

Letter Health Consultation

BJAT SITE

FRANKLIN, MASSACHUSETTS

**Prepared by
Massachusetts Department of Public Health**

OCTOBER 14, 2016

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Community Health Investigations
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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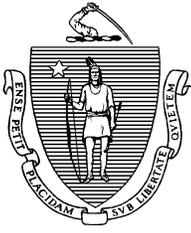
LETTER HEALTH CONSULTATION

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October 14, 2016

David E. McKearney, Director
Franklin Health Department
Town of Franklin
355 East Central Street
Municipal Building
Franklin, MA 02038

Dear Mr. McKearney:

As you know, the property at 300 Fisher Street in Franklin that is owned by BJAT LLC (BJAT) was proposed in March 2015 and designated in September 2015 as a National Priorities List (NPL) site by the United States Environmental Protection Agency (US EPA). The Massachusetts Department of Public Health, Bureau of Environmental Health (MDPH/BEH), under a cooperative agreement with the U.S. Agency for Toxic Substances and Disease Registry (ATSDR), assesses the presence and nature of health hazards at sites proposed to the NPL. As part of this agreement, MDPH/BEH is evaluating the public health implications of contamination at the BJAT site.

In this letter health consultation, MDPH evaluated two issues: 1) evidence of frequent trespassing and physical and chemical hazards on the site, and 2) whether site contamination has impacted the Town of Franklin public drinking water wells that are within 0.3 miles of the BJAT property. MDPH conducted a file review of the most readily available environmental data pertaining to the BJAT site from the MassDEP and US EPA. MDPH/BEH conducted two site visits in 2015 and reviewed analytical testing results from the Town of Franklin public drinking water wells. This letter health consultation is based on currently available data. Assuming that additional data are generated during the NPL remedial process, MDPH/BEH will evaluate other sampling data, characterize the nature and extent of site hazards, and recommend any additional public health actions that are needed.

Potentially impacted individuals in relation to this property include those who trespass at the BJAT site. MDPH/BEH identified physical hazards on site that could pose a potential risk to trespassers and classifies the site as a Public Health Hazard based on the presence of physical hazards. To address this issue, MDPH/BEH developed a factsheet (mailed to you along with a cover letter on 5/2/16) for distribution to Franklin residents in order to discourage trespassing. In addition, although MDPH/BEH did not fully evaluate chemical hazards at the BJAT site, they

are known to be present in soil and building materials. If soil and building materials are disturbed, trespassers could be exposed to elevated levels of lead in soil and asbestos and PCBs in building materials. Further investigations need to be completed to fully understand the impact of chemical hazards on trespassers.

Additionally, based on hydrological data reported by the US EPA, heavy metal contamination on the BJAT property could potentially contaminate the nearby public water wells through groundwater transport. This represents a potential future risk. MDPH/BEH evaluated **untreated** well water data from the public wells located 0.3 miles downgradient from the BJAT site. Based on available data, the wells are not currently impacted by BJAT site contamination. At this time, data are insufficient to determine if the Town of Franklin's water supply could be affected in the future by heavy metal contamination originating from the BJAT site. The limitations are based on the limited amount of sampling data for the untreated water, in addition to undefined trends for groundwater in the area. Consistent with US EPA concerns about potential contamination of nearby public water wells, MDPH/BEH recommends future testing of the untreated well water in order to monitor the potential risk of contamination. MDPH will continue to evaluate data as they become available for this NPL site.

BACKGROUND AND STATEMENT OF ISSUES

The BJAT site is an 18.3-acre property that dates back to 1884 or earlier as the Franklin Beet Sugar Refinery. The first rubber company to occupy the property was Saylor Rubber Company in 1899, and other business entities continued production until 1949. The site was later used for poultry dressing and then production of plastic products which concluded in 1985 (US EPA 2014). The property is bordered to the northeast by the Town of Franklin Department of Public Works (DPW); to the east and southeast by railroad tracks, motocross trails, and nearby residences; to the southwest by I-495; and to the north and northwest by wetlands, surface water, beach/recreational areas and forests owned by the Town of Franklin. Groundwater flow beneath the property is predominantly to the west and northwest toward I-495 and Town of Franklin public drinking water wells (US EPA 2014).

