

**REPORT OF  
PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**

**Parcel of Land Adjacent to Houston National Cemetery  
Veterans Memorial Drive and Ruellen Lane  
Houston, Texas 77038**

**June 29, 2005**

**Prepared For:**

**Department of Veterans Affairs  
National Cemetery Administration**

**Prepared By:**

**MACTEC Engineering and Consulting, Inc.  
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**MACTEC Project 4935047034**



January 6, 2005

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Subject: **Report of Phase I Environmental Site Assessment  
Parcel of Land Adjacent to the Houston National Cemetery  
Veterans Memorial Drive and Ruellen Lane  
Houston, Harris County, Texas 77038  
MACTEC Project 4935047034**

Dear Mr. Gerdovich:

MACTEC Engineering and Consulting, Inc. (MACTEC) is pleased to submit this draft report of our Phase I Environmental Site Assessment for the Site. The purpose of our assessment was to characterize the Site and adjacent property conditions relative to environmental concerns and to identify obvious actual and potential recognized environmental conditions.

This report has been prepared on behalf of and for use by the Department of Veterans Affairs. No other party has a right to rely on the contents of this report without the express written authorization of MACTEC.

The conclusions and recommendations contained herein are based upon the data that were reviewed and documented in this report along with our experience on similar projects. The discovery of any additional information concerning environmental conditions at the site should be reported to us for our review so that we can reassess potential environmental impacts and modify our recommendations, if necessary.

We appreciate the opportunity to be of service to you. Please call us if you have any questions or if we may be of further service.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

Handwritten signature of Vanessa A. Harris in black ink.

Vanessa A. Harris, P.E.  
Senior Environmental Engineer

Handwritten signature of Mary Helen Niemann in black ink.

Mary Helen Niemann, P.G.  
Principal Geologist

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SIGNED BY Carol Meslin  
WITH PERMISSION

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## EXECUTIVE SUMMARY

Proposed Land Acquisition of Property Adjacent to  
National Houston Cemetery  
Veterans Memorial Drive and Ruellen Lane  
Houston, Harris County, Texas

MACTEC Engineering and Consulting, Inc., (MACTEC) has performed a Phase I Environmental Site Assessment (ESA) at the property Veterans Memorial Drive and Ruellen Lane, located adjacent to the Houston National Cemetery in Houston, Harris County, Texas. The Phase I ESA was performed to characterize the general site and adjacent property conditions relative to environmental concerns and to identify obvious actual and potential recognized environmental conditions (RECs). MACTEC understands that the Department of Veterans Affairs, National Cemetery Administration may be acquiring the Site.

The Site is situated on approximately 32 acres of undeveloped land immediately adjacent to the Houston National Cemetery located east of Ruellen Drive and Veterans Memorial Drive, in Houston, Texas. The area adjacent to the north is the Houston National Cemetery. To the south and east are residential developments. To the west is Veterans Memorial Drive which contains commercial and retail establishments.

Provided below is a summary of MACTEC's conclusions and recommendations related to the Phase I ESA completed at the Site.

- **Neighboring Site Reconnaissance** – The neighboring site reconnaissance did not identify facilities in the immediate vicinity of the Site that appeared to be a recognized environmental concern (REC) with respect to the Site.
- **Regulatory Review** – Our review of readily accessible local, state, and federal environmental regulatory agency databases identified the existence of two RCRA SQGs, one RCRA LQG, three Leaking PST sites, and four PST sites. Based on the available regulatory information, site observations, distance from the Site, and/or topographic location relative to the Site, the identified facilities would not be considered RECs with respect to the Site.
- **Site Reconnaissance** – Our site reconnaissance did not identify potential sources that may pose an environmental concern at the Site. The inferred topographic groundwater gradient is to the south toward Halls Bayou.
- **Site History** – MACTEC's historical review indicated that the Site has been undeveloped wooded land since at least 1944. No historical RECs relative to the Site were identified.

- Neighboring Site History - Our historical review of the neighboring site indicated that the neighboring site to the north (e.g. the Houston VA National Cemetery) began undergoing development in 1965. The area to the south began residential and commercial development in the mid- to late-70s. The area to the east has been undeveloped land since at least 1944 and is currently leased to a farmer for cattle grazing. The neighboring site history does not appear to pose an REC relative to the site.

Based on the information presented in this report, no evidence of recognized environmental conditions was identified with regards to the Site. No further assessment is recommended at this time.

