Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

PERGAMENT MALL/CORNICHE DRY CLEANERS
Staten Island, Richmond County, New York
Site Number 243012

July 2001

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* ERIN M. CROTTY, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Pergament Mall/Corniche Dry Cleaners Inactive Hazardous Waste Disposal Site
Staten Island, Richmond County, New York
Site No. 243012

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Pergament Mall/ Corniche Dry Cleaners Class 2 inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law. The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Pergament Mall/Corniche Dry Cleaners inactive hazardous waste disposal site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site have been addressed by implementing the interim remedial measure identified in this ROD. The early removal of contaminated soil and the decreasing groundwater contamination have significantly reduced the current or potential significant threat to public health and the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation/Feasibility Study (RI/FS) and the soil removal IRM that has been conducted for the Pergament Mall/Corniche Dry Cleaners site, the NYSDEC has selected No Further Action with continued groundwater monitoring as the remedy for this site. As part of the selected remedy, the Department would require Pergament Enterprises to design and implement an ongoing monitoring program which will, at a minimum, include quarterly sampling for and analysis of all groundwater monitoring wells where the contamination exceeds groundwater standards. Additionally, monitoring of other wells where the contaminants do not exceed the groundwater standards will also be required at least on an annual basis. Further, institutional controls in the form of existing use and development restrictions limiting the use of groundwater as a potable water also serves as a remedy. The NYCDOH will not issue a permit for a private water supply well if there is public water available, regardless of the groundwater quality.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

Date: 7/30/01

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

TABLE OF CONTENTS

RECORD OF DECISION

Pergament Mall/Corniche Dry Cleaners
Staten Island, Richmond County, New York
Site No. 243012
July 2001

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) is proposing a remedy to address the significant threat to human health and/or the environment created by the presence of hazardous waste at the former Corniche Dry Cleaners Site located in the Pergament Mall, Staten Island, New York. The store location is presently occupied by a Chinese restaurant. The site is a Class 2 Inactive Hazardous Waste Disposal Site. As more fully described in Sections 3 and 4 of this document, tetrachloroethene, a dry cleaning solvent commonly called "Perc", apparently was disposed in a limited area in the back of the dry cleaner. These disposal activities resulted in a significant threat to human health and the environment. A limited soil excavation was carried out by the property owners in the late eighties (exact date is not known). Currently, most of the site is paved or covered by structures so direct contact exposure is unlikely. Further, air monitoring of the adjacent stores has not indicated any impact to the indoor air quality by site-related contaminants. The groundwater is not used for drinking purposes in the area.

A remedial investigation of the potential source area and its impacts on the groundwater shows that no contaminant sources remain in soils. The groundwater contamination appears to be decreasing. The investigation shows that the soils present onsite are tight (of low permeability), and other remedial means such as vapor extraction or groundwater extraction and treatment are unlikely to appreciably accelerate the groundwater cleanup. The early source removal and the decreasing groundwater contamination have significantly reduced a threat to human health and the environment. Therefore, No Further Action with continued groundwater monitoring was selected as the remedy for this site. In addition, the Department will also reclassify the site to a Class 4 on the New York State Registry of Inactive Hazardous Waste Disposal Sites.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Corniche Dry Cleaners site is located within an 18-acre shopping center complex of Pergament Mall on Staten Island in Richmond County, New York. The Pergament Mall shopping complex is located across from the Staten Island Mall and is bounded by Richmond Avenue to the west,

Platinum Avenue on the north, a residential condominium complex on the east, and Yukon Avenue on the south. The nearest boundary of the Fresh Kills Sanitary Landfill is approximately 200 yards west of the site. The Pergament Mall consists of a main core building and four (4) satellite buildings. The remainder of the site surrounding the buildings is paved and used primarily for parking. The Corniche Dry Cleaner was located in the middle of the eastern satellite building. The location is presently occupied by a Chinese restaurant and is surrounded by other restaurants and retail stores. See Figures 1 and 2 for site location.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The Pergament Mall was originally developed in 1964 and subsequently sold to Pergament Enterprises, its current owners, in 1981. The exact period of operation of the dry cleaners at the Pergament Mall is not known. Corniche operated from 1982 to 1997, but, prior to Corniche, another dry cleaner is known to have operated in the Mall during the seventies. Corniche went from an open dry cleaning system to a closed system in 1993. A closed system is self contained and emits no flue gas to the environment. The open system was more prone to the spill of solvents. The disposal, therefore, may have occurred anytime or periodically between 1970 and 1993. An investigation was first done in 1987 by Atlantic Environmental Services, Inc. on behalf of the financing company which held the mortgage on the property. The Atlantic investigation found soil contamination in two locations: 1) petroleum constituents in the former gasoline storage tank area in the northwest part of the site (see Figure 2 for an approximate location of the gasoline tank area); and 2) dry cleaning solvents in the area behind the Corniche Dry Cleaner. Groundwater contamination was not detected in either location at the time.

3.2: Remedial History

In response to the Atlantic investigation, the property owners conducted limited soil excavation between 1987 and 1988 in the gasoline storage tank area (Figure 2) and behind the Corniche Dry Cleaners (Figure 7) where the soil contamination was initially discovered. The details of these remedial actions are not known. In a post remedial evaluation investigation conducted in 1988, no contaminants were detected in the gasoline storage area. This area of petroleum contamination was therefore considered remediated. In the second area, the area behind the Corniche Dry Cleaner, tetrachloroethene and its breakdown products were still present indicating there was need for further investigation and or remediation. The Department conducted a Phase II investigation of the Corniche Dry Cleaner in 1992. The purpose of the investigation was to collect field data essential to document the disposal of hazardous waste and determine if there were a significant threat to human health and the environment. The Phase II investigation detailed in a September 1993 Report concluded the presence of hazardous waste and recommended that a Remedial Investigation/Feasibility (RI/FS) be conducted to determine the source of groundwater

contamination and evaluate remedial measures. As a result, the site was reclassified to a Class 2 in November 1993.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the Corniche Dry Cleaner site and to evaluate alternatives to address the significant threat to human health and/or the environment posed by the presence of hazardous waste, Pergament Investments, the potential responsible party (PRP), entered into an order on consent with the Department and has since completed an RI/FS.

4.1: Summary of the Remedial Investigation

An RI/FS work plan dated January 1996 was approved by the Department on April 24, 1997. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted from July 1997 to February 1998 and is detailed in an RI Report dated August 1998. A Supplemental RI was conducted from October 1999 to March 2000 to address data gaps noted in the RI. The results of the supplemental RI are described in a Phase II Remedial Investigation Report dated June 2000. The RI included the following activities:

- *Ground Penetrating Radar and Magnetometer Survey to locate subsurface utilities prior to installation of borings and monitoring wells*

- *Installation of soil borings (15 in the RI plus another 7 during the Supplemental RI) and four monitoring wells (2 in the RI and 2 in the Supplemental RI) for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions; and*

- *Air Monitoring of adjacent stores in the shopping mall to check for presence of solvent vapors.*

To determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the RI analytical data were compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water, and surface water SCGs identified for the Pergament Mall site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of New York State Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 provides soil cleanup guidelines for the protection of groundwater, background conditions, and health-based exposure scenarios. In addition, for soils site specific background concentration levels can be considered for certain classes of contaminants. Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, the groundwater onsite remains contaminated. The extent of contamination is summarized

in Section 4.1.3. More complete information can be found in the Remedial Investigation Report dated August 1998; the Phase II Remedial Investigation Report dated June 2000; and the Feasibility Study Report dated December 2000.

Chemical concentrations are reported in parts per billion (ppb), parts per million (ppm), and micrograms per cubic meter ($\mu g/m^3$) for groundwater, soil and, air samples, respectively. For comparison purposes, where applicable, SCGs are provided for each medium.

4.1.1: Site Geology and Hydrogeology

The Pergament Mall site geology is characterized by 3 to 15 ft thick overburden consisting of glacial ground moraine deposits with substantial amounts of clay over moderately weathered Cambrian serpentinite bedrock. The grain size analysis conducted for the RI show overburden material at the site consists of poorly sorted clayey to silty sands, silts and very fine sands and gravel. The groundwater at the site is found under static water table conditions, with primary movement occurring through fractures in the serpentinite bedrock aquifer and in pore spaces of the unconsolidated overburden material. The groundwater flow direction is to the southwest, averaging 0.07 ft/day. The groundwater occurs at 3 feet to 10 feet below the ground surface.

4.1.2: Nature of Contamination

As described in the RI report, many soil, groundwater, and surface water samples were collected at the site to characterize the nature and extent of contamination. The main category of contaminants that exceed their SCGs are volatile organic compounds (VOCs) - specifically tetrachloroethene (the dry cleaning solvent commonly known as "Perc") and its degradation product trichloroethene (TCE). Chloroform, another dry cleaning solvent, was also found in one sample. Some petroleum constituents, benzene, toluene, ethylbenzene, and xylenes were also found in some groundwater samples. These contaminants are not related to dry cleaner operations and may or may not be from onsite disposal. Semi-volatiles and metals were not identified during the site characterization and are not of concern at this site.

4.1.3: Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in soil and groundwater and compares the data with the SCGs for the site. Additionally, Tables 2 through 5 are attached at the end of the PRAP. Tables 2 and 3 show results of the latest round of soil and groundwater sampling. Tables 4 and 5 show historical results of soil and groundwater sampling. The following are the media which were investigated and a summary of the findings of the investigation.

