Health Consultation

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

HURRICANE RESPONSE SAMPLING ASSESSMENT FOR
GULF COAST VACUUM SERVICES

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EPA FACILITY ID: LAD980750137

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
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## List of Acronyms

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

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

*µg/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.
Gulf Coast Vacuum Services Post-Hurricane Assessment

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.
Preparers of this Report

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References


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.

Jeffrey Kellam
Technical Project Officer, Division of Health Assessment and Consultation (DHAC)

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

Alan W. Yarbrough
Cooperative Agreement Team Leader, DHAC, ATSDR
Gulf Coast Vacuum Services Post-Hurricane Assessment

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

* 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

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″
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“