

Health Consultation

Review of Health and Safety Plan for the Gilbert and Bennett Lagoon Site

GILBERT AND BENNETT MANUFACTURING COMPANY
REDDING (GEORGETOWN), FAIRFIELD COUNTY, CONNECTICUT

EPA FACILITY ID: CTD000847764

FEBRUARY 2, 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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Prepared by:

Connecticut Department of Public Health
Under Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

The conclusions and recommendations in this health consultation are based on the data and information made available to the Connecticut Department of Public Health and the Agency for Toxic Substances and Disease Registry. The Connecticut Department of Public Health and the Agency for Toxic Substances and Disease Registry will review additional information if it becomes available. The review of any additional data could change the conclusions and recommendations listed in this document.

Background and Statement of Issues

On October 23, 2000, the Environmental Protection Agency forwarded the health and safety plan for remediation activities at the Gilbert and Bennett Lagoon Site to the Connecticut Department of Public Health for review [1]. The purpose of this Health Consultation is to determine whether the health and safety plan is adequately designed to protect the public health of nearby residents during remediation activities.

The remedial activities will include, among other actions, the following [1]:

- Preparing work zones and decontamination area.
- Restricting site access to authorized personnel only.
- Clearing debris and vegetation as needed from the work area.
- Conducting personal air sampling for lead.
- Excavating the most highly contaminated soil.
- Conducting on-site soil treatment and stabilization.
- Transporting soil to an off-site location for treatment and disposal.
- Constructing geotextile and stone cap.
- Demobilizing all personnel and equipment.

Site Description and History

The Gilbert and Bennett Manufacturing Company produced wire fences and screens from the early 1800s and ceased operation in July of 1989 [2]. The facility was recently used as the Corporate Headquarters and several buildings have been leased for various operations (National Historic Society storage and renovation of the Weir Farm, recycling material storage, private property shipping and storage, storage of garden furniture, tractor-trailer truck, and woodworking operations) [2]. The Gilbert and Bennett facility is located in Georgetown, CT, which is a village in the southwest corner of the Town of Redding. Segments of the facility property may extend into the town of Wilton, CT.

The manufacturing operations conducted at the Gilbert and Bennett facility involved steel rod cleaning, extruding, vinyl coating, painting, welding, lead annealing (malleability), zinc galvanizing and product packaging [2]. Wastes generated during these processes include the following: waste acids and acid slush, alkalis, solvents, oils, paints, lacquers, lead and zinc skimmings, and metal hydroxide sludge. Acids were used during the metal processing procedure. Acidic waste water from the manufacturing processes was neutralized by adding a lime solution. This process resulted in the precipitation of metals (notably: lead, zinc and iron) [2]. The precipitated solids (also known as by-products and metal hydroxide sludge) were disposed of in

several locations in the surface impoundment area. Specifically, the locations included: two ponds, one drying area, and several mounds. The metal hydroxide sludge has the consistency of a pasty, fine grained clay-like material [3]. The color is reddish-rust when dry, and dark gray, green, or light blue when wet [3]. The estimated volume of hydroxide sludge-related waste material is 46,000 cubic yards [3].

The surface impoundment-lagoon area is approximately four acres. The area is bordered on the north by Redding Road (also known as Route 107), the Norwalk river on the east and south, and an active rail line on the west. The northern portion of the area is leased to the town and contains a wastewater treatment plant. The wastewater treatment plant is currently being expanded.

A previous Health Consultation has been developed which examined the physical and chemical hazards present at the surface impoundment-lagoon area and manufacturing area [4]. The soil located in the surface impoundment-lagoon area was identified as representing a public health hazard to nearby construction workers. The surface soil from two adjacent residential properties contained lead and zinc below a level of concern.

During remediation activities within the impoundment-lagoon area, fugitive dust may be generated. This dust has the potential to contain high levels of lead. If this dust then migrates off the site, the nearest resident (located 100 yards from the site) could then be exposed to site-related contaminants.

Discussion

Residents who live near the impoundment-lagoon area are at risk of exposure to site-related contaminants during remediation activities. The principal contaminant of concern is lead. Lead is known to harm the nervous system and may result in decreased intelligence scores, attention deficits, slowed growth and hearing problems among children. Exposure to high levels of lead can cause the brain and kidneys of adults and children to be badly damaged. Particulates are also a focus of concern; since inhalation of particulates has been associated with respiratory illnesses and cardiovascular disease.

The Health and Safety Plan has not addressed the off-site migration potential of lead or particulates. The only provisions for air monitoring are for on-site workers. The specifics of the on-site worker air monitoring protocol for lead and particulates are presented in the following table.

