.

2002

- The NYSDEC notified Pfizer that the NYSDOH has provided an additional comment to the April 5, 2000 Work Plan. The NYSDOH has requested that soil gas sampling and analysis be performed near the offsite apartment building that abuts the northern-central portion of the Site. On behalf of Pfizer, Roux Associates provided a response letter (March 14, 2002; Roux Associates, 2002b) to the January 2002 NYSDOH comment, and agreed to perform onsite soil gas sampling near the offsite apartment building. After receipt of the March 14, 2002 letter, the NYSDEC verbally notified Roux Associates that the NYSDOH has disagreed with the soil gas sampling methodology.

  The following work activities were performed in preparation of implementing the April 5, 2000 Work Plan:

  – characterization of the backfill material;

  – characterization of the Site B fill material to determine disposal options; and

  – selection of the proper health and safety personnel protection equipment through ambient air sampling over and within the area proposed for removal.

  – A meeting was held between the NYSDEC, the NYSDOH, Pfizer, and Roux Associates on July 10, 2002 to discuss the Site B April 5, 2000 Work Plan. Specifically, Pfizer had requested this meeting to discuss the soil gas sampling with the NYSDOH and onsite and offsite excavation activities.

  – Pfizer submits the Site B Interim Remedial Measure Work Plan to the NYSDEC and the NYSDOH.

– Pfizer performs an IRM in the eastern portion of Site B to remove petroleum-impacted soil and groundwater (October through December 2002).

2003

- Pfizer performs a Limited Site Investigation (Phase I and II) to obtain additional data so that the Supplemental Site Investigation Work Plan can be developed to complete the Site characterization (February and April 2003).
- Pfizer submits a second VCP application to the NYSDEC (February 2003).

2.4 Current and Potential Future Use of Site B

Pfizer has decommissioned Site B to prepare this property for future redevelopment and/or beneficial use. Pfizer is currently contemplating redevelopment (future-use) for Site B as light industrial and/or commercial. Redevelopment of the property would be conducted in such a manner as to preclude any exposure of Site B contaminants to humans (e.g., through capping, barriers, soil excavation, or a combination of these technologies). Additionally, a qualitative risk assessment would be performed on any residual impacts that remain to demonstrate that these impacts would not pose a risk to human health based on the intended future use of Site B.

3.0 IRM SCOPE OF WORK

From October through December 2002, an IRM was performed to remove petroleum-related soil and groundwater (including perched groundwater) impacts at Site B. During the course of the IRM, the NYSDEC conducted three Site visits (October 28 and 30, 2002 and November 15, 2002), while the NYSDOH performed one Site visit (November 15, 2002) to observe and obtain a status of the IRM activities.

The Site B IRM scope of work included the following tasks:

- Site Preparation;
- Excavation Activities;
- UST and Other Subsurface Structure Removal Activities;
- Post-Excavation Sampling and Analysis;
- Surveying Activities;
- Backfilling and Site Restoration Activities;
- Equipment Decontamination;
- Health and Safety Monitoring; and
- Photographic Documentation of Construction Operations.

All tasks were performed in accordance with the Site B IRM Work Plan (Roux Associates, 2002a), and are described in detail below.

3.1 Site Preparation

The elements of Site preparation included:

- Site security;
- installation of supporting facilities; and
- initial surveying activities.

A brief description of each Site preparation element is provided below.

3.1.1 Site Security

The IRM portion of Site B is surrounded by an existing 10-ft high chain-link fence. Access to and from the Site was provided through two gates both located along Gerry Street (i.e., on the south side of the Site). During working hours, access was controlled by designated construction personnel. During non-working hours, the access gate was locked and patrolled by a security guard.

3.1.2 Installation of Supporting Facilities

Supporting facilities were installed onsite prior to implementing the IRM field activities, and included one office trailer, one storage equipment container, and two portable lavatories.

3.1.3 Initial Surveying Activities

Prior to excavation activities, the initial lateral extent of the excavation was marked on the concrete slab, which was determined based on previous analytical data. The lateral extent of the excavation and the elevation of the top of the soil (i.e., beneath the concrete slab) were surveyed by AK Associates Professional Land Surveyors (AK Associates), Rockville Center, New York. AK Associates is a licensed New York State surveying firm. This initial survey was supplemented with additional surveying during the excavation activities (see Section 3.5).

3.2 Excavation Activities

All excavation activities were performed by Garito, Yonkers, New York. The excavation activities began by removing those portions of the concrete slab that overlaid the petroleum-related impacted soil. The concrete was loaded directly into trucks and disposed as construction and demolition (C&D) debris at the Waste Management Inc. facility in Woodside, New York. The C&D debris was transported to the disposal facility by Garito. The disposal documentation is provided in Appendix B.

After the removal of the concrete slab, an excavator (CAT 322B) was used to remove the soil. Please note that the previous soil quality data indicated that the soil from land surface to approximately 4 feet (ft) below land surface (bls) was not petroleum impacted. This material consisted of historical fill material. The top 4 ft of soil was then stockpiled on the northeastern most portion of the Site, and characterized for disposal options. The stockpiled

material was placed on plastic sheeting that was surrounded by hay bales, and covered with plastic sheeting. This soil was analyzed for VOCs using the United States Environmental Protection Agency (USEPA) Method 8021 (NYSDEC Spill Technology and Remediation Series [STARS] list compounds), base neutral compounds (BNs) using the USEPA Method 8270 (NYSDEC STARS list compounds), and lead using the USEPA Method 6010B.

Because the soil at a depth interval greater than 4 ft bls had been previously characterized for disposal (see Appendix F of the Site B IRM Work Plan), the soil was loaded directly into 20 cubic yard (yd^3) trucks. The soil was previously characterized as petroleum-impacted. The soil was transported by Middlesex Material, Inc., Iselein, New Jersey, and disposed at the Clean Earth of New Castle, Inc. facility in New Castle, Delaware. The excavated soil was transported and disposed offsite in accordance with city, state and federal regulations, consistent with the applicable land disposal requirements. The disposal documentation is provided in Appendix B.

Additionally, three test pits (Test Pits 1 through 3) were performed in the easternmost portion of Site B to search for subsurface structures (e.g., USTs). The locations of these test pits are shown in Figure 3. Further details of these test pits are provided in Section 4.1.1.

Roux Associates conducted waste tracking of all materials disposed offsite. The waste tracking included:

- the excavated soil volumes;
- the name of each transfer, storage and disposal facility (TSDF);
- the manifest or bill of lading number; and
- the generation and disposal dates.

The manifests and transporting documents were prepared and field checked for completeness and accuracy by Capitol Environmental Services prior to verification by Roux Associates.

During the excavation activities, perched groundwater was encountered and removed by pumping into an onsite holding tank. Additionally, after the removal of the clay/silt layer during the excavation activities, groundwater was encountered. In the areas of the excavation where

separate-phase product was identified on top of the groundwater, the separate-phase product (along with groundwater) was removed by pumping into an onsite holding tank. The water in each holding tank was characterized to determine disposal options. The water was analyzed for VOCs using the USEPA Method 8021, semivolatile organic compounds (SVOCs) using the USEPA Method 8270, Resource Conservation and Recovery Act (RCRA) metals using the USEPA Method 6000-7000 Series, polychlorinated biphenyls (PCBs) using the USEPA Method 8082, ignitability using the USEPA Method 1010, and total suspended solids (TSS) using the USEPA Method 160.2 (see Section 4.1.3.2).

3.3 UST and Other Subsurface Structure Removal Activities

The three 275-gallon capacity USTs that were previously identified, located in the northeast portion of the Site, were removed. Additionally, according to a 1935 Sanborn™ map, a 550-gallon capacity UST was anticipated to be present in the southeastern portion of the Site, and was identified and removed. During the excavation activities, a total of nine USTs (including the four USTs mentioned above) and two other subsurface structures (i.e., tank-like structures) were identified and removed. Please note that based on the observed age of these USTs and structures and the fact that Pfizer did not own or utilize any USTs during their tenure at Site B, these USTs and structures were owned and operated by former owners of Site B prior to Pfizer's occupancy at Site B. The former locations of the USTs and other subsurface structures are shown in Figure 2. The construction details of these USTs and structures are presented in Section 4.1.1.1.

After the identification of each UST or other subsurface structure, an inspection was performed to determine if the UST or structure contained liquids and/or solids. If liquids were identified, they were removed by pumping into a holding tank (if the liquid was determined to be water) and into drums (if the liquid was determined to be potentially product). The drummed liquids were placed into secondary containment structure and characterized for disposal options. The liquids were analyzed for VOCs using the USEPA Method 8260, SVOCs using the USEPA Method 8270, RCRA metals using the USEPA Method 6000-7000 Series, PCBs using the USEPA Method 8082, ignitability, and TSS (see Section 4.1.3.2). The USTs and other subsurface structures were removed from the excavation area after the liquids were removed. Each UST or subsurface structure was then placed on plastic sheeting and inspected.

Additionally, the inspection of the USTs and structures indicated that pin sized holes were present.

Prior to cutting and cleaning the USTs, the oxygen levels, the percent of the lower explosion limit (LEL), and the organic vapor concentrations were measured inside each UST. If the concentrations exceeded allowable levels (as presented in the Health and Safety Plan [HASP]) to cut the USTs open and perform decontamination, then a vapor suppressant (solution of Biosolve™ and water) was introduced into the USTs until acceptable levels were measured. The USTs were then cut open using a "non sparking nibbler" (Trumpf, Type N1000-1) attached to a diesel-powered compressor.

After the USTs were cut open, any residual sludge was characterized to determine disposal options prior to its removal. The sludge was analyzed for VOCs using the Toxicity Characteristic Leaching Procedure (TCLP) (USEPA Method 8021), SVOCs using the TCLP (USEPA Method 8270), RCRA metals using the TCLP (USEPA Method 200.7), VOCs using the USEPA Method 8021, SVOCs using the USEPA Method 8270, RCRA metals using the USEPA Method 6000-7000 Series, PCBs using the USEPA Method 8082, ignitability, reactivity, and corrosivity. If the sludge was determined to be nonhazardous (see Section 4.1.3.2), this material was placed in the trucks with the petroleum-related impacted soil, while the vapor suppressant and water was placed into an onsite holding tank. If the material was considered a potentially characteristic hazardous waste (see Section 4.1.3.2), the sludge, vapor suppressant, and water were drummed, and placed into a secondary containment structure until removal from the Site.

The other subsurface structures (i.e., tank-like structures) were found with an opening at the top, and were identified to contain petroleum-impacted water and sludge. These materials were removed and disposed with the petroleum-impacted soil. The structures were decontaminated, placed on plastic sheeting, and covered prior to offsite disposal.

After the USTs and the other subsurface structures were decontaminated, they were then disposed offsite as scrap metal at the PASCAP Co., Inc. facility in the Bronx, New York. The disposal documentation is provided in Appendix B.

3.4 Post-Excavation Sampling and Analysis

During the excavation activities, 103 post-excavation samples were collected using a trowel or hand auger from the sidewalls (samples designated as SS) and bottom (samples designated as BS) of the excavation. The sidewall samples were collected as composite samples from 10 ft long and approximately 8 ft wide sections. The bottom samples were generally collected within a 10 ft by 10 ft area (as composite samples). Additionally, several bottom grab samples were also collected for laboratory analysis. The samples were collected from the top 6 inches of the excavation sidewall or bottom. The locations of the post-excavation samples are shown in Figure 4.

The post-excavation samples were analyzed for VOCs using the USEPA Method 8021 (NYSDEC STARS list compounds) and SVOCs using the USEPA Method 8270 (NYSDEC STARS list compounds).

3.5 Surveying Activities

The final lateral extent and depth of the excavation and test pits were surveyed (Figure 2). Additionally, the locations of subsurface structures (e.g., USTs, tank-like structures, and former building foundations) were surveyed by AK Associates, a New York State licensed surveyor (Figure 2), as the work proceeded.

3.6 Backfilling and Site Restoration Activities

Backfilling was initiated upon completion of the post-excavation sampling. Clean sand from an offsite source (see Appendix E of the Site B IRM Work Plan for the backfill analytical results) was placed in the excavation and compacted using vibratory equipment. Each load of sand was inspected for visual impacts (e.g., staining and odors), and screened in the field for VOCs using a PID. An approximate 1-ft thick layer of bluestone was placed on top of the clean fill material to meet the surrounding slab.

3.7 Equipment Decontamination

The equipment utilized during the IRM activities (e.g., excavator and holding tanks) were decontaminated at the completion of the excavation activities prior to leaving the Site. An

explosimeter and a photoionization detector (PID) were utilized for health and safety purposes and to confirm that decontamination procedures were successful.

The waste material generated from the decontamination activities (i.e., mostly sediment with a minor amount of water) was characterized for disposal options. The sediment was analyzed for VOCs using the TCLP (USEPA Method 8021), SVOCs using the TCLP (USEPA Method 8270), RCRA metals using the TCLP (USEPA Method 6000-7000 Series), VOCs using the USEPA Method 8021, SVOCs using the USEPA Method 8270, RCRA metals using the USEPA Method 6000-7000 Series, PCBs using the USEPA Method 8082, ignitability, reactivity, and corrosivity (see Section 4.1.3.2). The sediment determined to be non-hazardous was placed into a lined roll-off container, and was transported by Middlesex Materials Inc. to the Clean Earth of New Castle, Inc. facility in Delaware. The sediment determined to be a characteristic hazardous waste was placed into 55-gallon capacity drums, transported by Freehold Cartage, Inc., Freehold, New Jersey, and disposed at the LWD Inc. facility in Calvert City, Kentucky. The disposal documentation is provided in Appendix B.

3.8 Health and Safety Monitoring

Roux Associates conducted health and safety monitoring during all intrusive activities, which included both worker and community health and safety monitoring. All monitoring activities were conducted in accordance with:

- the NYSDEC Technical Administrative and Guidance Memorandum (TAGM) #4031 (Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites) (NYSDEC, 1989);
- the NYSDOH Community Air Monitoring Plan (CAMP) (NYSDOH, 1994);
- the Health and Safety Plan included as Appendix C of the Site B IRM Work Plan (Roux Associates, 2002a);
- the Community Health and Safety Plan (CHASP) included as Appendix D of the Site B IRM Work Plan (Roux Associates, 2002a); and
- Roux Associates' Standard Operating Procedures.

Additionally, the monitoring activities were conducted consistent with the New York City Department of Environmental Protection (NYCDEP) Noise Code (1998), where applicable.

Organic vapor (i.e., VOCs), oxygen levels, LEL, air particulate levels, and noise were monitored during the excavation activities. A brief description of each type of monitoring is presented below.

- Air monitoring for VOCs was conducted on a continuous basis during IRM excavation activities at three locations: upwind and downwind of the excavation and at the perimeter of the excavation. Air monitoring equipment was set up at each station (at approximately 4 ft to 5 ft above land surface within the breathing zone) and periodically checked by the Site Health and Safety Officer (SHSO), while the SHSO monitored the excavation's perimeter. A PID was used to monitor VOC levels. The maximum VOC concentration for each measurement period was recorded. Prior to monitoring excavation activities each day, background concentrations were measured and recorded. As an added safety measure, an application of a vapor suppressant (solution of Biosolve™ and water) was used during the IRM excavation activities for vapor suppression if action levels were approached or exceeded. Additionally, to assist the vapor suppression during bursts of vapors, clean fill was temporarily placed back over the excavated area until the vapors were suppressed.

- Air particulate monitoring was conducted on a continuous basis during IRM excavation activities at three locations: upwind and downwind of the excavation and at the perimeter of the excavation. The air particulate monitoring equipment was set up at each station (at approximately 4 ft to 5 ft above land surface within the breathing zone) and periodically checked by the SHSO, while the station designated for the excavation's perimeter was monitored by the SHSO. A Dataram 2000™ particulate monitor was used to record air particulate levels. As an added safety measure, the application of water was used during the IRM excavation activities for dust control if action levels were approached or exceeded.

- Oxygen and LEL monitoring was conducted inside of the USTs and other subsurface structures using a VRAE™ multi gas meter. If an exceedance occurred, an application of Biosolve™ and water were added to the UST to reduce or eliminate the vapors such that the UST could be cut opened for cleaning.

- Ambient noise levels were recorded using a Quest™ noise meter. Any exceedances of the action levels resulted in appropriate engineering control measurements to protect workers (e.g., hearing protection) and adjacent residential sites (e.g., stop work or repositioning of the equipment such that the noise levels were reduced).

Generally, if an action level was approached or exceeded for organic vapors or particulates, engineering controls (i.e., application of vapor suppressant and water and/or placing clean fill over the area of concern) was implemented to reduce the level of vapors or particulates to below the action levels in the HASP and CHASP. Further details of the health and safety monitoring are provided in Section 4.1.5.

3.10 Photographic Documentation of Construction Operations

The key activities performed during the IRM were photo-documented, and are provided in Appendix C.

4.0 IRM RESULTS, FINDINGS, AND CONCLUSIONS

The purpose of this section is to provide the IRM results, findings, and conclusions, which are discussed below.

4.1 Results

A summary of the excavation area quantities and UST structures removed is presented below.

4.1.1 Excavation and UST Structure Removal Activities

A summary of the excavation and UST structure removal activities is presented below.

4.1.1.1 Soil Excavation

The volume of soil excavated and disposed offsite was 4,735 tons. The soil was transported by Middlesex Material, Inc, Iselein, New Jersey, and disposed at the Clean Earth of New Castle, Inc. facility in New Castle, Delaware. The disposal documentation is provided in Appendix B.

The final surveyed lateral extent of the excavated areas is shown in Figure 2. The approximate area of the largest excavation was 9,600 square feet by 10 ft bls in depth. The approximate dimensions of the three test pits were:

- Test Pits 1 and 2: 12 ft in length by 12 ft in width by 10 ft in depth; and
- Test Pit 3: 15 ft in length by 9 ft in width by 10 ft in depth.

The anticipated termination depth of the excavation was 8 ft bls. This was the depth to the top of the clay/silt layer. Because the impacts were observed to be at the top of the clay/silt layer, a portion of the clay/silt layer was removed. However, further excavation indicated that the impacts were throughout the clay/silt layer, and therefore, the entire clay/silt layer (which was present throughout the entire excavation) was removed to the top of the underlying sand unit (and aquifer). Therefore, the vertical extent of the excavation was terminated at the groundwater interface, which was measured at approximately 10 ft bls.

4.1.1.2 Separate-Phase Product

Separate-phase product was observed on top of the groundwater in the southeastern portion of the excavation. The product (including groundwater) was removed by pumping, and was placed into a holding tank prior to offsite disposal.

4.1.1.3 UST/Structure Removal

As previously discussed in Section 3.3, nine USTs were identified and removed (Figure 2), and included the following:

- Two 550-gallon capacity USTs, located in the southeastern portion of the Site, were removed. The characterization of the sludge and liquids from these USTs indicated that the contents may have been gasoline. It also appears that one of the two USTs was the 550-gallon capacity UST noted on the 1935 Sanborn™ map.

- Four USTs (i.e., three 275-gallon capacity and one 420-gallon capacity), located in the northeast portion of the Site, were removed. The 275-gallon capacity USTs were previously cleaned out and their contents disposed offsite (see Section 2.0 and Appendix A for further details). The characterization of the liquids and sludge from these USTs indicated that the contents may have been waste oil. Pfizer found the 275-gallon capacity USTs after the demolition of the former Site building. The 420-gallon capacity UST was found empty and was removed.

- Three 550-gallon capacity USTs, located in the southwest portion of the excavation and west of the former basement, were removed. These USTs contained only water, which was removed and stored in the onsite holding tanks prior to offsite disposal. The former UST contents could not be determined because no residual contents were remaining in the USTs during their removal.

Please note that based on the characterization of the liquids, sludge or water identified in the USTs, the analytical results do not indicate the presence of chlorinated VOCs.

Additionally, two other subsurface structures were identified and removed. These two structures appeared to resemble tank-like structures. Each structure was approximately 4 ft in length by 2 ft in diameter, and was observed to contain openings at the top and along its body for piping. Petroleum-related impacted sludge and liquids were removed from each of the structures and disposed with the petroleum-related impacted soil. After removal of the sludge and liquids, the tank-like structures were cleaned. The locations of these structures are shown in Figure 2.

