

# Letter Health Consultation

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PAPER MILL ROAD UNDEVELOPED TRACT

LAWRENCEVILLE, GWINNETT COUNTY, GEORGIA

DECEMBER 2, 2008

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.

You May Contact ATSDR TOLL FREE at  
1-800-CDC-INFO

or

Visit our Home Page at: <http://www.atsdr.cdc.gov>

LETTER HEALTH CONSULTATION

PAPER MILL ROAD UNDEVELOPED TRACT

LAWRENCEVILLE, GWINNETT COUNTY, GEORGIA

Prepared By:

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



B. J. Walker, Commissioner

The Georgia Department of Human Resources • Division of Public Health • Sandra Elizabeth Ford, M.D., MBA, Acting Director  
2 Peachtree Street NW • Suite 15.470 • Atlanta, Georgia 30303-3142  
404-657-2700 • FAX: 404-657-6709

Date: October 8, 2008

Mike Kemp  
Unit Director, Land Protection Branch  
Environmental Protection Division  
Georgia Department of Natural Resources  
4220 International Pkwy  
Tradeport Offices Suite 104  
Atlanta, GA 30354

Dear Mr. Kemp,

This letter is in response to your request to evaluate the potential public health impacts from a closed unpermitted landfill site located off Paper Mill Road near the intersection of Springlake Road in Gwinnett County, Georgia.

To evaluate current soil and groundwater conditions, GDPH reviewed the *Laboratory Report for Paper Mill Road Phase II Environmental Site Assessment*. Sampling was conducted for the assessment in November, 2006 to identify contamination in soil and groundwater at the Paper Mill Road site.

### **Background Summary**

In April 2008, the Georgia Environmental Protection Division (GEPD) contacted the Georgia Division of Public Health (GDPH) regarding a resident's concerns about buried trash on her property and in land adjacent to her property. During a site visit, both GEPD and GDPH staff observed debris on the undeveloped parcel to the south and east, and in a resident's yard adjacent to the north end of the site. On-site debris includes mostly household waste. Debris on the resident's property includes roofing tiles and other materials that may be from another source not associated with the site. The site is not fenced and is easily accessible to the public.

In November 2006, soil and groundwater samples collected on the undeveloped parcel showed several contaminants. In March 2007, the parcel was listed on the GEPD Hazardous Site Inventory for lead above regulatory levels for soil and groundwater. The Hazardous Site Inventory is a list of sites in Georgia where there has been a known or suspected release of a regulated substance above the reportable quantity, and which have yet to show that they meet state clean-up standards.

The closest residences are within 300 feet of the site. Two municipal water supply wells and three private water wells are located approximately one mile from the site. Additionally, approximately 18 unused water wells are located within two miles of the site. All residents living within one-half mile of the site use municipal water. For related maps, see Appendix A.

### **Toxicological Evaluation**

GDPH uses ATSDR comparison values to select contaminants that require further evaluation. Comparison values (CVs) are concentrations of contaminants that can reasonably (and conservatively) be regarded as harmless, assuming default conditions of exposure. The CVs generally include ample safety factors to ensure protection of sensitive populations. Because CVs do not represent thresholds of toxicity, exposure to contaminant concentrations above CVs will not necessarily lead to adverse health effects.

#### ***Soil***

Ten subsurface soil samples were collected on site and analyzed. Lead was detected in one sample and polychlorinated biphenyls (PCB) were detected in two samples at levels above the federal soils screening value or the lowest CV.

One on-site soil sample collected from the southeastern area of the site shows lead at 777 milligrams of lead per kilogram of soil (mg/kg); however, the other nine samples ranged from 2-186 mg/kg. The average concentration of lead in the ten soil samples is 118 mg/kg. The EPA has established a residential soil screening value of 400 mg/kg for lead. This value is derived from a model and is considered to be protective of health and the environment. For more information about EPA's soil screening value for lead, visit, [www.epa.gov/superfund/health/conmedia/soil/#user](http://www.epa.gov/superfund/health/conmedia/soil/#user)

Two soil samples collected northern area of the site showed PCB above the lowest CV (0.4 mg/kg) at 12 mg/kg and 0.61 mg/kg. Although two soil samples showed PCB above the lowest CV, it is not known whether residents are exposed to the area of contaminated soil frequently or for an extended period of time.

