

# Health Consultation

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HURRICANE RESPONSE SAMPLING ASSESSMENT FOR  
GULF COAST VACUUM SERVICES

ABBEVILLE, VERMILION PARISH, LOUISIANA

EPA FACILITY ID: LAD980750137

SEPTEMBER 26, 2006

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Agency for Toxic Substances and Disease Registry  
Division of Health Assessment and Consultation  
Atlanta, Georgia 30333

## **Health Consultation: A Note of Explanation**

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION

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GULF COAST VACUUM SERVICES

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Prepared by:

Louisiana Department of Health and Hospitals  
Office of Public Health  
Section of Environmental Epidemiology and  
Toxicology  
Under Cooperative Agreement with the  
U.S. Department of Health and Human Services  
Agency for Toxic Substances and Disease Registry

**Table of Contents**

Table of Contents ..... ii  
List of Acronyms ..... iii  
Summary and Statement of Issues ..... 1  
Background and Site History ..... 1  
Demographics ..... 2  
Discussion ..... 5  
    Data Used..... 5  
    Exposure Pathways ..... 5  
    Evaluation Process ..... 5  
Child Health Considerations ..... 5  
Conclusions ..... 6  
Recommendations ..... 7  
Public Health Action Plan..... 7  
Preparers of this Report ..... 8  
References..... 9  
APPENDIX A: Gulf Coast Vacuum Services Post-hurricane Site Inspection Photographs ..... 11

**List of Acronyms**

ATSDR	Agency for Toxic Substances and Disease Registry
EPA	Environmental Protection Agency
GCVS	Gulf Coast Vacuum Services, Inc.
LDEQ	Louisiana Department of Environmental Quality
LDHH	Louisiana Department of Health and Hospitals
NPL	National Priorities Listing
OPH	Office of Public Health
SEET	Section of Environmental Epidemiology and Toxicology
ug/L	micrograms per liter

### **Summary and Statement of Issues**

The August 29, 2005 landfall of Hurricane Katrina and the September 24, 2005 landfall of Hurricane Rita resulted in extensive flooding throughout southern Louisiana. Following the hurricanes, a number of National Priorities Listing (NPL) sites throughout southern Louisiana were visited and sampled. The objectives of these events were to identify any impacts that these sites might have suffered from the hurricanes and to determine whether any contaminant levels had increased at the sites following hurricane-related flooding.

The United States Environmental Protection Agency (US EPA), in coordination with the Louisiana Department of Environmental Quality (LDEQ), sampled groundwater from two monitoring wells at the Gulf Coast Vacuum Services (GCVS) site. These samples were collected and analyzed to determine whether contamination may have reached the Chicot Aquifer System via recharge subsequent to the hurricanes of 2005. Through a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), the Louisiana Department of Health and Hospitals/Office of Public Health/Section of Environmental Epidemiology and Toxicology (LDHH/OPH/SEET) has developed the following health consultation to review these groundwater samples. The primary goals of this document are to determine whether any contaminants that would pose a public health hazard infiltrated the site's groundwater following Hurricane Rita and to establish what further public health actions, if any, may be needed.

### **Background and Site History**

The GCVS site is located on Parish Road P-7-31, approximately 2.5 miles southwest of Abbeville, Louisiana and 1.5 miles west of the Vermilion River. Figure 1 shows the location and perimeter of the site. The site, which lies adjacent to another NPL site (D.L. Mud, Inc.), was once part of 25.56-acres of land known as the Galveston Houston Yard or the LeBoeuf Yard. The property was used for the storage and formulation of mud for barium sulfate-based oil field drilling. Waste oils and diesel fuel reportedly spilled onto the surface soils at the site, and illegal dumping of other wastes was also reported to have taken place during this time period [1,2].

In October 1980, Galveston Houston Fluid Services sold 12.78 acres of the site to Gulf Coast Vacuum Services, Inc.. As its predecessor had, Gulf Coast Vacuum Services, Inc. used the property as a storage and disposal facility for materials and wastes generated from oil and gas exploration and production. Gulf Coast Vacuum Services, Inc. operated the site until it declared bankruptcy in 1984. Wastes that were generated during operations at the site included an estimated 15,000 cubic yards of sludge in two above-ground pits and one buried pit; 43,857 gallons of sludge and liquid in above-ground tanks; and 19,500 cubic yards of contaminated soils in the northeast and northwest site fields [3].