## 1.0 INTRODUCTION

MACTEC Engineering and Consulting, Inc. (MACTEC) has completed a Phase I Environmental Site Assessment (ESA) of the property located immediately south of the Houston National Cemetery at Veterans Memorial Parkway and Ruellen Lane in Houston, Harris County, Texas (Figure 1).

MACTEC understands that the Department of Veterans Affairs National Cemetery Administration plans to acquire the site. For purposes of this Phase I environmental site assessment, the approximately 32 acre tract of vacant land is referred to as the Site, as discussed in MACTEC's proposal.

The Site is located immediately south of the Houston National Cemetery on Veterans Memorial Drive and Ruellen Lane. According to information provided to MACTEC, the Site encompasses about 32 acres (Figure 2).

The Site consists of approximately 32 acres which has been undeveloped since at least 1944. The area immediately to the north is the Houston National Cemetery, to the south is a residential development, to the east--undeveloped land, and to the west is Veterans Memorial Drive which contains a few commercial establishments in the immediate vicinity.

Mr. Dennis Gerdovich of the Department of Veterans Affairs requested that MACTEC perform this assessment. This assessment was performed in general accordance with the protocols specified in ASTM E-1527-00, *Standard Practice of Environmental Assessments: Phase I Environmental Site Assessment Process* and the applicable requirements specified in the August 13, 2003 VA NCA Indefinite Delivery Indefinite Quantity Contract No. V786P-557, and as modified on August 12, 2004.

## **2.0 PURPOSE, SCOPE AND REPORT FORMAT**

Section 2.0 provides a summary of the purpose and scope of work of the Phase I ESA, and a discussion of the report format.

### **2.1 PURPOSE**

The purpose of our Phase I ESA was to characterize the general site and adjacent property conditions relative to environmental concerns and to identify obvious actual and potential recognized environmental concerns (RECs). It was not the purpose of this study to determine the extent or source of contamination, if any, on the Site. Additional exploratory work, including sampling and laboratory analysis, was not part of the Phase I Environmental Site Assessment.

### **2.2 SCOPE OF WORK**

The Phase I ESA is a general characterization of environmental concerns based on readily available information and site observations. The assessment was performed using procedures as specified in the American Society for Testing and Materials (ASTM) specification ASTM E1527-00. The following services were provided for the assessment:

1. A review of the site's location, present use and improvements, topography, soils, geology, and hydrogeology information.
2. A review of site history information, including aerial photographs, maps, and other readily available site development data.
3. A review of available regulatory information published by state and federal health and environmental agencies.
4. A review of previous environmental assessment reports provided by the Veterans Administration.
5. A neighboring site reconnaissance, including a review of adjacent property uses, as well as significant surrounding area uses.
6. A site reconnaissance and environmental review, including a site survey, observations for chemicals and raw materials, polychlorinated biphenyls (PCBs), wells, hazardous and solid wastes, on-site landfills, pits and sumps, storage tanks, and utilities.
7. Preparation of this report containing our conclusions and recommendations.

### **2.3 REPORT FORMAT**

Our report format has nine major sections:

- Introduction
- Purpose, Scope and Report Format

- Site Location and Geology
- Site History
- Regulatory Review
- Neighboring Site Reconnaissance
- Site Reconnaissance and Environmental Review
- Conclusions and Recommendations
- Limitations

A statement of interpretive limitations follows the recommendations.

### 3.0 SITE LOCATION AND GEOLOGY

Section 3.0 provides a summary of the site location, site geology/hydrogeology, and environmental permits.

#### 3.1 SITE LOCATION

The Site is located immediately south of the Houston National Cemetery on Veterans Memorial Drive and Ruellen Lane. The Site consists of approximately 32 acres which has been undeveloped since at least 1944. The areas immediately to the north is the Houston National Cemetery, to the south and east are residential developments, and to the west is Veterans Memorial Drive which contains a few commercial establishments in the immediate vicinity.

#### 3.2 SITE GEOLOGY/HYDROGEOLOGY

A consideration of surface and subsurface drainage and geology are of interest since they provide an indication of the direction that contaminants, if present, could be transported.