#### **Lead**

Exposure to elevated levels of lead can be potentially harmful to fetuses, infants, and young children. ATSDR has not developed a CV for lead; however, they have developed a mathematical model designed to estimate blood lead levels in the body based upon exposure to actual concentrations of lead in soil, along with exposure to lead from all sources.

According to the Centers for Disease Control and Prevention, a person's blood lead level is a good indicator of recent exposure to lead, and correlates well with health effects. However, lead concentrations in soil do not directly predict adverse health effects. It is estimated that blood lead levels generally increase 3 to 7 micrograms of lead per deciliter of blood (ug/dL) for every 1000 mg/kg increase in soil lead concentrations. CDC considers children to have an elevated blood lead level if the amount of lead in blood is 10 ug/dL or greater. Applying the ATSDR Lead Model to the highest lead concentration found in soil at the Paper Mill Road site shows that the estimated blood lead level from all sources can be up to 4 ug/dL. Therefore, we conclude that

blood lead levels among persons exposed to lead in soil at Paper Mill Road is not expected to exceed a level that would pose a health risk.

### ***Groundwater***

One groundwater sample was collected on site. Lead and arsenic were detected above CVs. Groundwater data is limited because only one sample was collected and hydrogeological data is not yet available.

Although lead and arsenic were detected in groundwater above comparison values, toxicological evaluation for lead and arsenic in groundwater was not conducted because most residents use water from a municipal water supply, and the nearest private drinking water well is approximately one mile from the site. Therefore exposure to site related contaminants in groundwater is not likely.

### **Conclusions**

GDPH concludes that this site poses an ***Indeterminate Public Health Hazard*** for exposure to contaminants in soil and groundwater because there is not enough information to determine whether residents may be exposed to contaminants from the site. The site has unlimited access which may result in exposure to contaminated soil. Although residents use the municipal water supply, there are residents living approximately one mile from the site using private water wells.

### **Recommendations**

Based on the available information, GDPH recommends that:

- GEPD oversees further site characterization to determine the extent of site related contaminants
- Proper abandonment of unused wells.

GDPH will review data as it becomes available, and provide additional documents, including a follow-up health consultation, if appropriate. If there are any questions regarding this health consultation, please contact Julia McPeek Campbell (404) 657-5234.

Sincerely,

Julia McPeek Campbell  
Chemical Hazards Program Consultant  
State Environmental Health Section  
Division of Public Health  
Georgia Department of Human Resources

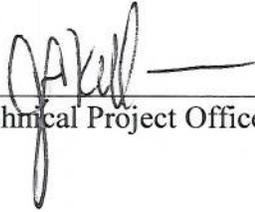
**Cc: Jason Metzger, Georgia Environmental Protection Division  
John Tilden Bembrey, Georgia Environmental Protection Division  
Joseph Sternberg, East Metro Public Health District**

## **REFERENCES**

1. Environmental Conservation Laboratories, Inc., *Laboratory Report, Paper Mill Road Phase II ESA*, 12/14/06.
2. Agency for Toxicological Substances and Disease Registry, *Toxicological Profile for Polychlorinated Biphenyls*, 8/07.
3. Agency for Toxicological Substances and Disease Registry, *Toxicological Profile for Lead*, 8/07.
4. U.S. Environmental Protection Agency, *Soil Screening Guidance: User's Guide*. Publication 9355.4-23; 7/96.
5. Agency for Toxic Substances and Disease Registry, *Soil Comparison Values*; 10/26/07.
6. Agency for Toxic Substances and Disease Registry, *Water Comparison Values*; 10/26/07.

