

# Health Consultation

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TOM WILLIAMS BUICK

BIRMINGHAM, JEFFERSON COUNTY, ALABAMA

EPA FACILITY ID: ALD078960796

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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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Prepared by:

Alabama Department of Public Health  
Under Cooperative Agreement with the  
U.S. Department of Health and Human Services  
Agency for Toxic Substances and Disease Registry

## Foreword

The Agency for Toxic Substances and Disease Registry (ATSDR) was established by Congress in 1980 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also called the *Superfund* law. That law established a fund to pay for identifying and cleaning our country's hazardous waste sites. The United States Environmental Protection Agency (EPA) and state environmental agencies oversee the site investigation and clean up actions. Historically, public health assessments are conducted by environmental and health scientists from ATSDR. In 1993, the Alabama Department of Public Health (ADPH) entered into a cooperative agreement with ATSDR, the goal of which was that ADPH would develop the capacity to perform this function for ATSDR.

In 1986, the Superfund Amendments and Re-authorization Act (SARA, Title III) required ATSDR to conduct a public health assessment at each site on the EPA National Priorities List (NPL). Public health assessments seek to discover whether people are being exposed to hazardous substances. Under the 1993 cooperative agreement and subsequent renewals, this responsibility has been assumed by ADPH for sites in Alabama. If people are exposed or have the potential to be exposed, a decision is made as to whether the exposure is harmful and at what level health effects might occur; from these data, a determination can be made whether the exposure should be stopped or reduced.

**Exposure:** ADPH health assessors review environmental data to determine how much and what type of contamination exists at a site, where it is, and how people might come into contact with it. ADPH does not collect and analyze environmental samples but, instead, reviews sampling data provided by EPA, other government agencies, businesses, or the public. When there is not sufficient environmental information available, the assessment will indicate that further sampling data are needed.

**Health Effects:** If the review of the environmental data shows that people have or could come into contact with hazardous substances, ADPH scientists evaluate whether that exposure may result in harmful effects. ADPH, as well as ATSDR, recognizes that children, because of their play activities and their smaller body size, may be most susceptible to these effects. As a policy, unless data are available to suggest otherwise, ADPH health professionals responsible for assessing effects in populations consider children to be more sensitive and vulnerable to hazardous substances. Thus, the health impact to children is considered first when evaluating the health threat to a community. The health impact to other high risk groups within the community (i.e., the elderly, those with compromised immune systems, chronically ill, women of child-bearing age, and people engaging in high risk practices) also receive special attention during the evaluation.

ADPH uses existing scientific information that can include the results of medical, toxicological, and epidemiologic studies and disease registry data to determine the health effects that may result from exposure. The science of environmental health is still developing, and sometimes scientific information on the health effects of certain substances may not be available. In such cases, the report will document the need for further data collection activities.

**Conclusions:** The report assigns a public health hazard category and describes any hazards at the site. It contains a public health action plan that recommends ways to stop or reduce exposure. Because ATSDR and ADPH are advisory agencies, not regulatory, the report identifies actions that are appropriate for EPA, other responsible parties, or the research or education divisions of ATSDR and/or ADPH to conduct. However, if there is an urgent public health hazard, a public health advisory can be issued to warn people of the danger. When appropriate, health education activities, pilot studies of health effects, full-scale epidemiology studies, diseases registries, surveillance studies, or research on specific hazardous substances can be initiated.

**Interactive Process:** The development of a health assessment is an interactive process. The approach requires accumulation of information from many sources, including, but not limited to: ATSDR; many city, state, and federal agencies; the companies responsible for cleaning up the site, the principal responsible party (PRP), and the community. Once an assessment has been completed, the conclusions are shared with all interested parties. They are asked to comment on an early draft of the report to make sure the data they provided are presented correctly and responsibly. Sometimes agencies will begin to carry out recommendations when they read the draft conclusions and recommendations.

