UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
5 POST OFFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

March 28, 2016

Thomas E. Lederle
Dept of the Army, ACSIM BRAC Division
DAIM-ODB
600 Army Pentagon
Washington, DC 20310-0600

Re: *"Fourth Five-Year Review Report for US Army Materials Technology Laboratory (AMTL), Watertown, Massachusetts"*, dated March 2016

Dear Mr. Lederle:

This office is in receipt of the *"Fourth Five-Year Review Report for US Army Materials Technology Laboratory, Watertown, Massachusetts"*, dated March 2016. EPA reviewed the report for compliance with the Comprehensive Five-Year Review Guidance (OSWER No. 9355.7-03B-P dated June 2001). There are 3 operable units (OUs) at the Site, but only one of those operable units, OU1 zones 1-5, was evaluated for protectiveness during this review. The protectiveness evaluation is required for OU1 because hazardous substances, pollutants or contaminants remain at OU1 above levels that permit unrestricted use and unrestricted exposure.

Upon review of this report, EPA concurs with the Deferred Protectiveness Statement for OU1 proposed by the Army in the fourth FYR Report. The protectiveness is deferred until March 30, 2018 when a vapor intrusion (VI) study will be completed. Although indoor air samples were collected in 1991 and compared to occupational standards at that time, a more robust VI study that conforms to current guidance is needed to determine if the remedy remains protective due to the VOCs present in groundwater.

In addition, although not mentioned in this FYR, by this letter EPA is requesting that the Army also perform a Preliminary Assessment (PA), including a Historical Records Search, to determine if perfluorinated compounds have been stored, used, or released at the AMTL Superfund Site.

Therefore, in accordance with paragraphs 19.3 and 33.2 of the AMTL Federal Facility Agreement, dated April 24, 1995, additional work is being requested. Army is required to submit, for EPA's approval, a supplemental remedial action work plan to address both the PA and the VI study. This work plan is due within 90 days of receipt of this letter.

An amendment to the Five Year Review is due on March 30, 2018 so that a protectiveness determination can be made once the PA and VI study are complete.

Land use controls will continue to play a key role in EPA's determination that the soil remedy for OU1 is protective. The Army must ensure that those institutional controls remain effective until such time that they are no longer necessary.

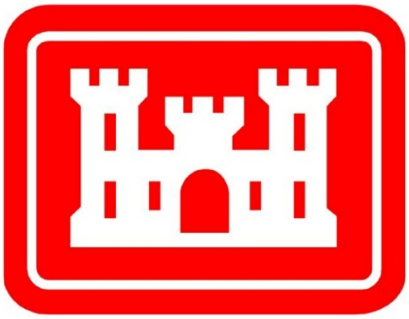
The 2016 Five-Year Review, the fourth comprehensive Five-Year Review completed at the Former Army Materials Technology Laboratory, was triggered by the third comprehensive Five-Year Review completed in 2011. Consistent with Section 121(c) of CERCLA, the next Five-Year Review must be finalized by March 20, 2021.

If you have any questions with regard to this letter, please contact Christine Williams at (617) 918-1384.

Sincerely,

Bryan Olson, Director
Office of Site Remediation and Restoration

cc: Christine Williams
Joanne Dearden, MassDEP
Mark Brodowicz, Calibre



FINAL

FOURTH FIVE-YEAR REVIEW REPORT

for

U.S. ARMY MATERIALS

TECHNOLOGY LABORATORY

WATERTOWN, MASSACHUSETTS

Prepared for:

U.S. Army Installation Support Management Activity

Washington, D.C.

Prepared by:

U.S. Army Corps of Engineers
New England District
Concord, Massachusetts

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Thomas E. Lederle
Chief
ACSIM BRAC Division

14 MARCH 2016

Date

Table of Contents

List of Figures

List of Tables

List of Appendices

List of Attachments

EXECUTIVE SUMMARY

The following represents the fourth five-year review for the Army Materials Testing Laboratory (AMTL) property in Watertown, Massachusetts. The site consists of 48 acres of land located in Watertown, Massachusetts. The property is bordered by Arsenal Street and a commercial area to the north; commercial and residential properties to the west; Talcott Avenue to the east; and the Charles River to the south. A public park and a yacht club are located on what was formerly an 11-acre easement granted in 1920. The AMTL facility was established in 1816 and was originally used for the storage, cleaning, and issuance of small arms. During the mid-1800s, the mission was expanded to include ammunition and pyrotechnics production. Staff and facilities continued to expand until World War II, at which time the facility encompassed 131 acres, including 53 buildings and structures, and employed 10,000 people. Arms manufacturing continued until an operational phase down was initiated in 1967.