Soil

To characterize soil conditions, detect the presence of any hot spots (source locations), and detect potential residual source and/or free phase locations, a number of soil borings were advanced during various phases of investigation as follows: five (5) borings during site characterization corresponding to high soil gas locations (this included a boring in the area behind the back door location of the former dry cleaner); sixteen (16) borings were advanced in suspect locations during the RI (this included a boring through the floor of the former dry cleaner location); and, nine (9) additional borings were advanced during the Phase II Supplemental RI to check for contaminated soil or free product (residual source material). With the exception of two borings inside the dry cleaner and one boring behind the dry cleaner, these borings were generally drilled to the top of the bedrock, and the sample exhibiting the highest Photo Ionization Detector (PID) reading was collected for analysis. As shown in Table 1, tetrachloroethene exceeded its SCG of 1400 ppb in only one of the 28 soil samples. This sample was collected during the RI in July 1997 at a depth of 11 to 12 ft below ground in boring W3 corresponding to a high soil gas reading. See Figure 3 for boring locations and soil sampling results. The absence of chlorinated solvents in soil samples, including those taken from borings in which downgradient monitoring wells were installed, suggests that the migration of these contaminants is more vertical towards the water table than lateral through the soil, and that there are no longer any contaminant sources present in soils that need to be removed.

Groundwater

One upgradient groundwater monitoring well and three downgradient wells were installed in May 1992 as part of the site investigation conducted on behalf of the Department. The downgradient wells were installed in locations of high soil gas readings. All wells were drilled to the top of the bedrock (15 to 17 ft below ground). The groundwater flow direction was confirmed to be southwest. See Figure 4 for a groundwater contour map and monitoring well locations. Tetrachloroethene (PCE), the dry cleaning solvent, exceeded the 5 ppb groundwater standard in all three downgradient wells at 210 ppb in MW-2, 1800 ppb in MW-3, and 4100 ppb in MW-4. TCE and dichloroethene (1,2-DCE), the breakdown products of PCE, were also detected. Additional rounds of samples were collected from these wells between 1994 and 2000. PCE was detected up to 5600 ppb in MW-4 in 1994. Two (2) additional wells, MW-5 and MW-6, were installed during the Remedial Investigation in August 1997 to determine the down gradient extent of the dissolved plume. Only a trace of PCE or related contaminants was found in MW-5 and none were found in MW-6. Petroleum constituents benzene (0.5 ppb), toluene (0.7 ppb), ethylbenzene (9.8 ppb) and xylenes (28 ppb) (commonly known as BTEX) were found in MW-6. These do not appear to be from the gasoline spill (mentioned in Section 3.1) that was investigated in 1987 because that location is upgradient (northeast) of this well. Tetrachloroethene was detected at 1000 ppb in MW-2 and at 1100 ppb in MW-3. MW-4 could not be located and, therefore, was not sampled. Two additional wells were installed in November 1999 during the Phase II RI: 1) a new MW-4 (R) was installed to replace the missing MW-4; 2) another down gradient well, MW-7, was installed to confirm that the plume was not escaping between MW-5 and MW-6. All wells except MW-7 were resampled in January 2000

(MW-7 was found to be dry in January, but a sample was collected in March 2000). The latest sampling found tetrachloroethene at up to 1200 ppb in downgradient well MW-3. See Figure 5 for the most recent groundwater sampling results.

Surface Water

The groundwater from the Pergament site discharges into an unnamed tributary of Richmond Creek, which is located south of the site. Two rounds of surface water samples at three locations were collected from this tributary in 1994. Tetrachloroethene and its products were detected at concentrations below their respective surface water standards specified at Title 6, Chapter X, Parts 702.15, 702.16 and 703.5 Table 1. See Figure 6 for surface water sampling locations and sampling results.

Air

A screening of the interior of the strip mall buildings to assess these areas was conducted in January 2000 to check for the presence of volatile organic compounds. All open stores were screened using a PID. No elevated readings were found. A low detection air monitoring survey of all stores in the vicinity of the former dry cleaner was subsequently required by the NYSDOH. Air samples were collected using evacuated air canisters and analyzed for volatile organic compounds. Tetrachloroethene was detected at levels from 2.4 $\mu g/m^3$ to 12 $\mu g/m^3$. No other site-related contaminants were detected in the air samples. Levels of tetrachloroethene were well below the NYSDOH guideline of 100 $\mu g/m^3$ for tetrachloroethene in indoor air.

4.2: Interim Remedial Measures

An Interim Remedial Measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. A soil excavation in the rear of the dry cleaner location was conducted sometime between September 1987 and September 1988. Although the exact details of the soil removal action are not known, the excavation appears to have been done in a 25 ft x 15 ft area (See figure 7). The post remedial action sampling and the soil investigation done during the RI does not indicate the presence of any additional source in this area.

4.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 5 of the Feasibility Study Report dated December 2000.

An exposure pathway is the manner by which an individual may come in contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

The following pathways which may potentially exist on-site were evaluated:

1. Inhalation of Vapors - The highest soil gas reading recorded during the May 1992 soil gas survey was 740,000 $\mu g/m^3$ for PCE located six feet below the paved ground. To address concern for the potential impact on indoor air quality, air monitoring was conducted in stores in the vicinity of the former dry cleaner. Levels of tetrachloroethene detected within the stores were slightly elevated compared to typical background ranges found in residential homes, but were well below the NYSDOH guideline for tetrachloroethene in indoor air. No other site-related chemicals were detected in these samples. Based upon these results, potential for exposure to vapor emissions appears to be minimal.

2. Direct Physical Contact - Based upon results of an extensive soil sampling program, there is little to no potential for direct contact with contaminated soils. Soils were found to contain very low concentrations of dry cleaning solvents. As mentioned before, only one sample (at 2100 ppb of tetrachloroethene collected at a depth of 11 to 12 ft below ground in W 3) exceeded the soil cleanup criteria of 1400 ppb. Also, all soils at the site are covered with pavement or buildings, limiting the potential for contact.

3. Groundwater - The groundwater is not used for drinking purposes on Staten Island and there are no active wells in the vicinity of the site. However, the USEPA has designated Staten Island as a Principal Aquifer which may need to be used in an emergency, such as in an extreme drought condition. Groundwater, if used as a source of public drinking water, would be subject to mandated testing and is required to meet state and federal drinking water standards before being sent to the distribution system. Exposure to contaminated groundwater, therefore, is unlikely.

4. Surface Water - There is no main surface water body in the vicinity of the site. Two rounds of water samples were collected at two to three locations from a drainage ditch. This ditch is the origin of a tributary to the Richmond Creek. Tetrachloroethene and its degradation products were detected at all locations but were below their respective surface water standards. The concentrations were lowest in the most downstream location, that is, at a location closest to the tributary to the Richmond Creek. The tributary receives storm water from multiple sources, and the contamination cannot be attributed to any single source.

4.4: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures and ecological risks which may be presented by the site. The Fish and Wildlife Impact Assessment included in the RI presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources. The following pathways for environmental exposure and/or ecological risks have been identified:

Groundwater: The USEPA has designated Staten Island as a Principal Aquifer which may need to be used in an emergency, such as in an extreme drought condition. The contaminated groundwater, therefore, presents a threat to the environment.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Potential Responsible Parties (PRP) for the site, documented to date, include Pergament Enterprises of Staten Island LP. The NYSDEC and Pergament Enterprises entered into an Order on Consent on July 26, 1996. The Order obligates the responsible parties to implement a Remedial Investigation and a Feasibility Study, collectively known as an RI/FS. Upon issuance of the Record of Decision, the NYSDEC will approach the PRPs to implement the selected remedy under an Order on Consent.

Date	Index No.	Subject
07/26/96	**W2-0751-95-09**	**RI/FS**

SECTION 6: SUMMARY OF THE SELECTED REMEDY

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health and/or the environment caused by the presence of hazardous waste at the site. The State believes that the remediation steps taken since 1987, as described in Section 4.2 Interim Remedial Measures, together with the apparent natural attenuation of contaminants in groundwater will in time accomplish this objective. Further, institutional controls in the form of existing use and development restrictions limiting the use of groundwater as a potable water also serve as a remedy. The NYCDOH will not issue a permit for a private water supply well if there is public water available regardless of the water quality.

Based on the results of the investigations and the IRMs that have been performed at the site, the NYSDEC has selected No Further Action with continued groundwater monitoring as the remedy

for the site. As part of this No Further Action selected remedy, the Department will require Pergament Enterprises to design and implement an on-going monitoring program which will, at a minimum, include quarterly sampling for and analysis of all groundwater monitoring wells where the contamination exceeds groundwater standards. Those wells in which contaminants do not exceed the groundwater standards will be monitored at least annually. Additional groundwater monitoring wells will be installed if deemed necessary. The monitoring program will continue to be in effect until the contaminants of concern no longer exceed their respective groundwater standards or until significant reductions in contaminant concentrations have materialized and asymptotic conditions are reached. If asymptotic conditions are reached without significant reductions, the NYSDEC will evaluate what additional measures, if any, are needed to mitigate any residual threats. The Department will also reclassify the site from a Class 2 to a Class 4. A Class 4 site is defined as a site that is properly closed and one that requires continued management.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.
- A Fact Sheet describing the contamination on site and announcing the date for a public meeting, together with the start and end dates of public comment period, was sent to every one on the mailing list.
- A public meeting was held on April 3, 2001 at the Staten Island Community Board 2. State officials from the New York State Department of Environmental Conservation and the Department of Health presented the investigation results and discussed the preferred remedy. The site owner's technical consultant was also available to discuss how the investigation was conducted. The comment period ended on April 17, 2001. The Department's responses to all comments received during the public meeting and during the comment period are provided in the Responsiveness Summary Section of this Record of Decision.

