

Impact Environmental

❖ a division of impact environmental consulting, inc.

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Remote Sensing Survey

Ground Penetrating Radar Investigation

July 28, 1999

Conducted at:

**AA Truck Renting Corp.
28-90 Review Avenue
Long Island City, New York**

Client:

**Alvin Petroleum Systems, Inc.
65-60 Fresh Meadow Lane
Flushing, New York**

User:

**Alvin Petroleum Systems, Inc.
65-60 Fresh Meadow Lane
Flushing, New York**

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PLATES

Plate #1: Project Location Map, Long Island City, New York
Plate #2: GPR Scan Map, Long Island City, New York

REPORT HOLDER	NUMBER OF REPORTS ISSUED
Alvin Petroleum Systems, Inc.	2
Impact Environmental Consulting, Inc. Corporate Records	1

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1.0 Purpose & Scope

This investigation was performed to identify the presence of any abandoned underground storage tanks (USTs) on the site located at 28-90 Review Avenue, Long Island City, New York, herein identified as the subject property.

The investigative protocols used for this assessment were based upon the following documents: 1) United States Environmental Protection Agency's A Compendium of Superfund Field Operations Methods; and 2) the Geophysical Survey Systems, Inc. SIR System-2 Operation Manual.

- ❖ **Site Description**
- ❖ **Survey Plan**
- ❖ **Presentation of Imagery**
- ❖ **Evaluation of Results**

Presented herein are the results of the Remote Sensing Survey conducted by Impact Environmental Consulting, Inc. on the subject property [see **Plate #1: Project Location Map, Long Island City, New York**].



Plate#1: Project Location Map, Long Island City,

2.0 Site Description

2.1 Topography

The areal extent of the subject property was approximately 185,000 square feet. The subject property contained one two-story, masonry building with an approximate footprint of 1,000 square feet; one two-story, masonry building with an approximate footprint of 3,000 square feet; one single-story, masonry building with an approximate footprint of 23,000 square feet; and one single-story, masonry building with an approximate footprint of 2,000 square feet. The surface area of the subject property consisted of asphalt parking areas, concrete pads, and natural scrub vegetation. The subject property exhibited low topographic relief (less than three percent slopes), except for slightly steeper slopes along the western border of the subject property (where the property dips down to the Dutch Kills Creek) and along the southwestern border (where the property slopes up to the LIRR). The subject property lies within New York City manufacturing zoning district M3-1.

2.2 Land Use

The interiors of the buildings were utilized as office and operational space by AA Truck Renting Corp. The first floor of 1,000 sf building was utilized for the storage of a truck washing machine and chemicals. The second floor of this building was reportedly abandoned, and was inaccessible (sealed). The first floor of the 3,000 sf building was utilized for the storage of truck parts. The second floor was utilized for file storage. The 23,000 s.f. building facilitated office space, truck repair space, truck engine rebuilding space, and truck parts storage space. The 2,000 s.f. building facilitated chemical storage, utilities, and a former truck body repair shop (reportedly no longer in operation).

3.0 Survey Plan

A survey plan was designed to identify the presence of any routes or mechanisms for the migration of contaminants released at target locations on the subject property. Potential routes and mechanisms included abandoned underground storage tanks. The survey was performed with a ground penetrating radar (GPR) unit.

