

Health Consultation

HURRICANE RESPONSE SAMPLING ASSESSMENT FOR
PAB OIL & CHEMICAL SERVICE, INC.

ABBEVILLE, VERMILION PARISH, LOUISIANA

EPA FACILITY ID: LAD980749139

SEPTEMBER 19, 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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PAB OIL & CHEMICAL SERVICE, INC.

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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

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List of Acronyms

ATSDR	Agency for Toxic Substances and Disease Registry
EPA	Environmental Protection Agency
LDEQ	Louisiana Department of Environmental Quality
LDHH	Louisiana Department of Health and Hospitals
LDNR	Louisiana Department of Natural Resources
NPL	National Priorities Listing
OPH	Office of Public Health
PAH	polycyclic aromatic hydrocarbon
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 damage that these sites suffered from the hurricanes, to determine whether the remedial actions at these sites remained effective, 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 PAB Oil & Chemical Service, Inc. (PAB Oil) 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 health hazard to exposed individuals 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

PAB Oil is located adjacent to LA Route 167, approximately 3 miles north of Abbeville in Vermilion Parish, Louisiana. The site consists of 16.7 acres in a largely rural area. From late 1978 until early 1983, the facility operated as a disposal site for oil field exploration and production wastes. Waste oil was skimmed from oil-based drilling mud in separation/disposal pits and sold to waste oil reclaimers [1].

The company stopped receiving oil field waste in August 1982. On November 10, 1982, the Louisiana Department of Natural Resources (LDNR) ordered PAB Oil to proceed with a closure plan for the site. In January 1983, LDNR agents sealed storage tanks and the gates to the facility because of open leakage from pits and new petroleum wastes that had been placed in one tank. The company ceased operations but lacked the funds for a proper closure, leaving most of the wastes on-site [1].

EPA had begun an investigation of the site in 1980 as a result of citizen complaints of discharge from the site into an off-site drainage ditch. On the basis of these investigations, the site was proposed to the NPL on June 1988 and finalized to the list in March 1989. In July 1990, EPA began a Remedial Investigation and Feasibility Study (RI/FS) to characterize the nature and extent of contamination at the site and to evaluate cleanup alternatives. The objective of the cleanup was to address the heavy metals, polycyclic aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons that were detected in site soils, sediments, and surface water [1]. The selected remedy called for surface water treatment, excavation of contaminated soils and sediments, residuals solidification/stabilization, onsite disposal, and installation of a clay cover. The remedy also calls for 30 years of groundwater monitoring after site remediation to monitor

the potential migration of contaminants. The remediation objectives were completed, and the site was deleted from the NPL on January 3, 2000 [1].

The September 24, 2005 landfall of Hurricane Rita resulted in extensive flooding throughout southern Louisiana. On October 1, 2005, EPA and LDEQ performed a site inspection to determine if the site remedies had been compromised by the hurricane. Pictures from the site 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 [2].

Groundwater samples were collected from each of two on-site monitoring wells. The location of these two monitoring wells is shown on the site map in Figure 1. Arsenic and chromium were detected above their respective drinking water standards; these metals had been previously detected in past groundwater sampling events at the site. No PAHs were detected in either groundwater sample [3]. Hurricane-related floodwaters therefore did not contribute to the leaching of contaminants from residual soils at the site.