4.1.2 Groundwater Removal

Groundwater including perched groundwater was removed from the excavation and placed into the onsite holding tanks prior to characterization and offsite disposal. The volume of groundwater removed from the excavation was 18,449 gallons. The groundwater was pumped into holding trucks, transported by Terrace Transportation, Staten Island, New York and Freehold Cartage, Freehold, New Jersey, and disposed at the Clean Water of New York, Inc. facility in Staten Island, New York and the Dupont facility in Deepwaters, New Jersey. The disposal documentation is provided in Appendix B.

4.1.3 Post-Excavation and Waste Characterization Sampling

A summary of the post-excavation and waste characterization sampling is provided below.

4.1.3.1 Post-Excavation Sampling

The results of the post-excavation samples indicate that the majority of the bottom and sidewall samples contain VOCs and BNs that were detected at concentrations that exceed the NYSDEC RSCOs. The locations of the post-excavation samples are shown in Figure 4. The post-excavation sample analytical data is provided in Appendix D.

4.1.3.2 Waste Characterization Sampling

The waste characterization sampling performed during the IRM activities included the soil from land surface to approximately 4 ft bls, groundwater including perched groundwater contained in the holding tanks, sediment from the groundwater holding tanks, and sludge and liquids from two of the nine former USTs, as described below. The waste characterization sample analytical data is provided in Appendix E.

- The results of the soil from land surface to approximately 4 ft bls indicate that BNs were detected at concentrations that exceeded the NYSDEC RSCOs. The soil was comprised of historical fill material, and was determined to be nonhazardous.

- The results of the groundwater (including the perched groundwater) from three of the four holding tanks were considered non-hazardous, while the groundwater from one of the four holding tanks was considered a characteristic hazardous waste (i.e., based on its benzene level).

- The results of the holding tank sediment removed from the tanks where the groundwater was determined to be non-hazardous indicated that the sediment contained petroleum-related impacts and was non-hazardous. Additionally, the results of the holding tank

sediment removed from the tank where the groundwater was determined to be a characteristic hazardous waste indicated that the sediment is a characteristic hazardous waste (i.e., based on its benzene level).

- The results of the sludge and liquids from two of the nine former USTs indicate that these materials are considered a characteristic hazardous waste (i.e., based on their benzene and ignitability levels). These materials were transported by Freehold Cartage, and disposed at the LWD, Inc. facility in Calvert City, Kentucky. The disposal documentation is provided in Appendix B.

4.1.4 Backfilling and Site Restoration Activities

After completion of the excavation activities, clean sand was placed into the excavation and compacted with a 10-ton roller. Each load was inspected, and the results indicated that no visual impacts, odors, or PID readings were observed. The volume of backfill material used to fill the excavation was 5,500 yd^3. The backfill documentation indicating the individual load tickets is provided in Appendix F.

Site restoration was completed by placing approximately 1 ft of blue stone over the backfill material to meet the surrounding concrete slab. The blue stone documentation indicating the individual load tickets is provided in Appendix F.

4.1.5 Health and Safety Monitoring

The results of the organic vapor, air particulate, and noise monitoring for worker and community health and safety indicated that exceedances of vapor and particulate action levels did occur at the perimeter of the excavation. Please note that the air monitoring activities included being performed adjacent to the apartment building to verify that action levels would not be exceeded during the work activities. Additionally, the general wind direction recorded during the work activities indicated that the apartment building was up wind.

Based on action level exceedances, engineering controls were immediately implemented, which included the use of water mixed with a vapor suppressant (i.e., Biosolve™) for the organic vapors and air particulates. Additionally, clean soil was mixed with the impacted soil to eliminate potential odors. If the noise levels exceeded an action level, hearing protection was provided to the workers. No noise action levels were exceeded at the property boundary (i.e., for community monitoring). The engineering controls were successful in reducing or eliminating exceedances of action levels. The monitoring logs are provided in Appendix G.

4.2 Findings and Conclusions

A summary of the findings and conclusions is presented below.

- A total of 4,735 tons of fill material/soil have been excavated and disposed offsite. The approximate extent of the significant removal action was 11,200 square feet and 10 ft bls in depth.

- A total of 18,449 gallons of groundwater including perched groundwater have been removed from the excavation and disposed offsite.

- A total of nine USTs and two tank-like structures were identified, removed, and disposed offsite.

- A total of 103 post-excavation bottom and sidewall samples were collected for the laboratory analysis, and the results indicate that VOCs and BNs were detected at concentrations that exceed the NYSDEC RSCOs.

- A total 5,500 yd^3 of clean soil has been used to backfill the excavation.

- The source of the petroleum-related impacts appears to be the USTs and tank-like structures, which were related to the previous owners and operators of the Site prior to Pfizer's occupancy at Site B.

- The sources of the petroleum-related impacts (i.e., the USTs and tank-like structures) have been removed and disposed offsite. Additionally, the most grossly impacted soil has been removed and disposed offsite.

- The separate-phase product identified on top of the groundwater in the southeastern portion of the excavation was removed.

- The post-excavation sample results indicate that the majority of the petroleum-related soil impacts have been removed from land surface to the top of the water table (i.e., approximately 10 ft bls).

5.0 PHASE I AND II LIMITED SITE INVESTIGATIONS

The following section presents the Phase I and II LSI scope of work and results. The purpose of the LSIs was to develop additional data and to supplement the IRM findings, which was then used to develop a scope of work for the SSIWP to complete the Site characterization.

5.1 Phase I LSI

The following section presents the Phase I LSI scope of work and results. The purpose of the Phase I LSI was:

- to verify the presence or absence of additional USTs or other potentially petroleum-containing structures outside of the IRM area at the Site;
- to characterize the groundwater quality to determine if the previously identified petroleum-related soil impacts have impacted the groundwater at the Site;
- to estimate the groundwater flow direction at the Site; and
- to verify the presence or absence of separate-phase product at the Site.

The NYSDEC was verbally notified regarding the need to develop the additional data, the scope of work tasks, and was provided periodic updates during the progress of the work activities.

5.1.1 Phase I LSI Scope of Work

The Phase I LSI scope of work tasks included:

- Task 1: Geophysical Survey;
- Task 2: Test Pit Excavations;
- Task 3: Monitoring Well Installation;
- Task 4: Water-Level and Separate-Phase Product Thickness Measurements; and
- Task 5: Groundwater Sampling.

A description of each field task conducted is presented below.

5.1.1.1 Task 1: Geophysical Survey

A geophysical survey was performed throughout the portions of Site B that were not previously excavated during the IRM (Appendix H). The purpose of the geophysical survey was to

determine whether any additional subsurface structures (i.e., USTs and associated piping) are present at Site B. The geophysical survey included electromagnetics using an EM-61, a Fisher TW-6 Pipe and Cable Locator, and ground-penetrating radar. Enviroscan, Inc., Lancaster, Pennsylvania, performed the geophysical survey.

5.1.1.2 Task 2: Test Pit Excavations

A total of 19 test pits (Test Pit Nos. 4 through 22) were excavated to confirm the geophysical survey results and to determine whether there were any additional subsurface structures (i.e., USTs and associated piping) present at Site B. The locations of the 19 test pits were based on the geophysical survey anomalies identified (Appendix H). The locations of the test pits are shown in Figure 3.

The test pits were excavated using a backhoe. The test pit dimensions were approximately 10 ft in length by 8 ft in width by 8 ft in depth. The 8 ft test pit depth was determined to be sufficient based on the depth of other subsurface structures previously identified onsite. The soil was inspected for impacts (i.e., staining, odors, and separate-phase product), and screened in the field for VOCs using a PID. The lithology of the soil was described in the field notebook.

5.1.1.3 Task 3: Monitoring Well Installation

Seven monitoring wells (MW-1 through MW-7) were installed at the Site using either the hollow-stem auger (HSA) drilling method or a combination of the HSA and mud rotary drilling methods. The locations of the wells are shown in Figure 5.

Soil cuttings were inspected throughout the borehole, and the results were recorded in soil boring logs (Appendix I). At 2 ft depth intervals, the cuttings were inspected for impacts (e.g., odors, staining, and separate-phase product), and were screened in the field for VOCs using a PID.

Three of the seven monitoring wells (MW-1 through MW-3) were installed below the clay/silt layer. Therefore, a steel casing was set into the clay/silt layer (i.e., from land surface to an approximate depth of 10 ft bls) to prevent downward migration of perched groundwater into the wells. The well casings were installed using the HSA drilling method, and continued through the steel casings with mud rotary to the desired bottom depth of the well. The remaining wells

(MW-4 through MW-7) were installed using only the HSA drilling method in the locations of the Site where the clay/silt layer was removed during the IRM, and therefore, no steel casing was used.

The monitoring wells were constructed of 2-inch inside diameter (ID), schedule 40, flush joint internally-threaded, polyvinyl chloride (PVC) casing and screen. The well screens are 10 ft in length with a screen slot size of 0.01 inch (10 slot), and were installed to bridge the water table. The well screens extend up to 2 ft above the water table to accommodate seasonal and/or tidal water-level fluctuations. The screen annulus of each well was gravel packed up to approximately 2 ft above the top of the screen, unless field conditions necessitated a shorter gravel pack zone. The additional 2 ft of gravel pack is to account for any settlement that may occur during well development. A 2 ft thick bentonite pellet seal was placed on top of the gravel pack, unless field conditions necessitated a shorter seal. The remainder of the annulus was grouted to within 2 ft of land surface, and topped with a concrete cap. The concrete cap was sloped to divert precipitation away from the well. Each monitoring well was finished flush with land surface and fitted with an 8-inch diameter steel curb box. The well construction logs are provided in Appendix I.

The monitoring wells were developed by a submersible pump and by surging with subsequent pumping. Development continued until each monitoring well produced sediment-clear water to the extent possible to establish an adequate hydraulic connection between the well screen and the aquifer. Turbidity measurements were made during the development activities, and an attempt was made to obtain turbidity measurements under 50 Nephelometer Turbidity Units (NTUs). If the 50 NTUs were not achieved, the well was considered developed after the removal of 10 well casing volumes.

The top of each well casing was surveyed for its vertical coordinates using the Borough of Brooklyn Datum, and horizontally using a relative datum coordinate system by a New York State-licensed surveyor.

All dedicated sampling equipment was decontaminated using a non-phosphate soap with a potable water rinse. The drill rig and associated drilling equipment were decontaminated by

steam cleaning. The decontamination water was contained in 55-gallon capacity drums, characterized, and disposed offsite accordingly. Additionally, the well development water was contained in the drums with the decontamination water. Soil cuttings that were generated from the monitoring well installation were also placed into 55-gallon capacity drums, characterized, and disposed offsite accordingly.

The drummed soil cuttings and water were characterized for disposal options (see Section 5.1.2.6). The soil cuttings were analyzed for VOCs using the TCLP (USEPA Method 8260), SVOCs using the TCLP (USEPA Method 8270), RCRA metals using the TCLP (USEPA Method 6000-7000 Series), PCBs using the USEPA Method 8082, ignitability, reactivity, and corrosivity. The water was analyzed for VOCs using the USEPA Method 8260, SVOCs using the USEPA Method 8270, RCRA metals using the USEPA Method 6000-7000 Series, PCBs using the USEPA Method 8082, ignitability, reactivity, and corrosivity. The disposal documentation is provided in Appendix B.

5.1.1.4 Task 4: Water-Level and Separate-Phase PRODUCT Thickness Measurements

One round of water-level and separate-phase product thickness measurements were performed in the seven new wells using an electronic measuring scope.

5.1.1.5 Task 5: Groundwater Sampling

Groundwater samples were collected for laboratory analysis from the seven monitoring wells at the Site. Prior to sampling, each well was purged into 55-gallon capacity drums using a low-flow pump. Three to five times the volume of standing water in each monitoring well was purged (evacuated) prior to sample collection. The purge water was contained with the decontamination water, characterized, and disposed offsite accordingly (see Sections 5.1.1.3 and 5.1.2.6).

Groundwater samples were collected using precleaned (decontaminated), bottom-filling bailers and new nonabsorbent cord. Groundwater samples were poured into the appropriate laboratory-supplied containers and covered with Teflon™ septa and caps. The sample for VOCs was decanted with minimum agitation and the vials were filled to exclude headspace.

The groundwater was analyzed for VOCs using the USEPA Method 8260, SVOCs using the USEPA Method 8270, and RCRA metals (filtered and unfiltered) using the USEPA Method 6000-7000 Series. Quality Assurance/Quality Control (QA/QC) samples (i.e., replicate and trip blank) were collected for laboratory analysis of the same parameters as the groundwater samples.

5.1.2 Phase I LSI Results

The purpose of this section is to provide the results of the Phase I LSI, including a discussion of the media characterization (i.e., groundwater) and a comparison of the impacts identified relative to the appropriate regulatory Standards, Criteria, and Guidances (SCGs).

SCGs used to evaluate the groundwater data are the NYSDEC Ambient Water-Quality Standards and Guidance Values (AWQSGVs). The AWQSGVs provide ambient concentrations developed to protect New York State groundwater and refer to the best-classified usage. The AWQSGVs are provided in the groundwater analytical data tables.

5.1.2.1 Geophysical Survey

The results of the geophysical survey indicate that 19 anomalies (i.e., potential metallic structures) were identified on the surface and in the subsurface at the Site. The geophysical survey report is presented in Appendix H.

5.1.2.2 Test Pit Excavations

A total of 19 test pits were excavated (i.e., one test pit at each geophysical anomaly identified) to verify whether any USTs or other metallic structures are present in the subsurface (Figure 3). No USTs or other metallic structures were identified in any of the test pits excavated at the Site. However, metal debris (i.e., pieces of scrap metal) was identified within the fill material in each of the test pits.

5.1.2.3 Site Hydrogeology

The following sections present a brief discussion of the subsurface geology, depth to groundwater, and the estimated groundwater water flow direction at the Site.

Site Geology

Soil cuttings were characterized from monitoring well pilot boreholes to determine the Site geology (i.e., lithology) during the Phase I LSI. The cuttings were described and recorded in the field notebook. The field descriptions were later transferred to soil boring logs, which are included in Appendix I.

Three distinct geologic strata were encountered from land surface to a depth of approximately 24 ft bls at the Site, and include:

- a brown sand stratum (i.e., fill material). This stratum was identified throughout the Site with an approximate thickness of 8 ft;
- a green clay/silt stratum that underlies the fill material with an approximate thickness of 2 ft. This stratum was identified throughout the Site except in the areas excavated during the IRM; and
- a brown fine to medium sand stratum with minor amounts of silt and gravel that underlies the clay layer (where present). This stratum was identified throughout the Site, however, its thickness was not determined during the Phase I LSI.

The fill material is characterized as predominately fine to coarse sand, some concrete, brick, and slag fragments, trace to some gravel, and trace clay.

The lithology determined during the LSI is consistent with the lithology determined during the previous investigations at the Site.

Depth to Groundwater and Groundwater Flow

On February 10, 2003, one synoptic round of water-level measurements was made in the Site monitoring wells (Table 2). Groundwater occurs immediately above the clay/silt strata at a depth ranging from 7.75 ft to 9.87 ft bls as measured in monitoring wells at the Site (Table 2).

The groundwater elevation data were used to construct a water-level elevation contour map of the water table. The estimated groundwater flow direction is northeast in the eastern portion of the Site and west-northwest in the western portion of the Site from Gerry Street toward Wallabout Street (Figure 6). The estimated northerly direction of the groundwater flow is consistent with the regional groundwater flow direction (USGS, 1979).

5.1.2.4 Separate-Phase Product

No measurable separate-phase product was present in any of the Site wells.

5.1.2.5 Groundwater Quality

This section presents the laboratory analytical results of the groundwater samples collected in February 2003 from Monitoring Wells MW-1 through MW-7. The discussion of the analytical results is focused on the comparison between the concentrations of the detected constituents and the appropriate SCGs (i.e., whether an exceedance has occurred). The groundwater results were evaluated to characterize the groundwater quality and to determine if any of the petroleum-related soil impacts have impacted groundwater quality.

The groundwater quality results are presented by analyte.

VOCs

Fifteen VOCs were detected in the groundwater at the Site. Ten of the 15 VOCs were detected in groundwater at concentrations that exceed the NYSDEC AWQSGVs (Table 3). The most predominant VOCs detected in groundwater are xylene, 1,2-dichloroethene (1,2-DCE), and vinyl chloride (VC). The highest VOC concentrations detected in groundwater that exceed the NYSDEC AWQSGVs are located at MW-3 (i.e., northeast portion of the Site), MW-4 (i.e., southeast portion of the Site), and MW-5 (located immediately north of the former basement).

The lateral extent of the VOCs detected at concentrations that exceed the NYSDEC AWQSGVs can be shown using the benzene, toluene, ethylbenzene, and xylenes (BTEX) and chlorinated VOC (CVOC) analytical results. Specifically, the CVOCs include tetrachloroethene (PCE) and its daughter products (i.e., trichloroethene [TCE], 1,2-DCE, and VC). The lateral extent of the BTEX appears to be limited to the eastern portion of the Site, while the extent of the CVOCs appears to be throughout the majority of the Site. The BTEX and CVOC concentrations that exceed the NYSDEC AWQSGVs were detected in the top 10 ft of groundwater (i.e., to the approximate depth to the deepest well).

SVOCs

Twelve SVOCs were detected in the groundwater at the Site. Three of the 12 SVOCs (i.e., benzo(a)pyrene, bis(2-ethylhexyl)phthalate, and naphthalene) were detected in groundwater at concentrations that exceed the NYSDEC AWQSGVs (Table 4).

Benzo(a)pyrene was detected at a very low concentration in the sample, but it was not detected in its duplicate sample. Therefore, it is likely that the detection of benzo(a)pyrene is a result of suspended sediment, and not representative of groundwater quality. The bis(2-ethylhexyl)phthalate was detected at a very low concentration and is a typical laboratory artifact. Therefore, the detection of bis(2-ethylhexyl)phthalate is not representative of groundwater quality.

Naphthalene was detected in groundwater at concentrations that exceed the NYSDEC AWQSGVs at Monitoring Wells MW-4, MW-5, and MW-6.

Metals

Five of the eight RCRA metals (arsenic, barium, lead, mercury, and chromium) were detected in unfiltered groundwater at the Site. Three of the eight metals (arsenic, lead, and chromium) were detected in unfiltered groundwater at concentrations that exceed the NYSDEC AWQSGVs (Table 5). However, none of these three metals were detected in the filtered groundwater at concentrations that exceed the NYSDEC AWQSGVs. Additionally, the majority of the filtered samples did not have any metals detected. Therefore, the three metals detected in the unfiltered

groundwater samples at concentrations that exceed the NYSDEC AWQSGVs are likely due to suspended sediment, and are not representative of groundwater quality.

5.1.2.6 Waste Characterization

The waste characterization results of the soil cuttings and water (i.e., decontamination and purge water) were non-hazardous, petroleum-impacted (Appendix E). The drums were transported by Freehold Cartage of Freehold, New Jersey to the Chemical Waste Management facility in Model City, New York. The disposal documentation is provided in Appendix B.

5.1.3 Phase I LSI Findings and Conclusions

A summary of the Phase I LSI findings and conclusions is presented below.

- Nineteen geophysical survey anomalies were identified on the surface and in the subsurface throughout the portions of Site B outside of the IRM area.

- Nineteen test pits were completed in the areas of the geophysical survey anomalies. The results of the test pits indicate that no USTs or other metallic structures were identified in any of the test pits. Furthermore, the result verifies that there are likely no additional sources of the soil or groundwater impacts remaining in the subsurface at Site B.

- The estimated groundwater flow direction is northeast in the eastern portion of the Site and west-northwest in the western portion of the Site from Gerry Street toward Wallabout Street.

- No measurable separate-phase product was present in any of the Site wells.

- The groundwater quality results indicate that the soil impacts have migrated into the groundwater. Fifteen VOCs were detected in the groundwater at the Site. Ten of the 15 VOCs were detected in groundwater at concentrations that exceed the NYSDEC AWQSGVs. The most predominate VOCs detected in groundwater are xylene, 1,2-DCE, and VC. The highest concentrations detected in groundwater that exceed the NYSDEC AWQSGVs are located at MW-3, MW-4, and MW-5.
  - The likely source of the BTEX appears to be the former USTs, and its lateral extent appears to be limited to the eastern portion of the Site.
  - Based on the analytical results, groundwater throughout the majority of the Site is impacted with CVOCs. There is no available historical information that indicates that CVOCs were used at the Site (see Section 2.0). The source of the CVOCs may be from an offsite property (i.e., an upgradient dry cleaner shop).
  - The BTEX and CVOC concentrations that exceed the NYSDEC AWQSGVs were detected in the top 10 ft of groundwater (i.e., to the approximate depth of the deepest well).

