
Final Report

PHASE I ENVIRONMENTAL SITE ASSESSMENT

**LONDON AVENUE CANAL
ORLEANS PARISH
NEW ORLEANS, LOUISIANA**



November 29, 2006

**U.S. Army Corps of Engineers
New Orleans District
New Orleans, Louisiana**



**PHASE I
ENVIRONMENTAL SITE ASSESSMENT**

FINAL REPORT

**London Avenue Canal
Orleans Parish
New Orleans, Louisiana**

Prepared for



**U.S. Army Corps of Engineers
New Orleans District
New Orleans, Louisiana**

Prepared by



Baton Rouge, Louisiana

November 29, 2006

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PHASE I REPORT

1.0 SUMMARY

On behalf of the U.S. Army Corps of Engineers – New Orleans District (USACE), Gulf Engineers and Consultants, Inc. (GEC) has completed a Hazardous, Toxic, and Radioactive Waste (HTRW) Phase I Environmental Site Assessment (ESA) for a portion of the London Avenue Canal in Orleans Parish, Louisiana. The London Avenue Canal is located in the city of New Orleans in Orleans Parish, and forms the boundary between University of New Orleans Lakefront Campus and United States Highway 90. The property contains the canal and adjacent levees and floodwalls. The existing Drainage Pumping Station Numbers 3 and 4, operated by the New Orleans Sewerage and Water Board, are located within the project corridor. The pumping stations were incapacitated by Hurricane Katrina in August 2005. A temporary pumping station is currently under construction within the project corridor by the USACE. Nine bridges transect the canal within the project corridor.

Pursuant to construction of a new permanent pumping station within the project corridor, the USACE has authorized the performance of an HTRW Phase I ESA of the property in accordance with applicable sections of USACE Regulation ER 1165-2-132, *Water Resources Policies and Authorities for Hazardous, Toxic, and Radioactive Waste Guidance for Civil Works Projects*, and American Society for Testing and Materials (ASTM) Standard E 1527-05 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* in order to identify recognized environmental conditions (REC) located in the vicinity of the property. In order to characterize environmental conditions for the project, GEC:

- Reviewed federal, state, and local environmental databases;
- Conducted historical research;
- Interviewed pertinent personnel; and
- Performed a site investigation.

GEC performed this HTRW Phase I ESA in accordance with the scope and limitations of ER 1165-2-132 and ASTM E 1527-05, where applicable and appropriate. Any exceptions to, or departures from, this practice are described in the report. Based on the review of federal, state, and local environmental databases, historical research, interviews, and site investigations, the assessment indicates the property warrants additional investigation. Figure 1 provides a summary map of potential REC sites in the vicinity of the project corridor identified by the environmental database review. Table 1 provides geographic coordinates for the sites listed in Figure 1. Additional information about these sites is presented in Sections 5.0 and 8.0 below.

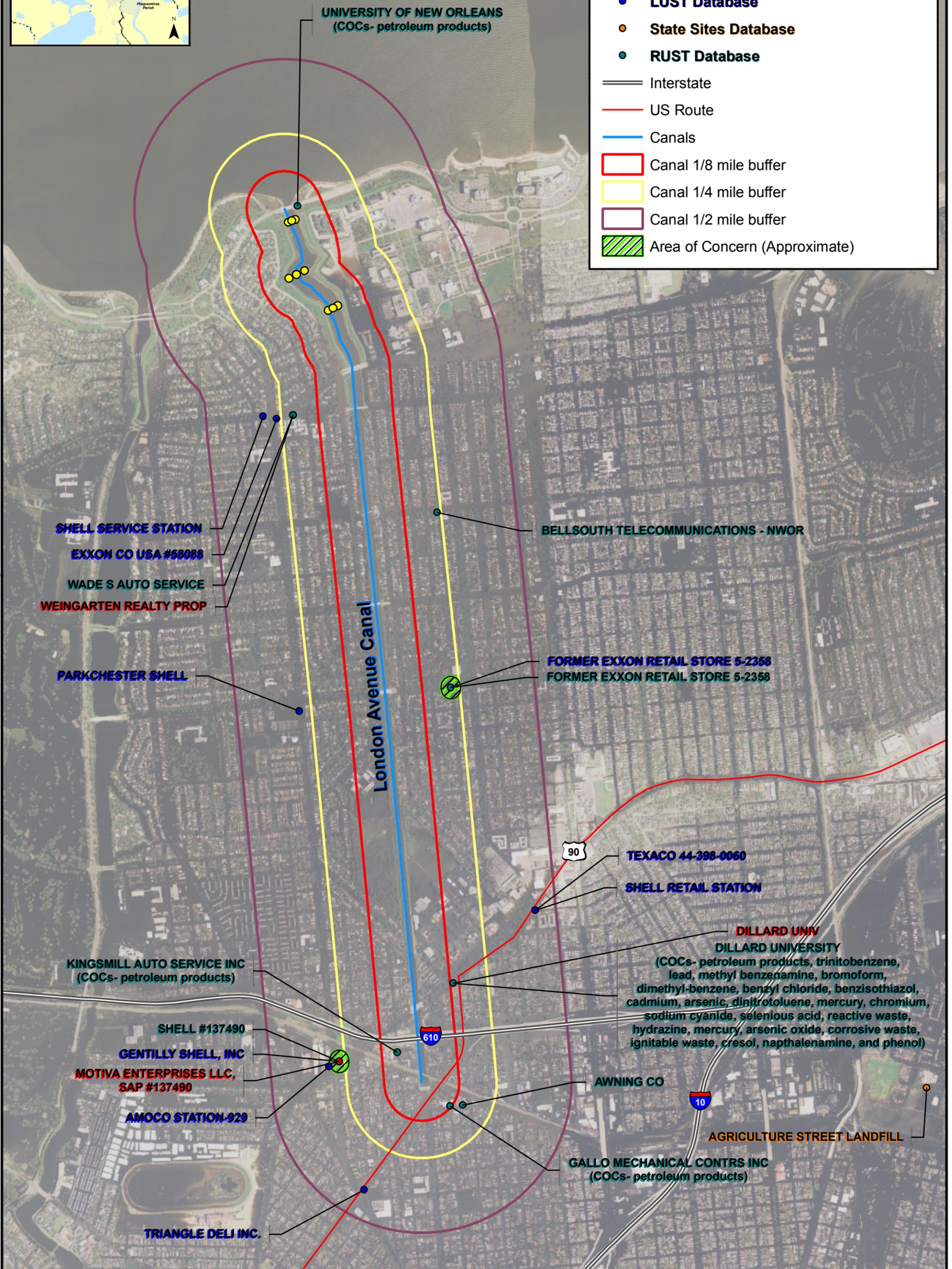
2.0 INTRODUCTION

2.1 PURPOSE

The purpose of the assessment is to identify potential REC located in the vicinity of the project corridor that have, or may have in the past, adversely impacted environmental conditions at the property.



● CIH INVESTIGATION SAMPLING LOCATIONS (COCs - PAHs, Lead, TPHs)
Potential REC Sites
 ● **RCRAGN Database**
 ● **LUST Database**
 ● **State Sites Database**
 ● **RUST Database**
 — Interstate
 — US Route
 — Canals
 □ Canal 1/8 mile buffer
 □ Canal 1/4 mile buffer
 □ Canal 1/2 mile buffer
 ▨ Area of Concern (Approximate)



SUMMARY MAP
London Avenue Canal
Orleans Parish, Louisiana

Note: Background image is post-Katrina USACE Aerial Photograph (September, 2005). Sites provided by Banks Information Solutions, Inc.

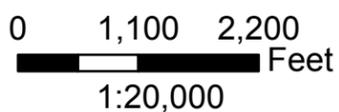


Figure 1

**Table 1. Geographic Coordinates of Potential REC Sites
Identified in the Environmental Database Review**

Site Name	Database	Latitude	Longitude
University of New Orleans	RUST	30.03125500000	-90.07372400000
Exxon Co USA #58088	LUST	30.02094000000	-90.07518400000
Amoco Station-929	LUST	29.98942200000	-90.07320500000
Parkchester Shell	LUST	30.00670900000	-90.07435000000
Shell Service Station	LUST	30.02108200000	-90.07594100000
Triangle Deli	LUST	29.98338700000	-90.07142000000
Shell Retail Station/ Texaco 44-398-0060	LUST (2)	29.99675200000	-90.06149400000
Agriculture Street Landfill	State Sites	29.98763000000	-90.03996000000
Kingsmill Auto Service Inc	RUST	29.99002500000	-90.06938300000
Gallo Mechanical Contrs Inc	RUST	29.98734000000	-90.06651200000
Dillard University	RCRAGN, RUST	29.99330000000	-90.06615300000
Awning Co	RUST	29.98737700000	-90.06580100000
Weingarten Realty Prop/ Wade's Auto Service	RCRAGN, RUST	30.02109900000	-90.07427200000
Former Exxon Retail Store 5- 2358	LUST, RUST	30.00766700000	-90.06588000000
Bellsouth Telecommunications - NWOR	RUST	30.01618700000	-90.06638600000
Shell #137490	RUST	29.98965400000	-90.07263000000
Gentilly Shell Inc/ Motiva Enterprises SAP #137490	RCRAGN, LUST	29.98965400000	-90.07263000000

Note: Coordinates were not provided for all sites listed in the environmental database report.

Source: Banks, 2006.

2.2 SCOPE OF SERVICES

As outlined in its contract with the USACE, GEC is responsible for investigating the property in order to identify REC sites within and adjacent to the property. Investigation procedures are to comply with ER 1165-2-132 and ASTM E 1527-05, where applicable and appropriate, and the scope of services for this ESA includes the following:

- Research of available federal, state, and local environmental databases for potential REC sites on, or within a specified distance of, the property;
- Reviews of available historical aerial photographs, Sanborn Fire Insurance Maps, United States Geologic Survey (USGS) topographic maps, and/or published soils and geologic information;
- Interviews with state and local government agency representatives and/or persons knowledgeable of sites regarding documented inspections, violations, incidents, spill response, or past uses of the property;

- Visual observations of accessible portions of the property in order to identify current and historical REC sites. Visual observations of accessible portions of properties adjacent to the property were also conducted;
- Preparation of a written report that identifies whether the property contains potential REC and whether or not conditions warrant further investigation.

In accordance with the procedures outlined in ER 1165-2-132 and ASTM E 1527-05, an HTRW Phase I ESA typically does not include sampling and analysis of soil and/or groundwater. Additionally, an HTRW Phase I ESA typically does not include wetlands delineations or surveys for cultural or historic resources, threatened or endangered species, lead-based paint, asbestos-containing materials, or radon.

2.3 SIGNIFICANT ASSUMPTIONS

No significant assumptions were made in the preparation of this HTRW Phase I ESA.

2.4 LIMITATIONS AND EXCEPTIONS

GEC's review of record information and environmental databases included information that was reasonably ascertainable from standard sources. *Reasonably ascertainable* denotes (1) information that is publicly available, (2) information that is obtainable within reasonable time and cost constraints, and (3) information that is practically reviewable. GEC's review included information gathered directly from governmental and regulatory agencies as well as an electronic database search performed by Banks Information Solutions, Inc. (Banks). Much of this information was gathered from public records and sources maintained by third parties. Although reasonable care was taken to verify this information, GEC does not accept responsibility for errors, omissions or inaccurate information.

GEC interviewed available individuals identified as having current and historical knowledge of land use, commercial and residential development, and activities and incidents associated with the property. Available individuals includes (1) persons with whom contact can be made within reasonable time constraints, and (2) persons willing to share information with interviewers. These individuals were selected based on their employment in state and local government, association with, or proximity to, specific properties, or long-time residence in and knowledge of the area. Significant effort was made to identify and contact individuals possessing direct knowledge of sites; however, no guarantee is made or intended that all individuals with pertinent knowledge of sites were identified and interviewed. Additionally, GEC makes no guarantee that information provided during the interviews is free of errors, omissions, or inaccurate information.

Observations made during GEC's reconnaissance of the project were limited to (1) sites or portions of sites that were accessible to investigators, and (2) evidence that was visible to the investigators. Several areas had access limitations, including concrete floodwalls and unsafe conditions that impeded inspection of the entire area or specific portions or features of a site. Observations were based on evidence that was visible to inspectors while walking the site. No ground excavation, vegetation clearing, or physical relocation of obstacles was conducted during site investigations. Accordingly, no guarantee is made or intended that all site conditions were observed.

2.5 SPECIAL TERMS AND CONDITIONS

No special terms or conditions significant with respect to ER 1165-2-132 and ASTM E 1527-05 standards were made.

2.6 USER RELIANCE

In accordance with ASTM E 1527-05 Section 7.5.2.1 "Reliance," GEC is not required to verify independently the information provided by various sources but may rely on the information unless there is actual knowledge that certain information is incorrect or unless it is obvious that certain information is incorrect based on other information obtained during the course of the investigation or otherwise actually known to the investigators conducting the assessment. However, GEC has no indications that the information provided by outside sources is incorrect.

3.0 SITE DESCRIPTION

The project corridor is comprised of the northern portion of the London Avenue Canal and its adjacent floodwalls in New Orleans, Louisiana in Orleans Parish (Figure 2). The project corridor is bounded on the north by Lake Pontchartrain, on the south by the existing Drainage Pumping Station Number 3, on the east by the foot of the eastern floodwall and levee complex, and on the west by the foot of the western floodwall and levee complex. The project corridor is located in the following sections:

Township 11 South, Range 11 East--Sections 97, 99, 106, 107, 108, 111, 164, and 165

The property contains the canal and adjacent levees and floodwalls. The existing Drainage Pumping Station Numbers 3 and 4, operated by the New Orleans Sewerage and Water Board, and a temporary pumping station currently under construction within the project corridor by the USACE are located within the project corridor. Nine bridges transect the canal within the project corridor. Land use within the project corridor is municipal drainage operations.

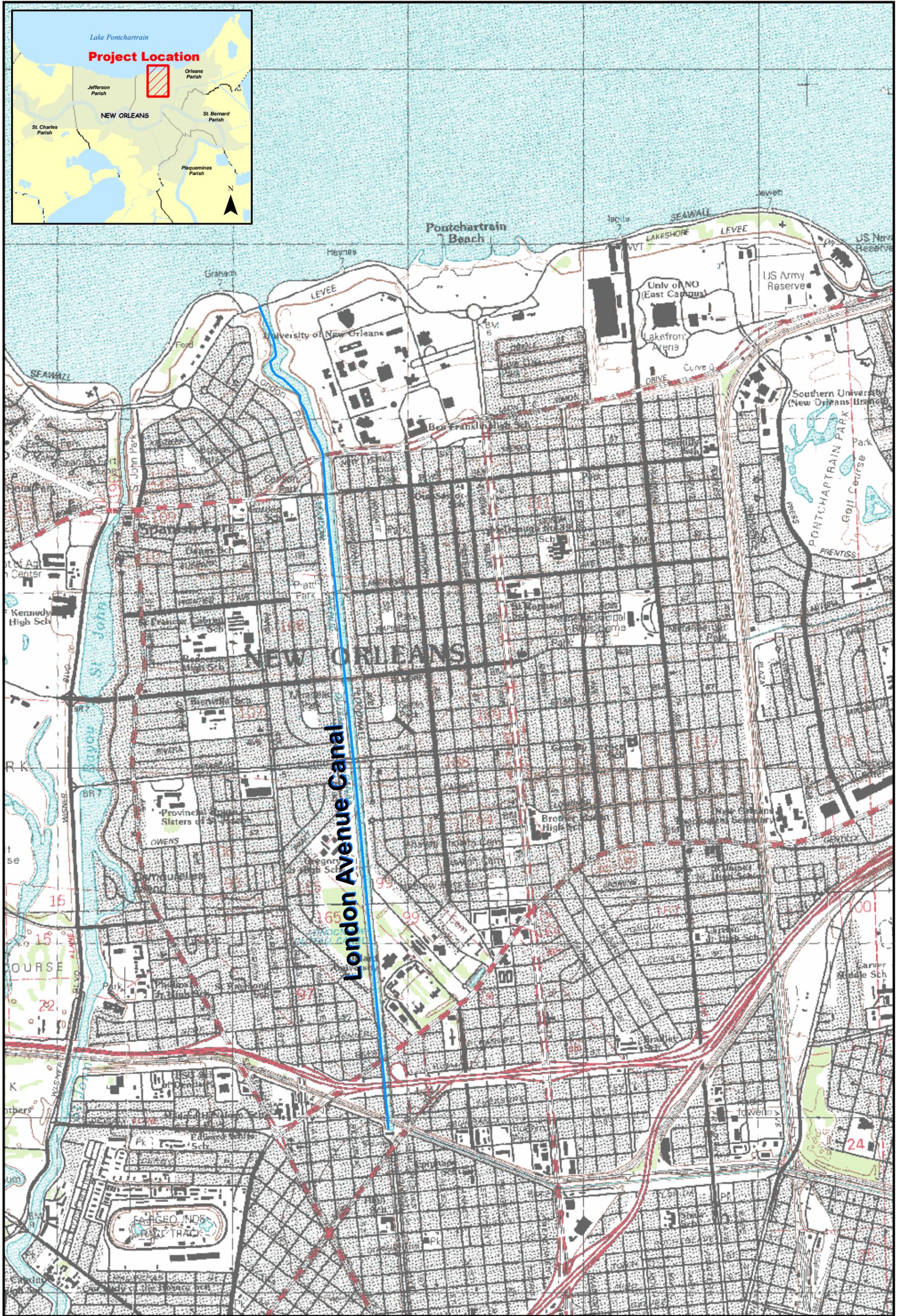
3.1 SITE VICINITY AND GENERAL CHARACTERISTICS

Land use in adjacent properties to the south and west of the project corridor is primarily residential with some light commercial and industrial facilities, particularly in the area along Florida Avenue and North Broad Street (US Highway 90). Land use in adjacent properties to the north is residential west of the canal, and urban and recreational east of the canal at the site of the former United States Naval Air Station (now University of New Orleans Lakefront Campus). Land use in the adjacent properties to the east and west of the subject property are almost exclusively residential. Lake Pontchartrain borders the project corridor to the north.

3.2 GEOLOGY, HYDROGEOLOGY, AND TOPOGRAPHY

3.2.1 Geology

The project corridor is located in the Coastal Plain province of southeastern Louisiana. The prominent landforms in this region are natural levees, freshwater and brackish swamp and marsh, and point bars. Subsurface sediments in the vicinity of the project corridor are typically composed of 60-100 feet of Holocene (0.1 million years ago [Ma] to present) sands and silts overlying Pleistocene (2.0-0.1 Ma) clays. Holocene sediments are thickest in point bar deposits on outside bends of the Mississippi River. Both the Pleistocene and Holocene sediments are



SITE LOCATION MAP
London Avenue Canal
Orleans Parish, Louisiana

Note: Background image is post-Katrina USACE Aerial Photograph (September, 2005). Sites provided by Banks Information Solutions, Inc.

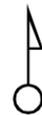
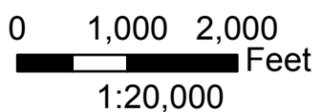


Figure 2

typical of deltaic deposition, and represent a progradation over time from a coastal deltaic environment to a more inland coastal plain regime.

The project corridor has been the site of significant urban development in the historic period, and consequently surface sediments in the project corridor may not be representative of the typical surface sediments found in a river valley. Native surface sediments at the project site and the surrounding area are primarily composed of river alluvium deposited by the Mississippi River. The Mississippi River distributed significant amounts of sediment in the vicinity of the project corridor from prehistoric times until the early 20th century, when levee improvements brought a cessation to sediment renourishment.

Surface sediments are generally artificial fill ranging from gravel to sand. This fill was placed in the area in historic times to provide a more stable surface for urban expansion and improvement than the peat that occurred naturally throughout the Louisiana Coastal Plain province. Sediments within the canal channel were deposited naturally by waters discharging from the surrounding municipal areas and range from sand to clay.

3.2.2 Hydrogeology

The project transits the Chicot Equivalent Aquifer, a Pleistocene-aged aquifer found in the New Orleans area, the Baton Rouge area, and St. Tammany, Tangipahoa, and Washington parishes. The sedimentary sequences containing the aquifer system are subdivided into several aquifer units separated by confining beds. The aquifers are moderately well to well-sorted and consist of fine sand near the top, grading downward into coarse sand and gravel. The aquifers are typically confined by silt and clay layers.

The deposits that comprise the individual aquifers are not readily differentiated at the surface and act in effect as a single hydraulic system containing several hydrologic zones in the subsurface. The Mississippi River Valley is entrenched into the Pleistocene strata in the western part of the system, resulting in water movement between the river and the aquifer system.

Recharge of the Chicot Equivalent Aquifer system occurs primarily by the direct infiltration of rainfall in interstream, upland outcrop areas, by the movement of water between aquifers, and between the aquifers and the Mississippi River. Hydraulic conductivity ranges from 10-200 feet/day.

The freshwater interval of the Chicot Equivalent Aquifer system has a thickness range of 50-1,100 feet. The maximum depths of freshwater occurrence in the system range from 350 feet above sea level to 1,100 feet below sea level. DOTD *Water Resources Special Report No. 15, Water Use in Louisiana, 2000* indicates that the primary use of groundwater in this aquifer is industrial, with secondary and tertiary uses for rural domestic and public supply, respectively.

The USGS has 25 monitoring wells emplaced in the Chicot Equivalent aquifer system. Well OR-61 is located near the western end of the project corridor. Table 2 provides water quality data from Well OR-61 presented Appendix 12 of the *2003 Triennial Summary Report for the Environmental Evaluation Division of the Louisiana Department of Environmental Quality (LDEQ)*.

Table 2. Water Quality Data for Well OR-61

Parameter	Value	
	Initial Sample	Resample
Water Quality Data		
pH	8.59	8.59
Salinity (ppt)	0.48	0.48
TDS (ppm)	562	562
Turbidity (NTU)	< 1.0	1.3
NH ₃ (ppm)	1.25	1.26
Inorganic Data (ppb)		
Antimony	< 5.0	< 5.0
Arsenic	< 5.0	< 5.0
Barium	83.3	82.8
Beryllium	< 1.0	< 1.0
Cadmium	< 1.0	< 1.0
Chromium	< 5.0	< 5.0
Copper	< 5.0	< 5.0
Iron	102	102
Lead	< 10.0	< 10.0
Mercury	< 0.05	< 0.05
Nickel	< 5.0	< 5.0
Selenium	< 5.0	< 5.0
Silver	< 1.0	< 1.0
Thallium	< 5.0	< 5.0
Zinc	10.5	<10.0

Source: USGS and LDEQ, 2003.

Both the Jasper Equivalent aquifer, a Miocene-aged (24-5 Ma) aquifer, and the Evangeline Equivalent aquifer, a Pliocene-aged (5-2 Ma) aquifer terminate in the vicinity of the project corridor, but it is unlikely that these aquifers exhibit any hydrologic influence on the project corridor.

3.2.3 Topography

The property is located in an alluvial floodplain, an area of relatively uniform topography. The artificial levees along the waterfront comprise the only significant topographic high in the vicinity of the project corridor. Elevation in the general vicinity of the project corridor is approximately zero feet above mean sea level (MSL). No significant topographic variation was noted in the surrounding property either in the historical records review or in the site reconnaissance.

3.3 CURRENT USE OF THE PROPERTY

The property is currently used for municipal drainage.

3.4 STRUCTURES, ROADS AND OTHER IMPROVEMENTS ON THE SITE

Structures present within the project corridor include the existing Drainage Pumping Station Number 3 operated by the New Orleans Sewerage and water board, located at the southern terminus of the subject property and at the intersection of Broad, London, and Florida Avenues, existing Drainage Pumping Station Number 4 operated by the New Orleans Sewerage and

water board, located immediately east of the subject property on Prentiss Avenue, and a temporary pumping station currently under construction by the USACE, located immediately north of the Milneburg Boulevard bridge.

Drainage Pumping Station No. 3, sometimes called the St. Bernard Pumping Station, is located at the intersection of Broad, London, and Florida Avenues. Construction of Drainage Pumping Station No. 3 was virtually complete by the end of 1902, and the completion of the contract was accepted by the Sewerage and Water Board in 1903. Drainage Pumping Station No. 3 was modified for the installation of 14 Wood screw pumps in 1930-1931. The building's western end was extended and three 1,000 cubic feet per second (cfs) Wood pumps were installed in 1931. In 1950, new flood gates were constructed at Station No. 3, and in 1970-1972, further alterations were made. These modifications in the early 1970s included the addition of a mechanical trash screen cleaner. In 1976, attempts were made to floodproof part of the machinery at the station, but these modifications were not apparently fully successful.

Plans for a new drainage pumping station, designated Station No. 4 but located at Prentiss Avenue and the London Outfall Relief Canal, were drawn up in 1938; however, construction was not to begin until late in World War II. On August 9, 1945, Contract 136-D was issued for construction of Drainage Pumping Station No. 4. Originally, the station was equipped with two 320 cfs horizontal centrifugal pumps. Construction of the station was completed in 1946. Major additions were made to Station No. 4 in the late 1950s, and a 1000 cfs screw pump was installed about 1960. A new 36" constant duty trash pump was installed in 1963/1964. A mechanical trash screen cleaner and another 1000 cfs screw pump were added to Station No. 4 in the late 1960s. A flood protection wall was constructed on the London Outfall Canal side of the station about 1972. A third 1000 cfs screw pump was installed at this station with unknown date.

The project corridor is bounded to the east and west by the canal's levee and floodwall complex. Floodwalls are constructed of concrete or steel throughout the project corridor. Nine roads transect the project corridor by means of bridges. These roads, in order from north to south, include Lakeshore Drive, Milneburg Boulevard, Robert E. Lee Boulevard, Prentiss Avenue, Filmore Avenue, Mirabeau Avenue, Gentilly Boulevard, Interstate 610, and Florida Avenue.

3.5 CURRENT USE OF ADJOINING PROPERTIES

Lake Pontchartrain forms the northernmost boundary of the project corridor. A portion of Lake Terrace Park adjoins the property to the west immediately south of Lake Terrace Drive. University of New Orleans adjoins the project corridor to the east at the northernmost boundary above Milneburg Boulevard. Between Milneburg Boulevard and Drainage Pumping Station No. 3, adjoining properties are almost exclusively residential. Dillard University is located on either side of London Avenue Canal between Gentilly Boulevard and Mirabeau Avenue.

A review of Orleans Parish zoning maps was performed in conjunction with a site reconnaissance to identify all nonresidential properties that adjoin the project corridor. Nonresidential properties (excluding parks and/or greenspaces) identified by these methods are presented in Table 3. Index maps for the project area are presented in Appendix A.

Table 3. Nonresidential Properties Adjoining the Project Corridor

Map	Block	Parcel	Facility Name
Western Canal Bank			
D-12	RD-2	1	Sears Lawnmower
D-12	C.U.	1	Real Wood Cabinet
Eastern Canal Bank			
D-10	RM-4; RS-1	—	University of New Orleans
D-10; D-11	RD-2; RS-2	120	Pumping Station No. 4
D-11; D-12	RM-4; RS-2; C.U.	—	Dillard University
D-12	RD-3	3A	Gallo Mechanical Contractors
D-12	RD-2	—	Pumping Station No. 3

Source: Orleans Parish Zoning Maps, 2000, GEC, 2006.

Interviews were sought with owners and/or site managers for all of the abovementioned properties. Additional discussion of interviews is presented in Section 7 below.

4.0 USER PROVIDED INFORMATION

As defined in ASTM E 1527-05 Section 3.2.93 “User,” the USACE is the user of this HTRW Phase I ESA. GEC conducted the assessment on behalf of the USACE.

4.1 TITLE RECORDS

In accordance with the project Scope of Work, a title record search was not conducted for the project corridor.

4.2 SPECIALIZED KNOWLEDGE

The user did not provide GEC with any specialized knowledge.

4.3 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

The Sewer and Water Board of New Orleans (SWBNO) informed GEC that the project corridor has served as a drainage canal since the 1800s. The SWBNO further informed GEC that New Orleans Pumping Station No. 3, which forms the southern terminus of the project corridor, was originally constructed in 1909.

4.4 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

No valuation reduction for environmental issues is proposed.

4.5 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The project corridor is owned by the State of Louisiana. Drainage Pumping Station Numbers 3 and 4 are owned by the City of New Orleans and operated by the SWBRO on behalf of the city.

No permanently occupied properties are present in the project corridor. The temporary pumping station currently under construction north of Milneburg Bridge will be operated by the SWBNO on behalf of the City of New Orleans.

4.6 REASON FOR PERFORMING PHASE I

On behalf of the USACE, GEC conducted this investigation and assessment to identify potential REC sites in the vicinity of the project that have, or may have in the past, adversely impacted environmental conditions of the property. The USACE intends to construct a permanent pumping station within the project corridor to assist in municipal drainage operations and to augment the capacity of the existing Drainage Pumping Station Numbers 3 and 4, which were incapacitated during Hurricane Katrina.

5.0 RECORDS REVIEW

In accordance with ASTM E 1527-05 Section 8 “Records Review,” GEC conducted a thorough search of Federal, state, and local government environmental databases to obtain and review records and/or documents that would aid in the identification of known or potential REC sites on or near the project. ASTM E 1527-05 contains a list of records that should be reviewed and the approximate minimum search distance to use.

5.1 STANDARD ENVIRONMENTAL RECORD SOURCES

In accordance with the project Scope of Work and ASTM E 1527-05 Section 8.2.1 “Standard Environmental Record Sources,” a review of the following databases and was conducted at the proscribed search radii:

Federal NPL ¹ Site List	1.0 mi
Federal Delisted NPL Site List	0.5 mi
Federal CERCLIS ² List	0.5 mi
Federal CERCLIS-NFRAP ³ Site List	0.5 mi
Federal RCRA ⁴ CORRACTS ⁵ List	1.0 mi
Federal RCRA Non-CORRACTS TSD ⁶ Site List	0.5 mi
Federal RCRA LQG/SQG ⁷	target/adjoining property
Federal IC/EC ⁸ Registries	target property
Federal ERNS ⁹ List	target property
Federal HMIRS ¹⁰ List	
State-Equivalent NPL List	1.0 mi
State-Equivalent CERCLIS List	0.5 mi
State Landfill and/or Solid Waste Disposal Site Lists	0.5 mi
State Leaking UST ¹¹ Lists	0.5 mi

¹ National Priority List

² Comprehensive Environmental Response, Compensation, and Liability Information System

³ CERCLIS-No Further Remedial Action Planned

⁴ Resource Conservation and Recovery Act

⁵ Corrective Action Report

⁶ Treatment, Storage, and Disposal Facility

⁷ Large or Small Quantity Generator

⁸ Institutional Control/Engineering Control

⁹ Emergency Response Notification System

¹⁰ Hazardous Materials Incident Reporting System

¹¹ Underground Storage Tank

Table 4 provides a summary of potential sites listed in Federal and state environmental databases identified by GEC and Banks during the environmental records review for the project corridor. In addition to plottable sites, Banks generated a list of orphan sites. Orphan sites are sites containing insufficient location information and can only be identified as being within the same zip code(s) as the project corridor. A map of all plottable sites identified by Banks is presented as Figure 3. The complete Banks report for the site is provided in Appendix B. The USACE identified the area within one-eighth mile of the canal centerline on either bank as a corridor for potential use in the construction of the proposed pumping station. Consequently, particular concern was given to sites located within this corridor.

Table 4. Environmental Database Research Results Summary

Database	Search Radius						Orphan	Total
	Site	1/8 mile	1/4 mile	1/2 mile	>1/2 mile			
<i>Federal</i>								
NPL	---	---	---	---	---	---	---	
NPL Delisted	---	---	---	---		---	---	
CERCLIS	---	---	---	---		1	1	
NFRAP	---	---	---	---		---	---	
RCRA:								
TSD	---	---	---	---		---	---	
COR	---	---	---	---	---	---	---	
GEN	---	---	3			---	3	
IC/EC	---	---	---	---		2	2	
ERNS	---	---	---			18	18	
Tribal Lands	---	---	---	---	---	---	---	
HMIRS	---	---	---			3	3	
<i>State/Tribal</i>								
State/Tribal Sites	---	---	---	1	---	1	2	
SWL	---	---	---	---		3	3	
LUST	---	---	2	8		---	10	
UST/AST	---	3	6			--	9	
Oil & Gas Wells	---	---	---	---	---	---	---	
	---	3	11	9	---	28	51	
Notes: --- indicates no sites/items were found. LUST and UST values represent facilities, some of which contain multiple tanks. <i>Shaded areas indicate search not required per ASTM E1527-05.</i>								

Source: Banks Information Solutions, Inc., 2006.

5.1.1 National Priorities List (NPL) Database

The NPL is the EPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. A site must meet or surpass a predetermined hazard ranking system score, be chosen as a state's top priority site, or meet three specific criteria set jointly by the U.S. Department of Health and Human Services (HHS) and the EPA in order to become an NPL site.

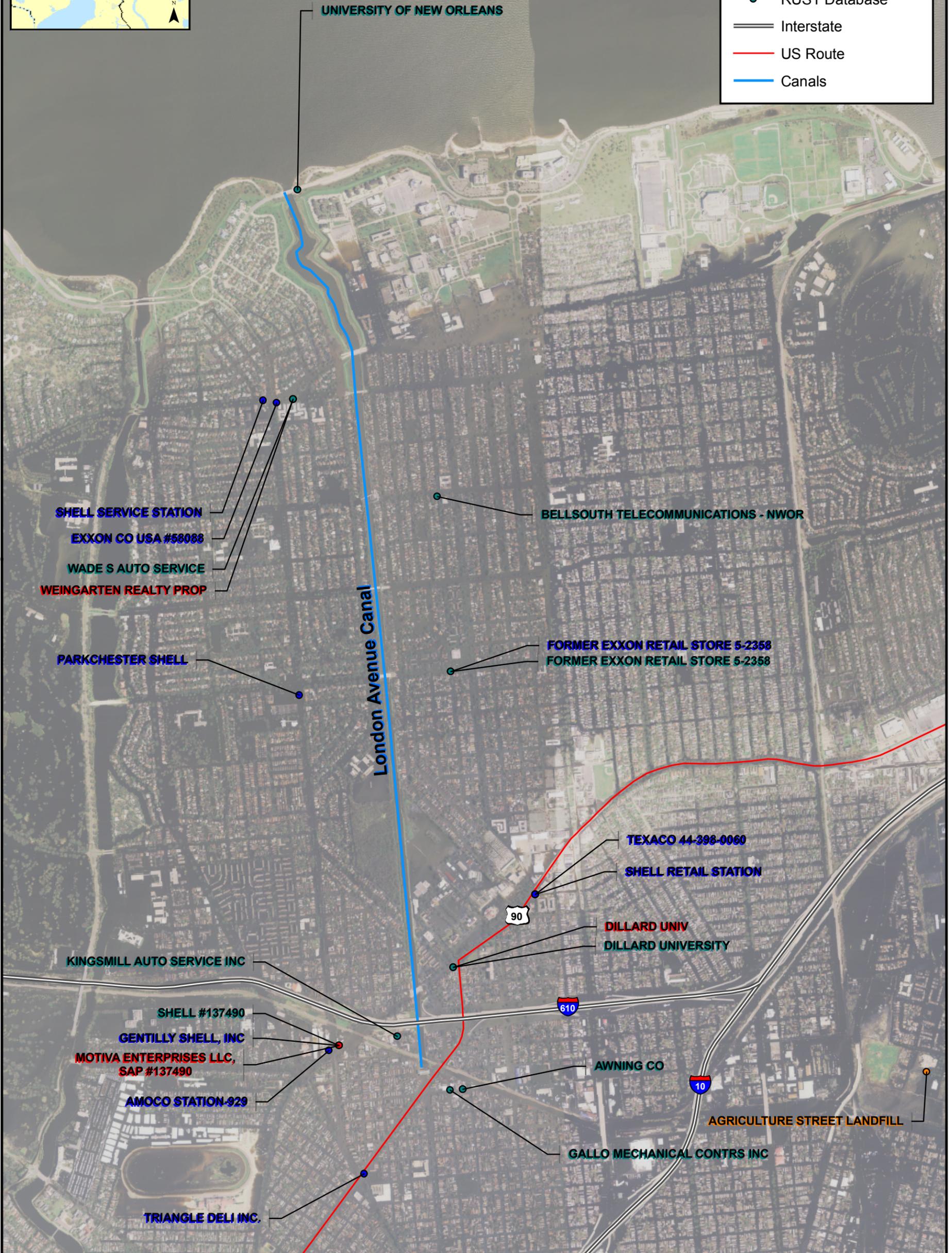
Review of the EPA's NPL database, last updated in August 2006, indicates no such sites are located within one mile of the project corridor.



Potential REC Sites

- RCRAGN Database
- LUST Database
- State Sites Database
- RUST Database

== Interstate
 — US Route
 — Canals



POTENTIAL REC SITES
London Avenue Canal
Orleans Parish, Louisiana

Note: Background image is post-Katrina USACE Aerial Photograph (September, 2005). Sites provided by Banks Information Solutions, Inc.

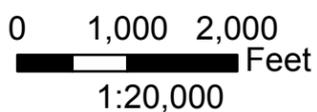


Figure 3

5.1.2 NPL Delisted Database

The NPL delisted database is the EPA's database of sites previously listed in the NPL database as hazardous waste sites identified for priority remedial actions under the Superfund program that have subsequently been removed from the NPL database because remedial actions have progressed to the point at which the site is no longer subject to priority remedial actions.

Review of the EPA's NPL database, last updated in August 2006, indicates no such sites are located within one-half mile of the project corridor.

5.1.3 Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) and No Further Remedial Action Planned (NFRAP) Databases

The CERCLIS database is a comprehensive listing of known or suspected uncontrolled or abandoned hazardous waste sites. These sites have either been investigated or are currently under investigation by the EPA for the release or threatened release of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and may ultimately be placed on the NPL.

The NFRAP Report, also known as the CERCLIS Archive, contains information pertaining to sites that have been removed from the EPA's CERCLIS database. NFRAP sites may be sites where, following an initial investigation, either no contamination was found, contamination was removed quickly without need for the site to be placed on the NPL, or contamination was not serious enough to require Superfund action or NPL consideration.

Review of the CERCLIS and NFRAP databases, last updated in September 2006, indicates that one orphan CERCLIS site potentially located within one-half mile of the project corridor. No NFRAP sites were listed within the ASTM-recommended search radius. Subsequent research was unable to determine if the orphan CERCLIS site is located within the ASTM-recommended search radius of the project corridor.

<u>Facility Name:</u>	Asbestos Release
<u>Facility Location:</u>	New Orleans
<u>Distance/Direction:</u>	Unknown

An asbestos release (EPA incident number LA0000605405) occurred at an unknown facility in New Orleans on 4 May 2000. No other information about the facility or incident is available in the CERCLIS database. The EPA Region 6 Office was contacted for additional information about the facility. A review of EPA Region 6 records indicated that the location of the incident and quantity of asbestos release was not recorded by the EPA. The location of the site with respect to the project corridor cannot be determined from the available information; however, no evidence of a large release of asbestos-containing material was observed in the vicinity of the project corridor during the site reconnaissance. Consequently, based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

5.1.4 Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Sites

RCRA TSDs are facilities that treat, store, and/or dispose of hazardous waste.

Review of the database, last updated in April 2006, indicates that no such sites are located within one-half mile of the project corridor.

5.1.5 Resource Conservation and Recovery Act (RCRA) CORRACTS Database

The EPA's RCRA database contains information concerning RCRA facilities that have conducted, or are currently conducting, a corrective action. A Corrective Action Order is issued pursuant to RCRA Section 3008(h) when a release of hazardous waste or constituents into the environment occurs from a RCRA facility. Corrective actions may also be imposed as a requirement of receiving and maintaining a transportation/storage/disposal facility (TSDF) permit.

Review of the EPA's RCRA CORRACTS database, last updated in April 2006, indicates no such sites are located within one mile of the project corridor.

5.1.6 RCRA Generator Database

The EPA's RCRA Generator Database provides a list of Large Quantity Generators and Small Quantity Generators. Large Quantity Generators are defined as facilities that generate at least 1,000 kilograms per month (kg/mo) of non-acutely hazardous waste or one kg/mo of acutely hazardous waste. Small Quantity Generators generate less than 1,000 kg/mo of non-acutely hazardous waste.

Review of the EPA's Generator database, last updated in April 2006, indicates three potential REC sites (all with multiple listings) are located within one-quarter mile of the project corridor. Two of these facilities are cross-listed in multiple databases.

Facility Name: Dillard University
Facility Location: 2601 Gentilly Boulevard
Distance/Direction: 0.15 mi NE
Other Databases: EPA Brownfield, UST

Facility Name: Weingarten Realty Property
Facility Location: 1656 Robert E. Lee Boulevard
Distance/Direction: 0.20 mi SW
Other Databases: UST (as Wade's Auto Service)

Facility Name: Motiva Enterprises LLC
Facility Location: 2035 Gentilly Boulevard
Distance/Direction: 0.25 mi SW
Other Databases: LUST (as Gentilly Shell, Inc.); UST (as Shell #137490)

Dillard University is located immediately adjacent to the eastern and western border of the project corridor above Interstate 610. The facility is a conditionally exempt small quantity generator that generates between 100 and 1000 kg/mo of 1,3,5-trinitrobenzene, lead, 4-methyl benzenamine, bromoform, dimethyl-benzene, benzyl chloride, 1,2-benzisothiazol, cadmium,

arsenic, 2,4-dinitrotoluene, mercury, chromium, sodium cyanide, selenious acid, reactive waste, hydrazine, mercury, arsenic oxide, corrosive waste, ignitable waste, cresol, 1-naphthalenamine, and phenol. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

The Weingarten Realty Property is a conditionally exempt small quantity generator that generates between 100 and 1000 kg/mo of lead, benzene, chromium, and ignitable waste. This site is also listed as a general automotive repair. A site reconnaissance showed an abandoned five-minute oil change facility, where there appeared no signs of REC. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The Motiva Enterprises LLC facility is a small quantity generator that generates between 100 and 1000 kg/mo of benzene, ignitable waste, trichloroethylene, tetrachloroethylene, and corrosive waste. This site is also listed as a gasoline station. A review of an October 1995 subsurface investigation report indicates very minimal hydrocarbon contamination, whereby the incident was closed. This site does contain three USTs. In May 1996, three monitoring wells were plugged and abandoned. This is the only violation listed for the facility. Because only a small amount of product was discharged during this incident, and because the incident appears to have been confined to land, it is believed that this incident has had little, if any, adverse impact on environmental conditions within the project corridor.

5.1.7 Brownfields Management System Database

This EPA database was designed to assist in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield Grant Programs. The database contains a listing of all sites administered by the EPA under the various Brownfield grant programs.

Review of this database, last updated in September 2006, indicates two orphan sites (one with multiple listings) potentially located within one-half mile of the project corridor. Subsequent research indicates that one orphan site, Dillard University Property is located within the ASTM-recommended search radius of the project corridor.

<u>Facility Name:</u>	Dillard University
<u>Facility Location:</u>	2601 Gentilly Boulevard
<u>Distance/Direction:</u>	0.15 mi NE
<u>Other Databases:</u>	RCRA GEN, UST

As of September 2003, there was a renewed interest in the parks and parkways property. Currently, Dillard University is under renovation and gated. Contact with appropriate personnel is ongoing. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

5.1.8 Emergency Response Notification System (ERNS) Database

ERNS is a national database that is used to store information on the sudden and/or accidental release of hazardous substances, including petroleum, into the environment. The ERNS reporting system contains preliminary information on specific releases, including spill location, substance released, and responsible parties.

Review of the database, last updated in December 2005, indicates eighteen orphan sites potentially located within one-half mile of the project corridor. Subsequent research indicates that the orphan incidents did not occur within the ASTM-recommended search radius of the project corridor.

5.1.9 Tribal Lands

This database is maintained by the U.S. Department of the Interior and lists all areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority.

Review of this database, last updated in December 2005, indicates no such sites are located within one mile of the project corridor.

5.1.10 Hazardous Materials Incident Reporting System (HMIRS) Database

This database, maintained by the U.S. Department of Transportation, was established in 1971 to fulfill the requirements of the Federal hazardous materials transportation law. Part 171 of Title 49, Code of Federal Regulations (49 CFR) contains the incident reporting requirements of carriers of hazardous materials. The database contains a listing of all unintentional release of hazardous materials meeting the criteria set forth in Section 171.16, 49 CFR.

Review of this database, last updated in October 2006, indicates three orphan incidents potentially occurred within one-quarter mile of the project corridor. Subsequent research indicates that the orphan incidents did not occur within the ASTM-recommended search radius of the project corridor.

5.1.11 State Environmental Databases Reviewed

State Equivalent NPL (SCL) Database

This database, updated quarterly, is maintained by the LDEQ Inactive and Abandoned Sites Division in accordance with requirements contained in LA R.S. 30:2226H. The database provides a listing of all known potential and confirmed hazardous waste sites maintained by the Office of Waste Services - Inactive and Abandoned Sites Division.

Review of the SCL database indicates one potential REC site is located within one mile of the project corridor and one orphan site is potentially located within one mile of the project corridor. Subsequent research could not determine if the orphan site is located within the ASTM-recommended search radius of the project corridor.

Facility Name: Agriculture Street Landfill
Facility Location: New Orleans
Distance/Direction: 0.44 mi NE

Facility Name: Chevron- New Orleans Station
Facility Location: New Orleans
Distance/Direction: Unknown

No additional information is available for the facilities. The Agriculture Street Landfill site is not within the ASTM-recommended search radius of the project corridor. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The location of the Chevron site with respect to the project corridor cannot be determined from the available information; however, no evidence of such a site was observed in the vicinity of the project corridor during the site reconnaissance. Consequently, based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

Solid Waste Landfill Facilities (SWL) Databases

The listing of permitted solid waste landfills maintained by the LDEQ Permits Division related to solid waste and landfill disposal facilities was reviewed.

Review of this database, last updated in January 1999, indicates three orphan sites are potentially located within one-half mile of the project corridor. Subsequent research indicates that none of the sites are located within the ASTM-recommended search radius of the project corridor.

Leaking Underground Storage Tank (LUST) Database

Initial queries of this LDEQ database, last updated February 2006, indicate 10 potential REC sites (two with multiple listings) are located within one-half mile of the project corridor.

Facility Name: Former Exxon Retail Store 5-2358
Facility Location: 1943 Mirabeau Ave
Distance/Direction: 0.22 mi NE
Other Databases: UST

Facility Name: Gentilly Shell, Inc.
Facility Location: 2035 Gentilly Blvd
Distance/Direction: 0.25 mi SW
Other Databases: RCRA GEN (as Motiva Enterprises LLC), UST (as Shell #137490)

Facility Name: Exxon Co #58088
Facility Location: 1600 Robert E. Lee Blvd
Distance/Direction: 0.26 mi SW

Facility Name: Parkchester Shell
Facility Location: 4840 Paris Ave
Distance/Direction: 0.29 mi SW

Facility Name: Amoco Station-929
Facility Location: 2025 Gentilly Blvd
Distance/Direction: 0.29 mi SW

Facility Name: Shell Service Station
Facility Location: 1546 Robert E. Lee Blvd
Distance/Direction: 0.30 mi SW

Facility Name: Triangle Deli Inc.
Facility Location: 1904 North Broad Street
Distance/Direction: 0.38 mi SW

Facility Name: Shell Retail Station
Facility Location: 2946 Gentilly Blvd
Distance/Direction: 0.44 mi NE

Facility Name: Texaco 44-398-0060
Facility Location: 2946 Gentilly Blvd
Distance/Direction: 0.44 mi NE

Facility Name: Texaco 44-398-0060
Facility Location: 2946 Gentilly Blvd
Distance/Direction: 0.44 mi NE

As of October 2006, three monitoring wells are present at the Former Exxon Retail Store 5-2358. No information regarding the initial detection of contamination at the site or remediation activities is present within the LUST database. The report indicates that the area of concern for contamination is limited to the facility site and adjacent properties. There does not appear to be any tanks within this vacant property. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

A review of an October 1995 subsurface investigation report at Gentilly Shell, Inc. indicates very minimal hydrocarbon contamination, whereby the incident was closed. This site does contain three USTs as of June 2006. In May 1996, three monitoring wells were plugged and abandoned. The report indicates that the area of concern for contamination is limited to the facility site and adjacent properties. Because only a small amount of product was discharged during this incident, and because the incident appears to have been confined to land, it is believed that this incident has had little, if any, adverse impact on environmental conditions within the project corridor.

The remaining facilities are all located more than one-quarter mile from the project corridor. Although these facilities are located within the ASTM-recommended search radius, it is believed that these facilities are sufficiently distant from the project corridor to render unlikely the possibility of contaminant migration from any of these sites to the project corridor. Based on this information, and lacking any evidence to the contrary, it is believed that these sites have had little, if any, adverse impact on environmental conditions within the project corridor.

Registered Underground Storage Tank (RUST) Database

Review of this LDEQ database, last updated February 2006, indicates nine potential REC sites (four with multiple listings) located within one-quarter mile of the project corridor.

Facility Name: Dillard University
Facility Location: 2601 Gentilly Blvd
Distance/Direction: 0.15 mi NE
Other Databases: RCRA GEN, EPA Brownfield

Facility Name: Wade's Auto Service
Facility Location: 1656 Robert E. Lee Blvd
Distance/Direction: 0.20 mi SW
Other Databases: RCRA GEN (as Weingarten Realty Property)

Facility Name: Shell #137490
Facility Location: 2035 Gentilly Blvd
Distance/Direction: 0.25 mi SW
Other Databases: RCRA GEN (as Motiva Enterprises LLC), LUST (as Gentilly Shell, Inc.)

Facility Name: Former Exxon Retail Store 5-2358
Facility Location: 1943 Mirabeau Ave
Distance/Direction: 0.22 mi NE
Other Databases: LUST

Facility Name: University of New Orleans
Facility Location: Elysian Fields at Lakeshore
Distance/Direction: 0.04 mi NE

Facility Name: Kingsmill Auto Service Inc.
Facility Location: 1732 Benefit St
Distance/Direction: 0.06 mi SW

Facility Name: Gallo Mechanical Contractors Inc.
Facility Location: 1839 Agriculture St
Distance/Direction: 0.12 mi SE

Facility Name: Awning Co
Facility Location: 1873 Agriculture St
Distance/Direction: 0.16 mi SE

Facility Name: Bellsouth Telecommunications-NWO
Facility Location: 1944 Prentiss Ave
Distance/Direction: 0.24 mi NE

The Dillard University and Wade's Auto Service facilities are discussed in Section 5.1.6 above. Based on the information presented in that section, it is believed that the sites have had little, if any, adverse impact on environmental conditions within the project corridor. As stated in Section 5.1.6, the Dillard University property would not normally qualify as a REC site.

However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

Both Former Exxon Retail Store 5-2358 and Shell #137490 are discussed in the LUST database subsection above. Based on the information presented in that section, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The University of New Orleans, Kingsmill Auto Service, and Gallo Mechanical Contractors facilities do not appear to be listed in the LUST database and would not normally qualify as REC sites. However, the sites are located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigations at these sites are warranted.

The remaining facilities do not appear to be listed in the LUST database. No evidence of violations or corrective actions was determined for any of the remaining facilities. Based on this information, and lacking any evidence to the contrary, it is believed that these sites have had little, if any, adverse impact on environmental conditions within the project corridor.

Oil and Gas Well Database

This database contains a listing of all oil and gas wells within the state of Louisiana that have been registered with the Louisiana Department of Natural Resources.

Review of this database, last updated January 2001, indicates no such sites are located within one mile of the project corridor.

5.2 ADDITIONAL ENVIRONMENTAL RECORD SOURCES

ASTM E 1527-05 Section 8.2.2 “Additional Environmental Record Sources” states that one or more additional state or local sources may be checked to enhance and supplement the Federal and state sources identified in ASTM E 1527-05 Section 8.2.1.

GEC performed additional research using historic city directories, LDEQ headquarters’ site files, the EPA National Pollutant Discharge Elimination System (NPDES) database, and previous sampling studies conducted within the subject property.

5.2.1 City Directory Search

A review of city directories published by R. L. Polk and Company was conducted to identify any former industrial sites in the project corridor and adjoining properties. City directories for the years 1940, 1947, 1952-1953, 1956, 1961, 1964, 1966, 1971, 1976, 1981, 1982, 1986, 1991, 1997, 2001, and 2006 were reviewed for nonresidential facilities on properties adjoining the project corridor and can be viewed in Appendix C. The results of this review are presented in Table 5.

None of the abovementioned properties on the western canal bank exhibited any evidence of operating as a present or former industrial facility. A site reconnaissance of Pratt Drive indicated that all structures on the street that adjoin the project corridor are residential. Most of these structures are currently unoccupied as a result of damage from Hurricane Katrina. It is

**Table 5. Nonresidential Sites Adjoining the Project Corridor
Identified in Historic Directory Search**

Facility Address	Facility Name	Description	Years
Western Canal Bank			
4801 Pratt Drive	Swartzchild Real Estate Agent	Real Estate	2001
5245 Pratt Drive	Bayou Landscaping	Lawn Garden Services	1997
5655 Pratt Drive	Pittman C R Construction Company	New Home Construction	2001
6000 Pratt Drive	Service American Heating and Air Conditioning		2001
6119 Pratt Drive	Technical Graphics	Business Services	1997
6133 Pratt Drive	Geological Data Consultants	Geological Consultants	2001
6374 Pratt Drive	Tilden-Foley Gallery	Museum and Art Galleries	2001, 2006
6442 Pratt Drive	Golden Opportunity	Business Management Consultants	2001, 1997
Eastern Canal Bank			
5303 Warrington Drive	Forrestier A J & Associates	Single-family Housing Construction	1997
5700 Warrington Drive	City Sewerage & Water Board	Pumping Station	1991
5725 Warrington Drive	Edwards Productions	Photo Studios Portrait	1997
6056 Warrington Drive	First Step Learning Center	Child Day Care Service	2001, 1997

Source: R.L. Polk & Co., 1940-2006.

believed that the abovementioned properties are residential structures that also functioned as administrative centers for offsite businesses.

Of the properties listed on the eastern canal bank, only the City Sewerage and Water Board appears to be a nonresidential facility. A site reconnaissance of Warrington Drive indicated that all structures on the street that adjoin the project corridor are residential. Most of the residential structures on Warrington Drive are currently unoccupied as a result of damage from Hurricane Katrina. It is believed that the abovementioned properties are residential structures that also functioned as administrative centers for offsite businesses.

5.2.2 EPA National Pollutant Discharge Elimination System Database

As authorized by the Clean Water Act, the EPA NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. These permitted facilities are stored within the NPDES permit database.

The NPDES permit database was reviewed with assistance from the EPA EnviroMapper™ program to identify any permitted dischargers within one-half mile of the project corridor. A review of the database indicated two such facilities within this radius of the project corridor. Only one is cross-listed in the environmental databases discussed in Section 5.1 above.

<u>Facility Name:</u>	Hotard Coaches, Inc.
<u>Facility Location:</u>	2838 Touro St
<u>Distance/Direction:</u>	0.50 mi SE
<u>Facility Name:</u>	Star Enterprise
<u>Facility Location:</u>	2946 Gentilly Blvd
<u>Distance/Direction:</u>	0.44 mi NE
<u>Other Databases:</u>	LUST (as Texaco 44-398-0060)

LDEQ considers Hotard Coaches, Inc., as of October 2005, closed for recon purposes. The facility was used for motorcoach/bus service and fueling facility. The Star Enterprise facility is currently Shell Retail Station (formerly Texaco 44-398-0060). Because the facilities do not appear to discharge wastewater into the project corridor, it is believed that these sites have had little, if any, adverse impact on environmental conditions within the project corridor.

5.2.3 LDEQ Headquarters Site Files

Files at the LDEQ Headquarters site were reviewed in an effort to identify any additional potential REC sites in the vicinity of the project corridor not identified in the environmental database review and to provide supplementary information on sites identified in the environmental database review. Supplementary information on identified potential REC sites is presented with the discussion of the individual sites in Section 5.1 above. No additional potential REC sites were identified in the vicinity of the project corridor from LDEQ Headquarters site files.

5.2.4 Previous Sampling Studies

A Certified Industrial Hygienist (CIH) investigation was conducted on sediment samples within the London Avenue Canal between the canal mouth and Milneburg Boulevard in February 2006 pursuant to construction of the temporary pumping station currently under construction north of the Milneburg Boulevard Bridge. Sediments within this portion of the canal were analyzed for contaminants from urban stormwater runoff prior to the initiation of any dredging activities that may be required during construction. The USACE contracted GEC to collect and composite sediments from three locations along the canal, which were then analyzed for total and Toxicity Characteristic Leaching Procedure (TCLP) RCRA metals, total petroleum hydrocarbons (TPH),

volatile and semi-volatile organics (including polynuclear aromatic hydrocarbons [PAHs]), pesticides, and dioxins.

Sediment samples were collected from the bottom of the canal with a backpack vibracore unit to a depth of approximately five feet below the surface sediments in three-inch aluminum barrels. Three samples were collected from each location: one near the edge of each bank and one from the center of the canal. The three samples from each location were consolidated into one composite sample for laboratory analysis. A map of the sampling locations is provided in Figure 4.

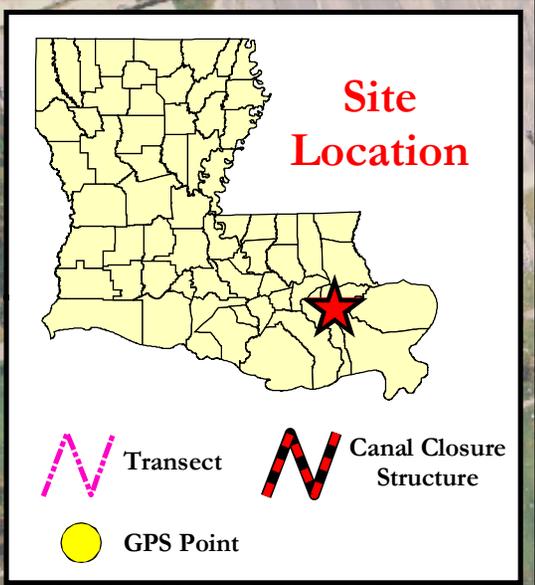
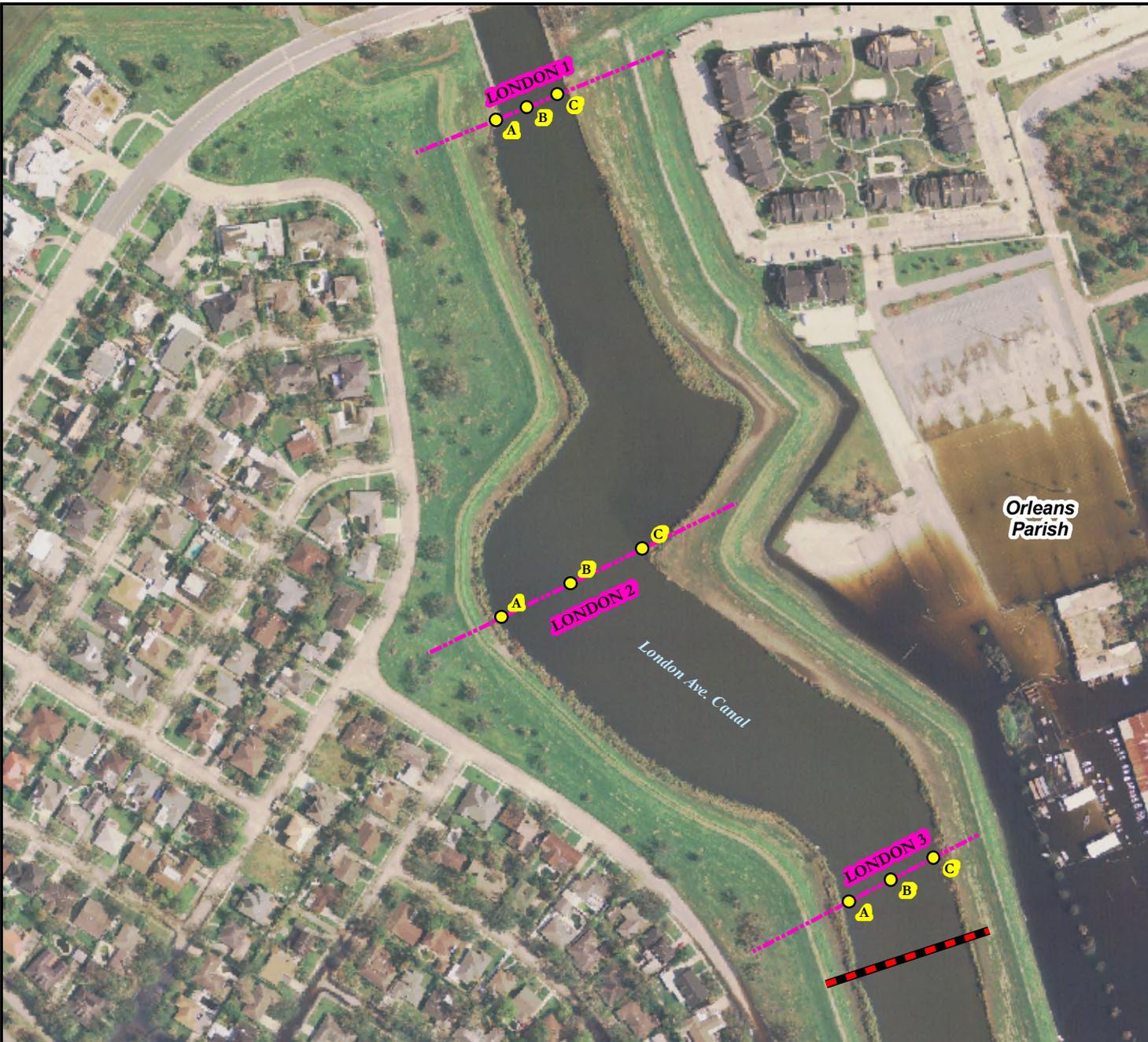
Sample LONDON 1 exhibits no compounds exceeding RECAP standards with the exception of the blank contamination noted below. Sample LONDON 2 exceeds standards for lead by 85 mg/kg (85 percent), TPH-DRO by 405 mg/kg (623 percent), and TPH-ORO by 940 mg/kg (522 percent). Sample LONDON 3 exceeds standards for TPH-DRO by 356 mg/kg (548 percent) and TPH-ORO by 850 mg/kg (472 percent). Volatile organic blank contamination was also noted in the trip blank for the London Avenue Canal. Falsely elevated concentrations of trichloroethene are noted in the volatile organics analysis for all three composite samples. These falsely elevated volatile detections are also reflected in the TPH-GRO results. None of the analyzed compounds that are regulated by RCRA are present in the London Avenue Canal TCLP samples in concentrations exceeding RCRA standards. TPH-DRO and TPH-ORO were detected in the TCLP leachate in the LONDON 2 sample, and TPH-DRO was detected in the LONDON 1 and LONDON 3 samples. TPH-GRO was also detected in all three samples, possibly due to volatile organic blank contamination.

The results of the laboratory analyses indicated that the material sampled from London Avenue Canal contained PAHs, lead, and total petroleum hydrocarbons in concentrations that are potentially hazardous to human health or the environment. Additionally, the laboratory analyses indicated that dioxins, while not present in concentrations exceeding standards set by the State of Louisiana, are present in the sediments at levels that may preclude certain disposal options. The sampling analysis report recommended further evaluation of the sediment material analysis prior to consideration of ocean dumping or use of the material as borrow or fill. The report further recommended that prior to landfill disposal, the analysis of the sediment be evaluated in order to ensure its disposal in a landfill permitted to dispose of such material, and that personnel handling the sediment material should be outfitted in modified Level D personal protective equipment, including oil-resistant gloves and safety glasses. Additionally, the report stated that special actions associated with state environmental regulations regarding the handling, storage, disposal or ownership of contaminated sediments (as described in Louisiana Administrative Code Title 33:V) may be required.

5.3 HISTORICAL RECORDS REVIEW

For this project, GEC researched historical quadrangles for structures, mines, quarries, clearings, wells, and land use in order to: (1) ascertain development of the project corridor since the early 20th century; and (2) identify indications of possible items of environmental concern.

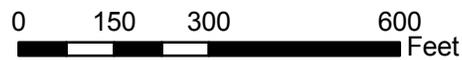
In accordance with ASTM E 1527-05, current USGS 7.5-Minute Topographic Maps were utilized as the primary physical setting source. Additional sources were utilized to ascertain the geologic, hydrogeologic, hydrologic, and topographic conditions of the project site. The sources include the following:



CIH INVESTIGATION SAMPLING LOCATIONS

London Avenue Canal
Orleans Parish, Louisiana

Note: Post-Katrina Color Aerial Photography provided by 3001, Inc. through the USACE. Other data not derived from registered survey and should be considered approximate.



1:3,600



Figure 4

- USGS Groundwater Maps;
- LGS Bedrock Geology Maps; and
- LGS Surficial Geology Maps.

Information on the physical setting sources and historical use sources is included below.

5.3.1 Historical USGS Quadrangle Map Review

Historical USGS quadrangle maps were reviewed to determine if any development occurred on the subject property in the past. For historical use of the project corridor, GEC reviewed the following maps which can be viewed in Appendix D:

- New Orleans East, LA- 1998, 1992, 1989, 1979, 1966, 1951; and
- Spanish Fort, LA- 1999, 1992, 1979, 1972, 1965, 1951.

The historical quadrangle maps reviewed for the project corridor indicate that construction of the London Avenue Canal and the existing Drainage Pumping Station Numbers 3 and 4 occurred prior to 1951. Other structures present in the project corridor vicinity in 1951 included the United States Naval Air Station, located immediately east of the project corridor in the area now occupied by University of New Orleans; and Dillard University at the present location. No parks or other greenspaces or commercial, industrial, or urban structures are evident in the 1951 maps. The adjoining property to the west and east of the project corridor between Lake Pontchartrain and Drainage Pumping Station Number 3 appears to be comprised exclusively of residential properties.

Prior to 1965, the Louisiana State University (New Orleans Branch) was built where United States Naval Air Station existed. The greenspace, Lake Terrace Park, was built at the northernmost end on the west canal bank. No other new developments were noted in the 1965 maps.

Between 1979 and 1989, the Interstate 610 overpass located at the southern terminus of the project corridor was constructed. No other indications of commercial or industrial structures or improvements were identified during the historic quadrangle map review.

5.3.2 Historical Fire Insurance Map Review

From about 1860 to 1990, the Sanborn Fire Insurance Map Company created a series of highly detailed maps of urban areas indicating every man-made structure within the area mapped and included information on the use of structures and, if a structure housed a business, the type of business. Features such as petroleum products or hazardous materials used or stored, individual building uses, building materials utilized, size of structures and storage tanks, and many other details were also indicated. Particularly notable for their past use or storage would be such flammable materials as gasoline, kerosene, heating oils, paints, solvents, or any other chemicals that are today classified as hazardous materials and, in waste form, as hazardous wastes. Other concerns that may be indicated by the Sanborn maps include facilities such as landfill or wastewater treatment plants that may have operated at one time on or near the subject property.

GEC reviewed four Sanborn maps covering the period 1929-1951 which can be viewed in Appendix E. Sanborn coverage existed for only the southern portion of the project corridor (with the northernmost area of coverage extending to approximately the location of present-day Prentiss Avenue). The maps indicate that the London Avenue Canal was constructed prior to 1929 (the first year for which coverage exists of the area encompassed by the canal). Prior to February 1946, Rosehill Cemetery existed where present Dillard University would be built. In June 1949, Pumping Station Number 4 is visible at Prentiss Avenue. The areas along both the eastern and western border of the project corridor are comprised of residential parcels in all years for which coverage exists.

5.3.3 Historical Aerial Photograph Review

The Louisiana State University Cartographic Information Center (CIC), operated by the Department of Geography and Anthropology, maintains a library of historical aerial photographs collected by the U.S. Department of Agriculture (USDA). The CIC's inventory of historical USDA aerial photographs of the project corridor was reviewed to determine changes in land use during the period of record, and in particular, whether any sites or conditions that may constitute a REC are visible within the project corridor. Photographs from 1952, 1960, and 1976 were reviewed and are included in Appendix F.

Analysis of historical aerial photographs indicates that the vicinity of the project area was almost exclusively residential or recreational in 1952. The only nonresidential structure apparent in the 1952 photographs is the United States Naval Air Station. No other indications of commercial or industrial development are visible in these photographs.

The 1960 photographs indicate that the presence of the United States Naval Air Station at the northernmost point of project corridor. The area at Dillard University has grown since 1952. No other indications of commercial or industrial development are visible in these photographs. The Drainage Pumping Station Numbers 3 and 4 are present and more discernible than 1952.

The 1976 photographs indicated continued residential development throughout the project corridor and the development of University of New Orleans. Interstate 610 is fully constructed at the southernmost project corridor. No other indications of commercial or industrial development are visible in these photographs.

6.0 SITE RECONNAISSANCE

In accordance with ASTM E 1527-05 Section 9 "Site Reconnaissance," field investigations were conducted in order to inspect the property and surrounding areas for structures, oil and gas exploration and production, land use, runoff patterns, and indications of environmental impacts. The investigation was conducted in November 2006. Photographs from these surveys are presented in Appendix G.

6.1 METHODOLOGY AND LIMITING CONDITIONS

The project was investigated in order to identify potential REC sites, current and historical, that have, or may have in the past, adversely impacted environmental conditions within the required right-of-way for the project. ASTM E 1527-05 Section 9 "Site Reconnaissance" addresses aspects of site field investigations. GEC, as described in this report, has investigated the property for potential REC sites based on information gathered during historical research, the

environmental database review, interviews with pertinent personnel, and field reconnaissance in accordance with ASTM E 1527-05 standards, as applicable and appropriate.

Observations made during GEC's reconnaissance of the property were limited to (1) sites or portions of sites that were accessible to investigators, and (2) evidence that was visible to the investigators. Limitations include concrete floodwalls and unsafe conditions that impeded inspection of the entire area or specific portions or features of a site. Observations were based on evidence that was visible to inspectors while walking the site. No ground excavation or physical relocation of obstacles was conducted during inspections. Accordingly, no guarantee is made or intended that all site conditions were observed.

6.2 GENERAL SITE SETTING

ASTM E 1527-05 Section 9.4.1 "General Site Setting" addresses current and past use of the property being assessed, adjoining properties, and surrounding area. The elevation of the site is approximately zero feet above MSL, and the project vicinity is urban. Predominantly residential buildings are found in the surrounding blocks of the project corridor to the west and east. The project corridor is bounded on the north by Lake Pontchartrain, on the south by the existing Drainage Pumping Station Number 3, on the east by the foot of the eastern floodwall and levee complex, and on the west by the foot of the western floodwall and levee complex. Commercial, industrial, or municipal sites present within or adjoining the project area include University of New Orleans-Lakefront Campus, Dillard University, and the existing Drainage Pumping Station Numbers 3 and 4. A temporary pumping station is currently under construction by the USACE immediately north of the Milneburg Boulevard Bridge. A staging area for this construction enterprise is located southwest of the Robert E. Lee Boulevard Bridge.

6.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS IN CONNECTION WITH IDENTIFIED USES

One 3,000 gallon AST with secondary containment was observed at the site of the temporary pumping station. Two 500-gallon fuel AST was observed on the west canal bank at the temporary pumping station. One 3,000 gallon fiberglass AST was observed at the staging area for the temporary pumping station. A fuel station on a concrete island was observed at each of these ASTs. These ASTs possessed secondary containment, and no evidence of discharge of petroleum products in the vicinity of the ASTs was observed during the site reconnaissance. Two ASTs were observed immediately southwest of Drainage Pumping Station Number 4. These ASTs appear to be used for water treatment purposes. No evidence of REC in conjunction with these ASTs was observed in the vicinity.

6.4 UNIDENTIFIED SUBSTANCE CONTAINERS

All observed substance containers were clearly labeled at the temporary pumping station and staging area. No evidence of unidentified substance containers was detected during the reconnaissance.

6.5 POLYCHLORINATED BIPHENYLS (PCBs)

No electrical transformers were observed within the project corridor. Seven utility pole-mounted electrical transformers were observed on adjoining property to the east of the project corridor, and 24 pole-mounted transformers were observed on adjoining property to the west of the project corridor. Electrical transformers may contain oil with PCBs as an additive. It is not

known whether the transformers observed on the adjoining properties contain such PCBs, but no evidence of corrosion or rupture was detected on the transformers.

6.6 EXTERIOR OBSERVATIONS

6.6.1 Pits, Ponds, or Lagoons

The project corridor contains an artificial canal for municipal drainage. No evidence of pits, ponds, or lagoons was observed within the project corridor or adjoining properties.

6.6.2 Stained Soil or Pavement

Pavement is not present on the property. No evidence of stained soil was observed on the property during the reconnaissance. Stained soil was observed at the staging area for the temporary pumping station, located immediately southwest of the Robert E. Lee Boulevard bridge. This stained soil appeared to indicate the discharge of small amounts of hydrocarbons associated with the operation of construction equipment and does not appear to constitute a significant REC concern. Additionally, stained pavement was observed along roadways on adjoining properties. This stained pavement appeared to indicate the discharge of small amounts of hydrocarbons associated with the operation of motor vehicles and does not appear to constitute a significant REC concern.

6.6.3 Stressed Vegetation

No areas of stressed vegetation were observed on the property during the reconnaissance. Stressed vegetation was observed on some adjoining properties, particularly on residential properties adjoining the project corridor. This stressed vegetation appeared to be the result of the effects of Hurricane Katrina and is not indicative of the presence of REC in the vicinity of the project corridor.

6.6.4 Solid Waste

No areas filled by fill of unknown origin, suggesting trash or other solid waste disposal, or mounds or depressions suggesting trash or other solid waste disposal, were observed during the site reconnaissance. Small quantities of flotsam and garbage were observed along the canal banks within the project corridor. These items appear to have been discarded by motorists or residents in the area and do not appear to be indicative of significant quantities of solid waste in the vicinity of the project corridor. Fill dirt for leveling ground for demolished residential structures was present throughout adjoining canal property but is not indicative of contamination.

6.6.5 Waste Water

No evidence of wastewater discharging into a drain, ditch, or stream on or adjacent to the property was observed during the reconnaissance.

6.6.6 Wells

No wells were observed on the property or adjoining properties during the reconnaissance.

6.6.7 Septic Systems

No indications of on-site septic systems or cesspools were observed on the property or adjoining properties during the reconnaissance.

6.6.8 Oil and Gas Drilling Activities

No evidence of oil and gas wells or drilling activity was noted on the property or adjoining properties during the site reconnaissance.

6.6.9 Storage Tanks

One 3,000 gallon AST with secondary containment was observed at the site of the temporary pumping station. Two 500-gallon fuel AST was observed on the west canal bank at the temporary pumping station. One 3,000 gallon fiberglass AST was observed at the staging area for the temporary pumping station. A fuel station on a concrete island was observed at each of these ASTs. These ASTs possessed secondary containment, and no evidence of discharge of petroleum products in the vicinity of the ASTs was observed during the site reconnaissance.

Two ASTs were observed immediately southwest of Drainage Pumping Station Number 4. These ASTs originally stored sodium hypochlorate for water treatment but have been empty since the 1970s and are slated for removal in the near future. No evidence of REC in conjunction with these ASTs was observed in the vicinity. No other ASTs or USTs were observed on the property during the reconnaissance. Additionally, no vent pipes, fill pipes or access ways indicating the presence of other USTs were observed during the reconnaissance.

6.6.10 Odors

No strong, pungent, or noxious odors were detected at the property during the reconnaissance.

6.6.11 Pools of Liquid

Isolated pools of standing surface water were observed on some adjoining properties during the reconnaissance. These pools appeared to represent minor accumulations of rain water from recent precipitation events and did not contain any evidence of contamination. No pools or sumps containing liquids likely to be hazardous substances or petroleum products were observed on the property during the reconnaissance.

6.6.12 Drums and Containers

One discarded 55-gallon drum was observed at the staging area, located immediately southwest of the Robert E. Lee Boulevard bridge, but no REC was observed. No other drums of hazardous substances or petroleum products were observed during the site reconnaissance.

6.7 INTERIOR OBSERVATIONS

6.7.1 Heating/Cooling

No heating or cooling system is currently present at the temporary pumping station currently under construction in the project corridor by the USACE.

6.7.2 Stains or Corrosion

Minor oil stains was observed on the premises of the temporary pumping station. Corrosion was observed on exposed steel structures at the station and on exposed floodwall bulkheads. The oil stains appeared to represent minor discharges associated with the operation of construction equipment, and the corrosion appeared to represent the natural effects of exposure to steel.

6.7.3 Drains and Sumps

No evidence of drains or sumps was observed at the temporary pumping station during the site reconnaissance.

7.0 INTERVIEWS

Interviews were conducted with local and state government officials as well as property owners and/or site managers for information regarding conditions and activities within the project corridor and adjoining nonresidential properties. Interview forms are presented in Appendix H.

Mr. Wayne Desselle, Staff Environmental Scientist for the LDEQ Southeast Regional Office Surveillance Division, was interviewed for knowledge of environmental conditions within the project corridor. Mr. Desselle stated that he is not aware of any incidents within the project corridor that may have adversely impacted environmental conditions therein. He further stated that LDEQ performed water quality and tissue analyses for Lake Pontchartrain waters and finfish in the vicinity of the canal shortly after Hurricane Katrina, and the results indicated only minimal increases in toxins in the area as a result of toxic releases associated with Hurricane Katrina.

Mr. Jack Huerkamp, Chief of Operations for the SWBNO, was interviewed for his knowledge of conditions and operations at Drainage Pumping Station Numbers 3 and 4 and the project corridor. Mr. Huerkamp stated that waste oil from the pump gearboxes is stored at Drainage Pumping Stations, where it is removed by a waste oil company. Mr. Huerkamp stated that flotsam and debris are often dumped into the canal, but he is not aware of any hazardous waste dumping and discharges within the project corridor. Mr. Huerkamp stated that the ASTs present on the southwest side of Drainage Pumping Station Number 4 were formerly used to store sodium hypochlorate for water treatment but have been empty for approximately 30 years. Mr. Huerkamp stated that he is not aware of any incidents at the facility that may have adversely impacted environmental conditions within the project corridor.

Mr. Darryl Buras, Associate Vice Chancellor for Facility Services at University of New Orleans, was interviewed for his knowledge of conditions and operations. Mr. Buras stated that two UST are present at Facility services, and that he is not aware of any incidents that have occurred at University of New Orleans that may have adversely impacted environmental conditions within the project corridor. He further stated that the entire area prior to World War II was a lagoon.

Ms. Williams, owner of Sears Lawnmower, was interviewed for her knowledge of conditions and operations in the project corridor. Ms. Williams stated that no petroleum products or chemicals are stored at the property, and that she is not aware of any incidents that have occurred at her business or adjoining property that may have adversely impacted environmental conditions within the project corridor. Ms. Williams further stated that she has owned the property for 20

years, prior to which was a gasoline station. The tanks were removed before the property was purchased.

8.0 FINDINGS

As defined in ASTM E 1527-05 Section 1.1.1, REC means:

the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.

Based on research of additional environmental record sources, the assessment confirms that REC exist at the subject property. The results of laboratory analyses conducted during the February 2006 CIH Investigation of the northern portion of the London Avenue Canal (between the canal mouth and Milneburg Boulevard) indicated that the material sampled from London Avenue Canal contained PAHs, lead, and total petroleum hydrocarbons in concentrations that are potentially hazardous to human health or the environment. Additionally, the laboratory analyses indicated that dioxins, while not present in concentrations exceeding standards set by the State of Louisiana, are present in the sediments at levels that may preclude certain disposal options. Although this study did not examine sediments in the southern portion of the project corridor, the presence of contaminants in concentrations potentially hazardous to human health in the northern portion of the project corridor indicates that such contaminants are potentially present throughout the project corridor.

The USACE identified the area within one-eighth mile of the canal centerline on either bank as a corridor for potential use in the construction of the proposed pumping station. Consequently, particular concern was given to sites identified in the records review and site reconnaissance located within this corridor. Table 6 provides a listing of these sites and potential constituents of concern (COCs) associated with them and an assessment of the potential environmental risk posed by these sites.

Items such as radon, ACM, lead-based paint, and lead in drinking water are beyond the scope of ASTM E 1527-05 standards because these items are not included in CERCLA's definition of hazardous substances (42 U.S.C. § 9601(14)). However, parties undertaking a commercial real estate transaction may wish to assess these substances because in certain quantities and/or in certain conditions, the constituents may pose a threat of contamination.

9.0 OPINION

Of the potential REC sites that have, or may have had in the past, the potential to adversely impact conditions in the project's required right-of-way, it is determined that REC at the subject property require additional investigation. Further investigation of sediment conditions is necessary to determine if the property has been impacted by point- and nonpoint-source pollution from urban runoff. Additionally, further investigation of subsurface conditions at the sites listed in Table 6 above may be necessary if the proposed permanent pumping station is to be constructed in the vicinity of these sites.

Table 6. Sites of Concern Within One-Eighth Mile of the Canal Centerline

Site	Address	COCs	Environmental Risk Factor
Dillard University	2601 Gentilly Blvd	petroleum products, trinitrobenzene, lead, methyl benzenamine, bromoform, dimethyl-benzene, benzyl chloride, benzisothiazol, cadmium, arsenic, dinitrotoluene, mercury, chromium, sodium cyanide, selenious acid, reactive waste, hydrazine, mercury, arsenic oxide, corrosive waste, ignitable waste, cresol, naphthalenamine, phenol	Moderate
University of New Orleans	Elysian Fields at Lakeshore	petroleum products	Low
Kingsmill Auto Service Inc	1732 Benefit St	petroleum products	Low
Gallo Mechanical Contractors	1839 Agriculture St	petroleum products	Low

Source: Banks, GEC, 2006.

10.0 CONCLUSIONS

GEC has performed this HTRW Phase I ESA in conformance with the scope and limitations of ER 1165-2-132 and ASTM E 1527-05, as applicable and appropriate. Any exceptions to, or departures from, this practice are described in the report. Based on the site reconnaissance, records review, interviews, and best engineering judgment, this assessment has revealed evidence of recognized environmental conditions in connection with the project, and it is GEC's opinion that further investigation is warranted at the property.

Sediment samples within the proposed footprint of the proposed permanent pumping station within the project corridor should be analyzed for constituents of concern, including but not limited to, PAHs, lead, and total petroleum hydrocarbons. Additionally, should the footprint of the proposed permanent pumping station be constructed in the vicinity of any of the sites listed in Table 6, subsurface sampling should be performed in the vicinity of the site(s) to determine if any of COCs have adversely impacted environmental conditions within the proposed construction footprint.

11.0 DEVIATIONS

Based on the scope of the project, GEC believes an *appropriate inquiry* level was utilized for the assessment. GEC complied with the standards specified in ASTM E 1527-05, as applicable and appropriate, when *reasonably ascertainable*. As provided for in ASTM E 1527-05 Section 4.5.2 "Not Exhaustive," GEC did not perform an exhaustive assessment of observably clean portions of the property. In accordance with guidance from the project Scope of Work and USACE personnel, a title record search was not conducted, and interviews of knowledgeable personnel on adjoining properties was limited to identified nonresidential properties.

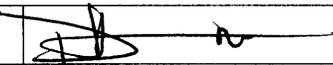
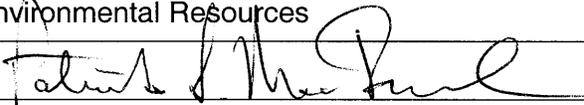
Additionally, and as described in Sections 4.0 and 6.0 of the report, certain observation limitations were encountered as noted.

12.0 ADDITIONAL SERVICES

GEC performed no additional services in conjunction with this Phase I ESA.

13.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

I certify that I have examined the property and, being familiar with the provisions of ASTM E 1527-00 and ASTM E 1528-00, attest that this ESA has been conducted in accordance with good environmental practices.

Signature	
Name	Donald W. Glenn, III, Ph.D.
Title	Environmental Resources
Signature	
Name	Patrick S. MacDanel
Title	Senior Environmental Scientist/Wildlife Biologist
Date	29 November 2006

14.0 QUALIFICATION OF ENVIRONMENTAL PROFESSIONALS

Dr. Glenn and Mr. MacDanel have project management and research experience in environmental, hydrological, and geotechnical projects throughout the United States. They provide planning, coordination, and consulting services on Federal and state regulatory compliance issues for numerous clients. Relevant environmental experience for Dr. Glenn and Mr. MacDanel includes:

Hazardous, Toxic, and Radioactive Waste (HTRW) Investigations – Risk liability studies of various properties in Louisiana. Investigations conducted in accordance with U.S. Army Corps of Engineers Regulation ER 1165-2-132, *Water Resources Policies and Authorities for Hazardous, Toxic, and Radioactive Waste For Civil Works Projects*, which requires identification and evaluation of potential environmental risks in Federal project corridors.

Environmental Site Assessments – Assessments for commercial and industrial clients to evaluate the presence of hazardous substances and petroleum products in accordance with American Society of Testing and Materials Standard E1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.

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Department of the Interior

Tribal Lands Database, last updated December 2005.

7.5-Minute Series Quadrangle, U.S. Geological Survey, New Orleans East, Louisiana, 1951, 1966, 1979, 1989, 1992, 1998.

7.5-Minute Series Quadrangle, U.S. Geological Survey, Spanish Fort, Louisiana, 1951, 1965, 1972, 1979, 1992, 1999.

Orleans Parish Government

Municipal Zoning Maps D-10, D-11, D-12

Sanborn Fire Insurance Company

New Orleans Fire Insurance Maps, 1929, Vol. 8, Maps 1005-1007.

New Orleans Fire Insurance Maps, 1929-1951, Vol. 10, Maps 1005-1007, 1020-1021, 1034-1035, 1037-1038.

New Orleans Fire Insurance Maps, 1937, Vol. 1, Map 74.

New Orleans Fire Insurance Maps, 1937-1951, Vol. 1, Map 74.

Polk City Directories

Polk's New Orleans City Directory, 1940, 1947, 1952-1953, 1956, 1961, 1964, 1966, 1971, 1976, 1981, 1982, 1986, 1991, 1997, 2001, 2006. Polk City Directories, Livonia, MI.