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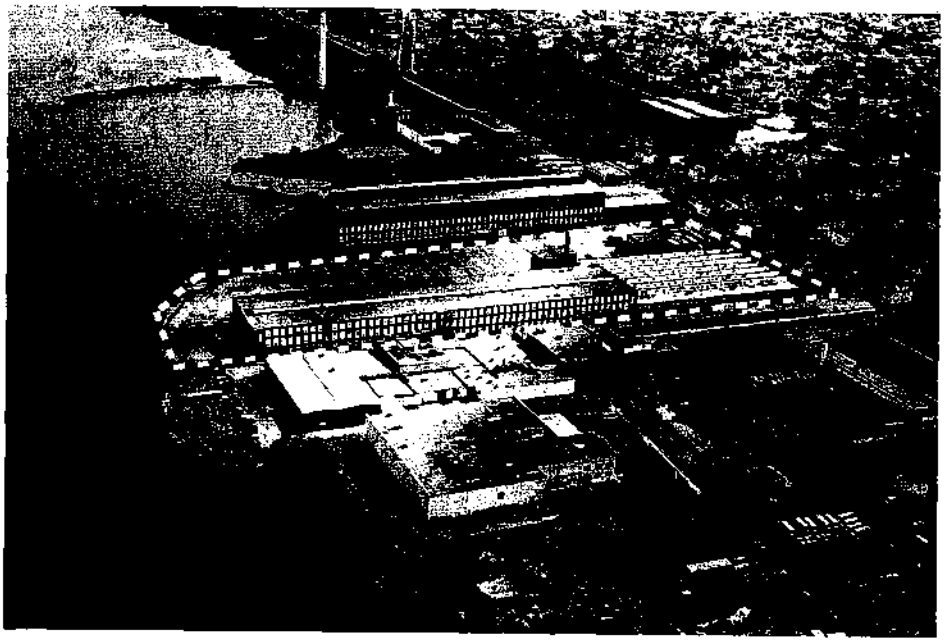
Vacant Aerovox Plant

740 Belleville Avenue
New Bedford, MA

Supplemental Engineering Evaluation and Cost Analysis (EE/CA)



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Vacant Aerovox Plant - April 2006 Supplemental EE/CA

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LIST OF ACRONYMS

ARAR	Applicable and Relevant and Appropriate Requirement
AWQC	Ambient Water Quality Criteria
CDF	Confined Disposal Facility
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSO	Combined Sewer Overflow
cy	cubic yard
DEP	Massachusetts Department of Environmental Protection
EE/CA	Engineering Evaluation/Cost Analysis
EPA	U.S. Environmental Protection Agency
IAG	Inter-Agency Agreement
ICs	Institutional Controls
MA	Massachusetts
NBH	New Bedford Harbor
ng/m^3	nanograms per cubic meter (a nanogram is one-billionth of a gram)
NCP	National Contingency Plan
NIOSH	National Institute for Occupational Safety and Health
NPL	National Priority List (EPA's list of Superfund sites)
NTCRA	Non-Time-Critical Removal Action
OU	Operable Unit
OSHA	Occupational and Safety and Health Administration
PCB	Polychlorinated Biphenyl
PEL	permissible exposure limit
PETS	Public Exposure Tracking System
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
REL	recommended exposure limit
ROD	Record of Decision
TSCA	Toxic Substance Control Act
USACE	U.S. Army Corps of Engineers

EXECUTIVE SUMMARY

This report supplements the 1998 Engineering Evaluation/Cost Analysis (the 1998 EE/CA) for the implementation of a Non-Time-Critical Removal Action (NTCRA) for the Aerovox facility. The 1998 EE/CA recommended that the contaminated Aerovox building be demolished, and that the entire 11 acre site be capped. Pursuant to the National Contingency Plan the 1998 EE/CA and its associated administrative record were made available for public comment in 1998, but no comments were received. Subsequently, in 1999 EPA entered into an Administrative Order on Consent with Aerovox pursuant to the Resource Conservation and Recovery Act (RCRA) to perform the cleanup recommended in the 1998 EE/CA. (The associated administrative record for the RCRA action has been incorporated into the administrative record for this Supplemental NTCRA.) In April 2001, Aerovox relocated to a new facility and in June 2001, filed for bankruptcy. The NTCRA was thus not performed and the building has remained vacant since April 2001. EPA settled its claim in the bankruptcy and the proceeds, although insufficient, will contribute to the NTCRA funding.

The vacant Aerovox plant at 740 Belleville Avenue in New Bedford, MA consists of a 450,000 sq. ft. former manufacturing building located on approximately 11 acres of industrial-zoned land abutting the Acushnet River. From c.1940 to c.1977, polychlorinated biphenyls (PCBs) were used at the facility in the manufacture of electrical capacitors and transformers. In the 1980s and 1990s Aerovox performed some remediation to address PCB contamination: This included partial capping of contaminated soils and the installation of a shoreline steel sheet pile wall to serve as a barrier to contaminated groundwater entering New Bedford Harbor. Aerovox was also to monitor and maintain these on-site containment features and prevent releases of PCBs.

In 1997, due to the identification of very high levels of PCBs within the interior of the building and the presence of PCBs in uncapped soils outside the building, Aerovox prepared the 1998 EE/CA. The 1998 EE/CA evaluated three alternatives for demolishing the building, disposal of the demolition waste, and capping the entire site. The purpose of this Supplemental EE/CA is to a) update the cost estimates of the 1998 EE/CA, b) evaluate two new alternatives for the site, and c) allow additional public comment on these issues.

Site risks remain consistent with those presented in the 1998 EE/CA, with PCBs in soil and groundwater posing a risk to human health and the environment. In addition, the long-term vacancy of the building poses a significant fire threat (other vacant mill buildings in the area have caught on fire recently). Air emissions created by a fire and run off from fire suppression activities into the Harbor pose threats to human health and the environment. Moreover, since Aerovox vacated the building, significant deterioration has occurred including increased roof leaks and heavy water damage throughout the building. Trespassing and vandalism (and the potential for tracking contamination off-site) has become a common problem.

EPA performed additional sampling at the facility after 2001 and found PCBs in the asphalt parking lot and the continued presence of PCBs in groundwater and stormwater runoff. Air monitoring activities at the site also show elevated levels of PCBs at the eastern end of the site. Complete results of these activities are presented in the updated administrative record for the site and are described in this Supplemental EE/CA.

The goals and objectives of the NTCRA remain essentially unchanged; they have been supplemented herein to reflect the continuing deterioration of the building and the significant

potential for fire, as well as to address stormwater and groundwater discharges from the site and air emissions during building demolition activities. The objectives also include coordination of the NTCRA with future reuse of the site. EPA (potentially with the City of New Bedford as the lead partner), will perform the removal action. As such, pursuant to 40 C.F.R. 300.415(b)(5), EPA will seek a consistency waiver from the $2 million and 12 month statutory limits on removal actions. EPA will establish in a forthcoming Action Memorandum that the NTCRA is appropriate and consistent with long-term remedial action.

The three alternatives addressed in the 1998 EE/CA assumed three different but similar approaches for demolition and capping of the Aerovox site. The three alternatives varied in the way that the first floor concrete slab was addressed (by leaving it in place, removing all of it, or removing only the western portion of it). All alternatives assumed that all demolition waste above TSCA thresholds would be disposed off-site, and that demolition waste below TSCA thresholds would be disposed both off- and on-site. All alternatives also assumed that PCB-contaminated soils below the basement's concrete floor and outside the building would remain in place with an impermeable cap over the entire site. The 1998 EE/CA concluded that the first floor concrete slab should remain in place, citing this as equally protective yet less expensive than the other two alternatives evaluated.

Since the cost estimates for these three original alternatives were based on 1997 price levels, this Supplemental EE/CA accounts for ten years of inflation by updating these original cost estimates to 2007 price levels.

The two new alternatives evaluated in this Supplemental EE/CA are a) disposal of all demolition waste <u>on</u> site and b) disposal of all demolition waste <u>off</u> site. In order to provide for a fair comparison with the original EE/CA cost estimates, the same general cost estimating approach used in the 1998 EE/CA was used herein. Some additional cost items were added to all five alternatives, however, to best reflect the current status of the Aerovox site. It should also be noted that the costs cited in both the original and Supplemental EE/CA are planning-level estimates; therefore, in addition to approximating final costs, their main purpose is to provide for a comparison of costs between all alternatives.

After evaluating all five alternatives, this Supplemental EE/CA recommends that the new alternative #1 (disposal of all demolition waste on site) be implemented. This alternative was found to be equally as protective yet less costly than the three original alternatives (since these other alternatives would leave high levels of PCB contamination on site as well), and that the new alternative #2 (disposal of all demolition waste off site) was not cost-effective.

While the 1998 EE/CA was made available for public comment, EPA is holding a second public comment period on the NTCRA with the issuance of this Supplemental EE/CA. EPA is also specifically seeking comment on the draft Regional Administrator's finding (see Attachment 3) that the recommended alternative does not pose an unreasonable risk of injury to health or the environment. After consideration of public comments received, EPA will publish an Action Memorandum reflecting the final cleanup approach, along with a response to comments.

EPA is currently exploring the possibility of implementing the NTCRA in partnership with the City of New Bedford and the New Bedford Redevelopment Authority - the current owners of the property - to facilitate redevelopment and reuse of the site. While such a partnering is the best approach to facilitate redevelopment of the site, if these entities are not available, EPA's own cleanup will also allow for future reuse of the site.

1. Site Characterization and Background

The vacant Aerovox mill at 740 Belleville Avenue in New Bedford, MA consists of a 450,000 sq. ft. former manufacturing building located on approximately 11 acres of industrial-zoned land abutting the Acushnet River. From c.1940 to c.1977, polychlorinated biphenyls (PCBs) were used at the facility in the manufacture of electrical capacitors and transformers. As a result of this manufacturing history, soils and groundwater at the site as well as the building itself are heavily contaminated with PCBs. This facility is considered one of the major sources of historic PCB contamination to New Bedford Harbor. See Section 2 of the 1998 EE/CA for a more detailed discussion of the site's history and characterization.

Figure 1 shows the Aerovox site in context with local land use. The property directly abuts two active industrial mills to the north and south, and a large, densely populated, urban residential neighborhood on the opposite (west) side of Belleville Avenue. Nearby residential areas also exist one block north of Aerovox (on the east side of Belleville Avenue), as well as in the towns of Acushnet and Fairhaven on the eastern side of the Acushnet River.

An inspection and sampling of the building by EPA in 1997, as well as follow-up sampling performed by Aerovox, identified high levels of PCBs throughout the interior of the building as well as in site soils. In 1999 Aerovox entered into a consent order with the Commonwealth of Massachusetts to monitor groundwater at the site. Also in 1999, EPA issued a RCRA Section 7003 Administrative Consent Order to Aerovox, which required, among other things, the demolition of the building and capping of the entire site. Interim measures were taken to protect workers inside the building, and the building was vacated in 2001 when operations relocated to an alternative site in New Bedford. Aerovox filed for bankruptcy in June 2001 and the response actions required by the RCRA consent order were never implemented.

Site inspections performed by EPA and the state after the bankruptcy found that many drums of hazardous waste had been left behind, and that cracks in an impermeable cap installed in 1985 (see section 1.a below) had gone unrepaired. These inspections also noted the presence of asbestos, inorganic mercury spills, and extensive water damage throughout the building.

1.a Past Response Actions

Environmental cleanup activities performed to date at Aerovox include:

- placement in 1983/84 of a shoreline steel sheet pile wall to minimize the amount of PCB-contaminated ground water discharging to the Acushnet River (Figure 2);

- placement of a hydraulic asphalt concrete (HAC) cap to contain PCB-contaminated soils in the drainage swale to the north of the building and along the eastern portion of the site, also in 1983/84 (Figure 3);

- removal of two 10,000 gallon underground fuel oil storage tanks, and one 250 gallon condensate collection tank from a former concrete oil containment bunker in 1988;

- removal of petroleum product from the bunker area, and recycling of petroleum contaminated soils into an asphalt base course for the parking lot in 1990; and

- removal and off-site disposal by EPA of various hazardous wastes left inside the building when it was vacated and repair of cracks in the HAC cap in 2004.

1.b Additional Sampling and Risk Evaluation

EPA commissioned additional groundwater and stormwater monitoring at the site in 2004-05 (ENSR, 2006). This groundwater evaluation estimated that a relatively low mass flux of 0.4 kg PCB/yr entered the harbor via groundwater from the site. A mass flux of similar magnitude (0.4 kg PCB/yr) was also estimated to enter the harbor via stormwater runoff. The results of the stormwater monitoring showed continued releases of PCBs to the Acushnet River from the site's drainage system, but with PCB concentrations lower than originally reported by Aerovox in 1994 (Stanley, 1994).