## CERTIFICATION

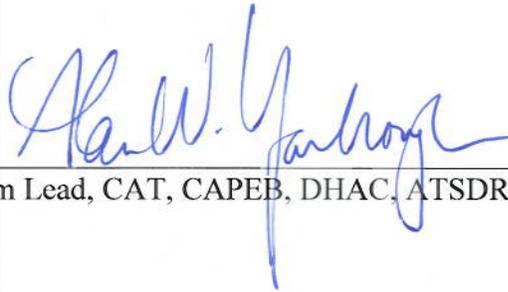
This letter health consultation was prepared by the Georgia Division of Public Health under a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (ATSDR). It was completed in accordance with approved methodologies and procedures existing at the time the health consultation was initiated. Editorial Review was completed by the Georgia Division of Public Health.



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Technical Project Officer, CAT, CAPEB, DHAC

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.



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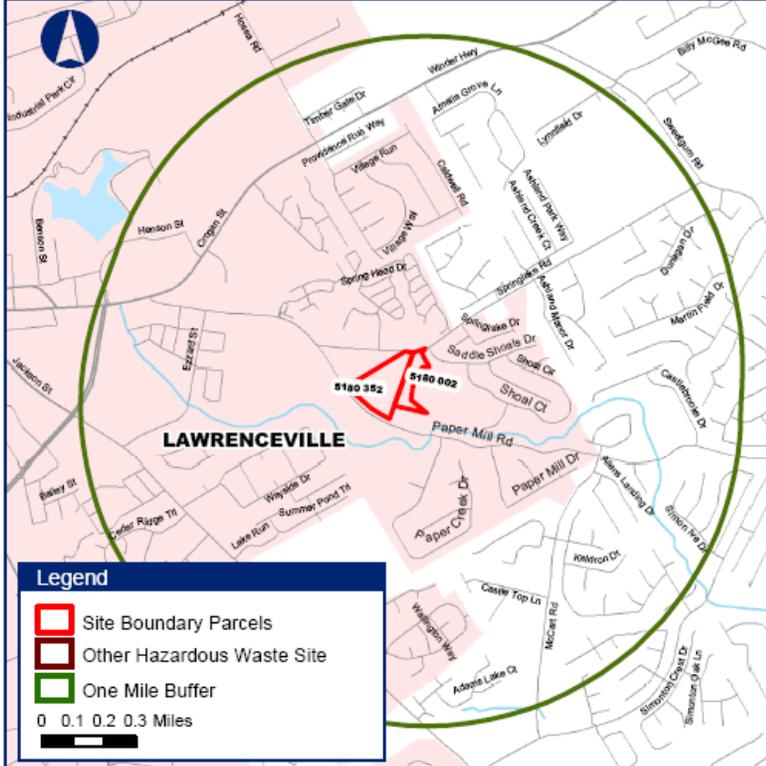
Team Lead, CAT, CAPEB, DHAC, ATSDR