Location	Compound	Frequency	Action level
Unspecified area (air sampling and personal air sampling)	Lead	Daily for first five days of excavation. Continue as necessary	Half of OSHA PEL for lead 0.025 mg/m ³ . If action levels are reached, cease work and re-evaluate work practices and engineering controls.
Unspecified	Particulates	During contaminated soil excavation and load-out activities	If ≤ 1.7 mg/m ³ use worker protection level D; if >1.7 mg/m ³ then increase worker protection to level C, and increase/re-evaluate dust suppression or other engineering controls.

These air monitoring parameters for particulates and lead appear to be protective for the on-site workers. However, if this protocol were to be implemented, the CT DPH and ATSDR would have significant concerns regarding the protection of the public health of nearby residents. First, there are no provisions for monitoring dust or lead at locations near residential properties. Second the action levels are above established health protective values established for other lead remediation sites in CT [5].

Conclusions

The CT DPH and ATSDR examined the health and safety plan for the Gilbert and Bennett Lagoon Site, and have concluded that the plan does not adequately protect the public health during remediation activities. Specifically, there are no air monitoring plans to ensure that the public health of residents is protected during remediation activities.

Recommendations

The CT DPH and ATSDR recommend the following additions and enhancements to the health and safety plan to ensure the protection of public health during all phases of the remediation effort.

1. Real-time particulate monitoring should be conducted during waste handling activities or activities that may generate fugitive dust. The fugitive dust readings should be obtained at downwind locations (one adjacent to the nearest resident, one each on the eastern and western fence lines), and should be based on 15-minute average concentrations. Action levels for total suspended particulates (150 mg/m³), and lead (3 ug/m³). The lead value is based on the state of Connecticut's 8-hour Hazard Limit Value. Both action levels have been used at other EPA lead-remediation sites in CT [3]. These should be adopted for this site.

If action levels are reached, then upwind measurements should be obtained. These sampling strategies are best accomplished using simultaneous sampling of down and upwind locations. If the downwind exceeds the upwind by 100 mg/m^3 , then dust suppressions contingencies should be initiated. If such dust suppression measures do not lower the concentrations to below 150 mg/m^3 , then remedial activities should be suspended.

2. Inform the Local Health and CT State Health departments of the air monitoring results on a daily basis.
3. When any exceedance occurs, notify the CT DPH, CT DEP, and the Redding Health Department at the end of the day.
4. If work has been suspended to reduce dust emissions, immediately notify CT DPH, CT DEP, and the Redding Health Department.
5. The emergency contacts should be expanded to include the CT DPH, and Redding Health Department.

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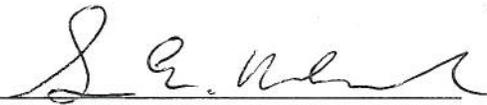
Certification

The Health Consultation for the Gilbert and Bennett Lagoon site was prepared by the Connecticut 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 health consultation was initiated.



Technical Project Officer, SPS, SSAB, DHAC

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



Chief, SPS, SSAB, DHAC, ATSDR

for R. G.

References

1. Roy F. Weston, Inc. Health and Safety Plan for the Gilbert and Bennett Lagoon Site North Main Street, Redding, Fairfield County, Connecticut. Contract No.: 68-W-00-097, DC NO.: R-1109. September 5, 2000.
2. U. S. Environmental Protection Agency New England Region 1. Memorandum from Carolyn Casey (EPA) to Beth Timm (ATSDR Region 1), and Gary Perlman (CT DPH) concerning request for a Health [Consultant] at the Gilbert and Bennett Facility and surrounding area in Georgetown CTD001162775. August 16, 2000.
3. Malcolm Pirnie. Closure and Post-Closure Plan; By-Product Management Area for the Gilbert and Bennett Manufacturing Company. Project No.: 1835-04-4. April 1992, Revised January 1995.
4. ATSDR Health Consultation "Public Health Implications of Environmental Sampling and Physical Site Conditions at the Gilbert and Bennett Manufacturing Company" Georgetown, Connecticut CERCLIS NO. CTD001162775, Connecticut, *Under Review*.
5. ATSDR Health Consultation "Review of Air Monitoring and Air Sampling Data Collected from April 15 through September 20, 1999 During Excavation of Areas of Environmental Concern: 12, 20, 6-1, 5-1, 5-2, 5-3, 16, and 9-4" Lake Success Business Park formerly known as Remmington Arms Park CERCLIS NO. CTD980520480 Bridgeport, Fairfield County, Connecticut, July 18, 2000.