EPA also performed PCB analyses of the asphalt parking lot in 2004, to compliment previous pavement sampling reported in the 1998 EE/CA. (Fuel oil impacted site soils, potentially contaminated with PCBs, had been used to manufacture the base course of the asphalt parking lot.) EPA's analyses found PCBs in the top ½ inch in all but one of the fourteen pavement samples, at levels ranging from 0.8 to 46 ppm.

As part of the New Bedford Harbor Superfund Site cleanup, ambient air monitoring has been performed to measure the levels of airborne PCBs at the Aerovox site. Two locations have been monitored - one on the east end of the site and one on the west. Airborne PCBs from the eastern location (near the Acushnet River) are routinely the highest of any location monitored around the harbor, with a maximum reading of 9,557 ng/m^3 detected in September 2004. (For comparison, the National Instititute for Occupational Safety and Health (NIOSH) recommended exposure limit (REL) for individual PCB Aroclors in indoor air is 1,000 ng/m^3, while the Occupational Health and Safety Administration (OSHA) permissible exposure limit (PEL) for PCB Aroclors in indoor air is 500,000 ng/m^3.) The air monitoring station on the west side of the site near Belleville Avenue on the other hand has revealed significantly lower airborne PCB levels. See Attachment 1 for air monitoring data collected to date from the Aerovox site.

EPA's additional sampling confirms that site risks remain consistent with those presented in the 1998 EE/CA, with PCBs in soil and groundwater posing a potential threat to human health and the environment. See Section 2 of the 1998 EE/CA. While there are no longer Aerovox workers in the building, remediation workers as well as trespassers will be exposed to contaminated building materials. Entering and exiting the building by trespassers also raises the potential for tracking PCB contamination to off-site areas.

Since 2001 the manufacturing building has continued to deteriorate, and, without on-going maintenance the existing HAC cap will crack and deteriorate. A major failure of the interior fire suppression system after the building was vacated caused significant water damage throughout the building, and inspections inside the building in 2006 reported that roof leaks have increased. Limited fire suppression and security funding was provided to the City of New Bedford as a result of the bankruptcy proceedings, but trespassing and vandalism of the fire suppression system's copper piping has been a recurring problem. Due to the difficulty in maintaining the fire suppression system in the (unheated) building, the City has installed a temperature monitoring system designed to notify the fire department in the event of a fire.

Fire and fire suppression pose significant potential threats to area residents and to the Harbor environment. The two industrial facilities abutting the Aerovox site to the north and south are active manufacturing facilities with hundred of employees working three shifts per day. In both cases only a small roadway separates these two facilities from the Aerovox building. In addition, directly across the street from the western side of the building is a densely populated urban neighborhood with double and triple decker residential homes. Should a fire erupt, the burning materials would emit airborne PCBs and asbestos, as well as the potential for dioxins and furans. In such a fire scenario large-scale evacuations of impacted neighborhoods would likely be required, as well as cleanup of PCB and other residues resulting from the fire. Fire suppression activities would also likely produce contaminated water that would run off into the Acushnet River.

2. Non-Time-Critical Removal Action and Removal Action Objectives

2.a Non-Time-Critical Removal Action

As discussed in Section 4 of the original 1998 EE/CA, the Aerovox site cleanup will be implemented as a Non-Time-Critical Removal Action (NTCRA) pursuant to Section 104 of CERCLA, 42 U.S.C. Section 9604, and 40 C.F.R. Section 300.415 of the NCP. The vacated, PCB-contaminated Aerovox mill remains an imminent and substantial endangerment due to continued building deterioration and the potential for a fire at the site and the close proximity of residential and industrial abutters.

As elaborated below in Section 9, EPA-New England is currently exploring the possibility of partnering with the City of New Bedford to implement this NTCRA in a way that best facilitates redevelopment of the site. Pursuant to 40 C.F.R. 300.415(b)(5), EPA will seek a consistency waiver from the $2 million and 12 month statutory limits on removal actions. EPA will establish in the Action Memorandum that the NTCRA is appropriate and consistent with the long-term remedial action.

2.b Removal Action Objectives

The overall removal action goals for the site remain as outlined in Section 4 of the 1998 EE/CA, but have been modified to reflect the current status of the site. Overall the goals are to

minimize impacts to human health and the environment caused by the presence of high levels of PCBs in the vacated mill building and surrounding site soils. More specifically, the modified removal action objectives are:

- to safely demolish the PCB-contaminated manufacturing building in a manner, to the extent practicable, that is both in compliance with ARARs and cost-effective, and which occurs in a timely manner prior to excessive building deterioration or a potential mill fire occurring; and

- to prevent direct contact with site soils containing PCBs at concentrations greater than 2 ppm through the installation of a clean protective cover.

Three new objectives have been added:

- to minimize future releases of PCBs via storm water or ground water discharges to New Bedford Harbor, and to minimize future emissions of airborne PCBs from the site, by demolishing the building and placing a protective cover at the site;

- to the extent practicable, to coordinate the building demolition and protective site cover so that these activities do not interfere with future commercial or industrial redevelopment of the site; and

- to assist the state in establishing institutional controls in the form of deed restrictions to prevent land uses that could damage the new cover or require the use of site groundwater as part of post-removal site activity.

3. Summary of the Three 1998 EE/CA Alternatives

The original 1998 EE/CA evaluated three different alternatives for demolition and capping of the Aerovox site, with the underlying assumption for all alternatives being that site land use would remain as industrial/commercial. In summary, all three alternatives included the following basic components:

- asbestos materials inside the building(s) would be inventoried and removed prior to demolition (note: EPA would also remove other controlled wastes such as mercury and flourescent light fixtures prior to demolition);

- the building would be demolished, in compliance with health and safety and air monitoring plans;

- demolition waste above TSCA thresholds would be disposed at a licensed off site TSCA facility;

- demolition waste below TSCA thresholds would be disposed both on- and off-site;

- highly PCB-contaminated soils below the basement's concrete floor slab and in soils outside of the building would remain in place; and

- the entire approximately 11 acre site would be covered with an impermeable cap.

The three alternatives differed only in the way the concrete basement floor slab (portions of which are highly PCB-contaminated) would be dealt with. The first alternative assumed that the concrete floor slab would remain in place; the second alternative assumed that the more highly contaminated western portion of the floor slab would be removed and disposed (Figure 4), and the third alternative assumed that the entire floor slab would be removed and disposed. The 1998 EE/CA recommended that the first alternative be implemented, concluding that it was equally effective and implementable as the other two alternatives, yet significantly less costly (see Table 1 below). Note that this supplemental EE/CA changes the recommended approach in Section 6 below.

Although not specifically stated in the 1998 EE/CA, post-removal institutional controls in the form of deed restrictions would be necessary to ensure the integrity of the cap and to prevent groundwater uses above GW-3 industrial/commercial standards. Long-term maintenance of the cap would also be required to maintain the protectiveness of the NTCRA.

For a more detailed discussion of these three original alternatives, please see the 1998 EE/CA.

4. Description of the Two New Alternatives

In addition to the three alternatives discussed in the 1998 EE/CA and summarized above in Section 3, EPA has evaluated two additional alternatives for the Aerovox site. These are: 1) disposal of all demolition waste on site (Section 4.a below); and 2) disposal of all demolition waste off site (Section 4.b below).

4.a New Alternative #1: Disposal of All Demolition Waste On Site

This alternative continues and expands upon the concept employed in the 1998 EE/CA wherein the basement of the manufacturing building would be used for disposal of demolition waste. Since the basement concrete floor slab varies between 0 and 8 feet below grade, this building footprint provides approximately 28,000 cubic yards (cy) of available disposal volume below existing grade. Because the total of approximately 18,300 cy of demolition waste is expected to fit within this volume (void spaces within the demolition waste will increase the required disposal volume), this first new alternative evaluated the disposal of all demolition waste on site within the basement footprint. Similar to the 1998 EE/CA alternatives, asbestos and mercury wastes would be removed prior to the building demolition.

As part of the demolition and disposal process, it is likely that the demolition waste would first be segregated and/or processed for size reduction and ease of handling (either in a temporary enclosed building on site or inside an undemolished portion of the existing mill building) prior to final disposal within the basement. As with the recommended alternative in the 1998 EE/CA, the basement concrete floor slab and side walls and underlying PCB-contaminated soils would remain in place. The demolition waste, once processed, would be placed and compacted inside the "hole" created by the building demolition.

Once the demolition waste is placed inside the basement, the entire site, with the exception of a small uncontaminated area along Belleville Avenue, would be covered with a new protective cover (see Attachment 3, item #5).

To ensure the health and safety of neighboring abutters, the demolition contractor would be required to comply with environmental standards for safe levels of air- and water-borne emissions, including PCBs. Compliance with these health and safety standards would likely require controlled misting or other dust suppression activity around the point(s) of demolition. In the more heavily contaminated portions of the building, a more careful dismantling rather than demolition of the building may be required in order to meet these standards.

4.b New Alternative #2: Disposal of All Demolition Waste Off Site

To bound the full range of potential alternatives for the Aerovox site, this second new alternative considered the disposal of all demolition waste offsite. Since the vast majority of building samples to date indicate that building materials are contaminated at or above TSCA-regulated levels of PCBs, and since the decontamination studies performed to date have not determined that there is a cost-effective method to reduce these levels to a non-TSCA threshold (BBL, 1998), this alternative conservatively assumes that all demolition waste would be disposed offsite as TSCA waste.

As with the first new alternative discussed in Section 4.a, it is assumed that the demolition waste would first be segregated and/or processed (either in a temporary enclosed building on site or inside an undemolished portion of the existing mill building) prior to offsite disposal. As with the recommended alternative in the 1998 EE/CA, the basement concrete floor slab and side walls would remain in place (and be covered with the new cover). The key difference with this alternative is that after segregation, the demolition waste would be transported offsite for disposal rather than being disposed within the basement. Clean backfill would then be brought in to fill the basement up to existing grade.

As with all alternatives, once the demolition and disposal activities have been completed the entire site (with the exception of the small uncontaminated area along Belleville Avenue) would be covered with the new protective cover.

To ensure the health and safety of neighboring abutters, the demolition contractor would

be required to comply with site specific environmental standards for safe levels of air- and water-borne emissions, including PCBs. Compliance with these health and safety standards would likely require controlled misting or other dust suppression activity around the point(s) of demolition. In the more heavily contaminated portions of the building, a more careful dismantling rather than demolition of the building may be required in order to meet these standards.

5. Summary of Updated Cost Estimates for All Five Alternatives

The estimated capital costs for all five alternatives are summarized in Table 1. As Table 1 illustrates, the updated costs for the five Aerovox alternatives range from a minimum of $7,899,685 for New Alternative #1 (disposal of all demolition waste on site) to a maximum of $18,074,142 for the original 1998 EE/CA Alternative 3 (removal and off-site disposal of the entire concrete foundation).

Note that this supplemental EE/CA adjusts the costs of the three original alternatives by accounting for inflationary increases from 1997 to 2007. As noted above in the Executive Summary, these costs are planning-level estimates rather than firm, fixed prices. As such, in addition to approximating final costs, their main use is to provide a comparison of the relative cost between alternatives.

In order to provide a fair comparison between the three original and the two new alternatives, the same general cost estimating approach used in the 1998 EE/CA was used for this supplemental EE/CA. Some updates and additions to the original approach were made, however, to best reflect the current status of the Aerovox site. For example:

- the updated cost estimate accounts for the need to handle and dispose the approximately 7,140 cubic yards (cy) of miscellaneous equipment, supplies and debris left behind when the facility was vacated in 2001 (this volume was not anticipated in the 1998 EE/CA);

- estimated asbestos-related costs have been increased from $100,000 to $1,086,416 (assuming off site disposal) based on a detailed inventory of asbestos performed in 2006. The need for this more detailed asbestos inventory was anticipated but not included in the 1998 EE/CA; and

- costs have been included in the updated estimate for the expected need for specialized demolition waste handling and processing in order to comply with environmental emission standards (e.g., such work to occur inside an enclosed building to keep air emissions low; see Section 4 above).

For additional detail regarding these updated cost estimates, please see Attachment 2.

6. Comparative Analysis of Alternatives and Recommended Approach

This section compares the relative performance of each of the five alternatives with respect to effectiveness, implementability and cost, and provides a recommended cleanup approach for the Aerovox site.

6.a Effectiveness

Each of the five alternatives meets the removal action objectives specified above in Section 2.b, since each includes the demolition of all site buildings and placing a cap or protective cover over all areas of the site above 2 ppm PCBs. The only difference between the five alternatives is the amount of demolition waste disposed on site; the degree of protectiveness for industrial/commercial use remains the same for all alternatives with a protective cover in place (especially since PCBs do not readily migrate in groundwater). Since all five alternatives would leave TSCA levels of PCB-contaminated soils and concrete on site under the new cover, the additional volume of TSCA demolition waste disposed on site per New Alternative #1 does not represent a significant decrease in protectiveness.