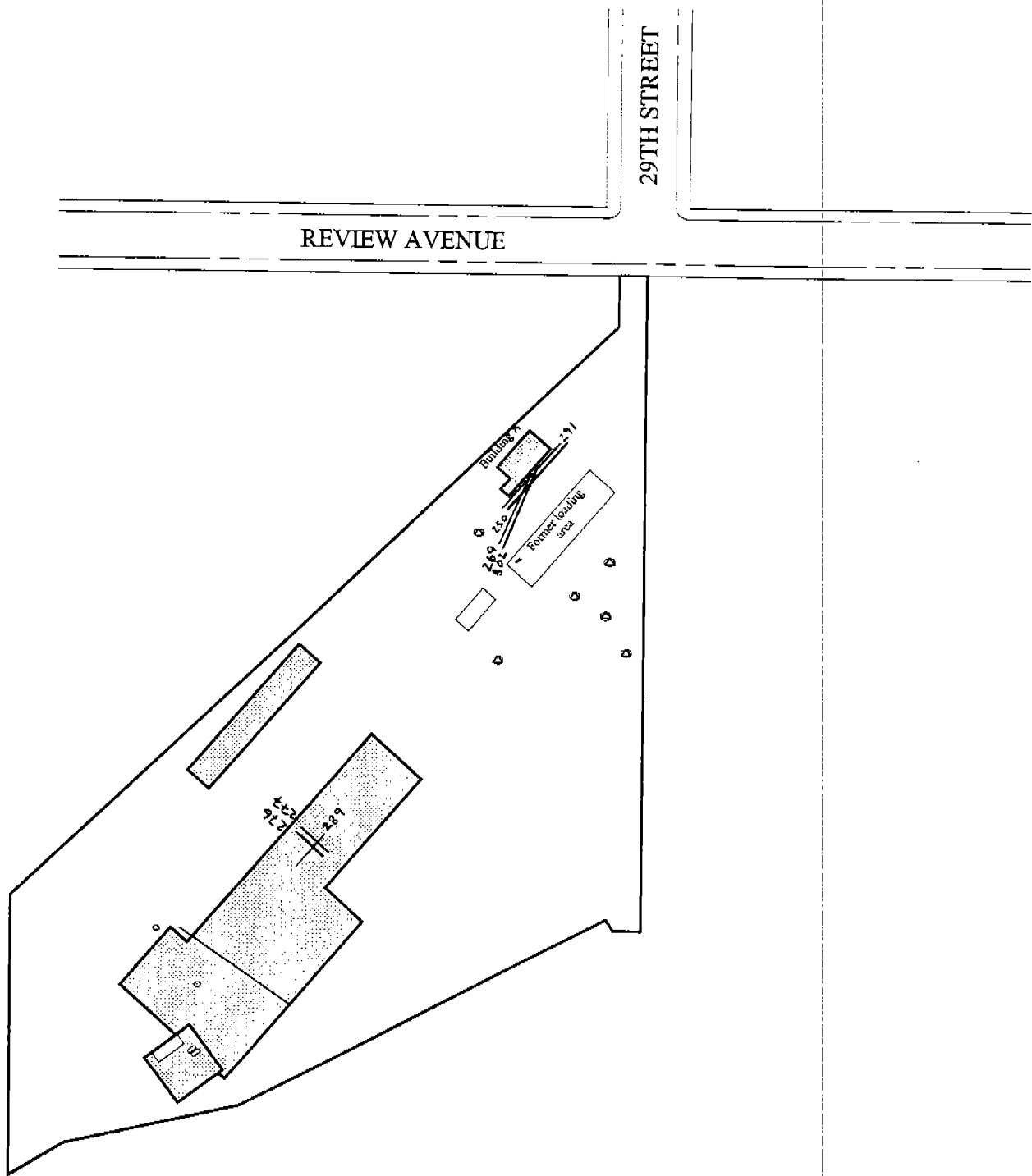
3.1 Remote Survey

A remote survey on target locations of the subject property was performed on July 21, 1999. An interpretation of GPR imagery obtained from the target locations on the subject property exhibited one anomalous feature consistent with that of an underground storage tank (adjacent to the southwestern corner of the 1,000s.f. building). This feature is discussed in detail below and mapped on *Plate #2: GPR Scan Map, Long Island City, New York*. The second target survey location (interior of 23,000s.f. building) failed to exhibit any GPR imagery consistent with that of USTs. References contained within each discussion pertain to GPR image files that are presented in section 4.0 of this report.

One underground storage tank (UST) was located adjacent to the southwestern corner of the 1,000 s.f. building (see Scan Files 250, 269, 291 and 302). The orientation of the UST appeared to be such that the long axis ran north-south). Based on the apparent UST dimensions, the capacity was estimated at being between one and three-thousand gallons.

3.1.1 GPR Procedures

The GPR system consists of a radar control unit, control cable and a transducer (antenna). The control unit transmits a trigger pulse at a normal repetition rate of 50 KHz. The trigger pulse is sent to the transmitter electronics in the transducer via the control cable. The transmitter electronics amplify the trigger pulses into bipolar pulses that are radiated to the subsurface. The transformed pulses vary in shape and frequency according to the transducer used. In the subsurface, variations of the signal occur at boundaries where there is a dielectric contrast (void, steel, soil type, etc.). Signal reflections travel back to the control unit represented as color graphic images for interpolation. This system is capable of transmitting electromagnetic energy in the frequency range of 16MHz to 2000MHz.



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99-309
Plate # 2: GPR Scan Map
Long Island City, New York



• Groundwater monitoring well

A qualified Impact Environmental Consulting, Inc. technician specified a coordinate system on the planimetric surface of the subject property to map any subsurface dielectric anomalies detected on the premises. The operator used knowledge of the subsurface soil composition to calibrate the SIR-2 system to site specific conditions. Factor settings such as range, gain, number of gain points, and scans per unit, were modified to yield the most accurate data to describe the subsurface conditions.

Where an anomaly was encountered, a more spatially specific coordinate system was plotted over the area to determine its size, shape and orientation. The data collected during the survey was reviewed by the operator and compared against past experience, technical judgment and prior site knowledge to classify the anomalies.