The BJAT site currently has one large, dilapidated building with various rooms and corridors once housing industrial processes. The building is a prominent hazard with frequent trespassing and structurally inadequate floors, walls, and limited roofing. The building sits on an elevated plain that slopes to the north and northwest into wetlands and surface water. There are four main disposal areas near the main BJAT building where lead, mercury, and zinc were detected above applicable health-based comparison values in soil, as well as in sediment located downgradient near the access road to the public wells. Detectable levels of semivolatile organic compounds (SVOCs) remain from historical plastic product production. The deteriorating structure contains hazardous building materials, including asbestos, lead, and polychlorinated biphenyls (PCBs) (R.I. Analytical 2015). For this letter health consultation, we evaluated onsite physical hazards and preliminary soil contamination data at the BJAT site; MDPH/BEH intends to fully evaluate soil, sediment, and groundwater data in a future document after additional data become available.

Four of the 11 wells maintained by Franklin DPW for public drinking water are located within 0.3 miles of the BJAT site. These four wells are located downgradient from the BJAT site and

draw from a water table that is influenced by surface water located between the wells and the BJAT site (US EPA 2014). The BJAT site is located in the MassDEP Wellhead Protection Area known as Zone II, which is the area of an aquifer that will contribute to the public water supply under the most drastic pumping and recharge conditions anticipated (MassDEP 2016). Groundwater beneath the BJAT site has been impacted by heavy metal contamination and it discharges into the wetlands between the site and the public wells (US EPA 2014). At the request of US EPA, one untreated water sample was collected from each of the four public water wells on November 12, 2015, and analyzed for metals. MDPH/BEH reviewed sample results contained in a laboratory report submitted to US EPA and MassDEP (US EPA 2015). MDPH/BEH staff compared these sampling results to health-based guidelines and standards for public drinking water (i.e. ATSDR risk-based values and Massachusetts Department of Environmental Protection [MassDEP] Maximum Contaminant Levels [MMCLs]).

DISCUSSION

MDPH/BEH staff conducted a preliminary review of available environmental data and noted evidence of frequent trespassing during site visits. Based on this information, MDPH/BEH recommends that the fencing that surrounds the BJAT site be properly maintained and trespassing discouraged for the following reasons:

1. The structures are in disrepair and present potential physical harm to trespassers on the BJAT site.
2. Exposed building materials contain hazardous materials, including asbestos, lead, and PCBs. Trespassers could potentially disturb the soil or building materials and increase their risk of being exposed to chemical hazards.
3. A preliminary review of available environmental sampling data for the BJAT site revealed elevated levels of metals in surface soil (US EPA 2014). In particular, lead was detected in accessible surface soil at a maximum concentration of 39,990 ppm, which is well above the Massachusetts state standard for lead (S-1 soil standard = 200 ppm) in soil associated with unrestricted use (e.g., parks, playgrounds and schoolyards) (MassDEP 2014).

One untreated water sample was collected from each of the four public water wells. Our review of the analytical results for **untreated** public drinking water indicates that the majority of metals were either not detected or detected below health-based guidelines. It should be noted that lead was detected in one out of four water samples at a maximum level of 0.006 milligrams per liter (mg/L). While any lead exposure should be avoided, this level is below the Massachusetts action level of 0.015 mg/L. The public drinking water wells currently have membrane ultra-filtration treatment for iron and manganese (Waldron 2016). Ultra-filtration combined with natural minerals is useful for filtering lead out of water sources (Katsou 2011). The most recent Town of Franklin Consumer Confidence Report (CCR) indicated the detection, but noted that lead was not detected above the action level in the Franklin water distribution system (Franklin DPW 2015).

Samples from the four wells near the BJAT property contained elevated levels of iron and manganese (US EPA 2014). Manganese was detected in all four untreated public well samples at a maximum level of 1.2 mg/L, which is above the US EPA and MassDEP health-based guideline of 0.3 mg/L. The well water was tested pre-treatment, and the Town of Franklin currently treats the water from these public wells for iron and manganese. According to the 2015 Franklin CCR, iron was detected above US EPA's Secondary MCL (SMCL) of 0.3 mg/L, with the average detection level falling below the SMCL (Franklin DPW 2015). The SMCL for iron is based on it adversely affecting the taste of drinking water and staining of laundry and plumbing fixtures. Aluminum, barium, chromium, and zinc were detected in the four pre-treatment samples, but all were below applicable ATSDR and MMCL values.

