UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE – SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

**CONTAINS ENFORCEMENT-SENSITIVE INFORMATION**

**MEMORANDUM**

**DATE:** January 23, 2017

**SUBJ:** Request for a Second Removal Action at the King Philip Mills Site, Fall River, Bristol County, Massachusetts - **Action Memorandum**

**FROM:** Wing Chau, On-Scene Coordinator WC
Emergency Response and Removal Section II

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**THRU:** William Lovely, Chief
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**TO:** Bryan Olson, Director BO
Office of Site Remediation and Restoration

## I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action at the King Philip Mills Site (the Site), which is located at 386 Kilburn Street in Fall River, Bristol County, Massachusetts. Hazardous substances present in oil within electrical transformers at the Site, if not addressed by implementing the response actions selected in this Action Memorandum, will continue to pose a threat to human health and the environment. There are no nationally significant or precedent-setting issues associated with this Site, and there has been no use of the OSC's $200,000 warrant authority.

## II. SITE CONDITIONS AND BACKGROUND

**CERCLIS ID# :** MAN000103302
**SITE ID# :** 01LJ
**CATEGORY :** Time-Critical

## A. Site Description

### 1. Removal site evaluation

On May 25, 2016, the Massachusetts Department of Environmental Protection (MassDEP) requested EPA's assistance in evaluating whether current site conditions, including the potential release of transformer oil containing polychlorinated biphenyls (PCBs), at the Site would warrant a time-critical removal action. On August 1, 2016, EPA, MassDEP, and EPA's Superfund Technical Assessment and Response Team (START) contractor conducted a site reconnaissance to evaluate the electrical transformers and determine how to access these transformers to collect oil samples for PCB analysis. The transformers of concern are located within a brick building specifically constructed to house the electrical components that had provided electrical power to the onsite mill buildings. In the west side of the transformer building, there are approximately 20 oil circuit breaker cups and 10 small box transformers. In the eastern side of the building, there are approximately 11 cylindrical transformers that were located in 4 enclosures. In the southern end of the transformer building, there are 4 large box transformers that sit on the building floor and were approximately of ceiling height.

On September 15, 2016, EPA, MassDEP, and START returned to the Site to perform the preliminary assessment/site investigation (PA/SI) sampling activities. Approximately 28 oil samples were collected for PCB analyses from these transformers located within the transformer building. In addition, 10 surficial soil samples were collected for PCB and heavy metals analysis from the perimeter of the transformer building and the two courtyard areas south of the transformer building. Analytical results for the samples collected during the PA/SI indicate the presence of PCBs in some of the transformer oils. In addition, PCBs have also been detected in one of the surface soil samples. This sample location is only a few feet from the south side of the transformer building, indicating a release PCBs to the environment had already occurred. Based upon the PA/SI sampling results and the release and/or potential for further release of transformer oil containing PCBs, the PA/SI was concluded and a time-critical removal action was recommended in the Site Investigation Closure Memorandum dated December 22, 2016.

### 2. Physical location

The Site is located at 386 Kilburn Street, Fall River, Bristol County, Massachusetts. It is further identified in the City of Fall River Assessor's Office as B17-001; B17-0009; and B17-0010, at the Bristol County Registry of Deeds in Book 5514, Page 24, and in a takings document recorded in Book 7381, Page 38. The geographical coordinates at the approximate center of the Site are 41°40'55" north latitude and 71°10'21" west longitude.

### 3. Site characteristics

The approximately 5-acre property contains a series of interconnected mill factory buildings. The mill buildings consist of four 4-story granite buildings and an adjacent 2-story office building. In addition, there is a transformer house in the north-central portion of the Site (between Mill No.1 and Mill No.2). The property is bordered to the north by Dwelly Street and residential properties, to the west by Kilburn Street and residential/commercial properties, to the south by a commercial property, and to the east by Cook Pond, which is a recreational and fishing resource for the community.

The King Philip Mills was operated as a cotton mill from 1871 until approximately 1970. King Philip Mills was organized in 1871 and Mill number (No.) 1 was built. In 1881, Mill No. 2 was built. Mill No. 3 was added in 1888 for weaving, and Mill No. 4 was built in 1892. In 1930, the property was sold to Berkshire Fine Spinning Associates. In 1983, the Site was added to the National Register of Historic Places. Sometime during the 1990s, the buildings were divided into various rental units for storage and light manufacturing.