4.0 Presentation of Imagery

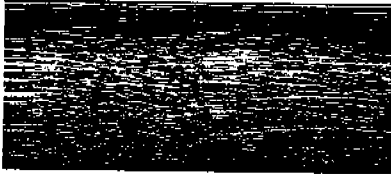
The following index identifies the GPR Scan Files and their respective interpretations. Following the index are printed graphic files downloaded from the GPR.

Scan File Code	Interpretation of Image	Reasons for Interpretation
276	No UST anomalies	No significant dielectric change
277	No UST anomalies	No significant dielectric change
289	No UST anomalies	No significant dielectric change
250	UST	Parabolic curve, low profile
269	UST	Parabolic curve
291	Product Vent	Parabolic curve, high profile
302	UST	Parabolic curve

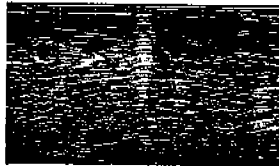
File 276



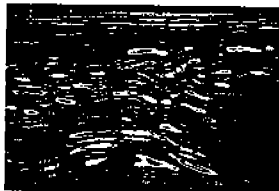
File 277



File 289



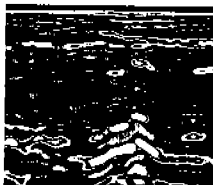
File 250



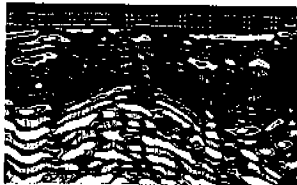
File 269



File 291



File 302



5.0 Evaluation of Results

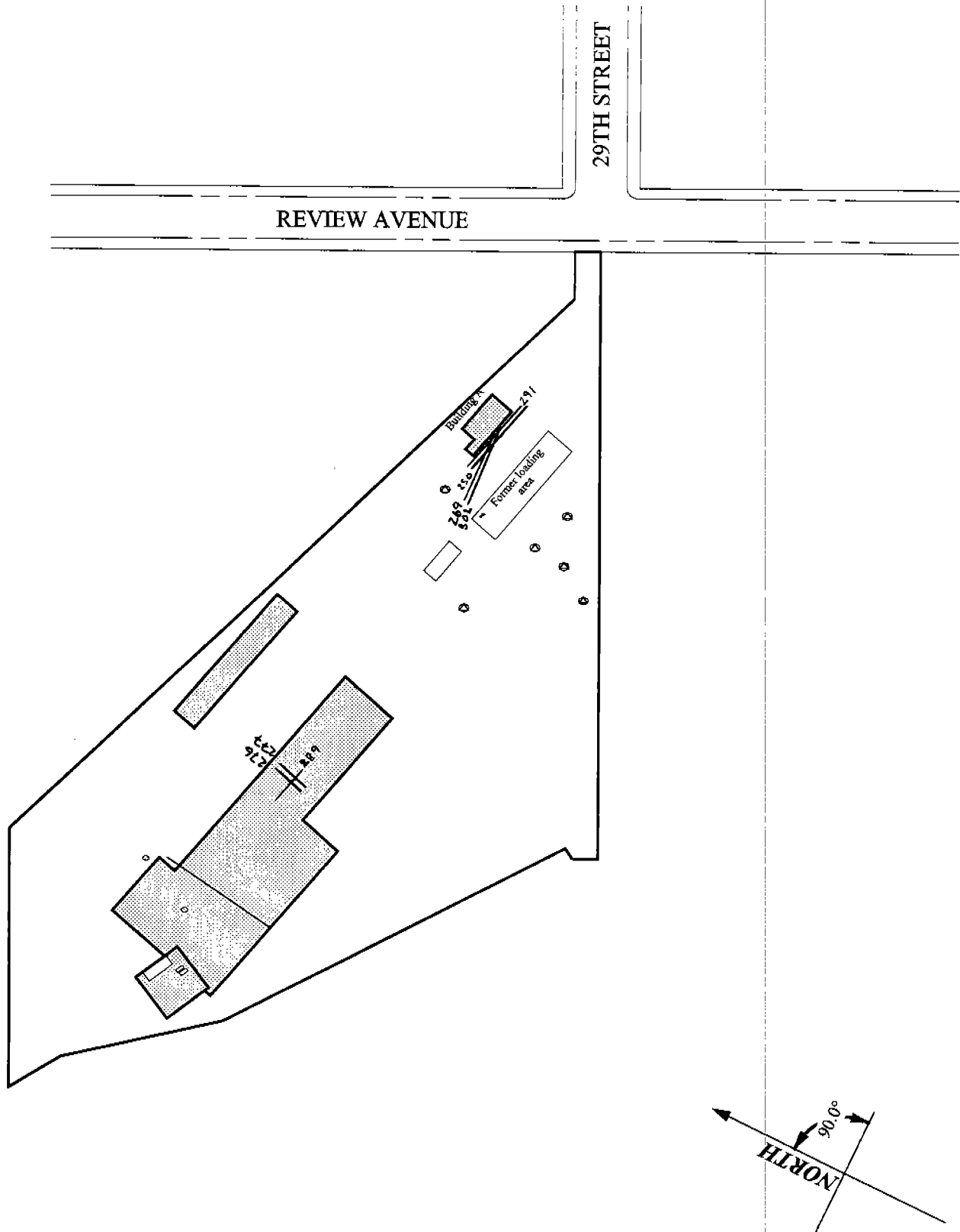
An interpretation of GPR imagery identified the presence of one significant subsurface anomaly adjacent to the southwestern corner of the 1,000 s.f. building on the subject property. Said anomaly was consistent with that of the size and shape of USTs.