The site was placed on the EPA National Priority List (NPL) as a Superfund Site in May 1994 and in 1995 the Army signed a Federal Facilities Agreement with the EPA stipulating that site investigations and cleanup actions would follow Comprehensive Environmental Response , Compensation, and Liability Act (CERCLA)/Superfund Amendments and Reauthorization Act (SARA), 42 U.S.C. §9601 *et seq.*, under the regulatory guidance of the National Consistency Plan (NCP) 40 CFR Part 300 and in 1994, AMTL was placed on the Base Realignment and Closure (BRAC94) list.

Since the late 1990s, ownership of the properties within the Site were transferred and, at the time of each transfer, the United States of America granted the Massachusetts Department of Environmental Protection (MassDEP) a Grant of Environmental Restriction and Easement (GERE) for each appropriate zone of the AMTL site. There were a total of three Operable Units at the site including: OU1 Zones 1-4, which includes the AMTL industrial site and Zone 5, which is the Charles River Park and adjacent Watertown Yacht Club, OU2, which is the Charles River, and OU3, which is within the areal boundary of Zones 1-4 but is a designated for residential use. At the time of this fourth five-year review only OU1 Zones 1-5 remain unsuitable for unrestricted use and unrestricted exposure (UU/UE) and are being evaluated for protectiveness.

The remedy described in the ROD for OU1 included 1) excavation of areas with contaminated soil that was above cleanup goals, 2) confirmatory soil sampling within excavations after contaminated soil removal, 3) off-site landfill disposal or reuse of the excavated soil, 4) backfilling with clean fill soil into the excavations and 5) institutional controls and five-year reviews at the site. Also, land use controls were necessary following remediation in certain areas that are not suitable for UU/UE and annual inspections are required at OU1 to verify that ICs are maintained and to document any changes at the site.

The Technical Assessment of OU1 indicates that the remedy is functioning as intended by the ROD, the exposure assumptions, toxicity data, cleanup values, and Remedial Action Objectives used at the time of the remedy selection are still valid. Indoor air samples were collected in each building in 1991 (*Final Phase II Remedial Investigation Report, Roy F. Weston, May 1994*), For each sample, a comparison of analytical results to both occupational and public health exposure scenarios was made. In no instance were public health guidelines or occupational exposure limits exceeded.

However the vapor intrusion pathway was not evaluated in accordance with current vapor intrusion assessment guidance. The presence of vapor-forming chemicals and potential receptors raise the possibility of a completed vapor intrusion pathway which may call into question the protectiveness of the remedy. Therefore, the protectiveness of this remedy is deferred until further information is obtained since available data are insufficient to determine whether there is a potential or actual vapor intrusion exposure pathway; therefore, there is a recommendation that vapor intrusion risks need to be assessed.

In addition, a concern was raised regarding the retaining wall at the Watertown Yacht Club and the potential for a future protectiveness issue to develop.

Also, to reduce the occurrence of any institutional control violations in the future, the GERE will be reviewed annually with all concerned parties during the annual site inspection/interview and during the FYR site inspection/interview.

The next five-year review should be completed by March 2021.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: U.S. Army Materials Technology Laboratory		
EPA ID: MAD213820939		
Region: 1	**State:** MA	**City/County:** Watertown/Middlesex County

SITE STATUS	
NPL Status: Deleted	
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: Other Federal Agency **If "Other Federal Agency" was selected above, enter Agency name:** U. S. Army Base Realignment and Closure Office (BRACO)
Author name (Federal or State Project Manager): Thomas Lederle
Author affiliation: Army
Review period: 01 June 2015 – 20 March 2016
Date of site inspection: 01 June 2015
Type of review: Statutory
Review number: 4
Triggering action date: March 20, 2011
Due date *(five years after triggering action date)*: March 20, 2016

Five-Year Review Summary Form (continued)

The table below is for the purpose of the summary form and associated data entry and does not replace the two tables required in Section VIII and IX by the Five-Year Review (FYR) guidance. Instead, data entry in this section should match information in Section VII and IX of the FYR report.