- Naphthalene was detected in groundwater at concentrations that exceed the NYSDEC AWQSGVs at Monitoring Wells MW-4, MW-5, and MW-6. The source of the naphthalene is likely from the former USTs at the Site.

- The metals arsenic, lead, and chromium were detected in unfiltered groundwater at concentrations that exceed the NYSDEC AWQSGVs. However, none of these three metals was detected in filtered groundwater at concentrations that exceed the NYSDEC AWQSGVs. Therefore, the three metals detected in the unfiltered groundwater samples at concentrations that exceed the NYSDEC AWQSGVs are likely due to suspended sediment, and are not representative of groundwater quality.

- Based on the groundwater quality results, additional groundwater characterization is warranted.

5.2 Phase II LSI

The following section presents the Phase II LSI scope of work and results. The purpose of the Phase II LSI was:

- to develop offsite (i.e., upgradient only) groundwater data to determine if an upgradient source of CVOCs was migrating onto the Site;

- to confirm the initial Site groundwater quality data; and

- to determine the onsite vertical extent of VOCs in groundwater.

The NYSDEC was verbally notified regarding the need to develop the additional data, the scope of work tasks, and was provided periodic updates during the progress of the work activities.

5.2.1 Phase II LSI Scope of Work

The Phase II LSI scope of work tasks included:

- Task 1: Geoprobe™ Groundwater Sampling;

- Task 2: Confirmation Groundwater Sampling Round; and

- Task 3: Groundwater Quality Vertical Profiling.

A description of each field task conducted is presented below.

5.2.1.1 Task 1: Geoprobe™ Groundwater Sampling

A total of six offsite borings (GW-1 through GW-6) and two onsite soil borings (GW-7 and GW-8) were advanced to the top 2 ft of groundwater, which was encountered at approximately

8 ft to 10 ft bls. A groundwater sample was collected from each boring using the Geoprobe™ method. The locations of the borings are shown in Figures 5 or 7, and were as follows:

- GW-1 through GW-3 were located upgradient of the Site along Bartlett Street;
- GW-4 was located upgradient near the intersection of Harrison Avenue and Gerry Street;
- GW-5 and GW-6 were located upgradient along the south side of Gerry Street; and
- GW-7 and GW-8 were located in the north-central and north-east portions of Site B.

Prior to sampling, approximately three casing volumes (i.e., from the Geoprobe™ tube) were purged. Each sample was analyzed for CVOCs using the USEPA Method 8260.

5.2.1.2 Task 2: Confirmation Groundwater Sampling Round

Confirmation groundwater samples were collected for laboratory analysis from the seven monitoring wells at the Site. Additionally, water-level and separate-phase product thickness measurements were made in the seven onsite wells. The water-level and separate-phase product thickness measurements, purging, and sampling procedures conducted were the same as described in Section 5.1.1.4 and 5.1.1.5.

The groundwater samples were analyzed for VOCs using the USEPA Method 8260.

5.2.1.3 Task 3: Groundwater Quality Vertical Profiling

An attempt to determine the vertical extent of the groundwater impacts beneath the Site, vertical profiling was conducted using a discrete sampling method at two onsite locations (VP-1 and VP-2). The locations of these sampling points are shown in Figure 5.

This method included drilling to the desired sampling depth using a hollow-stem auger rig, and installing a temporary well point inside of the augers. The well point screen was installed approximately 2 ft below the bottom of the borehole. The well point was purged prior to Roux Associates collecting a groundwater sample. After the sampling was completed, the well point was removed and drilling continued to the next sampling interval.

A groundwater sample was collected at 10 ft intervals from the water table (i.e., approximately 10 ft bls) to approximately 50 ft bls using a disposable bailer. The groundwater samples were analyzed for VOCs using the USEPA Method 8260.

All dedicated sampling equipment was decontaminated using a non-phosphate soap with a potable water rinse. The drill rig and associated drilling equipment was decontaminated by steam cleaning. The decontamination water was contained in 55-gallon capacity drums. Additionally, the purge water was contained in the drums with the decontamination water. Soil cuttings that are generated from the borings were also be placed into 55-gallon capacity drums.

The drummed soil cuttings and water (including water from Tasks 1 and 2) were characterized for disposal options (see Section 5.2.2.4). The soil cuttings were analyzed for VOCs using the TCLP (USEPA Method 8260), SVOCs using the TCLP (USEPA Method 8270), RCRA metals using the TCLP (USEPA Method 6000-7000 Series), PCBs using the USEPA Method 8082, ignitability, reactivity, and corrosivity. The water was analyzed for VOCs using the USEPA Method 8260, SVOCs using the USEPA Method 8270, RCRA metals using the USEPA Method 6000-7000 Series, PCBs using the USEPA Method 8082, ignitability, reactivity, and corrosivity. The disposal documentation is provided in Appendix B.

5.2.2 Phase II LSI Results

The purpose of this section is to provide the results of the Phase II LSI, including:

- a discussion of the media characterization (i.e., groundwater);
- a comparison of the impacts identified relative to the appropriate regulatory SCGs; and
- a comparison of the impacts identified to the previous groundwater results (i.e., the Phase I LSI groundwater results).

SCGs used to evaluate the groundwater data are the same as described in Section 5.1.2.

5.2.2.1 Depth to Groundwater and Groundwater Flow

On April 16, 2003, one synoptic round of water-level measurements was made in the Site monitoring wells (Table 2). Groundwater occurs immediately above the clay/silt strata at a depth ranging from 6.52 ft to 8.52 ft bls as measured in monitoring wells at the Site (Table 2).

The groundwater elevation data were used to construct a water-level elevation contour map of the water table. The estimated groundwater flow direction is northeast in the eastern portion of the Site and west-northwest in the western portion of the Site from Gerry Street toward Wallabout Street (Figure 8). This estimated flow direction is consistent with the estimated flow direction determined in February 2003 (see Figure 6).

5.2.2.2 Separate-Phase Product

No measurable separate-phase product was present in any of the Site wells, which is consistent with the February 2003 results.

5.2.2.3 Groundwater Quality

This section presents the laboratory analytical results of the groundwater samples collected in April 2003. The discussion of the analytical results is focused on the comparison between concentrations of the detected constituents and the appropriate SCGs (i.e., whether an exceedance occurred) and the previous groundwater results (i.e., the Phase I LSI groundwater results).

A description of the groundwater quality is presented below.

Offsite Geoprobe™ Groundwater Sampling

CVOCs were not detected or detected below the NYSDEC AWQSGVs in the offsite and upgradient samples, except at GW-5 (Table 3). CVOCs were detected at GW-5, located on the south side of Gerry Street (upgradient and offsite; see Figure 7), at concentrations that exceed the NYSDEC AWQSGVs.

Confirmation Groundwater Sampling Round

VOCs (i.e., CVOCs and BTEX) were detected in groundwater at concentrations that are similar to the concentrations detected during the initial sampling round, except at Monitoring Well MW-5. At Monitoring Well MW-5 (see Figure 5), the levels of BTEX increased by one order of magnitude, while the levels of CVOCs decreased by one order of magnitude. An additional groundwater sample was collected (May 5, 2003) from Monitoring Well MW-5 to verify the confirmation groundwater results. The results of this additional sample verified the confirmation

groundwater results for Monitoring Well MW-5 (Table 3). The wide variation in results between the February and April sampling rounds could be associated with the change in fill materials at the water table from IRM backfilling activities.

The lateral extent of the VOCs detected during the initial and confirmation rounds is similar. The extent of the CVOCs and BTEX are shown in Figures 9 and 10, respectively, based on data from the confirmation round. The CVOCs detected in groundwater appear to be located throughout the majority of the Site, while its highest concentrations were detected at Monitoring Well MW-2 in the northwestern portion of the Site (Figure 9). The BTEX detected in groundwater is present on the eastern portion of the Site, while its highest concentrations were detected at Monitoring Well MW-5 (Figure 10).

Groundwater Quality Vertical Profiling

At Groundwater Sampling Points VP-1 and VP-2, VOCs (i.e., BTEX and CVOCs) were detected at concentrations that exceed that NYSDEC AWQSGVs to a depth of 40 ft below the water table (i.e., approximately 50 ft bls; Table 3). The concentrations appear to increase to a depth of 30 ft bls and then decrease to a depth of 50 ft bls (Table 3).

5.2.2.4 Waste Characterization

The waste characterization results of the soil cuttings and water (i.e., decontamination and purge water) were non-hazardous, petroleum-impacted (Appendix E). The drums were transported by Freehold Cartage of Freehold, New Jersey to the Chemical Waste Management facility in Model City, New York. The disposal documentation is presented in Appendix B.

5.2.3 Phase II LSI Findings and Conclusions

A summary of the Phase II LSI findings and conclusions is presented below.

- The estimated groundwater flow direction is northeast in the eastern portion of the Site and west-northwest in the western portion of the Site from Gerry Street toward Wallabout Street, which is consistent with the February 2003 measurement round.
- No measurable separate-phase product was present in any of the Site wells, which is consistent with the February 2003 measurement round.
- VOCs (i.e., CVOCs and BTEX) were detected in groundwater at concentrations that exceed the NYSDEC AWQSGVs. The level of concentrations detected during the initial

sampling round was generally similar with the confirmation round concentrations except at Monitoring Well MW-5. At Monitoring Well MW-5, the levels of BTEX increased by one order of magnitude, while the levels of CVOCs decreased by one order of magnitude.

- Additionally, the lateral extent of the VOCs detected during the confirmation round and the initial round are similar. The CVOCs detected in groundwater appear to be located throughout the majority of the Site, while its highest concentrations were detected at MW-2 in the northwestern portion of the Site. The BTEX detected in groundwater appears to be located on the eastern portion of the Site, while its highest concentrations were detected at Monitoring Well MW-5.

- VOCs (i.e., BTEX and CVOCs) were detected in onsite groundwater at concentrations that exceed that NYSDEC AWQSGVs to a depth of 40 ft below the water table (i.e., approximately 50 ft bls). The concentrations appear to increase to a depth of 30 ft bls and then decrease to a depth of 50 ft bls.

- The CVOCs were not detected or detected below the NYSDEC AWQSGVs in the offsite and upgradient samples, except at GW-5 (located on the south side of Gerry Street). Although one location did have CVOCs detected at concentrations that exceeded the NYSDEC AWQSGVs, the source(s) of the CVOCs are likely from the past operations at Site B prior to the occupancy of Pfizer. Please note there is no available historical information regarding the use of CVOCs at Site B.

6.0 SUPPLEMETAL SITE INVESTIGATION WORK PLAN

This SSIWP has been designed to develop additional Site-specific data to supplement the previous investigation results, to address the NYSDEC concerns presented in their November 2000 comment letter that were not addressed during the previous investigations, and to complete the Site characterization. The SSIWP objectives are as follows:

- to complete the soil characterization in the western portion of Site B;
- to develop soil quality data to perform a qualitative risk assessment;
- to characterize soil vapor near the offsite apartment building that abuts the north-central portion of the Site and in the southwestern corner of the Site in the direction of a nearby school;
- to complete a third round of water-level and separate-phase product thickness measurements and groundwater sampling; and
- to perform a Qualitative Risk Assessment (QRA) in accordance with the NYSDOH guidelines for any remaining media impacts at the Site.

The SSIWP has been designed to be flexible and dynamic to respond to field conditions as they are encountered. Any amendments to the SSIWP will be communicated with the NYSDEC and recorded in a field change memorandum. All field changes/modifications will be provided as an attachment to the investigation report.

Procedures for performance of the field tasks and documenting field activities are provided in Appendix J. All field tasks will be performed in accordance with the Site-specific and community health and safety plans, which were previously submitted to the NYSDEC. Additionally, the field tasks will be performed consistent with the Sampling and Analysis Plan and the Quality Assurance Project Plan presented in the April 5, 2000 Work Plan previously submitted to the NYSDEC.

6.1 Scope of Work

To achieve the objectives, the following scope of work tasks will be performed.

- Task 1: Soil Boring and Sampling;
- Task 2: Soil Vapor Sampling;

- Task 3: Water-Level and Separate-Phase Product Thickness Measurements and Groundwater Sampling;
- Task 4: Qualitative Risk Assessment; and
- Task 5: Data Evaluation and Report Preparation.

A description of each scope of work task is presented below.

6.1.1 Task 1: Soil Boring and Sampling

A total of six soil borings (SBB-07 and SBB-08 and SBB-25 through SBB-28) will be sampled continuously from land surface to groundwater (i.e., approximately 10 ft bls) using the Geoprobe™ method. The purpose of these borings is to complete the soil quality characterization in the western portion of Site B. The location of each soil boring is shown in Figure 10.

To perform the Geoprobe™ method, truck-mounted Geoprobe™ equipment will be positioned over the selected boring location, and a 2-ft or 4-ft long drive-point sampler containing a disposable acetate liner will be attached to the steel rods and driven to the desired sampling depth. The drive-point sampler will remain closed while it is being driven to the sampling depth. The sampler will be opened by releasing a stop pin from the surface, and the sampler will be driven 2 ft or 4 ft into the material to be sampled (releasing the stop pin allows a piston to retract inside of the sampling tube while it is displaced by the soil core). The soil core contained within the disposable acetate liner will be retrieved by retracting the steel rods and the drive-point sampler. The disposable acetate liner, with the intact soil sample, will then be removed from the drive-point sampler.

Each sample will be inspected for impacts (e.g., odors, staining, and separate-phase product). A portion of each sample will be placed in a Ziploc™ bag and screened in the field for VOCs using a PID. The lithology of each sample will be described, and recorded in the field notebook.

The sampling rationale, sample interval(s) for laboratory analysis, parameters for analysis, and analytical method(s) are presented in Table 6.

After the completion of each soil boring, the borings will be backfilled with a bentonite seal (6-inch minimum thickness), and a minimum 6-inch layer of clean sand placed above the seal to the surface.

All dedicated sampling equipment will be decontaminated using a non-phosphate soap with a potable water rinse. The decontamination water will be contained in 55-gallon capacity drums, characterized, and disposed offsite accordingly. Disposable sampling equipment and soil cuttings generated from each soil boring will also be placed in 55-gallon capacity drums, characterized, and disposed offsite accordingly.

The location of each soil boring will be surveyed for its horizontal coordinates by a New York State-licensed surveyor.

6.1.2 Task 2: Soil Vapor Sampling

A total of four soil vapor samples (SV-1 through SV-4) will be collected for laboratory analysis. The purpose of the soil vapor sampling is to gather data to support an evaluation of risks associated with residual Site impacts and their potential to impact the adjacent offsite apartment building and nearby school.

Two of the four samples (SV-1 and SV-2) will be located in the north-central portion of the Site near the offsite apartment building, while the other two samples (SV-3 and SV-4) will be located in the southwestern corner of the Site, in the direction of the nearby school (Figure 11).

As requested by the NYSDOH, two discrete samples will be collected for analysis at each sampling location; one sample at 3 ft bls; and the second sample at 6 ft bls yielding a total of 8 soil gas samples. In addition, one field blank (consisting of zero gas) will be collected for laboratory analysis.

The samples will be collected using the Geoprobe™ method. A 1.5-inch diameter discrete sampler will be advanced to the required sampling depth. Polyethylene sample tubing will be placed through the rods and into the discrete sampler. The top of the sampler will be capped to prevent influx of ambient air while sampling. Prior to collecting the sample for analysis, each

dedicated sample tube will be purged to ensure that a representative sample is collected. A low flow air-sampling pump will be used to extract the soil gas at each discrete sampling interval at a rate of approximately 100 milliliters per minute. The sample will then be collected through the pump exhaust vent directly into a one-liter Tedlar® bag.

The soil gas samples will be submitted to Severn Trent Laboratories, Inc. and immediately analyzed for VOCs using the USEPA Method TO14A.

6.1.3 Task 3: Water-Level and Separate-Phase Product Thickness Measurements and Groundwater Sampling

One round of water-level and separate-phase product thickness measurements will be performed in the existing wells (Monitoring Wells MW-1 through MW-7) using an electronic measuring scope. The water levels will be used to estimate the direction of groundwater flow at the Site.

The groundwater samples will be collected from Monitoring Wells MW-1 through MW-7 (Figure 5). Prior to sampling, each well will be purged into 55-gallon drums using a low-flow pump. Three to five times the volume of standing water in each monitoring well will be purged (evacuated) prior to sample collection. Removing all stagnant water from the well will ensure the collection of a representative sample from the aquifer. Purge water will be contained, characterized, and disposed offsite accordingly.

Groundwater samples will be collected using precleaned (decontaminated), bottom-filling bailers and new nonabsorbent cord. Bailers will either be discarded (if disposable type) or decontaminated after sampling each monitoring well, and new rope will be used for each sampling event.

Groundwater samples will be poured into appropriate laboratory-supplied containers and covered with Teflon™ septa and caps. The sample for VOCs will be decanted with minimum agitation and the vials will be filled to exclude headspace.

The groundwater samples will be analyzed for VOCs using the USEPA Method 8260. QA/QC samples (i.e., replicate and trip blank) will be collected for laboratory analysis of the same parameters as the groundwater samples.

6.1.4 Task 4: Qualitative Risk Assessment

A QRA will be performed on the impacted media (e.g., soil) remaining at the Site. The purpose of the QRA is to demonstrate that the impacted media remaining at the Site will not pose a risk to human health based on the current and future intended use of Site B. The QRA will be performed in accordance with the requirements of the NYSDOH Qualitative Human Health Exposure Assessment (Appendix K).

To assist in performing the QRA, additional soil quality data needs to be developed. Therefore, a total of 11 soil borings (i.e., SBB-01 through SBB-03, SBB-07, SBB-08, and SBB-29 through SBB-34) will be sampled from the depth intervals of 0 to 2 inches and 2 inches to 5 ft bls. The locations of the soil borings are presented in Figure 10.

The sample collection and field inspection procedures are consistent with those specified in Section 6.1.1. The sampling rationale, sample interval(s) for laboratory analysis, parameters for analysis, and analytical method(s) are presented in Table 6.

6.1.5 Task 5: Data Evaluation and Report Preparation.

After the completion of Tasks 1 through 4, the data generated will be evaluated and a summary report will be prepared and submitted to the NYSDEC. This report will include a summary of the field methods performed, soil, soil vapor, and groundwater quality results, water-level and separate-phase product thickness measurements, a QRA, findings, and conclusions.

6.1.6 Schedule

The field work can begin within 10 days of the NYSDEC's approval of the SSIWP. Tasks 1 and 2 are anticipated to take two weeks to complete. The laboratory turnaround time schedule will be three weeks from the laboratories receipt of the last sample batch. Tasks 4 and 5 are anticipated to take 4 weeks from the receipt of the analytical results.

7.0 ENGINEER'S CERTIFICATION

I certify that the IRM was implemented and that all construction activities were completed substantially in accordance with the Interim Remedial Measure Work Plan by persons under my direct supervision.

Charles J. McGuckin, P.E.
Remedial Engineering, P.C.

Respectfully submitted,

ROUX ASSOCIATES, INC.