In order to meet the objective of facilitating redevelopment of the site, it is assumed (for all but new alternative #2) that the waste-filled basement would be used to support parking lot loads rather than new building loads. Under this scenario, new buildings and associated infrastructure would instead be located within the current parking lot area to the south of the existing building. In other words, the current site layout would be reversed, with the new parking area to the north of the new building area. Under this scenario, depending on local zoning, it is estimated that over 150,000 sq. ft. of site area would be available for build-out. New Alternative #2 (all demolition waste disposed off site) would be the best alternative at meeting this reuse objective, since the basement could be backfilled with clean structural fill to allow for building loads rather than parking lot loads. With over 150,000 sq. ft. area available for build-out, however, the other four alternatives meet this objective as well.

6.b Implementability

As noted in the 1998 EE/CA, demolition of buildings and installation of protective caps or covers over contaminated sites are well established technologies that have been used at many sites nationwide. Construction activities for each of the alternatives would be similar, and are not expected to be difficult to implement. Removal of the additional concrete foundation in the original alternatives #2 and #3 would require more time and effort, and generate more noise and dust than the other alternatives, but is a task that can be accomplished with available heavy construction machinery.

As discussed above in Sections 3 and 4, due to the high levels of PCB contamination within the building and the close proximity of industrial and residential abutters, compliance with site-specific air- and water-quality emission standards during demolition will be a critical

concern. To comply with the TSCA risk-based determination (see Attachment 3), the demolition waste handling, segregation and processing activities would be implemented in an enclosed space in order to meet these standards (either in the existing mill building or in a temporary enclosed building erected on site). Note that the updated cost estimates include costs for these specialized waste handling activities.

New Alternatives #1 and #2 would simplify implementation in the sense that the process of segregating non-TSCA demolition waste from the TSCA demolition waste (washing, decontaminating, rinsing, sampling, sorting, etc.) would not be required. New Alternative #1 would, however, require that additional demolition waste be placed inside the basement, but this activity would be taking place regardless for the non-TSCA demolition waste. This process would have to be carefully controlled in a similar fashion to the demolition process (e.g., with controlled misting) in order to comply with the site-specific emission standards. Conducting this activity below grade should serve to make compliance with these standards easier.

6.c Cost

The updated estimated costs for all five alternatives are discussed and summarized above in Section 5 as well as in Table 1 and Attachment 2. The alternative with the lowest estimated cost is New Alternative #1, at $7,899,685.

It should be noted that, as discussed further in Section 9 below, coordinating the site cleanup with site redevelopment by a private party has the potential to significantly reduce the final cost of the cleanup below those presented herein.

6.d Recommended Approach

New Alternative #1 (disposal of all demolition waste on site), since it effectively meets all the response action objectives, is implementable and significantly less costly than the other four alternatives, yet remains protective, is the recommended approach. The estimated cost of New Alternative #1 is $7,899,685, compared to the estimated costs of the other four alternatives which ranged from $14, 511,302 to $18,074,142.

It is possible that a private party could propose to perform remediation above and beyond the recommended approach in order to enhance the redevelopment potential of the site. EPA would consider this request but, at a minimum, would require that the additional cost beyond that for the recommended approach be born by the private party, and that the proposed remedy comply with all of the project's health and safety and emission standards and other ARARs.

7. Applicable and Relevant and Appropriate Requirements (ARARs)

The ARARs in Tables 13 and 14 in the 1998 EE/CA and those in Table 2 of this

Supplemental EE/CA have been identified to guide the cleanup of this facility. Tables 13 and 14 of the 1998 EE/CA are included and available in the administrative record for the 1998 EE/CA, at document #5. Section 10 below (Community Relations) describes the availability of the administrative record locally in New Bedford, MA as well as in Boston, MA.

The Supplemental EE/CA identifies ARARs that were not included in the original EE/CA and those that apply to changed site conditions and to conditions that were unknown at the time the original EE/CA was issued. For removal actions, EPA's policy is that actions will meet ARARs to the maximum extent practicable, considering the exigencies of the situation. As determined in this document the Aerovox facility presents an imminent and substantial threat to the environment and must be addressed as quickly as possible; therefore, these ARARs will be complied with to the extent practicable given the need to address the risks posed by this site.

As noted in Table 14a of the 1998 EE/CA, pursuant to TSCA Section 761.61(c), all alternatives, including the two new alternatives will involve a risk-based cleanup that requires a determination from EPA's Regional Administrator that the removal action will not pose an unreasonable risk of injury to health or the environment. A draft determination is attached to this Supplemental EE/CA for comment. Once comment is received and evaluated, a final determination will accompany the Action Memorandum for this NTCRA which will be issued after the public comment period closes.

The Aerovox area was evaluated as part of the archeology survey performed previously for the New Bedford Harbor Superfund site, and was found not to be an area of significant interest. The Aerovox building itself, although not a listed historic site, may be eligible for such a listing. Pursuant to Section 106 of the Historic Preservation Act, EPA will consult with the appropriate federal and state historic officers prior to the issuance of the Action Memorandum for this removal action. Due to the widespread PCB contamination within the interior of the building, however, conservation of the building for historic value is not considered a realistic or cost-effective option. Documentation or other form of mitigation may be appropriate prior to building demolition.

Because the NTCRA will be performed within the 11-acre parcel of land containing the existing building and parking lot, it is considered an Area of Containment (AOC) under CERCLA, and thus RCRA Land Disposal Regulations do not apply to this action. Asbestos is regulated by TSCA, as well as under state solid waste regulations as a special waste. Certain solid waste regulations are relevant and appropriate to disposal of asbestos for removal, containerizing, and segregation of asbestos waste during the demolition process. TSCA sets standards for disposal of asbestos waste on site. To comply with these, asbestos will be removed prior to building demolition, properly managed and disposed either on site in a designated portion of the building or off site at a licensed facility.

Pursuant to the Massachusetts Contingency Plan (MCP), 310 CMR 40.0111, Massachusetts deems response actions at disposal sites subject to CERCLA adequately regulated

for purposes of compliance with the MCP provided the Department of Environmental Protection (DEP) concurs with EPA's decision for the response action. DEP has given its preliminary concurrence to the recommended approach herein, and will review the EE/CA further during the upcoming comment period (see Section 10 below).

In addition, since this removal action is based on the 40 CFR 761.61(c) TSCA risk-based determination, 310 CMR 30.105 recognizes that the site is adequately regulated by TSCA, and therefore, the Massachusetts Hazardous Waste regulations identified in the 1998 EE/CA do not apply.

7.a RCRA and TSCA - Site cover

The 1998 EE/CA recommended alternative included a low permeability cap over the entire 11-acre site. For cost estimating, the 1998 EE/CA assumed that a hydraulic asphalt concrete (HAC) cap, similar to that placed in the mid-1980s (see Figures 2 and 3) would be used. This Supplemental EE/CA clarifies that its recommended approach also requires a clean protective cover over the site to address PCB contaminated waste. This protective cover would at a minimum meet the conditions of the TSCA determination pursuant to 40 CFR 761.61(c) for the activities within the scope of this NTCRA (see Attachment 3). As noted in Table 14a of the 1998 EE/CA, all alternatives (as well as the two new alternatives) will involve a risk-based cleanup that require this TSCA determination from the Regional Administrator that the removal action will not pose an unreasonable risk of injury to health or the environment. A draft determination is attached to this Supplemental EE/CA for comment (see Attachment 3). Once comments are received and evaluated, a final TSCA determination will accompany the Action Memorandum for this NTCRA.

Asbestos waste removed from the building during demolition will either be disposed off site at a licensed state facility or disposed on site in the basement. If on-site disposal occurs, the asbestos will be contained and disposed in a segregated area of the basement and covered with at least 36 inches of material. Other state and federal asbestos disposal requirements will be met as well.

In the long term, final site closure will require approval from the state's hazardous waste cleanup program (M.G.L. Chapter 21E) and federal TSCA program, and a more highly impermeable cap will likely be required as a result. Long-term operation and maintenance of the cap and long-term groundwater monitoring would also likely be required as part of final site closure.

EPA has not quantified whether any additional hazardous waste are present at the site; however, the measures proposed will protect human health and the environment in the short-term. Long-term protection will be addressed under the state c. 21E program.

The NTCRA has also been revised to include an RAO that recognizes that EPA will

assist the state in establishing institutional controls. These controls may take the form of a Grant of Environmental Restriction to the state or an Activity and Use Limitation to prohibit site activities that will adversely affect the cover. Applicable site security will also be maintained by the site owner under state authority.

7.b Wetlands/Floodplains

A wetland assessment has been performed in this area as part of the New Bedford Harbor Superfund site cleanup and no federal wetlands have been identified on the Aerovox site. Unlike federal wetland regulations, Massachusetts wetland regulations cover work within a 100 foot buffer zone of wetlands. There is a small fringe saltmarsh area directly adjacent to the eastern end of the Aerovox property. State wetland and waterway regulations were identified in Tables 13 and 14 of the original EE/CA and will not be repeated here.

The eastern end of the Aerovox property is located within Zone A-1 of the National Flood Insurance Program (100-year flood plain); the remainder of the property is located in Zone B (between the limits of 100-year and 500-year flood plain). See Figure 5 attached. However, the hurricane barrier at the entrance to New Bedford Harbor would likely ameliorate severe flooding problems. The federal flood plain executive order requires evaluating alternatives to avoid effects and incompatible development in the flood plains and minimizing the potential harm to flood plains if the only practicable alternative requires siting an action in a flood plain. The only practical alternative to address this facility, based on available funding and the exigencies of site circumstances is to demolish the existing building which was built in the flood plains. EPA will dispose of demolition waste offsite to the extent practicable but expects that without an additional source of non-EPA funding, waste will be left onsite in the flood plain. Disposal and cover activities in the flood plain will be conducted so as to reduce the risk of flood loss to minimize potential harm to people and property and to restore and preserve the natural and beneficial values served by the flood plain. Federal and state facility siting locations standards also regulate new and existing facilities in flood plain areas. Flood control measures are summarized below.

While space considerations for demolition activities and equipment may dictate otherwise; the temporary processing building should be located outside the 100-year floodplain area if practicable. If located within the 100-year area, it must be constructed so that all waste can be removed safely in the event of flooding or the facility design will incorporate structures to protect it from a 100-year flood event. The building will be decontaminated and removed after all processing activities are complete. As to the cover portion of the recommended alternative, the scope of this NTCRA does not include removing PCB-contaminated soil under the concrete foundation of the existing building nor the PCB-contaminated soil in and under the asphalt cap already in place. A stable, protective cover will be put in place over the existing foundation and the demolition waste inside the foundation as part of this NTCRA that will withstand flooding and protect against any washout of hazardous waste. Measures, where practical given current and future site use, will include use of minimum grading, maintaining flood plain vegetation to

reduce erosion from the new cover material, and other acceptable flood protection measures.

7.c RCRA - Mercury

Since the 1998 EE/CA was issued, various surveys have been performed in the building, and mercury-containing equipment as well as spilled inorganic mercury have been observed. Flourescent lights and batteries containing mercury have also been observed. The spilled mercury has been preliminarily stabilized and will be removed along with other mercury-containing waste prior to building demolition. This mercury waste will be disposed at a licensed disposal facility in accordance with hazardous waste requirements.

Mercury-containing equipment, lamps, and batteries that are hazardous wastes are regulated by the RCRA Universal Waste Rule which requires specific handling, containing and removal techniques for both small and large quantity handlers of universal waste. Given that the amount of waste in the building most likely exceeds 5,000 kilograms, collectively, large quantity regulations will govern this removal action. These articles will be removed from the building in a way that prevents releases to the environment through the use of closed, structurally sound containers that are compatible with the contents of the device and that prevent volatilization. Intact mercury containing ampules, if any, may be removed from equipment as allowed under these regulations before building demolition. As long as the casing of battery cells are not breached and remain intact and closed (except to remove electrolyte), allowable activities such as sorting, discharging and regenerating may occur. The remaining emptied equipment will be tested to determine if it contains hazardous waste. If not, it may be disposed of in a solid waste facility. All universal waste removed from the building will be disposed of at a hazardous waste disposal facility as required by state law.

7.d Solid Waste

Massachusetts recently promulgated regulations that restrict disposal of, among other things, asphalt pavement, brick, concrete, metal and wood in a solid waste disposal facility. These regulations will become effective in July 2006. Because they are not effective as of the issuance of this EE/CA, they have been identified as regulations to be considered during the NTCRA. Their status will be reviewed again when the Action Memorandum is issued and, if effective, will be identified as relevant and appropriate to the NTRCA. Based on sampling to date, EPA anticipates that the majority if not all of these materials will be contaminated with PCBs. As such, the waste stream will be controlled by TSCA. However, to the extent these materials are separated during demolition activities, those that qualify as solid waste will be recycled to the extent practicable.