Currently, the mill buildings are no longer occupied. Despite having a chain-linked fence around the property and regular security patrols by the City of Fall River, trespassing onto the property occurs frequently, which is demonstrated by the amount of vandalism and graffiti found onsite and also confirmed by city employees. Local news outlets have reported that on February 5, 2016 a Fall River man was arrested for allegedly breaking into the King Philip Mills Site and attempting to set the mills on fire.

Based on information in EPA's EJSCREEN environmental justice screening tool, zero out of 11 Environmental Justice Indexes for the area within a one-mile radius of the site exceed the 80th percentile on a national basis. In addition, according to the EJSCREEN tool, the population within 1 mile of the Site is approximately 22,180. Please see the attached EJSCREEN standard report for more information.

### 4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The PA/SI sampling event has documented the presence of PCBs within the oils in approximately 9 of the electrical transformer located onsite. In addition, PCBs detected in a surface soil sample collected near the transformer building demonstrates that a release of PCBs has already occurred. Below is a table summarizing the oil and surface soil sample locations that had analytical results showing the presence of PCBs.

| Sample Location | PCB Concentration | Media | MassDEP MCP S-3 & GW-3 | EPA RMLs (HQ=3) Industrial Soil |
|---|---|---|---|---|
| SS-07 | 11 ppm (Aroclor-1248) | Soil | 4 ppm | 95 ppm (Aroclor-1248) |
| Oil-12 | 13 ppm (Aroclor-1260) | Oil | N/A | N/A |
| Oil-13 | 14 ppm (Aroclor-1260) | Oil | N/A | N/A |
| Oil-14 | 13 ppm (Aroclor-1260) | Oil | N/A | N/A |
| Oil-15 | 9.3 ppm (Aroclors-1242 and 1260) | Oil | N/A | N/A |
| Oil-16 | 8.9 ppm (Aroclors-1242 and 1260) | Oil | N/A | N/A |
| Oil-17 | 1.3 ppm (Aroclor-1260) | Oil | N/A | N/A |
| Oil-18 | 1.3 ppm (Aroclor-1260) | Oil | N/A | N/A |
| Oil-19 | 0.86 ppm (Aroclor-1260) | Oil | N/A | N/A |
| Oil-21 | 4.4 ppm (Aroclor-1260) | Oil | N/A | N/A |

Notes:

1) MassDEP MCP S-3 GW-3 = Massachusetts Contingency Plan S-3 & GW-3 Soil Standard.
2) EPA RML = EPA Removal Management Levels for Industrial Soil. Used RML table where Hazard Quotient (HQ) = 3 and Target Risk (TR) = $10^{-4}$

PCBs are hazardous substances as defined by Section 101(14) of CERCLA, 42 U.S.C. 9601 (14).

As noted previously, despite the presence of a fence and routine security patrols by the City of Fall River, vandalism occurs at the Site frequently, which includes individuals trespassing onto the property to steal copper and other scrap metals that may have some value. While these individuals are stripping the electrical components for its valuable contents, they are indiscriminately releasing the PCB oil onto the floor of the building and subsequently tracking it from the transformer building to the outside environment. In addition, there are various oil stained areas on the concrete floor areas underneath these transformers.

### 5. NPL status

The Site is not currently on the National Priorities List, and has not received a Hazardous Ranking System rating.

## B. Other Actions to Date

### 1. Previous actions

Subsequent to a fire at the mill complex in January 2012, the Fall River Fire Department (FRFD) conducted an inspection of the facility and discovered several 55-gallon drums and other containers of potentially hazardous materials improperly stored throughout the mill buildings. In April 2013, the City of Fall River and MassDEP requested EPA's assistance to assess the Site to determine whether a time-critical removal action was warranted. On December 12, 2013, EPA and its START contractor mobilized to the Site to inspect and conduct an inventory of the various containers of hazardous materials. On March 24, 2014, EPA and its START contractor performed a PA/SI, which included collecting samples from the drums/containers, surface soils, and suspected asbestos-containing materials (ACM). Based upon the results of the PA/SI, EPA conducted a time-critical removal action from September 2014 to November 2014 to address these drums/containers and the friable ACM that needed to be removed in order to facilitate EPA's removal action.

### 2. Current actions

In August 2015, Beta, Inc. completed a Phase I Environmental Site Assessment for the City of Fall River, which was funded using a Brownfields grant from EPA.

In March 2016, Beta, Inc. performed a Phase II Limited Subsurface Investigation for the City of Fall River, which was also funded using a Brownfields grant from EPA, and issued the draft report in June 2016.