Scott J. Glash, C.P.G.
Senior Hydrogeologist
Project Manager

8.0 REFERENCES

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United States Geological Survey. 1979. Brooklyn, New York 7.5 Minute Topographic Quadrangle

Table 1. Summary of Previous and Current Site B Work Activities
Site B, Pfizer Inc, Brooklyn, New York

Date	Activity	Completed/Ongoing
1996	Environmental Site Assessment	Completed; submitted to the NYSDEC in May 1996
1997	Supplemental Site Investigation	Completed; submitted to the NYSDEC in July 1997
1997	Delineation Soil Boring Program	Completed; submitted to the NYSDEC in September 1997
1997	NYSDEC verbally notifies Pfizer that a VCA for Petroleum Remediation can move forward	VCA Negotiations between the NYSDEC and Pfizer begin
2000	Submittal of First Voluntary Cleanup Program Application	Submitted to the NYSDEC on February 17, 2000
2000	Site B Investigation and Remediation Work Plan	Completed; submitted to the NYSDEC in April 2000
2000	NYSDEC Work Plan Comment Letter	Received in November 2000
2000	Response to NYSDEC Comments • Additional investigation activities requested: – Soil Boring and Sampling in western portion of Site – Geophysical Survey – Test Pits – Soil Vapor Sampling – Risk Assessment	Response submitted to the NYSDEC in December 2000
2002	Meeting with the NYSDEC and NYSDOH regarding Additional Investigation Activities • Additional investigation requested: – Groundwater Characterization • Agreed to perform IRM to remove impacted soil	Meeting held on July 10, 2002

Table 1. Summary of Previous and Current Site B Work Activities
Site B, Pfizer Inc, Brooklyn, New York

Date	Activity	Completed/Ongoing
2002	Submittal of Site B Interim Remedial Measure Work Plan	Submitted to the NYSDEC on August 19, 2002. No comments received regarding the NYSDEC and the NYSDOH's review.
2003	IRM • Removal of impacted soil, separate-phase product, groundwater, USTs, and tank-like structures	Completed in December 2003
2003	Phase I Limited Site Investigation • Completion of: – Geophysical Survey – Test Pits – Initial Groundwater Characterization - Onsite	Completed in February 2003
2003	Submittal of Second Voluntary Cleanup Program Application	Submitted to the NYSDEC on February 20, 2003; Approval Pending
2003	Phase II Limited Site Investigation • Completion of: – Offsite (i.e., upgradient) Groundwater Characterization – Confirmatory Groundwater Characterization - Onsite – Vertical Delineation of Groundwater Impacts - Onsite	Completed in April 2003

Table 1. Summary of Previous and Current Site B Work Activities
Site B, Pfizer Inc, Brooklyn, New York

Date	Activity	Completed/Ongoing
2003	IRM and LSI Results Report Supplemental Site Investigation Work Plan • Investigation Activities Requested to be performed to complete site characterization - Soil Boring and Sampling in western portion of Site B - Soil Vapor Sampling - Risk Assessment	Submitted to the NYSDEC in May 2003

Notes:

NYSDEC = New York State Department of Environmental Conservation
NYSDOH = New York State Department of Health
IRM = Interim Remedial Measure
VCA = Voluntary Cleanup Agreement
VCP = Voluntary Cleanup Program
USTs = Underground Storage Tanks

Table 6. Summary of Soil Boring Rationale, Sample Interval(s) for Laboratory Analysis, Parameters for Analysis, and Analytical Methods
Site B, Pfizer Inc, Brooklyn, New York

Soil Boring Designations	Sampling Rationale	Sample Interval(s) for Laboratory Analysis	Parameters for Analysis and Analytical Methods
SBB-07 and SBB-08	To complete the delineation of the western portion of Site B	Most impacted	VOCs using the USEPA Method 8260 and SVOCs using the USEPA Method 8270
SBB-25 through SBB-28	To complete the delineation on the western portion of Site B	Most impacted	VOCs using the USEPA Method 8260, SVOCs using the USEPA Method 8270, and TAL metals using the USEPA Method 6000-7000
SBB-01 through SBB-03 SBB-07 and SBB-08 SBB-29 through SBB-34	To assist in the risk assessment evaluation	0 – 2 inches bls and 2 inches to 5 ft bls	VOCs using the USEPA Method 8260, SVOCs using the USEPA Method 8270, and TAL metals using the USEPA Method 6000-7000

Notes:

ft bls = Feet Below Land Surface
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds
USEPA = United States Environmental Protection Agency
TAL = Target Analyte List

Note:

-- Soil Samples from SBB-01, SBB-02, and SBB-03 were previously analyzed for VOCs, SVOCs and TAL metals (i.e., most impacted interval)

-- Soil Samples from SBB-07 and SBB-08 were previously analyzed for TAL metals (i.e., most impacted interval)

APPENDIX A

Summary of Previous Investigations

APPENDIX B

Disposal Documentation

(See CD-ROM)

APPENDIX C

Photo-Documentation of IRM Activities

APPENDIX D

Post-Excavation Soil Sample Analytical Results

(See CD-ROM)

APPENDIX E

Waste Characterization Analytical Results

(See CD-ROM)

APPENDIX F

Backfill Documentation

(See CD-ROM)

APPENDIX G

Health and Safety Monitoring Logs

(See CD-ROM)

APPENDIX H

Geophysical Survey

APPENDIX I

Soil Boring and Well Construction Logs

APPENDIX J

Standard Operating Procedures

APPENDIX K

NYSDOH Qualitative Human Health Exposure Assessment

APPENDIX A

As part of the redevelopment of the Pfizer facility, Roux Associates, Inc. (Roux Associates) conducted a limited Environmental Site Assessment (ESA) at Site B in March 1996. The objective of the ESA was to identify any environmental concerns associated with Site B that may present a risk to human health or the environment. The results of the Site B ESA were reported in the document titled "Environmental Site Assessment on Site B." A summary of the key findings and conclusions is provided below.

Site Inspection and Database Search Results

- Based on the regulatory agency (i.e., federal and state) database research provided by the Environmental Risk Information and Imaging Services (ERIIS) Property Record Report, an Amoco Service Station (currently known as British Petroleum) located approximately 0.12 miles southwest of Site B, is considered to be an environmental concern to Site B. A gasoline spill from the Amoco Service Station occurred and was reported to the New York State Department of Environmental Conservation (NYSDEC) in the mid-1980s. A groundwater treatment system was in operation in the early 1990s to remove contaminated groundwater due to this spill from the Amoco Service Station, and has since ceased operations.

A new spill occurred and was reported to the NYSDEC in 2002. It is Pfizer's understanding that this spill is in the process of being investigated by British Petroleum. Results of the investigation are currently not available.

- Based on the Site inspection results, four areas of Site B were identified by Roux Associates for further investigation during the ESA. These areas included the vacant lot currently being used by Arlington Press, Inc. as an employee parking lot, the southwest portion of the concrete slab, the location of the former above ground fuel oil tank (located in the former basement), and the location of a former roof drain pipe (located in the eastern portion of Site B).

Soil Quality Results

- Man-made fill underlies Site B to a depth of approximately 10 to 11 feet (ft) below land surface (bls) and typically is comprised of brown fine to coarse sand with varying amounts of silt, gravel, brick and concrete fragments. The man-made fill is underlain by clay with occasional fine to medium sand and silt.

- Benzene, toluene, ethylbenzene and xylene (BTEX) were the only volatile organic compounds (VOCs) detected in the fill material above the NYSDEC Recommended Soil Cleanup Objectives (RSCOs) from six soil borings drilled at Site B (i.e., SBB-01 through SBB-06). These VOCs were detected at concentrations exceeding the NYSDEC RSCOs at only one location (SBB-05). The detections of BTEX in the soil sample from SBB-05

were compared to the NYSDEC Spill Technology and Remediation Series (STARS) Memo #1, Petroleum-Contaminated Soil Guidance Policy (which is specifically used to determine the limits of petroleum-contaminated soil that may require remediation). The concentrations of BTEX detected in Soil Sample SBB-05 exceeded the NYSDEC STARS guidance. Please note that this work was performed in 1996 prior to the NYSDEC changing guidances from the STARS to the RSCOs for petroleum-related impacts in soil.

- Six semivolatile organic compounds (SVOCs) (i.e., phenol, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[a]pyrene and dibenzo[a,h]anthracene) were detected in the fill material above the NYSDEC RSCOs. Of these six SVOCs, benzo(a)pyrene and dibenzo(a,h)anthracene were detected most frequently (i.e., 4 of 6 locations), and benzo(a)pyrene was detected at the highest concentration (1,500 micrograms per kilogram [µg/kg] in SBB-02). The maximum concentrations of five of the SVOCs occurred in SBB-02, which is located in the center of the western portion of Site B.

- Eleven Target Analyte List (TAL) metals were detected in the fill material above the NYSDEC RSCOs. Chromium, iron, mercury and zinc were detected above the NYSDEC RSCOs at all six locations sampled.

Perched Groundwater Results

- Perched groundwater was encountered in the fill material at all six ESA soil borings (i.e., SBB-01 through SBB-06). Depth to perched groundwater was approximately 6 to 8 ft bls, consistent with depths to perched groundwater measured on the adjacent Pfizer blocks. The thickness of the perched groundwater zone ranged from several inches to approximately four feet. The samples were collected using the Geoprobe™ method.

- Seven VOCs (1,2-dichloroethene, chloroform, styrene, and BTEX) were detected in perched groundwater samples collected at Site B. Xylene was present at the highest concentration (15,000 micrograms per liter [µg/L] in SBB-05). The maximum concentrations of all seven VOCs were detected at SBB-05.

- Seventeen SVOCs were detected in perched groundwater samples collected at Site B. Naphthalene was present at the highest concentration (1,900 µg/L in SBB-05). The maximum concentrations of 15 of the SVOCs were detected at SBB-02, which is located in the center of the western portion of Site B.

- Twenty-two TAL metals were detected in perched groundwater samples collected at Site B. The maximum concentrations of 18 metals were detected at SBB-02, which is located in the center of the western portion of Site B.

Based on the ESA results, data gaps were identified. The Supplemental Soil and Perched Groundwater Investigation Work Plan (December 12, 1996) was prepared and implemented to fill the data gaps identified during the ESA. This investigation was conducted in April 1997, and

the results were reported in the document titled "Results of the Supplemental Investigation at Site B." Additionally, a limited risk assessment (LRA) was performed.

A summary of the key findings and conclusions is provided below.

Soil Quality Results

- Man-made fill underlies Site B to a depth of approximately 7 to 11 ft bls and typically is comprised of black to brown fine to coarse sand, with some silt and minor accounts of gravel. The fill also contained varying amounts of bricks, cinders, and concrete fragments. The man-made fill is underlain by clay with occasional fine to medium sand and silt.

- Twenty-two of 23 TAL metals were detected in the fill material at Site B, while 16 of the 22 metals detected exceeded the NYSDEC RSCOs. The results also indicate that the metals concentrations in the fill material detected at Site B are generally consistent with metals background concentrations, which are consistent with Site B not being used for manufacturing purposes.

- The total concentrations of metals detected in the fill material were compared against the criteria developed for the nearby Pfizer Citric Block Site. The results indicate that three soil borings (SBB-03, 0 to 2 ft; SBB-07, 0 to 2 ft; and SBB-15, 6 to 7 ft) from the Supplemental Soil and Perched Groundwater Investigation and two soil borings (SBB-02, 4 to 6 ft and SBB-05, 6 to 8 ft) from the ESA contain fill material with total concentrations that exceed the risk-based criteria for lead, and may be a characteristic hazardous waste.

- VOCs in surficial soil (0 to 2 ft) at Site B were either not detected or detected below the NYSDEC STARS guidance values. Three of the four deeper soil samples (SBB-13, SBB-14 and SBB-16) contained numerous VOCs that exceed the NYSDEC STARS guidance values. The concentrations of VOCs in the deep fill samples indicate that this material may be a characteristic hazardous waste.

Toxicity Characteristic Leaching Procedure (TCLP) Sampling Results

- The metals results indicated that five soil borings (i.e., SBB-02, SBB-03, SBB-05, SBB-07 and SBB-15) contain fill material that may have been a characteristic hazardous waste. The fill material from the five soil borings were tested for TAL metals using the TCLP, and the results indicate that the fill material is nonhazardous. Therefore, no further sampling was necessary.

- The VOC results indicated that four soil borings (i.e., SBB-05, SBB-13, SBB-14 and SBB-16) contain fill material that may have been a characteristic hazardous waste. The fill material from the four soil borings was tested for VOCs using the TCLP, and the results indicate that the fill material is nonhazardous. Therefore, no further sampling was necessary.

Perched Groundwater Results

- Perched groundwater was encountered in all Supplemental Soil and Perched Groundwater Investigation soil borings. Depth to perched groundwater was approximately 6 to 8 ft bls, consistent with depths to perched groundwater measured during the ESA and on adjacent Pfizer blocks. The thickness of the perched groundwater ranged from several inches to approximately four feet. The samples were collected using the Geoprobe™ method.

- Twenty-two of 23 metals were detected in unfiltered perched groundwater samples at Site B, while 18 of the 23 metals were detected in the filtered samples.

- Dissolved (filtered) metals concentrations were significantly lower than the concentrations of total metals (unfiltered). The higher concentrations of metals in the unfiltered groundwater samples are considered reflective of the abundance of suspended sediment in the water samples.

- VOCs were detected in perched groundwater at all four borings drilled in the vicinity of the former above ground tank (SBB-13 through SBB-16). Xylene was detected at the greatest concentration of any of the VOCs detected.

Limited Risk Assessment

- The results of the LRA indicate that the presence of chemicals at the concentrations detected in the fill material at Site B do not pose a current or future risk under occupational or construction activities.

On July 29, 1997, a meeting was held between Pfizer and the NYSDEC regarding the environmental investigations completed at Site B. The NYSDEC requested that further delineation of the petroleum-related impacts be conducted. On behalf of Pfizer, Roux Associates prepared a scope of work to complete the delineation of petroleum-related impacts at Site B. The scope of work was provided to the NYSDEC in a August 7, 1997 letter, re: Delineation Soil Boring Sampling and Analysis.

The results of the delineation work at Site B were reported in a September 4, 1997 Technical Memorandum: Summary of Toxicity Characteristic Leaching Procedure Testing Delineation Soil Borings at Site B. The extent of the petroleum-related impacts were shown on a map, and would be removed and disposed accordingly.

On September 9, 1998, routine maintenance of Site B was being conducted (i.e., cleanup of litter) when fill ports to three underground storage tanks (USTs) in the northeast portion of Site B

(within the former truck renting facility) were found (Lot 46). Please note that Pfizer did not have knowledge of these USTs, and the available information including Sanborn™ maps did not indicate that any USTs were present within this area of Site B. These USTs were owned and operated by the previous Site B owners (not Pfizer), which was consistent with the former truck renting facility operations. The fill ports were opened, and product and sludge were present in the USTs. A sample from two of the three USTs was collected and analyzed. One of the USTs did not have a sufficient volume of material to be collected for analysis. The results indicated that the product and sludge contained high concentrations of VOCs, SVOCs, and metals. Specifically, lead failed the TCLP test.

Between October 2 and October 9, 1998, the three USTs were uncovered and each was determined to be approximately 275 gallons in capacity. Pfizer registered the USTs with the NYSDEC on October 15, 1998. The USTs were cleaned out, and the product and sludge drummed and disposed accordingly.

Pfizer submits first VCP application, and then worked with the NYSDEC on completing a Voluntary Cleanup Agreement (VCA), for which the April 5, 2000 Site B Investigation and Remediation Work Plan would be attached.

The NYSDEC and the NYSDOH provides comments to the April 5, 2000 Work Plan (November 2000), and Pfizer responds to the comments in a letter dated December 20, 2000.

From January through November 2001, Pfizer and the NYSDEC continued to work on completing a VCA.

In January 2002, the NYSDEC notified Pfizer that the New York State Department of Health (NYSDOH) has provided an additional comment to the Work Plan. The NYSDOH has requested that soil gas sampling and analysis be performed near the offsite apartment building adjacent to the northern-central portion of the Site. On behalf of Pfizer, Roux Associates provided a response letter (March 14, 2002; Roux Associates, 2002a) to the January 2002 NYSDOH comment, and agreed to perform onsite soil gas sampling near the offsite apartment building in

accordance with the procedures stated in the April 5, 2000 Work Plan. After receipt of the March 14, 2002 letter, the NYSDEC verbally notified Roux Associates that the NYSDOH disagreed with the soil gas sampling methodology.

In February 2002, the following work activities were performed in preparation of implementing the April 5, 2000 Work Plan.

- A representative sample of clean sand was collected from the RANDCO facility in Manorville, New York, and analyzed for polychlorinated biphenyls (PCBs), Resource Conservation and Recovery Act (RCRA) metals, SVOCs, and VOCs. The results indicate that the constituents were either not detected or detected significantly below the NYSDEC RSCOs. Based on these results, the clean sand will be used for backfill material at Site B.

- Ten representative fill material samples were collected and characterized for offsite disposal. These 10 samples were analyzed for BTEX, PCBs, ignitability, corrosivity, reactivity, and RCRA metals, VOCs, and SVOCs using the TCLP. The results indicate that the fill material is non-hazardous and petroleum impacted.

- To verify that the proper health and safety will be performed during the excavation activities, air samples were collected and analyzed. A test pit was excavated in an area where known fill material impacts were previously identified (i.e., near Soil Boring SBB-16). The test pit was excavated to depth of approximately 8 ft bls. Two air samples were collected onto cartridges downwind of the excavation and one sample was collected near the bottom of the excavation at approximately 8 ft bls. One of the down wind samples was analyzed for aromatic hydrocarbons (NIOSH Method 1501), while the second downwind sample was analyzed for polycyclic aromatic hydrocarbons (PAHs) (NIOSH Method 5515). The sample collected inside of the test pit was analyzed for aromatic hydrocarbons (NIOSH Method 1501). The results indicate that there were no detections in the three samples. Therefore, Level D personal protection will be employed during the start of the excavation activities.

On July 10, 2002, a meeting was held between the NYSDEC, the NYSDOH, Pfizer, and Roux Associates to discuss the April 5, 2000 Site B Work Plan. Specifically, Pfizer had requested this meeting to discuss the soil gas sampling with the NYSDOH and onsite and offsite excavation activities. The results of this meeting are as follows.

- The NYSDEC and the NYSDOH agreed to an IRM for the onsite excavation of petroleum-related fill material and removal of perched groundwater at two locations (i.e., adjacent to the former basement and the UST location area).

- The NYSDEC re-reviewed the fill material quality, perched groundwater quality, and the geology developed at the Site. The NYSDEC stated that based on one soil boring log that did not indicate the presence of clay (because the boring was terminated prior to encountering the clay, which is most likely deeper at this location) and two boring logs that indicated that the clay may not be thicker than several feet, the petroleum-related impacts most probably have migrated vertically to the underlying aquifer. Based on the NYSDECs' opinion that the clay is not continuous at Site B and relatively thin (i.e., approximately 2 ft thick), the NYSDEC stated that a groundwater quality investigation must be performed. Additionally, the NYSDEC stated that Pfizer must meet the Standards, Criteria, and Guidance's (SCGs) (nature and extent) for all subsurface media (e.g., perched groundwater and groundwater). Lastly, the NYSDEC requested that Pfizer determine if any groundwater impacts, if present, are migrating off-site.

Information was provided to the NYSDEC regarding the nature of the continuous clay, it's thickness, and that it is acting as a barrier to the underlying aquifer. Pfizer expressed their disagreement that a groundwater quality investigation beneath the clay in the underlying aquifer is warranted based on the significant amount of data generated from Site B including all of the Pfizer blocks that supports our model of the clay.

Pfizer agreed to confirm the model to demonstrate that the clay is a significant unit that acts as a barrier to the migration of impacts or propose a groundwater quality investigation to demonstrate that impacts above the clay have not migrated beneath the clay.

- Based on the fill material quality in the top four feet of the anticipated area to be excavated, Pfizer requested to use this material for backfilling of the excavation. A sample(s) would be collected and analyzed, and if the results indicate that the petroleum-related impacts were detected below the NYSDEC RSCOs then this fill material should be deemed clean and usable as backfill material by the NYSDEC. The NYSDEC stated that Pfizer would need to request a Beneficial Use Determination (BUD) with the NYSDEC's Division of Solid Waste. However, the NYSDEC cautioned that this process would significantly delay the approval of the IRM Work Plan until next year (2003). Additionally, the NYSDEC would also would not exclude the impacts native to the fill material (i.e., metals and PAHs), therefore, Pfizer would be denied the BUD. Pfizer stated that they would consider the NYSDEC's comments regarding this issue.

- Pfizer stated that the NYSDOH requested soil gas sampling is not warranted at this time based on the data generated (i.e., soil quality data, fill material inspection data, and the health and safety air sampling data) at Site B. The NYSDEC and the NYSDOH stated that although the fill material or perched groundwater impacts may not pose a potential risk to the apartment building, soil gas could still have migrated towards the occupants of the apartment building and pose a potential risk. The NYSDEC and the NYSDOH

rejected the analytical and field inspection results and the health and safety air sampling results (that clearly demonstrate that soil gas impacts do not appear to have migrated towards the apartment building), and would not be amenable to postponing the soil gas sampling until more information has been generated. Additionally, the NYSDEC and the NYSDOH rejected our proposed soil gas sampling with a field instrument, modeling of the soil gas concentrations, and engineering controls as an alternative to collection and laboratory analysis of soil gas.

