# Health Consultation

CUYAHOGA WRECKING

OPA-LOCKA, MIAMI-DADE COUNTY, FLORIDA

APRIL 19, 2001

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

## EXPOSURE INVESTIGATION

## CUYAHOGA WRECKING

## OPA-LOCA, MIAMI-DADE COUNTY, FLORIDA

Prepared by:

Florida Department of Health
Bureau of Environmental Epidemiology
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

## Summary and Statement of Issues

This health consultation evaluates the public health threat from eating fish from the lake at Ingram Park two blocks south of Cuyahoga Wrecking in Opa-Locka, Florida. The contaminants of concern include heavy metals, pesticides, polychlorinated biphenyls (PCBs), dioxins and polynuclear aromatic hydrocarbons (PAHs). The Miami/Dade County Health Department (MDCHD) collected fish from this lake and requested the Florida Department of Health (FDOH) to evaluate the fish data. The conclusions and recommendations of this consultation are only applicable to people who eat fish from this lake. The FDOH developed this consultation under a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (ATSDR). Financial support for this consultation is provided entirely by the ATSDR.

## Background

The 7.6 acre Cuyahoga Wrecking site is located at 1790 Service Road in Miami-Dade County in Opa-Locka, Florida (Figure 1 and Figure 2). This site is in the Environmental Protection Agency's (EPA's) Brownfield program.

Cuyahoga Wrecking is surrounded by residential, recreational and transportation land uses. Residential properties are located east and west of the site. Ingram Park is south of the site. The lake at Ingram Park is approximately 36 acres (Figure 2). The lake is used for recreational activities such as fishing, swimming and jet skiing. The Biscayne canal connects the lake to Biscayne Bay and the Atlantic Ocean (Figure 3). The CSX railroad and State Road 9 are north of the site. Residential property is north of State Road 9.

The site is relatively flat. However, large piles of debris are scattered throughout the site creating false hills (PBS&J 1999). Surface water runoff from the site drains south to the lake at Ingram Park . The site consists of open ground with no paving. Large portions of the site are heavily overgrown with vegetation.

During the 1970s and 1980s, Cuyahoga Wrecking was the most active demolition contractor in South Florida. In 1986, Cuyahoga declared bankruptcy. The owner's nephew continued to operate Cuyahoga Wrecking until it was abandoned sometime after January 1997.

Cuyahoga Wrecking stored large quantities of demolition debris including removed asbestos. Cuyahoga Wrecking also maintained heavy equipment and vehicles, disposed of petroleum wastes, and burned insulated electrical wire for copper recovery. Scrap metal, 55-gallon drums, abandoned tanks, vehicles, boats, aircraft and other debris were found scattered across the site. For over 20 years, Cuyahoga Wrecking disposed of debris in the lake south of the site (PBS&J 1999).

In 1986, the Opa-Locka City Commission declared Cuyahoga Wrecking a public nuisance. Dade Environmental Resources Management (DERM) found evidence of petroleum spills and illegal filling of the lake. In 1995, the Florida Department of Environmental Protection (FDEP) and DERM issued citations to Cuyahoga Wrecking for environmental violations including non-compliance with solid waste rules.

In August/September 1998, the Florida Freshwater Game and Fish Commission (FGFC) collected samples of largemouth bass and sunfish from the lake at Ingram Park using electroshock equipment. PBS&J labs blended filets from each type of fish to produce one representative sample of each species. The lab analyzed the blended samples for metals, PCBs and pesticides. The laboratory detected chlorinated pesticides and metals. The FDOH evaluated the results and recommended further testing.

In February 1999, the MDCHD collected fish from the lake and from three areas of the canal north of the site. The FDOH Jacksonville laboratory analyzed the fish for arsenic, cadmium, chromium, copper, lead, mercury, selenium and zinc. In March 1999, the FDOH determined it is unlikely that any adverse health effects will occur in children or adults from consumption of metals in the fish from the canal near the Cuyahoga Wrecking site (FDOH, 1999). In March 1999, the City of Opa-Locka posted "no fishing"signs.

## Fish Collection, Laboratory Method and Analysis

On June 29, 2000, the Florida Fish and Wildlife Conservation Commission (FFWCC) collected 12 bluegill and 12 largemouth bass from the lake at Ingram Park using electrofishing. FFWCC collected varying ages of the two fish species and tried to collect the largest possible fish. Three of the largemouth bass weighed seven to eight pounds. The MDCHD gutted the fish and removed the heads. Each fish was individually wrapped in plastic and shipped on ice to PBS& J labs in Orlando. PBS&J labs blended the composited bluegill and bass species and analyzed them for PCBs, organochlorine pesticides and metals. PBS&J analyzed PCBs and organochlorine pesticides using the gas chromatography with electron capture detection (GC/ECD) method and inductively coupled argon plasma spectrometer (ICAP) method to analyze metals.