An interpretation of GPR imagery failed to identify the presence of any anomalies consistent with that of USTs in the interior of the 23,000 s.f. building.

IMPACT ENVIRONMENTAL CONSULTING, INC.

Richard S. Parrish, *P.G., C.E.I.*
Senior Geologist

Kevin Kleaka
Environmental Engineer

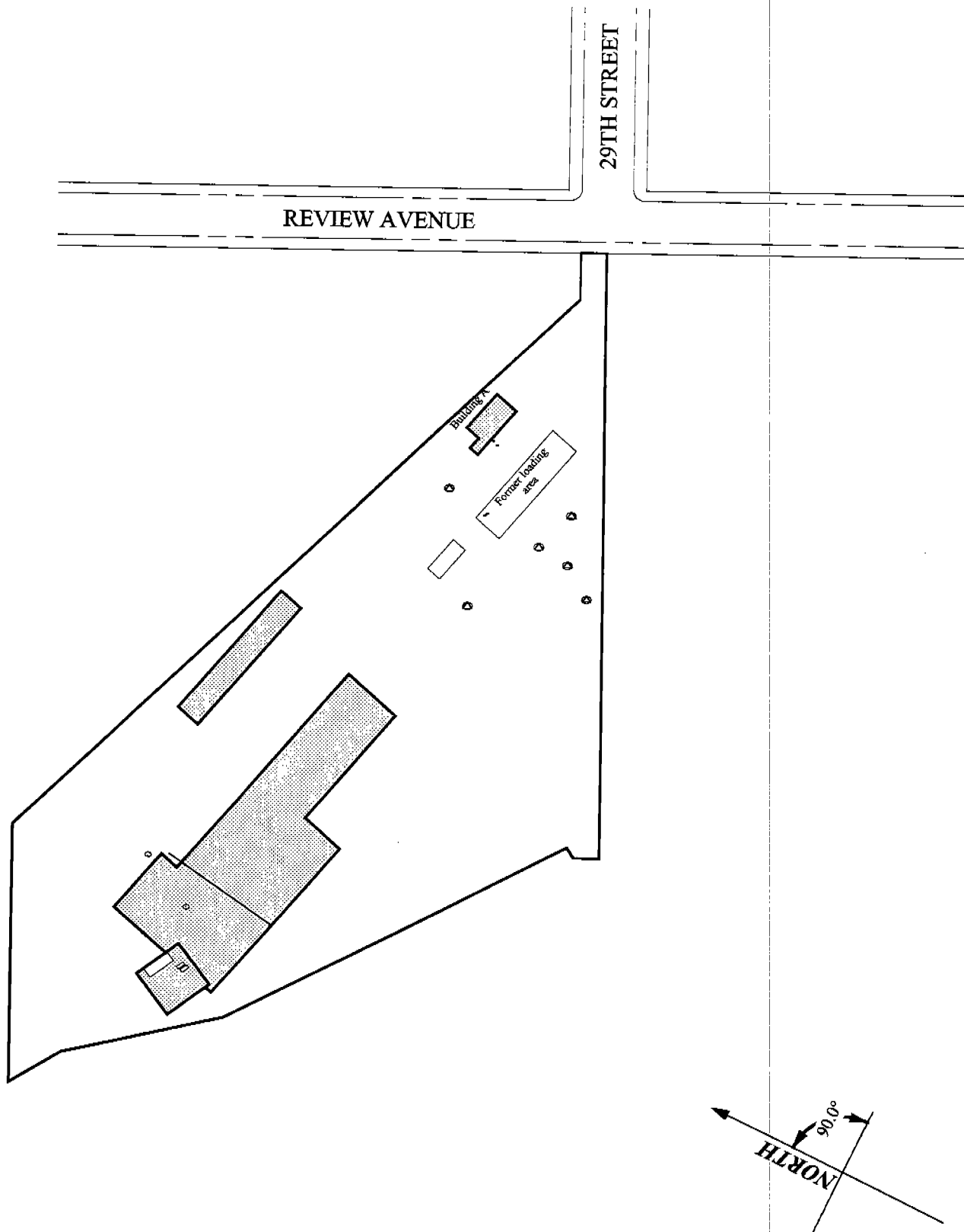


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Plate # 2: GPR Scan Map
Long Island City, New York