## C. State and Local Authorities' Roles

### 1. State and local actions to date

On March 5, 2003, FRFD, the Massachusetts State Fire Marshall's Office, MassDEP, and EPA responded to a report of improper storage of 55-gallon drums of oil and hazardous materials at the Site. The State Fire Marshall issued a Notice of Improper Storage of Materials to the responsible party and ordered removal and disposal of the materials due to its fire hazards. MassDEP issued a Notice of Responsibility to the Site owner. The owner of the hazardous materials, who rented the storage space from the property owner, hired an environmental cleanup contractor to characterize and properly dispose of the hazardous materials. The Site owner also

hired an environmental consultant to oversee the work and to ensure the cleanup actions were in compliance with MassDEP's requirements.

On December 18, 2015 and January 5, 2016, National Grid removed its damaged pad-mounted transformer from the Site. National Grid hired Clean Harbors and Tighe & Bond to address the oil impacted transformer pad and nearby soils. Upon completion of their cleanup activities and to document their response actions, Tighe & Bond submitted to MassDEP a Limited Removal Action Report on behalf of National Grid.

In May 2016, MassDEP hired Clean Harbors Environmental Services to address two above-ground storage tanks (ASTs) containing fuel oil. MassDEP's cleanup contractor also performed some limited sampling of the transformers onsite, collecting a total of 7 oil samples for PCB analysis. Two of the samples collected were from two wall mounted transformers on the backside of the main mill building; and the other five samples were composite samples collected from various transformers within the transformer building.

In September 2016, City of Fall River personnel performed some clearing and grubbing activities at the Site adjacent to the transformer building to assist EPA with getting access to the PA/SI sampling areas.

### 2. Potential for continued State/local response

After the proposed EPA removal action has been completed, MassDEP will continue to work with the City of Fall River to address any remaining environmental issues under the Massachusetts Contingency Plan (MCP) Chapter 21E (310 CMR 40). The City of Fall River will continue to provide logistical support to EPA during the removal action as needed.

## III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

As described below, the conditions at the Site meet the general criteria for a removal action, as set forth in 40 C.F.R. §300.415(b)(1), in that "there is a threat to public health or welfare of the United States or the environment," and in consideration of the factors set forth in 40 C.F.R. §300.415(b)(2) as described below.

Polychlorinated Biphenyls (PCBs) – Please see the Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, Public Health Service, *ToxFAQ Fact Sheet for Polychlorinated Biphenyls, February 2001* in Attachement 2.

PCBs are hazardous substances as defined by Section 101(14) of CERCLA, 42 U.S.C. 9601 (14).

Nine of the electrical transformers that were sampled contain oil with PCBs. The staining on the floor of the transformer building indicates the release of some of the transformer fluids have occurred. Vandalism occurs at the Site frequently, which includes individuals trespassing onto the property to steal copper and other scrap metals that may have some value. While these individuals are stripping the electrical components for its valuable contents, they are indiscriminately releasing the PCB oil onto the floor of the building and subsequently tracking it from the transformer building to the outside environment. Furthermore, the analytical results for one of the surface soil samples collected near the transformer building indicate the presence of PCBs.

*Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants; [§300.415(b)(2)(i)];*

The Site is located within a residential area, with residential homes located directly across the street from the Site on the west along Kilburn Street and to the north on Dwelly Street. Cook Pond, which is a recreational and fishing resource for the community, abuts the Site along the eastern side of the property. The release or potential release of transformer oil containing PCBs pose an exposure threat to trespassers, who have demonstrated from past actions, that they are making unauthorized entry to the Site in order to salvage metal and/or electrical parts. There is a significant risk that these trespassers will be exposed to PCB oil as a result of salvaging activities. While these individuals are stripping the electrical components for its valuable contents, they are indiscriminately releasing the PCB oil onto the floor of the building and subsequently tracking it from the transformer building to the outside environment. PCB contaminated oil, released from the transformers and tracked outside by these trespassers, could also potentially migrate to the abutting Cook Pond, which is approximately 100 feet away from the transformer building.

*Actual or potential contamination of drinking water supplies or sensitive ecosystems [§300.415(b)(2)(ii)];*

The Site is located within a residential area and also abuts the Cook Pond, which is a recreational and fishing resource for the community. Cook Pond straddles along the entire eastern side of the property and the transformer building is approximately with 100 feet of the pond. When trespassers strip these transformers and its related electrical parts for salvageable scrap metals, the release or potential further release of transformer oil containing PCBs could potentially migrate to the abutting Cook Pond. While these individuals are stripping the electrical components, they are indiscriminately releasing the PCB oil onto the floor of the building and subsequently tracking it from the transformer building to the outside environment, thus contaminating nearby surface soils. Surface soils can be easily mobilized during heavy rain events.

*Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release [§300.415(b)(2)(iii)];*

The PA/SI has documented the presence of oils containing PCBs in nine of the sampled electrical transformers located in the transformer building. Since all operations have ceased at the facility approximately 2 years ago, these transformers are no longer active and appear to be leaking onto the concrete floor of the building in which they are housed. The releases likely occurred when trespassers made unauthorized entries to the Site in order to salvage metal and/or electrical parts. The leaking constitutes a release to the environment, and continued trespassing and scrapping activities threaten to exacerbate the extent of release, posing a threat of further release to the soils immediately adjacent to the transformer building.

*Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [§300.415(b)(2)(v)];*

Adverse weather conditions could potentially cause surface soils containing PCBs to further migrate through surface water runoff. In addition, the transformer building is in a state of disrepair. Although the city attempts to board up the broken windows and secure the doors with bolts, the regularly occurring vandalism at the Site, at times, leaves the building wide open to the environment. Thus, rainfall can easily enter into the building and potentially mobilize the released PCB oils from within the building and onto the surface soil areas immediately outside of the building. Contaminated surface soils due to trespassers tracking PCBs oil onto it from the transformer building can also be easily mobilized by heavy rain events.

*Threat of fire or explosion [§300.415(b)(2)(vi)];*

As noted previously, the Site has a history of several trespassing incidents, including the arrest of a Fall River man in February 2016 for allegedly breaking into the King Philip Mills Site and attempting to set the mill on fire. A fire near the PCB transformers would likely lead to a significant release of PCBs to the environment.

## IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances or pollutants or contaminants from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment. In accordance with OSWER Directive 9360.0-34 (August 19, 1993), an endangerment determination is made based on "appropriate Superfund policy or guidance, or on collaboration with a trained risk assessor, which is outlined and discussed in Section III above. Appropriate sources include, but are not limited to, relevant action level or clean-up standards, Agency for Toxic Substances and Disease Registry documents or personnel, or staff

toxicologists." EPA also relied on the Massachusetts Contingency Plan's (MCP) cumulative risk approach which compares site-specific information to a Cumulative Cancer Risk Limit (*See* 310 Code of Massachusetts Regulations (CMR) 40.0000). In this case, PCB concentrations within the electrical transformers exceed the risk limits presented in the table shown in Section II.A.4 above and there is evidence that PCB oils have been released from some of these transformers onto the floor within the building and to surface soil areas immediately outside of it. Unless the oil from these transformers is removed, there is the potential that further releases of PCB oils to the environment will occur.

## V. PROPOSED ACTIONS AND ESTIMATED COSTS

### A. Proposed Actions

#### 1. Proposed action description

The actions required to mitigate the threats outlined herein, are given below. The proposed actions will protect public health, welfare, and the environment by removing the hazardous substances from accessible areas of the Site. It is expected that specific removal activities will include, among other things, the following:

Specific removal activities will include the following:

- Conducting a site walk with the cleanup contractor;
- Developing a site specific Health and Safety Plan (HASP);
- Clearing of vegetation and debris, as needed;
- Mobilizing of personnel and equipment to the Site;
- Collecting samples, from transformers not previously sampled, for analysis and other samples as needed to develop waste profiles;
- Draining PCB oils from the approximately 10 transformers into appropriate shipping containers and prepare for off-site disposal;
- Conducting gross decontamination of impacted floors area of the transformer building;
- Arranging for transportation and disposal (T&D) of hazardous substances at EPA-approved off-site disposal facilities, as needed;
- Conducting post-removal confirmation sampling as necessary; and
- Repairing response-related damages, if necessary.

## 2. Community relations

A Community Involvement Coordinator (CIC) has been assigned to this Site and will assist the OSC by engaging with local and state officials, and residents to keep them informed about the removal action. The CIC will prepare press releases and fact sheets as necessary.

## 3. Contribution to remedial performance

The cleanup proposed in this Action Memorandum is designed to mitigate the threats to human health and the environment posed by the Site. The actions taken at the Site would be consistent with and will not impede any future responses. Following completion of the removal action, regulatory oversight of the Site will be returned to the MassDEP.

## 4. Description of innovative technologies and sustainable approaches

Alternative technologies and sustainable approaches will be considered and incorporated, as appropriate, throughout the implementation of the removal action.

## 5. Applicable or relevant and appropriate requirements (ARARs)

Pursuant to 40 C.F.R. 300.415(j), removal actions shall, to the extent practicable considering the exigencies of the situation, attain ARARs. Current ARARs identified, but not limited to, are listed below.

