

# **241 Duchaine Blvd ABCA**

## **Analysis of Brownfield Cleanup Alternatives**

### **Former PolyPly Facility**

**241 Duchaine Blvd, New Bedford, MA, 02740**

**Massachusetts Release Tracking Number: 4-1347**

## **I. Introduction & Background**

This Analysis of Brownfield Cleanup Alternatives (ABCA) has been prepared in support of the City of New Bedford's EPA Brownfield Cleanup Grant funded remediation project at 241 Duchaine Blvd (the Site). The Site consists of roughly 3 Acres of upland where a decrepit industrial facility was located until 2017, and approximately 5 acres of wetlands to the west. Extensive Polychlorinated Biphenyl contamination has been identified on both the upland and wetland portions of the Site. The preliminary stages of the remediation, including demolition and targeted excavation, have been carried out using MassDevelopment funding. This document presents the potential remedial alternatives considered for the project.

### **A. Site Location**

The Former PolyPly Facility (the Site) is located at 241 Duchaine Blvd., New Bedford, MA, 02740.

#### **1. Forecasted Climate Conditions**

The US Global Change Research Program (USGCRP) indicates that the climate of the northeastern region of the United States is trending toward increased temperatures and precipitation, including extreme precipitation events and sea level rises. Increases in stormwater runoff may affect conditions at the Site.

FEMA Flood zone Map 25005C0377F shows that the Site is not located within a flood zone. Runoff from the Site flows into the Hobomock Swamp to the west and north. The effects of climate change caused by global warming are unlikely to adversely affect conditions at the Site.

### **B. Previous Site Uses and Site Cleanup**

The site history and previous actions were detailed in the November 2001 EPA Removal Program report as follows:

*The site was first developed in 1960 as Polyply, Inc., a manufacturing facility for composite fiberglass boards in the New Bedford Industrial Park. In 1990, Polyply, Inc., filed for bankruptcy and restructured under the name Polymerine, Inc. Polynerine, Inc., ceased operations, but the building on site currently houses two non-related companies: New England Plastics Corporation, and A WT Environmental, Inc.*

*Polyply, Inc., and Polymerine, Inc., were both involved in the production of composite plastic fiberglass boards. These boards were created by laminating several layers of fiberglass sheets*

*together, coating them with a water-based epoxy resin, then bonding them using pressure and heat. In later years, the boards were purchased pre-impregnated, and then joined at the facility. For a majority of the life of the company, the oil used in the heat transfer system contained polychlorinated biphenyls (PCBs). At an unknown date, the heat transfer system was modified to use a non-PCB heat transfer fluid.*

*On 24 June 1998, the EPA issued a Unilateral Administrative Order (UAO) to the property owner. The owner began removal work at the site, but inadequate funding terminated activities. PCB contaminated soil, totaling approximately 220 tons, was excavated and stockpiled in the parking lot on site, but was not disposed of. The PCB-contaminated soil was not properly secured, and the polyethylene tarp covering the pile had been repeatedly blown, or taken off. The lot where the soil was staged was not restricted, and adverse weather conditions threatened to spread the contamination past the confines of the pile.*

An area to the immediate north of the site building was identified as a former UST location where crushed gravel had been placed (i.e., to the immediate east of the loading dock). During the subsequent Tighe & Bond Phase I investigation, no information was available or reviewed in site records or in municipal and state files relative to the former tank capacity, contents, years installed or removed, or condition of the tank at the time of removal.

After Polymerine ceased operations in the mid-1990s, the site was occupied by New England Plastics Corp. and Aquapoint, Inc. New England Plastics Corp performed plastic fabrication operations, and Aquapoint designed and manufactured wastewater treatment systems. The City of New Bedford took ownership of the property in June 2006 through tax title. Following the City's acquisition, the two tenants still occupied the site building. By approximately 2008, Aquapoint vacated the site, and after early 2009 New England Plastics Corp vacated the site.

The EPA oversaw an additional removal program in 2001, and 2,000 tons of PCB contaminated soil were removed from depths above the groundwater table to a maximum of 8' below grade. The building and a substantial but undetermined quantity of PCB impacted soil remained on-Site following the EPA removal activities. The City acquired the property through tax title in 2006.