# APPENDIX A: SITE AND DEMOGRAPHIC MAPS

## Paper Mill Road Site Lawrenceville, GA



EPA Facility ID: UNAVAILABLE

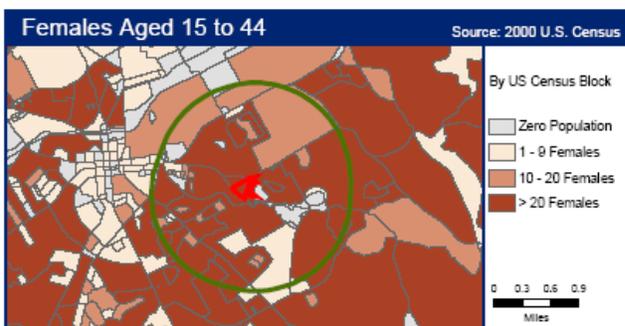
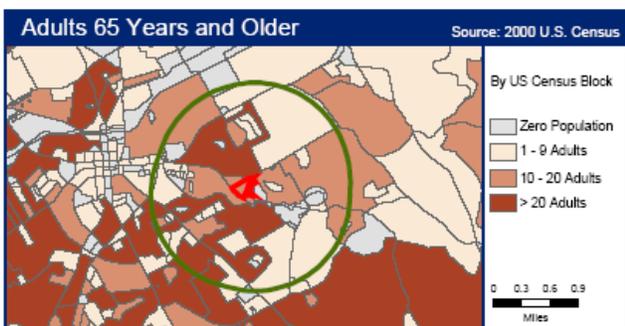
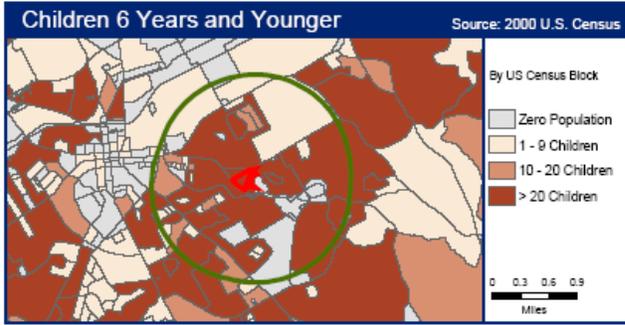
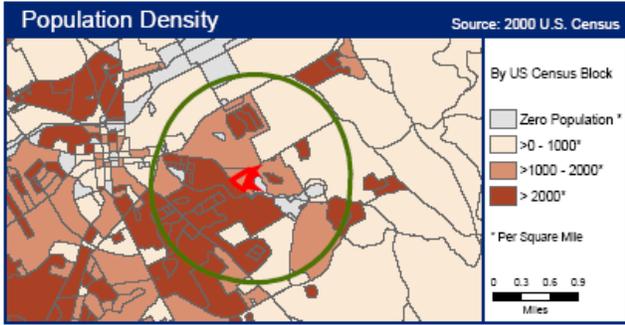


### Demographic Statistics Within One Mile of Site\*

Total Population	6,591
White Alone	4,856
Black Alone	847
Am. Indian & Alaska Native Alone	24
Asian Alone	305
Native Hawaiian & Other Pacific Islander Alone	0
Some Other Race Alone	381
Two or More Races	178
Hispanic or Latino**	994
Children Aged 6 and Younger	835
Adults Aged 65 and Older	433
Females Aged 15 to 44	1,652
Total Housing Units	2,306