Federal ARARs:

40 CFR Part 761.61: TSCA requirements for cleanup and disposal of PCBs.

40 C.F.R. Section 761.79: TSCA Decontamination of Equipment Used.

State ARARs:

40 C.F.R. Parts 260-262 and 264 Resource Conservation and Recovery Act, Subtitle C-Hazardous Waste Identification and Listing Regulations; Generator and Handler Requirements, Closure and Post-Closure - Massachusetts has been delegated the authority to administer these RCRA standards through its state hazardous waste management regulations. Waste generated will be tested to determine whether it exceeds hazardous waste thresholds and, if so, the hazardous waste will be managed on-site and until such time as it is shipped to an EPA-approved off-site disposal location.

The OSC will coordinate with State officials to identify additional State ARARs, if any. In accordance with the National Contingency Plan and EPA Guidance Documents, the OSC

will determine the applicability and practicability of complying with each ARAR that is identified in a timely manner.

### 6. Project schedule

Upon approval of the proposed removal action, EPA expects to initiate the time-critical removal action in early 2017 and estimates the removal action will be completed within 6 weeks.

## B. Estimated Costs

| COST CATEGORY | | CEILING |
|---|---|---|
| *REGIONAL REMOVAL ALLOWANCE COSTS:* | | |
| ERRS Contractor | | $75,000.00 |
| Interagency Agreement | | $ 0.00 |
| *OTHER EXTRAMURAL COSTS NOT FUNDED FROM THE REGIONAL ALLOWANCE:* | | |
| START Contractor | | $30,000.00 |
| Extramural Subtotal | | $105,000.00 |
| Extramural Contingency | 10% | $10,500.00 |
| **TOTAL, REMOVAL ACTION CEILING** | | **$115,500.00** |

## VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will increase public health risks due to the potential contact threat posed by the release and/or threat of further release of PCBs at and from the Site. The absence of a removal action described herein will cause conditions at the Site to remain unaddressed, and threats associated with the presence of hazardous substances at the Site will continue to pose a threat to human health and the environment.

## VII. OUTSTANDING POLICY ISSUES

There are no precedent-setting policy issues associated with this site.

## VIII. ENFORCEMENT ... For Internal Distribution Only

See attached Confidential Enforcement Strategy.

The total EPA costs for this removal action that will be eligible for cost recovery are estimated to be $115,500.00 (extramural costs) + $50,000.00 (EPA intramural costs) = $165,500.00 X 1.4867 (regional indirect rate) = $246,048.85 [1].

## IX. RECOMMENDATION

This decision document represents the selected removal action for the King Philip Mills Site in Fall River, Massachusetts, developed in accordance with CERCLA, as amended, and is not inconsistent with the National Contingency Plan. The basis for this decision will be documented in the administrative record to be established for the Site.

Conditions at the Site meet the NCP Section 300.415 (b) (2) criteria for a removal action due to the following:

*Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants [§300.415(b)(2)(i)];*

*Actual or potential contamination of drinking water supplies or sensitive ecosystems [§300.415(b)(2)(ii)];*

*Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release [§300.415(b)(2)(iii)];*

*Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [§300.415(b)(2)(v)];*

*Threat of fire or explosion [§300.415(b)(2)(vi)];*

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[1]Direct Costs include direct extramural costs $115,500.00 and direct intramural costs $50,000.00. Indirect costs are calculated by using regional indirect rate in effect at time cost estimate is prepared, and is expressed as a percentage of the direct costs 48.67% x $165,500.00, consistent with EPA's full cost accounting methodology effective October 01, 2016. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

I recommend that you approve the proposed removal action. The total extramural removal action project ceiling if approved will be ~~$T~~15,500.00.