### **C. Site Assessment Findings**

Groundwater removal was not part of the 2001 EPA Removal Program; therefore, excavation ceased in some areas where PCBs greater than 1 mg/kg were detected but where groundwater was observed. At the completion of the removal activities, approximately 2,000 tons of PCB contaminated soils were generated and transported off site for disposal. Weston collected confirmatory soil samples from the base of the final excavations in the 25-foot by 25-foot grid cells. Laboratory and field screening results indicated residual PCB concentrations in the post-removal samples ranged from non-detect to 230 mg/kg. To minimize exposure, Weston placed a geotextile fabric in the grids where elevated (EPA defined as greater than 2 mg/kg) PCB concentrations remained prior to backfilling to grade.

Also as part the EPA Removal Program, 45 wipe samples were collected from the interior building surfaces (floors, walls, and various pieces of machinery) for PCB analysis. PCB concentrations were

above TSCA's High Occupancy Standard of 10 micrograms per 100 square centimeters in two of the samples, which were collected from a punch press unit and from the hydraulic press unit used for fiberglass bonding.

In 2008, Tighe & Bond completed additional investigations of conditions at the site. As part of that program, a 10-foot by 10-foot soil sampling grid was established. In general, soil samples were collected from varying depths where EPA's earlier program indicated remaining soils had PCBs greater than 1 mg/kg, from beneath the building slab floor (previously not assessed), and to the immediate north of the site building. A total of 253 samples were submitted for PCB analysis. PCBs were detected in soils at concentrations up to 18,000 mg/kg, with the highest concentrations detected in soils at or immediately below the groundwater table to the northwest of the site building (i.e., in general vicinity of where EPA reported post-removal results of 230 mg/kg in soils) and in soils immediately adjacent to the catch basin in the loading dock area to the north of the site building. As part of a groundwater assessment program, nine monitoring wells were installed. In general, groundwater results were below applicable MCP Method 1 standards. PCBs were also not detected in two surface water samples collected from Hobomock Swamp.

Also as part of the Tighe & Bond assessment program, potential PCB impacts from historical site operations to site building materials and equipment were further evaluated. This included sampling of floor and walls (through concrete dust samples), machinery (through wipe samples), and subsurface pits (through water samples) within the building. In general, those findings further indicated building materials had been impacted by earlier site operations, with the most PCB-impacted concrete identified on the north/northwestern portion of the building where a machine shop, boiler room, and heat transfer system were located.

In 2013, the City obtained funding for conducting building demolition and remedial response actions at the site. In preparation for those activities, Tighe & Bond conducted supplemental investigations at the site in 2013 and 2014. This included a comprehensive in-situ soil sampling program for refining the delineation of the horizontal and vertical extent of PCB impacts in soils in previously un-sampled 10-foot by 10-foot grid cells across the known impacted areas, followed by further horizontal delineation in select grid cells further into the forested swamp. As part of these supplemental investigations, approximately 492 additional soil and "wetland" soil samples were submitted for PCB analysis. The assessment findings indicate that PCB impacts are more expansive than previous investigations had indicated, as the total volume of remaining soils (and wetland soils) impacted by PCBs greater than 1 mg/kg is estimated to be in excess of 6,000 cubic yards. This includes PCB impacts over 100 feet into the forested wetland to the west and northwest of the site building, with those impacts extending beyond the property line boundary into a west to east-oriented utility line easement and beyond.

The City of New Bedford initiated demolition and Site cleanup activities under a Phase IV Remedy Implementation Plan/ TSCA Risk Based Cleanup Plan in May 2017. The building and all equipment were decontaminated and appropriately disposed of by August 2017, and the underlying slab was crushed and consolidated in January 2018. Approximately 200 tons of PCB impacted concrete was identified for removal as TSCA waste and was stockpiled on-Site. The remainder of the concrete

slab and brick from the building was crushed and stockpiled separately. The City is in the process of disposing the remaining TSCA waste at a licensed facility.

### **A. Project Goal**

The planned reuse for the Site is as an industrial manufacturing facility. A local business has expressed interest in the use of the property for a two story building in which approximately forty people will be employed. New Bedford has a relatively high unemployment rate and would benefit from the jobs and expanded tax base. Overall Site closure will require that the upland portion of the property is capped according to the risk based cleanup plan and that the impacts to the wetland portion of the Site be adequately assessed and addressed.

## **II. Applicable Regulations and Cleanup Standards**

### **A. Cleanup Oversight Responsibility**

Remedial Activities will be overseen by the Site's Licensed Site Professional of record, Todd Kirton of Tighe & Bond. All assessment and remedial documents are submitted to the Massachusetts Department of Environmental Protection under Release Tracking Number 4-1347.