**Community:** ADPH needs to determine what people in the area know about the site and what health concerns they may have about the site. Therefore, ADPH gathers information and provides its findings to the public. ADPH works closely with the local health department to provide the affected population informed about the type of contamination and conducts health education activities to ensure they understand the health effects and or outcome from being exposed to a specific contaminant. The public is broadly defined to include people who live or work nearby, property owners, business owners, civic leaders, health professionals, community groups, and anyone else who is interested or concerned. ADPH is available to answer questions or assist the public at all times.

**Comments:** If you have questions or comments after reading this report, please send them to the Alabama Department of Public Health, 201 Monroe Street, Suite 1470, Montgomery, Alabama 36104.

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## **Summary and Statement of Issues**

The Alabama Department of Environmental Management (ADEM) requested that the Alabama Department of Public Health (ADPH) provide a public health evaluation of the Tom Williams Buick property. The current plan for the property entails demolishing the existing buildings and development of apartments with a clubhouse and living amenities on the ground floor. Tom Williams Buick is located in downtown Birmingham, Alabama at 401 20<sup>th</sup> Street South. As implied by the name, this site was a new/used vehicle dealership that provided sales and service for customers. During the time the dealership was in operation, there were various materials used that could have produced chemical plumes or spills that required special handling. The site ceased operations in 2000 and was unused with the exception of one building which was used as an administrative office.

### **Background**

The site consists of approximately 1.76 acres of unoccupied commercial property formerly occupied by the Tom Williams Buick automobile dealership. There are 3 structures currently occupying the property. There are 2 two-story brick and steel buildings and a concrete parking deck. During the operation of the dealership, there were 9 hydraulic lift systems. Seven of these were reported to have been plugged and abandoned between 1955 and 1988; one that was not visible at the surface was discovered during the removal of the underground storage tanks. One hydraulic lift remained in operation until the establishment closed. The site also contained 2 underground storage tanks (USTs), which were closed in place prior to 1988 by filling the tanks with sand. The tanks reportedly consisted of one 1,000 gallon used oil tank and one 4,000 gallon new engine oil tank. As part of the restoration process, the tanks were removed.

There is no surface water in the immediate area of the site. Site drainage is to the north toward an area known as Village Creek, located approximately two miles away. The nature of the site is all concrete and asphalt which promotes surface water runoff and drainage. The majority of the surface water moves off site and is collected in the storm sewers and drains.

In 1998, a limited subsurface investigation was performed by Maxim Technologies, Inc. to identify any constituents of concern present in the soil and groundwater. Constituents of concern include products such as petroleum hydrocarbons, benzene, toluene, ethylbenzene and xylenes (BTEX), polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and heavy metals. Maxim conducted this investigation as part of the property transaction and made a total of 12 soil borings. Groundwater samples were collected from two of the borings. Constituents of concern were detected in both soil and groundwater samples.

In March and May of 1999, Bhate Environmental Associates (Bhate) conducted site investigations for a voluntary property assessment and installed five temporary groundwater wells (TMW-1 through TMW-5) and collected soil samples at locations selected to determine the extent of petroleum hydrocarbon contamination in the soil and groundwater and to obtain closure status for the two USTs. The soil samples were analyzed for total petroleum hydrocarbons

(TPH), BTEX: and PAHs. Two of the soil samples were analyzed for PCBs, 1,2-dichlorobenzene, 2-methylnaphthalene, and butylbenzylphthalate. Groundwater samples were analyzed for BTEX, PAHs and total and dissolved RCRA 8 metals. (arsenic, barium, chromium, cadmium, lead, mercury, selenium and silver.)

### **Community Health Concerns**

The community has not expressed any concerns about the site or future construction. ADPH is involved in ensuring that public health is safeguarded and will evaluate data as it becomes available.

### **Discussion**

This consult focuses on the health issues of the future construction of an apartment complex with a clubhouse and living amenities on the ground floor. Construction will begin with the demolition of the existing structures. Concrete and asphalt will be used as a permanent barrier to limit any future exposures. Permanent sampling locations will be maintained on site.