APPROVAL:_____ DATE: 1/29/17

DISAPPROVAL:_____ DATE:_____

# Attachment 1 - EJ SCREEN Summary Report

# EJSCREEN Report (Version 2016)

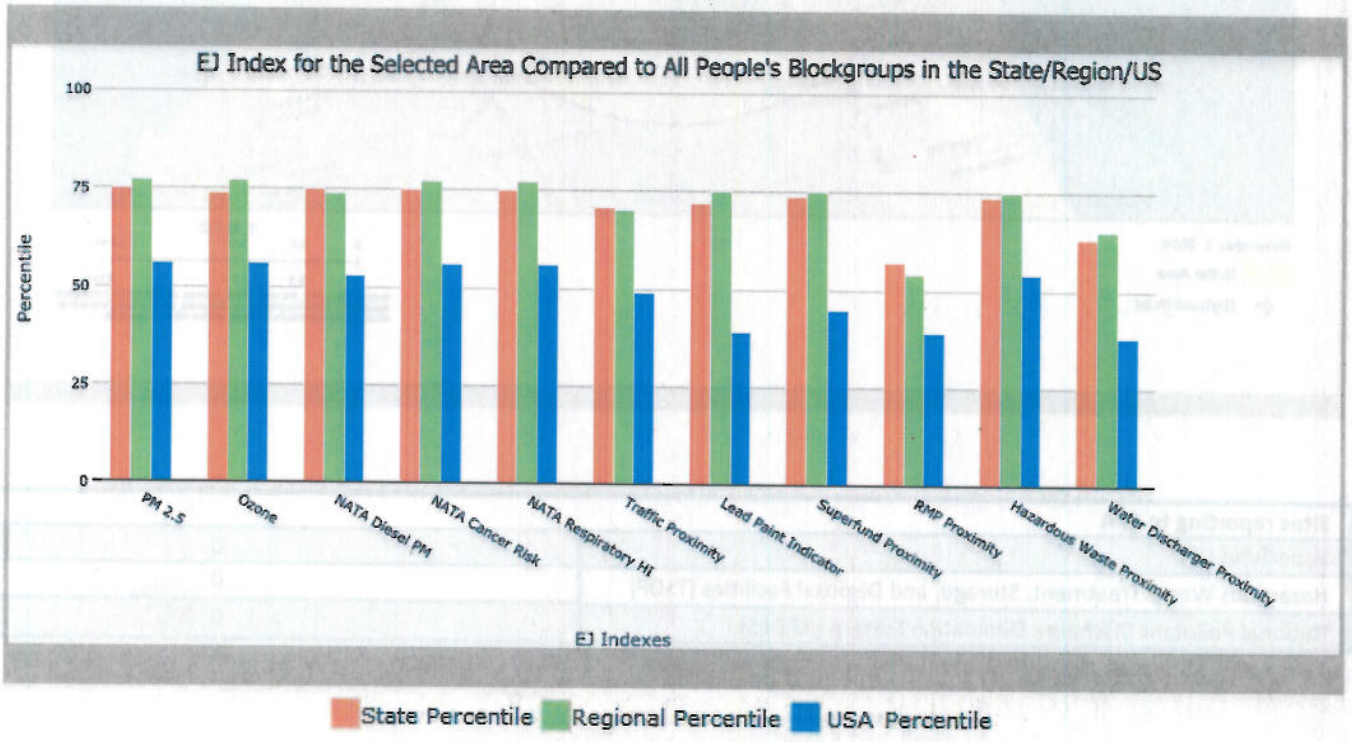
**1 mile Ring Centered at 41.681540,-71.172747, MASSACHUSETTS, EPA Region 1**

**Approximate Population: 22,180**

**Input Area (sq. miles): 3.14**

**King Philip Mills Site**

| Selected Variables | State Percentile | EPA Region Percentile | USA Percentile |
|---|---|---|---|
| **EJ Indexes** | | | |
| EJ Index for PM2.5 | 75 | 77 | 56 |
| EJ Index for Ozone | 74 | 77 | 56 |
| EJ Index for NATA* Diesel PM | 75 | 74 | 53 |
| EJ Index for NATA* Air Toxics Cancer Risk | 75 | 77 | 56 |
| EJ Index for NATA* Respiratory Hazard Index | 75 | 77 | 56 |
| EJ Index for Traffic Proximity and Volume | 71 | 70 | 49 |
| EJ Index for Lead Paint Indicator | 72 | 75 | 39 |
| EJ Index for Superfund Proximity | 74 | 75 | 45 |
| EJ Index for RMP Proximity | 57 | 54 | 39 |
| EJ Index for Hazardous Waste Proximity+ | 74 | 75 | 54 |
| EJ Index for Water Discharger Proximity | 63 | 65 | 38 |