7.e Air

Air emissions will be monitored during site activities, especially during the demolition phase, to ensure that dust, noise and airborne PCBs, lead and mercury levels are below levels of concern.

To ensure the protection of site workers and the employees of the two abutting industrial facilities, OSHA PELs will be used. The NIOSH RELs will be used as early warning criteria, which if exceeded, will trigger corrective actions to site operations to minimize airborne emissions. To protect the residential abutters on the opposite side of Belleville Avenue, a more stringent, risk-based airborne PCB level will be used to monitor the performance of the demolition activity. Massachusetts Allowable Ambient Limits (AALs) will also be considered when setting air emission limits.

EPA notes one correction to Table 14a of the 1998 EE/CA: MADEP Division of Air Quality Control (DAQC) Policy - Allowable Sound Emissions, Policy 90-001, dated February 1, 1990, the final column entitled "Consideration in the the Removal Process/Action for Attainment" states "there are no inhabited residences in close proximity to the Aerovox facility". This statement is incorrect in that the facility is located directly across the street from a densely populated residential area with double and triple decker homes.

7.f Discharge of Water

Site demolition and processing activities will involve the use of water for dust suppression and air emission controls. This water, along with any potentially contaminated stormwater runoff, will be collected and either treated onsite and discharged to the River or discharged to the New Bedford waste-water treatment facility in compliance with its pretreatment standards. If the treated water is discharged to the River, because of substantive requirements of the Clean Water Act National Pollutant Discharge Elimination System (including the fact that the River currently does not meet water quality criteria for PCBs), the water quality criteria for PCBs must be met at the point of discharge, as well as other NPDES requirements.

Throughout construction activities, best management practices will be used to control pollutants in stormwater discharges and erosion and sediment control measures will be implemented to control pollutants in stormwater discharges after the cover is in place.

8. Consistency with the Long-Term Remedial Action

The recommended approach addresses the original hydraulic asphalt concrete (HAC) cap installed in 1983/84 (see Section 1.a above): The original HAC cap areas, as well as all other PCB-contaminated areas of the site, will be covered with a clean protective cover as part of the recommended approach. Likewise, the steel sheet-pile wall and abutting stone seawall installed with the HAC cap will remain in place along the eastern edge of the Aerovox property. The new cover will key into the sheet pile wall, yet will not prevent long-term maintenance of it nor will it prohibit further reinforcement of the wall if ever necessary. As with the new cover, maintenance of the sheet pile wall will become the responsibility of the site owner, under oversight by the State.

To protect the long term integrity of the new cover and prevent the use of site groundwater, institutional controls (e.g., deed restrictions) are part of the post-removal site

controls. EPA will assist the state and City to establish these institutional controls through the state's hazardous waste site cleanup program (M.G.L. c.21E).

Depending on the final configuration of the post-removal surface water drainage system, a NPDES (National Permit Discharge Elimination System) storm water discharge permit may be required, pursuant to the federal Clean Water Act. If storm water is discharged from the site via pipes or swales, as opposed to overland sheet flow, the owner of the site will be required to obtain a NPDES permit.

The recommended approach is consistent with EPA's cleanup of the New Bedford Harbor Superfund site, since it serves to minimize further releases of PCBs to the harbor as a result of surface water runoff and groundwater flow from Aerovox, and since it eliminates potential releases of PCBs to the harbor in the event of a mill fire (i.e., from fire fighting water runoff and PCB-contaminated soot deposition).

The 1998 Record of Decision (ROD) for the harbor cleanup includes a confined disposal facility (CDF "A") along the Aerovox shoreline (USEPA, 1998 at Figure 21a). While CDF A has not been designed or constructed to date, a preliminary decision was made during the initial remedial design phase of the harbor cleanup to terminate the northern end of CDF A just south of Hadley Street. Hadley Street is the street that runs just south of the Aerovox property. This revised geometry of CDF A would avoid a costly relocation of the eight foot wide storm drain which runs under Hadley Street. This geometry also eliminates any issues with regard to how the shoreline CDF A might overlap with the Aerovox property.

9. Coordination with Site Redevelopment

For a variety of reasons EPA recognizes the importance of coordinating the Aerovox cleanup with future redevelopment of the site. First, absent such coordination, the future redevelopment of the site would be more costly and problematic, since the new cover would have to be disturbed to construct the new infrastructure. With proper coordination, however, the site can be remediated in a way that incorporates the needs of the site's redevelopment plan. For example, construction of new building foundations, clean utility corridors, and other required infrastructure can be sequenced prior to placement of the new cover.

Second, pairing the cleanup with the site's redevelopment ensures maximum cost-effectiveness. If, as explained further below, in addition to performing the site cleanup, the cleanup vendor develops the property, the project in total is likely to be worth more to the vendor, and the cleanup cost itself should thus be lower. In other words, with cleanup paired with redevelopment the project becomes a valuable asset, which promotes competition and the potential for lowered cleanup costs to the government.

Third, pairing cleanup with reuse retains the potential for remediation above and beyond that called for in the recommended approach. For example, the recommended approach assumes

the continuation of commercial and industrial land use at the site, and thus leaves PCB-contaminated soil in place underneath the new protective cover. Contaminated demolition waste would also remain on site under the cover. Alternatively, if a vendor finds that its redevelopment plans would benefit from the complete removal and off-site disposal of the contaminated soil or demolition waste, it would have the opportunity to do so (at its expense) as part of the cleanup. Such a scenario would improve the protectiveness of the cleanup, and by pairing the cleanup with redevelopment the potential for this scenario is preserved.

In order to achieve a successful coordination between cleanup and redevelopment, EPA is currently exploring the possibility of partnering closely with the City of New Bedford during this project. For example, a cooperative agreement with the City could allow the City to be the lead agency, with EPA (and the U.S. Army Corps of Engineers) remaining integrally involved by performing technical oversight and environmental monitoring. One method to implement this redevelopment approach is for the City to issue one Request for Proposal but two separate contracts for the cleanup and redevelopment components. In other words, the same vendor or vendor team would be used for both components, but under separate city contracts. This allows for the cleanup design to incorporate the redevelopment plan, but keeps EPA's cleanup costs tracked separately from the redevelopment process.

While such a partnering offers the best effort at future planning, if the City is not available EPA will move forward with the recommended alternative. This scenario would still leave the site available for future reuse, with appropriate restrictions, but the party developing the site would not have the benefit of the necessary underground infrastructure being in place and incorporated into the new protective cover.

It should also be noted that EPA has issued a Superfund Redevelopment Initiative grant to the City, which is being used to fund conceptual redevelopment plans with public input for the Aerovox site. As part of this planning process, the creation of a shoreline corridor for public access has been identified as an important outcome of the site's redevelopment.

10. Community Relations

EPA considers community involvement an integral part of the cleanup process, and will work with all stakeholders to ensure that the Aerovox cleanup is performed safely, encourages redevelopment, and allows for public access to the shoreline portion of the site.

A public comment period was held for the original 1998 EE/CA from 10/8/98 to 11/7/98. No public comments were received at that time. An additional comment period will be held specifically for this Supplemental EE/CA, which will begin with a public informational meeting for the site. The date of the informational meeting and comment period has not been finalized as of completion of this report, but is expected to be in May 2006. EPA will announce the exact dates of the meeting and comment period as soon as they become available, and ensure that all stakeholders are aware of them.

Once the comment period begins, written comments may be submitted either by letter (hard copy), by fax, or by e-mail, as described below, until the comment period ends:

1. Comment letters shall be sent to:

   David J. Dickerson, Project Manager
   U.S. EPA - New England
   1 Congress Street
   Suite 1100 (HBO)
   Boston, MA 02114-2023

2. E-mailed comments shall be sent to:

   commentsnbh@epa.gov

3. Faxed comments shall be sent to:

   617-918-0329
   ATTN: David Dickerson (HBO)

As required by CERCLA, an administrative record for the site is available locally for public review at the **Wilkes Branch of the New Bedford Free Library** (pending confirmation). The administrative record contains the documents and information that EPA has relied upon in determining the recommended cleanup approach for the Aerovox site. The address and hours of operation of the Wilkes Branch Library are:

1911 Acushnet Avenue, New Bedford

Tuesdays:	noon - 8 pm
Wednesdays:	9 am - 5 pm
Fridays and Saturdays:	9 am - 5 pm

508 991 6214
508 991 6280 (reference desk)

The administrative record is also available for public review at EPA-New England's Superfund Records and Information Center in Boston, MA at One Congress Street (near the Haymarket subway station). Please call Holly Inglis at (617)918-1413 with any questions.

In addition to this public comment period and public meeting, EPA-New England and its City and state partners will implement a comprehensive community outreach effort throughout the Aerovox cleanup to ensure that all stakeholders are well informed and have ample opportunity to voice any concerns.

An updated community relations plan is also available as part of the administrative record for the Aerovox site as discussed above.

11. References

BBL, 1998. Engineering Evaluation/Cost Analysis (EE/CA). Aerovox, Inc. New Bedford, Massachusetts. Prepared by Blasland, Bouck and Lee, Inc. (BBL). August 1998. (This document is included in the Administrative Record for the Aerovox site.)

ENSR, 2006. Aerovox Facility - Conceptual Site Model. New Bedford Harbor Superfund Site - New Bedford, Massachusetts. Prepared by ENSR Corporation. March 2006. (This document is included in the updated Administrative Record for the Aerovox site.)

Gushue and Cummings, c.1985. On-Site Containmnet of PCB-Contaminated Soils at Aerovox Inc., New Bedford, Massachusetts. J.J. Gushue and R.S. Cummings. No date. (This document is included in the updated Administrative Record for the Aerovox site.)

Stanley, 1994. Final Aerovox New Bedford Plant Stormwater Study. Prepared by Stanley Consultants Environmental, Inc. for Aerovox, Inc. April 19, 1994. (This document is included in the updated Administrative Record for the Aerovox site.)

USEPA, 1998. Record of Decision for the Upper and Lower Harbor Operable Unit, New Bedford Harbor Superfund Site, New Bedford, Massachusetts. September 1998. Available at: www.epa.gov/ne/nbh.

Table 1 - Summary of Updated Cost Estimates[1]

Vacant Aerovox Plant Supplemental EE/CA - April 2006

Alternative	**1998 EE/CA Alternative # 1**	**1998 EE/CA Alternative # 2**	**1998 EE/CA Alternative #3**	**New Alternative #1[2]**	**New Alternative # 2**
Description	Building is demolished and the entire site is covered with a new protective cover. TSCA demolition waste is disposed off-site, and non-TSCA demolition waste is disposed on-site within the basement of the former building. The concrete foundation and PCB contaminated soils remain on site underneath the new cover.	Same as EE/CA Alternative #1, except the western (more highly contaminated) portion of the concrete foundation is disposed off-site.	Same as EE/CA Alternative #1, except the entire concrete foundation is disposed off-site.	Same as EE/CA Alternative #1, except all demolition waste is disposed on site.	Same as EE/CA Alternative #1, except all demolition waste is disposed off site.
Updated 1998 Capital Cost	$11,156,047	$12,407,623	$13,785,323	n/a	n/a
Supplemental EE/CA Capital Cost (2007 dollars)	**$15,028,700**	**$16,442,570**	**$18,074,142**	**$7,899,685[3]**	**$14,511,302**

[1]See Attachment 2 for additional detail regarding this updated cost estimate.

[2]As described in Section 6 below, New Alternative #1 is the recommended alternative

[3]The total estimated cost shown here would be reduced if asbestos waste is disposed on site (see Section 7.a below)

Table 2 - Supplemental EE/CA ARARs

Action-Specific ARARs			
Requirement	Status	Synopsis	Action to be Taken
Because this removal action is based on the 40 CFR 761.61(c) TSCA risk-based determination, the Massachusetts Hazardous Waste regulations identified in the 1998 EE/CA do not apply. Pursuant to 310 CMR 30.105, because the site is adequately regulated by TSCA, Massachusetts Hazardous Waste regulations do not apply.			
310 CMR 30.125 (Federal RCRA base program and Universal Waste Rule (except for cathode ray tubes) has been delegated in Massachusetts. Federal standards are identified for information.) RCRA – 40 C.F.R. 261.24	Applicable	Identifies solid wastes as hazardous wastes if the waste exhibits characteristics of ignitability, corrosivity, reactivity or toxicity. TCLP results with mercury concentrations equal to or greater than 0.2 mg/L is characteristically toxic.	Mercury or mercury containing material with concentrations equal to or greater than 0.2 mg/L will be handled as hazardous waste during demolition and disposal activities.