## Discussion

### *Evaluation of Laboratory Analytical Data collected June 29, 2000*:

The recommended mean and 95$^{th}$ percentile fish consumption values for recreational freshwater anglers are 8 grams/day and 25 grams/day, respectively (EPA 1997). These values were derived by averaging the values from a survey of three populations. To be conservative and protective of public health, we assumed that nearby residents eat more fish from the lake at Ingram Park than the average recreational angler. Thus, we used 32 grams of fish per day (about one ounce) for an

adult and 16 grams of fish per day (about ½ ounce) for a child in our dose calculations. We assumed a child weighs 14.5 kilograms and an adult weighs 70 kg. We calculated doses in milligrams per kilogram per day (mg/kg/day). We then compared these doses to ATSDR's Minimal Risk Levels (MRLs).

In the future, we recommend that all agencies involved with this site request the lowest possible detection limit for each chemical analyzed by laboratories for fish analyses. This will provide precise analytical results rather than estimates.

***Metals:***

Aluminum and zinc were the only two metals with levels above detection limits.

***Aluminum:***

Exposure to aluminum is usually not harmful. Aluminum occurs naturally in foods. An adult eats about 7 to 9 milligrams of aluminum per day in their food. The laboratory results for aluminum were 6 parts per million (ppm) for bluegill and 4 ppm for bass. Our estimate of a child's long-term (≥ 365 days) maximum exposure to aluminum from eating the bluegill or bass is 100 times less than the ATSDR Cancer Effect Levels (CELs). Our estimate for an adult's long-term maximum exposure is 1,000 times less than the ATSDR CELs. Therefore, we do not expect any illness from eating aluminum in the fish from the lake at Ingram Park.

***Zinc:***

Zinc occurs in many of our foods. We are exposed to small amounts of zinc compounds in food every day. Food may contain levels of zinc ranging from approximately 2 parts per million (ppm) (e.g. leafy vegetables) to 29 ppm (meats, fish, poultry). Since the analytical results of 12 composited bluegill and 12 bass were 16.8 and 6.2 ppm respectively, we do not expect any illness from eating zinc in the fish from the lake at Ingram Park.

***Polychlorinated biphenyls (PCBs):***

All of the PCBs analytical results were non-detectable. Therefore, we do not expect any illness from eating PCBs in the fish in the lake at Ingram Park.

***Organochlorine Pesticides (i.e. DDT, chlordane, dieldrin, endosulfan)***:

All of the organochlorine pesticide analytical results were non-detectable. Therefore, we do not expect any illness from eating organochlorine pesticides in the fish from the lake at Ingram Park.

*Polynuclear Aromatic Hydrocarbons (PAHs)*:

Fish rapidly metabolize PAHs absorbed from water, sediments and food. This is why PAHs are not detected or are found only at very low concentrations in fish from areas heavily contaminated with PAHs. Half-lives for elimination of PAHs in fish ranged from 2 days to 9 days (EPA, 1995).

All of the PAH analytical results were non-detectable. Therefore, we do not expect any illness from eating PAHs in fish from the lake at Ingram Park.

*Other Health-Based Standards*:

The levels of chlorinated pesticides in fish from the lake at Ingram Park were less than the Food and Drug Administration (FDA) Action Levels for Poisonous or Deleterious Substances in Human Food and Animal Feed (Department of Health and Human Services 1998). FDA Action Levels apply to commercially sold fish and include economic considerations.

## Children's Health Conclusions

There is currently no public health hazard for children eating the levels of metals, PCBs, organochlorine pesticides and PAHs in fish from the lake at Ingram Park. We do not know what exposures may have occurred in the past.

## Conclusions

Most of the contaminants analyzed in fish from the lake at Ingram Park were below detection levels. For those contaminants that were detected, the levels of metals, PCBs, organochlorine pesticides and PAHs were not of health concern. Therefore, there is currently no public health hazard for children and adults eating fish from the lake at Ingram Park. We do not know what exposures may have occurred in the past.

## Recommendations

FDOH recommends that all agencies involved with this site request the lowest possible detection limit for each chemical analyzed by laboratories for fish analyses. This will provide precise analytical results rather than estimates.

## Public Health Plan

FDOH will continue to provide technical assistance to the Miami-Dade County Health Department and evaluate additional fish analyses upon request.

## Glossary

Cancer Effect Level (CEL) - the lowest dose of chemical in a study, or group of studies, that produces significant increases in the incidence of cancer (or tumors) between the exposed population and its appropriate control.