### **B. Cleanup Standards for Major Contaminants**

Under the Massachusetts Contingency Plan (MCP), soil and groundwater at disposal sites are categorized for risk assessment purposes based upon the location and uses of the site and site groundwater. The 2009 Phase II CSA stated that most "accessible" soils at the site (i.e., soils between 0 and 3 feet BSG in unpaved areas) met the criteria of the S-2 soil category based on site use. With the site building now being vacant, the S-3 soil category for accessible site soils in wetland areas is applicable because there is only evidence of infrequent trespassers and their "intensity of use" is considered low.

The Phase II CSA also indicated that the GW-2 groundwater category (i.e., protective of vapor intrusion into occupied structures) was applicable to the interior monitoring wells MW-5 and MW-6 because they were installed within the site building and the groundwater table is less than 15 feet BSG. The GW-1 groundwater category was applicable to monitoring wells MW-2, MW-3, MW-7 and MW-8 because these wells were installed along the edge of the transition between the boundaries of the PPA and the Non-Potential Drinking Water Source Area. The GW-3 groundwater category applies to all groundwater in Massachusetts because it has the potential to discharge to surface water.

The Phase II CSA also noted that Toxic Substances Control Act (TSCA) regulations are applicable to the site due to the presence of PCBs in site soils that meet the definition of a bulk PCB remediation waste. At the time of our earlier Phase II submittal, the site building was occupied, and the site was considered to be a high occupancy area as defined in §761.3. However, since the site is now vacant, the site now meets the low occupancy area criteria. Therefore, in addition to PCBs being compared to MCP Method 1, Risk Characterization Standards, PCB concentrations will also be compared to the TSCA's Risk Based Standard for high occupancy use. The cleanup standards for PCBs in a low occupancy area is at concentrations up to 25 mg/kg for unrestricted use, at concentrations >25

mg/kg and  $\leq 50$  mg/kg if the site is secured by a fence meeting TSCA regulations, and at concentrations  $> 25$  mg/kg and  $\leq 100$  mg/kg if the area is covered with a cap meeting TSCA regulations. Risk-based approval is required for cleanup standards  $> 100$  mg/kg.

### **C. Laws & Regulations Applicable to the Cleanup**

The Site is federally regulated by the TSCA, due to the presence of PCBs at concentrations greater than 50 mg/kg. The MCP also governs the environmental conditions at the Site. Both TSCA and the MCP include provisions for Risk Based Cleanups, referred to as Method III Risk Characterization in the MCP. This process allows risks that are potentially faced by human and ecological receptors through exposure to contaminants to be quantified on a site specific basis. Unacceptable risks to specific exposure points, subsections of a site, can be identified and mitigated in a more targeted manner than remedial excavation to meet generic numerical criteria.

The Massachusetts Wetland Protection Act has jurisdiction over the portion of the Site that is within the 100 foot wetland buffer zone. An Order of Conditions has been received from the New Bedford Conservation Commission pursuant to this legislation. The US Clean Water Act, through the National Pollution Discharge Elimination System also applies to the Site. The Federal Small Business Liability Relief, Brownfields Revitalization, and Davis-Bacon Acts also apply to portions of the project. The City is committed to complying with all federal, state, and local laws. All necessary and appropriate permits have been or will be obtained prior to the commencement of site work.

## **III. Cleanup Alternatives**

### **A. Cleanup Alternatives Considered**

The City has considered the following four cleanup alternatives for the 241 Duchaine Blvd. Site:

- Alternative 1: Excavation and off-site disposal of all upland soils and wetland soils with PCBs  $\geq 1$  mg/kg.
- Alternative 2: Excavation and off-site disposal of all upland soils and wetland soils with PCBs  $\geq 100$  mg/kg, and consolidate the remaining soils with PCBs  $\geq 1$  mg/kg under a TSCA cap. Perform MCP Method 3 Risk Characterization on Wetland soils to address potential risks associated with wetland impact and achieve site closure.
- Alternative 3: Excavation and off-site disposal of all upland soils and wetland soils with PCBs  $\geq 500$  mg/kg, and consolidate the remaining upland soils with PCBs  $\geq 1$  mg/kg under a TSCA cap. Perform MCP Method 3 Risk Characterization on Wetland soils to address potential risks associated with wetland impact and achieve site closure.
- Alternative 4: No action.