310 CMR 680 Use and Management of Containers RCRA – 264.170, Subpart I, Use and Management of Containers	Applicable if mercury or other hazardous waste is stored in containers before offsite disposal	Regulates condition, compatibility, management, location and design of containers and containment systems of hazardous waste.	Mercury or other hazardous waste shall be containerized before offsite transportation. If so, containers will be in good conditions, compatible with the contained waste, closed except when necessary to add or remove waste, and not placed in or near incompatible waste.
310 CMR 30.1044-Universal Waste Rule RCRA Universal Waste Rule: Mercury containing equipment 40 CFR 273.4 and 273.9 Lamps 40 CFR 273.5 and 273.9 Batteries 40 CFR 273.2 and 273.9	Applicable	Streamlined collection requirements for certain wastes.	Mercury-containing equipment, fluorescent lamps and batteries will be handled, collected and contained in accordance with these regulations and disposed of offsite at a licensed facility.
RCRA 40 CFR 264.1100 Containment Buildings Subpart DD	Applicable	Standards for the use of containment buildings for hazardous wastes.	Process building will be constructed, operated and, when processing completed, decontaminated as required. The interior of the existing mill building may also be used for waste processing, if in compliance with this section.
310 CMR 19.017 Waste Bans	To Be Considered	Prohibits disposal of waste including asphalt pavement, brick, concrete, metal and wood in a solid waste disposal	To the extent these restricted materials are separated during demolition activities and do not qualify as

		facility. Becomes effective in July 2006.	hazardous waste; they will be recycled to the extent practicable.
Clean Water Act, Section 402, National Pollutant Discharge Elimination System (NPDES) 40 CFR 122-125, 131	Applicable	These standards govern discharge of water into surface waters. Due to the degraded nature of New Bedford Harbor waters, discharges into the waterway must meet ambient water quality criteria (AWQC) at the discharge point.	Any water runoff from the demolition activities discharged to New Bedford Harbor will meet AWQC at the point of discharge.
Clean Water Act, Section 402, NPDES, Prohibitions, 40 CFR 122.4(i)	Applicable	Prohibits new discharges into waters that do not meet applicable water quality criteria unless certain conditions are met.	Any water runoff from the demolition activities discharged to New Bedford Harbor will meet AWQC at the point of discharge, as well as other NPDES requirements.
314 CMR 3.10(3), (4-6); (9)(a); (19)(3-6), (10), (12)(a-b); (13) Surface Water Discharge	Applicable	This section outlines the requirements for obtaining a NPDES permit in Massachusetts. The waters of New Bedford Harbor adjacent to the Aerovox facility are classified as SB	Discharge from any onsite water treatment will meet stringent effluent limitations. Discharges will be monitored in accordance with the site monitoring plans. The discharge facility will be properly operated and maintained; discharge will be reduced or halted if facility fails to function properly while corrective action is undertaken.
Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Discharges, 314 CMR 12.03(8); 12.04(2), (5), (8-12); 12.05(1), (6), (12); 12.06(1-3).	Relevant and Appropriate	Establishes operation and maintenance standards for treatment works.	Applies to an onsite water treatment facility if used during the NTCRA. The water treatment facility, although not "treatment works", will not allow waste to bypass the system, will have an alarm system in place and will be maintained properly and safely with adequate tools, equipment, parts,

			personnel, etc. Sampling and analysis will be conducted according to the site plan.
Stormwater Control, 40 CFR 122.26 (b)(14)(x) and (c)(ii)(C) and (D)	Applicable	Applies to construction activity that results in the disturbance of greater than five acres of total land area.	Demolition and covering activities will include best management practices to control pollutants in stormwater discharges during construction and will implement erosion and sediment control measures to control pollutants in storm water discharges after the removal is complete.
310 CMR 19.061(3), and (6)(b)(1)(d) Special Waste – Asbestos and Asbestos Management Requirements	Relevant and Appropriate	Establishes asbestos as a special waste in Massachusetts. Special waste can be disposed at a solid waste facility that is license to accept special waste. Subsection (6) specifies management requirements for asbestos.	Prior to demolition, asbestos will be removed from the building. Asbestos will be properly wetted, containerized and labeled and managed so as to maintain the integrity of its containers and to prevent emission of asbestos fibers to the ambient air.
TSCA – Transport and Disposal of Asbestos Waste (40 CFR 763, Subpart E, Appendix D)	Applicable	Provides standards for transport and disposal of materials that contain asbestos. Requires proper wetting and containerization. Disposal involves the isolation of asbestos material to prevent fiber release. Landfilling is recommended. Final cover of an area containing asbestos waste is at least 30 inches of non-asbestos material to provide a 36 inch final cover. Signs warning "Breathing Asbestos Dust May Cause Lung Disease and Cancer" should be displayed.	If asbestos is disposed on site, disposal will meet these requirements.

Potential Location-Specific ARARs			
310 CMR 701 Facility Location Standards RCRA 40 CFR 264.18(b)	Applicable to process building; Relevant and Appropriate to capped areas	A hazardous waste facility must be designed, constructed, operated and maintained to prevent the washout of any hazardous waste by a 100-year flood.	The temporary process building if located within the zone A-1, 100-year floodplain portion of the site will be constructed so that the waste can be removed safely away from the flood waters or to withstand flooding. A stable, protective cover will be installed that will withstand floodwaters through flood proofing measures to the extent practicable.
Section 106 of the National Historic Preservation Act, 16 U.S.C. 470(f)	Applicable	Requires federal agencies to take into account the effects of their undertakings on historic properties.	The Aerovox facility may be eligible for historical building status. EPA will coordinate with the appropriate federal and state historic officers prior to the issuance of the Action Memorandum. The widespread PCB contamination within the building will preclude its preservation.
Fish and Wildlife Coordination Act, 40 CFR 6.302(g)	Applicable	Requires consultation with appropriate agencies to protect fish and wildlife when federal actions may alter waterways. Must develop measures to prevent and mitigate potential loss to the maximum extent possible.	Appropriate agencies will be consulted prior to discharges to the Harbor of treated site water to find ways to minimize any adverse effects to fish and wildlife resulting from the discharge.

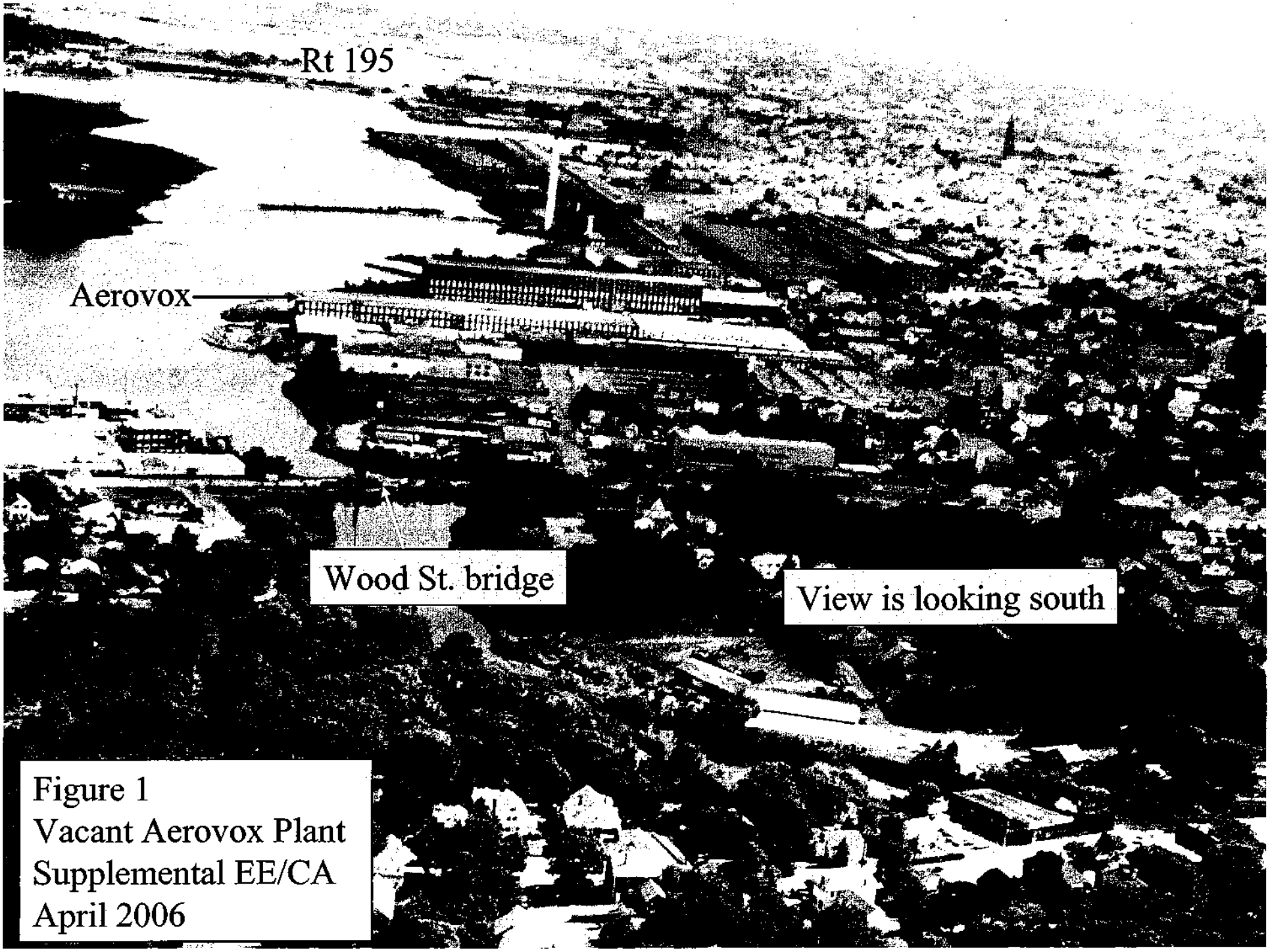

Figure 1
Vacant Aerovox Plant
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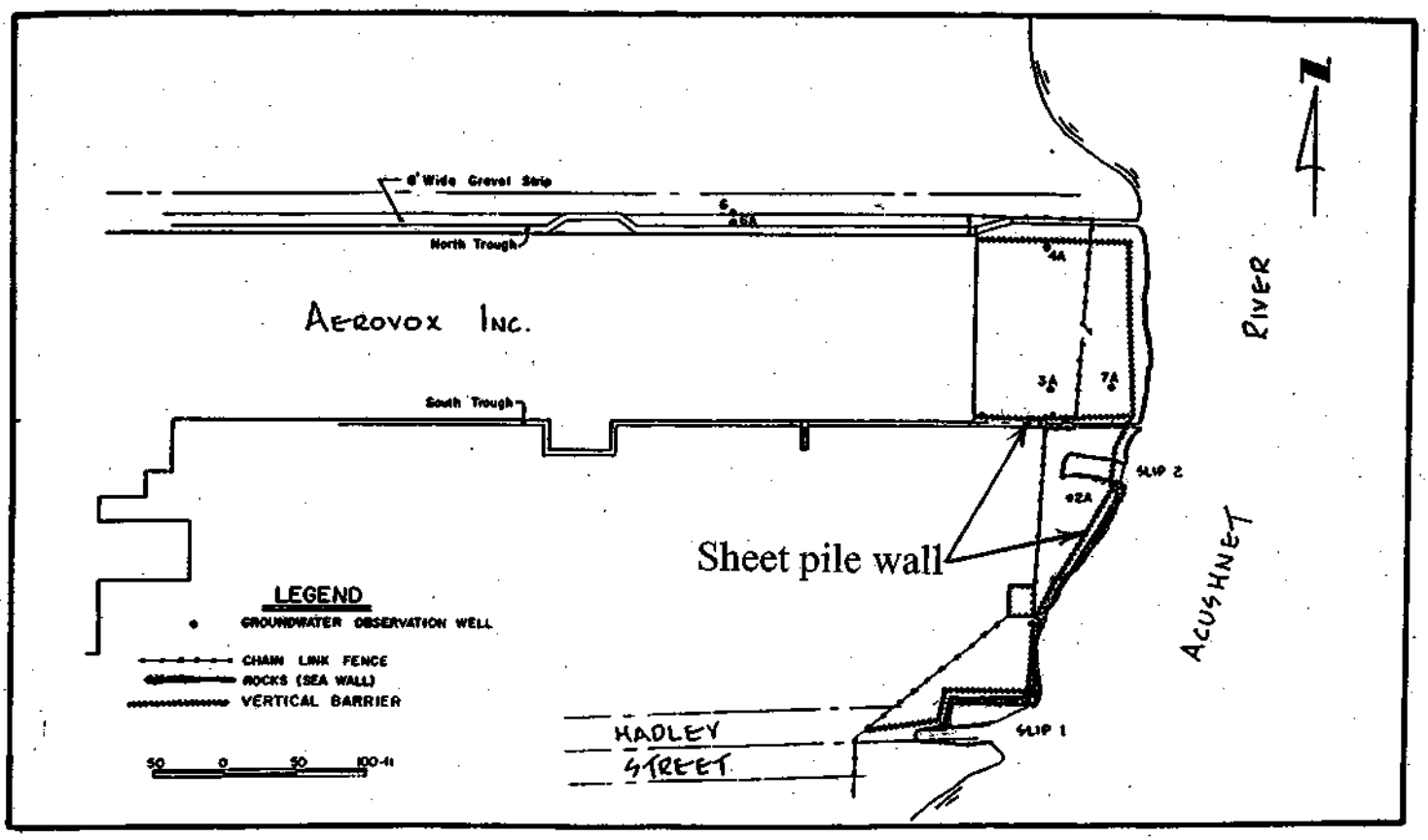
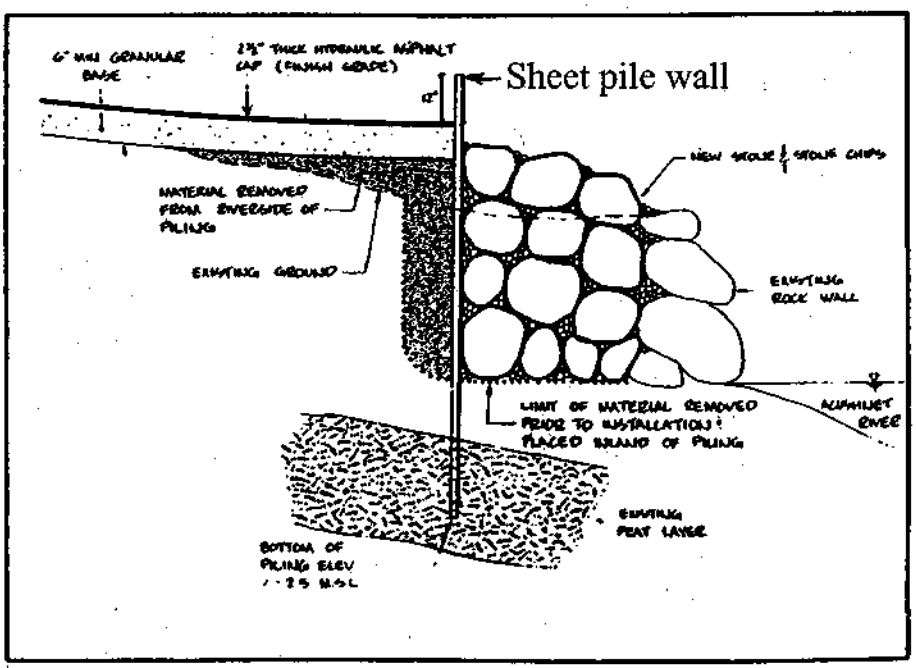