ADPH reviewed available environmental information for the site and concluded that a completed pathway in which the public would be exposed does not exist.

This document covers the data up to April 2004. Any additional sampling data collected after this date will be evaluated at a later time.

### **Evaluation of Environmental Contamination and Potential Exposure Situations**

#### **What is meant by exposure?**

Public health assessments are driven by exposure to, or contact with, environmental contaminants. Contaminants released into the environment have the potential to cause harmful health effects. Nevertheless, *a release does not always result in exposure*. People can only be exposed to a contaminant if they come into contact with that contaminant—if they breathe, eat, drink, or come into skin contact with a substance containing the contaminant. If no one comes into contact with a contaminant, then no exposure occurs, and thus no health effects could occur. An exposure pathway has five elements: (1) a source of contamination, (2) an environmental medium, (3) a point of exposure, (4) a route of human exposure, and (5) a receptor population. The source is the place where the chemical or radioactive material was released. The environmental media (such as, groundwater, soil, surface water, or air) transport the contaminants. The point of exposure is the place where people come into contact with the contaminated media. The route of exposure (for example, ingestion, inhalation, or dermal contact) is the way the contaminant enters the body. The people actually exposed are the receptor population.

Health assessors evaluate site conditions to determine if people could have been, are, or could be exposed (i.e., exposed in a past scenario, a current scenario, or a future scenario) to site-related contaminants. When evaluating exposure pathways, it is determined to what type of

contaminated media (soil, sediment, water, air, or biota) through ingestion, dermal (skin) contact, or inhalation people might be exposed.

If exposure was, is, or could be possible, assessors consider whether contamination is present at levels that might affect public health and at what dose and for how long a duration. If it is determined that an exposure pathway exists, the contaminant level is compared against health-based comparison values. Comparison values are derived for each of the different media and reflect an estimated contaminant concentration that is *not likely* to cause adverse health effects for a given chemical, assuming a standard daily contact rate (e.g., an amount of water or soil consumed or an amount of air breathed) and body weight. *Comparison values are not thresholds for adverse health effects.* Comparison values establish contaminant concentrations many times lower than levels at which no effects were observed in experimental animals or human epidemiologic studies. If contaminant concentrations are above comparison values, assessors further analyze exposure variables (for example, duration and frequency of exposure), the toxicology of the contaminant, other epidemiology studies, and the weight of evidence for health effects.

### **Data Analysis**

#### **SOIL**

A toxicologist determines if a specific substance has a toxic effect based on a specific dose, form, and duration of exposure. These data compose an initial screening level (ISL). ISL's are based on soil contaminant levels as well as ground water contaminant levels.

At the Tom Williams site, samples were taken at 5 foot intervals until the bedrock was reached. At most sample locations, bedrock was reached at a depth of 13-20 feet below ground surface (bgs). There is a limited amount of soil on the site because most of the site is covered with asphalt or concrete.

Chromium, lead and arsenic were detected in soil samples above the initial screening level ISL for residential property at soil borings 1-3, collected in the former service area. However, due to the depth at which these occurred, no exposure would occur: Therefore, no health hazard could occur.

None of the samples contained volatile organic compounds (VOCs) that exceeded the detection limits.

BTEX was found in only one of the soil samples in the area where the UST was removed. However, the concentration was below ADEM's initial screening level.

One soil sample taken at a previous location of an underground storage tank at a depth of 6-8 feet contained lead at a concentration of 69 ppm, which exceeds the initial screening level of 4.43 ppm. To date there has not been a removal action. However, the contaminant is at a depth where exposure would not occur.

PCBs, 1,2-dichlorobenzene; 2-methylnaphthalene; and butylbenzylphthalate were not detected in the soil samples.

**The levels of contamination detected are below levels at which a public health hazard might be expected. For this reason, the low concentrations of contaminants found in the soil do not pose a public health hazard.**

#### **GROUNDWATER**

BTEX concentrations were below health risk limits as was PCE. PAH's were below detection limits in all samples. Xylene was also detected.