Pfizer expressed concerns that any detection would implicate Pfizer as the source of the soil gas without considering that the detections could be the result of an off-site source. The NYSDEC and the NYSDOH stated that they would hold Pfizer responsible for any soil gas impacts (i.e., gasoline constituents) that pose a risk to the occupants of the apartment building or make us prove otherwise. However, the agencies did acknowledge our concern regarding this issue. Pfizer stated that they would consider the agencies comments prior to making a decision regarding the soil gas sampling issue

QUADRANGLE LOCATION

SOURCE:
USGS; Brooklyn, New York
7.5 Minute Topographic Quadrangle

N

0 2000'

Title:

SITE LOCATION MAP
SITE B

Prepared for:
PFIZER INC
BROOKLYN, NEW YORK

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: S.J.G.		Date: 04JUN03	FIGURE
Prepared by: R.K.		Scale: 1"=2000'	1
Project Mgr.: S.J.G.		Office: NY	
File No.: PF4436506.CDR		Project No.: 04744Y08	

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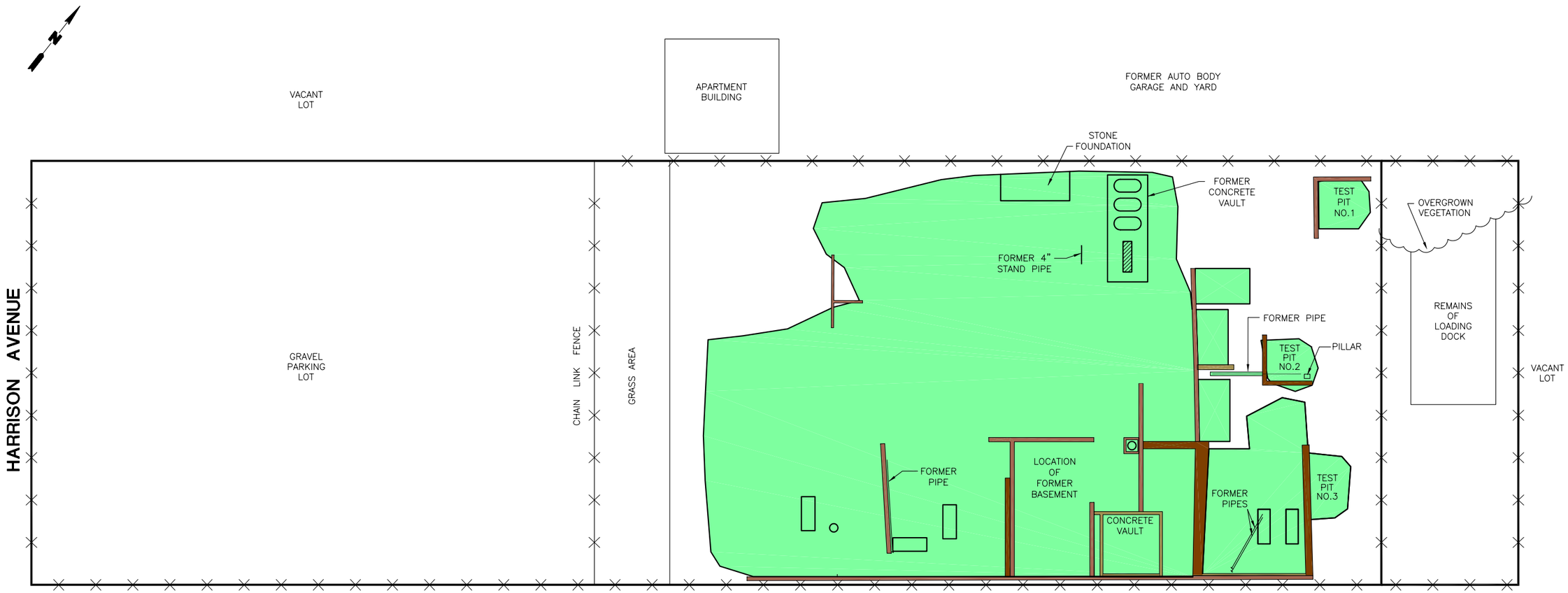

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- FORMER TANK–LIKE STRUCTURE
- FORMER 550–GALLON CAPACITY UST
- FORMER 275–GALLON CAPACITY UST
- FORMER 420–GALLON CAPACITY UST
- UST UNDERGROUND STORAGE TANK

25' 0 25'

Title:

SITE PLAN

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

REMEDIAL ENGINEERING, P.C. *ENVIRONMENTAL ENGINEERS*	Compiled by: M.M.	Date: 04JUN03	FIGURE 2
	Prepared by: G.M.	Scale: AS SHOWN	
	Project Mgr: S.G.	Office: NY	
	File No: PF4436507	Project: 04744Y08	

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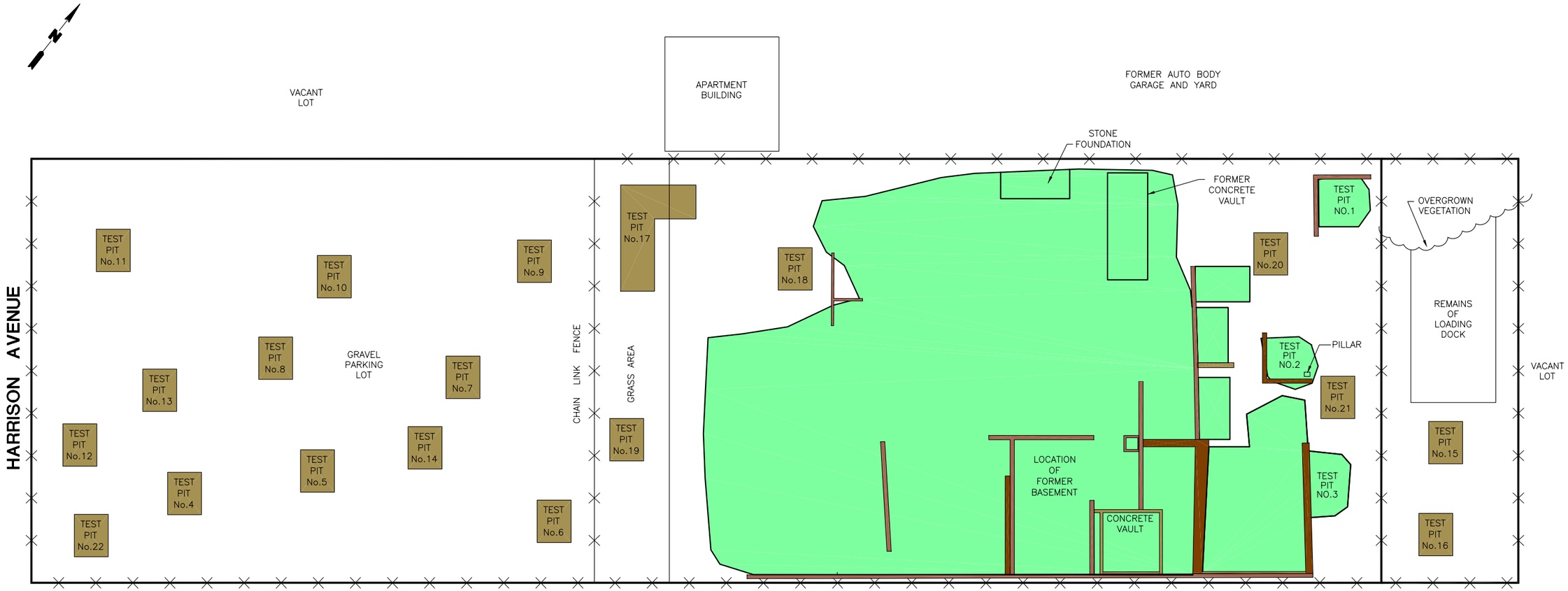

LEGEND

TEST PIT No.4 — LOCATION, DESIGNATION, AND LATERAL EXTENT OF TEST PIT PERFORMED DURING THE PHASE I LIMITED SITE INVESTIGATION

SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM

SITE B

FENCE

BRICK WALL/FOUNDATION

STONE WALL/FOUNDATION

CONCRETE WALL/FOUNDATION

25' 0 25'

Title:

TEST PIT LOCATIONS

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	3
Project Mgr: S.G.	Office: NY	
File No: PF4436508	Project: 04744Y08	

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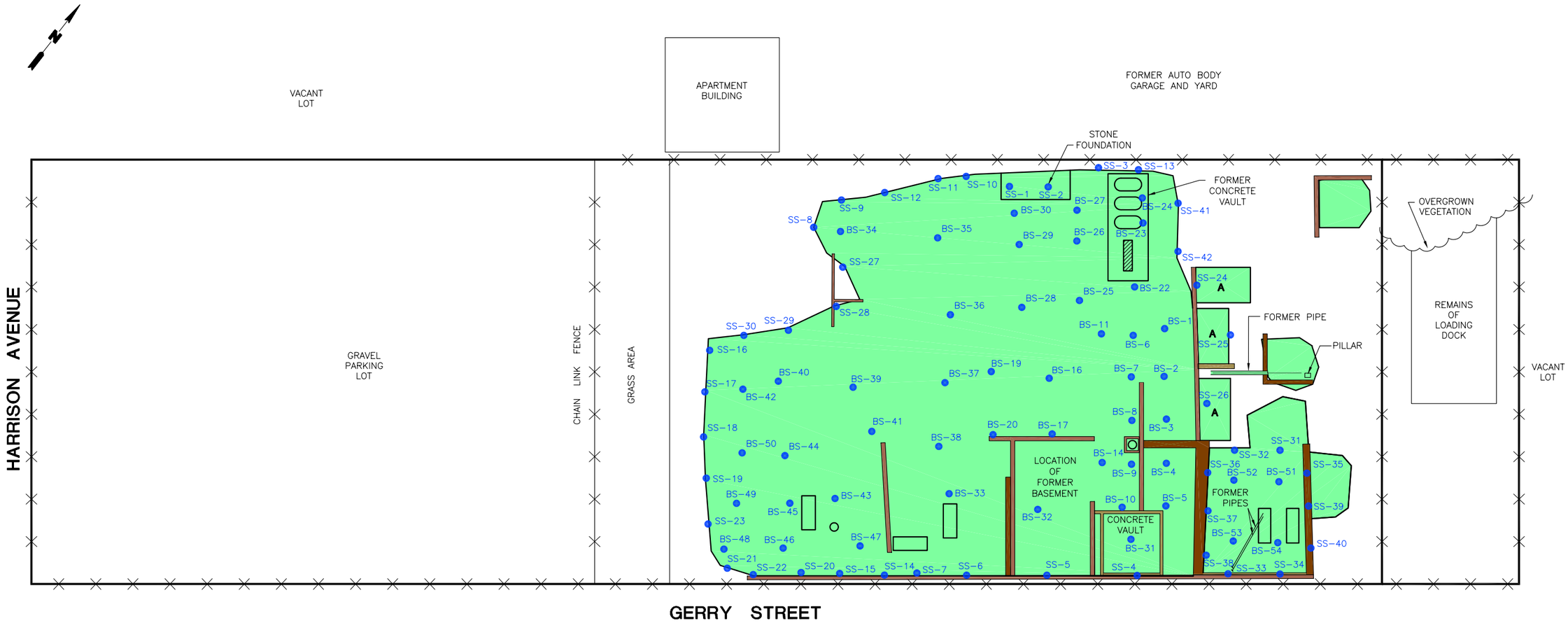

LEGEND

- LOCATION OF POST-EXCAVATION SOIL SAMPLE
- BS BOTTOM SAMPLE
- SS SIDEWALL SAMPLE
- UST UNDERGROUND STORAGE TANK
- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST

NOTE:

A PURPOSE OF EXCAVATION WAS TO FACILITATE COLLECTION OF SIDEWALL SAMPLE ON EASTERN SIDE OF STONE WALL AS SHOWN ABOVE

25' 0 25'

Title:

LOCATION OF POST EXCAVATION SOIL SAMPLES

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	4
Project Mgr: S.G.	Office: NY	
File No: PF4436509	Project: 04744Y08	

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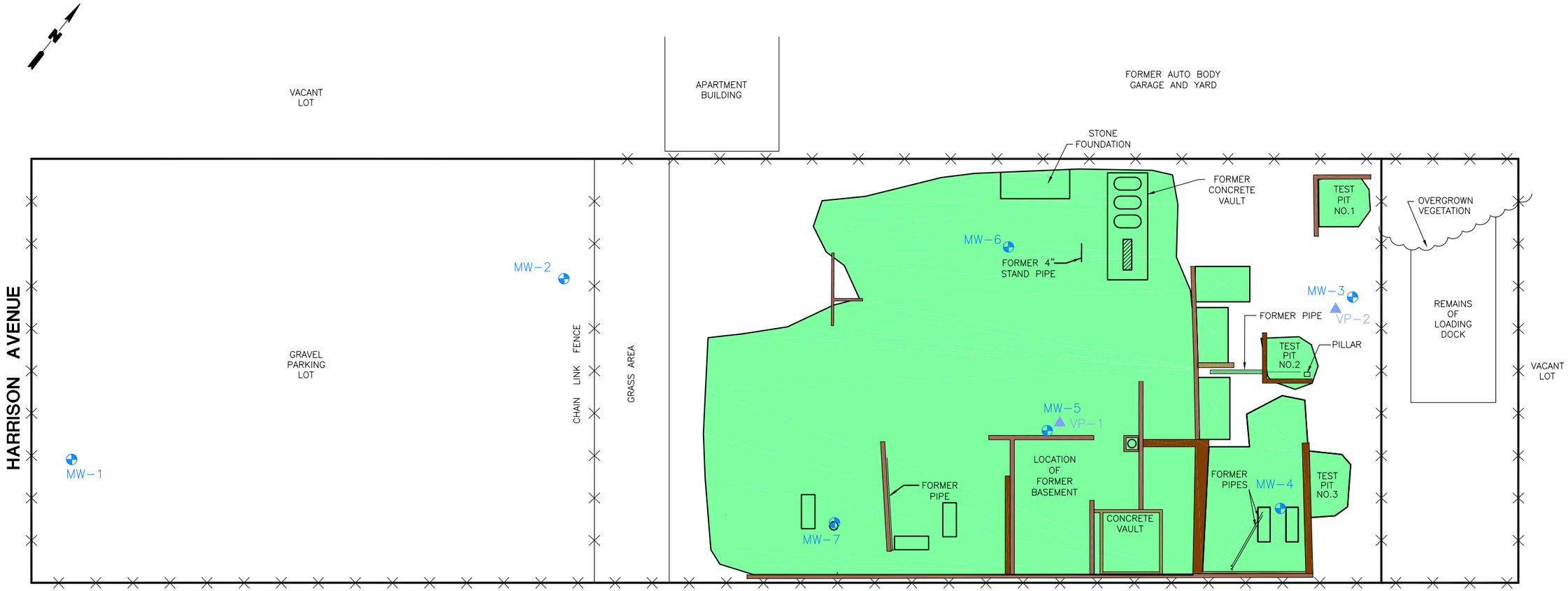

LEGEND

SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM

SITE B

FENCE

BRICK WALL/FOUNDATION

STONE WALL/FOUNDATION

CONCRETE WALL/FOUNDATION

MW-1 LOCATION AND DESIGNATION OF MONITORING WELLS

VP-1 LOCATION AND DESIGNATION OF VERTICAL DELINEATION SAMPLING POINT

FORMER TANK-LIKE STRUCTURE

FORMER 550-GALLON CAPACITY UST

FORMER 275-GALLON CAPACITY UST

FORMER 420-GALLON CAPACITY UST

UST UNDERGROUND STORAGE TANK

25' 0 25'

Title:

MONITORING WELL AND GROUNDWATER SAMPLING POINTS

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	5
Project Mgr: S.G.	Office: NY	
File No: PF4436510	Project: 04744Y08	

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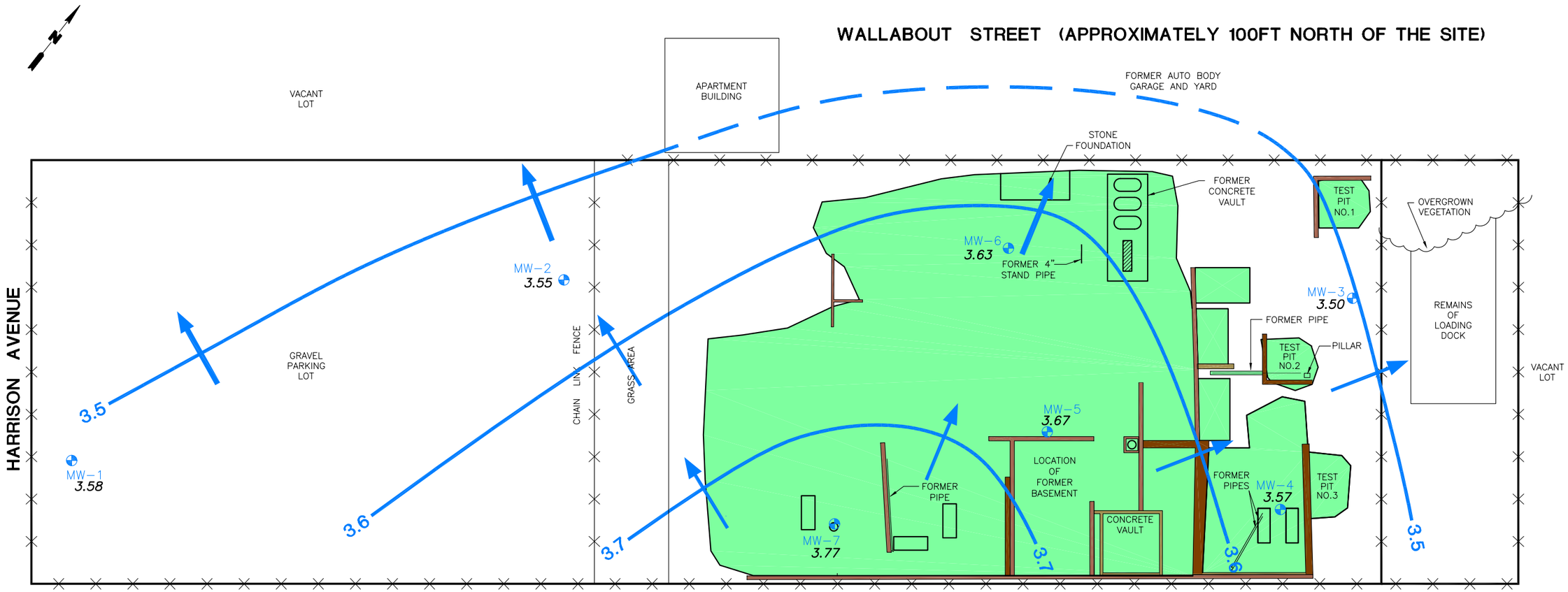

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- MW-1 — LOCATION AND DESIGNATION OF MONITORING WELLS
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- 3.5 — LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- 3.51 — WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

25' 0 25'

Title:

ESTIMATED GROUNDWATER FLOW DIRECTION FEBRUARY 10, 2003

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	6
Project Mgr: S.G.	Office: NY	
File No: PF4436511	Project: 04744Y08	

