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Health Consultation

**Wiley Davis Landfill Site
Greensboro, North Carolina**

November 26, 1999

SCANNED
6/20/14 *ES*

**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**

Background and Statement of Issues

This is an addendum to a public health consultation (PAC) for the Wiley Davis Landfill site released on September 19, 1999, regarding exposure to contaminated residential groundwater. Additional groundwater and tap water sampling results for residential wells # 3, 7, and 10 were provided to the Agency for Toxic Substances and Disease Registry (ATSDR) for review on October 20, 1999, by the Guilford County Environmental Health Department in Greensboro, North Carolina. The North Carolina State Laboratory of Public Health or the Research Analytical Laboratories, Inc. analyzed these water samples.

In the Wiley Davis Landfill site PHC (September 1999), ATSDR recommended that alternate water supplies be furnished to residences # 3, 7, and 10 (see attached map), because of elevated levels of lead and tetrahydrofuran detected in well water samples. Also, the agency recommended routine monitoring of the residential groundwater or well water at the site.

The most recent (June 28, 1999) groundwater sampling data for residence # 3 indicated that lead was detected in first catch water samples collected from the faucet at 8 micrograms per liter ($\mu\text{g/l}$). After the water ran for about 5 minutes, lead was detected at 9 $\mu\text{g/l}$; and after the tap water ran for 15 minutes, lead was detected at 16 $\mu\text{g/l}$. Although these lead concentrations are lower than the 34 $\mu\text{g/l}$ of lead that was detected earlier, occasionally they are fluctuating above the Environmental Protection Agency's lead action level of 15 $\mu\text{g/l}$.

The most recent (April 30, 1999) water sampling data presented for review for residence # 7 revealed that lead was not detected. However, iron was detected at 78 $\mu\text{g/l}$, barium was detected at 121 $\mu\text{g/l}$, and copper was detected at 106 $\mu\text{g/l}$ from this sample. This water sample was collected by the resident, and it was analyzed by the Research and Analytical Laboratories, Inc. The most recent (June 17, 1999) groundwater sampling data for residence # 10 indicated that tetrahydrofuran was detected at 17 $\mu\text{g/l}$.

Discussion

The fluctuating levels of lead detected in water samples from the faucet at residence # 3 may be the result of lead leaching from the plumbing system. Additional groundwater monitoring is warranted. The Guilford County Environmental Health Department indicated that the person who occupies residence # 3 stated that the water does not have any color that would suggest that iron is present [1]. The most recent water sampling from this resident indicate that the iron concentration was about one half (4,630 $\mu\text{g/l}$) of what was detected earlier (8,560 $\mu\text{g/l}$).

The results of the most recent water samples obtained from residence # 7 indicated that lead was not detected. The iron level has diminished from 58,900 $\mu\text{g/l}$ to 78 $\mu\text{g/l}$ in water samples, and barium and copper were detected at 121 $\mu\text{g/l}$ and 106 $\mu\text{g/l}$, respectively. Currently, there exists no maximum contaminant level (MCL) for iron. However, assuming that a child or adult weighing 10 kilograms (kg) and 70 kg, respectively, ingests 2 liters of water per day which

contains iron at 78 µg/l. The estimated exposure doses would be 10 µg/l of iron per day for a child, and 2.2 µg/l per day for an adult. EPA's reference dose (RFD) for iron is 300 µg/l. Therefore, the estimated exposure doses for a child or adult would be much lower than the RFD. An RFD is the maximum amount of a chemical allowed in drinking water that is not expected to pose a deleterious non-cancer health hazard upon daily ingestion. The MCL for barium is 2,000 µg/l and the MCL for copper is 1,300 µg/l. Therefore, barium and copper are below their respective MCLs. EPA's MCL is the maximum amount of a chemical that is allowed in drinking water that will ultimately be delivered to the public that is not expected to pose a health hazard over 70 years of exposure.

Tetrahydrofuran was detected at 17 µg/l from groundwater samples collected from residence # 10, which is much lower than the 2,394 µg/l that was detected earlier. It was suggested by the Guilford County Environmental Health Department that the tetrahydrofuran detected in groundwater samples may result from glue that was used on newly installed polyvinyl chloride pipes at the residence [1].

Conclusions

Based on the data reviewed, ATSDR concluded the following:

- The levels of lead detected in the most recent groundwater samples from residence # 3 do not represent a health hazard to adults or children;
- It is unlikely that water at residence # 7 which contains barium at 121 µg/l, and copper at 106 µg/l pose a health hazard from daily ingestion, because the levels are below their respective MCLs;
- Similarly, iron at 78 µg/l in water at residence # 7 does not represent a health hazard from daily ingestion, because it is below a level that is likely to result in exposure that would exceed EPA's RFD for iron of 300 µg/l.
- It is unlikely that tetrahydrofuran detected at 17 µg/l in water samples from residence # 10 poses a health hazard following daily ingestion of the groundwater;
- However, since the contaminants levels detected in water samples obtained from these residences are fluctuating, it is prudent public health practice to continue monitoring the water at these residences, and at other wells down gradient from the landfill that may be impacted by the landfill contaminants.

Recommendations

1. Continue monitoring the groundwater from all 26 residential wells reported in the original public health consultation.

2. **Monitor other wells in the immediate vicinity down gradient from the landfill that may be impacted by the landfill's contaminants.**

Prepared by:

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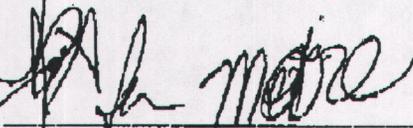
Reference

1. Agency Record of Activity (AROA), October 18, 1999, telephone conversation regarding Wiley Davis Landfill Site between Robert L. Williams (ATSDR) and Mr. Ken Carter (Guilford County Environment Health Department) Greensboro, NC.

Approved:

 11/06/99

Chief, EICB, DHAC Date

 11/21/99

Section Chief, EICB, DHAC Date