The site was placed on the NPL on March 31, 1989. EPA, in consultation with LDEQ, signed a

## **Gulf Coast Vacuum Services Post-Hurricane Assessment**

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Record of Decision for the site on September 30, 1992. The remedial activities chosen for the site included the following:

- on-site biological treatment of pit sludge, associated soils, and tank contents;
- stabilization and on-site disposal of the treated residuals from the biological treatment;
- capping with a 2-foot compacted clay cover;
- on-site stabilization and disposal of soils contaminated with metals;
- implementation of institutional controls, including site fencing, and deed notices; and
- long-term monitoring of the shallow perched groundwater for arsenic, barium, and chromium. Long-term groundwater monitoring will also be used to identify the movement of groundwater plumes through which contaminants may potentially migrate off-site or into the underlying Chicot Aquifer System.

Remedial activities began on June 3, 1997 and were completed on March 24, 2000. Five-Year Reviews were completed by the EPA at the site in 1998 and 2003 to confirm that the selected remedies were performing as intended and were protective of human health and the environment. The site was deleted from the NPL on July 23, 2001 [3].

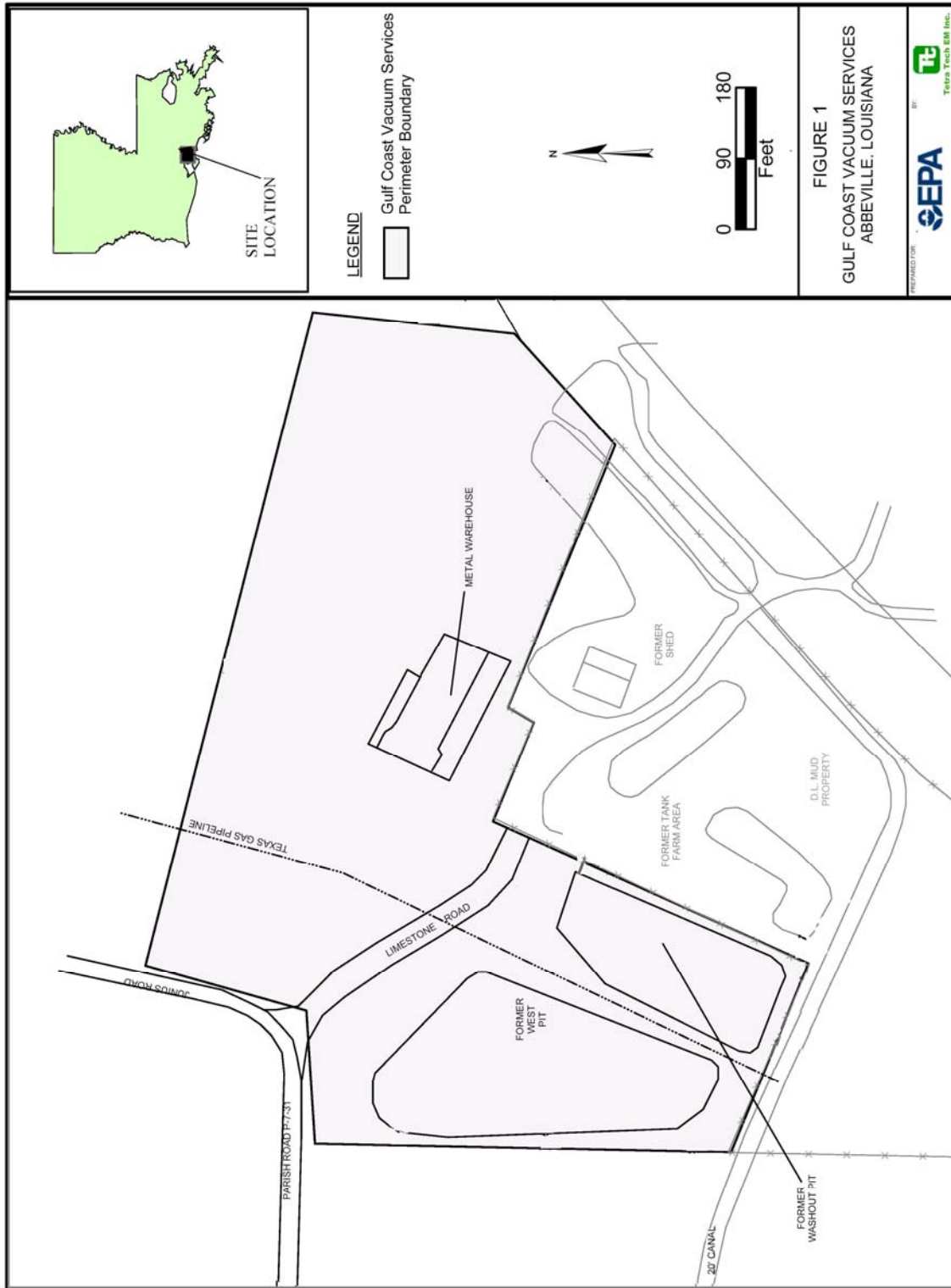
The September 24, 2005 landfall of Hurricane Rita resulted in extensive flooding throughout southern Louisiana. On October 1, 2005, EPA performed a site inspection determine if the site remedies had been compromised by the hurricane. Photographs from the inspection are displayed in Appendix A. The inspection team found no evidence of erosion or other hurricane-associated damage to the landfill caps, monitoring wells, or perimeter fencing at the site [3].