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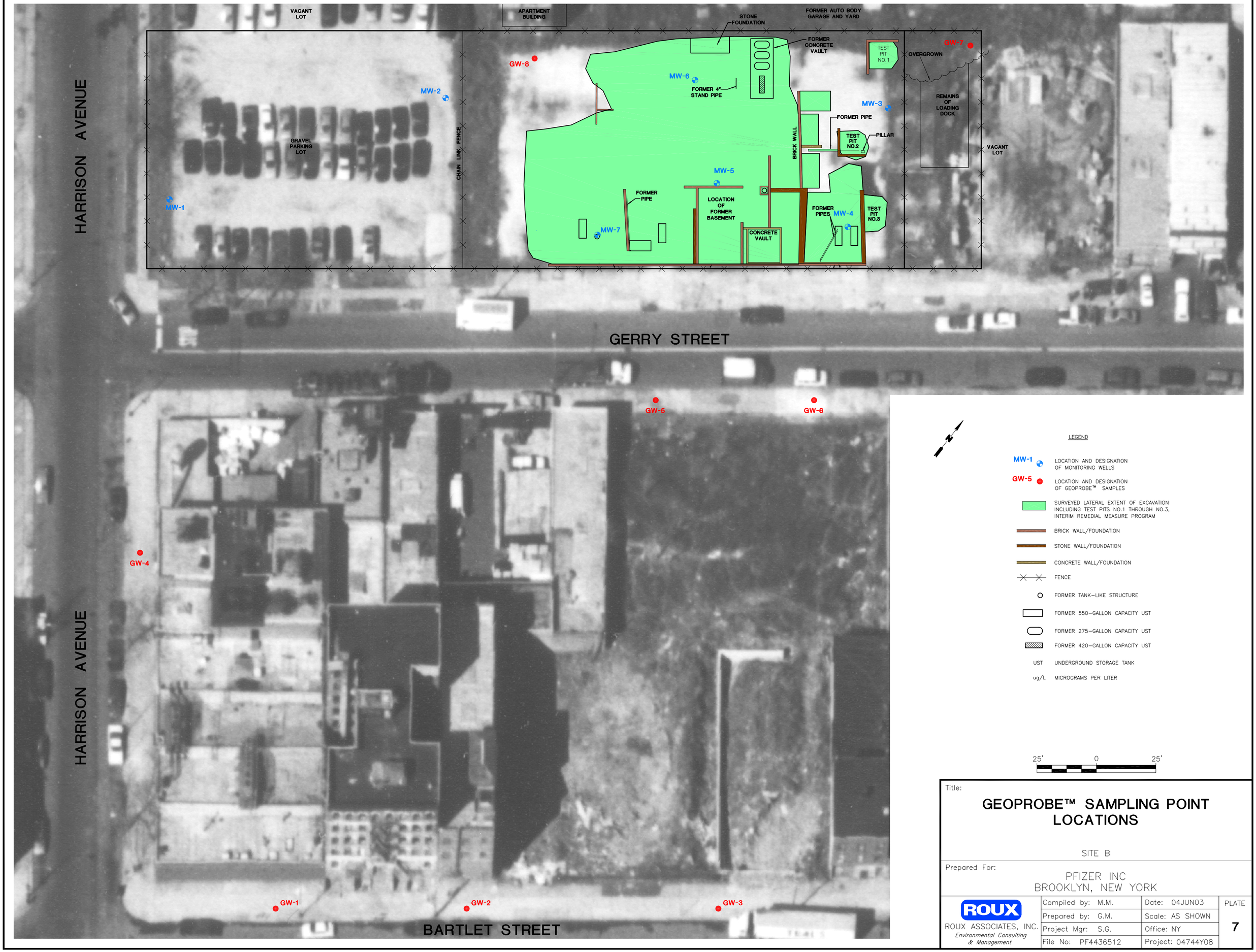


Title:

GEOPROBE™ SAMPLING POINT LOCATIONS

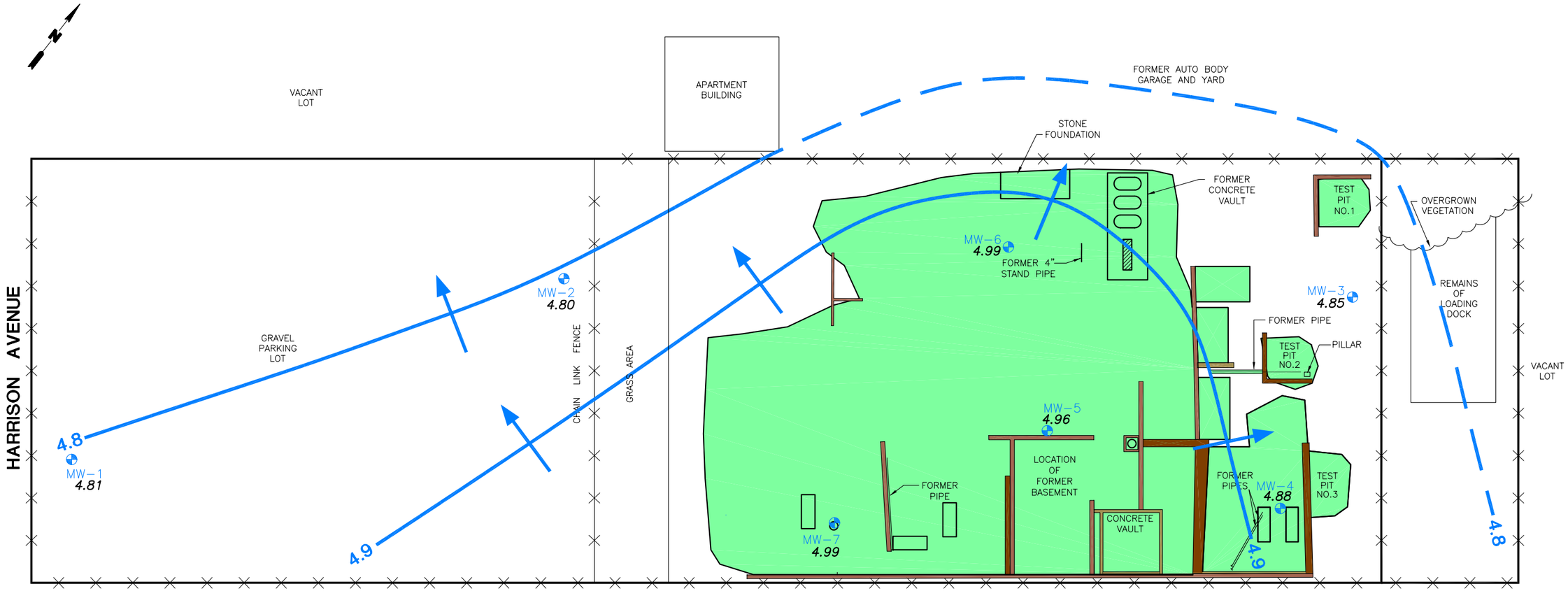
SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	PLATE 7
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: S.G.	Office: NY	
File No: PF4436512	Project: 04744Y08	



LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- MW-1 — LOCATION AND DESIGNATION OF MONITORING WELLS
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- 4.8 — LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- 4.96 — WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

25' 0 25'

Title:

ESTIMATED GROUNDWATER FLOW DIRECTION APRIL 16, 2003

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	8
Project Mgr: S.G.	Office: NY	
File No: PF4436513	Project: 04744Y08	

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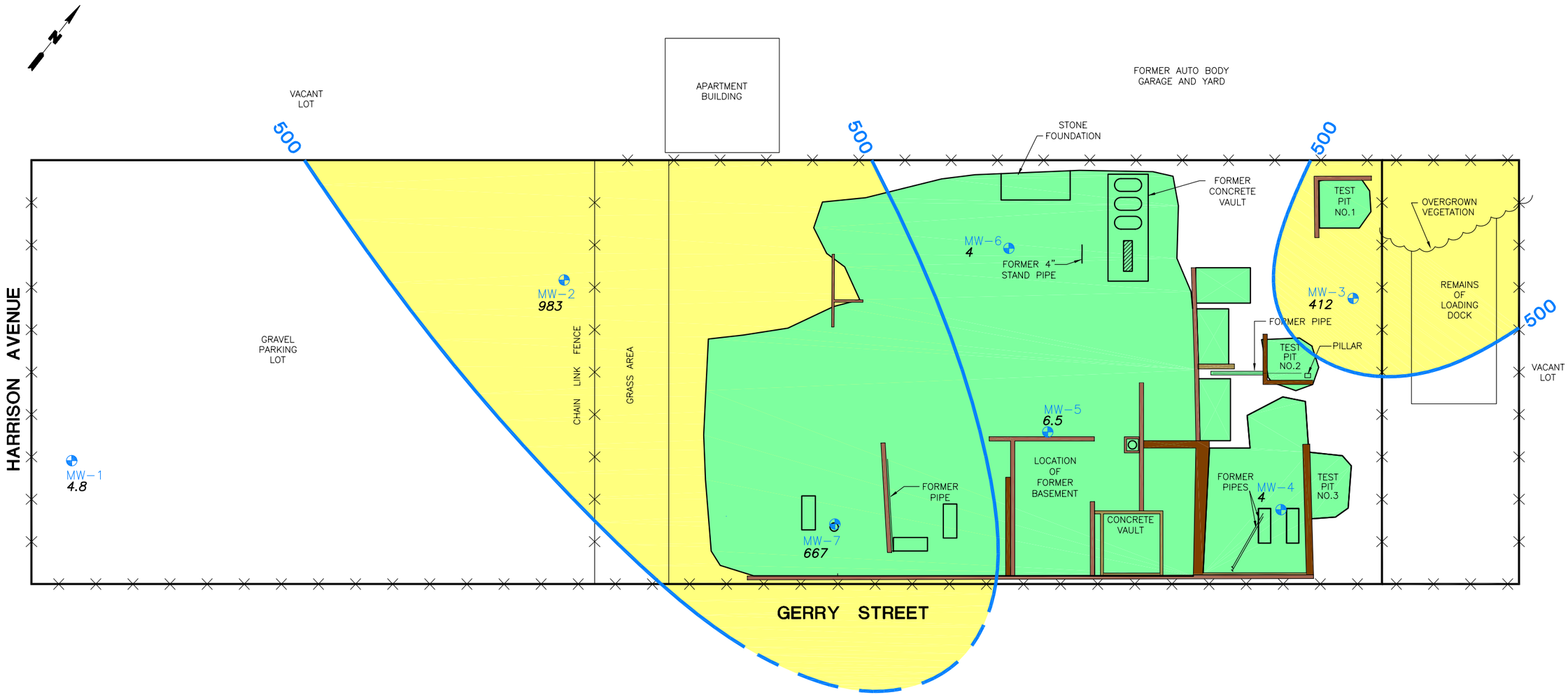

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- MW-1 — LOCATION AND DESIGNATION OF MONITORING WELLS
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- 500 — LINE OF EQUAL CVOCs IN ug/L (DASHED WHERE INFERRED)
- *983* — TOTAL CVOCs IN ug/L
- ug/L — MICROGRAMS PER LITER
- CVOCs — CHLORINATED VOLATILE ORGANIC COMPOUNDS
- CONCENTRATIONS OF CVOCs > 500 ug/L
- CONCENTRATIONS OF CVOCs < 500 ug/L

25' 0 25'

Title:

GENERALIZED EXTENT OF CVOCs IN GROUNDWATER APRIL 2003

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	9
Project Mgr: S.G.	Office: NY	
File No: PF4436514	Project: 04744Y08	

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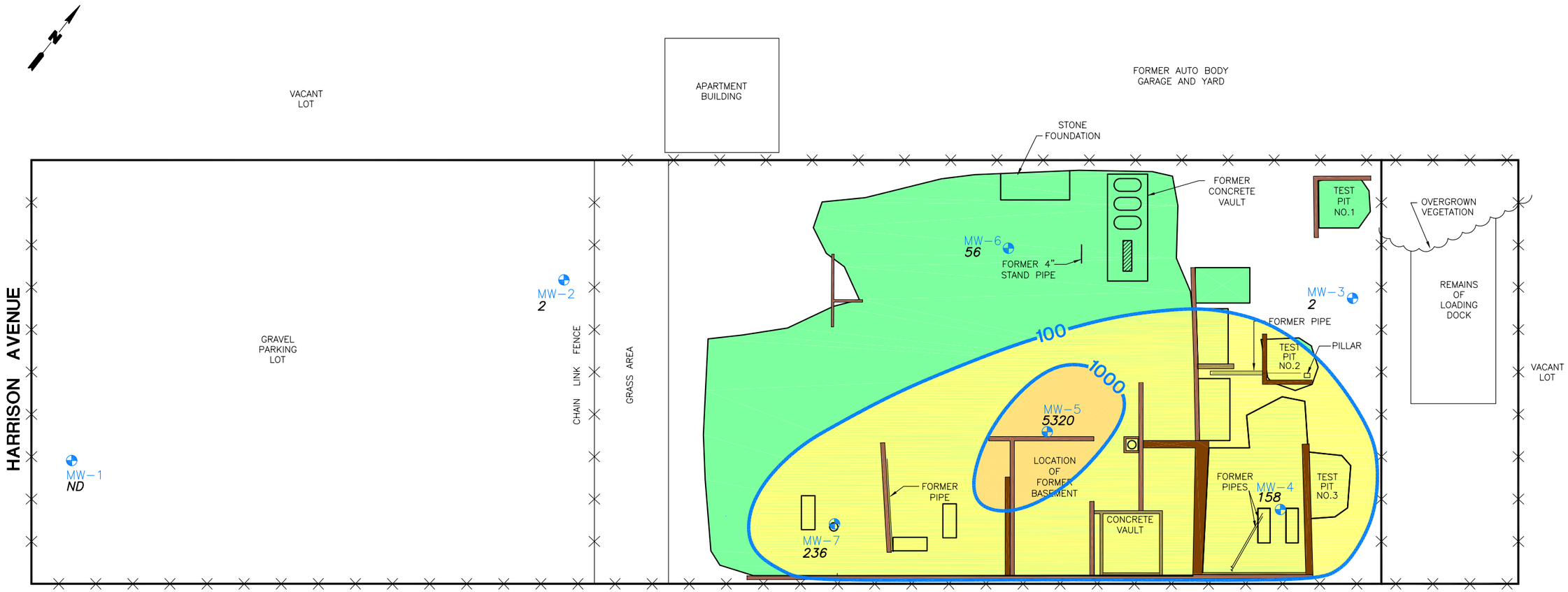

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- MW-1 — LOCATION AND DESIGNATION OF MONITORING WELLS
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- ug/L — MICROGRAMS PER LITER
- 100 — LINE OF EQUAL BTEX IN ug/L
- *56* — TOTAL BTEX IN ug/L
- *ND* — NOT DETECTED
- BTEX — BENZENE, TOLUENE, ETHYLBENZENE, XYLENES
- CONCENTRATIONS OF BTEX > 1000 ug/L
- CONCENTRATIONS OF BTEX BETWEEN 100 ug/L AND 1,000 ug/L
- CONCENTRATIONS OF BTEX <100 ug/L

25' 0 25'

Title:

GENERALIZED EXTENT OF BTEX IN GROUNDWATER APRIL 2003

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	10
Project Mgr: S.G.	Office: NY	
File No: PF4436515	Project: 04744Y08	

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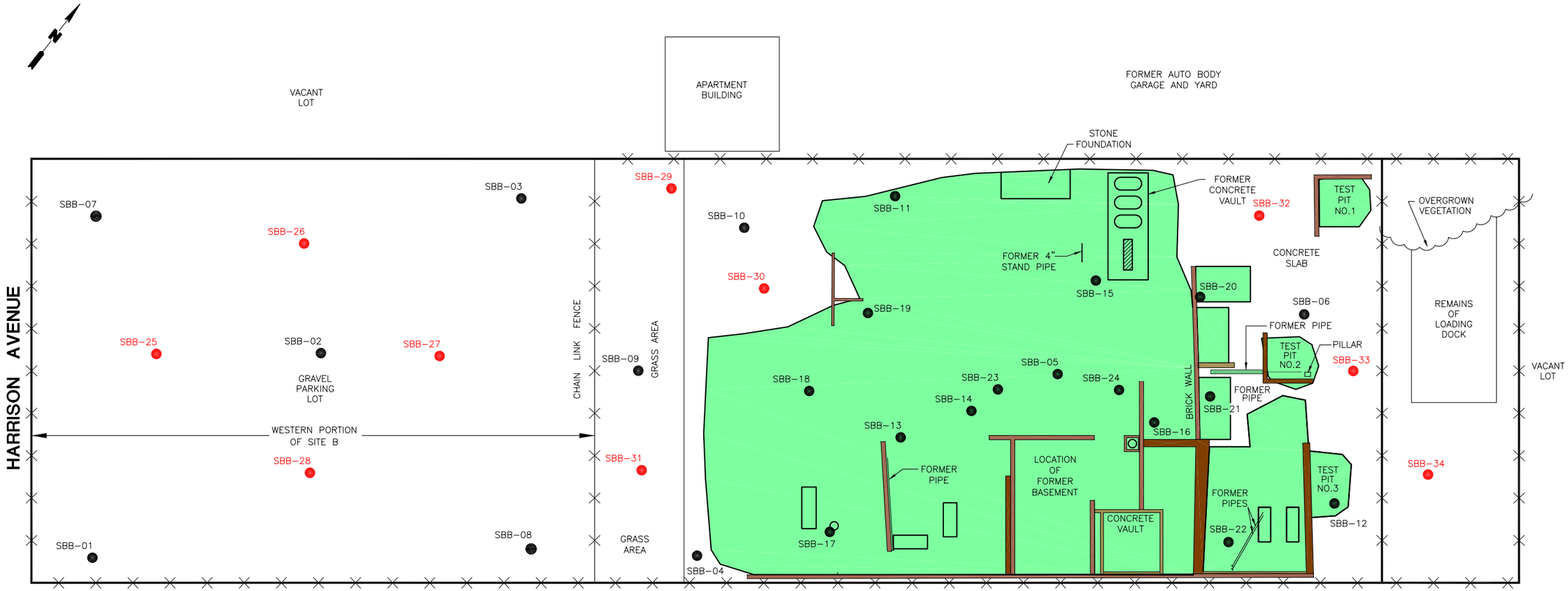

LEGEND

- SBB-03 — LOCATION AND DESIGNATION OF FORMER SOIL BORING
- SBB-28 — LOCATION AND DESIGNATION OF PROPOSED SOIL BORING
- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK

25' 0 25'

Title:

SOIL BORING LOCATIONS

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	11
Project Mgr: S.G.	Office: NY	
File No: PF4436516	Project: 04744Y08	

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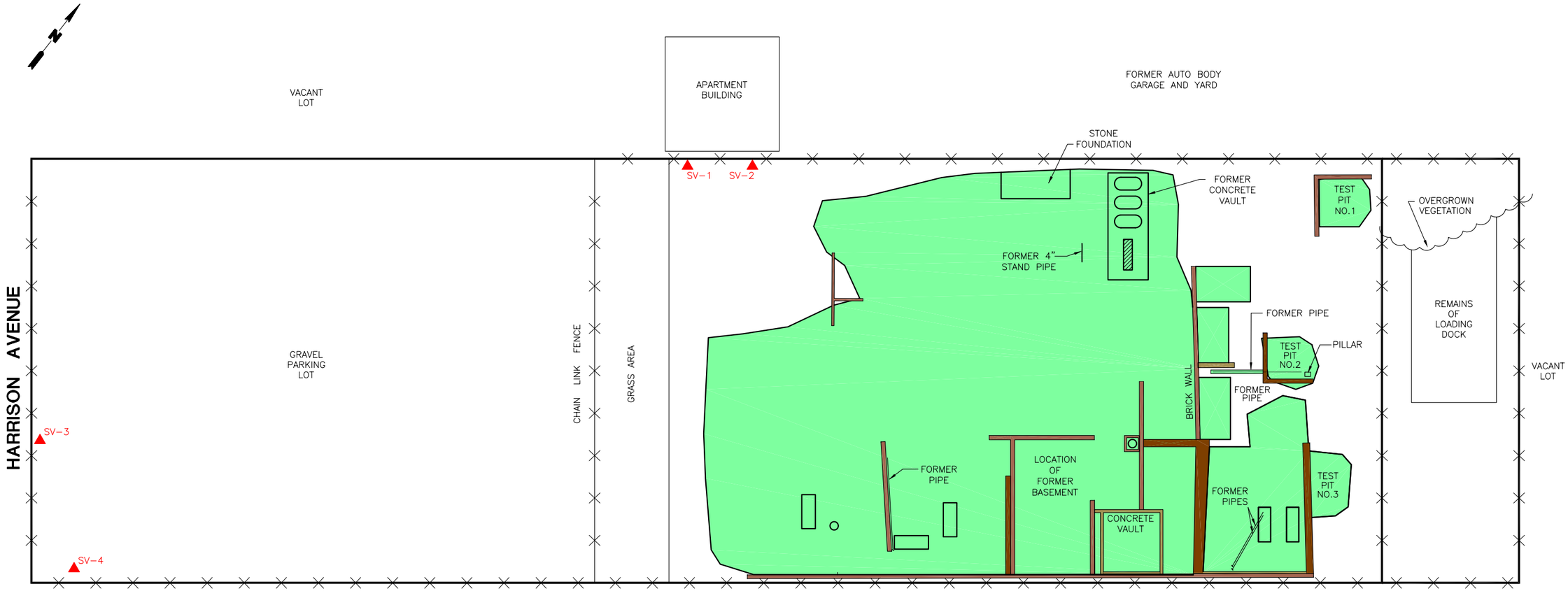

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- SV-1 — PROPOSED SOIL VAPOR SAMPLING POINT LOCATION AND DESIGNATION

25' 0 25'

Title:

PROPOSED SOIL VAPOR SAMPLING POINT LOCATIONS

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	12
Project Mgr: S.G.	Office: NY	
File No: PF4436517	Project: 04744Y08	

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QUADRANGLE LOCATION

SOURCE:
USGS; Brooklyn, New York
7.5 Minute Topographic Quadrangle

N

0 2000'

Title:

SITE LOCATION MAP
SITE B

Prepared for:
PFIZER INC
BROOKLYN, NEW YORK

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: S.J.G.		Date: 04JUN03	FIGURE
Prepared by: R.K.		Scale: 1"=2000'	1
Project Mgr.: S.J.G.		Office: NY	
File No.: PF4436506.CDR		Project No.: 04744Y08	