MACTEC reviewed the following information regarding the hydrogeology of the Site and surrounding area:

- *Soil Survey of Harris County, Texas*, United States Department of Agriculture Soil Conservation Service (now the Natural Resources Conservation Service), dated 1972, Sheet 56.
- *Geologic Atlas of Texas, Houston Sheet*, Bureau of Economic Geology, University of Texas, Austin, Texas, dated 1968, revised 1992.
- U.S. Geological Survey (USGS) Topographic Map, 7.5-minute series, Aldine, Texas Quadrangle, dated 1979 (Figure 1).
- Environmental Data Resources, Inc. (EDR) Regulatory Search and GeoCheck Report for the subject area (Appendix C).
- Well data provided by the Houston Galveston Subsidence District (Appendix C).

According to the USGS topographic map referenced above, the surface elevation of the Site is approximately 97 feet above the National Geodetic Vertical Datum of 1929. Review of the topographic map indicated that the Site is relatively level with a slight slope to the southeast. Surface runoff on the subject property and surrounding cemetery appears to be to the east and directed into onsite drainage ditches. The closest surface body of water is a drainage ditch which parallels the northern boundary of the site. Halls Bayou is located approximately one mile south of the Site.

The topographically inferred shallow groundwater gradient for the Site appears to be to the southeast. It should be noted that surface topography does not always reflect the actual hydraulic gradient and that fluctuations are sometimes encountered. Groundwater flow direction measurements would be necessary to determine the actual on-site direction and gradient.

Information regarding the area soils was obtained from the *1976 Soil Survey of Harris County, Texas*. The subject property is situated on soils of the Clodine loam and Gessner loam mapping units. Clodine loams consist of three layers of gray loams to a depth of 72 inches. These soils are described as having nearly level surfaces and being poorly drained. Surface runoff is very slow, and permeability is moderate. Clodine loams are classified as being hydric soils. Gessner loams consist of five layers of grayish brown loams that grade into firm sandy clay loam with depth and extend to a depth of about seven feet. They are described as nearly level, poorly drained and generally saturated in wet periods. Surface runoff is very slow to ponded, internal drainage is slow, and permeabilities are moderate.

Review of the *Geologic Atlas of Texas, Houston Sheet*, indicates that the uppermost geologic formation underlying the soils at the subject property is the Pleistocene aged Lissie Formation. Sediments of the upper part of the Lissie Formation consist predominantly of clays, silt and sand, with some gravels. Lower parts of this formation contain similar sediments with slightly coarser gravel. Approximate total thickness of the formation is  $\pm 200$  feet.

The Chicot and Evangeline aquifers provide much of the municipal water supply for Harris County. In general the Chicot and Evangeline aquifers are composed of alternating layers of sands and clays. Water movement through the aquifers follow irregular paths as it flows around impermeable clay lenses. The flow of ground water in the aquifers is generally influenced by localized pumping which is heavy in this area. According to a report from the Harris-Galveston Coastal Subsidence District there are four wells located within one-half mile radius of the property. The wells supply water for domestic and other purposes from both the Chicot and Evangeline Aquifers, producing from depths between 30 and 240 feet. Shallow groundwater is often encountered within 30 feet of the ground surface in this area. However, this water is not known to be used as a source of drinking water in this area. This area of Harris County also receives some of its municipal water supply from surface waters, primarily from Lake Houston located approximately seven miles to the northeast.

### 3.3 ENVIRONMENTAL PERMITS

The Site consists of undeveloped land. No evidence of conditions requiring a permit was identified during MACTEC's Site reconnaissance.

## 4.0 SITE HISTORY

MACTEC reviewed the following available information in order to ascertain the historical uses of the Site and immediately adjacent properties to evaluate the presence of activities relative to potential environmental concern:

- *Kriss Kross City Directories*, dated 1949, 1954, 1961, 1965, 1967, 1982, 1988, 1990, 1999, and 2004, obtained from the City of Houston Public Library.
- Sanborn Fire Insurance Maps were not available for the area.
- Aerial photographs obtained from Banks Information Solutions, dated 1944, 1953, 1969, 1979, 1989, 1995, and 2002 (approximate scale 1"=500').
- Aerial photograph obtained from Aerial Viewpoint, dated 2003 (approximate scale 1"=500').
- USGS 7.5-minute series topographic maps of the Aldine, Texas Quadrangle, dated 1995.
- *At Rest: A Historical Directory of Harris County Cemeteries, 1822 to 2001*, compiled by Trevia Wooster Beverly, obtained from the Houston Public Library.