• Groundwater monitoring well

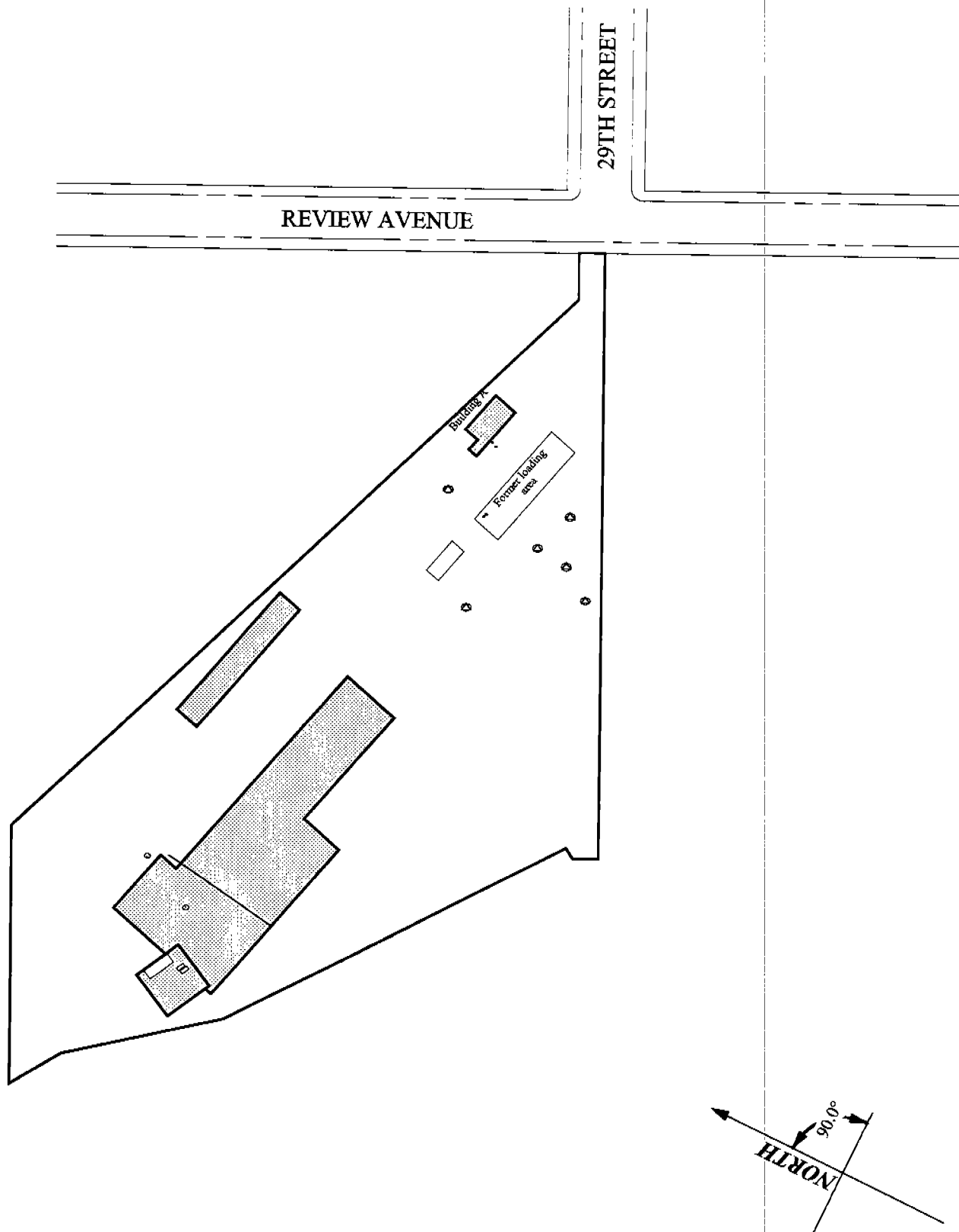


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Plate # 2: GPR Scan Map
Long Island City, New York