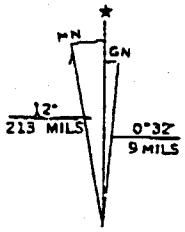
FIGURES

SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER



UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

QUADRANGLE LOCATION

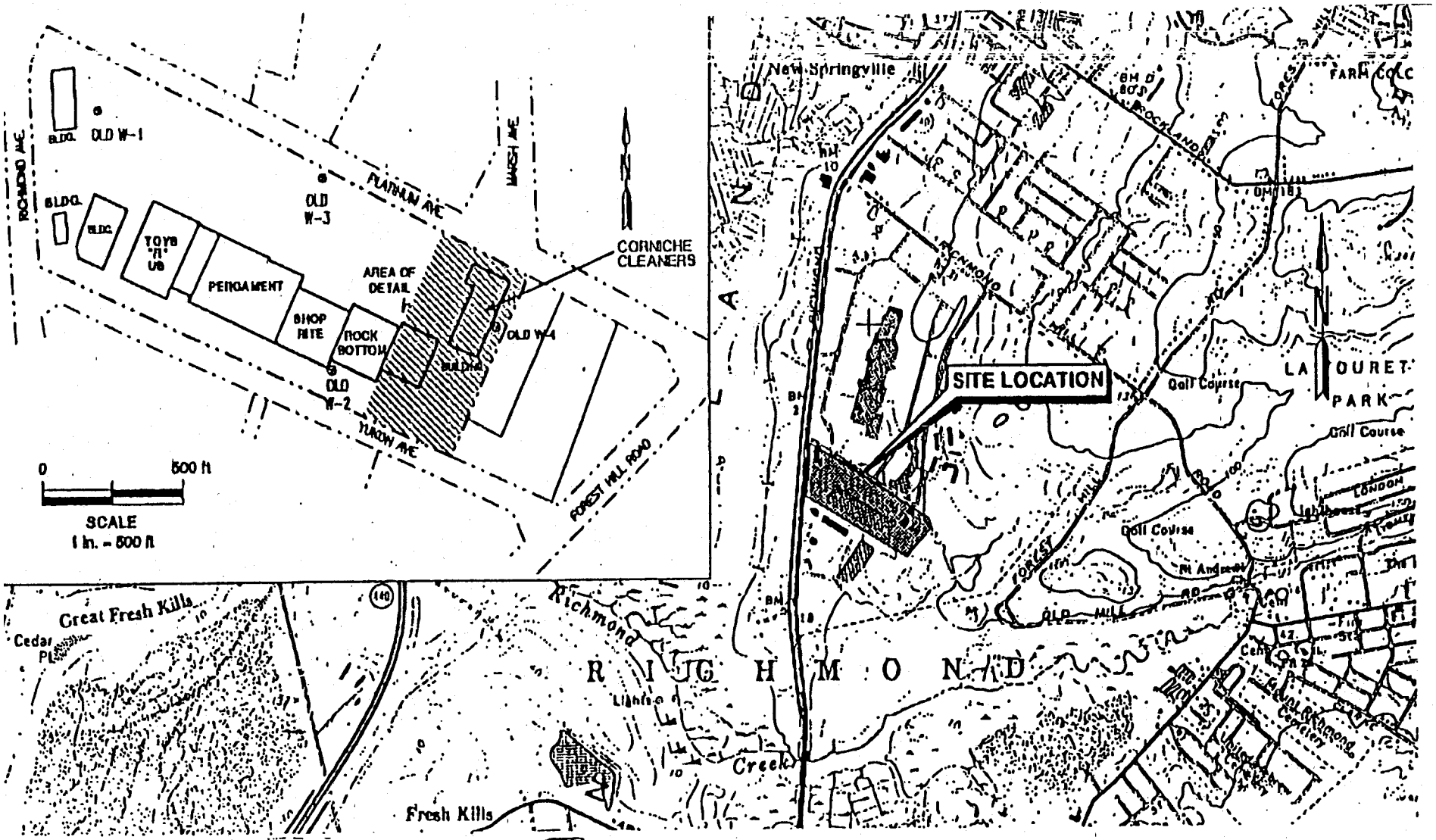
THE WHITMAN Companies, INC.

PERGAMENT MALL
STATEN ISLAND, NEW YORK

SITE LOCATION ON USGS
ARTHUR KILL, NY QUADRANGLE

DATE: AUGUST 1994 | FIGURE: 1

DWG.#: | DWG. BY: | CHK. BY: BS



SITE COORDINATES:

LAT.: 40° 34' 31" x 40°34' 36" N
LONG: 74° 09' 54" x 74° 10' 09" W

Map source: USGS quadrangle map, Arthur Kill, NY-NJ, 1966, photorevised 1981,

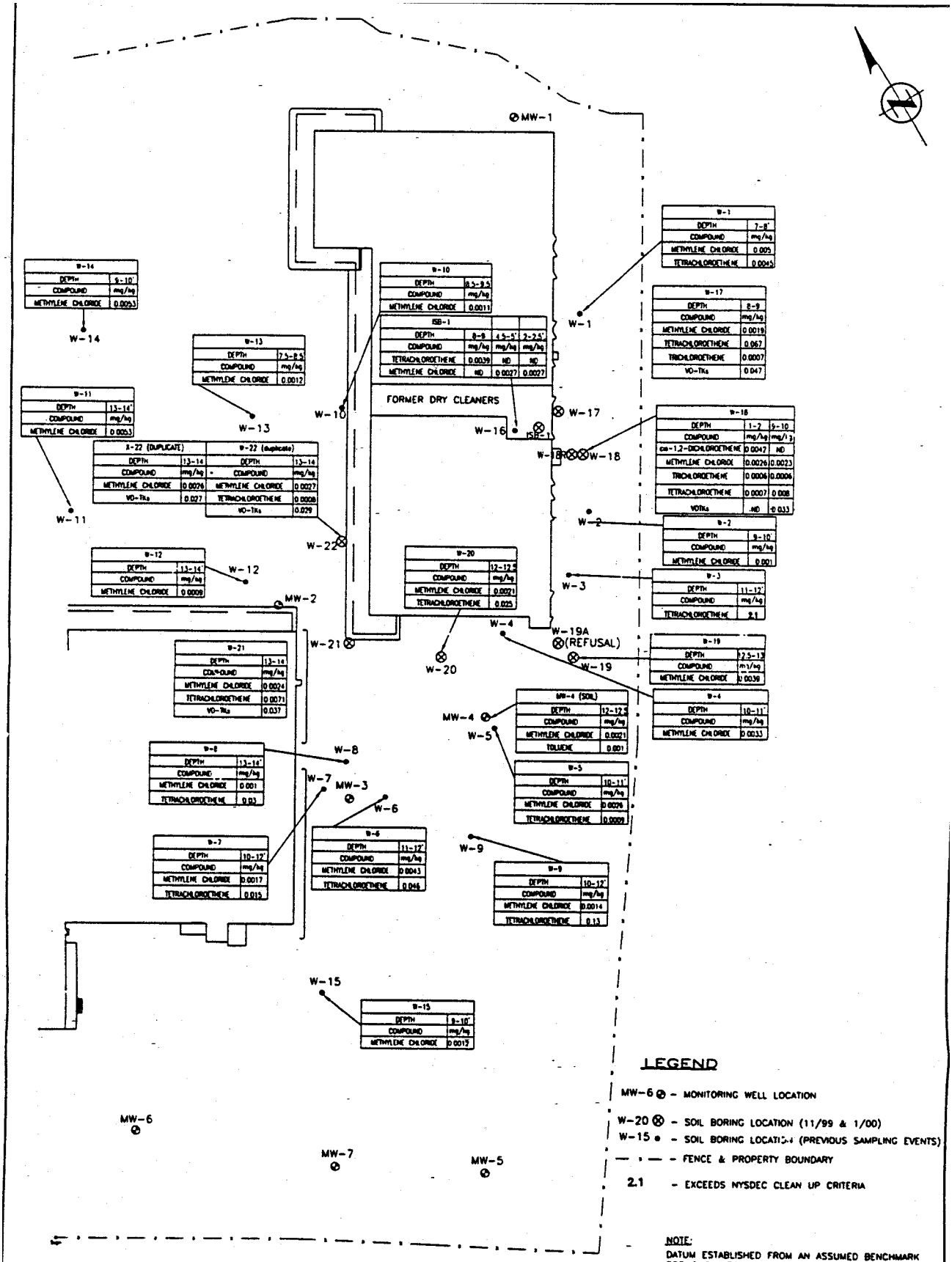
SOURCE: LMS ENGINEERS

THE WHITMAN Companies, INC.

PERGAMENT INVESTMENTS, INC.
STATEN ISLAND, NEW YORK

SCALED SITE PLAN

ORIGINAL BY: GW	DRAWN BY: A J	DRAWING NO:
CHECKED BY: GW	DATE: JULY 1998	FIGURE NO: 2



LEGEND

MW-6 ⊗ – MONITORING WELL LOCATION

W-20 ⊗ – SOIL BORING LOCATION (11/99 & 1/00)

W-15 ● – SOIL BORING LOCATION (PREVIOUS SAMPLING EVENTS)

— · — – FENCE & PROPERTY BOUNDARY

2.1 – EXCEEDS NYSDEC CLEAN UP CRITERIA

NOTE:
DATUM ESTABLISHED FROM AN ASSUMED BENCHMARK PREVIOUSLY ESTABLISHED BY L.M.S.

