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SUBSURFACE SOIL INVESTIGATION

Police Service Area No. 8
Bronx Community District #9
Block 3540, Lots 1, 29, and 40
CEQR # 95CHA002X

April 13, 1995

Prepared on behalf of:

New York City Housing Authority
Planning Department
123 William Street, Ninth
New York, New York 10038

CEQR No. 95CHA002X

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Figures and Tables

I. EXECUTIVE SUMMARY

Enviro-Sciences, Inc. (ESI) has conducted a Subsurface Soil Investigation at Block 3540, Lots 1, 29, and 40 in the Bronx Community District No. 9, Bronx, New York. A magnetometer survey was performed to attempt to locate any buried drums or underground storage tanks which may have been buried on site. No evidence of any previously unknown structures or the existence of any potential contaminant source(s) were revealed.

The site is a vacant lot with a chain link fence surrounding the perimeter. In the past the site has been used as a garden by the local residents. Several temporary shelters were constructed on site. The site contains areas with mounds eight to nine feet high, consisting of construction and demolition (C&D) material. Underlying the C&D material is a mixture of sand, silt, ash and other debris.

On March 7, 1995, eight (8) trenches were excavated and sampled. The dimensions of the trenches were approximately 20 x 2 x 10 feet. Each trench was sampled and analyzed for Volatile Organic plus 15 peaks (VO+15), Priority Pollutant metals (ppm), Polychlorinated Biphenyls (PCBs), and Petroleum Hydrocarbons (PHC). Sample analysis indicated the presence of beryllium above the NYSDEC Draft Cleanup and Guidelines (October 1991), value of 0.160 (parts per million) ppm at sample locations T-5 and T-7 at a concentration of 0.49 ppm. Lead was also detected above the NYSDEC guideline value of 250 ppm at sample locations T-2 at 489 ppm, T-3 at 884 ppm, T-4 at 660 ppm, T-5 at 699 ppm, T-6 at 764 ppm, T-7 at 229 ppm, and T-8 at 363 ppm. It is likely that not only the site but the surrounding area was filled in a random fashion. The beryllium contamination is most likely associated with the fill material. Full delineation of beryllium would be impossible due to ongoing land uses in the surrounding area and the pervasive nature of the fill material.

The NYSDEC Technical Administrative Guidance Memorandum (TAGM); Determination of Soil Cleanup Objectives and Cleanup Levels, dated January 24, 1994, states, that background lead concentrations vary widely. Average background concentrations in metropolitan areas and\or areas near highways typically range from 200 to 500 ppm.

Based on the above, ESI recommends that no further remedial investigation activities be conducted at the site.

II. INTRODUCTION

Enviro-Sciences, Inc. (ESI) conducted a Subsurface Soil Investigation at Block 3540, Lots 1, 29, and 40 in the Bronx Community District No. 9, Bronx, New York. The Site is located at the intersection of Zerega Avenue and La Combe Avenue. (see Figure 1).

Prior to the subsurface investigation, historical research was conducted in order to identify the potential for unknown contamination sources. A magnetometer survey was also performed to attempt to locate any buried drums or underground storage tanks which may have been buried on site.

III. HISTORICAL RESEARCH

On February 24, 1995, ESI personnel investigated historical documents at the New York City Public Library located at 42nd Street and 5th Avenue in order to obtain information regarding historical uses of the site and potential locations of on-site contamination. All available Sanborn and Bromley insurance maps held by the library were reviewed. No evidence of any previously unknown structures or the existence of any potential contaminant source(s) were revealed.

The area surrounding the site is comprised mainly of single and multiple dwellings to the southwest, high rise dwelling units to the west and commercial and manufacturing businesses to the north and east.

IV. MAGNETOMETER SURVEY

The purpose of conducting the survey was to identify potential sources of contamination (i.e. buried drums and\or underground storage tanks). If any magnetic anomalies were detected the sampling plan would be altered to incorporate the potential area of concern.

On March 2, 1995, the entire site was surveyed using a Schonstedt Magnetic and Cable locator, Model No. MAI51B. The survey was performed by walking the meter across the site at five foot intervals, parallel to Havermeyer Avenue. All areas exhibiting a horizontal magnetic field greater then two or three feet in diameter were identified as areas of concern and potential sampling areas.

The majority of the site is covered with building debris and general trash of both a metallic and non-metallic nature. This debris resulted in many positive readings. After investigating each of those areas by hand digging, most were determined to be false positive readings. The anomalies that remained were incorporated into the sampling plan (see Figure 2).