Issues/Recommendations

OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU2 and OU3

Issues and Recommendations Identified in the Five-Year Review:

OU(s): 1	**Issue Category: Remedy Performance**			
	Issue: no vapor intrusion study performed			
	Recommendation: perform vapor intrusion study			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
Yes	Yes	Federal Facility	EPA/State	March 30, 2018

To add additional issues/recommendations here, copy and paste the above table as many times as necessary to document all issues/recommendations identified in the FYR report.

Protectiveness Statement(s)

Include each individual OU protectiveness determination and statement. If you need to add more protectiveness determinations and statements for additional OUs, copy and paste the table below as many times as necessary to complete for each OU evaluated in the FYR report.

Operable Unit:	*Protectiveness Determination:*	*Addendum Due Date (if applicable):*
1	Protectiveness Deferred	March 30, 2018

Protectiveness Statement:

A protectiveness determination of the remedy at OU 1 cannot be made at this time until further information is obtained. Further information will be obtained by taking the following actions: perform a vapor intrusion study. It is expected that these actions will take approximately 2 years to complete, at which time a protectiveness determination will be made.

Protectiveness Statement(s)

Include each individual OU protectiveness determination and statement. If you need to add more protectiveness determinations and statements for additional OUs, copy and paste the table below as many times as necessary to complete for each OU evaluated in the FYR report.

Sitewide Protectiveness Statement (if applicable)

For sites that have achieved construction completion, enter a sitewide protectiveness determination and statement.

Protectiveness Determination:	*Addendum Due Date (if applicable):*
Protectiveness Deferred	*March 30 2018*

Protectiveness Statement:

A protectiveness determination of the remedy at OU 1 cannot be made at this time until further information is obtained. Further information will be obtained by taking the following actions: perform a vapor intrusion study. It is expected that these actions will take approximately 2 years to complete, at which time a protectiveness determination will be made.

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has coordinated this fourth Five-Year Review (FYR) for the Army Materials Technology Laboratory (AMTL) Superfund Site (site) in Watertown, Massachusetts with the Department of the Army, which has contracted with the U.S. Army Corps of Engineers, New England District (CENAE) to complete the review. The FYR report presented here evaluates the period of June 3, 2010 (third five-year review inspection date) through June 1, 2015 (fourth five-year review inspection date). This document has been prepared in accordance with EPA's Comprehensive FYR Guidance, EPA 540-R-01-007 (EPA, 2001a), and presents the results of the fourth FYR conducted for the site. This review is conducted consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 United States Code (U.S.C.) § 9601 *et seq*., and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (C.F.R.) Part 300.

CERCLA §121(c), 42 U.S.C. § 9621(c), as amended, states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The NCP at 40 C.F.R. §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

This statutory FYR is required because hazardous substances, pollutants, or contaminants remain above levels at one of the OUs (OU1), which would allow for unlimited use and unrestricted exposure (UU/UE). Specifically, even though use restrictions are in place preventing exposure, contaminants in soil are still present at levels that exceed exposure limits.

The AMTL Superfund Site is located in Watertown, Massachusetts (Appendix 1 - Figure 1) as defined in the initial Record of Decision (ROD) for OU3 dated June 1996. This is the fourth FYR performed for the site. The triggering action for this FYR was the initiation of the first remedial action, for OU1, as shown in EPA's WasteLAN database: November 20, 1996.

1.1 Overview of the Five-year Review

The purpose of the FYR process is to determine whether the selected and ongoing remedy at the AMTL site, which was formerly on the National Priorities List (NPL) and has since been delisted, remains protective of human health and the environment. The findings and conclusions of the review are based on review of existing reports, field inspections and interviews. The start of the FYR cycle began upon completion of remedial actions that left hazardous substances, pollutants, or contaminants at the site above levels that allow for UU/UE.

The site was placed on the CERCLA NPL in May 1994. A Federal Facilities Agreement (FFA) was signed by the Army and USEPA on 24 April 1995. The FFA outlines the response action requirements under CERCLA, and was developed in part to ensure that environmental impacts associated with past activities at the site are thoroughly investigated and remediated, as necessary.