FIG 3

SCALE
0 50'

THE WHITMAN COMPANIES, INC.	PERGAMENT INVESTMENTS, INC. STATEN ISLAND, NEW YORK
	WHITMAN SOIL BORING LOCATIONS AND ANALYTICAL RESULTS
ORIG. BY: GW	DWG. BY: TAG / CHK. BY: GW

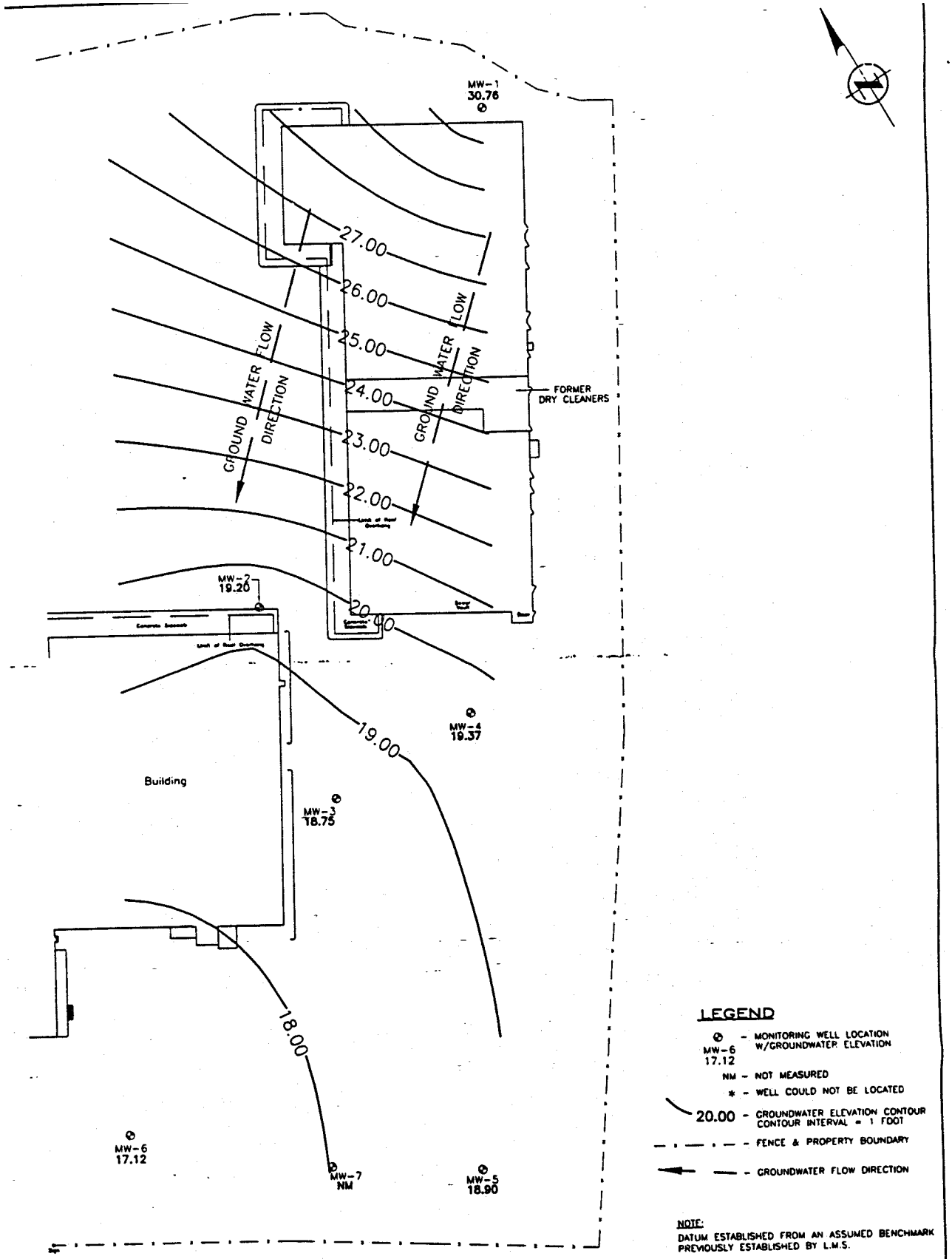


FIG 4

SCALE
0 50'

THE WHITMAN Companies, INC.	PERGAMENT INVESTMENTS, INC. STATEN ISLAND, NEW YORK	
	GROUNDWATER CONTOUR MAP JANUARY 7, 2000	
ORIG. BY: GW	DWG. BY: A I	CHK. BY: GW
DWG # 940103AH	DATE JUNE 2000	FIGURE 4

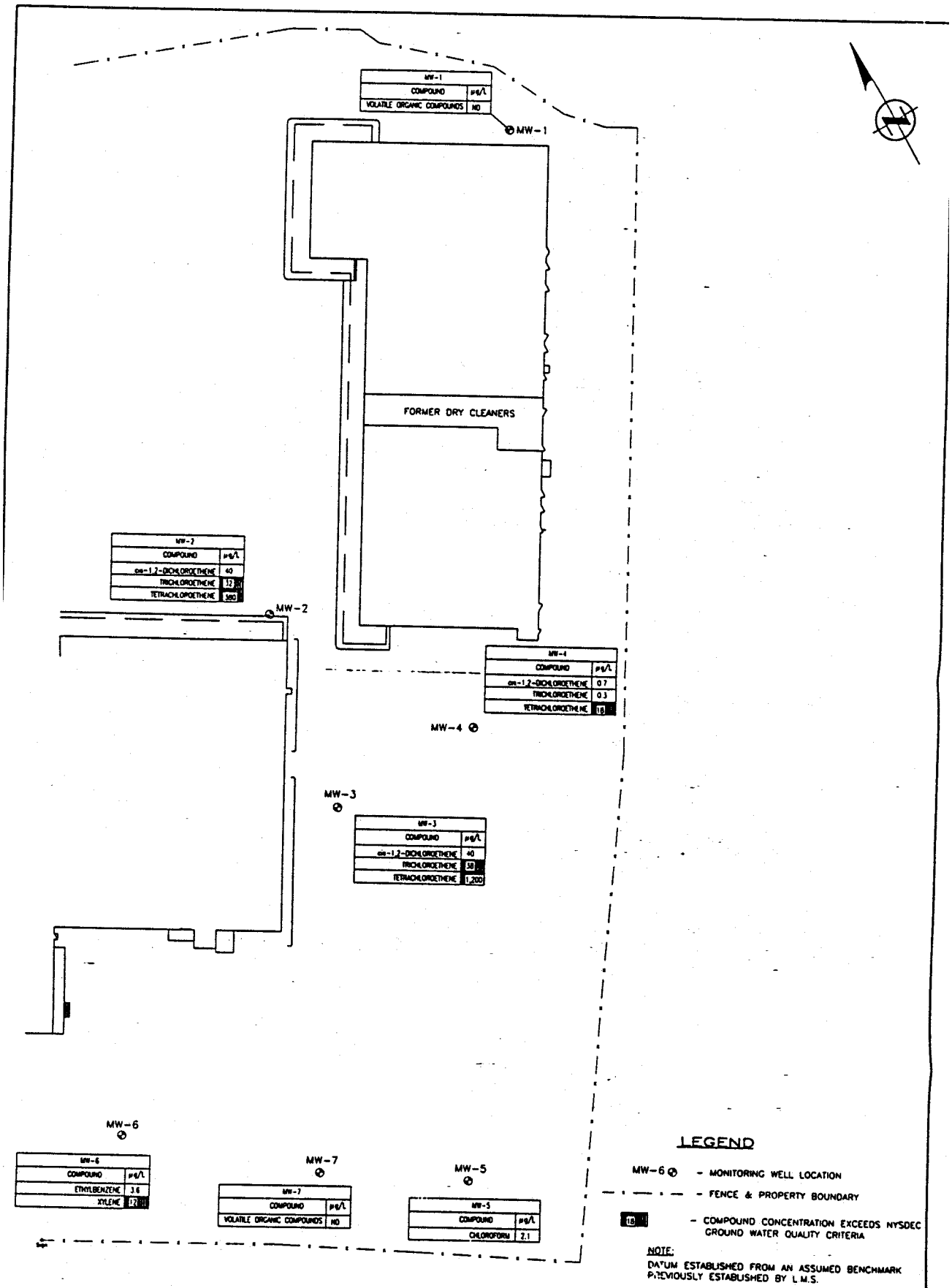
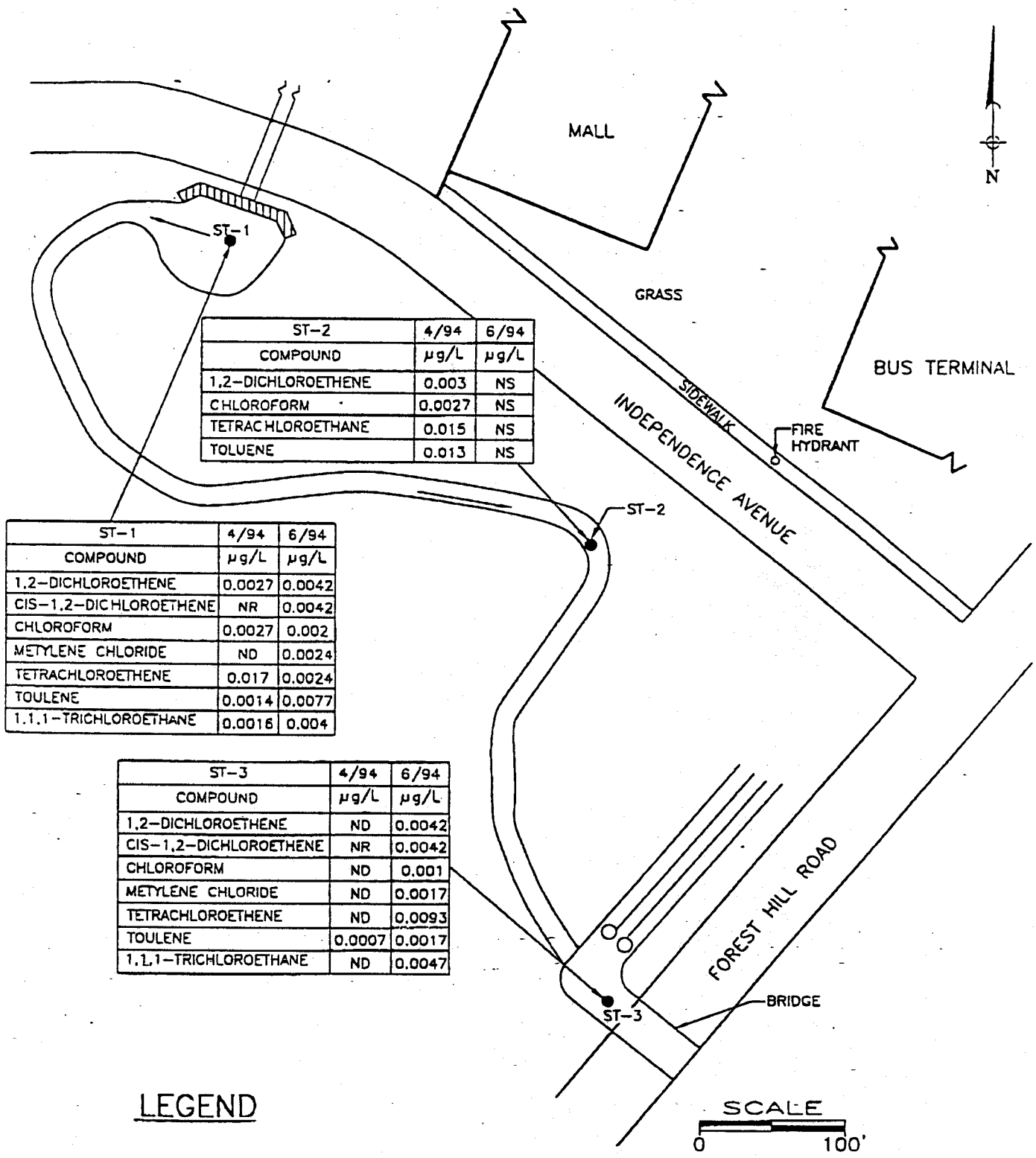