Source: Gushue and Cummings, 1985

Figure 2 - Plan view (top) and cross-sectional view (bottom) of the vertical steel sheet pile wall

Vacant Aerovox Plant Supplemental EE/CA, April 2006

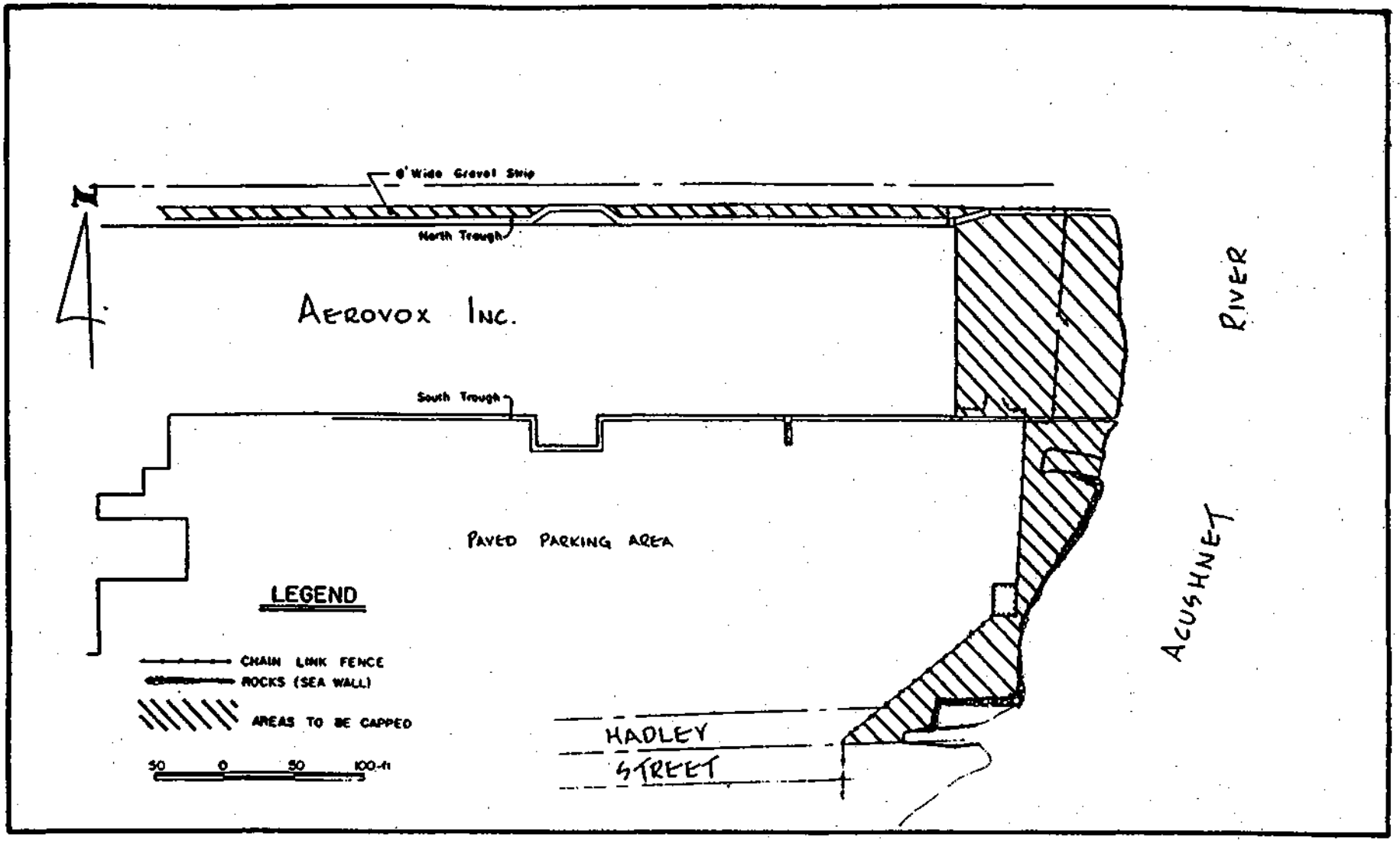
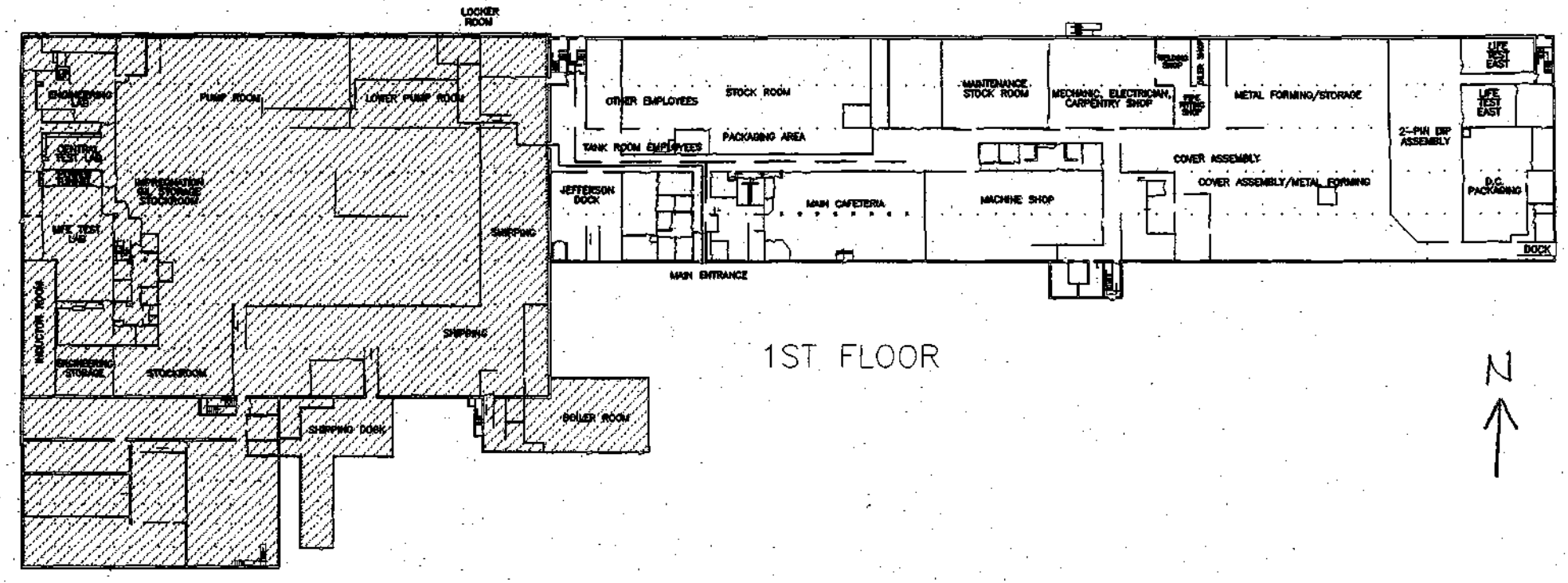
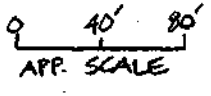


Figure 3 - Area of the Aerovox site covered with the hydraulic asphalt concrete (HAC) cap

Vacant Aerovox Plant Supplemental EE/CA, April 2006

Source: Gushue and Cummings, 1985





Legend

Approximate extent of concrete floor slab to be removed per 1998 EE/CA Alternative #2

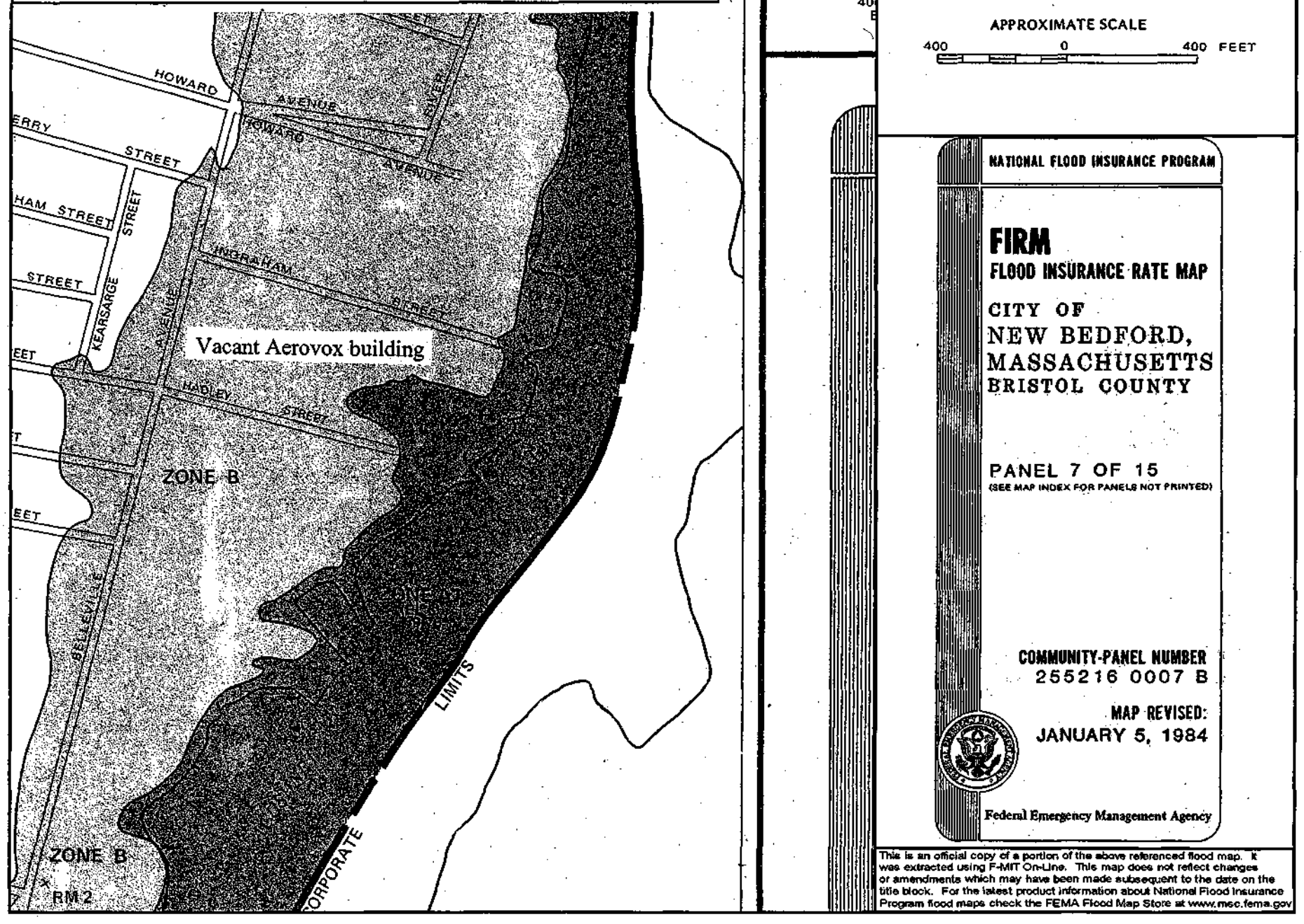
Figure 4 - Approximate Extent of Concrete Floor Slab to be Removed per Original EE/CA Alternative #2.

