

Letter Health Consultation

Evaluate Post Gustav Surface Water Samples

**HURRICANE GUSTAV WATER SAMPLING
LAFOURCHE AND TERREBONNE PARISHES, LOUISIANA**

**Prepared by the
Louisiana Department of Health and Hospitals
Office of Public Health**

JUNE 24, 2009

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

A health consultation is a verbal or written response from ATSDR or ATSDR's Cooperative Agreement Partners 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 or ATSDR's Cooperative Agreement Partner which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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LETTER HEALTH CONSULTATION

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Bobby Jindal
GOVERNOR

STATE OF LOUISIANA
DEPARTMENT OF HEALTH AND HOSPITALS



Alan Levine
SECRETARY

April 29, 2009

Linda Levy
Administrator, Water Quality Assessment Division
Louisiana Department of Environmental Quality
P.O. Box 4314
Baton Rouge, LA 70821-4314

Dear Mrs. Levy:

The Louisiana Department of Health and Hospitals/Office of Public Health/Section of Environmental Epidemiology and Toxicology (DHH/OPH/SEET) has evaluated the post-hurricane Gustav surface water samples collected during the September-October 2008 sampling events in Lafourche and Terrebonne Parishes, Louisiana. The following letter provides the results of SEET's assessment of the sampling conducted during those events.

Site Description and History

Hurricane Gustav made landfall on September 1, 2008 on the Louisiana coast as a category 2 storm. Many areas throughout Lafourche Parish sustained extensive wind damage, leading to debris and downed trees that clogged Bayou Lafourche, a potable water source, and prevented the flow of fresh water from the Mississippi River pump station in Donaldsonville, LA. Post-hurricane pumping was suspended for a short period of time to prevent flooding in the upper reaches of the bayou, resulting in difficulties of water treatment for taste, odor and color [1]. As requested by the Lafourche Parish President, the Louisiana Department of Environmental Quality's (LDEQ) Aquifer Evaluation and Protection Section (AEPS) conducted a series of water sampling events from September 7, 2008 thru October 2, 2008. Water system personnel in the neighboring Houma area, (Terrebonne Parish) expressed similar water quality concerns; leading to the inclusion of three additional sample locations from Terrebonne Parish to be incorporated into the sampling plan [1].

Data Evaluation

AEPS conducted nine surface water sampling events at seven different locations in Bayou Lafourche, Bayou Black, Houma Navigation Canal and the Houma Intracoastal Waterway from September 7, 2008 thru October 2, 2008. LDEQ historic sample sites and locations were chosen based on their proximity to public drinking water intakes and the amount of historical data available for baseline comparison/analysis [1]. Additionally, one background sample was collected from the Mississippi River.

Samples were collected at a depth of one meter and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) (at select locations) and water parameters including temperature, conductivity, salinity, pH, dissolved oxygen % saturation, and dissolved oxygen in milligrams per liter (mg/L) [1]. Toluene and chloroform, found in low concentrations, were the only contaminants detected.

Bayou Lafourche is not hydraulically connected to Bayou Black; however, toluene was detected in both water bodies [1]. Toluene was detected at each of the four sampling locations in Bayou Lafourche and at the Bayou Black location on varying dates of collection (Appendix A, Table 1). Each of the detected toluene concentrations were below the Agency for Toxic Substances and Disease Registry's (ATSDR) child Environmental Media Evaluation Guide (EMEG) for toluene of 200 micrograms per liter (ug/L). The last five sampling events (September 18 – October 2, 2008) did not detect any toluene at any of the sites that were sampled (Appendix A, Table 1). Additionally, during the September 22, 2008 sampling event at site # 0293 in Bayou Lafourche, chloroform was detected in a single sample (3.01 ug/L) below the ATSDR child EMEG of 100 ug/L. In absence of ATSDR surface water comparison values for toluene and chloroform, the ATSDR drinking water values were used. A detailed explanation of the ATSDR/SEET evaluation process can be accessed in Appendix A.

Exposure Pathways

Surface water sample locations from the noted waterways were chosen in part due to their proximity to public drinking water intakes. Detected concentrations of toluene and chloroform were below ATSDR's drinking water comparison values at each sample location and will not harm people's health.