FIG 5

SCALE
0 50'

THE WHITMAN CompanieS, INC.	PERGAMENT INVESTMENTS, INC. STATEN ISLAND, NEW YORK	
	MONITORING WELL LOCATIONS AND MOST RECENT GROUND WATER SAMPLING RESULTS	
ORIG. BY: GW	DWG. BY: TAG	CHK. BY: GW
DWG # 940103C4	DATE: AUG 2000	FIGURE 5



ST-2	4/94	6/94
COMPOUND	µg/L	µg/L
1,2-DICHLOROETHENE	0.003	NS
CHLOROFORM	0.0027	NS
TETRACHLOROETHANE	0.015	NS
TOLUENE	0.013	NS

ST-1	4/94	6/94
COMPOUND	µg/L	µg/L
1,2-DICHLOROETHENE	0.0027	0.0042
CIS-1,2-DICHLOROETHENE	NR	0.0042
CHLOROFORM	0.0027	0.002
METYLENE CHLORIDE	ND	0.0024
TETRACHLOROETHENE	0.017	0.0024
TOULENE	0.0014	0.0077
1,1,1-TRICHLOROETHANE	0.0016	0.004

ST-3	4/94	6/94
COMPOUND	µg/L	µg/L
1,2-DICHLOROETHENE	ND	0.0042
CIS-1,2-DICHLOROETHENE	NR	0.0042
CHLOROFORM	ND	0.001
METYLENE CHLORIDE	ND	0.0017
TETRACHLOROETHENE	ND	0.0093
TOULENE	0.0007	0.0017
1,1,1-TRICHLOROETHANE	ND	0.0047

LEGEND

ND – NOT DETECTED

NR – NOT REPORTED BY LABORATORY

NS – NOT SAMPLED

* ALL RESULTS REPORTED IN mg/l

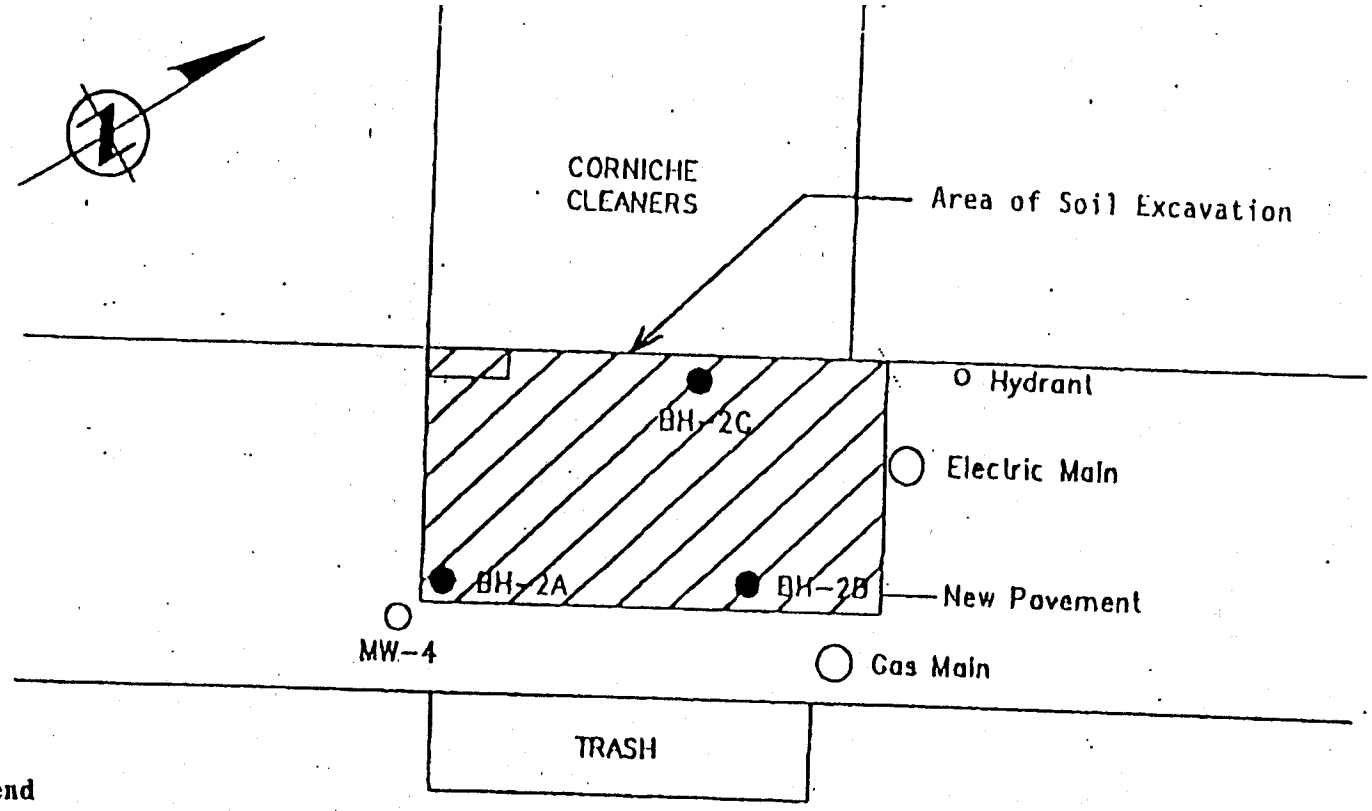
FIG 6

THE WHITMAN COMPANIES, INC.