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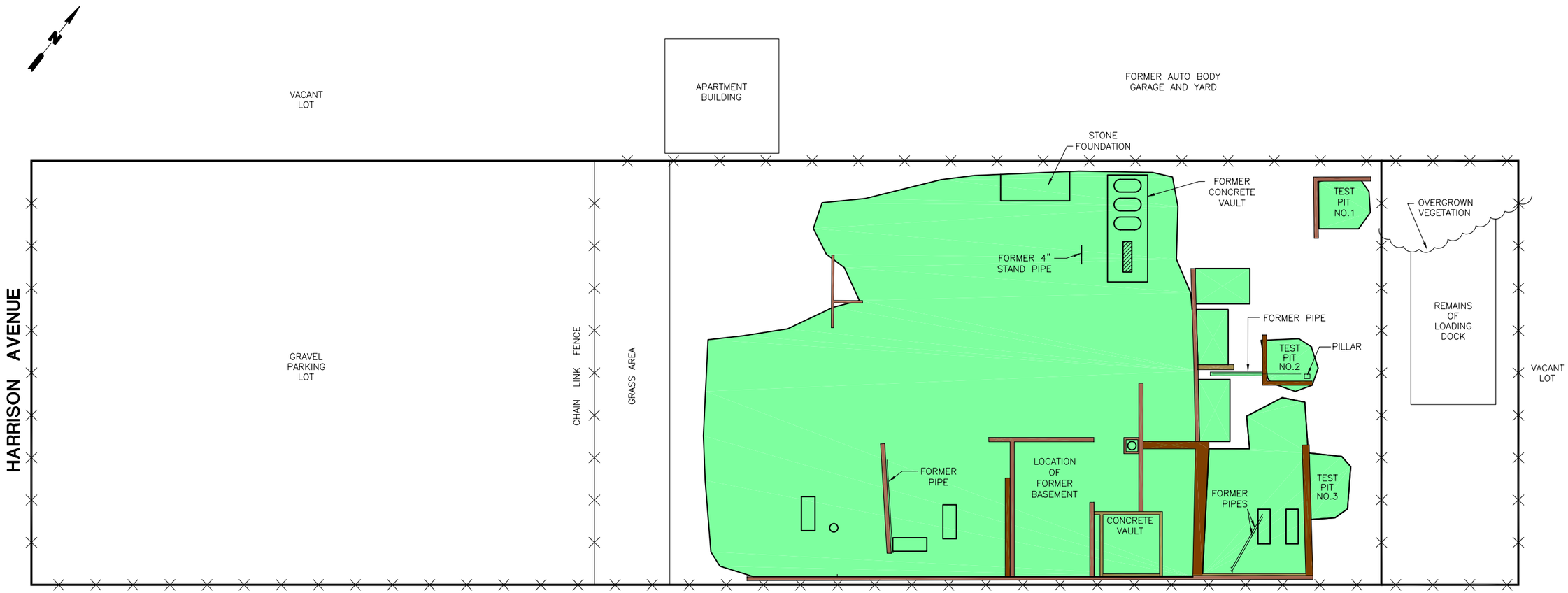

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- FORMER TANK–LIKE STRUCTURE
- FORMER 550–GALLON CAPACITY UST
- FORMER 275–GALLON CAPACITY UST
- FORMER 420–GALLON CAPACITY UST
- UST UNDERGROUND STORAGE TANK

25' 0 25'

Title:

SITE PLAN

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

REMEDIAL ENGINEERING, P.C. *ENVIRONMENTAL ENGINEERS*	Compiled by: M.M.	Date: 04JUN03	FIGURE 2
	Prepared by: G.M.	Scale: AS SHOWN	
	Project Mgr: S.G.	Office: NY	
	File No: PF4436507	Project: 04744Y08	

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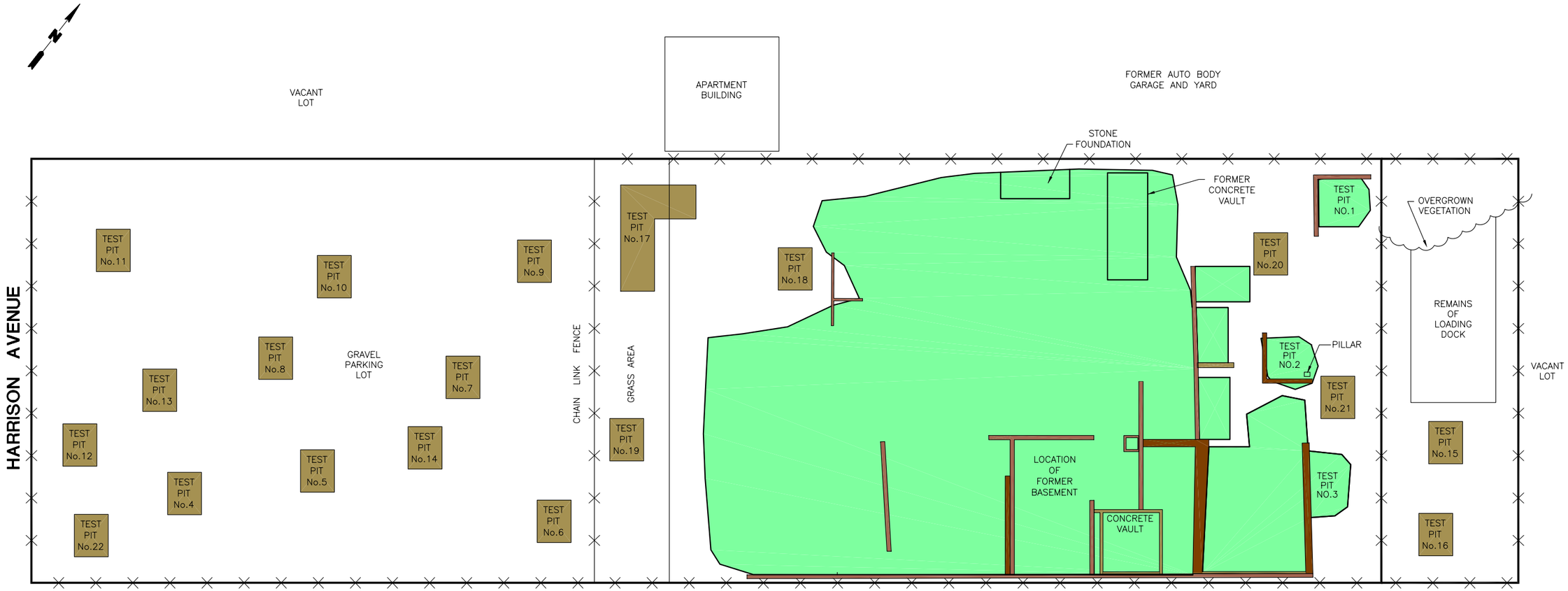

LEGEND

TEST PIT No.4 — LOCATION, DESIGNATION, AND LATERAL EXTENT OF TEST PIT PERFORMED DURING THE PHASE I LIMITED SITE INVESTIGATION

SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM

SITE B

FENCE

BRICK WALL/FOUNDATION

STONE WALL/FOUNDATION

CONCRETE WALL/FOUNDATION

25' 0 25'

Title:

TEST PIT LOCATIONS

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	3
Project Mgr: S.G.	Office: NY	
File No: PF4436508	Project: 04744Y08	

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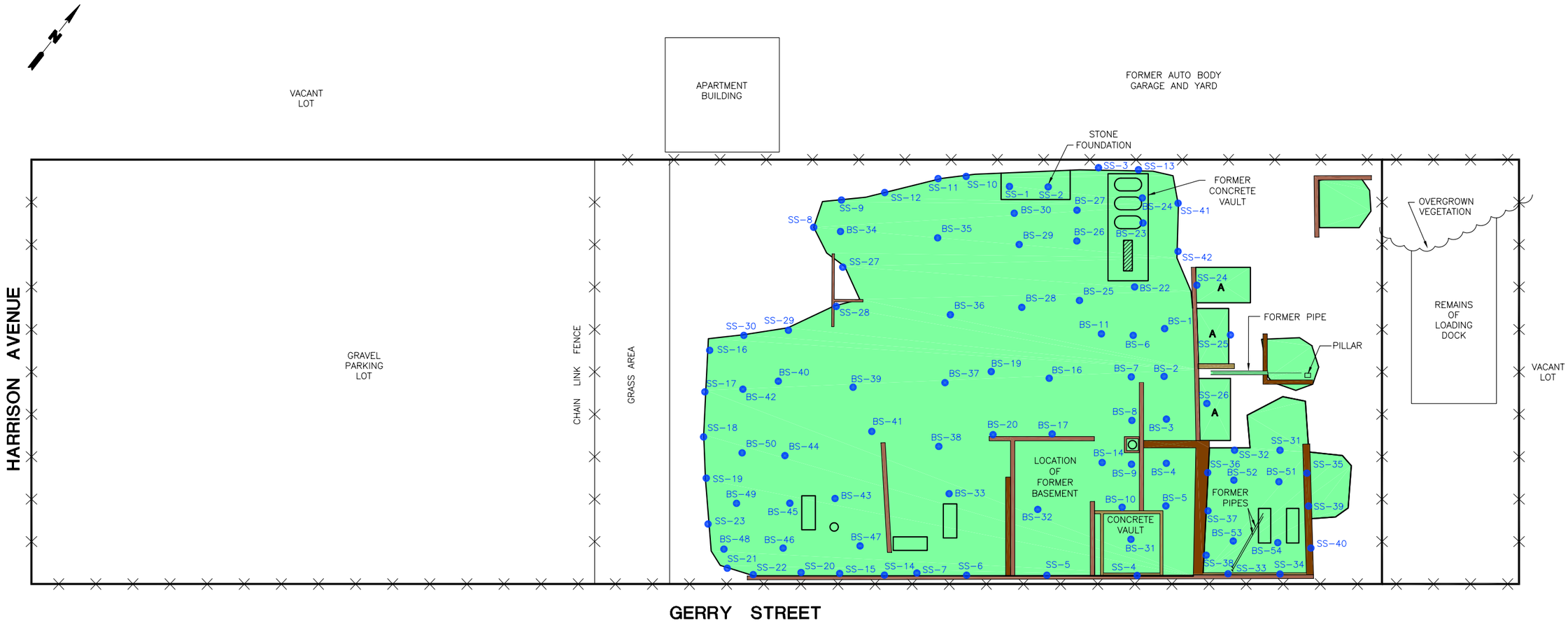

LEGEND

- LOCATION OF POST-EXCAVATION SOIL SAMPLE
- BS BOTTOM SAMPLE
- SS SIDEWALL SAMPLE
- UST UNDERGROUND STORAGE TANK
- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST

NOTE:

A PURPOSE OF EXCAVATION WAS TO FACILITATE COLLECTION OF SIDEWALL SAMPLE ON EASTERN SIDE OF STONE WALL AS SHOWN ABOVE

25' 0 25'

Title:

LOCATION OF POST EXCAVATION SOIL SAMPLES

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	4
Project Mgr: S.G.	Office: NY	
File No: PF4436509	Project: 04744Y08	

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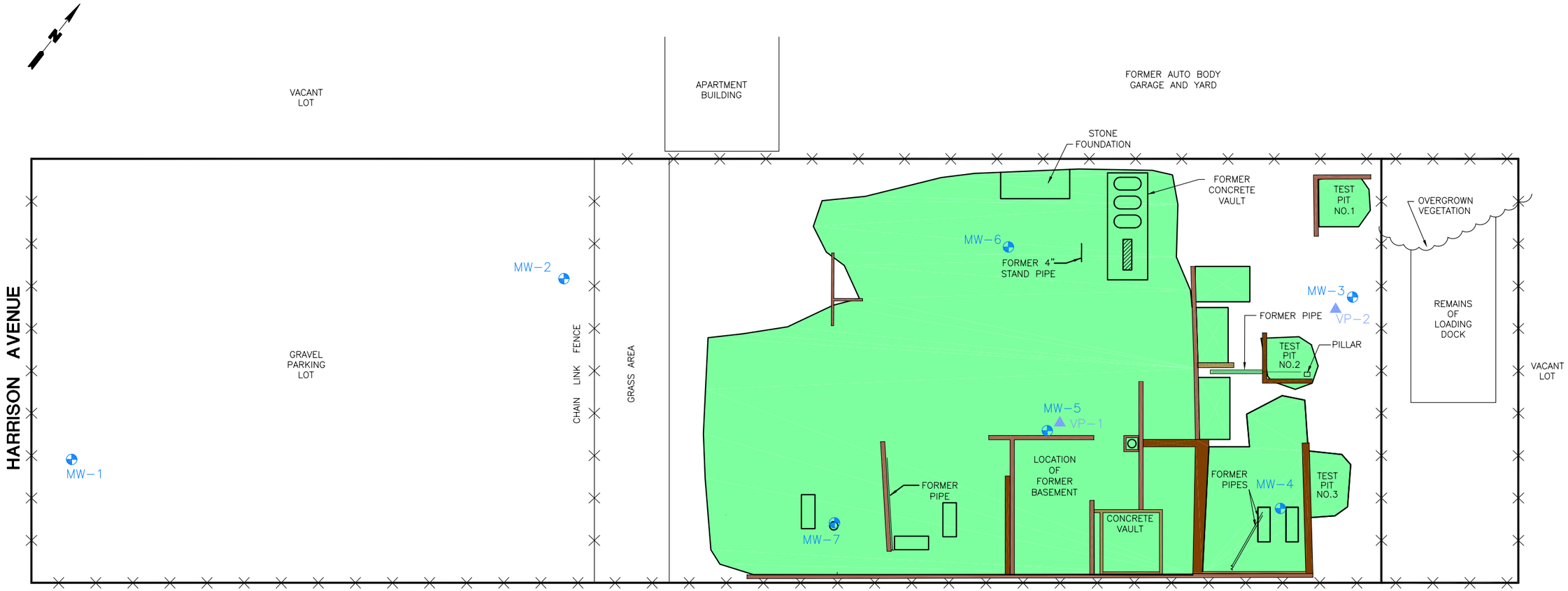

LEGEND

SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM

SITE B

FENCE

BRICK WALL/FOUNDATION

STONE WALL/FOUNDATION

CONCRETE WALL/FOUNDATION

MW-1 LOCATION AND DESIGNATION OF MONITORING WELLS

VP-1 LOCATION AND DESIGNATION OF VERTICAL DELINEATION SAMPLING POINT

FORMER TANK-LIKE STRUCTURE

FORMER 550-GALLON CAPACITY UST

FORMER 275-GALLON CAPACITY UST

FORMER 420-GALLON CAPACITY UST

UST UNDERGROUND STORAGE TANK

25' 0 25'

Title:

MONITORING WELL AND GROUNDWATER SAMPLING POINTS

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	5
Project Mgr: S.G.	Office: NY	
File No: PF4436510	Project: 04744Y08	

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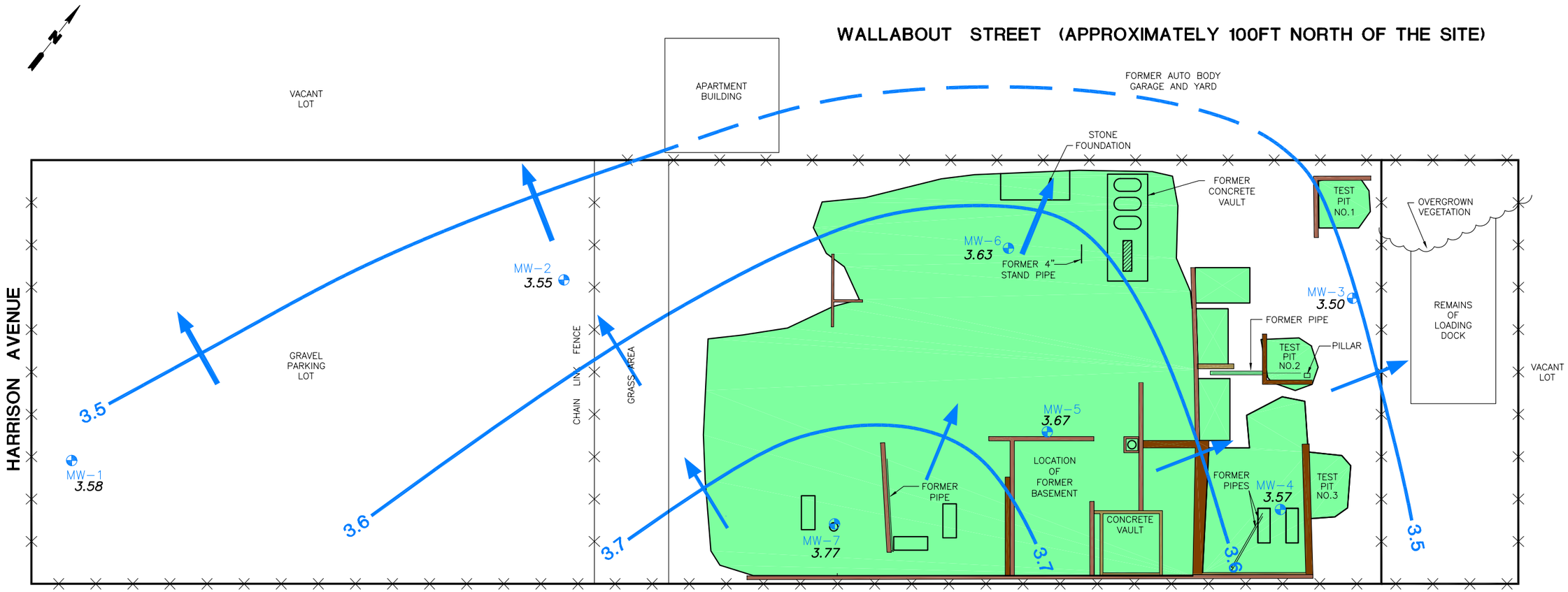

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- MW-1 — LOCATION AND DESIGNATION OF MONITORING WELLS
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- 3.5 — LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- 3.51 — WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

25' 0 25'

Title:

ESTIMATED GROUNDWATER FLOW DIRECTION FEBRUARY 10, 2003

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	6
Project Mgr: S.G.	Office: NY	
File No: PF4436511	Project: 04744Y08	

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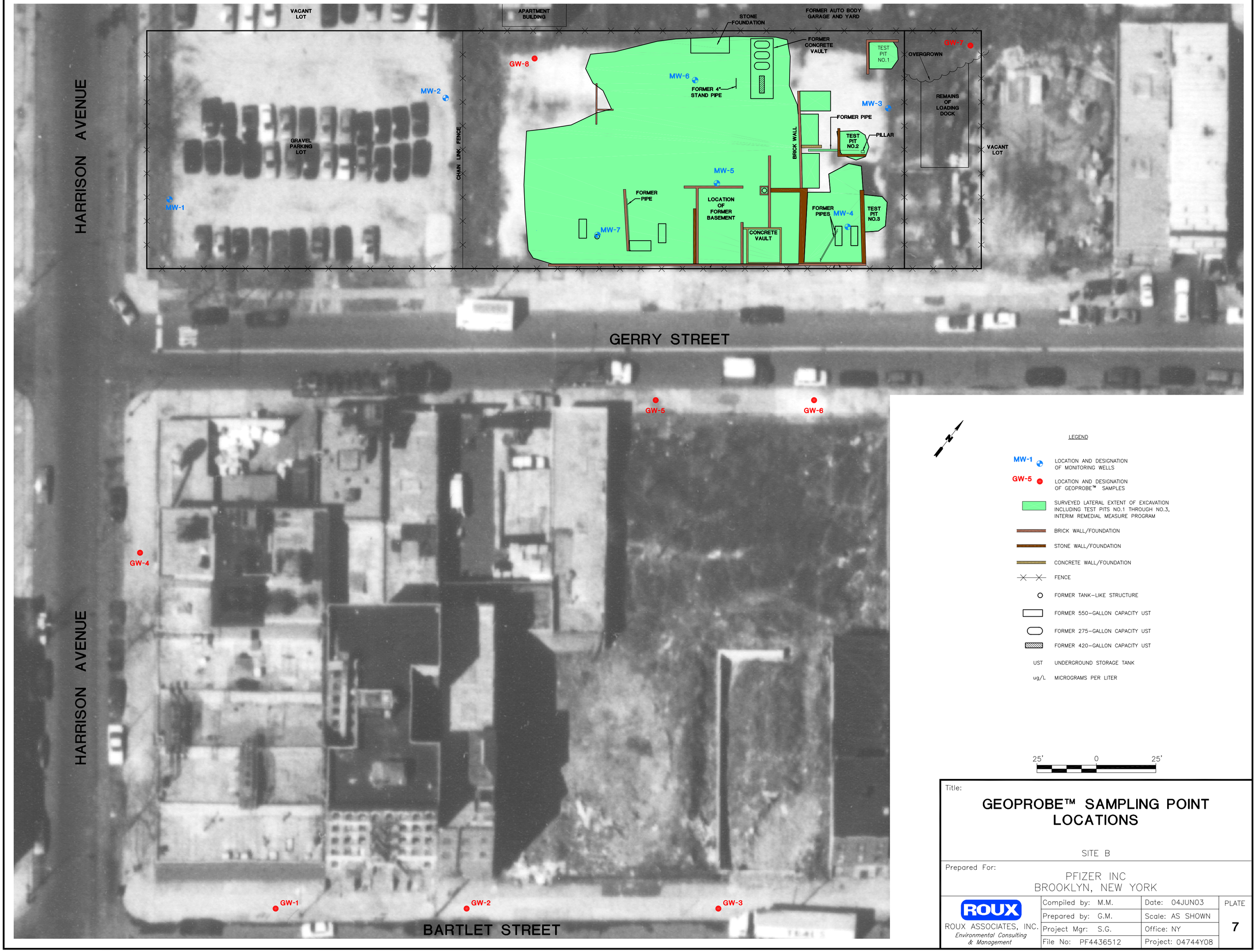