V. SUBSURFACE SOIL INVESTIGATION

A. Site conditions

The site is a vacant lot with a chain link fence surrounding the perimeter. In the past the site has been used as a garden by the local residents. Several temporary shelters were constructed on site. They were constructed with card board, plastic, wood and other discarded material. At the time of the investigation none of the shelters were inhabited.

The soils underlying the site consist preliminary of sand and silt mixed with construction and demolition (C&D) debris (i.e. wood, concrete, metal, glass, tires, miscellaneous debris and ash).

Each of the trenches were excavated to a depth of 9 to 10 feet, except T-5 which was excavated to a depth of approximately four feet due to the presence of rail road ties and large concrete slabs.

The site is generally flat with small mounds eight to nine feet high. It is likely that recent dumping of C&D material created these mounds. Underlying the C&D material is mixture of sand, silt, ash and other debris.

B. Sampling Procedures

On March 7, 1995, eight (8) trenches were excavated and sampled. The majority of the trenches (T-2, T-3, T-4, T-5, T-6, and T-7) were installed in the footprint of the proposed PSA#8 Building. The proposed trench locations in the footprint of the proposed building were changed after the magnetic survey was performed. The orientations of T-5, T-6, and T-7 were changed to encompass both the magnetic anomaly (associated with each trench) and the proposed location of the PSA#8 building.

Trench T-1 was located as close as possible to the property boundary of an existing structure and adjacent to a large elongated magnetic anomaly at the corner of La Combe and Havemeyer Avenues (see Figure 2) . Trench T-8 was installed near the previous location of an unidentified building.

The dimensions of the trenches were approximately 20 x 2 x 10 feet. Material excavated from each trench was photographed to document existing conditions (see appendix A). Each trench was sampled and analyzed for Volatile Organic plus 15 peaks (VO+15), Priority Pollutant metals (ppm), Polychlorinated Biphenyls (PCBs), and Petroleum Hydrocarbons (PHC). Each trench excavation was immediately back filled after sample collections were complete.

Four samples from each trench were obtained from the excavated soil. All samples (except VOs) were homogenized to form one composite sample per trench. All other samples were obtained using stainless steel trowels and mixed in stainless steel bowls. Each VO sample was placed into the VO sample jar to minimize aeration of the sample.

C. Sample Results

The sample results were compared to the Soil Cleanup and Guidelines, Volume II - Appendix document, and NYDEC Technical Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels.

Sample analysis indicated the presence of beryllium above the NYSDEC Draft Cleanup and Gidelines value of 0.160 (parts per million) ppm at sample locations T-5 and T-7 at a concentration of 0.49 ppm.

Lead was also detected above the NYSDEC Draft Cleanup and Guidelines value of 250 ppm at sample locations T-2 at 489 ppm, T-3 at 884 ppm, T-4 at 660 ppm, T-5 at 699 ppm, T-6 at 764 ppm, T-7 at 229 ppm, and T-8 at 363 ppm.

VI. Remedial Investigation

The entire site and perhaps the surrounding area has been filled with C&D, ash, and other miscellaneous fill material. It is likely that not only the site but the

surrounding area was filled in a random fashion. The beryllium contamination is most likely associated with the fill material. Full delineation of beryllium would be impossible due to the nature of land use surrounding area and the pervasive nature of the fill material.

The NYDEC Technical Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels, dated January 24, 1994, states, that background lead concentrations vary widely. Average background concentrations in metropolitan areas and\or areas near highways typically range from 200 to 500 ppm.

Since the site is located: 1) in a metropolitan area, 2) near a highway 3) adjacent to former manufacturing operations, and 4) the concentrations detected on-site are slightly above the NYSDEC concentration range cited above, no further soil investigation for lead is required.

Based on the above, ESI recommends that no further remedial investigation activities be conducted at the site.

