Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

London French Dry Cleaning Co. Site
Rockaway Beach, Queens County, New York
Site Number 241035

July 2007

New York State Department of Environmental Conservation
ELIOT SPITZER, *Governor* ALEXANDER B. GRANNIS, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

London French Dry Cleaning Co.
Inactive Hazardous Waste Disposal Site
Rockaway Beach, Queens County, New York
Site No. 241035

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the London French Dry Cleaning Co. site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the London French Dry Cleaning Co. inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the Department. 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 measures identified in this ROD. The treatment of contaminated soil and groundwater from the site has significantly reduced the threat to public health and the environment. Therefore, a groundwater monitoring program will be implemented to monitor the effectiveness of previous remedial actions in preventing further contamination of the groundwater.

Description of Selected Remedy

Based on the results of the Remedial Investigation and Feasibility Study (RI/FS) for the London French Dry Cleaning Co. site and the criteria identified for evaluation of alternatives, the Department has selected No Further Action with continued operation of the AS/SVE and sub-slab ventilation systems was selected as the remedy for this site. The components of the remedy are as follows:

1. The first IRM includes two air sparge (AS) injection points and two soil vapor extraction (SVE) points, each located approximately 5 feet away from the two AS injection points. The AS/SVE system includes a skid mounted air compressor to inject air into the AS points and a vacuum blower to draw air from beneath the surface from the SVE points.

2. The second IRM includes sub-slab mitigation measures, which were taken at several locations to address current human exposures (via inhalation) to volatile organic compounds associated with soil vapor intrusion. Mitigation points were installed in five storefronts within the Dayton Plaza, consisting of two 18 inch suction pits, one in the front (north), and one in the rear (south) of each storefront. The exhaust pipe then extends vertically above the roof line and an in-line fan is installed at the top of each exhaust pipe to act as a vacuum source to create negative atmospheric pressure below the slab.

3. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to commercial use, which will also permit industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

4. Development of a site management plan which will include the following institutional and engineering controls: (a) continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (b) monitoring of air sparge/soil vapor extraction parameters and groundwater; and (c) provisions for the continued proper operation and maintenance of the components of the remedy.

5. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

6. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

7. Since the remedy results in untreated hazardous wastes remaining at the site, a long-term monitoring program will be instituted. Periodic groundwater monitoring of monitoring wells MW-2, MW-3, MW-4 and MW-8 will be conducted for a minimum of 5 years. Pressure readings from the sub-slab ventilation and air sparge/soil vapor extraction systems will be taken to verify negative pressure beneath the slab is being maintained. This program will allow the effectiveness of the AS/SVE and sub-slab ventilation systems to be monitored and will be a component of the long-term management for the site.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is 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 July 31, 2007

Dale A. Desnoyers, Director
Division of Environmental Remediation

TABLE OF CONTENTS

SECTION **PAGE**

1: SUMMARY OF THE RECORD OF DECISION 1

2: SITE LOCATION AND DESCRIPTION 2

3: SITE HISTORY 2
- 3.1: Operational/Disposal History 2
- 3.2: Remedial History 2

4: ENFORCEMENT STATUS 3

5: SITE CONTAMINATION 3
- 5.1: Summary of the Remedial Investigation 3
- 5.2: Interim Remedial Measures 6
- 5.3: Summary of Human Exposure Pathways: 7
- 5.4: Summary of Environmental Assessment 8

6: SUMMARY OF THE REMEDIATION GOALS AND SELECTED REMEDY 8

7: HIGHLIGHTS OF COMMUNITY PARTICIPATION 10

Tables - Table 1: Nature and Extent of Contamination 11

Figures
- Figure 1: Site Location Map . . . . . .
- Figure 2: Soil Exceedances . . . . . .
- Figure 3: Groundwater Exceedances (2004) . . . . . .
- Figure 4: Groundwater Exceedances (2007) . . . . . .
- Figure 5: Historical Sub-slab Soil Vapor and Indoor Air Exceedances
- Figure 6: Sub-slab Ventilation System Construction Details . . . . . .

Appendices
- Appendix A: Responsiveness Summary A-1
- Appendix B: Administrative Record B-1

RECORD OF DECISION

London French Dry Cleaning Co. Site
Rockaway Beach, Queens County, New York
Site No. 241035
July 2007

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the London French Dry Cleaning Co. site. As more fully described in Sections 3 and 5 of this document, sub-standard handling of dry cleaning chemicals resulted in the disposal of hazardous wastes, including volatile organic chemicals (VOCs). These wastes contaminated the soil, groundwater, and indoor air at the site, and resulted in a significant threat to human health associated with current and potential exposure to contaminated soil, groundwater, and indoor air.

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the London French Dry Cleaning Co. in response to the threats identified above. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation/feasibility study (RI/FS). The IRMs undertaken at this site included resumption of the operation of an existing air sparging/soil vapor extraction (AS/SVE) system and installation of sub-slab ventilation systems to mitigate indoor air impacts to London French and other nearby businesses by venting vapors from beneath the building slab.

Based on the implementation of the above IRMs, the findings of the investigation of this site indicate that the site no longer poses a significant threat to human health or the environment; therefore No Further Action with continued operation of the AS/SVE and sub-slab ventilation systems was selected as the remedy for this site.

The selected remedy, discussed in detail in Section 6, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

SECTION 2: SITE LOCATION AND DESCRIPTION

The London French Dry Cleaners site is located in the Dayton Shopping Plaza at 85-15 Rockaway Beach Boulevard in Rockaway Beach, Queens. (See Figure 1) Dayton Plaza is bordered by Holland Avenue to the south, Rockaway Beach Boulevard to the north, Beach 90th Street to the west, and Beach 84th Street to the east. The site is located on an urban peninsula of barrier beach deposits. The Atlantic Ocean is approximately 1000 feet south of the site and the Beach Channel is approximately 1500 feet to the north. The Dayton Shopping Plaza consists of a 4.6 acre site on which is a one story shopping center building and adjacent asphalt parking areas.

The site is underlain by Barrier Island deposits consisting of sand and gravel. Water table elevations measured in onsite monitoring wells range from 4 to 8 feet below grade (1 to 5 feet above mean sea level). Groundwater flow is to the south. Due to the nearly flat water table, tides and the presence of subsurface utilities influence groundwater flow.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The dry cleaning operations are conducted in a storefront near the center of the on-site building. London French Cleaners has occupied that space for approximately 21 years. Currently one self contained dry cleaning unit is located in the facility. Prior to that unit's installation in 1997, filters and spent tetrachloroethene, also know as PCE or "perc", were stored on-site in 15 gallon and 55 gallon drums. Due to sub-standard waste handling practices, PCE contamination reached the soil and groundwater beneath the site.

In the late 1990s the previous owners of the property, FGH Realty Corporation, conducted several investigations which revealed contamination by PCE and its degradation products at the site. In the fall of 2000 FGH installed an air sparge, soil vapor extraction system (AS/SVE) to address groundwater contamination at the site. This system operated from October 2000 until it was shut down in June 2002, when it was taken off-line due to the transfer of property to the long-term lease holder, Rockaway Commons, LLC.

3.2: Remedial History

In 2001, the Department first listed the site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.

On December 20, 2002 the long-term lease holder, Rockaway Commons , LLC, entered into a Voluntary Cleanup agreement with the NYSDEC as an innocent owner. The voluntary cleanup program site number assigned to this site is V00620.

SECTION 4: 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. As a Class 2 site, NYSDEC would have approached the PRPs for London French Dry Cleaners and requested they implement an RI/FS. If they had declined, New York State would have conducted the RI/FS under it's State Superfund program. However, in this case a volunteer, Rockaway Commons, LLC, the long-term lease holder, applied to conduct the necessary work under the State's Voluntary Cleanup Program (VCP).

No determination has yet been made as to which party or parties would be the PRPs for this site. Were the volunteer to drop out or be removed from the VCP before the completion of site remediation, the NYSDEC would resume its investigation to determine the PRPs for this site and ask them to assume responsibility for the Remedial Program. If an agreement could not be reached with the PRPs, the Department would evaluate the site for further action under the State Superfund. PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 5: SITE CONTAMINATION

A remedial investigation/feasibility study (RI/FS) has been conducted to evaluate the alternatives for addressing the significant threats to human health or the environment.

5.1: Summary of the Remedial Investigation

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 between February 2003 and November 2006. The field activities and findings of the investigation are described in the RI reports.

During the investigation, termed a Supplemental Remedial Investigation due to previous Remedial Investigations conducted prior to NYSDEC involvement, samples were taken of soil, groundwater, soil gas, and indoor air for analysis. An evaluation to determine the area of influence of the existing SVE system and an assessment of the building's heating, ventilation, and air conditioning (HVAC) system were also conducted.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the groundwater, soil, and indoor air contain contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the Department's Cleanup Objectives (6 NYCRR subpart 375-6 Remedial Program Soil Cleanup Objectives).

- Concentrations of VOCs in air were evaluated using the air guidelines provided in the NYSDOH guidance document titled "Guidance for Evaluating Soil Vapor Intrusion in the State of New York," dated October 2006. (Soil Vapor/Indoor Air Matrix 2)

- Concentrations of VOCs in air were compared to typical background levels of VOCs in indoor and outdoor air using the background levels provided in the NYSDOH guidance document titled "Guidance for Evaluating Soil Vapor Intrusion in the State of New York," dated October 2006. The background levels are not SCGs and are used only as a general tool to assist in data evaluation.

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site required remediation. These are summarized in Section 5.1.2. More complete information can be found in the RI report.

5.1.2: Nature and Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.

As described in the RI report, many soil, groundwater, soil vapor and indoor air samples were collected to characterize the nature and extent of contamination. As seen in Figures 2, 3, and 4, the main categories of contaminants that exceed their SCGs are volatile organic compounds (VOCs). For comparison purposes, where applicable, SCGs are provided for each medium.

Chemical concentrations are reported in parts per billion (ppb) for water, and parts per million (ppm) soil. Air samples are reported in micrograms per cubic meter ($\mu g/m^3$).

Figures 2, 3, and 4 summarize the degree of contamination for the contaminants of concern in groundwater, soil, and air and compare the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Subsurface Soil

The subsurface soil investigation centered around a trench drain running from the London French Dry Cleaners building due south and ending approximately 20 feet south of the building. In two previous soil borings near the trench drain, sampled during an investigation conducted by the property owner in 1999, PCE was detected at concentrations up to 77 ppm. The trench drain was found to be connected to floor drains in the dry cleaners.

In February 2004 four new borings were advanced to a depth of 20 feet adjacent to the trench drain. (See Figure 2) The depth of the water table was approximately 5 feet, and no elevated readings were detected by the screening instruments from the soil samples taken below the water table. In the eight

samples taken above the water table one was found to exceed SCGs. That sample exceeded the SCG for PCE in soil of 1.3 ppm with a concentration of 15 ppm, a significant decrease from the concentration of 77 ppm found in the same area in 1999. It is anticipated that the residual PCE concentrations in this area will continue to decrease over time with continued operation of the air sparge/soil vapor extraction system.

Subsurface soil contamination identified during the RI/FS was addressed during the IRMs, resumption of AS/SVE operation and sub-slab ventilation system, described in Section 5.2.

Groundwater

Previous groundwater investigations undertaken before NYSDEC involvement indicated elevated concentrations of PCE and its breakdown products, trichloroethene (TCE), dichloroethene (DCE), and vinyl chloride. The most severely impacted well was MW-3, which had concentrations of total VOCs in groundwater as high as 8,700 ppb in 1998. Six other wells were also impacted by PCE contamination, though generally at concentrations of less than 100 ppb. The groundwater SCG for PCE is 5 ppb.

During the investigation undertaken under the Voluntary Cleanup Program, nine monitoring wells were sampled in February of 2004. (See Figure 3) Four of these wells contained PCE or its breakdown products in excess of SCGs. Concentrations of contamination in MW-3 decreased from the historical 8,700 ppb of total VOCs to under 300 ppb. The greatest single contaminant in that well was DCE at a concentration of 160 ppb. The groundwater standard for DCE is 5 ppb. No other monitoring well had concentrations of any PCE related contaminant exceeding 21 ppb. MW-10 reported a concentration of acetone at 340 ppb, however acetone is a common laboratory contaminant and is not documented to have been used at this site. Additional monitoring well sampling conducted in October 2006 indicated total VOC concentrations in MW-3 of under 200 ppb, with lower concentrations in the other wells. Concentrations drop off sharply downgradient of MW-3 and are non-detect at the southern property boundary.

Groundwater contamination identified during the RI/FS is being addressed by the IRM of air sparging/soil vapor extraction, as described in Section 5.2.

Sub-Slab Vapor/Air

During a previous investigation conducted by the property owner in 1998, extremely high concentrations of PCE vapor in sub-slab soil gas were found. Maximum concentrations exceeded 17 million $\mu g/m^3$. Therefore, the property owner installed an air sparge/soil vapor extraction system beneath the slab in October 2000. This system operated until it was shut down in June 2002, when it was taken off-line due to the transfer of property to the long-term lease holder, Rockaway Commons, LLC.

After the property entered the VCP program, sub-slab soil gas and indoor air samples were taken again in February 2004 to screen for potential human exposures. (See Figure 5) Concentrations had

decreased from the 1998 high to a maximum of approximately 110,000 $\mu g/m^3$ in one sample from beneath the dry cleaners storefront and a maximum of 38,000 $\mu g/m^3$ beneath the storefront currently occupied by LA Furniture. Samples of indoor air contained PCE at concentrations of up to 130 $\mu g/m^3$ in the dry cleaners and up to 33 $\mu g/m^3$ in other plaza shops.

These concentrations were still high enough to present a concern, and determined to impact areas beyond the influence of the AS/SVE system. This led to the repair and resumption of operation of the existing AS/SVE system in June 2005, and to the addition of a sub-slab ventilation system to address all of the areas of concern within the building in November 2006. Subsequent indoor air sampling in December 2006 indicated the maximum PCE concentration had been reduced to 10 $\mu g/m^3$.

Soil vapor and indoor air contamination identified during the RI/FS was addressed during the IRMs described in Section 5.2; air sparge/soil vapor extraction and sub-slab ventilation.

5.2: 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.

During the RI, due to elevated concentrations of PCE found in groundwater, soil vapor, and indoor air, the existing AS/SVE system was put back in operation. This IRM was implemented in June 2005 and the AS/SVE continues to operate. The AS/SVE system consists of a skid mounted air compressor to inject air into the air sparge points and a vacuum blower to draw air from beneath the surface for the SVE extraction points. The skid is located in the space currently occupied by LA Furniture, immediately east of the dry cleaner. The system includes two air sparge injection points, one near the skid in the LA Furniture space, the other through a paved access road immediately south of the dry cleaners, in the vicinity of the trench drain. An SVE extraction point was located approximately 5 feet away from each of the two air sparge injection points.

The system operates by injecting air into the groundwater through the air sparge points. This air then rises through the water table, capturing volatile organic contaminants (PCE in this case) until it enters the unsaturated zone above the water table. There it is captured by the soil vapor extraction points and vented to the atmosphere from an exhaust pipe on the roof of the building.

Mitigation measures were taken at several locations to address current human exposures (via inhalation) to volatile organic compounds associated with soil vapor intrusion. The results of the sub-slab vapor and indoor air sampling conducted in 2004 indicated the need for a sub-slab ventilation system to reduce VOC concentrations below the slab, and consequently, in indoor air within the shopping plaza. Ventilation points were installed in five storefronts within the Dayton Plaza; Medport of Rockaway Beach, Dano's Pizza, Beauty and More, Sunny Gift, and Visiting Services of New York. (See Figure 5) The installation design was identical in each of these storefronts. Two 18 inch suction pits, one in the front (north), and one in the rear (south), with 4 inch PVC vent pipes sealed in the center were installed in the slab of each storefront. These vent pipes connect in the rear of the store and exit through the rear wall via a 6 inch PVC pipe. The pipe

then extends vertically above the roof line in the rear of the building, and an in-line fan is installed at the top of each vent pipe to act as a vacuum source to create negative atmospheric pressure below the slab. (See Figure 6) Sub-slab pressure readings indicate negative pressure is being maintained beneath the slab throughout this area of the plaza.

5.3: 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 human exposure pathways can be found in Section 5.0 of the Supplemental Remedial Investigation (Phase II) Report, which can be found in the document repository.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

Soil vapor and indoor air in the strip mall is contaminated with tetrachloroethene and a complete inhalation exposure pathway exists to the occupants of the spaces adjacent to the active dry cleaner. However, the active remedy includes the continued use of the existing active air sparge/soil vapor extraction system and active sub-slab depressurization systems recently installed in the adjoining spaces. This will mitigate the potential for contaminated soil vapor from entering the strip mall structures and therefore, exposures to strip mall occupants from soil vapor intrusion will be eliminated.

In addition to addressing the contaminated soil vapor under the strip mall the air sparge/soil vapor extraction system is designed to address the on-site groundwater contamination. Ingestion or dermal contact of the contaminated groundwater by the site occupants is not expected because the area is served by public water and no private potable water supply wells have been identified in the vicinity of the site. Several irrigation wells reportedly exist downgradient, however the furthest downgradient on-site well is not being impacted by groundwater contamination, indicating no contamination is leaving the site. Construction or utility workers conducting subsurface activities

that intersect the groundwater could be exposed to the contaminated groundwater via incidental ingestion and/or dermal contact.

During the remedial investigation it was determined that contaminated soil vapor and groundwater are not migrating off-site. It is unlikely that off-site human receptors in the vicinity of the site will be exposed to contaminated soil vapor or groundwater.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site prior to the IRMs. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

Site contamination has impacted the groundwater resource in the Holocene beach deposits of the Rockaway peninsula.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS AND SELECTED REMEDY

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous wastes disposed at the site through the proper application of scientific and engineering principles.

Prior to the completion of the IRMs described in Section 5.2, the remediation goals for this site were to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to tetrachloroethene and its breakdown products in air, soil and groundwater;
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and
- the release of contaminants from subsurface soil and groundwater into indoor air through soil vapor.

The main SCGs applicable to this project are as follows:

- ambient groundwater quality standards;
- 6 NYCRR subpart 375-6 Remedial Program Soil Cleanup Objectives; and
- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006.

The Department believes that the IRMs have accomplished the remediation goals and satisfied the SCGs for the site provided that they continue to be operated and maintained in a manner consistent with the design.

Based on the results of the investigations at the site, the IRMs that have been performed, and the evaluation presented here, the Department has selected No Further Action with continued operation of the air sparge/ soil vapor extraction system and sub-slab ventilation system as the preferred alternative for the site. The Department believes that this alternative will be protective of human health and the environment and will satisfy all SCGs as described above. Overall protectiveness is achieved through meeting the remediation goals listed above.

Therefore, the Department concludes that No Further Action is needed other than operation, maintenance, and monitoring. The elements of the IRMs already completed and the institutional and engineering controls are listed below:

1. The first IRM includes two air sparge (AS) injection points and two soil vapor extraction (SVE) points, each located approximately 5 feet away from the two AS injection points. The AS/SVE system includes a skid mounted air compressor to inject air into the AS points and a vacuum blower to draw air from beneath the surface from the SVE points.

2. The second IRM includes sub-slab mitigation measures, which were taken at several locations to address current human exposures (via inhalation) to volatile organic compounds associated with soil vapor intrusion. Mitigation points were installed in five storefronts within the Dayton Plaza, consisting of two 18 inch suction pits, one in the front (north), and one in the rear (south) of each storefront. The exhaust pipe then extends vertically above the roof line and an in-line fan is installed at the top of each exhaust pipe to act as a vacuum source to create negative atmospheric pressure below the slab.

3. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to commercial use, which will also permit industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

4. Development of a site management plan which will include the following institutional and engineering controls: (a) continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (b) monitoring of air sparge/soil vapor extraction parameters and groundwater; and (c) provisions for the continued proper operation and maintenance of the components of the remedy.

5. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this

certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

6. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

7. Since the remedy results in untreated hazardous wastes remaining at the site, a long-term monitoring program will be instituted. Periodic groundwater monitoring of monitoring wells MW-2, MW-3, MW-4 and MW-8 will be conducted for a minimum of 5 years. Pressure readings from the sub-slab ventilation and air sparge/soil vapor extraction systems will be taken to verify negative pressure beneath the slab is being maintained. This program will allow the effectiveness of the AS/SVE and sub-slab ventilation systems to be monitored and will be a component of the long-term management for the site.

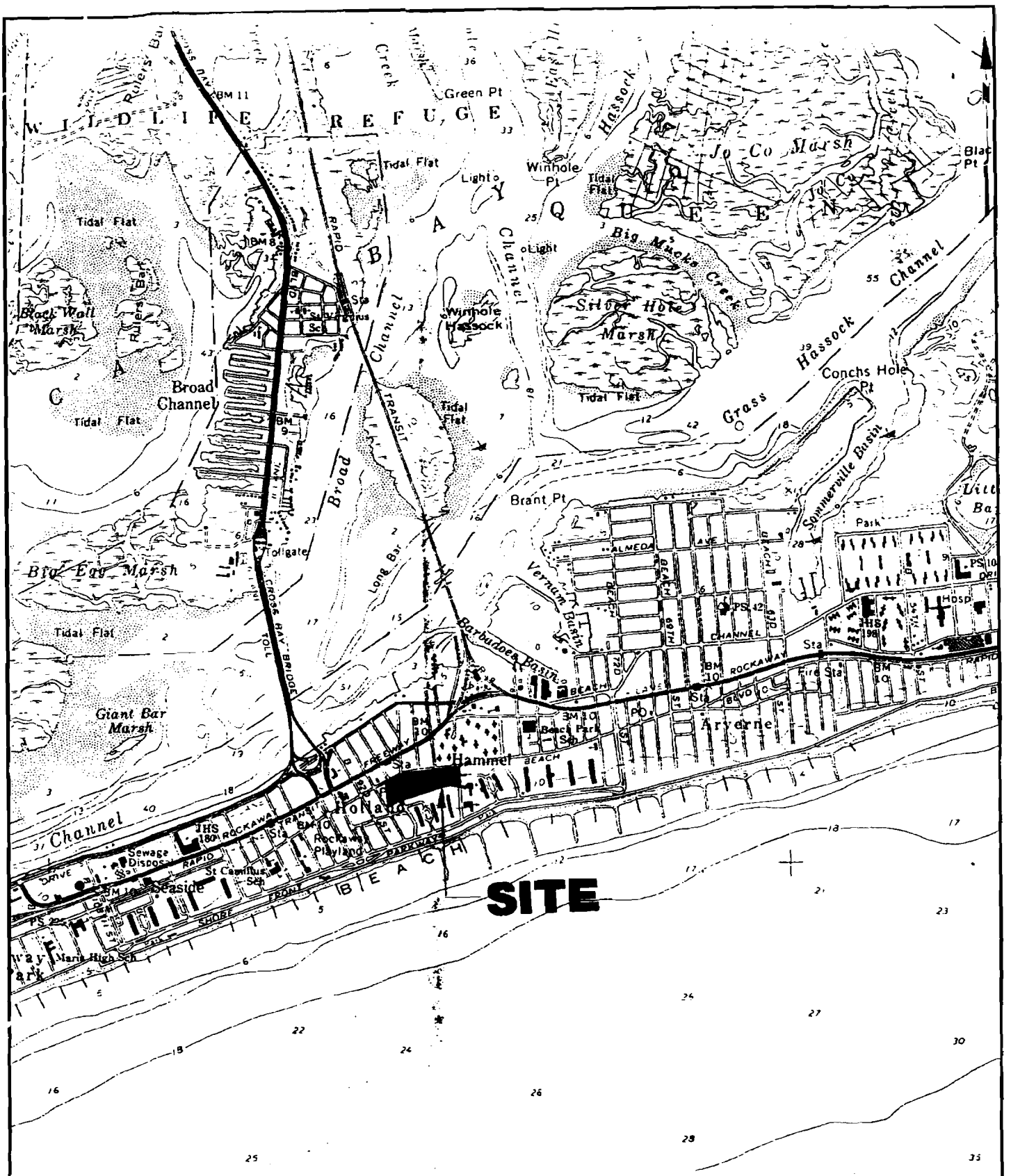
SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken 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:

- Repositories for documents pertaining to the site were established.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- A fact sheet announcing the release of the PRAP and the date and location of a public meeting was mailed on May 21, 2007.
- A public meeting was held on June 11, 2007 to present and receive comment on the PRAP.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

Table 1
Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Further Action, Continued Monitoring	0	26,000	170,000



MAP REFERENCE:FAR ROCKAWAY,N.Y. U.S.G.S. MAP (DATED 1969)

Langan Engineering and Environmental Services
(201) 794-6900 (215) 348-7101
Elmwood Park, NJ Doylestown, PA

Project **DAYTON PLAZA**
85-15 THRU 88-07 ROCKAWAY BEACH BLVD.
SITE LOCATION MAP
QUEENS NEW YORK

Job No.	Date	Scale	
1595501	10/7/99	1"=2000'	Figure 1

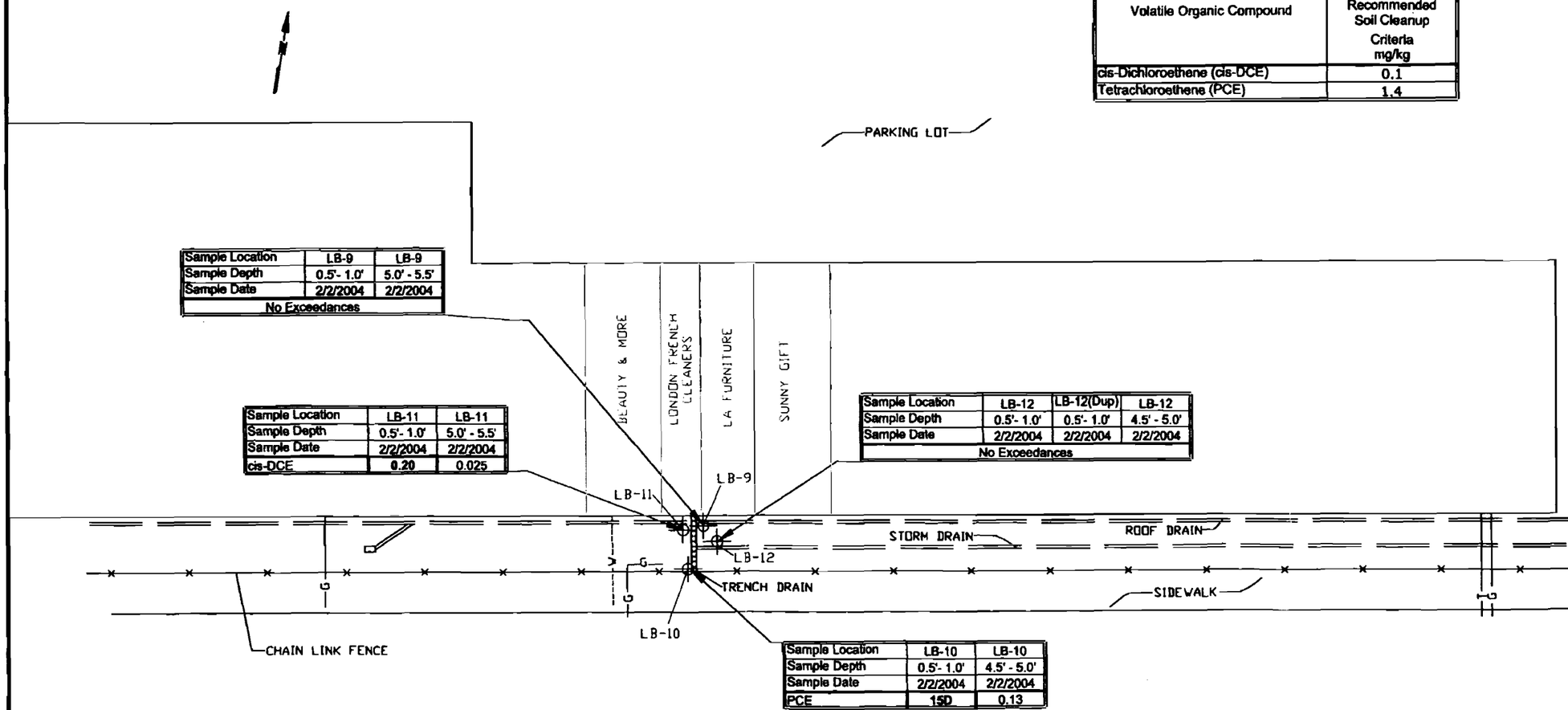
LEGEND

LB-10 SOIL TEST BORING LOCATION

NOTES

1. "J" INDICATES THAT THE RESULT IS AN ESTIMATED VALUE.
2. ND - NOT DETECTED

Volatile Organic Compound	NYSDEC TAGM Recommended Soil Cleanup Criteria mg/kg
cis-Dichloroethene (cis-DCE)	0.1
Tetrachloroethene (PCE)	1.4



Sample Location	LB-9	LB-9
Sample Depth	0.5'- 1.0'	5.0' - 5.5'
Sample Date	2/2/2004	2/2/2004
No Exceedances		

Sample Location	LB-11	LB-11
Sample Depth	0.5'- 1.0'	5.0' - 5.5'
Sample Date	2/2/2004	2/2/2004
cis-DCE	0.20	0.025

Sample Location	LB-12	LB-12(Dup)	LB-12
Sample Depth	0.5'- 1.0'	0.5'- 1.0'	4.5' - 5.0'
Sample Date	2/2/2004	2/2/2004	2/2/2004
No Exceedances			

Sample Location	LB-10	LB-10
Sample Depth	0.5'- 1.0'	4.5' - 5.0'
Sample Date	2/2/2004	2/2/2004
PCE	15D	0.13

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Project

DAYTON SHOPPING PLAZA
SOIL EXCEEDANCES

QUEENS NEW YORK

Job No.	Date	Scale	
1461905	23 APRIL 2004	1"=50'	**Figure 2**

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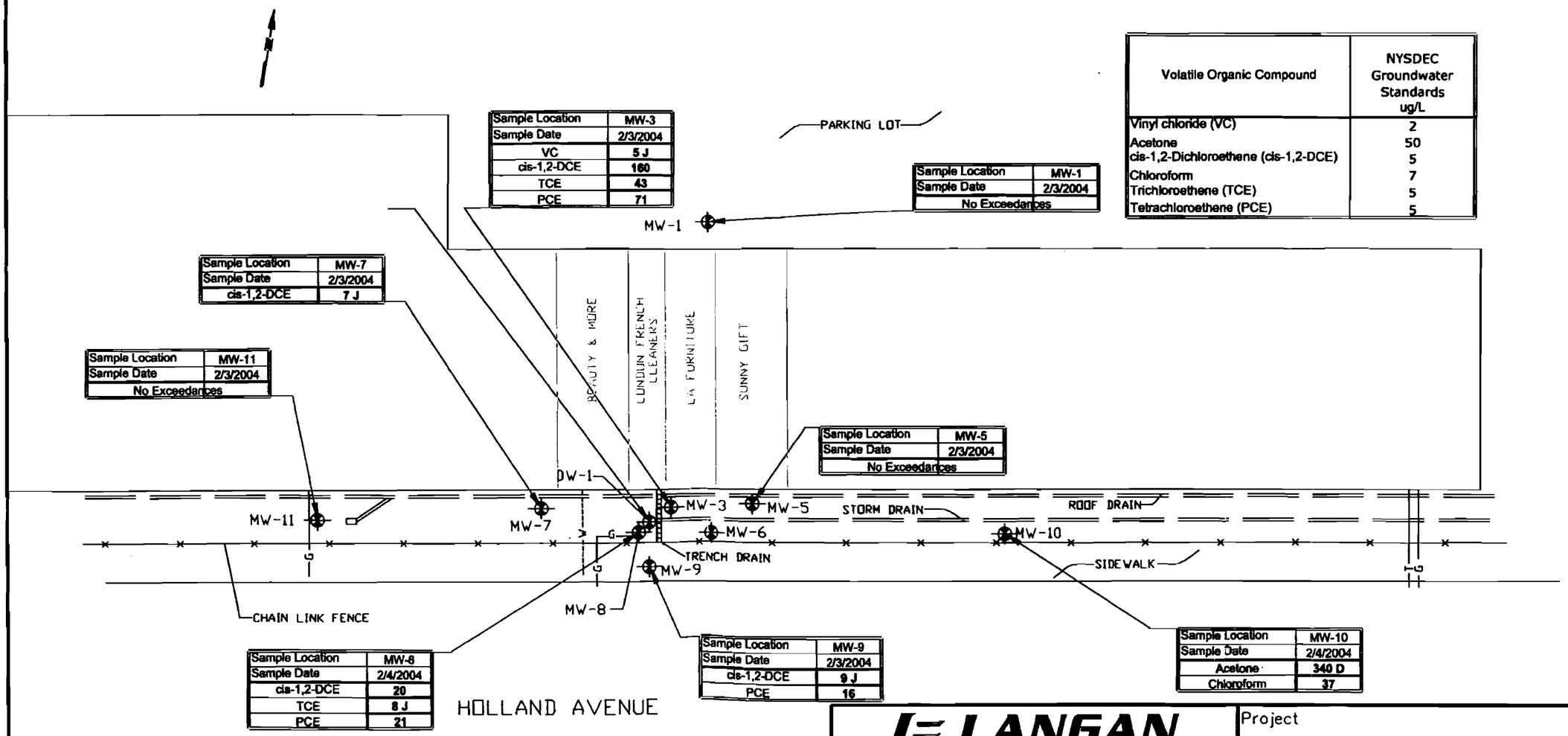
LEGEND

MW-1 EXISTING MONITORING WELL

NOTES

1. "J" INDICATES THAT THE RESULT IS AN ESTIMATED VALUE.
2. "D" INDICATES THAT THE SAMPLE WAS DILUTED.
3. NYSDEC - NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL COMMISSION
4. MONITORING WELL MW-6 NOT SAMPLED

Volatile Organic Compound	NYSDEC Groundwater Standards ug/L
Vinyl chloride (VC)	2
Acetone	50
cis-1,2-Dichloroethene (cis-1,2-DCE)	5
Chloroform	7
Trichloroethene (TCE)	5
Tetrachloroethene (PCE)	5



Sample Location	MW-3
Sample Date	2/3/2004
VC	5 J
cis-1,2-DCE	160
TCE	43
PCE	71

Sample Location	MW-1
Sample Date	2/3/2004
No Exceedances	

Sample Location	MW-7
Sample Date	2/3/2004
cis-1,2-DCE	7 J

Sample Location	MW-11
Sample Date	2/3/2004
No Exceedances	

Sample Location	MW-5
Sample Date	2/3/2004
No Exceedances	

Sample Location	MW-8
Sample Date	2/4/2004
cis-1,2-DCE	20
TCE	8 J
PCE	21

Sample Location	MW-9
Sample Date	2/3/2004
cis-1,2-DCE	9 J
PCE	16

Sample Location	MW-10
Sample Date	2/4/2004
Acetone	340 D
Chloroform	37

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Project

DAYTON SHOPPING PLAZA
GROUNDWATER EXCEEDANCES

QUEENS NEW YORK

Job No.	Date	Scale	
1461905	23 APRIL 2004	1"=50'	Figure 3

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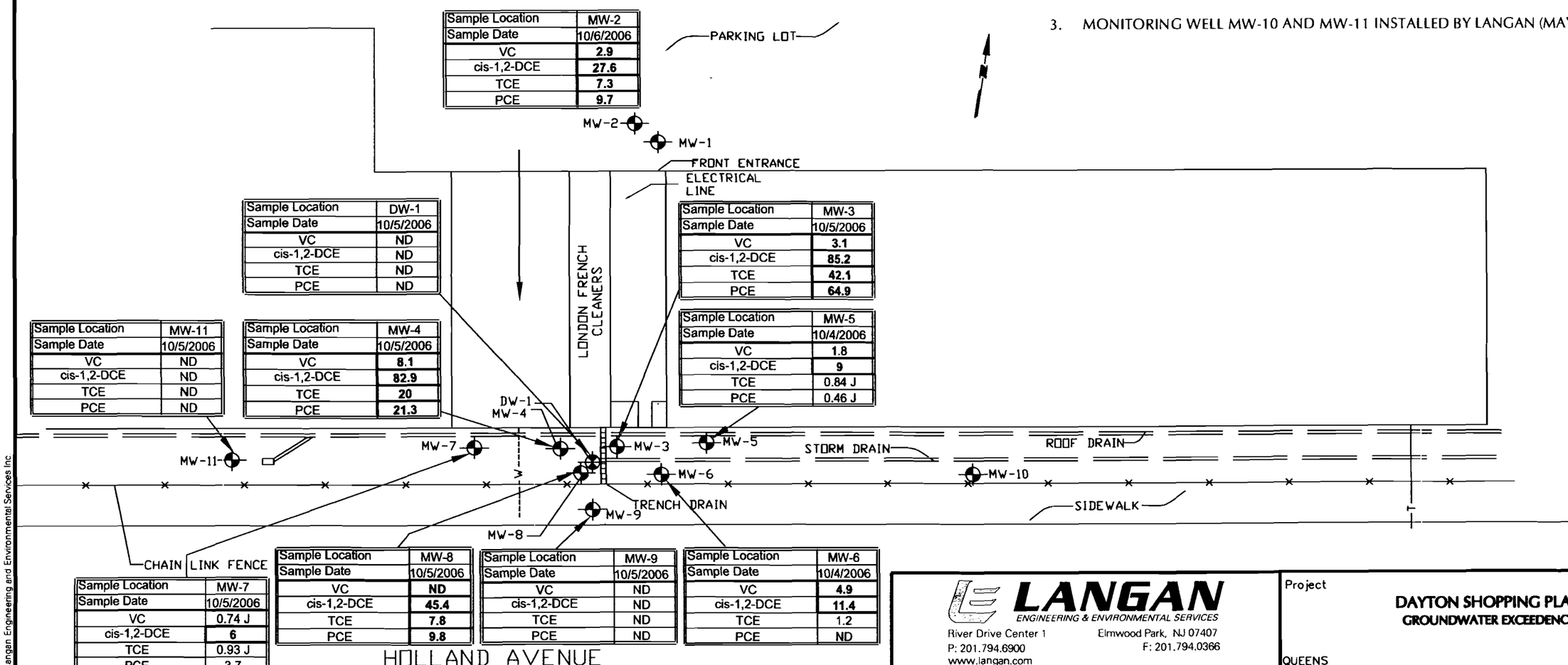
LEGEND

- MONITORING WELL LOCATION
- DEEP MONITORING WELL LOCATION
- GROUND WATER DIRECTION

NOTES

1. MONITORING WELL MW-1 TO MW-4 INSTALLED BY RECON ENVIRONMENTAL CORPORATION (NOVEMBER 1995)
2. MONITORING WELL MW-5 TO MW-9 AND DW-1 INSTALLED BY RECON ENVIRONMENTAL CORPORATION (JANUARY 1996)
3. MONITORING WELL MW-10 AND MW-11 INSTALLED BY LANGAN (MAY 1998)



Sample Location	MW-2
Sample Date	10/6/2006
VC	2.9
cis-1,2-DCE	27.6
TCE	7.3
PCE	9.7

Sample Location	DW-1
Sample Date	10/5/2006
VC	ND
cis-1,2-DCE	ND
TCE	ND
PCE	ND

Sample Location	MW-3
Sample Date	10/5/2006
VC	3.1
cis-1,2-DCE	85.2
TCE	42.1
PCE	64.9

Sample Location	MW-11
Sample Date	10/5/2006
VC	ND
cis-1,2-DCE	ND
TCE	ND
PCE	ND

Sample Location	MW-4
Sample Date	10/5/2006
VC	8.1
cis-1,2-DCE	82.9
TCE	20
PCE	21.3

Sample Location	MW-5
Sample Date	10/4/2006
VC	1.8
cis-1,2-DCE	9
TCE	0.84 J
PCE	0.46 J

Sample Location	MW-7
Sample Date	10/5/2006
VC	0.74 J
cis-1,2-DCE	6
TCE	0.93 J
PCE	3.7

Sample Location	MW-8
Sample Date	10/5/2006
VC	ND
cis-1,2-DCE	45.4
TCE	7.8
PCE	9.8

Sample Location	MW-9
Sample Date	10/5/2006
VC	ND
cis-1,2-DCE	ND
TCE	ND
PCE	ND

Sample Location	MW-6
Sample Date	10/4/2006
VC	4.9
cis-1,2-DCE	11.4
TCE	1.2
PCE	ND

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River Drive Center 1 Elmwood Park, NJ 07407
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Project

DAYTON SHOPPING PLAZA
GROUNDWATER EXCEEDENCES

QUEENS NEW YORK

Project No.	Date	Scale	
1461905	29 MARCH 2007	1"=40'	Figure 4

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LEGEND

- SG-58 — SUB-SLAB SOIL VAPOR SAMPLING LOCATION (2004)
- AS-3 — INDOOR AIR SAMPLING LOCATION (2004)
- SG-17 — SUB-SLAB SOIL VAPOR SAMPLING LOCATION (SUPPLEMENTAL PHASE II RI)
- AS-5 — INDOOR AIR SAMPLE LOCATION (SUPPLEMENTAL PHASE II RI)
- MP-1 — VAPOR MONITORING POINT (SUPPLEMENTAL PHASE II RI)

Sample ID	SG-11
Langan Sample Number	068
Sample Date	2/2/2004
Sample Depth	0.5'-1'
Units	ug/m3
Acetone	354
Benzene	76
Vinyl Chloride	ND
cis-1,2-Dichloroethene	ND
Trichloroethene	ND
Tetrachloroethene	45
Carbon tetrachloride	ND

Sample ID	AS-5	SG-12
Langan Sample Number	087	086
Sample Date	12/16/2004	12/16/2004
Sample Depth	—	0.5'-1'
Units	ug/m3	ug/m3
Acetone	ND	33.7
Benzene	1.3	ND
Vinyl Chloride	ND	ND
cis-1,2-Dichloroethene	ND	ND
Trichloroethene	ND	ND
Tetrachloroethene	ND	6.4 J
Carbon tetrachloride	ND	ND

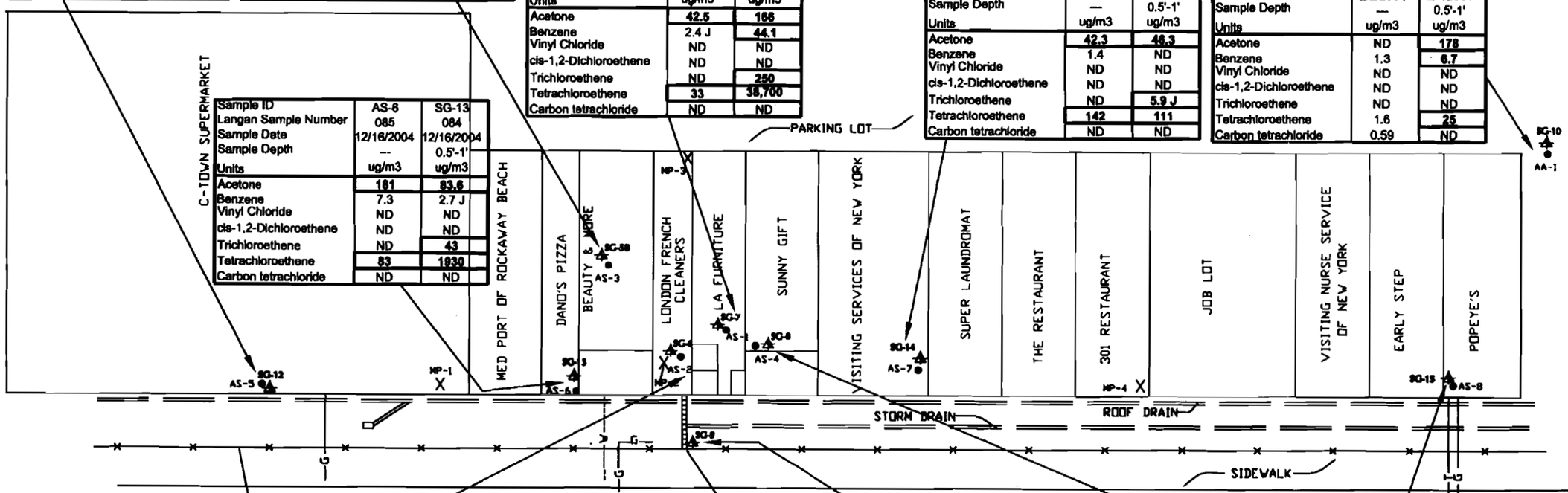
Sample ID	AS-3	SG-5
Langan Sample Number	072	062
Sample Date	2/2/2004	2/2/2004
Sample Depth	—	0.5'-1'
Units	ug/m3	ug/m3
Acetone	8.6	228
Benzene	1.2	45
Vinyl Chloride	ND	ND
cis-1,2-Dichloroethene	ND	ND
Trichloroethene	ND	20
Tetrachloroethene	26	222
Carbon tetrachloride	ND	ND

Sample ID	AS-1	SG-7
Langan Sample Number	070	064
Sample Date	2/2/2004	2/2/2004
Sample Depth	—	0.5'-1'
Units	ug/m3	ug/m3
Acetone	42.5	166
Benzene	2.4 J	44.1
Vinyl Chloride	ND	ND
cis-1,2-Dichloroethene	ND	ND
Trichloroethene	ND	250
Tetrachloroethene	33	38,700
Carbon tetrachloride	ND	ND

Sample ID	AS-7	SG-14
Langan Sample Number	089	088
Sample Date	12/16/2004	12/16/2004
Sample Depth	—	0.5'-1'
Units	ug/m3	ug/m3
Acetone	42.3	46.3
Benzene	1.4	ND
Vinyl Chloride	ND	ND
cis-1,2-Dichloroethene	ND	ND
Trichloroethene	ND	5.9 J
Tetrachloroethene	142	111
Carbon tetrachloride	ND	ND

Sample ID	AA-1	SG-10
Langan Sample Number	074	067
Sample Date	2/2/2004	2/2/2004
Sample Depth	—	0.5'-1'
Units	ug/m3	ug/m3
Acetone	ND	178
Benzene	1.3	6.7
Vinyl Chloride	ND	ND
cis-1,2-Dichloroethene	ND	ND
Trichloroethene	ND	ND
Tetrachloroethene	1.6	25
Carbon tetrachloride	0.59	ND

Sample ID	AS-6	SG-13
Langan Sample Number	085	084
Sample Date	12/16/2004	12/16/2004
Sample Depth	—	0.5'-1'
Units	ug/m3	ug/m3
Acetone	181	83.6
Benzene	7.3	2.7 J
Vinyl Chloride	ND	ND
cis-1,2-Dichloroethene	ND	ND
Trichloroethene	ND	43
Tetrachloroethene	83	1930
Carbon tetrachloride	ND	ND



Sample ID	AS-2	SG-6
Langan Sample Number	071	063
Sample Date	2/2/2004	2/2/2004
Sample Depth	—	0.5'-1'
Units	ug/m3	ug/m3
Acetone	6.9	283
Benzene	1.2 J	22
Vinyl Chloride	ND	ND
cis-1,2-Dichloroethene	ND	46
Trichloroethene	ND	638
Tetrachloroethene	131	112,000
Carbon tetrachloride	ND	ND

Sample ID	SG-9
Langan Sample Number	066
Sample Date	2/2/2004
Sample Depth	—
Units	ug/m3
Acetone	112
Benzene	1.8
Vinyl Chloride	ND
cis-1,2-Dichloroethene	ND
Trichloroethene	ND
Tetrachloroethene	5.3
Carbon tetrachloride	ND

Sample ID	AS-4	SG-8
Langan Sample Number	073	065
Sample Date	2/2/2004	2/2/2004
Sample Depth	—	0.5'-1'
Units	ug/m3	ug/m3
Acetone	101	330
Benzene	1.8	4.8
Vinyl Chloride	ND	ND
cis-1,2-Dichloroethene	ND	ND
Trichloroethene	ND	ND
Tetrachloroethene	16	302
Carbon tetrachloride	ND	ND

Sample ID	AS-8	SG-15
Langan Sample Number	092	090
Sample Date	12/16/2004	12/16/2004
Sample Depth	—	0.5'-1'
Units	ug/m3	ug/m3
Acetone	ND	48.2
Benzene	1.5	ND
Vinyl Chloride	ND	ND
cis-1,2-Dichloroethene	ND	ND
Trichloroethene	ND	ND
Tetrachloroethene	0.67 J	29
Carbon tetrachloride	ND	ND

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ENGINEERING & ENVIRONMENTAL SERVICES
River Drive Center 1 Elmwood Park, NJ 07407
P: 201.794.6900 F: 201.794.0366
www.langan.com
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Project

DAYTON SHOPPING PLAZA

HISTORICAL SUB-SLAB SOIL VAPOR AND INDOOR AIR EXCEEDENCE MAP

QUEENS NEW YORK

Project No.	Date	Scale	
1461905	9 NOV 2006	1"=50'	Figure 5

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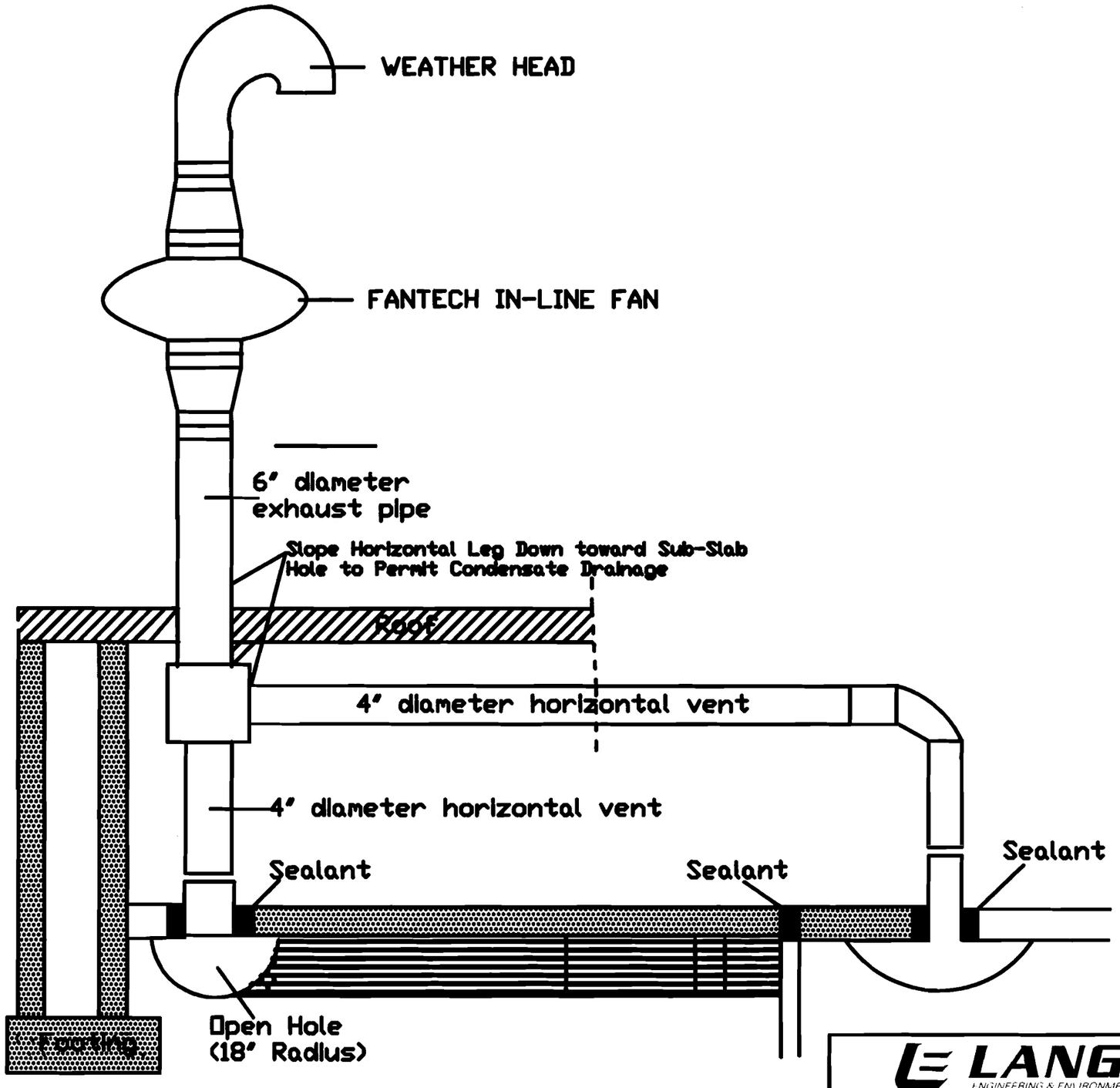

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Project
DAYTON SHOPPING PLAZA
INTERIM REMEDIAL MEASURE WORKPLAN
Sub-Slab Venting System Construction Details
FAR ROCKAWAY BEACH
QUEENS NEW YORK

Project No.	Date	Scale	
1461905	9 JUNE 2006	NTS	Figure 6

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APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

London French Dry Cleaning Co., Rockaway Beach, Queens, New York
Site No. 241035

The Proposed Remedial Action Plan (PRAP) for the London French Dry Cleaning Co. site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on May 22, 2007. The PRAP outlined the remedial measure proposed for the contaminated soil, groundwater, and sub-slab vapor at the London French Dry Cleaning Co. site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on June 11, 2007, which included a presentation of the Remedial Investigation (RI) and 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. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on June 21, 2007.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: Why did the previous property owner shut down the air sparge/soil vapor extraction (AS/SVE) system?

RESPONSE 1: NYSDEC is not certain of the reason because the previous owner was not operating the AS/SVE system under NYSDEC oversight. Based on the historic information in the site reports we had presumed the previous owner just turned the system off when the property was transferred to the new long-term lessee due to it no longer being their responsibility. However, one of the attendees at the public meeting who works in the plaza told NYSDEC that the system merely broke down around that time and was never repaired, so it's possible that is the reason.

COMMENT 2: Was the previous owner under a legal obligation to keep the AS/SVE system running, or did shutting it down in 2002 violate any laws?

RESPONSE 2: The previous owner was operating the AS/SVE system voluntarily, without input or oversight from NYSDEC or any other regulatory agency. They were under no legal obligation to continue the operation of the system, and NYSDEC is unaware of any laws preventing the system from being turned off.

COMMENT 3: Had the AS/SVE system not been turned off in 2002 could the remediation be further along by now than it is?

RESPONSE 3: Had the system run continuously between the June 2002 shutdown and the resumption of the system operation in June 2005, additional contamination would have been removed and, therefore, remediation would likely have been further along.