Vacant Aerovox Plant Supplemental EE/CA. April 2006

Source: BBL, 1998

Figure 5 - National Flood Insurance Map

Vacant Aerovox Plant Supplemental EE/CA, April 2006



Attachment 1 - Air Monitoring Data for the Aerovox Site

Station #: 24 Aerovox - EAST
Exposure Budget Slope (EBS) = 344 (ng/m^3-day)

Collection Date: 12/29/2005

Construction Activity: The 2005 dredging activities were completed on November 18, 2005.

This report summarizes sample results for the above referenced location and date. The samples were collected on polyurethane foam (PUF)/XAD sample media with a glass fiber pre-filter using a BGI, PQ-1 Low-Vol sampler. The samples were analyzed using high-resolution mass spectrometry (HRGCMS) for total PCB homologue groups. Results are evaluated relative to the Exposure Budget Tracking Process described in the Development of PCB Air Action Levels for the Protection of the Public, New Bedford Superfund Site, August 2001. Cumulative data for this reporting period are included on pages 3 and 4.

Summary of This Sampling Period:

The results from the Baseline Ambient Air Sampling program were used to assign background concentrations for each air sampling location. For Station 24 Aerovox, the quarterly average ambient air PCB concentrations for the June 1999 through May 2000 baseline sampling were used as background concentrations. These background concentrations were used for the inactive field times from 11/12/02 through 9/8/04 and for the period from 12/4/04 through 8/10/05 to close the inactive field season. Low triggers were identified, which will be evaluated for potential necessary response.

Monitoring Station		24 Aerovox
Exposure Budget Slope	[ng/m^3-day]	344
Work Start Date	[mm/dd/yyyy]	11/12/2002
Projected Work End Date	[mm/dd/yyyy]	11/10/2028
Occupational Limit Used as Ceiling	[ng/m^3]	500,000
TEL for Worker in Public	[ng/m^3]	50,000
NTEL for Worker in Public	[ng/m^3]	1,789
Minimum of TEL/NTEL	[ng/m^3]	1,789
Baseline Average Concentration	[ng/m^3]	75

Sample Results, Calculated Budget and Exposure Values

(A) Event	(B) Sampling Date	(C) Days Since Previous Sampling Event	(D) Work Effort Elapsed Time	(E) Estimated Work Effort Remaning	(F) PCB Concentration Result	(G) Average of Most Recent Two Concentration Results	(H) Weighted Average of Concentration Results	(I) Exposure Budget for the Period	(J) Cumulative Exposure Budget for Work Effort to Date	(K) Measured Exposure During the Period	(L) Calculated Cumulative Exposure for Work Effort to Date	(M) Exposure Budget Expended During the Period	(N) Cumulative Exposure Expended for Work Effort to Date
[#]	[month/day/year]	[days]	Running Sum of Column (C) to Date [days]	[days]	[ng/m^3]	[ng/m^3]	Column (L)/Column (D) [ng/m^3]	EBS[1] * Column (C) [ng/m^3-days]	Sum of Column (I) [ng/m^3-days]	Column (G)* Column (C) [ng/m^3-days]	Sum of Column (K) [ng/m^3-days]	Column (K) /Column (I) [%]	Column (L) /Column (J) [%]
1	11/12/2002	0	0	9495	67	67.00	67.00	NC	NC	NC	NC	NC	NC
2	11/30/2002	18	18	9477	67	67.00	67.00	6192	6192	1206.0	1,206.0	19.5%	19.5%
3	12/1/2002	1	19	9476	32	49.50	66.08	344	6536	49.5	1,255.5	14.4%	19.2%
4	2/28/2003	89	108	9387	32	32.00	38.00	30616	37152	2848.0	4,103.5	9.3%	11.0%
5	5/31/2003	92	200	9295	76	54.00	45.36	31648	68800	4968.0	9,071.5	15.7%	13.2%
6	8/31/2003	92	292	9203	130	103.00	63.52	31648	100448	9476.0	18,547.5	29.9%	18.5%
7	11/30/2003	91	383	9112	67	98.50	71.83	31304	131752	8963.5	27,511.0	28.6%	20.9%
8	2/28/2004	90	473	9022	32	49.50	67.58	30960	162712	4455.0	31,966.0	14.4%	19.6%
9	5/31/2004	93	566	8929	76	54.00	65.35	31992	194704	5022.0	36,988.0	15.7%	19.0%
10	8/31/2004	92	658	8837	130	103.00	70.61	31648	226352	9476.0	46,464.0	29.9%	20.5%
11	9/8/2004	8	666	8829	67	98.50	70.95	2752	229104	788.0	47,252.0	28.6%	20.6%
12	9/9/2004	1	667	8828	1024	545.50	71.66	344	229448	545.5	47,797.5	158.6%	20.8%
13	9/14/2004	5	672	8823	1449	1236.50	80.33	1720	231168	6182.5	53,980.0	359.4%	23.4%
14	9/23/2004	9	681	8814	588	1018.50	92.73	3096	234264	9166.5	63,146.5	296.1%	27.0%
15	9/27/2004	4	685	8810	9557	5072.50	121.81	1376	235640	20290.0	83,436.5	1474.6%	35.4%
16	10/19/2004	22	707	8788	559	5058.00	275.41	7568	243208	111276.0	194,712.5	1470.3%	80.1%
17	11/5/2004	17	724	8771	578	568.50	282.29	5848	249056	9664.5	204,377.0	165.3%	82.1%
18	12/3/2004	28	752	8743	30	304.00	283.10	9632	258688	8512.0	212,889.0	88.4%	82.3%
19	2/28/2005	87	839	8656	32	31.00	256.96	29928	288616	2697.0	215,586.0	9.0%	74.7%
20	5/31/2005	92	931	8564	76	54.00	236.90	31648	320264	4968.0	220,554.0	15.7%	68.9%
21	8/10/2005	71	1002	8493	130	103.00	227.41	24424	344688	7313.0	227,867.0	29.9%	66.1%
22	8/11/2005	1	1003	8492	216	173.00	227.36	344	345032	173.0	228,040.0	50.3%	66.1%
23	9/15/2005	35	1038	8457	1490	853.00	248.45	12040	357072	29855.0	257,895.0	248.0%	72.2%
24	9/23/2005	8	1046	8449	178	834.00	252.93	2752	359824	6672.0	264,567.0	242.4%	73.5%
25	9/29/2005	6	1052	8443	383	280.50	253.09	2064	361888	1683.0	266,250.0	81.5%	73.6%
26	10/6/2005	7	1059	8436	1822	1102.50	258.70	2408	364296	7717.5	273,967.5	320.5%	75.2%
27	10/28/2005	22	1081	8414	15.4	918.70	272.14	7568	371864	20211.4	294,178.9	267.1%	79.1%
28	11/18/2005	21	1102	8393	15.9	15.65	267.25	7224	379088	328.7	294,507.6	4.5%	77.7%
29	12/29/2005	41	1143	8352	83.2	49.55	259.44	14104	393192	2031.6	296,539.1	14.4%	75.4%

Notes:

[1]EBS: Exposure Budget Slope= ng/m^3-day

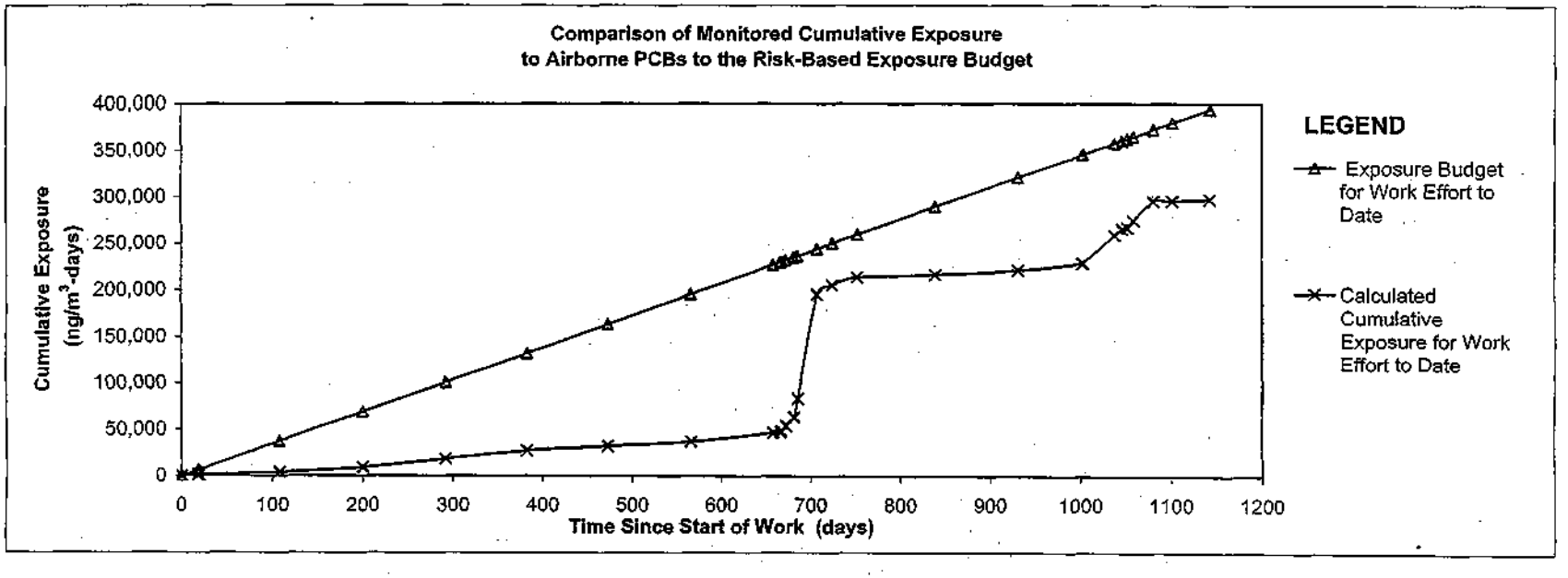
NC = Not Calculated

Shading represents actual sampling data. All other numbers represent projected PCB concentrations for that period.

Air Sampling Status Report

Sample Station :	24 Aerovox - EAST
Collection Date:	12/29/2005
Measured PCB Concentration (ng/m^3):	83.2
Exposure Budget Expended During This Period:	14.4%
Cumulative Exposure Budget Expended to Date:	75.4%
Response Level:	LOW
Response:	Evaluate the Cause and Significance of the Triggering Conditions

Triggers:



Air Sampling Status

New Bedford Harbor Superfund Site

Station #: 55 Aerovox West
Exposure Budget Slope (EBS) = 202 (ng/m^3-day)

Collection Date: 12/29/2005

Construction Activity: The 2005 dredging activities were completed on November 18, 2005.

This report summarizes sample results for the above referenced location and date. The samples were collected on polyurethane foam (PUF)/XAD sample media with a glass fiber pre-filter using a BGI, PQ-1 Low-Vol sampler. The samples were analyzed using high-resolution mass spectrometry (HRGCMS) for total PCB homologue groups. Results are evaluated relative to the Exposure Budget Tracking Process described in the Development of PCB Air Action Levels for the Protection of the Public, New Bedford Superfund Site, August 2001. Cumulative data for this reporting period are included on pages 3 and 4.