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APPENDIX A

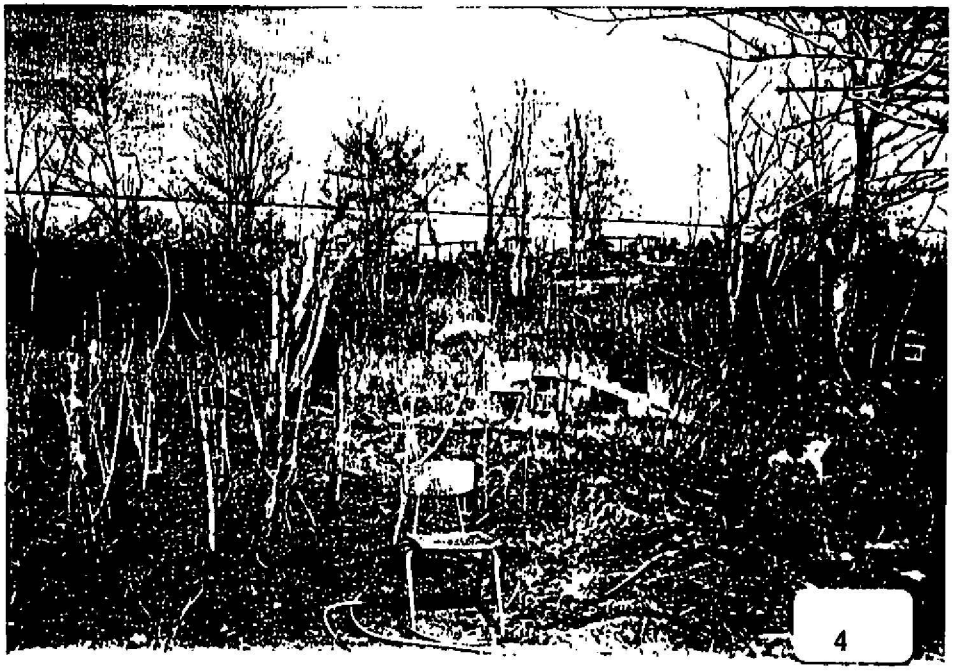
PHOTOGRAPHS

SUBSURFACE SOIL INVESTIGATION

Police Service Area No. 8
Bronx Community District #9
Block 3540, Lots 1, 29, and 40
CEQR # 95CHA002X

Photograph	Description
1	Along Havemeyer Avenue, north
2	Center of lot, northeast
3	Area along south side of lot (T-1), east
4	Area of T-2, north
5	Area of T-2, northwest
6	Center of lot, southwest
7	Along north side of lot, southwest
8	Along north side of lot, west, closer to Havemeyer Avenue
9	Center of lot, south
10	Northern section of lot, east
11	Lower area of lot near Havemeyer Avenue, southwest
12	Area T-2, northwest
13	Area T-2, west
14	Area T-7, south
15	Area T-3, south
16	Area T-4, southwest
17	Area T-4, northwest
18	Area T-6, south
19	Area T-6, southwest
20	Area T-5, north
21	Area T-8, north

DATE: ASSIGNMENT: FILE NO:

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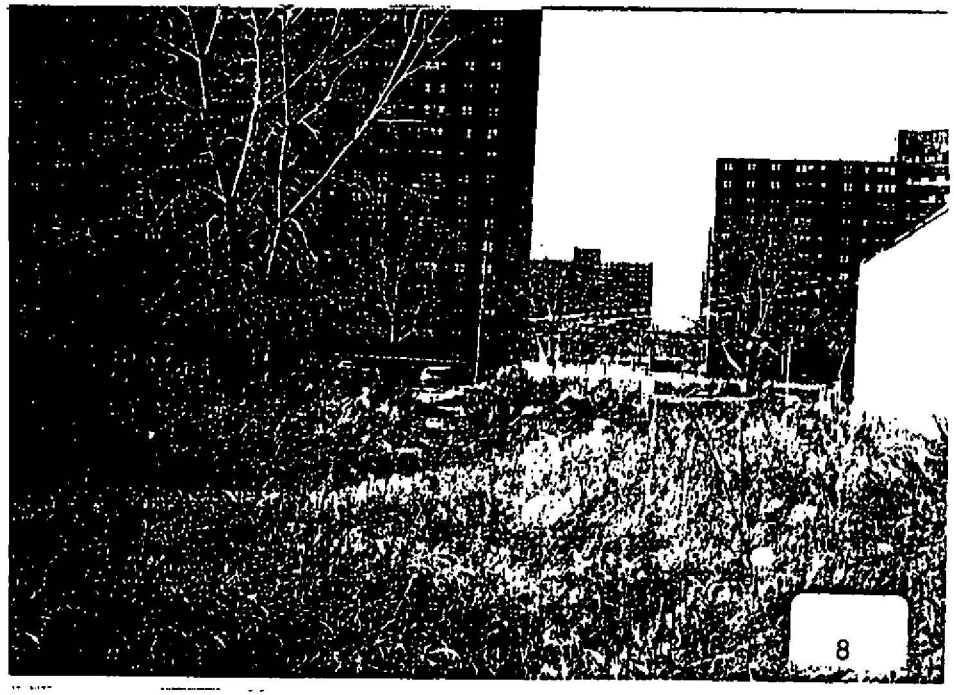
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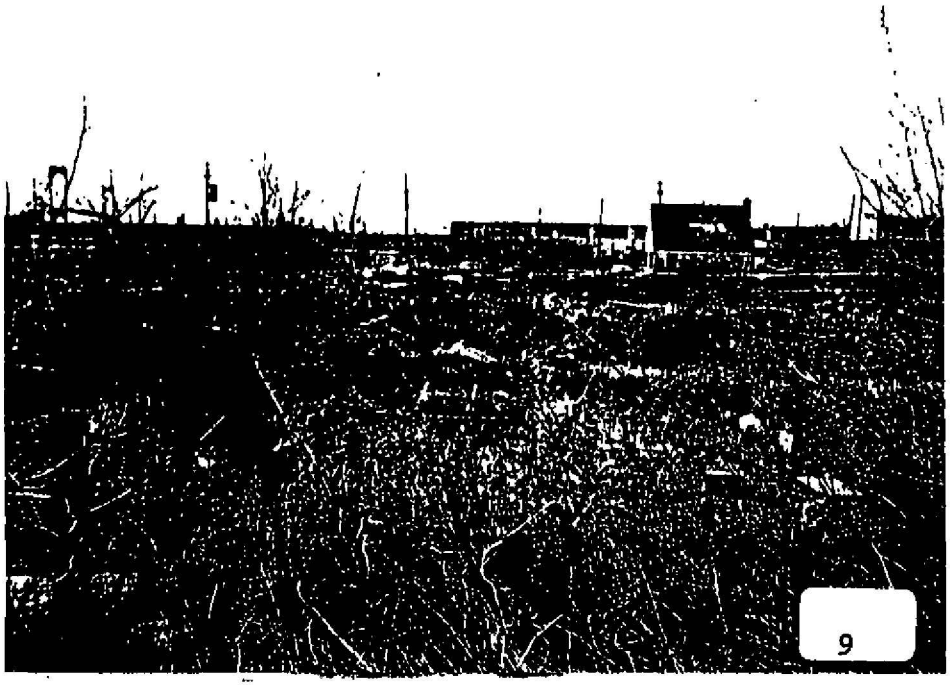

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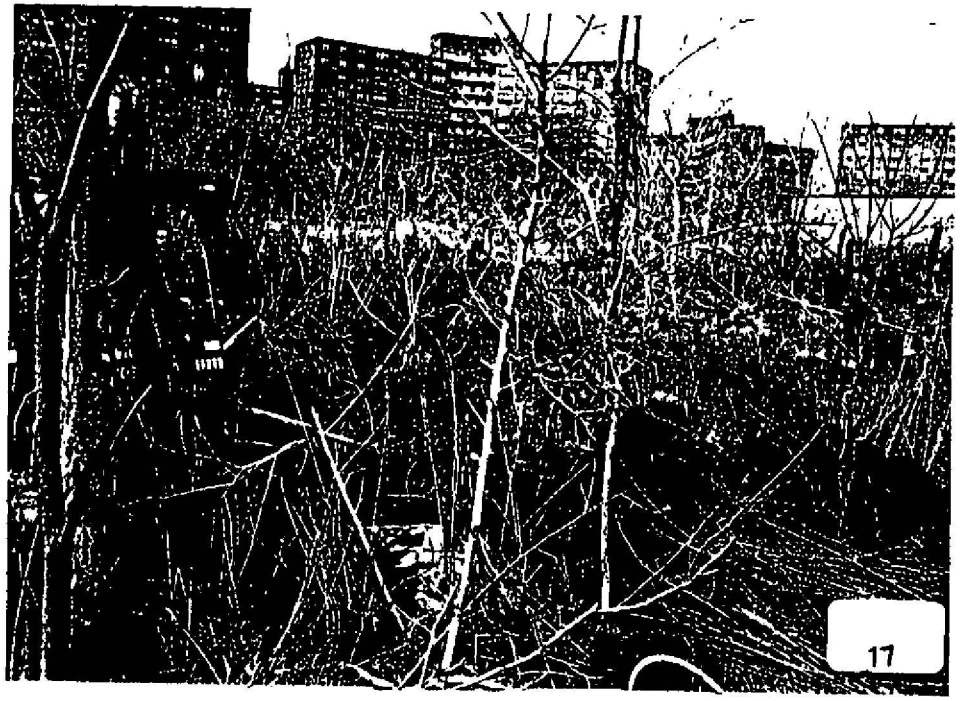