Arsenic, lead, mercury and chromium exceeded the ISL's for commercial land use. The depth to groundwater in these wells is between 12 and 18 feet below ground surface and there is no completed pathway for exposure. There weren't any other metals detected.

On April 12, 2000, four of the existing ground monitoring wells were sampled. All wells contained BTEX, methyl tertiary butyl ether (MTBE) and PAH below health risk limits. PCE was detected and slightly exceeded 5 parts per billion.

There are no private wells on site, and the residents will get their drinking water from the Birmingham Water Works. Therefore, there is no exposure to contaminants in groundwater.

There is going to be no excavation on the site for basements or sub-basements that could lead to exposures from vapor intrusion. Of the existing urban structures there are none with basements in which vapor intrusion would be an issue. **Groundwater from the depths where contaminants were found is not used for human consumption. For this reasons, the low concentrations of contaminants found in the groundwater DO NOT pose a public health hazard.**

#### **Children's Health Concerns**

ADPH recognizes that children can be more sensitive than are adults to exposure to some environmental contaminants or hazards than adults in communities faced with contamination of their water, soil, air, or food. This sensitivity is a result of several factors: (1) children are more likely to be exposed to certain media (e.g., soil or surface water) because they play and eat outdoors (2) children are shorter than adults, which means that they can breathe dust, soil, and vapors closer to the ground (3) children are smaller than adults, thus childhood exposure results in higher doses of chemical exposure per body weight. Children can sustain permanent damage if these factors lead to toxic exposure during critical growth stages. ADPH is committed to evaluating children's special interests at sites such as The Former Tom Williams Buick.

ADPH evaluated the risk of exposure to children living around the Tom Williams Buick site. These individuals would not likely be exposed to contaminants at levels of health concern because they are located approximately 5 feet below the surface and covered with asphalt and concrete which prevents exposure. For this reason, ADPH does not believe that children would be exposed or adversely affected.

## **Conclusions**

**The Former Tom Williams Buick is designated as NO PUBLIC HEALTH HAZARD based on both the location of the property and the depth at which the constituents have been detected, and the absence of any completed pathway through any media type.**

## **Recommendations**

- ADPH recommends that remedial activities continue until the site meets United States Environmental Protection Agency (USEPA) standards.
- ADEM continues to request monitoring data for review to determine if constituent levels continue to decline.

## **Public Health Action Plan**

This public health action plan was implemented during the course of the investigation or shortly afterwards.

ADEM will continue to monitor constituent levels.

ADPH will remain as a close working partner with ADEM and monitor the status of all remedial actions. ADPH will address any public health questions or concerns regarding the Former Tom Williams Buick site as they arise.

## References

ADEM Administrative Code, 2002. Water Quality Program, Chapter 335-6-10, Water Quality Criteria, and Chapter 335-6-11 Use Classifications for Interstate and Intrastate Waters.

Food and Drug Administration (FDA) “Action Levels For Poisonous or Deleterious Substances in Human Food and Animal Feed” Industry Activities Staff Booklet, August 2000.<http://www.cfsan.fda.gov/~lrd/fdaact.html>

Alabama Department of Environmental Management’s Water Quality Report to Congress April 1992.

Alabama Department of Environmental Management’s Water Quality Report to Congress April 1994.

Alabama’s 2002 Water Quality Report to Congress (Clean Water Act 305(b) Report).

The ATSDR FY 2002 Profile & Annual Report

EPA Region VI Alabama NPL Caliber Cleanup Site Summaries Webpage,  
<http://www.epa.gov/region4/waste/npl/nplal/annardal.htm>

## **Certification**

This Tom Williams Buick Health Consultation was prepared by the Alabama Department of Public Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the public health assessment was begun. Editorial review was completed by the Cooperative Agreement partner.

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Technical Project Officer  
Superfund Site Assessment Branch (SSAB)  
Division of Health Assessment and Consultation (DHAC)  
ATSDR

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

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Team Leader, Cooperative Agreement Team, SSAB, DHAC, ATSDR