Manganese is naturally occurring in the area and is not considered a contaminant of concern at BJAT, based on the US EPA Site Investigation Report (2014). According to the most recent Town of Franklin CCR, manganese was detected at a maximum of 1.2 mg/L and an average of 0.251 mg/L in treated water across the distribution system (Franklin DPW 2015). Because Town of Franklin drinking water is treated and then mixed within the distribution system, the samples cited in the CCR likely represent a mixture of water from the 11 municipal wells.

In compliance with US EPA and MassDEP regulations, the Franklin DPW provided guidance regarding manganese in the Consumer Confidence Report: http://franklinma.virtualltownhall.net/Pages/FranklinMA_Publicworks/General_Pages/2015_CC_R.pdf. For adults, EPA recommends that lifetime intake of manganese be less than 0.3 mg/L and over the short term, that people limit their consumption of water with levels over 1 mg/L, primarily due to concerns about possible neurological effects (Franklin DPW 2015). For children up to 1 year of age, exposure to water containing manganese concentrations over 0.3 mg/L should be limited to less than ten days. Formula for infants should not be made with water containing manganese levels over 0.3 mg/L for longer than 10 days (More information about manganese in drinking water can be found here: <http://www.mass.gov/eea/docs/dep/water/drinking/mnpws13.pdf>).

CONCLUSIONS

Several signs warning against trespassing have been posted throughout the BJAT site perimeter and interior; however, there is evidence of frequent trespassing. MDPH/BEH concludes that the most immediate risk on the BJAT property is the potential harm to trespassers via physical hazards on site. Chemical hazards are present on site, and future evaluations will indicate the extent of contamination and possible threat to trespassers. As reiterated previously in the letter, MDPH/BEH is categorizing the physical hazards on the BJAT site as a Public Health Hazard due to the high potential for potential trespassers to be negatively impacted.

Based on the sampling results from the four untreated public wells, the wells are not currently impacted by BJAT site contamination. As stated above, manganese is naturally occurring in the area and is not considered a contaminant of concern at BJAT (U.S. EPA 2014). The available data are not sufficient to conclude whether Franklin residents could be exposed via public drinking water to heavy metal contaminants originating from BJAT in the future. More sampling, particularly seasonal, is required to determine the potential future impact from heavy

metals originating from the BJAT property. Upon request, MDPH/BEH is available to review any future sampling results from the public water wells. In addition and as noted above and in the CCR, manganese was detected at maximum concentrations above the health-based guideline in treated public water, although the average concentration was below the guideline. Recommendations are provided below on how to address this situation.

RECOMMENDATIONS

MDPH/BEH developed a factsheet (mailed to you on 5/2/16) for distribution to Franklin residents in order to provide an additional deterrent to trespassing. We recommend distributing the factsheet to public and private schools, sporting goods stores, and youth-related groups, such as religious youth groups.

Lastly, we recommend that the Franklin Health Department provide additional educational statements in addition to the Consumer Confidence Reports, such as on the Town of Franklin website, to the community regarding ways to decrease potential exposure to manganese. For example, individuals should be educated that drinking water may naturally have manganese and, when concentrations are greater than 0.05 mg/L, water may be discolored and taste bad. Over a lifetime, EPA recommends that adults drink water with manganese levels less than 0.3 mg/L and over the short term, EPA recommends that adults limit their consumption of water with levels over 1 mg/L, primarily due to concerns about possible neurological effects. For children up to 1 year of age, exposure to water containing manganese concentrations over 0.3 mg/L should be limited to less than ten days. Formula for infants should not be made with water containing manganese levels over 0.3 mg/L for longer than 10 days. From the town website, residents could be directed to MassDEP's webpage on "Manganese in Massachusetts Drinking Water" for this information: <http://www.mass.gov/eea/agencies/massdep/water/drinking/manganese-in-drinking-water.html>

Please do not hesitate to contact us at 617-624-5757 if you have any questions or concerns regarding this letter.

Sincerely,

Jan Sullivan
Acting Director, MDPH Bureau of Environmental Health
Director, Community Assessment Program

References:

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