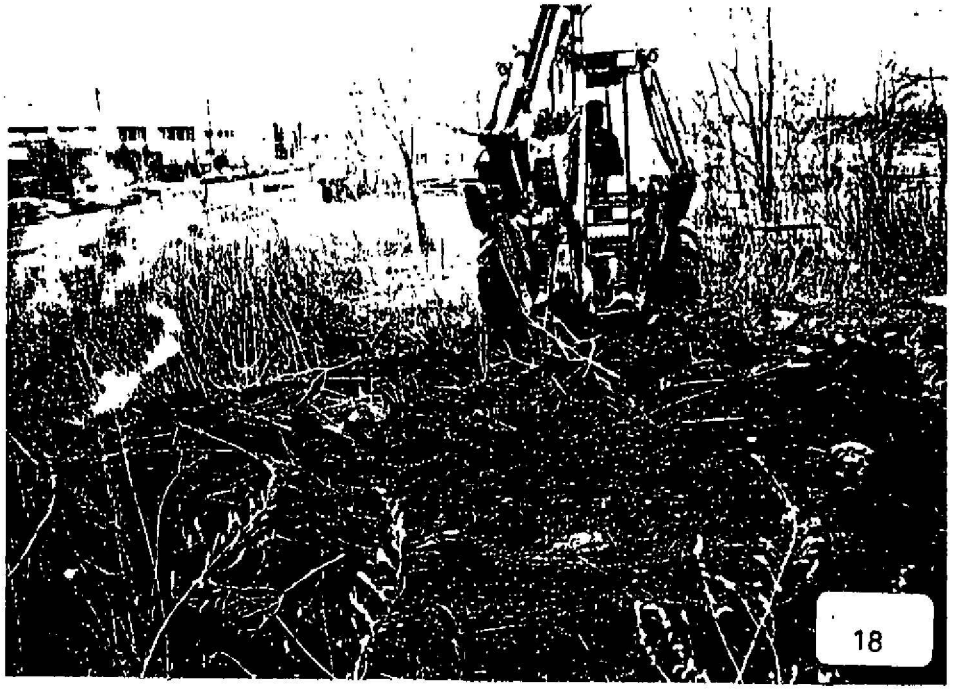

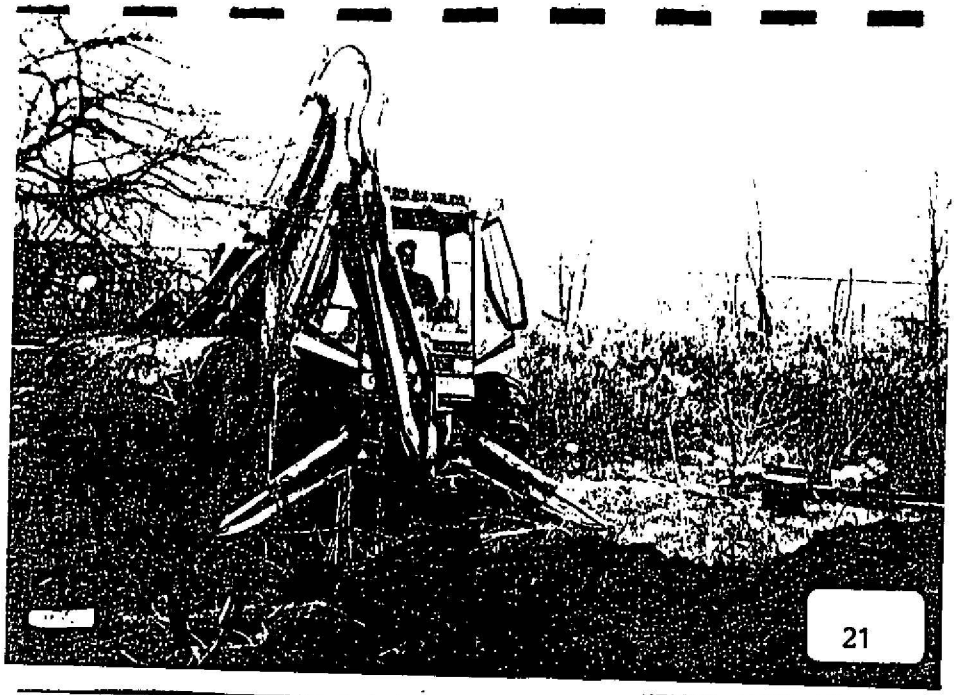