PERGAMENT INVESTMENTS, INC.
STATEN ISLAND, NEW YORK

SURFACE WATER SAMPLING LOCATIONS AND ANALYTICAL RESULTS

ORIGINAL BY:	DRAWN BY:	DRAWING NO:
K.M.	D.L	940103-E
CHECKED BY: K.M.	DATE: AUGUST 2000	FIGURE NO: 6



Legend

● = Soil Boring
O = Monitoring Well

Note: The cross hatched area is the approximate aerial extent of the soil excavation

0 10 20 Feet

FIG 7

FIGURE 7
SAMPLING LOCATIONS AND SOIL EXCAVATION (IRM)

TABLES

Table 1

Nature and Extent of Contamination

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY of EXCEEDING SCGs/Background	SCG/ Bkgd. (ppb)
Groundwater	Volatile Organic Compounds (VOCs)	Chloroform	ND to 8.1	1 of 29	7
		1,1,1 trichloroethane	ND to 91	5 of 29	5
		Trichloroethene	ND to 160	8 of 29	5
		Tetrachloroethene	ND to 5600	16 of 29	5
		Toluene	ND to 87	1 of 29	5
		Ethylbenzene	ND to 9.8	3 of 29	5
		Xylenes	ND to 28	4 of 29	5
Soils	Volatile Organic Compounds (VOCs	Tetrachloroethene	ND to 2100	1 of 28	1400

TABLE 2

PERGAMENT MALL, STATEN ISLAND, NEW YORK
SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS FOR SOIL
NOVEMBER 1999 AND JANUARY 2000

Sample ID	Soil Cleanup Objectives to Protect GW Quality	SB-11	MW-4	W-17	W-18	W-19	W-19	W-20	W-21	W-22	X-22	FB 11-19	TB 11-19	FB 1-7	TB 1-7
Lab Sample Number		178182	170389	170388	170386	170387	170385	170384	170383	170381	170382	170380	170379	178174	178173
Sampling Date		01/07/00	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99	01/07/00	01/07/00
Sample Depth (feet)		8-9	12-13	9-10	1-2	9-10	12-13	12-13	11-12	13-14	13-14				
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/L	ug/L	ug/L	ug/L
VOLATILE COMPOUNDS															
Chloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	0.1	ND	0.0021J	0.0019J	0.0026J	0.0023J	0.0039J	0.0021J	0.0024J	0.0027J	0.0026J	ND	ND	ND	ND
Trichlorofluoromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	0.3	ND	ND	ND	0.0042J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.76	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.7	ND	ND	0.0007J	0.0006J	0.0006J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl Vinyl Ether	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.4	0.0039	ND	0.067	0.0007J	0.0008J	ND	0.025	0.0071	0.0008	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1.5	ND	0.001J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (Total)	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Confident Conc.		0.0039	0.0031J	0.0696J	0.0081J	0.0037J	0.0039J	0.0271J	0.0095J	0.0035J	0.0026J	0	0	0	0
Total Estimated Conc. VOA TICs (s)		0	0	0.047	0	0.033	0	0	0.037	0.029	0.027	0	0	0	0

NC - No Criteria for Individual Contaminant.
ND - None Detected
B - The analyte was found in the laboratory blank as well as the sample.
This indicates possible laboratory contamination of the environmental sample.
J - The result is less than the specified detection limit but greater than zero.
The concentration given is an approximate value.
* - x-22 is a Laboratory Blind Duplicate of W-22

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THE WHITMAN COMPANIES, INC.

TABLE 3

PERGAMENT MALL, STATEN ISLAND, NEW YORK
SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS FOR GROUND WATER
JANUARY AND MARCH 2000

Sample ID Lab Sample Number Sampling Date Units	1994 NYSDEC Ground Water Standards Criteria ug/l	MW-1 [illegible] 01/07/00 ug/l	MW-10* 178176 01/07/00 ug/l	MW-2 178179 01/07/00 ug/l	MW-3 178180 01/07/00 ug/l	MW-4 178181 01/07/00 [illegible]	MW-5 178177 01/07/00 ug/l	MW-6 178178 01/07/00 ug/l	MW-7 191177 03/21/00 ug/l	FB-1-7 178174 01/07/00 ug/l	TB-1-7 178173 01/06/00 ug/l	FB-3-21 191176 03/21/00 ug/l
VOLATILE COMPOUNDS												
Chloromethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NS	ND	ND	40	40	0.7	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	32	38	0.3	ND	ND	ND	ND	ND	ND
Dibromochloromethane	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl Vinyl Ether	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	380	1200	18	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	ND	ND	ND	ND	ND	ND	3.6	ND	ND	ND	ND
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	12	ND	ND	ND	ND
Total Confident Conc. VOAs (s)		ND	0	452	1278	19	2.1	15.6	ND	ND	ND	0
Total Estimated Conc. VOA TICs (s)		0	0	0	0	0	0	715	3.2	12	0	0

☐ - Results above NYSDEC 1994 Ground Water Standards / Criteria
ND - None Detected
NS - No Standard
* - MW-10 is a laboratory blind duplicate of MW-1

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THE WHITMAN COMPANIES, INC.

TABLE 4
PERGAMENT MALL
STATEN ISLAND, NEW YORK
HISTORIC SOIL SAMPLING RESULTS FOR VOLATILE ORGANIC COMPOUNDS

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sample ID	NYSDEC Soil Cleanup	W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8	W-9	W-10	W-11	W-12	W-13	W-14
Lab Sample Number	Objectives (a)	313178	313179	313180	313181	313182	313183	313184	313185	313186	313187	313188	313189	313190	313191
Sampling Date	Protect GW	07/23/97	07/23/97	07/23/97	07/24/97	07/24/97	07/24/97	07/24/97	07/24/97	07/24/97	07/24/97	07/24/97	07/24/97	07/24/97	07/24/97
Sample Depth (feet)	Quality (b)	0.0-1.0	0.0-1.0	0.0-1.0	0.0-1.0	0.0-1.0	1.0-2.0	10.0-12.0	11.0-14.0	10.0-12.0	0.0-1.0	13.0-14.0	13.0-14.0	0.0-1.0	0.0-1.0
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
VOLATILE COMPOUNDS															
Chloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	0.1	0.005	0.001	ND	0.0033	0.0026	0.0043	0.0017	0.001	0.0014	0.0011	0.0053	0.0009	0.0012	0.0053
Trichlorofluoromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.76	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropene	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl Vinyl Ether	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.4	0.0045	ND	2.1	ND	0.0009	0.046	0.015	0.03	0.13	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (Total)	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Confident Conc.		0.0095	0.001	2.1	0.0033	0.0035	0.0503	0.0167	0.031	0.1314	0.0011	0.0053	0.0009	0.0012	0.0053
Total Estimated Conc. VOA TICs (s)		0	0	0	0	0	0	0	0	0	0	0	0	0	0

[ ] - Concentration Exceeds NYSDEC Soil Cleanup Objectives
NC - No Criteria for Individual Contaminant
ND - None Detected
NA - Not Analyzed
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
J - The result is less than the specified detection limit but greater than zerb. The concentration given is an approximate value.
* - W-16 is a Laboratory Blind duplicate of W-15
** - X-22 is a Laboratory Blind dupplicate of W-22

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TABLE 4
PERGAMENT MALL
STATEN ISLAND, NEW YORK
HISTORIC SOIL SAMPLING RESULTS FOR VOLATILE ORGANIC COMPOUNDS

		15	16	17	18	19	20	21	22.	23	24	25	26	27	28
Sample ID	Soil Cleanup Objectives to Protect GW Quality	W-1[illegible]	W-1[illegible]	SB-1[illegible]	SB-1[illegible]	SB-1[illegible]	MW-4	W-17	W-18	W-18	W-19	W-20	W-21	W-22	X-22
Lab Sample Number		[illegible]	[illegible]	20272	2027[illegible]	178182	170380	170388	170386	170387	170385	170384	170383	170381	170382
Sampling Date		07/24/97	07/24/97	[illegible]/06/97	08/05/97	01/07/00	11/19/99	11/18/99	11/18/99	11/18/99	11/18/99	11/18/99	11/18/99	11/18/99	11/18/99
Sample Depth (feet)		0.0-10.0	0.0-10.0	1.0-2.5	4.0-5.0	[illegible]	12-12.5	9-10	1-2	9-10	12.6-13.5	12-13	11-12	13-14	13-14
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
VOLATILE COMPOUNDS															
Chloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	0.1	0.0012	0.0014	0.0027	0.0027	ND	0.0021J	0.0019J	0.0026J	0.0023J	0.0039J	0.0021J	0.0024J	0.0027J	0.0026J
Trichlorofluoromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NC	ND	ND	ND	ND	ND	ND	ND	0.0042J	ND	ND	ND	ND	ND	ND
Chloroform	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.76	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.7	ND	ND	ND	ND	ND	ND	0.0007J	0.0006J	0.0006J	ND	ND	ND	ND	ND
Dibromochloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl Vinyl Ether	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.4	ND	ND	ND	ND	0.0039	ND	0.067	0.0007J	0.0008J	ND	0.025	0.0071	0.0008	ND
1,1,2,2-Tetrachloroethane	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1.5	ND	ND	ND	ND	ND	0.001J	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (Total)	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Confident Conc.		0.0012	0.0014	0.0027	0.0027	0.0039	0.0031J	0.0696J	0.0081J	0.0037J	0.0039J	0.0271J	0.0095J	0.0035J	0.0026J
Total Estimated Conc. VOA TICs (s)		0	0	0	0	0	0	0.047	0	0.033	0	0	0.037	0.029	0.027

[ ] - Concentration Exceeds NYSDEC Soil Cleanup
NC - No Criteria for Individual Contaminant
ND - None Detected
NA - Not Analyzed
B - The analyte was found in the laboratory blank a
This indicates possible laboratory contaminatio
J - The result is less than the specified detection li
The concentration given is an approximate valu
* - W-16 is a Laboratory Blind duplicate of W-15
** - X-22 is a Laboratory Blind dupplicate of W-22