## **B. Evaluation of Cleanup Alternatives**

### **Effectiveness – Including Climate Change Considerations**

- Alternative 1: Would be most effective at limiting exposure to PCBs in soil and building materials and allow for unrestricted reuse of the property. The removal of all of the impacted soil would require several times more carbon to be emitted during removal and transport than the other options. The removal of impacted wetland soils may cause the introduction of invasive species and a subsequent degradation of the wetland ecosystem present at the Site.
- Alternative 2: Would be highly effective at limiting exposures to PCBs in soil, but would require substantial expenditures of carbon based energy to transport and dispose. A land use restriction would be required to prevent potential future excavation beneath the cap. A vapor barrier may be required to prevent exposures to any volatilized PCB impacts in indoor air, if a structure were built on the cap. MCP Method 3 Risk Characterization would allow targeted areas of unacceptable wetland soil impacts to be addressed while leaving the remainder of the wetland intact.
- Alternative 3: Would also eliminate exposures to PCBs in soil in the upland area, but would require far lower emissions of carbon than Alternative 2. A land use restriction would be required to prevent potential future excavation beneath the cap. A vapor barrier may be required to prevent exposures to any volatilized PCB impacts in indoor air, if a structure were to be built on the cap. MCP Method 3 Risk Characterization would allow targeted areas of unacceptable wetland soil impacts to be addressed while leaving the remainder of the wetland intact.
- Alternative 4: Would not require the emission of any carbon, but would not prevent exposures to PCBs in upland soils. Increased extreme precipitation events anticipated as the climate changes would likely cause additional advection of PCB impacted soils into the adjacent wetland. The failure to address impacts in wetland soils would likely result in continued migration of PCB impacted soil, especially in a climate with and increased frequency of runoff events.

### **Implementability & Cost**

- Alternative 1: Would be very difficult to implement given the undelineated extent of PCB impacted wetland soils. It would also likely prove to be most costly, at least \$3 million. The excavation and consolidation of large amounts of wetland soils would likely lead to the migration of impact and substantial cost overruns.
- Alternative 2: Would be less difficult to implement than Alternative 1, and would cost at least \$2 million. The consolidation of smaller quantities of wetland soils would cause less disturbance to the swamp ecosystem and create fewer opportunities for unintentional migration of impacted soils.
- Alternative 3: Would be relatively straightforward to implement and cost roughly \$1.5 million. Conducting hotspot excavation and removal of material with greater than 500 ppm PCBs would be far less complicated than more widespread excavation and disposal of all material

containing greater than 100 ppm PCBs. The consolidation of a far smaller quantity of wetland soils would be much simpler to implement.

- Alternative 4: Would be simple to implement and incur no financial cost.

### **C. Recommended Cleanup Alternative**

The recommended cleanup alternative is #3: Excavation and off-site disposal of all upland soils and wetland soils with PCBs  $\geq 500$  mg/kg, and consolidate the remaining upland soils with PCBs  $\geq 1$  mg/kg under a TSCA cap. Alternatives #1 and #2 are considered to be too difficult to implement and costly, while alternative #4 would allow for unacceptable potential exposures to PCBs in soil at the Site. Alternative #3 is a practical way to ensure that the Site does not pose an ongoing potential threat to human and ecological receptors.

#### Green and Sustainable Remediation Measures for Selected Alternative

Alternative #3 is the greenest effective cleanup considered for the Site. The excavation and off-Site disposal of smaller quantities of soil will result in a far smaller carbon footprint for the site. Addressing wetland soil impacts with Risk Characterization will mitigate the introduction of invasive species. Best Management Practices identifies in the ASTM Standard Guide for Greener Cleanups (E-2893) will be employed as a reference during the implementation of the cleanup alternative. Contractors will be strongly encouraged to use heavy equipment with advanced emissions controls and low-sulfur fuel. Idling limits will also be enforced during the project.

Community Involvement Plan  
U.S. EPA Brownfield Cleanup Grant  
Former PolyPly Site  
241 Duchaine Blvd.  
New Bedford, Massachusetts

### Overview

This Community Involvement Plan (CIP) describes the City of New Bedford's Department of Environmental Stewardship's strategy to solicit input from stakeholders potentially affected by environmental remediation activities conducted at 241 Duchaine Blvd.