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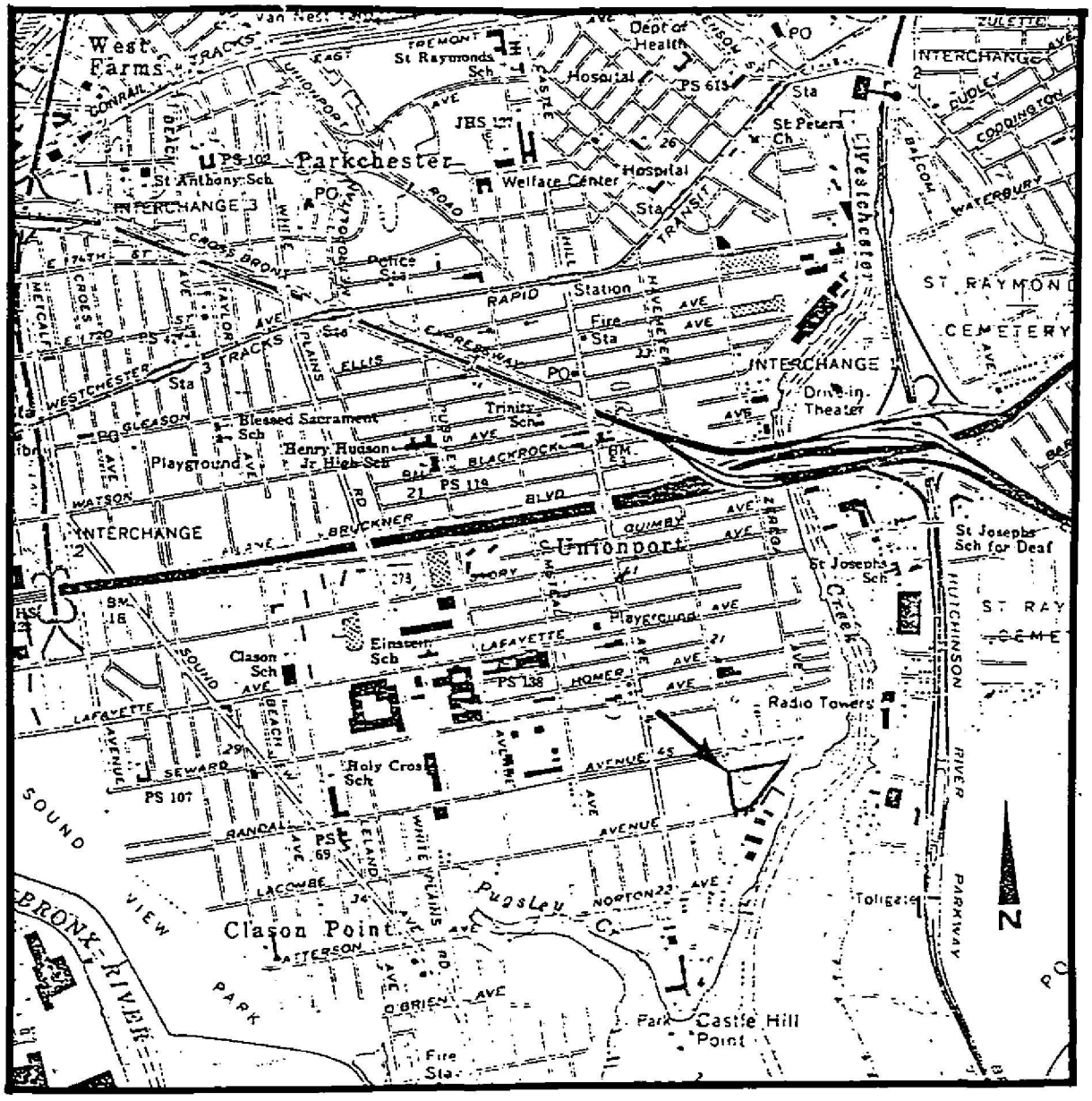
FIGURE 1