TABLE 5
PERGAMENT MALL
STATEN ISLAND, NEW YORK
HISTORIC GROUND WATER SAMPLING
RESULTS FOR VOLATILE ORGANIC
COMPOUNDS

Sample ID / Sampling Date / Units	1994 NYSDEC Ground Water Standards/Criteria ug/l	1 MW-1 Jun-92 ug/l	2 MW-1 3/26/94 ug/l	3 MW-1 6/23/94 ug/l	4 MW-1 9/23/97 ug/l	5 MW-1 2/25/98 ug/l	6 MW-1 1/7/00 ug/l	7 MW-2 Jun-92 ug/l	8 MW-2 3/26/94 ug/l	9 MW-2 6/23/94 ug/l	10 MW-2 9/23/97 ug/l	11 MW-2 2/26/98 ug/l	12 MW-2 1/7/00 ug/l
Volatile Organic Compounds													
Acetone	50	ND	NS	-	-	-	-	19	-	-	-	-	
Chloromethane	NC	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	NC	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	50	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NC	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	NR	NS	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND
cis-1,2-Dichloroethene	NC	NR	NS	ND	ND	ND	ND	NR	NR	5.8	90	92	40
Chloroform	7	ND	NS	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND
1,2-Dichloroethane	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	NS	ND	ND	ND	ND	ND	ND	6.8	ND	ND	ND
Carbon Tetrachloride	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NC	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	NC	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	NS	ND	ND	ND	ND	10 J	ND	ND	58	68	32
Dibromochloromethane	50	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NC	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.7	ND	NS	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	NC	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl Vinyl Ether	NC	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NC	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	NS	ND	ND	ND	ND	210	960	194	1000	1000	380
1,1,2,2-Tetrachloroethane	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	NS	0.8	ND	ND	ND	ND	87	ND	ND	ND	ND
Chlorobenzene	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (Total)	5	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Confident Conc. VOAs (s)		ND	NS	1.3	0	0	ND	220	1047	208	1148	1160	452
Total Estimated Conc. VOA TICs (s)		ND	NS	0.009	0	0	0	0	0	0	0	0	0

[ ] - Results above Ground Water Standards/Criteria
ND - None Detected
NC - No Criteria
NS - Not Sampled
NR - Not Reported by Laboratory
B - Substance detected in laboratory blank
J - The result is less than the specified detection limit but greater than zero. The result is an approximate value.
* - MW-9 is a laboratory blind duplicate of MW-6
* - MW-10 is a laboratory blind duplicate of MW-2

TABLE 5
PERGAMENT MALL
STATEN ISLAND, NEW YORK
HISTORIC GROUND WATER SAMPLING
RESULTS FOR VOLATILE ORGANIC COMPOUNDS

		13	14	15	16	17	18	19	20	21	22	23	24	25
Sample ID Sampling Date Units	1994 NYSDEC Ground Water (Standards) Criteria ug/l	MW-3 Jun-92 ug/l	MW-3 3/28/94 ug/l	MW-3 6/23/94 ug/l	MW-3 9/23/97 ug/l	MW-3 2/26/98 ug/l	MW-3 1/7/00 ug/l	MW-4 Jun-92 ug/l	MW-4 3/28/94 ug/l	MW-4 6/23/94 ug/l	MW-4 1/7/00 ug/l	MW-6 9/23/97 ug/l	MW-5 2/26/98 ug/l	MW-5 1/7/00 ug/l
Volatile Organic Compounds														
Acetone	50	ND	-	-	-	-		ND	-	-	-	-	-	-
Chloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	NR	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NC	NR	NR	78	14	ND	40	NR	NR	94	0.7	ND	ND	ND
Chloroform	7	ND	ND	ND	6.4	8.1	ND	ND	ND	ND	ND	0.6	ND	2.1
1,2-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	19 J	49	ND	ND	ND	ND	91	70	ND	ND	ND	ND
Carbon Tetrachloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	62 J	ND	ND	ND	13	38	160 J	ND	ND	0.3	ND	ND	ND
Dibromochloromethane	50	ND	ND	ND	18	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl Vinyl Ether	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	1800	2000	1600	1100	940	1200	4100	5600	4400	18	0.3	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Confident Conc. VOAs (s)		1852	2019	1627	1138.4	961.1	1278	4260	5691	4564	19	0.9	0	2.1
Total Estimated Conc. VOA TICs (s)		0	0.13 B	0	0	0	0	0	0.420 B	0	0	4	0	0

[ ] - Results above Ground Water Standards/Criteria
ND - None Detected
NC - No Criteria
NS - Not Sampled
NR - Not Reported by Laboratory
B - Substance detected in laboratory blank
J - The result is less than the specified detection limit but greater than zero. The result is an approximate value.
* - MW-9 is a laboratory blind duplicate of MW 6
* - MW-10 is a laboratory blind duplicate of MW-2

TABLE 5
PERGAMENT MALL
STATEN ISLAND, NEW YORK
HISTORIC GROUND WATER SAMPLING RESULTS FOR VOLATILE ORGANIC COMPOUNDS

26 27 28 29 30

Sample ID		1994 NYSDEC Ground Water Standard / Criteria	MW-4	MW-9	MW-5	MW-4	MW-7
Sampling Date			9/23/97	9/23/97	2/25/98	10/7/00	10/21/00
Units		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Volatile Organic Compounds							
Acetone		50	-	-	-		
Chloromethane		NC	ND	ND	ND	ND	ND
Bromomethane		NC	ND	ND	ND	ND	ND
Vinyl Chloride		2	ND	ND	ND	ND	ND
Chloroethane		50	ND	ND	ND	ND	ND
Methylene Chloride		5	ND	ND	ND	ND	ND
Trichlorofluoromethane		NC	ND	ND	ND	ND	ND
1,1-Dichloroethene		5	ND	ND	ND	ND	ND
1,1-Dichloroethane		5	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene		5	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		NC	ND	ND	ND	ND	ND
Chloroform		7	ND	ND	ND	ND	ND
1,2-Dichloroethane		5	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		5	ND	ND	ND	ND	ND
Carbon Tetrachloride		5	ND	ND	ND	ND	ND
Bromodichloromethane		NC	ND	ND	ND	ND	ND
1,2-Dichloropropane		5	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		NC	ND	ND	ND	ND	ND
Trichloroethene		5	ND	ND	ND	ND	ND
Dibromochloromethane		50	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		NC	ND	ND	ND	ND	ND
Benzene		0.7	0.5	ND	ND	ND	ND
trans-1,3-Dichloropropene		NC	ND	ND	ND	ND	ND
2-Chloroethyl Vinyl Ether		NC	ND	ND	ND	ND	ND
Bromoform		NC	ND	ND	ND	ND	ND
Tetrachloroethene		5	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane		5	ND	ND	ND	ND	ND
Toluene		5	0.7	0.5	ND	ND	ND
Chlorobenzene		5	ND	ND	ND	ND	ND
Ethylbenzene		5	0.8	5.7	5.7	3.6	ND
Xylene (Total)		5	28	17	17	12	ND
Total Confident Conc. VOAs (s)			39	23.2	22.7	15.6	ND
Total Estimated Conc. VOA TICs (s)			321	0	181	715	3.2

- Results above Ground Water Standards/Criteria
- ND - None Detected
- NC - No Criteria
- NS - Not Sampled
- NR - Not Reported by Laboratory
- B - Substance detected in laboratory blank
- J - The result is less than the specified detection limit but greater than zero. The result is an approximate value.
- * - MW-9 is a laboratory blind duplicate of MW-8
- * - MW-10 is a laboratory blind duplicate of MW-2

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Pergament Mall/Corniche Dry Cleaners Inactive Hazardous Waste Disposal Site
Staten Island, Richmond County, New York
Site No. 243012

The Proposed Remedial Action Plan (PRAP) for the Pergament Mall/Corniche Dry Cleaners site was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on February 16, 2001. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated groundwater at the Pergament Mall/Corniche Dry Cleaners site. The preferred remedy is No Further Action with continued sampling for and analysis of all monitoring wells at the site. Those wells in which contaminants exceed groundwater standards will be monitored on a quarterly basis while wells in which the contaminants do not exceed standards will be monitored at least annually. The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability. A public meeting was held on April 3, 2001, which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions, and comment on the proposed remedy. Written comments were received from Community Board 2 and State Senator Marchi's office and were also raised at the public meeting. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on April 17, 2001.

The following are the comments received at the public meeting, with the NYSDEC's responses:

COMMENT 1: Where exactly was the dry cleaner located?

RESPONSE 1: The dry cleaner occupied the store presently occupied by the Good Chinese Kitchen.

COMMENT 2: What was the extent of the soil removal behind the former dry cleaner location?

RESPONSE 2: As stated at the public meeting, the details of the soil removal that was done by the site owners some time between 1987 and 1988 are not known. The soil removal was done in an area approximately 25 ft x 15 ft in size (See Figure 7). The depth of the excavation is not known. The size of the excavation was misstated in the PRAP to be 50 ft x 30 ft.

COMMENT 3: Can the rising water table spread the contamination and push it under the surrounding buildings?

RESPONSE 3: No, this is not likely to happen. As stated at the public meeting, the contaminant sources are no longer present in the soil. The water table will rise in all directions, and the

contamination dissolved in the groundwater will continue to move along with the groundwater flow direction. Since most of the site is paved, and the adjacent stores built on slabs have no basements, it is not expected that vapors would collect in any other building in the vicinity of the former dry cleaner. To further confirm this, the NYSDOH required low level detection sampling of indoor air quality in seven stores in the vicinity of the former dry cleaner. As stated at the public meeting, the maximum concentration of any site related contaminant was found to be far below the guidance values established by the NYSDOH.