• Groundwater monitoring well

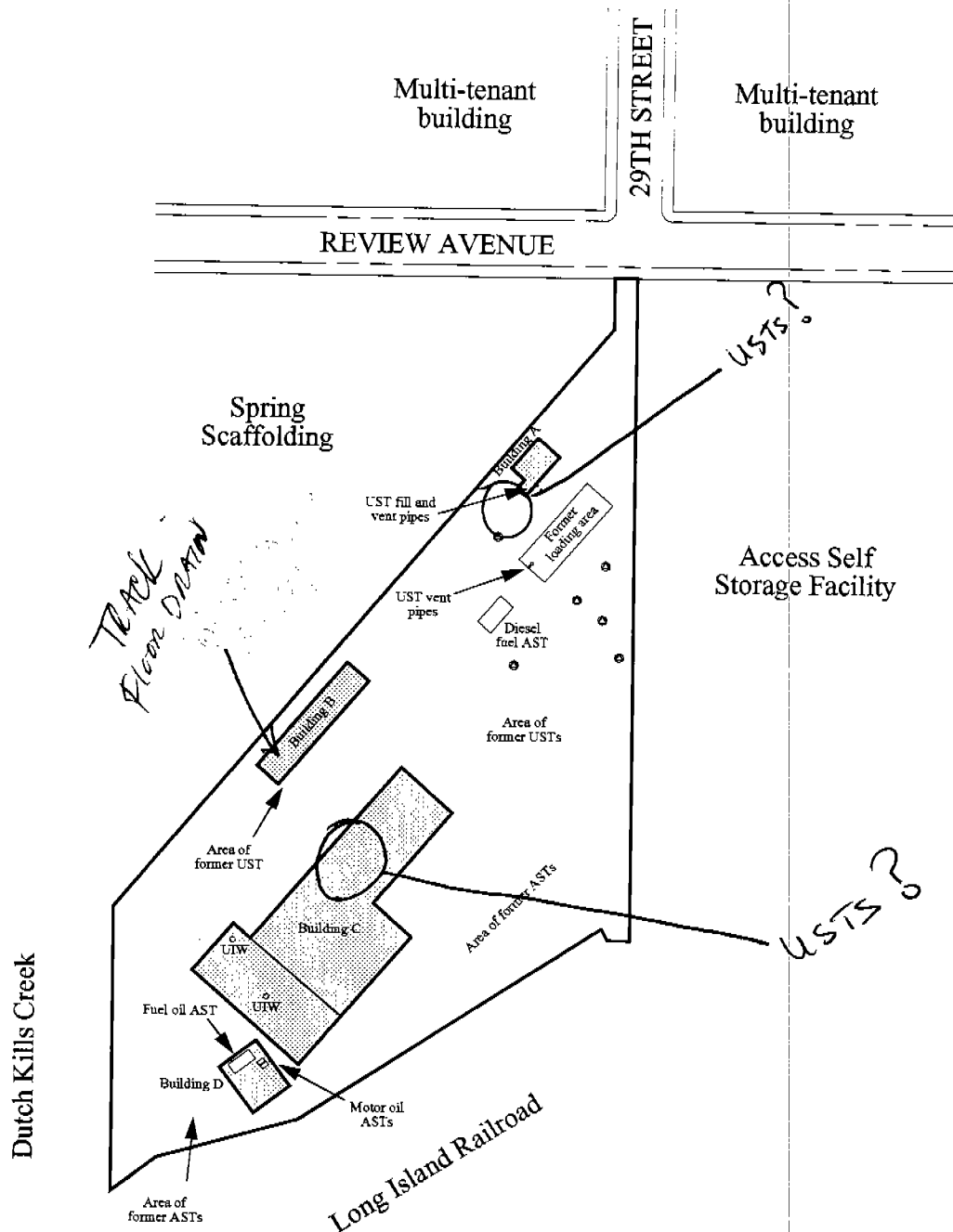


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Plate # 2: GPR Scan Map
Long Island City, New York



• Groundwater monitoring well



Tyree Brothers Environmental Services, Inc.
208 Route 109
Farmingdale, New York 11735

99-220
Plate # 2: Inspection Map
Long Island City, New York



• Groundwater monitoring well

*Phase I Environmental Site Assessment
28-90 Review Avenue, Long Island City, New York*

*June 17, 1999
Tyree Brothers Environmental Services, Inc.*

1.3 Limitations and Exceptions

This assessment is dated, and is only valid for activities which occurred prior to the date of the site visit. Activities, liabilities, and alterations to the subject property subsequent to the date of the site visit are not included in the assessment.