SITE LOCATION MAP



USGS TOPOGRAPHIC MAP: FLUSHING

NYCHA PSA NO.8

BRONX, NEW YORK

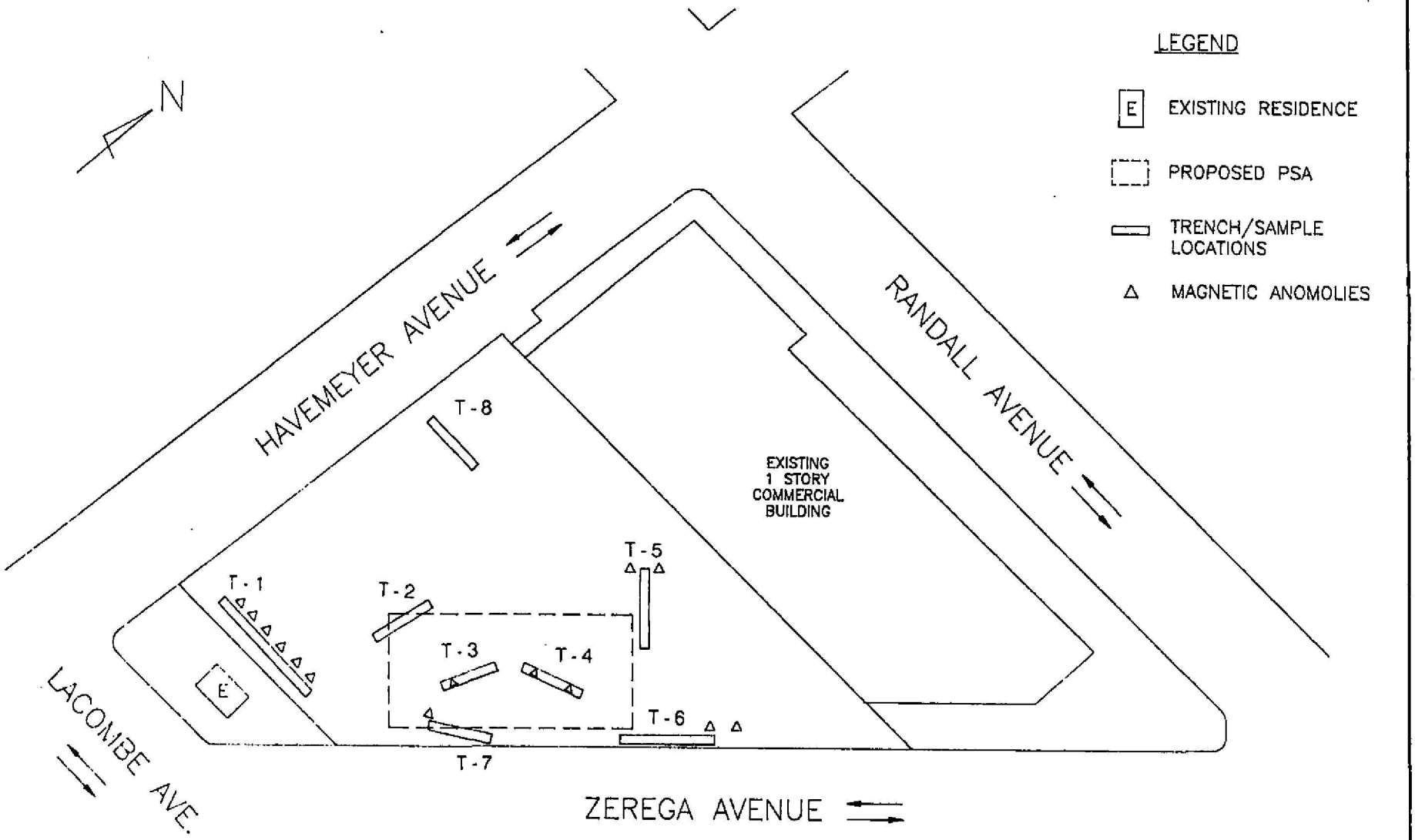


FIGURE 2

NEW YORK CITY HOUSING AUTHORITY
POLICE SERVICE AREA NO. 8
SUBSURFACE SOIL INVESTIGATION REPORT

ENVIRO-SCIENCES, INC.