Minimal Risk Level (MRL) - an estimate of daily exposure of a human being to a chemical ( in mg/kg/day) that is likely to be without an appreciable risk of deleterious effects (noncarcinogenic) over a specified duration of exposure. MRLs are based on human and animal studies and are reported for acute ($\leq$ 14 days), intermediate (15-364 days), and chronic ( $\geq$365 days). MRLs are published in ATSDR Toxicological Profiles for specific chemicals.

Parts Per Million (ppm) - a common basis of reporting water analysis. One part per million (ppm) equals 1 pound per million pounds of water; 14.3 equals one grain per Imperial gallon.

## References


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8. Florida Department of Health (FDOH). 1999. Memo from Bruce Tuovila to Samir Elmir regarding fish tissue analysis.

9. Post, Buckley, Schuh and Jernigan (PBS&J). 1999. Brownfields Site Assessment Report. Cuyahoga Wrecking Site prepared for FDEP.

**FIGURE 1**
**CUYAHOGA WRECKING SITE**

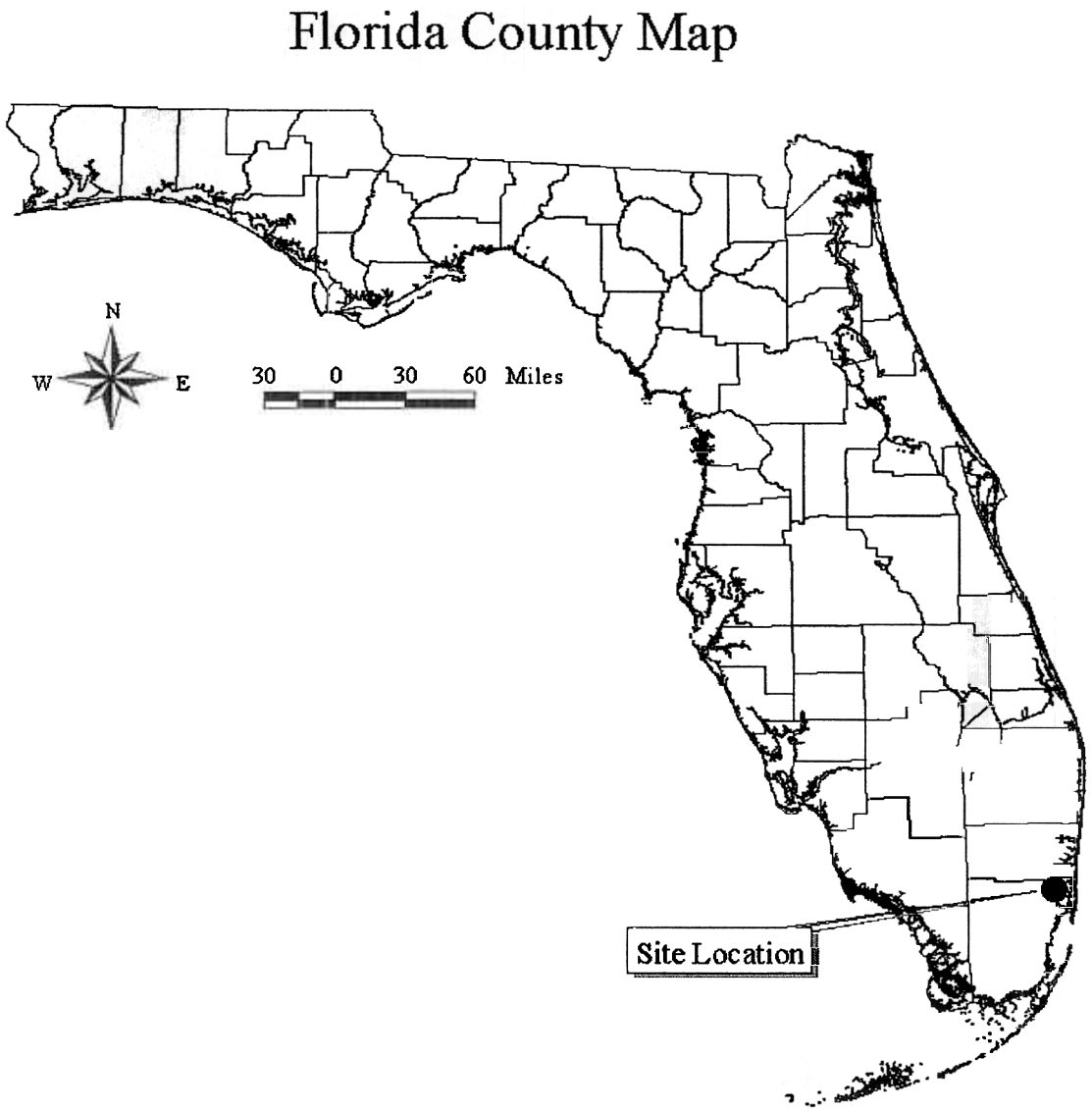


FIGURE 2

CUYAHOGA WRECKING SITE

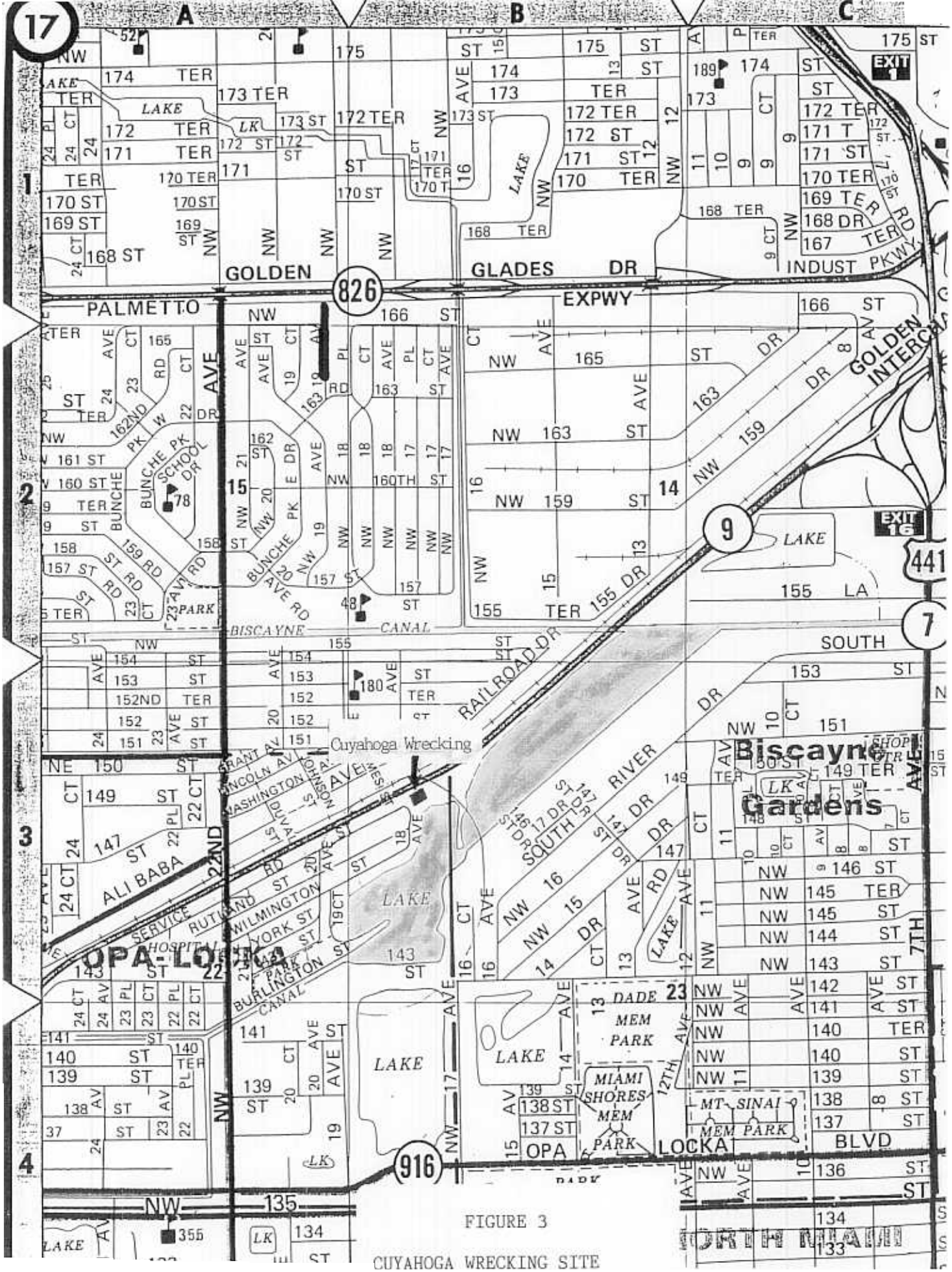


FIGURE 3

CUYAHOGA WRECKING SITE

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## CERTIFICATION

The Cuyahoga Wrecking Site Health Consultation was prepared by the Florida Department of Health, Bureau of Environmental Epidemiology, under a cooperative agreement with the Agency for Toxic Substances and Disease Registry. It is in accordance with approved methodology and procedures existing at the time the health consultation was begun.

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

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