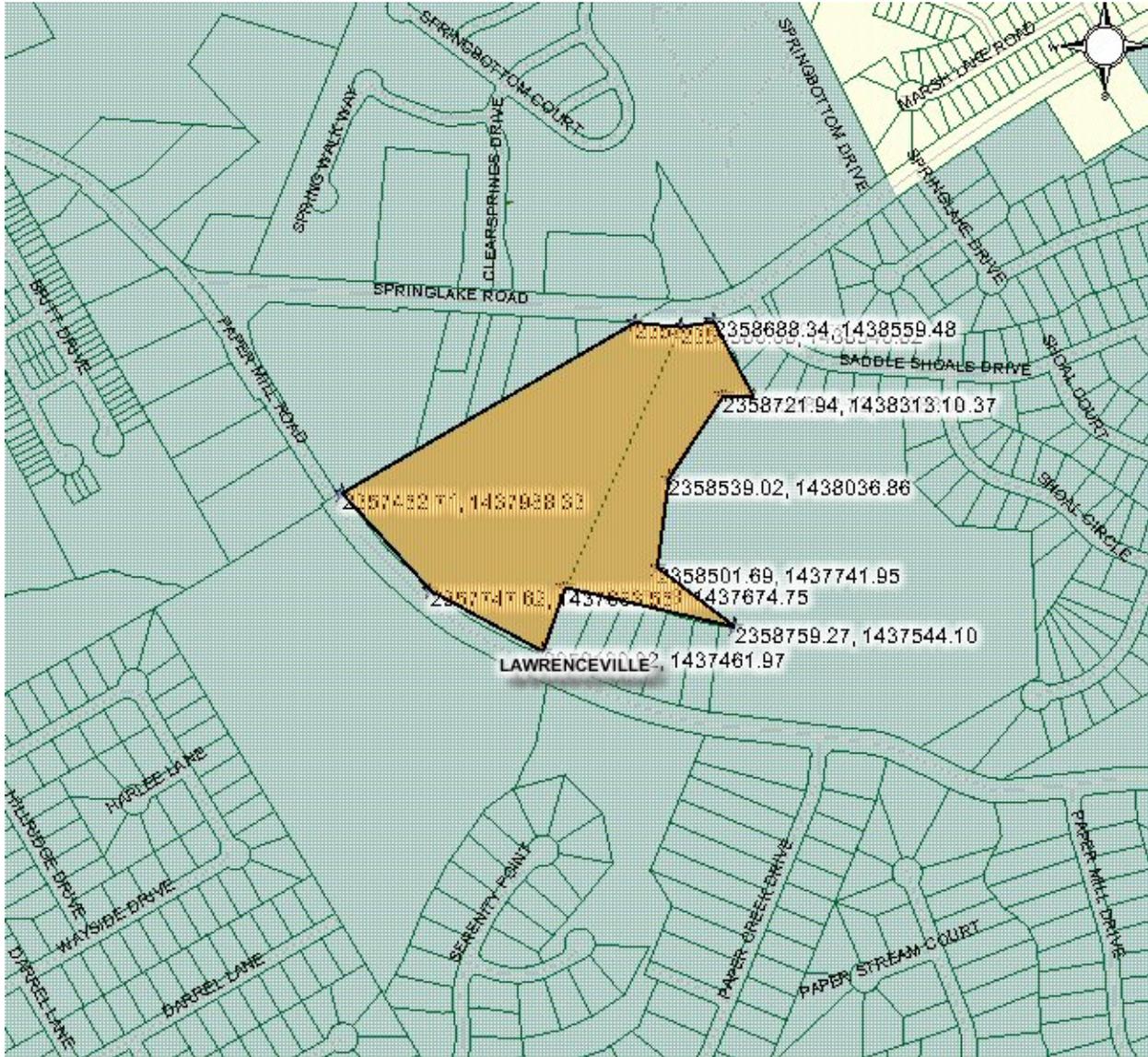
Base Map Source: Geographic Data Technology, May 2005.  
 Site Boundary Data Source: ATSDR Geospatial Research, Analysis, and Services Program, Current as of Generate Date (bottom left-hand corner).  
 Coordinate System (All Panels): NAD 1983 StatePlane Georgia West FIPS 1002 Feet

Demographics Statistics Source: 2000 U.S. Census  
 \* Calculated using an area-proportion spatial analysis technique  
 \*\* People who identify their origin as Hispanic or Latino may be of any race.