Title:

GEOPROBE™ SAMPLING POINT LOCATIONS

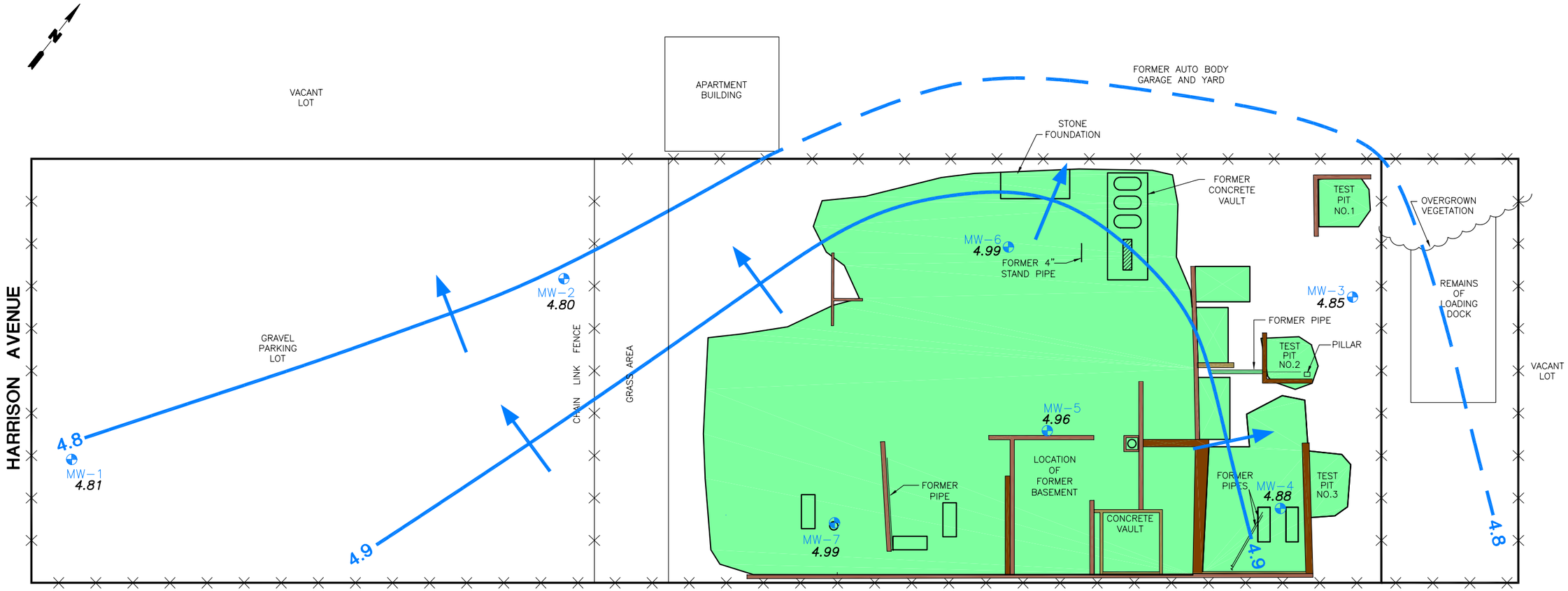
SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	PLATE 7
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: S.G.	Office: NY	
File No: PF4436512	Project: 04744Y08	



LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- MW-1 — LOCATION AND DESIGNATION OF MONITORING WELLS
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- 4.8 — LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- 4.96 — WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

25' 0 25'

Title:

ESTIMATED GROUNDWATER FLOW DIRECTION APRIL 16, 2003

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	8
Project Mgr: S.G.	Office: NY	
File No: PF4436513	Project: 04744Y08	

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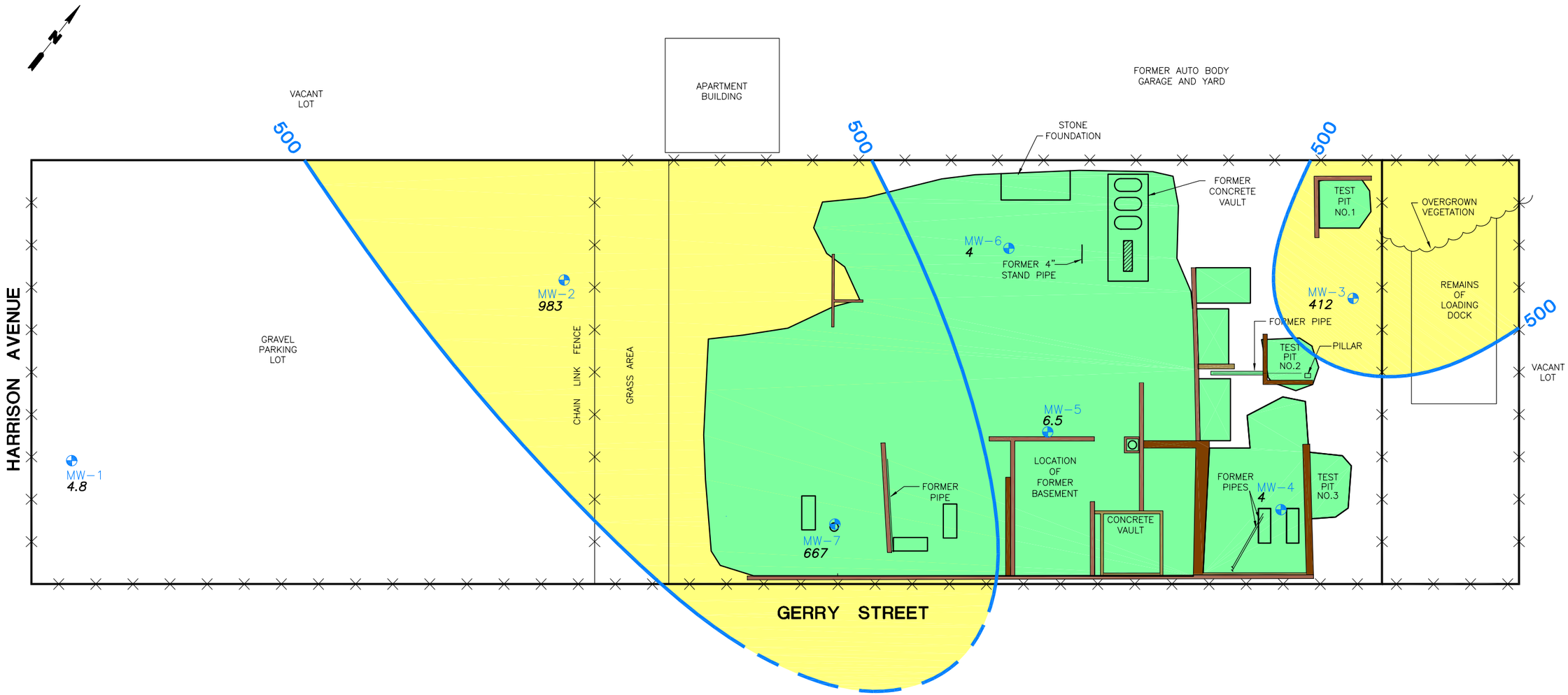

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- MW-1 — LOCATION AND DESIGNATION OF MONITORING WELLS
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- 500 — LINE OF EQUAL CVOCs IN ug/L (DASHED WHERE INFERRED)
- *983* — TOTAL CVOCs IN ug/L
- ug/L — MICROGRAMS PER LITER
- CVOCs — CHLORINATED VOLATILE ORGANIC COMPOUNDS
- CONCENTRATIONS OF CVOCs > 500 ug/L
- CONCENTRATIONS OF CVOCs < 500 ug/L

25' 0 25'

Title:

GENERALIZED EXTENT OF CVOCs IN GROUNDWATER APRIL 2003

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	9
Project Mgr: S.G.	Office: NY	
File No: PF4436514	Project: 04744Y08	

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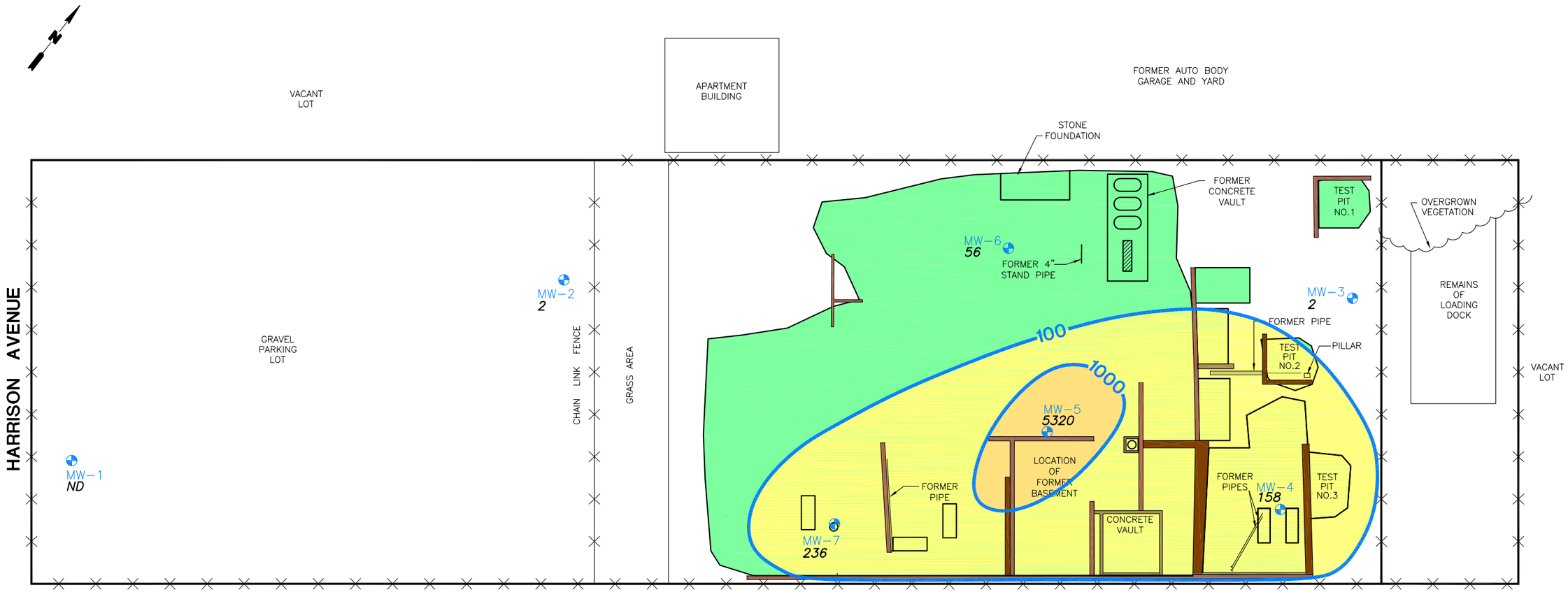

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- MW-1 — LOCATION AND DESIGNATION OF MONITORING WELLS
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- ug/L — MICROGRAMS PER LITER
- 100 — LINE OF EQUAL BTEX IN ug/L
- *56* — TOTAL BTEX IN ug/L
- *ND* — NOT DETECTED
- BTEX — BENZENE, TOLUENE, ETHYLBENZENE, XYLENES
- CONCENTRATIONS OF BTEX > 1000 ug/L
- CONCENTRATIONS OF BTEX BETWEEN 100 ug/L AND 1,000 ug/L
- CONCENTRATIONS OF BTEX <100 ug/L

25' 0 25'

Title:

GENERALIZED EXTENT OF BTEX IN GROUNDWATER APRIL 2003

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	10
Project Mgr: S.G.	Office: NY	
File No: PF4436515	Project: 04744Y08	

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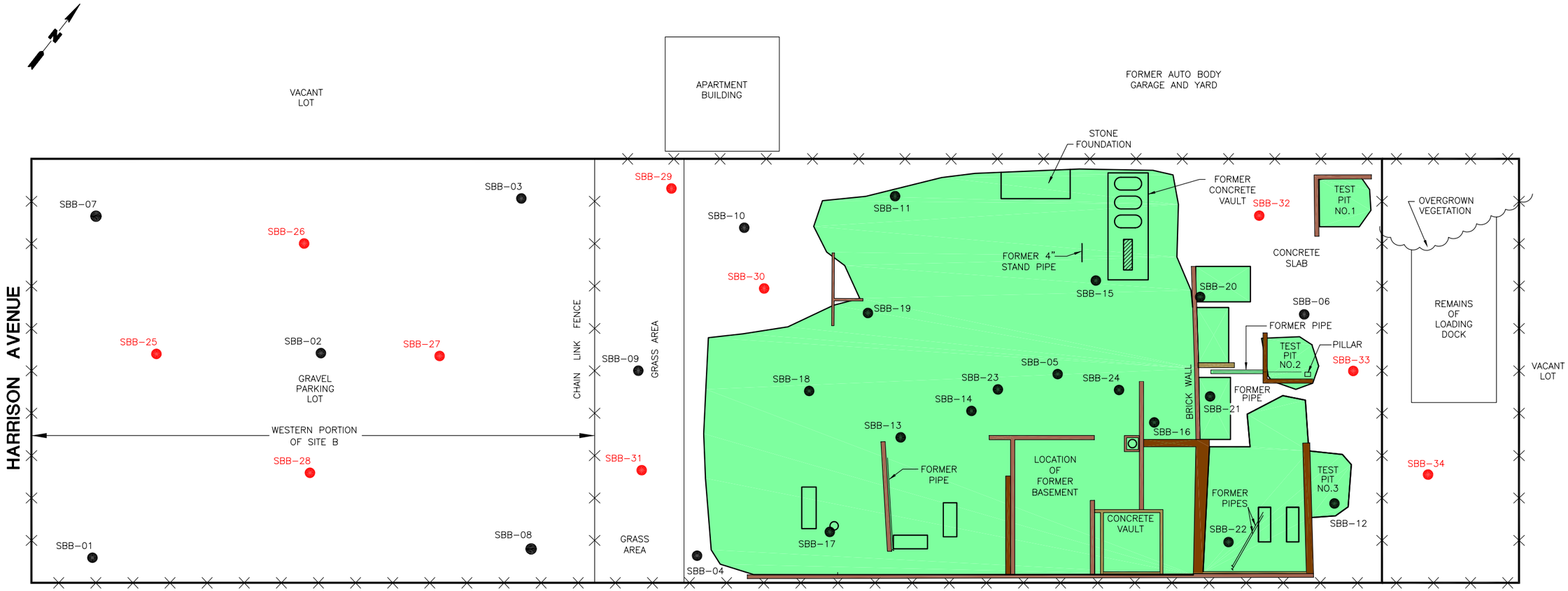

LEGEND

- SBB-03 — LOCATION AND DESIGNATION OF FORMER SOIL BORING
- SBB-28 — LOCATION AND DESIGNATION OF PROPOSED SOIL BORING
- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK

25' 0 25'

Title:

SOIL BORING LOCATIONS

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	11
Project Mgr: S.G.	Office: NY	
File No: PF4436516	Project: 04744Y08	

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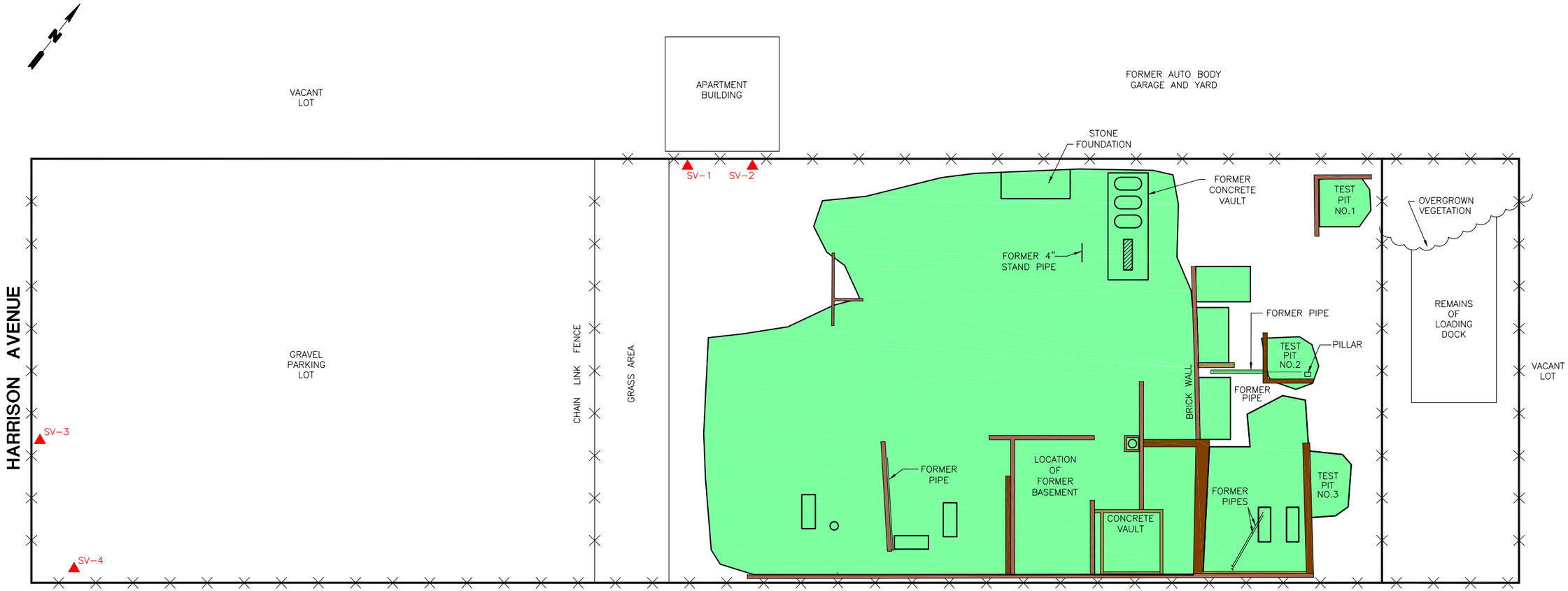

LEGEND

- SURVEYED LATERAL EXTENT OF EXCAVATION INCLUDING TEST PITS NO.1 THROUGH NO.3, INTERIM REMEDIAL MEASURE PROGRAM
- SITE B
- FENCE
- BRICK WALL/FOUNDATION
- STONE WALL/FOUNDATION
- CONCRETE WALL/FOUNDATION
- FORMER TANK-LIKE STRUCTURE
- FORMER 550-GALLON CAPACITY UST
- FORMER 275-GALLON CAPACITY UST
- FORMER 420-GALLON CAPACITY UST
- UST — UNDERGROUND STORAGE TANK
- SV-1 — PROPOSED SOIL VAPOR SAMPLING POINT LOCATION AND DESIGNATION

25' 0 25'

Title:

PROPOSED SOIL VAPOR SAMPLING POINT LOCATIONS

SITE B

Prepared For:

PFIZER INC
BROOKLYN, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.M.	Date: 04JUN03	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	12
Project Mgr: S.G.	Office: NY	
File No: PF4436517	Project: 04744Y08	

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