The trigger date for the FYR was determined by the initiation of the first remedial action, for OU1, as shown in EPA's WasteLAN database: November 20, 1996. A ROD for OU1 was signed September 26, 1996 and a ROD for OU3 (Area I) was signed on June 28, 1996. The OU1 ROD selected the following remedy:

- Excavation of areas with contaminated soil that was above cleanup goals (to UU/UE in some zones and to restricted use in other zones).
- Confirmatory soil sampling within excavations after contaminated soil removal.
- Off-site landfill disposal or reuse of the excavated soil.
- Backfilling of clean fill soil into the excavations.
- Institutional controls with five-year site reviews.

The OU3 ROD selected the following remedy:

- Excavation of areas with contaminated soil that was above cleanup goals (to UU/UE).
- Confirmatory soil sampling within excavations after contaminated soil removal.
- Off-site landfill disposal or reuse of the excavated soil.
- Backfilling of clean fill soil into the excavations.

An OU2 ROD, addressing sediments in the Charles River was signed on September 9, 2005. Since no site-related risks in sediments were identified, the ROD called for No Action under CERCLA.

There are two conditions that determine whether a FYR is required (and both have to be met): 1) a remedial action was taken, and 2) contaminants remain above levels that allow for UU/UE.

- For OU1, a remedial action was taken and, on completion, the site was not fully suitable for UU/UE and land use restrictions and institutional controls continue to exist. Therefore, because the first and second conditions were both met, FYRs are required.
- For OU2, there was no unacceptable risk under current or reasonably anticipated future land use. No action was necessary, and no remedial action was taken. Therefore, because the first condition was not met, no FYRs are required.

- For OU3, a remedial action was taken, and, on completion, the site was suitable for UU/UE. Therefore, because the second condition was not met, no FYRs are required.

The first five-year review was completed in March 2002. The second five-year review was completed in March 2006. The third five-year review was completed in March 2011. This is the fourth five-year review of the site and it evaluates the period from 03 June 2010 through 01 June 2015, having an expected completion date in March 2016.

1.1.1 Community Involvement

Public notice (see Appendix 2) of this five-year review was published in the Boston Globe (June 22, 2015), Boston Herald (June 22, 2015), and Watertown Tab & Press (June 26, 2015). Any persons with related comments and/or information were asked to contact the Army's Technical Manager, Kenneth Heim, U.S. Army Corps of Engineers - New England District, Engineering/Planning Division, 696 Virginia Road, Concord, MA 01742-2751, by phone at (978) 318-8650 or by email at kenneth.j.heim@usace.army.mil. No public comments were received by Mr. Heim by the end of the review period on September 30, 2015. A public notice will be sent to the same newspapers announcing that the fourth five-year review report for the site has been completed and will be available to the public at the Watertown Free Public Library, which is the site information repository.

1.1.2 AMTL Location

The site consists of 48 acres of land located in Watertown, Massachusetts. The property is bordered by Arsenal Street and a commercial area to the north; commercial and residential properties to the west; Talcott Avenue to the east; and the Charles River to the south. A public park and a yacht club are located on what was formerly an 11-acre easement granted in 1920 by the U.S. Army to the Metropolitan District Commission, predecessor to the Commonwealth of Massachusetts Department of Conservation & Recreation (DCR). The property was transferred to the DCR in May 2005. The western third of the DCR property is permitted for use to the Watertown Yacht Club (WYC) by the DCR. This 11-acre Charles River Park parcel is known as Zone 5. The other 36.5 acres represent the final footprint of the AMTL physical plant; this property was divided into Zones 1, 2, 3, and 4 for the purposes of environmental remediation and re-use.

1.2 Roles and Responsibilities

The U.S. Army Corps of Engineers, New England District has prepared this fourth five-year review for the site. The Army is the lead agency for performing cleanup at the site with regulatory oversight by EPA and Massachusetts Department of Environmental Protection (MassDEP).