Demographics

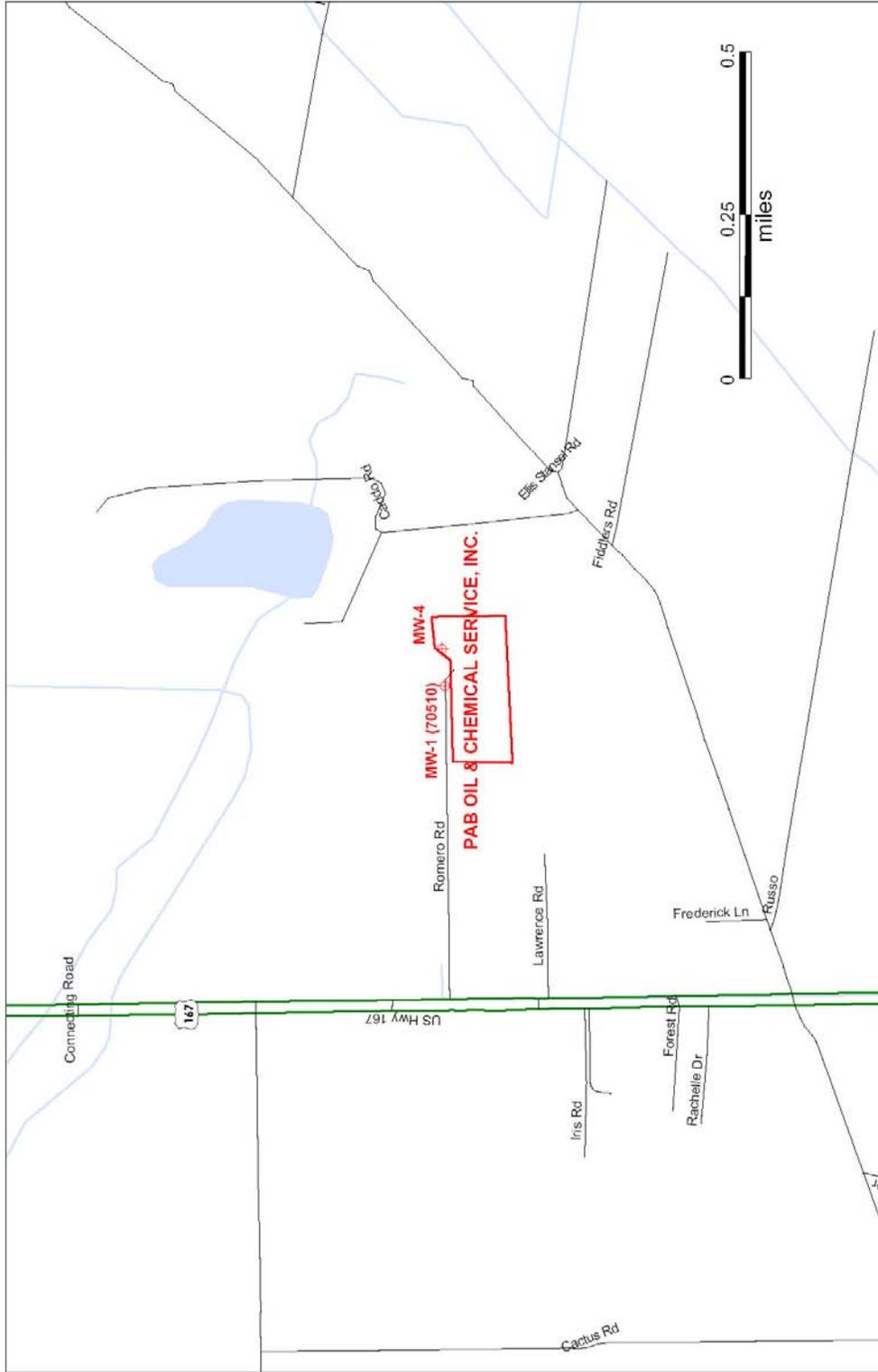
Census 2000 results reported a population of 2,962 within the census block that encompassed the PAB Oil site. The largest ethnic group at the site at that time was Caucasian (88.8%), followed by African-American (7.3%), Asian (2.9%), those identifying themselves as Other (0.4%), those identifying themselves as belonging to 2 or more races (0.4%), and American Indian or Alaskan Native (0.2%). Thirteen point five percent (13.5%) of the population identified themselves as Hispanic. Thirty-six point nine percent (36.9%) of the population age 25 years or older in 2000 had earned at least a high school diploma. The median household income was \$28,052.

Discussion

Data Used

Two shallow groundwater samples were taken from monitoring wells at the PAB Oil site on October 1, 2005. This sampling event was part of the 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 semivolatiles.

Figure 1. PAB Oil & Chemical Service NPL Boundary and Station IDs



Prepared by: Louisiana Department of Health & Hospitals,
Office of Public Health, Section of Environmental Epidemiology & Toxicology

The Louisiana Department of Health and Hospitals/Office of Public Health/Section of Environmental Epidemiology and Toxicology (SEET) cannot guarantee the accuracy of the information contained on this map and expressly disclaims liability for errors and omissions in its contents.

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Exposure Pathways

Groundwater serves as the source for the public water supply in the area around the PAB Oil site. Three Abbeville city wells located within three miles of the site provide water for 18,000 people. A number of households within the same area draw their domestic water from private wells. The groundwater source for these wells is the Chicot Aquifer System, which underlies a large portion of southwest Louisiana [4].

The PAB Oil monitoring wells do not share a groundwater source with the domestic water supply [1,2]. Long-term monitoring at the site currently shows no evidence of groundwater migration from the wells toward the domestic water supply. The local population is therefore unlikely come into contact with contaminants present in this exposure medium. There is no current exposure pathway between shallow groundwater contaminants at the site and the local population.

Evaluation Process

Table 1 lists the contaminants detected at the PAB Oil site. The majority of these contaminants were heavy metals. Consumption of heavy metals can lead to adverse health effects. However, the groundwater at the PAB Oil site is not currently associated with the domestic water supply and therefore is not consumed by the local population. The contaminants detected at the site pose no public health hazard.

Table 1. Contaminants detected in shallow groundwater from the PAB Oil & Chemical Service, Inc. October 1, 2005 site sampling event.

Contaminant	Well MW-1 (ug/L*)	Well MW-4 (ug/L)
Aluminum	76.9	135
Arsenic	21.9	9.64
Barium	67.8	124
Cadmium	3.4	3.33
Calcium	39,600	53,800
Caprolactam	1.8	1.6
Chromium	8.88	147
Cobalt	--	4.71
Copper	--	5.16
Iron	382	5,230
Magnesium	14,100	3,100
Manganese	566	157
Nickel	15.8	313
Potassium	2,450	2,350
Sodium	69,500	67,100

*ug/L = micrograms per liter

Child Health Considerations

Because the groundwater at the PAB Oil site is not associated with the domestic water supply, children are not exposed to the detected contaminants. SEET found no public health hazard to children under these conditions.