This assessment is intended to assess the potential for public health or environmental liabilities based upon examination of the subject property in accordance with ASTM Standards. The ASTM Standards provide specific guidance with regard to radon, asbestos, lead in drinking water, lead based paint, and polychlorinated biphenyls (PCBs). This report conforms to ASTM standards with the exception of not satisfying the requirements for documentation of historical use for the past fifty years.

Analysis of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) implications with regard to the innocent landowner defense under Superfund finds that naturally occurring radon is not subject to CERCLA liability and is appropriately considered as a non-scope issue. Accordingly, this assessment will only provide general guidance on this issue, and will not involve or recommend air monitoring for radon gas.

Similarly, the ASTM Standards do not recognize liability with regard to asbestos that is part of the building materials of a structure, in accordance with CERCLA innocent landowner defense under Superfund. If asbestos containing material is disposed of on a property, however, such practice would be subject to Superfund response actions and should be identified. In the interest of serving the client and addressing the needs of the user, this assessment will identify observed asbestos containing materials (ACMs) which may pose a health threat. This assessment is not a full asbestos survey as would be required for building demolition, or identification of all possible sources of ACM, regardless of health danger.

Lead in drinking water and lead based paint are also issues which are considered to be non-scope under CERCLA innocent landowner defense under Superfund. Lead based paint was in use for many years, and it is likely that many older buildings will have surfaces coated with lead based paint. As a general rule, painted surfaces should be maintained and ingestion of paint products should be avoided. If disposal of these materials is involved, disclosure of this practice would be subject to the scope of this environmental assessment. In the interest of serving the user, this report may include limited field testing of surface paints and the observations on the condition of the painted surfaces. Lead in drinking water generally occurs as a result of past use of high lead content solder. Water left stagnant in pipes overnight or longer may leach lead from these joints and affect drinking water quality. As a general rule, water should be run for several minutes in the morning where such plumbing may be present.

This assessment will not identify all potential sources of PCD containing oils. Common sources of these materials include transformers and fluorescent lamp ballasts. Electric service transformers may include ground level or pole mounted units. These transformers are owned and maintained by regional public utilities. Transformers are inventoried and periodically inspected. Public utility company representatives have reported that transformers were

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28-90 Review Avenue, Long Island City, New York*

*June 17, 1999
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10. EVALUATION OF DATA OBTAINED DURING THE ASSESSMENT

10.1 Recommendations

The following recommendations should be considered to further define the environmental quality of the subject property. These recommendations will define data which falls outside the scope of this investigation.

10.1.1 Recommended Phase I ESA Activities

Additional activities may be required as a result of the Phase I investigation. Generally, these apply to surrounding uses observed during the site inspection.

1. Responses to the Freedom of Information requests submitted to the New York State Department of Environmental Conservation and the New York City Fire Department have not been received to date. ASIM establishes that a diligent Phase I Environmental Site Assessment must consider all information obtained from a public agency within twenty days of receipt of a Freedom of Information request. Accordingly, information obtained from the above-mentioned agencies before the twenty day period has passed will be addressed in an addendum to this assessment.

10.1.2 Recommended Phase II ESA Activities

Additional activities may be required as a result of the Phase I investigation. These include the performance of sampling and analysis plans.

- GPR
1. A trench drain system was identified in building B. The outfall location of this drain system is not known. The use of this building and the presence of petroleum contaminated sludge and surficial petrochemical staining in and in the immediate vicinity of the trench drain system represent recognized environmental conditions. Accordingly, it is recommended that a remote sensing survey be performed to determine the outfall location of the drain system. In addition, it is recommended that a limited subsurface investigation be performed to determine if this outfall has received any discharges that may have affected the environmental quality of the subject property. ✓
 2. Two (2) UIWs were identified in the truck repair space in building C. Based on the use of this building, the potential for petroleum release into these UIWs represents a recognized environmental condition. Consequently, it is recommended that a limited subsurface investigation be performed to determine if the UIWs have received any discharges that may have affected the environmental quality of the subject property.
 3. Tyree Brothers observed evidence of one (1) UST, by the presence of a fill port and vent line adjacent south of building A. This UST was reportedly out of service at the time of the inspection. Based on the fact that

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there is no documentation on the contents of the tank, the capacity, the structural integrity, and installation date of the tank, this represents a recognized environmental condition. Accordingly, it is recommended that a limited subsurface investigation be performed to determine if the UST actuated a release of product to the subsurface soils and / or groundwater of the subject property. This work can be performed in conjunction with the proper abandonment of the UST (see section ~~X~~1.1.3).