Conclusions:

Contaminant concentrations detected in Bayou Lafourche were below ATSDR screening values. Toluene and chloroform detected in surface water samples from Bayou Lafourche and toluene detected in Bayou Black is not expected to harm people's health.

Public Health Actions:

No public health actions are needed at this time.

If there are any questions regarding this health consultation, please contact Darcie Olexia (504) 219-4579.

Sincerely,

Darcie Olexia, MSPH
Environmental Health Scientist
Louisiana Office of Public Health
Section of Environmental Epidemiology & Toxicology

Appendix A: Screening Process

Health based comparison values (CVs) were used to determine which samples needed further evaluation. CVs are not used to predict health effects or to set clean-up levels. Contaminants with media concentrations above a health based comparison value do not necessarily represent a health threat, but are selected for further evaluation. Contaminants with media concentrations below a health based comparison value are unlikely to be associated with illness and are not evaluated further.

ATSDR's child Environmental Media Evaluation Guide (EMEG) was used as a CV in this evaluation. EMEGs are estimated contaminant concentrations that are unlikely to cause adverse non-carcinogenic health effects. EMEGs are calculated by using ATSDR's Minimal Risk Level (MRL), which is also an estimate of daily exposure to contaminants that are unlikely to cause adverse non-cancer health effects.

Please note that in absence of surface water CVs, drinking water CVs were used. This provides an additional level of protection, as conservative drinking water CVs assume a greater degree of human exposure.

Table 1: Toluene (reported in parts per billion) detected in Surface Water from Post-Hurricane Gustav sampling locations. September – October 2008.

| | 9/7/08 | 9/10/08 | 9/15/08 | 9/17/08 | 9/18/08- 9/19/08 | 9/22/08 | 9/24/08 | 9/26/08 | 10/2/08 |
|--------|--------|---------|---------|---------|---------------------|---------|---------|---------|---------|
| Site # | | | | | | | | | |
| 3710 | 1.74 | ND | ND | ND | ND | ND | ND | ND | ND |
| 0293 | NS | 2.89 | ND | ND | ND | ND | ND | ND | ND |
| 3719 | 1.80 | 3.46 | ND | ND | ND | ND | ND | ND | ND |
| 3722 | NS | 4.34 | 7.98 | 5.93 | ND | ND | ND | ND | ND |
| 0339 | NS | NS | 125 | 62.8 | ND | ND | ND | ND | ND |
| 0343 | NS | NS | ND | ND | ND | ND | ND | ND | ND |
| 2675 | NS | NS | ND | ND | ND | ND | ND | ND | ND |
| 0009 | NS | NS | NS | NS | ND | NS | NS | NS | NS |

ND- not detected; NS- not sampled

Note the site # locations:

3710= Bayou Lafourche at Highway 1008, Napoleonville

0293= Bayou Lafourche at Canal Street Bridge, Thibodaux

3719= Bayou Lafourche at Spur 648 (bridge downstream from Nicholls)

3722= Bayou Lafourche at Highway 654 in Mathews

0339= Bayou Black at St. Ann's Church

0343= Houma Navigation Canal

2675= Intracoastal Waterway in Houma

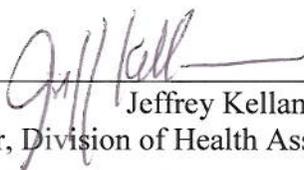
0009= Mississippi River at St. Francisville Ferry (background)

References

1. Louisiana Department of Environmental Quality, Water Quality Assessment Division. Executive Summary of water quality concerns with the water bodies affected by Hurricane Gustav that are used as potable water sources. Transmitted to Darcie Olexia from Jesse Means, LDEQ, via email on March 4, 2009.

Certification

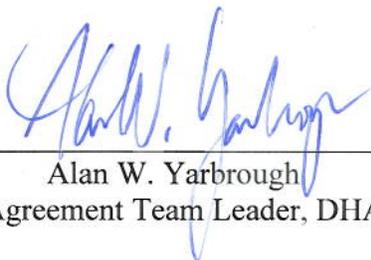
This letter health consultation was prepared by the Louisiana Department of Health and Hospitals under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures at the time the health consultation was begun. 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