Conclusions

An evaluation of groundwater sampled at the PAB Oil site during the post-hurricane investigation concluded 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. Groundwater from the site currently poses no public health hazard because the water in the site's monitoring wells is not associated with the source of the area's domestic water supply. Long-term groundwater monitoring shows 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 PAB Oil site. LDHH/OPH/SEET will examine future PAB Oil 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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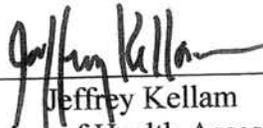
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References

1. Agency for Toxic Substances and Disease Registry. Public Health Assessment: Pab Oil and Chemical Services, Incorporated. Abbeville, Vermilion Parish, Louisiana. Atlanta: US Department of Health and Human Services; 2005 Apr 20.
2. CH2M HILL, Inc. Hurricane Rita Response: PAB Oil and Chemical Superfund Site, Louisiana, Site Inspection and Sampling Results. CH2M HILL Technical Memorandum 06-8471. 2006 Feb 03.
3. United States Environmental Protection Agency. Summary of Testing at Superfund National Priority List Sites. Accessed 23 Aug 2006 at URL: <http://www.epa.gov/katrina/superfund-summary.html#11>
4. United States Environmental Protection Agency. Fact Sheet: PAB Oil & Chemical Service, Inc. (Vermilion Parish), Louisiana. EPA ID# LAD980749139. 2006 Aug 07.

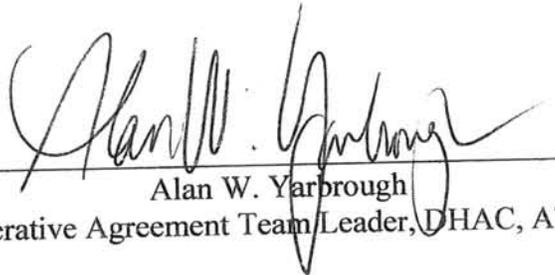
Certification

This Hurricane Response Sampling Assessment for the PAB Oil & Chemical Service, Inc. Post-Hurricane 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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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

APPENDIX A: PAB Oil Post-hurricane Site Inspection Photographs*



File Name: PAO_photo1.JPG
Date/Time Taken: 01 Oct 2005 1248
Description: View to east of site gate, showing no impact from storm.
N30°01'00.2"; W92°07'23.7"



File Name: PAO_photo2.JPG
Date/Time Taken: 01 Oct 2005 1258
Description: Sewage treatment structure, showing no storm damage, view to north.
N30°01'00.2"; W92°07'19.9"



File Name: PAO_photo3.JPG
Date/Time Taken: 01 Oct 2005 1303
Description: Monitoring well MW-5, showing no storm damage, view to north.
N30°01'00.4"; W92°06'58.7"



File Name: PAO_photo4.JPG
Date/Time Taken: 01 Oct 2005 1309
Description: Monitoring well pair MW-1 (Sample Location 2, sample PAC002) and MW-2, showing no storm damage, view to west.
N30°01'59.7"; W92°06'53.6"

* Adapted from CH2M HILL, Inc. Hurricane Rita Response: PAB Oil and Chemical Superfund Site, Louisiana, Site Inspection and Sampling Results. CH2M HILL Technical Memorandum 06-8471. 2006 Feb 03.

PAB Oil Post-Hurricane Assessment



File Name: PAO_photo5.JPG
Date/Time Taken: 01 Oct 2005 1314
Description: View to southeast of cap with MW-1 and MW-2 in background.
N30°01'00.3"; W92°06'54.4"



File Name: PAO_photo6.JPG
Date/Time Taken: 01 Oct 2005 1329
Description: Monitoring well MW-4 (Sample Location 1, sample PAC001), showing no storm damage, view to southeast.
N30°01'00.3"; W92°06'50.1"



File Name: PAO_photo7.JPG
Date/Time Taken: 01 Oct 2005 1332
Description: Monitoring well MW-8, showing no storm damage, view to west.
N30°01'00.5"; W92°06'52.1"



File Name: PAO_photo8.JPG
Date/Time Taken: 01 Oct 2005 1335
Description: View to south of cap area, over-grown but showing no storm damage.
[coordinates not recorded]

PAB Oil Post-Hurricane Assessment



File Name: PAO_photo9.JPG
Date/Time Taken: 01 Oct 2005 1337
Description: Pond adjacent to facility, view to northeast.
N30°01'00.6"; W92°06'52.3"



File Name: PAO_photo10.JPG
Date/Time Taken: 01 Oct 2005 1440
Description: View to southeast of cap and grassy area.
N30°01'00.4"; W92°06'55.7"