COMMENT 4: Referring to Figure 4, does 18.75 written shown next to MW-3 mean that the groundwater at this location is 18.75 ft below ground?

RESPONSE 4: The numbers shown on groundwater contour maps, such as Figure 4, are groundwater elevations with respect to an established benchmark and are not absolute elevations above mean sea level. In this case, the grade elevation at MW-3 is 29.15. The groundwater in MW-3, therefore, was 10.4 ft below grade at the time of measurement. As stated at the public meeting, the groundwater on site is approximately 3 to 10 ft below ground.

COMMENT 5: Is there anything to be concerned about regarding public health?

RESPONSE 5: As part of the investigation of the Pergament Mall/Corniche Dry Cleaners site, the New York State Department of Health evaluated potential exposure pathways to determine if people could be exposed to site-related contaminants. The media evaluated included soils, groundwater, surface water, and air. A limited amount of soil was found to be impacted by tetrachloroethene. Because the area is paved, the public would not come into contact with the soils and is, therefore, not exposed to contaminants via this pathway. Groundwater is contaminated with dry cleaning chemicals. However, there are no public or private drinking water supply wells known in the area, so exposures to contaminated groundwater are unlikely. There are no surface waters in the vicinity of the site contaminated at levels likely to cause health effects. Indoor air was also sampled at the site. No site-related chemicals were detected above typical background levels in indoor air. Based on this evaluation, no one is being exposed to site-related chemicals at levels where health effects are expected to occur.

COMMENT 6: How long will it take for the site to be remediated?

RESPONSE 6: As stated at the public meeting, it is estimated that it would be at least five years before the tetrachloroethene concentrations in groundwater would reach acceptable numbers. The Department wishes to further clarify that actual results can vary significantly from the estimated time. Further, as also pointed out during the public meeting, the contaminant concentrations do not always reduce steadily but can be expected to fluctuate depending upon hydrological conditions.

For this reason, as part of the selected remedy, the Department will require Pergament Enterprises to design and implement an on-going monitoring program which will, at a minimum, include quarterly sampling for and analysis of all groundwater monitoring wells where the contamination exceeds groundwater standards. Additionally, monitoring of any wells that do not show contaminants above groundwater standards will be required at least on an annual basis.

COMMENT 7: What are the health effects of tetrachloroethene?

RESPONSE 7: The health effects of tetrachloroethene depend on the level and length of exposure. Exposures to tetrachloroethene are not occurring at levels expected to cause health effects at the Pergament Mall/Corniche Dry Cleaners site. In response to the question, however, the strength (potency) of tetrachloroethene to cause health effects is low, but breathing air with high levels of tetrachloroethene can damage many parts of the body. In humans and animals, the major effects of exposure are on the central nervous system, kidney, liver and possibly the reproductive system. Tetrachloroethene is a suspected human carcinogen, which means there is not enough data available at this time to classify tetrachloroethene. This may change as studies are completed.

COMMENT 8: What is the PEL for perchloroethyene (tetrachloroethene)?

RESPONSE 8: The permissible exposure limit for perchloroethyene (tetrachloroethene) is 170,000 $\mu g/m^3$.

COMMENT 9: Who is paying for the investigation and remediation of the site?

RESPONSE 9: Pergament Enterprises, the property owners, have entered into an order on consent with the Department to investigate the site, and reimburse the State for its oversight costs.

A representative from State Senator Marchi's office read the following comments:

COMMENT 10: "Thank you for the opportunity afforded to the Staten Island Community to present our views on the Proposed Remediation Action Plan for the Pergament Mall/Corniche Dry Cleaners Site.

The findings of your experts that contamination of the groundwater has been reduced considerably is, of course, positive news. Your findings indicate that such contamination has been reduced from "5600 ppb to 1000 ppb". Based upon such reduction your report recommends no further remediation of the site except monitoring the groundwater over an extended period of time. However, you do not include a formula which indicates what are acceptable contamination levels whereby public health is no longer threatened. Additionally, you do not indicate a specific timetable for the implementation of such continued monitoring. I, therefore, request that your

final report indicate such information. I believe this information will go a long way in assuring our community that there is no threat to public health from this site.

The issue of groundwater contamination, which your report has deemed satisfactory with no further remediation, also raises some concerns. It is vital that guidelines and safety measures are in place to ensure that contaminants buried do not resurface in any future excavation or expansion. Therefore it is essential that your Department, working with the appropriate local agencies, mandate sufficient and timely notification to all prospective developers and business owners. I look forward to a continuing dialogue with you and your keeping the community and all public officials informed about this site on a regular basis."

RESPONSE 10: Senator Marchi's comments focus on three issues: 1) what contaminant levels are acceptable whereby public health is no longer threatened; 2) how long will the monitoring continue; and, 3) what safety measures are in place to ensure that the buried contaminants would not resurface. The response to these issues are as follows:

First, as stated above in Response 4, the State evaluated soil, groundwater, surface water, and air as the potential pathways of contamination. Contamination in surface soil, surface water, and air were below Department guidelines. In subsurface soil, the contamination was found in only one soil sample above cleanup guidelines, at a depth of 12 feet below ground. The site, therefore, does not pose any risk of direct contact. The indoor air quality in the nearby stores where the contaminants may have impacted the indoor air quality was tested and levels of site-related contaminants were found at levels comparable to typical background levels. There is no surface water contamination from the site. Although contamination above standards does exist in onsite groundwater, the groundwater in the area is not used for drinking or other purposes; therefore, exposures to contaminated groundwater are unlikely.

Second, the groundwater monitoring will continue for an indefinite time until the contaminants no longer exceed the groundwater standard or until the concentrations reach asymptotic conditions, at which time the Department would evaluate what further action, if any, is needed.

Third, it is unlikely that the site related contaminants will resurface in future excavations because the contaminants are not present in surface or near surface soils. The only likely potential in case of excavation is for some soil gas vapors to be released to the atmosphere which are formed as the contaminants present in the groundwater diffuse into the vapor phase. However, this is not likely to result in any exposure, because based upon the maximum concentrations of soil gas found during the investigations (700,000 $\mu g/ m^3$ drawn through the soil with a pump), the soil gas concentrations following any release would be greatly diluted with the atmospheric air. Exposure to the contaminated groundwater is unlikely, because the groundwater is not used for drinking purposes. Further, as stated previously, institutional controls in the form of existing use and development restrictions limiting the use of groundwater as a potable water also serves as part

of the remedy. The NYCDOH will not issue a permit for a private water supply well if there is public water available, regardless of the groundwater quality.

The NYSDEC held a meeting with Community Board 2 on February 8, 2001. In response to similar concerns (potential resurfacing of the contaminants) expressed by its members, the NYSDEC stated that it would consider deed restrictions. After careful consideration, and for the reasons explained above, the NYSDEC believes that no deed restrictions are warranted.

COMMENT 11: Dr. Ira Whitman of the Whitman Companies, East Brunswick, NJ, who was present at the April 3, 2001 Public Meeting, submitted a letter dated April 8, 2001. In his letter, Dr. Whitman responded to the concerns expressed by Senator Marchi and the follow up discussion of the public meeting where the possibility of a deed restriction was suggested. In his letter, Dr. Whitman stated that the Pergament Investments, the property owners, would not accept a deed restriction as it would interfere with its ability to refinance its property. Dr. Whitman offered the following response to Senator Marchi's concerns:

- The entire contaminant plume is confined to the Pergament property, owned by Pergament Investments, Inc. Therefore the concern expressed by Senator Marchi is not applicable because there are no prospective developers or business owners present at the site, and none are anticipated as long as Pergament remains the owner of the shopping mall.

- The one possibility of exposure would be if excavation is required to repair or replace the underground utilities in the area of the groundwater plume. However, as we were able to determine during our recent survey of the underground utilities, all utility lines are buried at a depth too shallow for them to be situated in the groundwater. Therefore, there are no risks of direct exposure to contaminated groundwater while engaging in utility repairs.

RESPONSE 11: While the NYSDEC's prime objective is to remediate the site in a manner that is protective of the human health and the environmental, it also recognizes the property owners' concerns and does not wish to place an undue burden on the part of the site owners and/or the responsible party. Notwithstanding Pergament's objections, both the NYSDEC and the NYSDOH believe that, for the reasons explained in the previous comment, a deed restriction is not warranted in this case. Further, the NYSDEC agrees with Dr. Whitman in his assessment of potential exposure to contaminated groundwater. The NYSDEC, however, wishes to make it clear that although the monitoring network on site has adequately defined the plume, and while this network of monitoring wells shows that the site related contaminants are not present in the most downgradient location wells, the selected remedy was not predicated upon the plume being confined to the site boundary. The selected remedy includes ongoing monitoring of all wells where the contaminants exceed their groundwater standards. Additionally, other wells where the

site-related contaminants are presently not indicated will also be sampled and analyzed at least on an annual basis. The monitoring would reveal the need, if any, for additional wells to be installed as part of the remedy.

APPENDIX B

ADMINISTRATIVE RECORD

1. Environmental Site Assessment Report dated September 28, 1987
2. Phase II Investigation Report dated November 1993
3. Order on Consent dated July 26, 1996 for Remedial Investigation And Feasibility Study
4. RI/FS Work Plan dated January 1996
5. Remedial Investigation Report dated August 1998
6. Phase II Remedial Investigation Report dated June 2000
7. Feasibility Study Report dated December 2000
8. Air Monitoring Results of December 21, 2000 Air Sampling
9. The Whitman Companies Letter dated April 18, 2001