This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

# EJSCREEN Report (Version 2016)

**1 mile Ring Centered at 41.681540,-71.172747, MASSACHUSETTS, EPA Region 1**

**Approximate Population: 22,180**

**Input Area (sq. miles): 3.14**

**King Philip Mills Site**

| Selected Variables | Value | State Avg. | %ile in State | EPA Region Avg. | %ile in EPA Region | USA Avg. | %ile in USA |
|---|---|---|---|---|---|---|---|
| **Environmental Indicators** | | | | | | | |
| Particulate Matter (PM 2.5 in µg/m³) | 7.48 | 8.38 | 11 | 8.06 | 20 | 9.32 | 14 |
| Ozone (ppb) | 44.9 | 42.3 | 96 | 42.8 | 72 | 47.4 | 31 |
| NATA* Diesel PM (µg/m³) | 0.746 | 0.869 | 53 | 0.711 | 60-70th | 0.937 | 50-60th |
| NATA* Cancer Risk (lifetime risk per million) | 29 | 35 | 22 | 33 | <50th | 40 | <50th |
| NATA* Respiratory Hazard Index | 1.1 | 1.6 | 21 | 1.5 | <50th | 1.8 | <50th |
| Traffic Proximity and Volume (daily traffic count/distance to road) | 44 | 290 | 34 | 320 | 38 | 590 | 38 |
| Lead Paint Indicator (% Pre-1960 Housing) | 0.77 | 0.52 | 77 | 0.46 | 83 | 0.3 | 90 |
| Superfund Proximity (site count/km distance) | 0.088 | 0.17 | 50 | 0.16 | 51 | 0.13 | 62 |
| RMP Proximity (facility count/km distance) | 0.89 | 0.36 | 89 | 0.3 | 92 | 0.43 | 86 |
| Hazardous Waste Proximity+ (facility count/km distance) | 0.045 | 0.11 | 17 | 0.12 | 28 | 0.11 | 31 |
| Water Discharger Proximity (facility count/km distance) | 1.2 | 0.36 | 95 | 0.43 | 92 | 0.31 | 95 |
| **Demographic Indicators** | | | | | | | |
| Demographic Index | 34% | 25% | 74 | 24% | 77 | 36% | 55 |
| Minority Population | 17% | 25% | 52 | 22% | 60 | 37% | 36 |
| Low Income Population | 50% | 25% | 87 | 26% | 87 | 35% | 76 |
| Linguistically Isolated Population | 11% | 6% | 82 | 5% | 86 | 5% | 85 |
| Population With Less Than High School Education | 35% | 10% | 94 | 10% | 95 | 14% | 91 |
| Population Under 5 years of age | 6% | 5% | 58 | 5% | 60 | 6% | 47 |
| Population over 64 years of age | 18% | 14% | 71 | 15% | 69 | 14% | 74 |

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

+ The hazardous waste environmental indicator and the corresponding EJ index will appear as N/A if there are no hazardous waste facilities within 50 km of a selected location.

For additional information, see: www.epa.gov/environmentaljustice

Attachment 2 - ATSDR ToxFAQ Fact Sheet for Polychlorinated Biphenyls, February 2001

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

# POLYCHLORINATED BIPHENYLS

Division of Toxicology ToxFAQs™

February 2001

**This fact sheet answers the most frequently asked health questions (FAQs) about polychlorinated biphenyls. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**HIGHLIGHTS: Polychlorinated biphenyls (PCBs) are a mixture of individual chemicals which are no longer produced in the United States, but are still found in the environment. Health effects that have been associated with exposure to PCBs include acne-like skin conditions in adults and neurobehavioral and immunological changes in children. PCBs are known to cause cancer in animals. PCBs have been found in at least 500 of the 1,598 National Priorities List sites identified by the Environmental Protection Agency (EPA).**

## What are polychlorinated biphenyls?

Polychlorinated biphenyls are mixtures of up to 209 individual chlorinated compounds (known as congeners). There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs have no known smell or taste. Many commercial PCB mixtures are known in the U.S. by the trade name Aroclor.

PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment and can cause harmful health effects. Products made before 1977 that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and old microscope and hydraulic oils.

## What happens to PCBs when they enter the environment?

❑ PCBs entered the air, water, and soil during their manufacture, use, and disposal; from accidental spills and leaks during their transport; and from leaks or fires in products containing PCBs.

❑ PCBs can still be released to the environment from hazardous waste sites; illegal or improper disposal of industrial wastes and consumer products; leaks from old electrical transformers containing PCBs; and burning of some wastes in incinerators.

❑ PCBs do not readily break down in the environment and thus may remain there for very long periods of time. PCBs can travel long distances in the air and be deposited in areas far away from where they were released. In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments. PCBs also bind strongly to soil.

❑ PCBs are taken up by small organisms and fish in water. They are also taken up by other animals that eat these aquatic animals as food. PCBs accumulate in fish and marine mammals, reaching levels that may be many thousands of times higher than in water.

## How might I be exposed to PCBs?

❑ Using old fluorescent lighting fixtures and electrical devices and appliances, such as television sets and refrigerators, that were made 30 or more years ago. These items may leak small amounts of PCBs into the air when they get hot during operation, and could be a source of skin exposure.