Groundwater samples were collected from each of two on-site monitoring wells. The location of these two monitoring wells is shown in Figure 2. Contaminant levels detected within these wells were found to be comparable to those recorded in the 2003 Five-Year Review, from which it was concluded that the concentrations of metals in the site groundwater were not affected by Hurricane Rita [4-6].

### **Demographics**

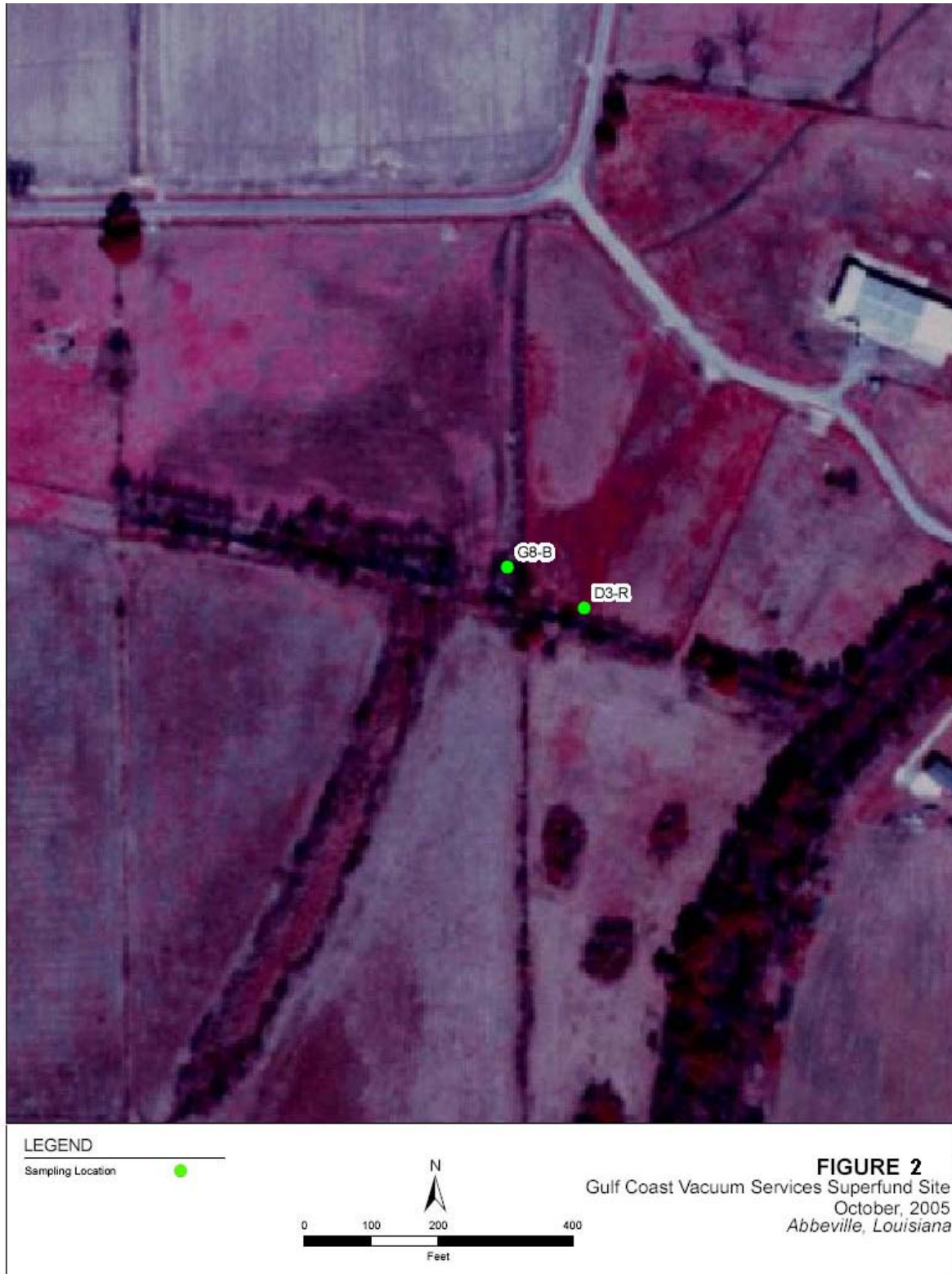
Census 2000 results reported a population of 5,283 within the census block that encompassed the GCVS site. Approximately 2,600 of these residents live within 3 miles of the site [3]. The largest ethnic group at the site at that time was Caucasian (94.7%), followed by African-American (4.2%), American Indian or Alaskan Native (0.44%), those identifying themselves as belonging to 2 or more races (0.42%), Asian (0.08%), Native Hawaiian or other Pacific Islander (0.08%), and Other (0.08%). Zero point eighty-five percent (0.85%) of the population identified themselves as Hispanic. Forty-three point nine percent (43.9%) of the population age 25 years or older in 2000 had earned at least a high school diploma. The median household income was \$37,676.

# Gulf Coast Vacuum Services Post-Hurricane Assessment



Adapted from: United States Environmental Protection Agency, Region 6. Second Five-Year Report for the Gulf Coast Vacuum Services Superfund Site, Abbeville, Vermilion Parish, Louisiana. Prepared by Tetra Tech EM Inc. Work Assignment No. 112-FR-FE-065Y. 2003 Sept.