### 4.1 AERIAL PHOTOGRAPHS

#### 4.1.1 Past Site Uses

The 1944 through 2003 aerial photographs show the Site as undeveloped wooded land. The 1989 aerial shows some dirt roads or all-terrain vehicle trails near the middle of the site. The trails become overgrown in later aerial photos. Copies of the aerial photographs are provided in Appendix A. The referenced topographic map showed the Site as undeveloped land. No listings for the Site were identified in referenced city directories.

The topographic maps and geologic atlas essentially agreed with the information obtained from the other historical resources. No on-site recognized environmental conditions were noted during our historical research. Based on our review of the available historical sources, the site history does not appear to pose an environmental concern.

#### 4.1.2 Past Immediately Surrounding Land Uses

Nearby property usage could potentially impact the surface and subsurface conditions of a property. Developing a history of past to present uses or occupancies can provide an indication of the likelihood of environmental concern. There were no past surrounding land uses noted in the historical references reviewed that could be considered recognized environmental conditions in relation to the subject property with the exception of those uses noted in the following sections.

The 1944 and 1953 show the property surrounding the site in all four directions as undeveloped. The Houston National Cemetery is visible in aerials from 1969 to 2003 immediately north of the site. The property to the east, south, and west of the property is undeveloped in the 1969 aerials. By 1979, the areas to the south and west have begun residential development. The area to the east remains undeveloped. The 1986, 1995, 2002, and 2003 aerial photographs show the continued increase in

residential and commercial development in the surrounding area. The 2002 and 2003 aerial photographs depicted the surrounding area predominately as observed during the area reconnaissance.

The referenced topographic map depicted the immediate surrounding properties as a cemetery to the north, residential to the west and south, and undeveloped to the east. The topographic maps and geologic atlas essentially agreed with the information obtained from the other historical resources. No offsite recognized environmental conditions (RECs) were noted during our historical research.

#### **4.2 SANBORN MAPS**

No coverage for the Site and surrounding area exists.

#### **4.3 CITY DIRECTORIES**

MACTEC reviewed available city directories for the Site area at a local library. No listings for the Site were identified in the city directories reviewed, and no listings for the National VA Cemetery to the north were noted until 1967. Streets in the residential area south of the site were new primarily in 1978 and 1979 which correlates with the 1979 aerial photograph. None of the surrounding properties identified in referenced city directories are considered to represent an environmental concern with respect to the Site

#### **4.4 INTERVIEWS**

Mr. Jorge Lopez, Director of the Houston VA Cemetery, provided a tour of the accessible areas of the Subject Property. Mr. Lopez confirmed that the property had been undeveloped since at least 1965 when the Houston VA National Cemetery opened. Ms. Trevia Beverly, author of *At Rest: a Historical Directory of Harris County Cemeteries, 1822 to 2001*, provided additional background regarding the cemetery itself. There are approximately 60 acres currently in use on a 419 acre tract. The additional 32 acre acquisition contained within the subject property would result in total cemetery of 451 acres.

#### **4.5 OIL AND GAS ACTIVITY**

Based on reviews of historical documents such as topographic maps and aerial photographs, no visible evidence of the oil and gas activity was observed on the Site. A slightly northeast-southwest trending natural gas pipeline was observed approximately 1300 feet south of the subject property.

## 5.0 REGULATORY REVIEW

Section 5.0 provides a summary of the local, state and federal regulatory lists.

### 5.1 INTERVIEWS WITH LOCAL AUTHORITIES

MACTEC contacted local authorities via faxed letters and phone to inquire about environmental issues that may be associated with the Site and immediate vicinity. The findings are summarized in the following paragraph.

MACTEC contacted The Harris County Pollution Control Division (HCPCD) and City of Houston Hazardous Materials Response Team (HMERT) to determine if the subject site is listed as having a past or present record of actual or potential environmental impact or are under investigation for an environmental impact. According to these agencies, no hazardous material accidents, spills or complaints involving 1600 Ruellen Lane, or in the immediate vicinity have been received. Copies of the correspondences are attached to this report in Appendix B.

### 5.2 STATE AND FEDERAL

MACTEC conducted a review of regulatory lists and permitted landfills published by federal and state regulatory agencies to determine whether the Site or nearby properties are listed as having a past or present record of actual or potential environmental impact or are under investigation for an environmental impact. EDR provided regulatory information to MACTEC; the EDR report is included in Appendix C. Listed facilities identified within the search distances of the Site are discussed below.

Regulatory listings are limited and include only those sites which are known to regulatory agencies at the time of publication to be contaminated, to be in the process of evaluation, to be subject to monitoring for potential contamination, or to be otherwise regulated.

EDR also reports listings that may be in the general subject area, but have inadequate address information to geographically locate. These listings appear on the EDR "Orphan List" contained in their report. Orphan Listings are not generally considered practicably reviewable; however, we have reviewed the list for obvious recognized environmental conditions in connection with the subject property.

In addition, review of the State of Texas Voluntary Cleanup Program (VCP) and Innocent Owner/Operator Program (IOP) Lists, though not required by the ASTM E 1527-00 Standard, have been included in this report since facilities listed on these lists may not appear on other regulatory database lists, and may be considered recognized environmental conditions in relation to the subject property.

#### EPA NATIONAL PRIORITIES LIST, dated July 30, 2004

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) established the National Priorities List (NPL) of federal "Superfund" sites. These are contaminated sites that have been assigned a high ranking, in terms of potential public health effects, by the EPA and require remediation.

- The Site does not appear on the NPL.
- There are no sites listed on the NPL within one mile of the Site.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS), dated August 10, 2004

The CERCLIS list identifies suspected contamination sites throughout the nation; however, a listed facility does not necessarily have environmental problems.

- The Site does not appear on the CERCLIS list.
- There are no facilities listed on the CERCLIS list within one-half mile of the Site.

EPA “No Further Remedial Action Planned” (NFRAP) Sites, dated August 10, 2004

The NFRAP list contains information pertaining to sites, which have been removed from the EPA’s CERCLIS database. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without need for the site to be placed on the NPL, or the contamination was not serious enough to require federal Superfund action or NPL consideration.

- The Site does not appear on the NFRAP list.
- There are no sites listed on the NFRAP list within a one-quarter mile radius of the Site.

RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM (RCRIS) LIST, dated August 10, 2004

RCRIS, or RCRA Notifiers list, is the EPA database of facilities that generate, transport, treat, store, or dispose of hazardous waste. Generators and transporters are found on the RCRIS list of Notifiers. Treatment, Storage, and Disposal (TSD) facilities are found on the RCRIS TSD list.

- The Site does not appear on the RCRIS Small Quantity Generator (SQG) or on the RCRIS Large Quantity Generators (LQG) list.
- There are two facilities listed on the RCRIS-SQG within one-quarter mile of the Site.

The listed RCRIS–SQGs are Roadmaster Engine Corporation located at 10323 Veterans Memorial Drive, and Jennings Auto Repair, located at 10175 Veterans Memorial Drive. Neither facility appears on the CORRACTS list.

Roadmaster Engine Corporation is approximately 1/8 mile west and up- or cross-gradient of the westernmost site boundary. This facility has been at this location for 13 years and provides automotive engine parts. No violations are listed for the facility.

Jennings Auto Repair is located approximately ¼ mile southwest and cross-gradient of the Site Boundary. This site was on the EDR Orphan List. No violations are listed for the facility.

- There is one facility listed on the RCRIS-LQG list within one-quarter mile of the Site.

Holcomb Environmental Oil Service is located at 10570 Keeneland Lane, approximately 1/8 mile south and downgradient of the site boundary. However, during the area reconnaissance, this address did not exist on Keeneland Lane. The listing appears to be an error.

- There are no facilities listed on the RCRIS Treatment, Storage, and Disposal (TSD) facilities list within one-half mile of the Site.

#### EPA RCRA CORRACTS FACILITIES LIST, dated September 23, 2004

The RCRA CORRACTS facilities list identifies RCRA TSD facilities subject to corrective action under RCRA.

- The Site does not appear on the RCRA CORRACTS facilities list.
- There are no facilities on the RCRA CORRACTS TSD facilities list within one mile of the Site.

#### EPA EMERGENCY RESPONSE NOTIFICATION SYSTEM, dated December 31, 2003

The ERNS list is a national database used to collect information on reported releases of oil and hazardous substances.

- The Site does not appear on the ERNS list.

#### STATE HAZARDOUS WASTE SITES LIST, dated October 12, 2004

The Texas Commission on Environmental Quality (TCEQ) State Hazardous Waste Sites (SHWS) list identifies potential hazardous waste facilities or areas that may constitute an imminent and substantial endangerment to public health and safety or the environment. Furthermore, the TCEQ SHWS record represents the state-equivalent to the national CERCLIS list, and identifies sites that may or may not already be included on the CERCLIS list.

- The Site does not appear on the State Hazardous Waste Site list.
- There are no facilities listed on the State Hazardous Waste Site list within one mile of the Site.

#### STATE VOLUNTARY CLEANUP PROGRAM SITES AND INNOCENT OWNER/OPERATOR PROGRAM (IOP) LISTS, dated July 03, 2004

The Voluntary Cleanup Program (VCP) and Innocent Owner/Operator Program (IOP) Lists are maintained by the TCEQ. These lists identify properties that are contaminated that may not be included on other lists is maintained by the TCEQ. The VCP list is a list compiling sites where various parties have undertaken voluntarily to perform remediation and/or other actions to reach closure with the TCEQ on impacted sites. The lists were reviewed and the results are summarized below.

- The Site does not appear on the VCP or IOP Sites lists.
- There are no facilities listed on the VCP Sites list within one mile of the Site.
- There are no listed facilities on the IOP list within one-half mile of the subject property.

#### STATE MUNICIPAL SOLID WASTE FACILITY (MSWF) LIST, dated July 15, 2004

Lists of active and inactive landfills, artificial fills, and disposal sites are maintained by the Texas Commission on Environmental Quality (TCEQ). The landfill listing includes known unpermitted landfills or dumps.

- The Site does not appear on the State Landfill list.
- There are no facilities on the State Landfill list within one-half mile of the Site.

#### CLOSED LANDFILL INVENTORY (CLI), dated August 30, 1999

The Closed Landfill Inventory (CLI), dated August 1999, is maintained by TCEQ and the findings are included below. This landfill listing does not include unpermitted landfills or dumps.

- The Site does not appear on the CLI list.
- There are no facilities on the CLI list within one-half mile of the Site.

#### LEAKING PETROLEUM STORAGE TANK LIST, dated August 02, 2004

The leaking petroleum storage tank (LPST) list is a record of tank systems within Texas that have reported releases of petroleum storage tank (PST) system contents. This list is maintained by the TCEQ.

- The Site does not appear on the LPST list.
- There are three facilities listed on the LPST list within one-half mile of the Site boundary.

The listed facilities are the Exclusive Food Mart 1 located at 10475 Veterans Memorial Drive, Stop and Go Markets 1257 located at 10102 Veterans Memorial Drive, and Handi Stop 82 at 10096 Veterans Memorial Drive.

Exclusive Food Mart 1 (identified during the area reconnaissance as a Chevron station) is located approximately ¼ mile west northwest of the Site boundary, upgradient from the site. The facility has three 10,000 gallon tanks which contain gasoline and were installed in 1985. There is leak detection and tank monitoring equipment installed at the facility. According to the LPST database, a release was discovered in June of 1998. An investigation was conducted, final concurrence was issued by TCEQ in June of 2004, and the case was closed. This service station is also listed in the PST database discussed below.

Stop and Go Markets 1257 is located approximately 1/8 mile southwest of the Site boundary, crossgradient from the Site. The facility had three tanks which were removed in 1995. Following discovery of a release,

an investigation was conducted. No apparent threat to groundwater was determined, final concurrence closure was issued by TCEQ, and the case was closed.

Handi Stop 82 is located approximately 1/8 mile southwest of the facility, crossgradient from the Site. The facility has three 12,000 gallon tanks which contain gasoline and were installed in 1980. Following discovery of a release in 1991, an investigation, remediation, and quarterly monitoring were conducted. As of October 2004, site closure has been approved by TCEQ; case closure is forthcoming. There is leak detection and tank monitoring equipment installed at the facility. This service station is also listed in the PST database discussed below.

Based on the available regulatory information and the distance from the property, none of these facilities would be considered a REC in relation to the Site.

#### REGISTERED PETROLEUM STORAGE TANK LIST, dated August 20, 2004

The PST List is a database of PST systems that are registered with the TCEQ.

- The Site does not appear on the PST list.
- There are four facilities listed on the PST list within a quarter mile of the Site boundary.

The listed facilities are the VA Houston National Cemetery located at 10410 Veterans Memorial Drive, Exclusive Food Mart located at 10475 Veterans Memorial Drive, Stop and Go Food Mart located at 10102 Veterans Memorial Drive, and Easy Hop located at 10301 Veterans Memorial Parkway.

The VA Houston National Cemetery is located immediately north and upgradient of the Subject property. The facility had two underground storage tanks installed in 1965. These two tanks were removed from the ground in 1993.

The Exclusive Food Mart was discussed above under the LPST program. The service station has three underground storage tanks which were installed in 1985.

The Stop and Go Food Mart was discussed above under the LPST program. The service station has two underground storage tanks which were removed from the ground in 1995.

Easy Hop is located approximately 1/8 mile south of the Site boundary and crossgradient of the subject property. Three tanks were installed in 1977 and removed from the ground in 1998.

Based on available regulatory information, none of these facilities would be considered an REC in relation to the Site.

#### DRY CLEANERS, dated October 12, 2004

The State of Texas Dry Cleaners List is a database of registered facilities that perform dry cleaning onsite, are dry cleaning drop-off sites only, and provide dry cleaning chemicals. The list is maintained by the TCEQ. The following information was found on the Dry Cleaners List.

- The subject site does not appear on the Dry Cleaning List.
- No facilities are listed on the Dry Cleaners List within one quarter mile of the subject property.

## **6.0 NEIGHBORING SITE RECONNAISSANCE**

The neighboring site reconnaissance was performed on November 26, 2004, by MACTEC professional, Ms. Vanessa Harris, to assist in evaluating whether or not adjacent land uses have or could have contaminated the Site. The neighboring site reconnaissance was conducted by touring the area by automobile and viewing particular businesses from public rights-of-way.

The findings of our neighboring site reconnaissance are discussed below according to the geographic relation to the Site: north, east, south and west.

### **6.1 NORTH**

The Site is bordered to the north by a drainage ditch and the Houston VA National Cemetery.

No RECs were noted north of the Site during the site reconnaissance.

### **6.2 EAST**

The Site is bordered to the east by an undeveloped property currently leased by the cemetery to a farmer for cattle grazing.

No RECs were noted east of the Site during the site reconnaissance.

### **6.3 SOUTH**

The Site is bordered to the south by a residential development.

No RECs were noted south of the Site during the site reconnaissance.

### **6.4 WEST**

The Site is bordered to the immediate west by Veterans Memorial Drive and a few commercial and retail establishments across Veterans Memorial Drive from the property. Further west is a residential development.

No RECs were noted south of the Site during the site reconnaissance.

## **7.0 SITE RECONNAISSANCE**

Ms. Vanessa Harris of MACTEC conducted a site reconnaissance on December 1, 2004 and the site was revisited on June 23, 2005 by Ms. Mary Helen Niemann of MACTEC. The purpose of the site reconnaissance was to determine whether or not there were obvious visual indications of present or past activities that have or could have contaminated the Site. The site reconnaissance was conducted via golf cart, 4-wheel drive truck, and on foot along the accessible areas of the Site. Due to thick, predominately impenetrable brush and vegetation, access to the site was limited to the northern perimeter along the drainage ditch easement and along overgrown dirt trails near the center of the site. Photographs of the Site are provided in Appendix D. Mr. Jorge Lopez, Houston VA National Cemetery Director, accompanied the MACTEC representatives on the site reconnaissance.

### **7.1 GENERAL SITE CONDITION**

The Site consists of approximately 32 acres of undeveloped wooded land south and immediately adjacent to the Houston National VA Cemetery.

### **7.2 CHEMICALS AND RAW MATERIALS**

No chemicals were observed on Site on the perimeter of the site.

### **7.3 POLYCHLORINATED BIPHENYL ELECTRICAL TRANSFORMERS**

Electrical transformers are a potential source of environmental concern due to the possible presence of polychlorinated biphenyl (PCB), which was used in the cooling oils used in some units. At the time of MACTEC's site visit, no transformers were observed on or adjacent to the Site.

### **7.4 HYDRAULIC EQUIPMENT**

No hydraulic equipment was observed at the Site.

### **7.5 POTABLE SUPPLY WELLS**

No active or inactive potable supply wells were observed at the Site. Potable drinking water to the Site would be supplied by the Houston VA National Cemetery Well.

### **7.6 HAZARDOUS AND SOLID WASTES**

No hazardous or solid wastes were on the perimeter of the site.