❑ Eating contaminated food. The main dietary sources of PCBs are fish (especially sportfish caught in contaminated lakes or rivers), meat, and dairy products.

❑ Breathing air near hazardous waste sites and drinking contaminated well water.

❑ In the workplace during repair and maintenance of PCB transformers; accidents, fires or spills involving transformers, fluorescent lights, and other old electrical devices; and disposal of PCB materials.

## How can PCBs affect my health?

The most commonly observed health effects in people exposed to large amounts of PCBs are skin conditions such as acne and rashes. Studies in exposed workers have shown changes in blood and urine that may indicate liver damage. PCB exposures in the general population are not likely to result in skin and liver effects. Most of the studies of health effects of PCBs in the general population examined children of mothers who were exposed to PCBs.

Animals that ate food containing large amounts of PCBs for short periods of time had mild liver damage and some died. Animals that ate smaller amounts of PCBs in food over several weeks or months developed various kinds of health effects, including anemia; acne-like skin conditions; and liver, stomach, and thyroid gland injuries. Other effects

of PCBs in animals include changes in the immune system, behavioral alterations, and impaired reproduction. PCBs are not known to cause birth defects.

**How likely are PCBs to cause cancer?**

Few studies of workers indicate that PCBs were associated with certain kinds of cancer in humans, such as cancer of the liver and biliary tract. Rats that ate food containing high levels of PCBs for two years developed liver cancer. The Department of Health and Human Services (DHHS) has concluded that PCBs may reasonably be anticipated to be carcinogens. The EPA and the International Agency for Research on Cancer (IARC) have determined that PCBs are probably carcinogenic to humans.

**How can PCBs affect children?**

Women who were exposed to relatively high levels of PCBs in the workplace or ate large amounts of fish contaminated with PCBs had babies that weighed slightly less than babies from women who did not have these exposures. Babies born to women who ate PCB-contaminated fish also showed abnormal responses in tests of infant behavior. Some of these behaviors, such as problems with motor skills and a decrease in short-term memory, lasted for several years. Other studies suggest that the immune system was affected in children born to and nursed by mothers exposed to increased levels of PCBs. There are no reports of structural birth defects caused by exposure to PCBs or of health effects of PCBs in older children. The most likely way infants will be exposed to PCBs is from breast milk. Transplacental transfers of PCBs were also reported In most cases, the benefits of breast-feeding outweigh any risks from exposure to PCBs in mother's milk.

**How can families reduce the risk of exposure to PCBs?**

❑ You and your children may be exposed to PCBs by eating fish or wildlife caught from contaminated locations. Certain states, Native American tribes, and U.S. territories have issued advisories to warn people about PCB-contaminated fish and fish-eating wildlife. You can reduce your family's exposure to PCBs by obeying these advisories.

❑ Children should be told not play with old appliances, electrical equipment, or transformers, since they may contain PCBs.

❑ Children should be discouraged from playing in the dirt near hazardous waste sites and in areas where there was a transformer fire. Children should also be discouraged from eating dirt and putting dirty hands, toys or other objects in their mouths, and should wash hands frequently.

❑ If you are exposed to PCBs in the workplace it is possible to carry them home on your clothes, body, or tools. If this is the case, you should shower and change clothing before leaving work, and your work clothes should be kept separate from other clothes and laundered separately.

**Is there a medical test to show whether I've been exposed to PCBs?**

Tests exist to measure levels of PCBs in your blood, body fat, and breast milk, but these are not routinely conducted. Most people normally have low levels of PCBs in their body because nearly everyone has been environmentally exposed to PCBs. The tests can show if your PCB levels are elevated, which would indicate past exposure to above-normal levels of PCBs, but cannot determine when or how long you were exposed or whether you will develop health effects.

**Has the federal government made recommendations to protect human health?**

The EPA has set a limit of 0.0005 milligrams of PCBs per liter of drinking water (0.0005 mg/L). Discharges, spills or accidental releases of 1 pound or more of PCBs into the environment must be reported to the EPA. The Food and Drug Administration (FDA) requires that infant foods, eggs, milk and other dairy products, fish and shellfish, poultry and red meat contain no more than 0.2-3 parts of PCBs per million parts (0.2-3 ppm) of food. Many states have established fish and wildlife consumption advisories for PCBs.

**References**

Agency for Toxic Substances and Disease Registry (ATSDR). 2000. Toxicological profile for polychlorinated biphenyls (PCBs). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs™ Internet address is http://www.atsdr.cdc.gov/toxfaq.html . ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.