Adapted from: CH2M HILL, Inc. Hurricane Rita Response: Gulf Coast Vacuum Superfund Site, Louisiana, Site Inspection and Sampling Results. CH2M HILL Technical Memorandum 06-8467. 2006 Feb 2.

### **Discussion**

#### **Data Used**

On October 1, 2005, groundwater samples were taken from two monitoring wells screened at depths of up to 40 feet below ground surface. This sampling event was part of EPA's characterization of post-hurricane conditions at NPL sites throughout southern Louisiana. The samples were analyzed for 141 contaminants, including a range of metals and organic contaminants.

#### **Exposure Pathways**

Groundwater is the source for the public water supply in the area around the GCVS site. Residents within a 3-mile radius of the site obtain drinking water from private wells, which also provide a water source for irrigation. These wells draw water from the Chicot Aquifer System, which underlies a large portion of southwest Louisiana and serves as the principal source of groundwater supply within the Abbeville area [3].

The monitoring wells from which GCVS site samples were collected are screened (allowing water but not soil particles to enter the well) at depths of up to only 40 feet, while the wells that provide the area's domestic water supply are screened at depths from 85 feet to 230 feet [5]. The local population is unlikely come into contact with contaminants in the site's groundwater unless the contaminants migrate into the deeper domestic groundwater sources. Long-term groundwater monitoring at the site currently shows no evidence of such migration. Therefore, there is presently no exposure pathway between the groundwater contaminants at the site and the local population.