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X Pipes elevated slightly above grade and pipes cut at grade were noted throughout the eastern portion of the subject property. It is possible that some of these pipes are associated with former USTs on the subject property. The potential presence of additional USTs represents a recognized environmental condition. Accordingly, it is recommended that a remote sensing survey be performed to confirm or refute the presence of these USTs on the subject property. If any USTs are identified, it is recommended that a limited subsurface investigation be performed to determine if the operation of the USTs actuated a release of product to the subsurface soils and / or groundwater of the subject property. This work can be performed in conjunction with the abandonment of the USTs (see section ~~X~~1.1.3).

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5. Several on-site catch basins were observed to be impacted by petroleum releases. The outfall locations of these basins could not be confirmed under the scope of this assessment. These petroleum impacted basins represent a recognized environmental condition. Accordingly, it is recommended that a remote sensing survey be performed to determine the outfall locations of the basins. If the basins discharge to an on-site outfall, it is recommended that a limited subsurface investigation be performed to determine if this outfall has received any discharges that may have affected the environmental quality of the subject property.

- GPR 6. Tyree Brothers observed evidence of a UST within building C, by the presence of a suspect fill pipe. Based on the fact that there is no documentation on the contents of the tank, the capacity, the structural integrity, and installation date of the tank, this represents a recognized environmental condition. Accordingly, it is recommended that a remote sensing survey be performed to confirm or refute the presence of this UST. If the presence of an interior UST is confirmed, it is recommended that a limited subsurface investigation be performed to determine if the UST actuated a release of product to the subsurface soils and / or groundwater of the subject property. This work can be performed in conjunction with the abandonment of the UST (see section ~~X~~1.1.3).

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7. A subsurface investigation performed in 1990 identified the presence of floating product on groundwater underlying the subject property. In addition, Tyree Brothers observed several areas throughout the subject property that exhibit substantial surficial petroleum staining. This investigation and on-site observations confirms the need for the above-referenced Phase II activities.
8. Several off-site confirmed or potential contamination sources were identified to exist within the ASTM search radius. The need for the above-recommended on-site investigative activities is further supported by the presence of these sources.

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28-90 Review Avenue, Long Island City, New York*

*June 17, 1999
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10.1.3 Recommended Phase III ESA Activities

Additional activities may be required as a result of the Phase I investigation. These include the performance of remediation activities. It should be noted that the scope of these activities may be modified based on a Phase II investigation.

1. Should the remote sensing surveys recommended in section ¹⁰~~11.1.1~~ confirm the presence of any USTs, they would need to be removed ~~in~~ ^{abandoned} accordance with NYSDEC protocol.
2. Suspect friable asbestos containing materials were identified on the subject property. Laboratory analysis results indicated that the material contained >1% asbestos. TBES recommends that all pipe insulation in poor condition be properly abated. Additionally, it is recommended that an Operations and Maintenance (O&M) Plan be implemented to manage any remaining suspect or confirmed asbestos containing materials on the subject property.
3. Painted surfaces in buildings A, B, and D were identified to contain lead-based paint. Most of these paints were in very poor condition (severely peeling). It is recommended that the paint in these areas should be properly abated. Additionally, it is recommended that an Operations and Maintenance (O&M) Plan be implemented to manage any remaining lead containing paints on the subject property.
4. All petroleum contaminated releases observed on the subject property should be properly remediated.

10.1.4 Recommended Compliance Activities

Compliance activities may be required based on the Phase I investigation. These include the performance of compliance activities that currently do not directly affect the environmental quality of the subject property.

1. The UIWs observed in building C need to be registered / permitted with the USEPA under the Underground Injection Control Program or abandoned in accordance with Underground Injection Well Closure parameters. This also applies to any other potential UIWs on the subject property (i.e., the outfall associated with the trench drain system in building B).
2. Should the buildings be renovated or demolished in the future, full lead and asbestos surveys should be conducted prior to the initiation of any work.
3. Documentation regarding the proper disposal of regulated wastes should be maintained on-site for periodic review.
4. Better housekeeping practices should be implemented to prevent any future releases of petroleum products to the surface of the subject property.



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Sold To:

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Flushing, NY 11365

Service Address:

AA Truck Renting Corp.
28-90 Review Ave
Long Island City, NY

Invoice Number:

IMP-99-309-7351-

Invoice Date:

Jul 28, 1999

Customer ID	Customer PO	Payment Terms	
990074	99-309	Net 30 Days	
Sales Rep ID	Shipping Method	Ship Date	Due Date
	US Mail	7/28/99	8/27/99

Quantity	Description	Unit Price	Extension
4.00	Remote Sensing Survey (GPR)	170.00	680.00
1.00	Mobilization/Demobilization	200.00	200.00
1.00	Report Generated	200.00	200.00

Check No:

Subtotal	1,080.00
Sales Tax	
Total Invoice Amount	1,080.00
Payment Received	0.00
TOTAL	1,080.00