COMMENT 4: Why did you only conduct a soil investigation near the London French Cleaners, yet sampled groundwater over a much larger area?

RESPONSE 4: Subsurface soil contamination does not generally migrate laterally from where a spill occurs. There is no mechanism to transport the contaminated soil horizontally, so the contaminated area is limited to the immediate vicinity of the spill. However, contamination will move vertically downward from a soil source area. The liquid contaminant itself may migrate downward due to gravity, or it can be carried downward by infiltrating water.

This downward motion eventually brings the contaminant to the water table where it impacts the groundwater. Groundwater does move laterally toward a point of discharge (the Atlantic Ocean in this case). Therefore, groundwater sampling was conducted over a wider area to determine whether contaminated groundwater had moved off the site. Based on the most recent groundwater sampling results, groundwater contamination is not migrating off the site.

COMMENT 5: When the air from the AS/SVE system is discharged to the atmosphere does it cause an outdoor air problem?

RESPONSE 5: Sampling of the exhaust gases from the AS/SVE systems indicates the concentrations of contaminants are much too low to cause outdoor air impacts or require treatment.

COMMENT 6: The lawns at the high rise building south of the site are watered from wells on the property. Is there any risk to people or animals after the lawns are watered?

RESPONSE 6: NYSDEC was unaware of the presence of irrigation wells on the downgradient property. However, the data from the monitoring wells shows no contaminated groundwater is leaving the site, so there is no site-related contamination impacting the downgradient wells.

COMMENT 7: Were all the stores in the Dayton Plaza affected by the contamination of indoor air? If not, how far did the contamination extend? What stores are impacted by vapor now?

RESPONSE 7: The indoor air sampling conducted in February 2004 and December 2004 indicated that indoor air impacts affected shops in the Dayton Plaza from Dano's Pizza in the west to what is currently the location of Rockaway Dental in the east. Rockaway Dental now occupies the space that is labeled "Visiting Services of New York" on the figures. That area included six storefronts; Dano's Pizza, Beauty & More, London French Cleaners, the storefront that is currently occupied by Atixxione (formerly LA Furniture), Sunny Gift, and the current Rockaway Dental location. These historical impacts were successfully mitigated by the resumption of the AS/SVE system operation and the installation of the sub-slab ventilation (SSV) system, so there are no current impacts to any of the stores.

COMMENT 8: What stores are being impacted by contaminated groundwater and soil?

RESPONSE 8: There are no direct impacts to the stores from groundwater and soil because there is no direct route of exposure for workers or customers to come into contact with groundwater or soil.

COMMENT 9: Is the newly started AS/SVE system the same system as the previous owner installed or is it a brand new system? Is the SSV system a new system?

RESPONSE 9: The air sparge system is basically the same system as was used previously, but with mostly new parts. The air sparge and soil vapor extraction wells are the same, but the compressor, pump, and much of the above ground PVC piping had to be replaced. The sub-slab ventilation system is an entirely new system.

COMMENT 10: It is disturbing that no one was aware that groundwater wells are being used off-site. It should be acknowledged in the PRAP that some wells are being used for irrigation.

RESPONSE 10: Text indicating the presence of off-site irrigation wells has been added to the Record of Decision.

COMMENT 11: How will NYSDEC limit the use of the site? How will the use of the soil and groundwater be limited?

RESPONSE 11: There will an institutional control in the form of an environmental easement to limit the use of the site to commercial or industrial purposes and restrict the use of the groundwater as a source of potable water. Proper safety procedures would be required to prevent unsafe exposures to contaminated soils in the even of future excavation at the site.

COMMENT 12: Is this work being done under a consent order? Who is responsible for the maintenance of the AS/SVE and SSV systems?

RESPONSE 12: The work is being conducted by the long-term leaseholder of the site under a voluntary cleanup agreement as an innocent owner. Were the volunteer to discontinue the operation of the selected

remedy at some point in the future before the completion of site remediation, the NYSDEC would resume it's investigation to determine the potential responsible party or parties (PRPs) and ask them to resume responsibility for the remediation. If an agreement could not be reached with the PRPs, the Department would evaluate the site for further action under the State Superfund. PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

COMMENT 13: How frequent is the monitoring?

RESPONSE 13: The frequency of groundwater sampling, monitoring of the exhaust from the SVE system, and pressure readings from the AS/SVE and SSV systems has not yet been determined.

COMMENT 14: How will you enforce the monitoring or know if the system is not running?

RESPONSE 14: The volunteer or the property owner would be required to submit a periodic certification of the institutional and engineering controls verifying that they are still in place. The results of the monitoring are submitted to NYSDEC so the Department would be aware of a problem if they were not submitted on time.

COMMENT 15: When do you expect to have a final remedy determined in a Record of Decision?

RESPONSE 15: The Record of Decision should be finalized sometime in the summer of 2007 and a notice will be sent to those people and organizations on the mailing list. The Record of Decision will be available for review at the document repositories.

COMMENT 16: What are the long term health effects of PCE exposure? What about workers at the plaza exposed to PCE in the past? Would former or current workers have any health concerns?

RESPONSE 16: Exposure to elevated levels of PCE can cause effects on the central nervous system. Very high exposures (700,000 micrograms per cubic meter (mcg/m^3)or more) have caused symptoms such as dizziness, headaches, sleepiness, light-headedness and poor balance, while lower exposures (1400 mcg/m^3 to5000 mcg/m^3 for several years) have been associated with lower scores on tests that evaluate central nervous system (CNS) function.

Studies of workers exposed to PCE and other chemicals, and studies of people living in communities with drinking water supplies contaminated with mixtures of VOCs (including PCE) show an association between exposure to high levels of these chemicals and increased risks of cancer. The role of other factors (e.g., exposure to chemicals other than PCE) in causing these cancers is not completely understood, and therefore the studies suggest, but do not prove, that exposure to PCE causes cancer in humans. Studies of people exposed to PCE in the workplace suggest that long-term inhalation

exposure may increase the risk of effects on reproduction (reduced fertility, changes in semen quality, increased incidences of menstrual disorders and increased rates of spontaneous abortion), but the studies are not strong enough to conclude that these effects were due solely to PCE. Long-term exposure to high levels of PCE has caused cancer and adverse effects on the central nervous system, kidney and liver in laboratory animals.

Typical exposures for past or current workers were not continuous, but intermittent. Assuming that the workers were exposed to the highest level of PCE measured in indoor air (19 parts per billion or 130 mcg/m^3), we estimate that risk for adverse health effects is low. It is unlikely that workers would experience health effects. The highest PCE levels in indoor air were measured prior to the time remedial measures for the building were resumed. Since that time, the PCE levels in indoor air have continued to decrease, resulting in a further decrease in exposure and associated health risks.

APPENDIX B

Administrative Record

Administrative Record

London French Dry Cleaning Co.
Site No. 241035

1. Proposed Remedial Action Plan for the London French Dry Cleaning Co. site, dated May 2007, prepared by the Department.

2. "Remedial Action Workplan, Dayton Shopping Plaza", February 2003, prepared by Langan Engineering and Environmental Services

3. "Remedial Action Workplan Addendum, Dayton Shopping Plaza", October 2003, prepared by Langan Engineering and Environmental Services

4. "Supplemental Remedial Investigation Report, Dayton Shopping Plaza", April 2004, prepared by Langan Engineering and Environmental Services

5. "Interim Remedial Measure Workplan, Dayton Shopping Plaza", June 2006, prepared by Langan Engineering and Environmental Services

6. "Supplemental Remedial Investigation (Phase III) Report (Revision III), Dayton Shopping Plaza", November 2006, prepared by Langan Engineering and Environmental Services

7. "Interim Remedial Measure Report, Dayton Shopping Plaza", March 2007, prepared by Langan Engineering and Environmental Services

8. "Interim Remedial Action Progress Report, Effectiveness Monitoring, Dayton Shopping Plaza", March 2007, prepared by Langan Engineering and Environmental Services