Summary of This Sampling Period:

This is a new sample location that was first sampled on December 3, 2004. Due to elevated concentrations on the East side of the facility, this location was selected to demonstrate what a local resident receptor (child receptor) might be seeing during remedial work. The results from the Baseline Ambient Air Sampling program were used to assign background concentrations for each air sampling location. For Station 55 Aerovox West, the maximum baseline result of 5.2 ng/m3 was used, which represents the maximum baseline result from Station 40 - Wood Street (Titleist), during the pre-construction sampling round on 11/18/02. Since there were no background concentrations measured at this location, the maximum concentration was used. These background concentrations were used for the inactive field times from 11/12/02 through 9/8/04 and for the period from 12/4/04 through 8/10/05 to close the inactive field season. No triggers were identified, therefore, no action is required.

Monitoring Station		55 Aerovox West
Exposure Budget Slope	[ng/m^3-day]	202
Work Start Date	[mm/dd/yyyy]	11/12/2002
Projected Work End Date	[mm/dd/yyyy]	11/10/2028
Occupational Limit Used as Ceiling	[ng/m^3]	500,000
TEL for Worker in Public	[ng/m^3]	50,000
NTEL for Worker in Public	[ng/m^3]	1,789
Minimum of TEL/NTEL	[ng/m^3]	1,789
Baseline Average Concentration	[ng/m^3]	5.2

Sample Results, Calculated Budget and Exposure Values

(A) Event	(B) Sampling Date	(C) Days Since Previous Sampling Event	(D) Work Effort Elapsed Time	(E) Estimated Work Effort Remaning	(F) PCB Concentration Result	(G) Average of Most Recent Two Concentration Results	(H) Weighted Average of Concentration Results	(I) Exposure Budget for the Period	(J) Cumulative Exposure Budget for Work Effort to Date	(K) Measured Exposure During the Period	(L) Calculated Cumulative Exposure for Work Effort to Date	(M) Exposure Budget Expended During the Period	(N) Cumulative Exposure Expended for Work Effort to Date
[#]	[month/day/year]	[days]	Runnig Sum of Column (C) to Date [days]	[days]	[ng/m^3]	[ng/m^3]	Column (L)/Column (D) [ng/m^3]	EBS[1] * Column (C) [ng/m^3-days]	Sum of Column (I) [ng/m^3-days]	Column (G)* Column (C) [ng/m^3-days]	Sum of Column (K) [ng/m^3-days]	Column (K) /Column (I) [%]	Column (L) /Column (J) [%]
1	11/12/2002	0	0	9495	5	5.00	5.00	NC	NC	NC	NC	NC	NC
2	11/4/2004	723	723	8772	5	5.00	5.00	146046	146046	3615.0	3,615.0	2.5%	2.5%
3	11/5/2004	1	724	8771	28	16.50	5.02	202	146248	16.5	3,631.5	8.2%	2.5%
4	12/3/2004	28	752	8743	9	18.50	5.52	5656	151904	518.0	4,149.5	9.2%	2.7%
5	8/10/2005	250	1002	8493	5	7.00	5.89	50500	202404	1750.0	5,899.5	3.5%	2.9%
6	8/11/2005	1	1003	8492	42.1	23.55	5.91	202	202606	23.6	5,923.1	11.7%	2.9%
7	9/15/2005	35	1038	8457	37.6	39.85	7.05	7070	209676	1394.8	7,317.8	19.7%	3.5%
8	9/23/2005	8	1046	8449	2.64	20.12	7.15	1616	211292	161.0	7,478.8	10.0%	3.5%
9	9/29/2005	6	1052	8443	87	44.82	7.36	1212	212504	268.9	7,747.7	22.2%	3.6%
10	10/6/2005	7	1059	8436	222	154.50	8.34	1414	213918	1081.5	8,829.2	76.5%	4.1%
11	10/28/2005	22	1081	8414	3.97	112.99	10.47	4444	218362	2485.7	11,314.9	55.9%	5.2%
12	11/18/2005	21	1102	8393	0.12	2.05	10.31	4242	222604	42.9	11,357.8	1.0%	5.1%
13	12/29/2005	41	1143	8352	10.8	5.46	10.13	8282	230886	223.9	11,581.7	2.7%	5.0%

Notes:

[1]EBS: Exposure Budget Slope= ng/m^3-day

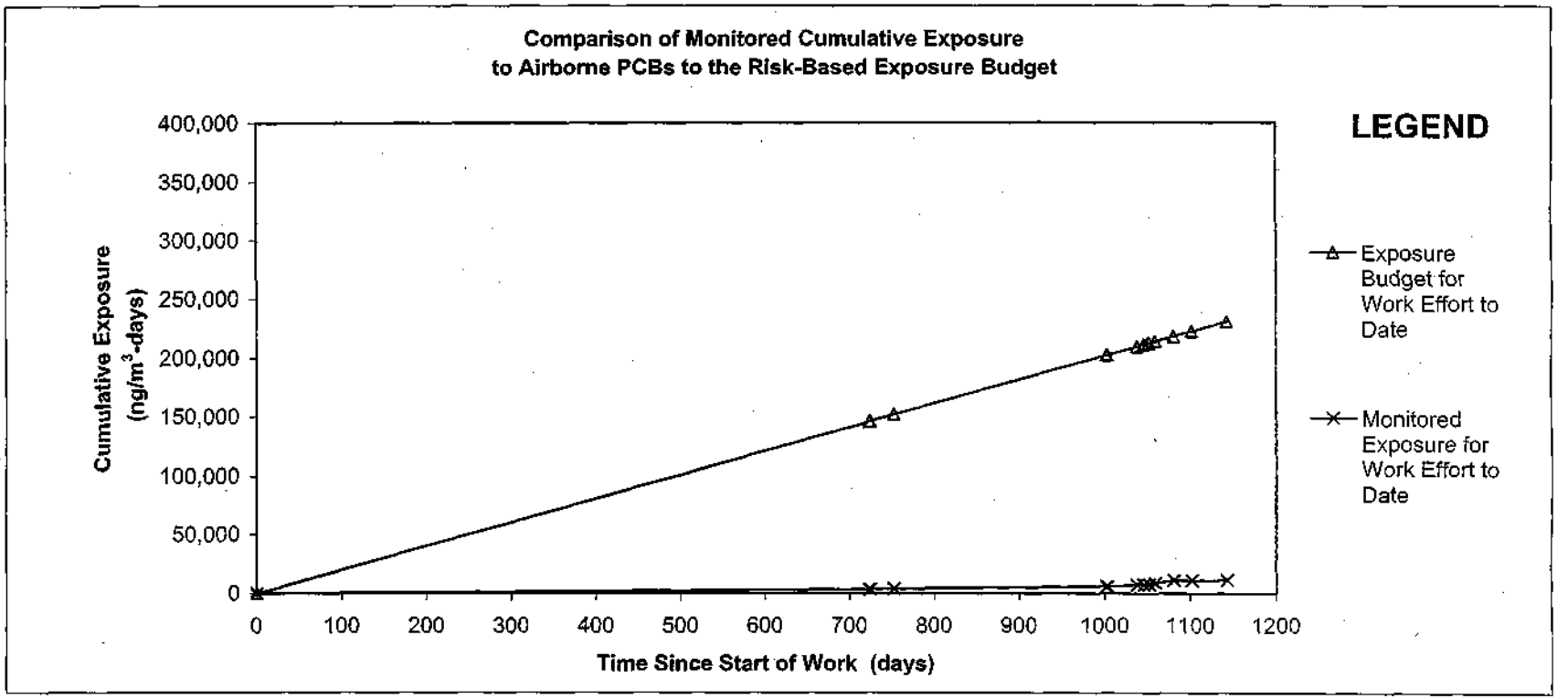
NC = Not Calculated

Shading represents actual data. All other numbers represent projected PCB concentrations for that period.

Air Sampling Status Report

Sample Station :	55 Aerovox West
Collection Date:	12/29/2005
Measured PCB Concentration (ng/m^3):	10.8
Exposure Budget Expended During This Period:	2.7%
Cumulative Exposure Budget Expended to Date:	5.0%
Response Level:	No Triggers Identified
Response:	No Response Necessary

Triggers:



Attachment 2 - Additional Detail on the Updated Aerovox Cost Estimate

	EE/CA Alt 1 basement floor remains	EE/CA Alt 2 partial basement floor	EE/CA Alt 3 basement floor removed	New Alt 1 100% on site disposal	New Alt 2 100% off site disposal.
1 Pre-Cleaning	951,000	951,000	951,000	0	0
2 Asbestos Removal	1,086,416	1,086,416	1,086,416	1,086,416	1,086,416
3 Post-Cleaning	95,000	95,000	95,000	0	0
4 Utility Mods	100,000	100,000	100,000	100,000	100,000
5 Demolition	2,803,190	3,239,330	3,622,793	1,541,690	1,541,690
6 Process/Replace				321,580	
7 T&D TSCA	388,000	1,233,840	1,976,860	0	3,427,980
8 T&D Non TSCA	324,750	99,250	99,250	0	0
9 Cap	1,449,190	1,435,690	1,457,290	1,161,478	1,457,290
10 7k cy debris, T&D	1,385,160	1,385,160	1,385,160	0	1,385,160
11 7k cy debris, H&P	714,000	714,000	714,000	749,700	714,000
Subtotal	**9,296,706**	**10,339,686**	**11,487,769**	**4,960,864**	**9,712,536**
Contingency 20%	1,859,341	2,067,937	2,297,554	992,173	1,942,507
Updated 1998 Capital Costs	11,156,047	12,407,623	13,785,323	5,953,037	11,655,043
Updated 2007 Capital Costs	**$15,028,700**	**$16,442,570**	**$18,074,142**	**$7,899,685**	**$14,511,302**

ESTIMATE NOTES:

1 All characterization and inventory tasks have been completed and costs have been removed from all Alts.
2 Volume and Mass data are from the 1998 EE/CA, attachment 11 and the equipment
3 All Pre and Post Cleaning have been removed from the New Alternatives.
4 Asbestos Removal assumes all ACM removed with a disposal fee of $100/cy. This is based on a 2006 survey and disposal fee data is not subject to escalation.
5 Demolition for EE/CA Alt 1-3 include increasing quatities of the concrete and wood floors on levels one and two of the building.
6 Demolition for New Alts 1 and 2 include the superstructure only. The foundation slab and walls will remain in place.
7 New Alternatives 1 & 2 assume no separation of wood and concrete. New Alt 1 includes additional crushing process housed in a temporary building and backfilling
8 TSCA T&D costs have been adjusted using current projected pricing and are not subject
9 Backfill required for New Alt 1 is reduced from 23,000 cy to 1088 cy due to the estimated volume of building material and equipment debris. This is reflected in the CAP
10 2007 Capital Costs assume effective dates of October 1997 to October 2007. ENR Construction Cost Indices indicate a 40% increase in cost during this period
11 Additional Debris (7140 CY) is calculated assuming 1 TON/CY, using a projected 2007 unit price of $194/ton with no adjustment for cost growth. Handling & Processing (H&P) is estimated at 100/ton. Additional costs of $5.00/cy are included in New Alt 1 to cover

Attachment 3 - TSCA 761.61(c) Determination

Consistent with Section 761.61(c) of the federal Toxic Substances Control Act (TSCA), I have reviewed the Administrative Record for the PCB-contaminated Aerovox site and considered the proposal for building demolition, onsite disposal and protective covering set out in the April 2006 Supplemental Engineering Evaluation/Cost Analysis (EE/CA). As required by that section of TSCA, I have determined that the EE/CA's recommended alternative does not pose an unreasonable risk of injury to health or the environment as long as the following conditions are met:

1. Engineering controls for dust suppression as described in the EE/CA shall be used during demolition, processing and covering activities and air quality is monitored to ensure air emission levels meet risk-based air standards.

2. Engineering controls for the collection and management of surface water runoff shall be used during the demolition, processing and covering activities to ensure that the PCB concentration in any such runoff from the site complies with site-specific standards.

3. To ensure compliance with items #1 and #2 above, demolition waste processing activities shall be performed in an enclosed environment, and any stockpiles of demolition waste shall be securely covered until such stockpiles are disposed.

4. EPA shall assist the state and City to establish institutional controls that prohibit any use or contact with groundwater and which prohibit land use activities that would adversely affect the site cover.

5. The site cover shall function as a barrier to direct contact exposure to contaminated site soils, and the site cover and steel sheet pile cutoff wall shall be monitored and maintained. The site cover shall be as protective as possible within the available funding, but shall at a minimum consist of twelve inches of vegetated soil.

6. Once the removal is completed, the site shall be transferred to the Massachusetts 21E program and a final closure plan shall be implemented in accordance with chapter 21E and the federal TSCA program.

7. Any development or activity on the site shall be designed, implemented, and maintained in a manner to prevent any release or exposure to any material contaminated with PCBs above identified risk levels, and shall be consistent with the final closure plan referred to in #6.

_____ _____

Robert W. Varney Date

Regional Administrator, EPA New England