#### **Evaluation Process**

Table 1 lists the contaminants detected at the GCVS site. Most of the contaminants were metals, including some metals that are essential to human nutrition, such as calcium and potassium. Though high concentrations of metals can be a cause of concern in water used for domestic purposes, the groundwater from the GCVS site is from a more shallow source than the domestic groundwater supply. The contaminants detected at the site pose no public health hazard.

#### **Child Health Considerations**

It is unlikely that children would be exposed to contaminants in the groundwater from the GCVS site. Children would have no contact with this source of water because the monitoring wells at the site are screened at a more shallow depth than the domestic wells. SEET found no public health hazard to children under these conditions.

**Table 1. Contaminants detected in groundwater from the Gulf States Vacuum October 1, 2005 site sampling event**

<b>Contaminant</b>	<b>Well D3-R (ug/L<sup>*</sup>)</b>	<b>Well G8-R (ug/L)</b>
Aluminum	27	31.8
Arsenic	5.86	15.7
Barium	2370	501
Cadmium	14	6.54
Calcium	373000	181000
Caprolactam	--	6.8
Chromium	--	1.93
Iron	--	6050
Lead	6.95	--
Magnesium	149000	65500
Manganese	307	3080
Nickel	18	6.08
Potassium	3640	2960
Sodium	353000	173000
Zinc	2.98	--

\*ug/L = micrograms per liter

## Conclusions

On the basis of evaluation of groundwater sampled at the GCVS site during the post-hurricane investigation, it is concluded that the storms did not cause significant physical damage to the site or cause site contaminants to be introduced into pathways where harmful exposures could occur. Therefore, exposures to groundwater from the GCVS site pose no public health hazard. The water in the site's monitoring wells is from a more shallow depth than the area's domestic water supply, and there is no evidence of groundwater migration from the monitoring wells to the domestic water sources. Exposure to groundwater contaminants detected at the site is unlikely.

## **Recommendations**

There are no recommendations to be made at this time regarding the groundwater at the GCVS site. LDHH/OPH/SEET will examine future GCVS data as needed.

## **Public Health Action Plan**

The information produced within this health consultation should be disseminated to the community members and stakeholders within Vermilion Parish, Louisiana.

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### References

1. Agency for Toxic Substances and Disease Registry. Public Health Assessment : D.L. Mud, Incorporated, Abbeville, Vermilion Parish, Louisiana. Atlanta: US Department of Health and Human Services: 2001 Apr 11.
2. United States Environmental Protection Agency. Fact Sheet: Gulf Coast Vacuum Services, Vermilion Parish, Abbeville, Louisiana. EPA ID# LAD980750137. 2005 Jul 05.
3. CH2M HILL, Inc. Hurricane Rita Response: Gulf Coast Vacuum Superfund Site, Louisiana, Site Inspection and Sampling Results. CH2M HILL Technical Memorandum 06-8467. 2006 Feb 2.
4. United States Environmental Protection Agency. National Priorities List Sites in Louisiana. Accessed 10 Aug 2006 at URL:  
<http://www.epa.gov/superfund/sites/npl/la.htm>
5. United States Environmental Protection Agency. Summary of Testing at Superfund National Priority List Sites. Accessed 10 Aug 2006 at URL:  
<http://www.epa.gov/katrina/superfund-summary.html#6>
6. United States Environmental Protection Agency, Region 6. Second Five-Year Report for the Gulf Coast Vacuum Services Superfund Site, Abbeville, Vermilion Parish, Louisiana. Prepared by Tetra Tech EM Inc. Work Assignment No. 112-FR-FE-065Y. 2003 Sept.