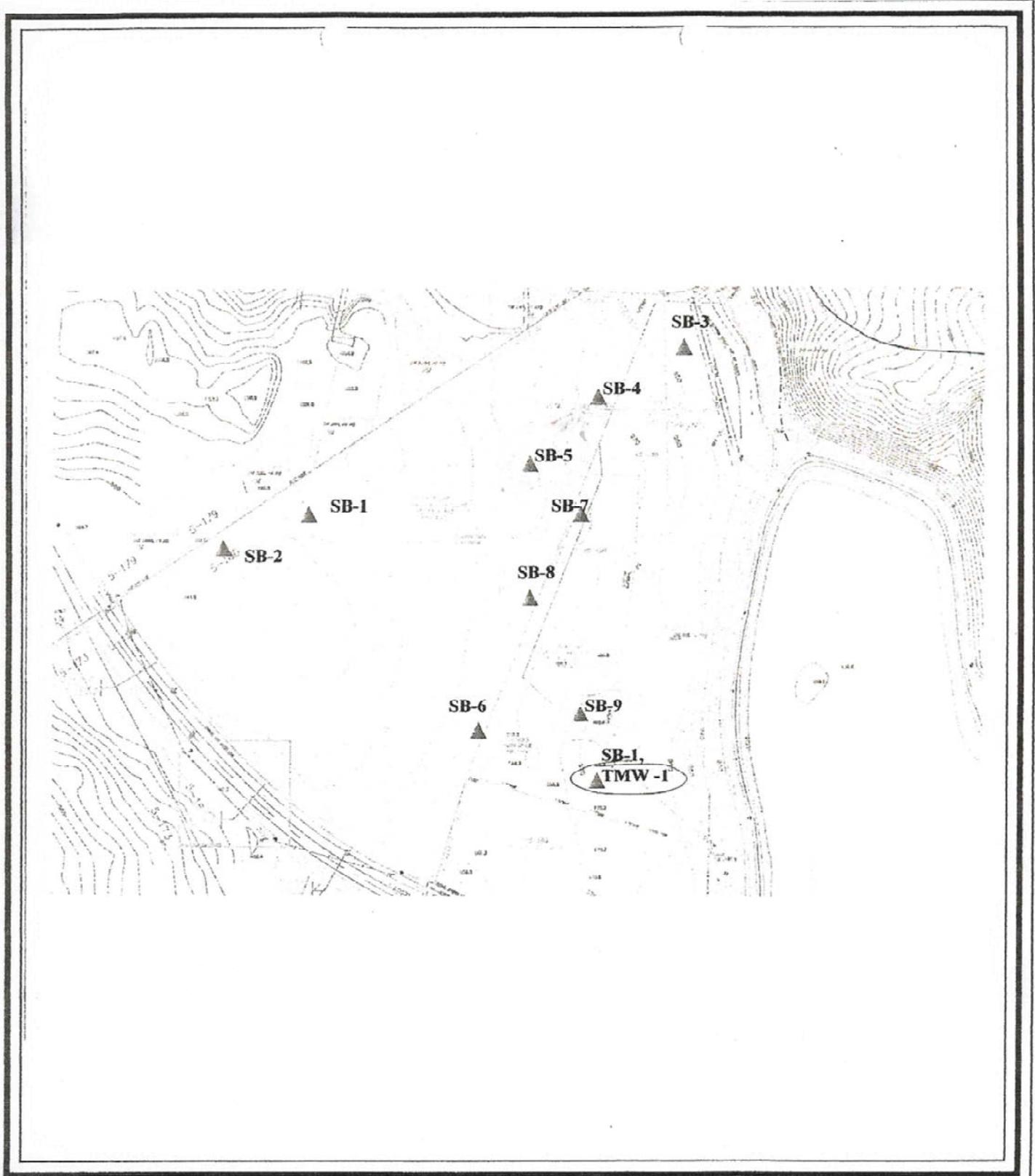


-project-3273--userid-JXAD--geo-Gwinnett County, GA--keywords-GASARDS3273, Paper, Mill-

# Gwinnett County Paper Mill Rd Undeveloped Parcel



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**Figure: 2**  
**Date: 12.06**  
**Job No. EN06071.02**

**BORING LOCATION MAP**  
FOR THE  
Paper Mill Road Site  
LOCATED IN  
**GWINNETT COUNTY, GEORGIA**



## APPENDIX B: PROPER WATER WELL ABANDONMENT FACT SHEET

# FACT SHEET



## *Water Well Abandonment*

This fact sheet provides general information about proper water well abandonment.

### **What is an abandoned well?**

An “abandoned well” is a water well or borehole that is not used anymore, is unable to produce useable water, or is unable to be used because of poor maintenance or significant wear and tear.

Wells are “temporarily abandoned” if they remain unused for a minimum 365 days, or “permanently abandoned” if use is interrupted for more than three years.



### **What does “properly abandoned” mean?**

“Properly abandoned” water well is a well that has been cleared, plugged, and sealed by a licensed well driller. The sealed plug must be constructed to fill the well hole for the length and diameter of the well.

For the work to be legal, it must be done by a licensed well driller, or by a county or municipal government. Water well owners are required to properly abandon a well if it has not been used for at least three years.