TRENCH/SAMPLE LOCATION AND MAGNETIC ANOMOLIES MAP	NYC/HA-4
	NYC-001
	04-11-95

Table
NYCHA/PSA8
Soil Sample
Analytical Results
Sampling Report - April 1995

Sample ID #		T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	FB-1	TB-1
Sample Date	NYDEC Soil Cleanup Criteria *	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95
Benzene	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	14	ND	ND	ND	0.00	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	20000	ND	ND	0.03	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	8000	0.01	ND	0.02	0.00	0.00	0.00	ND	0.00	ND	ND
M,O,P-Xylene	200000	0.02	0.00	0.18	0.01	0.00	0.00	0.00	0.01	ND	ND
1,2-Dichlorobenzene	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL PRIORITY POLLUTANT VO		0.04	0.01	0.25	0.03	0.04	0.03	0.03	0.03	2.94	1.34
TOTAL LIBRARY SEARCH VO		ND	ND	2.67	ND	0.01	0.01	ND	ND	ND	ND
TOTAL VO COMPOUNDS		0.04	0.01	2.92	0.03	0.05	0.05	0.03	0.03	2.94	1.34
TOTAL PHC (mg/kg)		83.00	66.60	233.00	846.00	310.00	897.00	62.20	382.00	--	--
Analysis Date		3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95
PCB (mg/kg)	1	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Extraction Date		3/9/95	3/9/95	3/9/95	3/9/95	3/9/95	3/9/95	3/9/95	3/9/95	3/9/95	3/9/95

* NYSDEC DRAFT Cleanup Policy and Guidelines Volume II-Appendix, October 1991
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit and greater than zero.
< - Indicates sample was detected above the NYSDEC DRAFT Cleanup Policy and Guidelines Volume II-Appenix, October 1991

Table 1
NYCHA/PSA8
Soil Sample
Analytical Results

Sampling Report - April 1995

Sample ID #	NYDEC Soil Cleanup Criteria *	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	FB-1	TB-1
Sample Date		3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95	3/7/95
PPM (mg/kg)											
Analysis Date	--	3/8-10/95	3/8-10/95	3/8-10/95	3/8-10/95	3/8-10/95	3/8-10/95	3/8-10/95	3/8-10/95	3/8-10/95	3/8-10/95
Antimony	NLE	0.34	0.22	0.21	0.42	0.49	0.57	0.23	1.16	--	--
Arsenic	80	6.27	6.00	4.94	9.84	13.00	10.90	4.99	6.09	--	--
Beryllium	0.16	ND	ND	ND	ND	0.49 <	ND	0.49 <	ND	--	--
Cadmium	80	0.90	1.09	1.18	2.54	1.32	2.16	0.72	0.98	--	--
Chromium	8000	13.10	20.50	18.80	22.70	16.90	14.60	13.20	6.08	--	--
Copper	NLE	220.00	71.10	83.10	131.00	144.00	150.00	47.00	97.00	--	--
Lead	250	100.00	489.00 <	884.00 <	660.00 <	699.00 <	764.00 <	229.00	363.00 <	--	--
Mercury	20	0.14	0.21	0.15	0.68	0.46	0.64	0.26	0.28	--	--
Nickel	2000	20.70	21.50	20.50	30.90	27.50	28.30	14.90	12.70	--	--
Selenium	NLE	0.56	0.20	0.26	0.29	0.23	0.30	0.45	0.74	--	--
Silver	200	ND	ND	ND	0.99	ND	ND	ND	ND	--	--
Thallium	6	0.10	0.11	0.10	0.12	0.11	0.10	0.09	0.13	--	--
Zinc	20000	350.00	276.00	334.00	621.00	508.00	577.00	227.00	321.00	--	--
VO+15 (mg/kg)											
Analysis Date		3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95	3/8/95
Priority Pollutant VO											
Chloromethane	540	ND	ND	ND	ND	ND	ND	ND	ND	2.94 J	1.34 J
Bromomethane	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	5400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	93	0.01	0.00	0.03	0.02	0.02	0.01	0.02	0.02	ND	ND
Trichlorofluoromethane	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	8000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	7.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0	ND	ND	ND	0.00	0.00	0.00	ND	ND	ND	ND
Carbon Tetrachloride	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis & trans-1,3-Dichloropropene	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	64	0.01	0.00	ND	ND	0.01	0.01	0.00	0.01	ND	ND
Dibromochloromethane	8.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND