June 7, 2007

Earth Tech, Inc.
536 Washington Avenue
New Orleans, LA 70130

U.S. Army Corps of Engineers, New Orleans District
Hurricane Protection Contracting Division
Attn: Ms. Lee Walker
P.O. Box 60267
New Orleans, LA

Subject: Contract No. DACA45-03-D-0032 (ERS Contract)
Submittal of Phase I Hazardous Toxic or Radioactive Waste Environmental Site Assessment Report, Replacement Pages for Revision 2
Federal Project Number: LPV 108 NOE Lakefront Levee, New Orleans, Louisiana

Dear Ms. Walker:

On May 2, 2007, we received USACE comments via email on the second revision (submitted March 28, 2007) of the Phase I Hazardous Toxic or Radioactive Waste (HTRW) Environmental Site Assessment (ESA) Report for Federal Levee Reach LPV 108 NOE Lakefront Levee. These comments were minor. You and I decided that, rather than Earth Tech submitting a complete third revision of the document, it would be simpler to submit appropriate replacement pages. Therefore, enclosed are two sets of hard copy replacement pages as well as one complete electronic report.

The following hard copy pages should be replaced: Pages 2, 3, 8, 15, 16, 17, and 18.

Earth Tech, Inc. appreciates the opportunity to provide services to the U.S. Army Corps of Engineers. If you have any questions or require further information, please call me at (850) 862-5191.

Sincerely,

A. Macbeth

Alec Macbeth
Project Manager

Enclosures: 1) Phase I HTRW ESA Report, Revision 2 Replacement Pages, LPV 108 – Hard Copy
2) Phase I HTRW ESA Report, Revision 2 with Replacement Pages, LPV 108 – Electronic Copy

March 28, 2007

Earth Tech, Inc.
536 Washington Avenue
New Orleans, LA 70130

U.S. Army Corps of Engineers, New Orleans District
Hurricane Protection Contracting Division
Attn: Ms. Lee Walker
P.O. Box 60267
New Orleans, LA

Subject: Contract No. DACA45-03-D-0032 (ERS Contract)
Submittal of Phase I Hazardous Toxic or Radioactive Waste Environmental Site Assessment Report, Revision 2
Federal Project Number: LPV 108 NOE Lakefront Levee, New Orleans, Louisiana

Dear Ms. Walker:

Enclosed is the second revision of the Phase I Hazardous Toxic or Radioactive Waste (HTRW) Environmental Site Assessment (ESA) Report for Federal Levee Reach LPV 108 NOE Lakefront Levee. We have included two hard copy reports and one electronic report.

This revision takes into account the comments provided by the USACE on the draft version of the report, provided to Earth Tech on February 26, 2007. These comments and our strategy for incorporating them into the updated document were discussed among Steve Johnson, Bill Bersson, and me on February 28, 2007 in New Orleans.

Please note that the Phase I HTRW ESA Report satisfies the SOW provided by USACE as follows.

USACE SOW TASK	**PERTINENT SECTION IN REPORT**
Task 1 Environmental Database Search	Section 5.0
Task 2 Site Inspection/Interviews	Sections 6.0 and 7.0
Task 3 Draft Report Preparation	Sections 6.0, 7.0, 8.0, 9.0, and 10.0
Task 4 Review Draft Phase I ESA Report	Not Applicable
Task 5 Final Report/Distribution and Formal Presentation	Not Applicable

Earth Tech, Inc. appreciates the opportunity to provide services to the U.S. Army Corps of Engineers. If you have any questions or require further information, please call me at (850) 862-5191.

Sincerely,

Alec Macbeth
Project Manager

Enclosure: Phase I HTRW ESA Report, Revision 2, LPV 108 NOE Lakefront Levee

Phase I Hazardous Toxic or Radioactive Waste Environmental Site Assessment

Federal Levee Reach LPV 108 NOE Lakefront Levee
New Orleans, Louisiana

Prepared for:
U.S. Army Corps of Engineers, New Orleans District
Hurricane Protection Office
7400 Leake Avenue
New Orleans, Louisiana 70118

Prepared by:
Earth Tech, Inc.
536 Washington Avenue
New Orleans, Louisiana 70130
ERS Contract Number DACA45-03-D-0032, Project No. 97536
Telephone: 504-962-5363

March 28, 2007

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1.0 SUMMARY

This Phase I Hazardous Toxic or Radioactive Waste (HTRW) Environmental Site Assessment (ESA) report for the Federal Levee Reach LPV 108 NOE Lakefront Levee in New Orleans, Louisiana (the "Property") was prepared by Earth Tech, Inc. (the Contractor) for the U.S. Army Corps of Engineers (USACE)-New Orleans District Hurricane Protection Office (HPO). This first section is intended as a general overview of the report, including the findings and opinions.

The term Hazardous Toxic or Radioactive Waste (HTRW) has the meaning in USACE Engineering Report ER 1165-2.132, "Hazardous Toxic or Radioactive Waste (HTRW) Guidance for Civil Works Projects" (USACE, 1992).

Federal Levee Reach LPV 108 represents the formal Property, as defined in ASTM Standard E1527-05, for this Phase I HTRW ESA (ASTM, 2005). However, the USACE requested that the ESA include the entire area that falls within a 1000-foot footprint extending from either side of the centerline of the levee. Therefore, the Contractor evaluated any residences, businesses, and open area within this footprint extending from the levee crown. The Contractor drove the entire extent of Federal Levee Reach LPV 108 on the levee crown and observed from the levee the surrounding terrain. Any parcels located contiguous to the 1,000-foot footprint are considered adjoining parcels. The various environmental database minimum search distances, as required in the USACE Scope of Services (Appendix A) and ASTM Standard Practice E1527-05, extended from the edge of the 1,000-foot footprint. The search distances are discussed further in Section 5.1. Four figures (Figures B-1 through B-4) that depict aspects of this report are included in Appendix B.

The professional practices that the Contractor used to determine if any recognized environmental conditions (RECs) existed in connection with the Federal Levee Reach LPV 108 and its 1,000-foot footprint included visual inspections, interviews with selected individuals who might have knowledge of RECs, a review of readily available historical information such as aerial photographs and fire insurance maps and topographic maps, a drive-by inspection of accessible adjacent parcels, a review of selected environmental records that were made available to the Contractor, and a review of a computer search of selected Federal and State environmental databases. These data were reviewed for indications of the presence of hazardous substances or petroleum products on the levee reach or nearby parcels from which those substances might migrate to the levee reach in other than vapor form.

In light of the objective of the environmental records review (to obtain and review records that would help identify RECs in connection with Federal Levee Reach LPV 108), in the professional opinion of the Contractor, no review of additional environmental record sources is required.

Federal Levee Reach LPV 108 NOE Lakefront Levee extends along the southern shoreline of Lake Pontchartrain northeast of the intersection of Hayne Boulevard and Paris Road (a location known as Little Woods) in Orleans Parish, New Orleans, Louisiana. The Bayou Sauvage Wildlife Refuge bounds the southern side of the levee reach.

No obvious signs of major contamination were discerned during the inspection of Federal Levee Reach LPV 108. No known or suspected RECs were observed on the Federal Levee Reach LPV 108 itself. Similarly, for the land outside of LPV 108 but within the 1,000-foot footprint, no definitive evidence of current recognized environmental conditions (RECs) was identified.

With regard to suspected RECs, the Contractor identified two abandoned port-a-johns located in the northern part of the study area. These are considered to be suspected RECs because of the potential for human waste to have impacted environmental media.

As noted in Section 6.3, the Contractor did not identify information on the current quality of Lake Pontchartrain sediments adjacent to LPV 108. Although no obvious contamination was observed during the walkover, the sediment could have been impacted by the storm activities and its aftermath.

The findings below are based upon the information obtained during this ESA, and discussed in the previous sections of this report. In accordance with ER 1165-2-132 Paragraph 7.c.(2) (USACE, 1992), the potential contaminants of concern (COCs) associated with each site are described or listed in parentheses.

Known or Suspect Recognized Environmental Conditions

No known RECs were identified.

Suspected RECs are identified at the following facilities outside of the Federal Levee Reach LPV 108 but within the 1,000-foot footprint:

- Two abandoned port-a-johns that may represent a potential of human waste impacting nearby soils, sediment, surface water, and/or groundwater.

The locations of these suspected RECs are shown on Figure B-4.

Historical Known or Suspected Recognized Environmental Conditions

No historical known or historical suspected RECs were identified during this Phase I HTRW ESA.

Known or Suspected De Minimis Environmental Conditions

No known or suspected de minimis conditions were identified during this Phase I HTRW ESA.

No other environmental concerns were identified.

Based upon all of the information obtained, the environmental professionals who conducted this ESA believe that the known or suspected RECs identified in Section 8.0 have not resulted in an impact to the soil or groundwater quality within the Federal Levee Reach LPV 108 itself. Therefore, the Contractor sees no need to collect soil or groundwater quality samples with regard the levee reconstruction efforts within the current levee footprint. The Contractor would suggest, however, vigilance during any invasive or ground breaking activities for physical signs of contamination. Also, if any of the soil will be moved off site, the USACE is encouraged to follow appropriate characterization protocols.

If the USACE extends the footprint of the levee onto the locations of the suspected RECs that are located within the 1,000-foot footprint area, the Contractor recommends that the USACE consider collecting soil and/or groundwater quality samples at those locations. The locations where sampling should be considered are shown on Figure B-4.

At the request of USACE-HPO, the Contractor has performed a Phase I HTRW ESA in accordance with the Scope of Services attached in Appendix A and in general conformance with the scope and limitations of ASTM Standard Practice E1527-05 of the Federal Levee Reach LPV 108. Any exceptions to, or deletions from, the ASTM Standard Practice are described in Chapters 2.0 and 11.0 of this report. This assessment has revealed no evidence of "recognized environmental conditions" (as that term is defined in ASTM Standard Practice E1527-05) in connection with the levee reach itself, although suspected RECs have been identified within the 1,000-foot footprint.

2.0 INTRODUCTION

The USACE is rehabilitating and improving the flood protection system of southeastern Louisiana. As part of this work, Federal Levee Reach LPV 108 NOE Lakefront Levee would be enlarged with compacted fill to authorized grade. The footprint of this enlarged levee reportedly would not exceed the limits of the existing right-of-way at this time; however, if this levee is eventually brought to the 100-year flood elevation, the footprint would likely increase outside of the existing right-of-way, by not more than 1,000 feet on either side of the levee crown. The location and current extent of levee reach LPV 108 is shown in Figures B-1 through B-3. (All figures referenced in this report are included in Appendix B.)

This Phase I HTRW ESA report for the Federal Levee Reach LPV 108 NOE Lakefront Levee in New Orleans, Louisiana (the "Property") was prepared by the Contractor for USACE-New Orleans District Hurricane Protection Office (HPO), who is the "User" of this report, as that term is defined in ASTM Standard Practice E1527-05. In this report, the term User includes any legal counsel or other representative of the User.

As noted above, the Federal Levee Reach LPV 108 represents the formal Property, as defined in ASTM E1527-05 (Photographs 1 and 2 in Appendix C). However, the USACE requested that the ESA include the entire area that falls within a 1000-foot footprint extending from either side of the centerline of the levee. The extent of this 1,000-foot footprint is shown on Figures B-2 and B-3. Therefore, the Contractor evaluated any residences, businesses, and open area within this footprint extending from the levee crown. The parcels located contiguous to the 1,000-foot footprint are considered adjoining parcels. The various environmental database search minimum search distances, as required in the Scope of Services (Appendix A) and ASTM Standard Practice E1527-05, extended from the edge of the 1,000-foot footprint. The search distances are discussed further in Section 5.1.

The format of this report generally follows the recommendations in ASTM Standard Practice E1527-05. Appendices A through G include back up information and documentation for this report. The following definitions from that Standard are important for understanding this report. Terms in italics are defined in that Standard Practice.

1.1.1 *de minimis conditions* - conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

3.2.39 *historical recognized environmental condition* - environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently.

3.2.52 *material threat* - a physically observable or obvious threat which is reasonably likely to lead to a release that, in the opinion of the *environmental professional*, is threatening and might result in impact to public health or the environment. An example might include an above ground storage tank system that contains a *hazardous substance* and which shows evidence of damage. The damage would represent a *material threat* if it is deemed serious enough that it may cause or contribute to tank integrity failure with a release of contents to the environment.

3.2.74 *recognized environmental conditions* - 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*. The term includes *hazardous substances* or *petroleum products* even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not represent a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not *recognized environmental conditions*.

The term "recognized environmental condition" is not used in this Phase I HTRW ESA report in complete accordance with the ASTM standard, which notes that a recognized environmental condition is associated directly with the Property itself. The Property in this case is the Federal Levee Reach LPV 108 and does not include the entire area encompassed by the 1,000-foot footprint. After discussions with the USACE and senior technical personnel employed with the Contractor, the term "recognized environmental condition" is applied, where warranted, to all sites within the 1,000-foot footprint even though they may not affect the Federal Levee Reach LPV 108 itself.

The category "suspected recognized environmental condition" is also used in this report. Suspected recognized environmental conditions are those sites or parcels where there is a realistic (but not *likely*) potential that the site has been (or will be) impacted. Suspected RECs show no definitive evidence (visual, documentation) that indicate an existing release, a past release, or a material threat of a release of hazardous substances or petroleum products into structures, the ground, groundwater, or surface water. Rather, commonly, more information (for example sampling and analytical data) is needed to determine whether the potential condition is a REC.

This report is intended for use only as a complete document. It is based upon the Scope of Services (Appendix A) and is subject to the Limitations and Exceptions and other restrictions, defined herein. It has been prepared for the exclusive use of the USACE. No other person or organization is entitled to rely upon any part of it without the prior written consent of the Contractor. The USACE may release or authorize the release of all or part(s) of this report to third parties. However, if any third party uses or relies on this report without the express written permission of the Contractor, such third party agrees that it shall have no legal recourse against the Contractor or its parent or subsidiaries, and shall indemnify and defend them from and against all claims arising out of or in conjunction with such use or reliance.

2.1 Purpose

The Phase I HTRW ESA was performed to investigate the potential presence of HTRW in the vicinity of the proposed construction of Federal Levee Reach LPV 108 NOE Lakefront Levee, to ensure that suitable and safe fill materials would be utilized for levee construction. The extents of LPV 108 and the 1000-foot footprint described above are shown on Figures B-2 and B-3. This Phase I HTRW ESA was conducted in general compliance with the following documents to the extent feasible given the nature of the project:

- ASTM Standard E1527-05, “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” (ASTM, 2005);
- USACE Engineering Report ER 1165-2-132, "Hazardous, Toxic and Radioactive Waste Guidance for Civil Works Projects", (USACE, 1992); and
- USACE Engineering Report ER 405-1-12, *The Real Estate Handbook* (USACE, 2000).

This report suggests general future investigative activities, but does not include costs and scopes of work for the investigative work, as noted in the USACE ER 1165-2-132 (USACE, 1992).

The focus of the ESA was to review existing and past historical information regarding the Federal Levee Reach LPV 108, the 1000-foot footprint, and the adjoining parcels. The ESA documents the current and historical uses of the assessment areas to determine the potential presence of any HTRW.

2.2 Detailed Scope of Services

The detailed Scope of Services provided by the USACE for this ESA, as well as the Contractor's proposal, are in Appendix A. The standard professional practices that the Contractor conducted to determine if any RECs existed in connection with the Federal Levee Reach LPV 108 included, among other things, a visual inspection of the area, interviews with selected individuals who might have knowledge of its RECs, a review of readily available historical information such as aerial photographs and fire insurance maps that depict it, a drive-by inspection of accessible adjacent parcels, a review of selected environmental records that were made available to the Contractor, and a review of a computer search of selected Federal and State environmental databases for indications of the presence of hazardous substances or petroleum products on Federal Levee Reach LPV 108 or on nearby parcels from which those substances might migrate to the levee in other than vapor form.

In general, the Scope of Services has been completed in accordance with the scope and limitations of ASTM Standard Practice E1527-05, with the provision that any deviations from the ASTM Standard are discussed in Section 11.0.

2.3 Significant Assumptions

In preparing this report, the Contractor has relied upon certain verbal information and representations provided by government employees and others, information and documents provided by the owners and/or operators of nearby businesses, and a computer search of government databases by a firm whose business is to provide that service. Except as discussed, the Contractor relied upon that information and has not attempted to independently verify its accuracy or completeness. Except as noted in the following text, the Contractor has not recognized any inconsistencies or omissions that might call into question the validity of any of the information obtained. To the extent that the conclusions in this report are based in whole or in part on such information, they are contingent on its validity. The Contractor assumes no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to the Contractor.

2.4 Limitation and Exceptions

This report is limited to representations of identified RECs on Federal Levee Reach LPV 108, and the 1,000-foot footprint, and conditions of concern on adjoining parcels as they existed at the time of this ESA, and of the conclusions drawn based upon the information obtained and assumptions made during the assessment process. This ESA was restricted to the Scope of Services as defined herein. No representations or warranties are made concerning the nature or quality of the air, soil, water, building materials, or any other substance on or adjacent to the Property (including the potential for any substance to migrate into a structure), other than the visual observations and the representations by others as stated in this report. By definition, a Phase I HTRW ESA is not intended to be a definitive investigation of existing or potential adverse environmental impacts, and thus it is possible that such an impact exists on Federal

Levee Reach LPV 108 and the 1,000-foot footprint, but was not identified during the ESA. Conclusions in this report represent professional judgments based upon the information evaluated during the course of the assessment, not scientific certainties.

Within the limitations of the agreed-upon Scope of Services, this ESA has been undertaken and performed in a professional manner, in accordance with generally accepted practices, using the degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, express or implied, is made.

2.5 Special Terms and Conditions

There were no special terms and conditions between the User and the Contractor, except as specified in the Scope of Services.

2.6 User Reliance

This report is intended for use only as the complete document. It is based upon the Scope of Services, and is subject to the Limitations and Exceptions and other restrictions, defined herein. It has been prepared for the exclusive use of USACE. No other person or organization is entitled to rely upon any part of it without the prior written consent of the Contractor. The USACE may release or authorize the release of all or part(s) of this report to third parties. However, if any third party uses or relies on this report without the express written permission of the Contractor, such third party agrees that it shall have no legal recourse against the Contractor or its parent or subsidiaries, and shall indemnify and defend them from and against all claims arising out of or in conjunction with such use or reliance.

3.0 PROPERTY DESCRIPTION

3.1 Location and Legal Description

The Property is Federal Levee Reach LPV 108 NOE Lakefront Levee located along the southern shoreline of Lake Pontchartrain in New Orleans, Louisiana. Its southwestern terminus is located at the intersection of Hayne Boulevard and Paris Road at a location known as Little Woods. The southwestern terminus of Federal Levee Reach 108 is at latitude 30.07581 degrees north and longitude 89.9439 degrees west. The levee reach extends northeastward from this location for approximately 6.4 miles to its northeastern terminus at a location known as South Point. Its northeastern terminus is located at latitude 30.14747 degrees north and longitude 89.8806 degrees north. From this northeastern terminus, the levee turns sharply to the south-southeast and is known as LPV 109.

The levee reach can be accessed from Interstate 10 by taking exit number 246 and traveling north on Paris Road for approximately 1 mile to its intersection with Hayne Boulevard (a sharp turn to the southwest [left]). The southwestern terminus of LPV 108 can be accessed by a dirt road leading up to the top of the earthen levee. The location of LPV 108 is depicted on Figures B-2 and B-3 in Appendix B. Additional description of the physical characteristics of levee reach LPV 108 is presented in Section 3.4.

3.2 Property and Vicinity General Characteristics

Federal Levee Reach LPV 108 extends approximately 6.4 miles. The western end of the levee reach is located just northeast of the intersection of Hayne Boulevard and Paris Road. LPV 108 runs northeast from that point to South Point, which is the starting point of Federal Levee Reach LPV 109. The levee is earthen and contains a dirt track that can accommodate one-way vehicular traffic. The elevation is approximately 17 feet above mean sea level (MSL). The area encompassing LPV 108 and the 1,000-foot footprint is approximately 1,540 acres. Lake Pontchartrain is northerly adjacent to the levee reach. The land to the south of LPV 108 is mostly salt marshland of the Bayou Sauvage National Wildlife Refuge. There are no commercial or industrial parcels within the 1,000-foot footprint of the levee. There are some residential parcels south and west of the southwestern end of LPV 108 within the 1,000-foot footprint of the levee.

According to the National Wetlands Inventory (NWI), subtidal estuarine wetlands exist within the boundaries of Lake Pontchartrain and the connecting canals. Intertidal estuarine wetlands are generally present along the shoreline of Lake Pontchartrain. As noted above, the land to the south of LPV 108 is composed primarily of salt marshes.

3.3 Current Use of the Property

According to information obtained from the Orleans Levee District (Gillen, 2006; USACE, 1982), parts of Levee Reach LPV 108 were constructed during the middle 1900s. The levee reach was improved around 1982. Since that time, the levee reach has been used for flood control to protect the neighborhoods and businesses from the waters of Lake Pontchartrain.

3.4 Detailed Property Description

Federal Levee Reach LPV 108 is an earthen structure approximately 17 feet above MSL. The top of the levee is flat and is capable of supporting one-way vehicular traffic. The Norfolk Southern Railroad

parallels the northern side of the levee between it and Lake Pontchartrain. Access to the levee reach is restricted at its southwestern terminus via locked gates managed by the Bayou Sauvage Wildlife Refuge.

3.5 Current Uses of Adjacent and Surrounding Parcels

The Property is bounded on the northwest by Lake Pontchartrain, on the southwest and east by continuation of the levee system (Federal Levee Reaches LPV 106 and 109, respectively), on the southeast by residential properties and on the south by the Bayou Sauvage National Wildlife Refuge (Figure B-2). No parcel within or adjacent to the 1,000-foot footprint was judged to have the potential for a significant adverse impact on the environmental condition of the Property.

4.0 USER-PROVIDED INFORMATION

4.1 Title Records

In accordance with the SOW (Appendix A), a title record search was not included in this Phase I HTRW ESA.

4.2 Environmental Liens or Activity Use Limitations

Representatives of the User reported no environmental liens, activity use limitations, or comparable encumbrances upon the Federal Levee Reach LPV 108 or parcels within the 1,000-foot footprint. The environmental database search did include a search for any environmental liens imposed by the LDEQ (Appendix D-1).

4.3 Specialized Knowledge

The User provided the Contractor with no specialized knowledge, such as previous assessments, soil or groundwater quality evaluations, or other investigations pertaining to the environmental conditions of the Federal Levee Reach 108 or the 1,000-foot footprint. The Contractor pursued this type of information through field visits, interviews, and evaluating other databases (e.g., those provided by the LDEQ).

4.4 Valuation Reduction for Environmental Issues

The User provided the Contractor no information regarding a reduction in the value of the Federal Levee Reach LPV 108 due to environmental issues.

4.5 Owner, Property Manager, and Occupant Information

According to the Orleans Levee District, Federal Levee Reach 108 was constructed by the USACE, and it is currently maintained by the Orleans Levee District (Gillen, 2006; Appendix F).

4.6 Reason for Performing the Phase I HTRW ESA

The Phase I HTRW ESA that resulted in this report was performed in contemplation of rehabilitating and improving the flood protection system of southeast Louisiana (Appendix A). Federal Levee Reach LPV 108 would reportedly be enlarged with compacted fill to authorized grade. The footprint of this enlarged levee would not exceed the limits of the existing right-of-way at this time; however, if this levee is eventually brought to the 100-year flood elevation, the footprint would likely increase outside of the existing right-of-way by not more than 1000 feet on either side of the levee crown.

4.7 Other User Information

The User provided no other information material to this Phase I HTRW ESA.

5.0 RECORDS REVIEW

5.1 Standard Environmental Record Sources

Government databases that identify sites of environmental concern were reviewed via a computerized search conducted by Environmental Data Resources, Inc. (EDR), a commercial database service, to determine if Federal Levee Reach LPV 108 was listed or if any listed sites were nearby. EDR provides a valuable service for firms conducting Phase I HTRW ESAs, because they are specialized in the environmental database search process. They provide a comprehensive search of numerous databases and a useable report in an efficient manner. EDR has represented that its procedures conform to, or exceed, the requirements of ASTM Standard Practice E1527-05. A list of all of the government records searched and the dates of the data obtained are shown in Section 5 (last section) of the EDR Report (Appendix D-1).

The report includes information about sites within one mile of the 1,000-foot footprint. Some sites in the databases do not have complete address information. In other cases, the algorithms used by the government to map the addresses do not recognize certain street addresses. Both of these types of sites are referred to as Orphan sites. They are in the vicinity of the Property, but not precisely locatable from the address information in the databases. The Contractor evaluated the information available for each Orphan site, and determined that none have the possibility of being within the minimum search distance (based on the associated database) of the 1,000-foot footprint.

Federal databases searched included, but were not limited to: NPL (National Priority List), PROPOSED NPL, DELISTED NPL, NPL Recovery (Federal Superfund Liens), CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System), CERC-NFRAP (CERCLIS No Further Remedial Action Planned), CORRACTS (Corrective Action Reports under RCRA), RCRA (Resource Conservation and Recovery Act Information), ERNS (Emergency Response Notification System), HMIRS (Hazardous Materials Information Reporting System), US BROWNFIELDS, CONSENT (Superfund/CERCLA Consent Decrees), ROD (Records of Decision for NPL sites), FINDS (Facility Index System), PADS (PCB Activity Database System), RAATS (RCRA Administrative Tracking System), TRIS (Toxic Chemical Release Inventory System), and TSCA (Toxic Substances Control Act).

State databases searched included, but were not limited to: LUST (Leaking Underground Storage Tanks), UST (Registered Underground Storage Tanks), SHWS (State Hazardous Waste Sites), SWF/LF (Solid Waste Disposal Facilities), SPILLS (Spills List), AST (Registered Aboveground Storage Tanks), Drycleaners, AULs (Activity and Use Limitations), and VRPS (Voluntary Remediation Program Sites).

Additional databases searched included Tribal Records for Indian Reservations, Indian USTs, and Indian LUSTs, as well as Manufactured Gas Plants.

As described above, the EDR Report presents all of the identified sites that fall within a 1-mile radius of the 1,000-foot footprint (Appendix D-1). The Contractor evaluated this information using the approximate minimum search distances for the researched databases in accordance with ASTM Standard Practice E1527-05 and USACE's Scope of Services (Appendix A). The databases searched and associated search distances included the following (all noted search radii are based on the edge of the 1,000-foot footprint):

- The National Priorities List (NPL; 1-mile radius);
- Delisted NPL (0.5-mile radius);

- The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS; 0.5-mile radius);
- The Comprehensive Environmental Response, Compensation, and Liability Information System No Further Remedial Action Planned Database (CERCLIS NFRAP; 0.5-mile radius);
- The Solid Waste Landfills/Facilities Database (0.5-mile radius);
- The Emergency Response Notification System (ERNS) and Hazardous Materials Incident Reporting System (0.25-mile radius);
- The Resource Conservation and Recovery Information System (RCRAInfo; 1-mile radius for treatment, storage or disposal (TSD) facilities and 0.25-mile radius for generators);
- Any state listing of registered and leaking underground storage tanks (0.25 and 0.5- mile radii, respectively);
- The Louisiana Inactive and Abandoned Sites List (1-mile radius); and,
- Louisiana Department of Natural Resources Oil and Gas Wells Database (1-mile radius).

No sites on the Federal Levee Reach LPV 108 itself, within the 1,000-foot footprint, or within the appropriate minimum search radii were identified for any of the databases searched.

Other Lists of Sites of Concern

No additional concern was identified by a review of the database search report. The Property is not on any of the other lists searched. No other located site is identified as being near the Property and in a location that is, or might be, upgradient from it, and represent a realistic potential concern with respect to its environmental condition. Also, no other Orphan site was determined to actually be located within an applicable minimum search distance of the Property and potentially upgradient of it.

5.2 Additional Environmental Record Sources

In light of the objective of the records review (to obtain and review records that would help identify RECs in connection with the Property), in the professional opinion of Earth Tech no review of additional environmental record sources was required.

5.3 Physical Setting

A Groundwater Technology, Inc. (GTI) report (1989) characterized the shallow soils at a nearby facility (gas station located at corner of Downman Road and Hayne Boulevard, southwest of Federal Levee Reach LPV 108). The soils at that particular location consist of dark gray silty sands and silty clays to a depth of 16.5 feet below land surface (bls). These soils may represent fill material. According to geologic literature, the area of the ESA is underlain by soils deposited during a Mississippi deltaic sequence (Saucier, 1994). This sequence includes an interlayering of material of varying grain size (for example, clays to sands) and composition (for example, quartz, clay minerals, and organic matter) that affects the soil's hydraulic conductivity.

The shallow-most aquifer underlying the study area is the Alluvial Aquifer. This aquifer ranges from 20 to 500 feet thick and exhibits hydraulic conductivities ranging from 10 to 530 feet per day. The groundwater in the aquifer is hard to very hard, and has chloride concentrations from 7 to 300 milligrams per liter (mg/L) and dissolved solids of 300 to 1,100 mg/L. The groundwater is unsuitable for potable uses (Boniol and others, 1989).

Depth to groundwater at the gas station was measured from approximately 2 to 3 feet bls (GTI, 1989). This report also documents ground water flow in the local area to be northward. However, geologic literature and the topography indicate that, on a broader scale, the groundwater flow is to the south, away from Lake Pontchartrain. Therefore, for the purpose of interpreting the results of this ESA, Earth Tech considers the groundwater flow direction to be southerly at a very low hydraulic gradient underneath the study area. The shallow groundwater is interpreted to be minimally influenced by tidal effects (Van Biersel, 2007).

5.4 Historical Use Information

5.4.1 Aerial Photographs

Aerial photographs were reviewed for the years 1952, 1972, and 1985. These aerial photographs are in Appendix D-2. Recent aerial photographs from 2006 were also reviewed. These photographs represent the base maps for Figures B-2 and B-4. The composite historical timeline in Section 5.5 contains a summary of the observations made from those aerial photographs and other historical sources.

5.4.2 Historical Fire Insurance Maps

After reviewing its files, EDR has certified that no historical fire insurance maps exist for Federal Levee Reach LPV 108 and its 1,000-foot footprint.

5.4.3 Historical Topographic Maps

Historical topographic maps were obtained for the Federal Levee Reach LPV 108 for 1951, 1967, 1972, 1979, 1994, and 1998. These maps are shown in Appendix D-3. The composite historical timeline in Section 5.5 contains a summary of the observations made from those historical topographic maps and other historical sources.

5.4.4 Historical City Directories

The Contractor obtained historical Polk City Directories at the New Orleans Public Library. The years 1956, 1964, 1979, 1985, 1991, and 2002 were reviewed. No businesses, not otherwise identified in this report, were identified within the 1,000-foot footprint of Federal Levee Reach LPV 108 that warranted concern. A complete set of the copied material obtained from the library is on file at the Contractor's Fort Walton Beach office and can be obtained upon request.

5.4.5 Additional Historical Sources

The Contractor pursued no additional historical sources of information for this Phase I HTRW ESA.

5.5 Composite Historical Timeline

The following discussion pertains to the levee reach, the land within the 1,000-foot footprint and the land adjacent to the footprint.

Year	Source	Discussion
1951	Historical Topographic Map	Levee Reach LPV 108 has not been constructed. Norfolk Southern Railroad is present.
1952	Aerial Photograph (1952-A)	A few residences and building are visible south of Hayne Boulevard in the area west of LPV 108. Majority of the area is undeveloped land. No definitive indications of commercial agricultural activities.
1965	(various)	Hurricane Betsy.
1967	Historical Topographic Map	Levee Reach LPV 108 is not clearly shown on map.
1972	Historical Topographic Map	Levee Reach LPV 108 is not clearly shown on map.
1972	Aerial Photograph (1972-B)	Streets and residences are visible south of Hayne Boulevard in the area west of LPV 108.
1979	Historical Topographic Map	Centerline of Levee Reach LPV 108 appears to be shown on map.
1985	Aerial Photograph (1985 C and D)	Residences and businesses basically filled out and established south of Hayne Boulevard in the area west of LPV 108.
1994	Historical Topographic Map	Levee Reach LPV 108 clearly shown on map.
2005	(various)	Hurricane Katrina.

Historical Summary:

According to the historical topographic maps and information obtained from the Orleans Levee District (Gillen, 2006; USACE, 1982), levee system has been in place along the southern shoreline of Lake Pontchartrain since 1960s to 1970s. The levee appears to have been improved in the early 1980s (USACE, 1982)

On the basis of the historical aerial photographs, in the early 1950s most of the land on the south side of Hayne Boulevard near LPV 108 was undeveloped. No evidence of large scale agriculture use has been identified near LPV 108 during this ESA.

During the early 1970s the residential neighborhoods were beginning to be established, and by 1985 the current infrastructure was generally in place.

6.0 RECONNAISSANCE

6.1 Methodology and Limiting Conditions

Mr. Jerry Murphy and Mr. Nathan Craig conducted a visual reconnaissance of accessible parts of the Federal Levee Reach LPV 108, the 1,000-foot footprint, and the adjacent parcels on November 29, 2006 through December 4, 2006. One hundred percent of the Levee Reach was walked or slowly driven in a vehicle. Similarly, 100% of the residential neighborhoods were driven, although no interviews or site visits were performed. All of the observed transformers were mapped and documented. Table B-1 in Appendix B identifies each of the transformers identified. None of these transformers were observed to be leaking or possibly leaking.

No commercial or industrial facilities were observed. Pertinent environmentally related observations and findings are described in the following sections.

6.2 General Property Setting

The height of the existing levees along LPV 108 is an average of 17.0 feet above MSL. Lake Pontchartrain represents sea level. The terrain of the 1,000-foot footprint south of the levee is fairly constant with a very gentle slope southward (Figure B-3).

The nearest downgradient bodies of surface water are Little River, Black Bayou Lagoon, Cane Bayou and unnamed ponds in the Bayou Sauvage National Wildlife Refuge. These water bodies are located within the 1,000-foot footprint. On the basis of this surface topography, Lake Pontchartrain is considered upgradient of LPV 108; groundwater is interpreted to move southerly, albeit slowly under a low hydraulic gradient.

Shallow ground water is expected to be encountered within 5 feet below grade, based upon surface topography and GTI (1989).

The inferred direction of shallow groundwater flow in the area, based upon the Property inspection and an examination of the topographic map, is to the south, although buildings and other conditions on the Property and nearby parcels, and sewer lines and/or other buried utility lines, may be significantly affecting the local flow pattern. Based upon the inferences regarding hydraulic conductivity and the local hydraulic gradient, shallow groundwater would be expected to move at a slow rate.

6.3 Exterior Observations

The following discussion includes descriptions of facilities associated with this ESA that represented some potential of environmental risk. Businesses that represented little or no environmental risk (on basis of site reconnaissance and the historical environmental records) are not mentioned in this section.

During the site reconnaissance, the effects of Hurricane Katrina were commonly observed. The physical effects included trash, construction debris, and damaged homes. No obvious signs of environmental contamination directly attributable to the hurricane were observed.

No obvious signs of major contamination were discerned during the inspection of Federal Levee Reach LPV 108. Two "port-a-johns" were located near the northern end of LPV 108 (Figure B-4). The southern shoreline of Lake Pontchartrain paralleling Federal Levee Reach LPV 108 was also inspected. No signs of significant contamination, including impacted sediment, were observed. Similarly Earth Tech did not identify any literature or other sources of information indicating that the Lake Pontchartrain sediments near the southern shoreline along Federal Levee Reach LPV 108 are currently impacted.

A railroad parallels the northern side of Federal Levee Reach LPV 108. This railroad is owned by Norfolk Southern, who has indicated no environmental concerns along this reach.

The remainder of Section 6.3 describes only the facilities within the 1,000-foot footprint that, on the basis of current or past operations, have a higher potential of an environmental condition than other facilities not described in this section.

No businesses or structures were identified on the north side of Federal Levee Reach LPV 108 that might represent a potential for environmental contamination. The 1985 historical aerial maps (Appendix D-2) show many wooden private piers extending out on the southern shoreline of Lake Pontchartrain. Some of these piers had boathouses. None of these structures survived Hurricane Katrina intact, and Earth Tech observed only relict pilings (Photograph 1 in Appendix C).

Earth Tech drove and observed all of the residential properties within the 1,000-foot footprint of Federal Levee Reach LPV 108 (Figure B-3). No obvious signs of environmental contamination were observed. However, some concentrations of construction, vehicle, and miscellaneous debris were observed in the southwestern part of the reach.

Earth Tech also visually described and mapped the locations of all transformers observed within the 1,000-foot footprint of Federal Levee Reach LPV 108. These transformers are described in Table B-1, in Appendix B. No leaking or possibly leaking transformers were observed.

Stormwater runoff in the area encompassing the 1,000-foot footprint either percolates through the exposed soil to the ground water or is transported via storm water drains and culverts to either the various canals in the area or Lake Pontchartrain.

6.4 Interior Observations

Federal Levee Reach LPV 108 has no interior conditions. No interiors of buildings associated with LPV 108 were evaluated as part of this ESA.

7.0 INTERVIEWS

The Contractor conducted interviews with as many business operators and employees as possible during the site inspections, using a standard interview form/questionnaire. Interviewees consistently indicated no awareness of current environmental concerns at their facilities. Their information was generally corroborated by other independent sources of information (for example, the EDR Report and LDEQ environmental records). Subsection 7.1 describes important interviews in detail. Records of all interviews conducted are presented in Appendix F.

7.1 Interviews With Owners or Occupants

No industrial or commercial parcels were identified within the 1,000-foot footprint of LPV 108, therefore no interviews were conducted.

7.2 Interviews With Local Government Officials

Earth Tech performed phone discussions with Mr. Gerry Gillen, Chief Engineer of the Orleans Levee District, and Mr. Joe Cassanova, Environmental Manager of the Orleans Levee District. These conversations are documented in Appendix F, and are referenced as applicable in various parts of this ESA Report. Neither of these gentlemen was aware of any significant environmental concern on or near LPV 108.

Earth Tech also talked to several employees with the New Orleans Fire Department (Appendix F). Captain Hellmers, with the New Orleans Fire Department HAZMAT unit (504-858-7005), had no recollection of any incident of an environmental nature specific to the Federal Levee Reach LPV 108. Captain Melvin McEvoy of the New Orleans Fire Department was not aware of a potential environmental concern along Federal Levee Reach LPV 108. Tom Papa, Chief of 4th District New Orleans Fire Department, also was not aware of any potential environmental concerns along Federal Levee Reach LPV 108.

Earth Tech also spoke with Mr. Mark Stansberry of the LDEQ (504-736-7754). He described LDEQ's activities in the area immediately following Hurricane Katrina. LDEQ employees and contractors performed reconnaissance in the area looking for environmental impacts, paying particular attention to sewage treatment plant and USTs.

7.3 Interviews With Others

Businesses adjoining to and outside of the 1,000-foot footprint were generally innocuous. On this basis, as well as their distance to the Levee Reach LPV 108, no interviews were conducted with facilities located outside of the 1,000-foot footprint.

8.0 FINDINGS

This section presents any various types of RECs (known, suspected, historical known, and historical suspected), as well as de minimis conditions, associated with Federal Levee Reach LPV 108 identified by the Contractor during this Phase I HTRW ESA. These findings are based on a comprehensive review of data available to the Contractor. These data include the environmental records review (Section 5.0), site reconnaissance observations (Section 6.0), and interviews with knowledgeable personnel (Section 7.0).

No known or suspected current or historical RECs were identified on Federal Levee Reach LPV 108 itself.

Similarly, for the land outside of LPV 108 but within the 1,000-foot footprint, no definitive evidence of current recognized environmental conditions (RECs) was identified.

With regard to suspected RECs, the Contractor identified two abandoned port-a-johns located in the northern part of the study area. These are considered to be suspected RECs because of the potential for human waste to have impacted environmental media.

As noted in Section 6.3, the Contractor did not identify information on the current quality of Lake Pontchartrain sediments adjacent to LPV 108. Although no obvious contamination was observed during the walkover, the sediment could have been impacted by the storm activities and its aftermath.

The findings below are based upon the information obtained during this ESA, and discussed in the previous sections of this report. In accordance with ER 1165-2-132 Paragraph 7.c.(2) (USACE, 1992), the potential contaminants of concern (COCs) associated with each site are described or listed in parentheses.

Known or Suspect Recognized Environmental Conditions

No known RECs were identified.

Suspected RECs are identified at the following facilities outside of the Federal Levee Reach LPV 108 but within the 1,000-foot footprint:

- Two abandoned port-a-johns that may represent a potential of human waste impacting nearby soils, sediment, surface water, and/or groundwater.

The locations of these suspected RECs are shown on Figure B-4.

Historical Known or Suspected Recognized Environmental Conditions

No historical known or historical suspected RECs were identified during this Phase I HTRW ESA.

Known or Suspected De Minimis Environmental Conditions

No known or suspected de minimis conditions were identified during this Phase I HTRW ESA.

No other environmental concerns were identified.

9.0 OPINIONS

Based upon all of the information obtained, the environmental professionals who conducted this ESA believe that the known or suspected RECs identified in Section 8.0 have not resulted in an impact to the soil or groundwater quality within the Federal Levee Reach LPV 108 itself. Therefore, the Contractor sees no need to collect soil or groundwater quality samples with regard the levee reconstruction efforts within the current levee footprint. The Contractor would suggest, however, vigilance during any invasive or ground breaking activities for physical signs of contamination. Also, if any of the soil will be moved off site, the USACE is encouraged to follow appropriate characterization protocols.

If the USACE extends the footprint of the levee onto the locations of the suspected RECs that are located within the 1,000-foot footprint area, the Contractor recommends that the USACE consider collecting soil and/or groundwater quality samples at those locations. The locations where sampling should be considered are shown on Figure B-4.

10.0 CONCLUSIONS

At the request of USACE-HPO, the Contractor has performed a Phase I HTRW ESA in accordance with the Scope of Services attached in Appendix A and in general conformance with the scope and limitations of ASTM Standard Practice E1527-05 of the Federal Levee Reach LPV 108. Any exceptions to, or deletions from, the ASTM Standard Practice are described in Chapters 2.0 and 11.0 of this report. This assessment has revealed no evidence of "recognized environmental conditions" (as that term is defined in ASTM Standard Practice E1527-05) in connection with the levee reach itself, although suspected RECs have been identified within the 1,000-foot footprint.

11.0 DEVIATIONS/DATA GAPS

Following is a list of the data gaps and deviations from ASTM Standard Practice E1527-05 that occurred during the performance of this assessment:

11.1 Historical Data Gaps/Data Failure

The history of the Property was researched back to the first developed use (including agricultural use or incidence of import of fill material), or to approximately 1950.

No further historical data sources were evaluated, because: (1) they were not *reasonably ascertainable*, and/or (2) the assessor's experience indicates that additional available sources were not likely to be sufficiently useful, accurate, or complete in terms of satisfying the historical research objectives. Based on these two criteria, the following standard historical sources were not evaluated:

- Recorded Land Title Records
- Property Tax Files
- Building Department Records
- Zoning/Land Use Records
- Other Historical Sources, including miscellaneous maps, newspaper archives, community organizations, local libraries, or historical societies.

11.2 Other Deviations/Data Gaps

No interviews were conducted with business operators outside of the 1,000-foot footprint. Such interviews are not required by ASTM Standard E1527-05, and the observed businesses were rather innocuous with regard to potential environmental concerns. Therefore, the lack of these interviews is not considered a data gap.

No other deviation or data gap was identified that was deemed material to this assessment.

12.0 ADDITIONAL SERVICES

No additional services were requested to be included in this Phase I HTRW ESA.

13.0 REFERENCES

ASTM, November 1, 2005. "ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, E 1527-05", Philadelphia, Pennsylvania.

Boniol, D., Autin, W.J., and Hanson, B.C., September 1989. *Recharge Potential of Louisiana Aquifers*, Open File Series No. 88-07 Louisiana Geological Survey, Baton Rouge, Louisiana.

Cassanova, Joe, Orleans Levee District, Personal Communications with Earth Tech, December 21, 2006 (see also Appendix F).

Earth Tech, 2007. *Phase I Environmental Site Assessment*, Federal Levee Reach LPV 107 Lincoln Beach Floodwall, New Orleans, Louisiana.

Environmental Data Resources, Milford, Connecticut, *EDR® Corridor Study Package Report.*

Groundwater Technology, Inc., April 1989. *Phase I Hydrogeologic Assessment*, Gulf Service Station #60108952, Downman Road and Hayne Boulevard, New Orleans, LA.

Gillen, Gerry, Orleans Levee District, Personal Communications with Earth Tech, December 28, 2006 (see also Appendix F).

Saucier, R.T., 1994. *Geomorphology and Quaternary Geologic History of the Lower Mississippi Valley*, U.S. Army Waterways Experiment Station.

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U.S. Army Corps of Engineers, *Hazardous, Toxic, and Radioactive Waste Guidance for Civil Works Projects*, ER 1165-2-132, June 26, 1992.

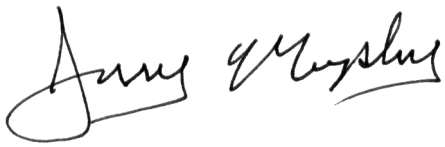
U.S. Army Corps of Engineers, *The Real Estate Handbook*, ER 405-1-12, May 15, 2000.

Van Biersel, Thomas, Louisiana Geological Survey, Personal Communications with Earth Tech, January 10, 2007.

14.0 SIGNATURE(S) OF ENVIRONMENTAL PROFESSIONALS

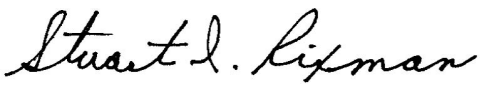
Following are the signatures of the environmental professionals who conducted this Phase I HTRW ESA and primarily prepared this report, and who reviewed it.

Prepared by:



Jerry Murphy
Project Scientist

Reviewed by:



Stuart I. Rixman
Manager, EHS Services

15.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Resumes of the environmental professionals named in Chapter 14.0 above are in Appendix G.

16.0 APPENDICES

The remainder of this report consists of the appendices that are listed in the Table of Contents.