### **7.7 ON-SITE LANDFILLS**

From our review of the State Landfill list, aerial photographs and observations during our site reconnaissance, no on-site landfills were identified. The dirt trails observed on aerial photographs did not appear to be associated with dumping or landfills and may have been related to construction activity in the area. During our site reconnaissance, general paper and plastic trash and some household debris was

observed near the entrance to the trails near the residential development and a pile of roofing shingles was observed along one of the trails.

#### **7.8 PITS AND SUMPS**

From our review of aerial photographs and during our site visit, no pits or sumps were observed at the Site.

#### **7.9 STORAGE TANKS**

No evidence of current aboveground or underground storage tanks was observed at the Site.

#### **7.10 WASTEWATER STREAMS AND UTILITIES**

No wastewater is generated at the Site and no visual evidence of septic tanks was observed on the Site.

## 8.0 CONCLUSIONS AND RECOMMENDATIONS

Provided below is a summary of MACTEC's conclusions and recommendations related to the Phase I ESA completed at the Site.

### 8.1 CONCLUSIONS

- **Neighboring Site Reconnaissance** – The neighboring site reconnaissance did not identify facilities in the immediate vicinity of the Site that appeared to be a recognized environmental concern (REC) with respect to the Site.
- **Regulatory Review** – Our review of readily accessible local, state, and federal environmental regulatory agency databases identified the existence of two RCRA SQGs, one RCRA LQG, three Leaking PST sites, and four PST sites. Based on the available regulatory information, site observations, distance from the Site, and/or topographic location relative to the Site, the identified facilities would not be considered RECs with respect to the Site.
- **Site Reconnaissance** – Our site reconnaissance did not identify potential sources that may pose an environmental concern at the Site. The inferred topographic groundwater gradient is to the south toward Halls Bayou.
- **Site History** – MACTEC's historical review indicated that the Site has been undeveloped wooded land since at least 1944. No historical RECs relative to the Site were identified.
- **Neighboring Site History** - Our historical review of the neighboring site indicated that the neighboring site to the north (e.g. the Houston VA National Cemetery) began undergoing development in 1965. The area to the south began residential and commercial development in the mid- to late-70s. The area to the east has been undeveloped land since at least 1944 and is currently leased to a farmer for cattle grazing. The neighboring site history does not appear to pose an REC relative to the site.

### 8.2 RECOMMENDATIONS

Based on the information presented in this report, no evidence of recognized environmental conditions was identified with regards to the Site. No further assessment is recommended at this time.

## 9.0 LIMITATIONS

The findings and opinions are relevant to the dates of our site work and should not be relied on to represent conditions at substantially later dates.

The opinions included herein are based on information obtained during the study and on our experience under similar circumstances. If additional information becomes available which might impact our environmental conclusions, we request the opportunity to review the information, reassess the potential concerns, and modify our opinion, if warranted. If this assessment included a review of reports prepared by other consultants, it must be recognized that MACTEC has no responsibility for the accuracy of information contained therein.

Although this assessment has attempted to identify the potential for contamination of the Site, potential sources of contamination may have escaped detection due to: (1) the limited scope of this assessment, (2) the inaccuracy of public records, and (3) the presence of undetected and unreported environmental accidents.

## 10.0 INFORMATION SOURCES

*Soil Survey of Harris County, Texas*, United States Department of Agriculture Soil Conservation Service (now the Natural Resources Conservation Service), dated 1972, Sheet No. 56.

*Geologic Atlas of Texas, Houston Sheet*, Bureau of Economic Geology, University of Texas, Austin, Texas, dated 1968, revised 1992.

U.S. Geological Survey (USGS) Topographic Maps, 7.5-minute series, Aldine, Texas Quadrangle, dated 1995.

*Kriss Kross City Directories*, dated 1949, 1954, 1961, 1965, 1967, 1982, 1988, 1990, 1999 and 2004 obtained from the City of Houston Public Library

Sanborn Fire Insurance Maps were not available for the area.

Environmental Data Resources, Inc. (EDR) GeoCheck – Physical Setting Source Report on November 30, 2004

Aerial photographs obtained from Banks Information Solutions, dated 1944, 1953, 1969, 1979, 1989, 1995 and 2002 (approximate scale 1"=500').

Aerial photograph obtained from Aerial Viewpoint, dated 2003 (approximate scale 1"=500').

Well data provided by the Houston Galveston Subsidence District.

*At Rest: A Historical Directory of Harris County Cemeteries, 1822 to 2001*, compiled by Trevia Wooster Beverly. Obtained from the Harris County Public Library.