**Certification**

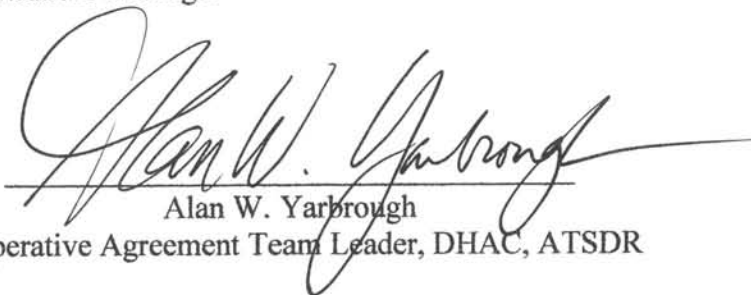
This Hurricane Response Sampling Assessment for the Gulf Coast Vacuum Services Post-Hurricane Assessment public health consultation was prepared by the Louisiana Department of Health and Hospitals under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures at the time the health consultation was begun. The editorial review was conducted by the Cooperative Agreement Partner.



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Jeffrey Kellam  
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The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.



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Alan W. Yarbrough  
Cooperative Agreement Team Leader, DHAC, ATSDR

**APPENDIX A: Gulf Coast Vacuum Services Post-hurricane Site Inspection Photographs\***



**File Name:** GSV\_photo1.JPG  
**Date/Time Taken:** 01 Oct 2005 1625  
**Description:** Fence line of site intact and not compromised by storm, view to west.  
N29°57'29.9"; W92°11'11.3"



**File Name:** GSV\_photo2.JPG  
**Date/Time Taken:** 01 Oct 2005 1631  
**Description:** View to northwest of cap, showing no subsidence, ruts, or cracks due to storm.  
N29°57'28.1"; W92°11'11.4"



**File Name:** GSV\_photo3.JPG  
**Date/Time Taken:** 01 Oct 2005 1636  
**Description:** Eastern portion of cap, with equipment storage/maintenance facility in background, view to north.  
N29°57'28.1"; W92°11'11.4"



**File Name:** GSV\_photo4.JPG  
**Date/Time Taken:** 01 Oct 2005 1641  
**Description:** Boundary fence between Gulf Coast Vacuum and D.L. Mud sites, view to east.  
N29°57'28.1"; W92°11'11.4"

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\* Adapted from CH2M HILL, Inc. Hurricane Rita Response: Gulf Coast Vacuum Superfund Site, Louisiana, Site Inspection and Sampling Results. CH2M HILL Technical Memorandum 06-8467. 2006 Feb 2.



## Gulf Coast Vacuum Services Post-Hurricane Assessment

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**File Name:** GSV\_photo5.JPG  
**Date/Time Taken:** 01 Oct 2005 1642  
**Description:** Monitoring well D-7R and site boundary, view to southwest.  
N29°57'28.1"; W92°11'11.4"



**File Name:** GSV\_photo6.JPG  
**Date/Time Taken:** 01 Oct 2005 1649  
**Description:** Low area between eastern and western caps, view to south.  
N29°57'29.3"; W92°11'11.6"



**File Name:** GSV\_photo7.JPG  
**Date/Time Taken:** 01 Oct 2005 1652  
**Description:** View to south along western fence and site boundary, showing intact sumps on side of cap.  
N29°57'31.9"; W92°11'14.1"



**File Name:** GSV\_photo8.JPG  
**Date/Time Taken:** 01 Oct 2005 1733  
**Description:** Warped top of riser pipe, well D-3R.  
N29°57'26.2"; W92°11'13.1"

## Gulf Coast Vacuum Services Post-Hurricane Assessment

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**File Name:** GSV\_photo9.JPG  
**Date/Time Taken:** 01 Oct 2005 1634  
**Description:** View to south of well D-3R (location for sample GCV001).  
N29°57'26.2"; W92°11'13.1"



**File Name:** GSV\_photo10\_WellPad\_G-8D-3.JPG  
**Date/Time Taken:** 01 Oct 2005 1730  
**Description:** Well G-8B (location for sample GCV002).  
N29°57'26.8"; W92°11'14.4"



**File Name:** GSV\_photo10\_NorthView.JPG  
**Date/Time Taken:** 01 Oct 2005 1757  
**Description:** View to north of western and eastern caps, showing no apparent storm impact.  
N29°57'26.6"; W92°11'14.0"