### Site Description and History

The Site consists of roughly 3 Acres of upland where a decrepit industrial facility was located until 2017, and approximately 5 acres of wetland to the west. The Subject Site was home to a nearly 1-acre, derelict, heavily vandalized, and abandoned industrial building. The building was used to manufacture laminates, a process using PCB containing heat transfer fluids. Unconscionably poor industrial hygiene practices contaminated roughly two acres of the property's soils and much of the concrete building.

Extensive Polychlorinated Biphenyl contamination has been identified on both the upland and wetland portions of the Site. The preliminary stages of the remediation, including demolition and targeted excavation, have been carried out. The construction of a risk management barrier and the assessment and remediation of the wetland portion of the property will be completed between late 2018 and early 2020.

### Nature and Threat to Public Health and the Environment

The Site abuts Hobomock Swamp, which is habitat for the Eastern Box Turtle, a Species of Special Concern in Massachusetts, and drains directly into the vast Acushnet Cedar Swamp, one of New Bedford's greatest natural resources. The high concentrations of PCBs identified in wetland soils have the potential to adversely affect the populations of the turtles and other wildlife that inhabit the swamp ecosystem.

### Action and Redevelopment Plan

The remedial plan is to close excavate and cap upland soils, and then perform a human health and environmental risk assessment to confirm that the contamination remaining at the Site will not pose a risk to humans or ecological receptors (i.e. estuarine invertebrates, fish, etc.). If necessary, a deed restriction called an Activity and Use Limitation (AUL) will be used to ensure that a condition of no significant risk is maintained at the Site. These activities will be performed in accordance with the Massachusetts Department of Environmental Protection's (MADEP's) regulations, 310 CMR 40.0000, and under the supervision of a Licensed Site Professional (LSP).



The City's plan for the Site is to achieve regulatory closure for the contamination and arrange for the property to be redeveloped for industrial use by a separate owner or leases.

### Community Profile

New Bedford contains approximately 20 square miles with a population density of approximately 4,750 people per square mile. According to the 2010 Census, the population of New Bedford is approximately 95,000, consisting of approximately 50% Portuguese, 17% Latino, and 7% African American, and the remainder is other Caucasian. English, Spanish and Portuguese are the primary languages spoken in the City. The median household annual income is approximately \$36,800, while the figure for Massachusetts is approximately \$66,500. Over 37% of New Bedford's population has an annual income below the poverty level.

The City has been historically been used for heavy manufacturing and industrial purposes, and a major component relating to the fishing industry. Currently the fishing industry remains strong, and the health, hospitality, and social services, wholesale trade, and manufacturing are three largest employing sectors in New Bedford and the surrounding areas.

### Community Involvement

A DRAFT Analysis of Brownfields Cleanup Alternatives (ABCA) will be made available to the City's general public for a 30 day public review period. A public notice will be posted notifying the Public that the DRAFTs ABCA is availability for review and will also announce that date, time, and locations of a public meeting. This public meeting will be held within this 30 day review period and will be a forum for the public to discuss any concerns and answer questions. Upon obtaining comments from the public during the review period, a final ABCA will be submitted to the EPA.

It is anticipates that the DRAFT ABCA will be made available in June, the Public review period will be in June/July 2018, the Public meeting will be held in early June 2018, and the final ABCA will be completed and submitted to the EPA in July 2018. Upon completion of all remedial activities, a MADEP Permanent or Temporary Solution Statement Report ("closure report") is anticipated to be submitted to the MADEP by the Spring of 2019.

### Spokesperson and Administrative Record

The spokesperson for the project is Mr. Ray Holberger, the Environmental Planner for the City's Department of Environmental Stewardship.

Mr. Holberger can be contacted at:

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An Information Repository that contains environmental reports prepared for the Site is located at the Wilks Library Brank, 1911 Acushnet Avenue, New Bedford, Massachusetts 02746. To review the reports please contact the Lawler Library at 508-991-6214. The libraries business hours are as follows:

Mondays and Wednesdays - 10:00am to 6:00pm

Tuesday and Thursday - 12:00pm to 8:00pm

Saturdays - 9:00am to 5:00pm

Fridays, Sundays and Holidays - Closed

The administrative record file includes or will include the following documents related to the environmental assessment and remediation of the Site upon their completion:

- Public MADEP reports;
- EPA Brownfield Cleanup Grant Application;
- EPA's Quality Assurance Project Plan, and
- Community Involvement Plan.