### **Why should I properly abandon my well?**

Unused water wells that are not properly abandoned leave open holes in the ground. These holes can be dangerous. People (especially children), pets, and wild animals can get hurt or trapped after falling into an abandoned well.

These holes also serve as direct channels into Georgia’s groundwater. They allow contamination to pass straight through to a drinking water source used by many people. Contamination, such as chemicals or bacteria, may enter the well from the outside environment. The only way to eliminate safety hazards and groundwater contamination from unused wells is to properly abandon them.

### **Are there laws about abandoning water wells?**

The State of Georgia Water Well Standards Act of 1985, (OCGA 12-5-120--12-5-137) provides laws to govern the proper abandonment of water wells. To abandon a well, the owner must hire a licensed well driller. For a list of licensed well drillers, contact the Georgia Environmental Protection Division, Watershed Protection Branch at 404-657-6126, or visit their website at [www.gaepd.org](http://www.gaepd.org).

Well type and site geology determine the material requirements for plugging abandoned water wells. For example, flowing wells and wells that terminate in bedrock are required to be plugged with cement grout. Shallow, small diameter wells may be effectively plugged with bentonite chips.

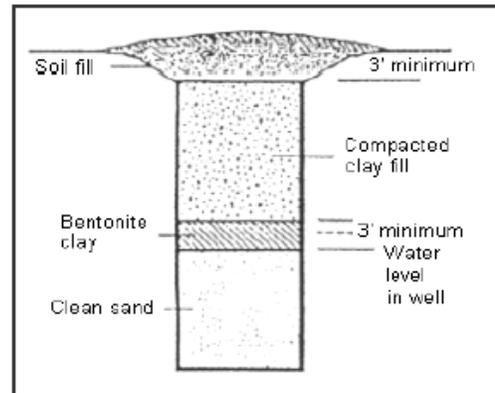
## **How do I know if I have an abandoned water well?**

Abandoned wells can be difficult to identify. A typical well casing is a metal pipe 1 ¼ inches to 6 inches in diameter. A typical dug well may be a ring of concrete, tile, bricks, or rocks 12 to 36 inches in diameter, or more.

Things to look for include pipes sticking out of the ground or floor of a basement, a ring of concrete or bricks surrounding a hole in the ground, or a dip in the land surface. Small buildings, such as sheds, may also house an abandoned well. Unnaturally wet areas may indicate a free flowing well (artesian well) that was never properly sealed.

## **How much will it cost the plug my abandoned well?**

Costs vary depending upon the well depth, diameter, location, and other factors. The cost for plugging a well in Georgia can range from \$50 to \$500. Well depth and diameter, well type, and local geology require different types of plugging material and methods. Your costs may be reduced by having your old well plugged at the time the replacement well is drilled or at the time you connect to municipal water service.



## **Who can I contact for further information and assistance?**

You can contact your local health department, your county cooperative extension office, a registered well drilling contractor, or the Georgia Drillers Association at [www.georgiadrillers.com](http://www.georgiadrillers.com).

### **Proper water well abandonment . . .**

- 1) *Restores protective barrier to minimize groundwater contamination*
- 2) *Removes physical hazards by removing tempting openings for curious children and animals*
- 3) *Restores stability to the land surface*
- 4) *Eliminates or reduces liability*
- 5) *Protects and improves property values*

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### **For More Information, Contact:**

#### **GEORGIA DEPARTMENT OF HUMAN RESOURCES**

Division of Public Health  
Chemical Hazards Program  
2 Peachtree Street, 13<sup>th</sup> Floor  
Atlanta, GA 30303  
(404) 657-6534

[www.health.state.ga.us/programs/hazards](http://www.health.state.ga.us/programs/hazards)

## APPENDIX C: ATSDR LEAD MODEL\*

Numerous longitudinal and cross-sectional studies have attempted to correlate environmental lead levels with blood lead levels. The studies have provided a number of regression analyses and corresponding slope factors for various media including air, soil, dust, water, and food. In an attempt to use this valuable body of data, ATSDR has developed an integrated exposure regression analysis. This approach utilizes slope values from selected studies to integrate all exposures from various pathways, thus providing a cumulative exposure estimate expressed as total blood lead. The worktable in the text can be used to calculate a cumulative exposure estimate on a site-specific basis. To use the table, environmental levels for outdoor air, indoor air, food, water, soil, and dust are needed. In the absence of such data, default values can be used. In most situations, default values will be background levels unless data are available to indicate otherwise. Based on the US Food and Drug Administration's Total Diet Study data, lead intake from food for infants and toddlers is about 5 micrograms per day. In some cases, a missing value can be estimated from a known value. For example, EPA has suggested that indoor air can be considered 0.03 times the level of outdoor air.

Empirically determined or default environmental levels are multiplied by the percentage of time one is exposed to a particular source and then multiplied by an appropriate regression slope factor. Slope factor studies were based upon an assumption that exposure is continuous. The slope factors can be derived from regression analysis studies that determine blood lead levels for a similar route of exposure. Typically, these studies identify standard errors describing the regression line of a particular source of lead exposure. These standard errors can be used to provide an upper and lower confidence limit contribution of each estimate of blood lead. The individual source contributions can then be summed to provide an overall range estimate of blood lead. While it is known that such summing of standard errors can lead to errors of population dynamics, detailed demographic analysis (e.g., Monte Carlo simulations) would likely lead to a model without much utility. As a screening tool, estimates provided by the table have a much greater utility than single value central tendency estimates, yet still provide a simple-to-use model that allows the health assessor an easy means to estimate source contributions to blood lead.

Default values were used in calculating values in the table for exposures to lead other than soil and groundwater. Although it is unknown whether residents using private water wells are exposed to lead detected in groundwater, groundwater sampling results were included in these calculations as a conservative measure. When suggested default values are a range of values, the average of the range is used as the default value.

\* Source: U.S. Public Health Service, Agency for Toxic Substances and Disease Registry, *Draft Toxicological Profile for Lead (Update)*; 2006.

**Table 2. Estimated blood lead levels from exposure to environmental lead for persons exposed to surface soil lead in the Paper Mill Road site.**

Media	Concentration*		Slope Factor** ug/dL per ugPb/kg	Estimated Blood Lead Level (µg/dL)	
Outdoor Air	0.15 ug/m3	0.1 days	1.32	0.0198	
			2.52		0.0378
Indoor Air	0.045	0.3 days	1.32	0.01782	
			2.52		0.03402
Food	5 ug/day	1	0.24	1.2	1.2
Water	53 ug/L	1	0.03	1.59	1.59
Soil	777 mg/kg	0.1 days	0.00583	0.453	
			0.008		0.622
Dust	777 mg/kg	0.1 days	0.00628	0.488	
			0.008		0.622
<b>Total</b>				<b>3.77</b>	<b>4.106</b>

# Highest surface soil concentration of lead found in all samples collected and analyzed above EPA screening level of 400 mg/kg.

\* Suggested default values references:

- Outdoor Air 0.1–0.2 µg/m3 [1]
- Indoor Air 0.1–0.2 µg/m3 [2]
- Food 5 µg/day [3]
- Water 4 µg/day [4]
- Dust 10–70 mg/kg [5]

\*\* Slope values references:

- Outdoor, Indoor air 1.32 (low)–2.52 (high) µg/dL per µg Pb/m [6]
- Food 0.24 µg/dL per µg Pb/day [8]
- Water 0.03 µg/dL per µg Pb/day [8]
- Soil 0.00583 (low)–0.008 (high) µg/dL per µg Pb/kg [6]
- Dust 0.00628 (low)–0.008 (high) µg/dL per µg Pb/kg [6]

For children under the age of six, the Centers for Disease Control and Prevention (CDC) has set a level of concern at 10 micrograms of lead per deciliter of blood (10 ug/dL). This means that children with blood lead levels equal to or greater than 10 ug/dL are considered to have an elevated lead level and require appropriate follow-up. An elevated lead level does not mean that a child will have health effects, especially if caught early, and the source of the lead exposure is removed.