1.3 Organization of Report

Section 1 presents the introduction and overview of the FYR for the AMTL site, Section 2 presents a chronology of significant events at the site, Section 3 presents background information for the site, Section 4 describes the remedial actions that have occurred at the site, Section 5 summarizes the progress since the last FYR, Section 6 describes the FYR process, Section 7 presents a technical assessment of site protectiveness, Section 8 describes any issues at the site that would compromise protectiveness, Section 9 summarizes

recommendations and follow up actions, Section 10 presents a protectiveness statement for the site, and Section 11 indicates when the next FYR will take place. Additional information is included in each of eight appendices and two attachments.

2.0 SITE CHRONOLOGY

2.1 Introduction

This section describes the history of the site as it relates to usage, ownership and contamination. The following bulleted list describes the chronology of the major events at the AMTL site.

Table 2-1: Chronology of Major Events at AMTL Site

Event	Date
Army initiates investigation into nature and extent of contamination	1992
Site placed on NPL	May 1994
Federal Facilities Agreement signed by Army and EPA	Apr 1995
Terrestrial Ecological Risk Assessment prepared to supplement 1993 Baseline Risk Assessment	Aug 1995
ROD signed for OU3 (Area I) to remove and dispose of contaminated materials	June 1996
Action at OU3 (Area I) completed providing UU/UE	Aug 1996
ROD signed for OU1 to address contaminated soil (groundwater not a concern); following that, excavation of 36.5 acres completed and triggering date for construction complete	Sep 1996
First ESD for OU1 ROD Completed	Jan 1998
36.5 acre parcel transferred from Army to the Watertown Arsenal Redevelopment Corporation and the Town of Watertown	Aug 1998
Memorandum of Agreement (MOA) to include annual institutional control reports for OU1 signed	Aug 1998
36.5 acre remediated parcel deleted from the National Priorities List (NPL).	Nov 1999
Second ESD for OU1 completed	Jun 2001
Soil excavation in Charles River Park completed	Sep 2001
First five-year review completed	Mar 2002
Field work for Charles River ecological risk assessment completed	Summer 2003
Final OU2 ecological risk assessment completed	Feb 2005
Charles River Park parcel transferred to DCR with ICs	May 2005

Event	Date
No Action ROD for OU2 signed	Sep 2005
Final closeout report for OU2	Sep 2005
Second five-year review completed	Mar 2006
Work began to re-vegetate revegetating the Charles River Park shoreline	Sep 2006
Remaining 11 acres at Charles River Park were deleted from the NPL	Nov 2006
Third five-year review completed	Mar 2011
athenahealth finalizes purchase of the Watertown Arsenal	May 2013

3.0 BACKGROUND

This section provides a brief description of relevant background information for OU1 including Zones 1-4 referred to as the AMTL property and Zone 5 referred to as the Charles River Park parcel.

3.1 Physical Characteristics

The site is relatively flat with a surface slope of generally less than 1 percent. The southern portion of the site slopes 2 to 3 feet downward to the Charles River along its banks. The original land topography has been greatly altered since the turn of the century by construction and demolition fill. The majority of the site was covered by a layer of fill, consisting of sand, gravel, and non-hazardous construction debris. Surface drainage on the site, other than direct infiltration or surface flow to the river, exists as a storm water drainage system off the adjacent roadways.

3.2 Land and Resource Use

OU1 Zones 1-4

There is a private drinking water well located 2 miles northwest of the property. Municipal drinking water within 4 miles of the site is supplied by surface water sources located to the west of the site and is unaffected by the site. The Charles River located adjacent to the AMTL site is used for various recreational activities such as boating and fishing. As previously stated, the AMTL site closed in the fall of 1995. Since its transfer to the Watertown Arsenal Development Commission (WADC) and Charles River Business Center Associates (CRBCA), the property has been developed for commercial and open space. A list of current tenants of the AMTL property (Lot 1) is included in Appendix 3.

OU1 Zone 5 (Charles River Park)

Charles River Park consists of approximately 11 acres of land and is bounded between North Beacon Street to the north, the Charles River to the south, the WYC to the west, and the North Beacon Street/Charles River Road intersection to the east. A public park, a yacht club, and North Beacon Street are located on what was the 11 acre easement granted by the U.S. Army to the Commonwealth of Massachusetts DCR and transferred to the DCR in May 2005. The western third of the DCR property is permitted to the WYC by the DCR. This 11-acre parcel is known as Zone 5. Remediation locations, as defined in the September 1996 ROD, include Areas M, N, O, P, and Q. Area M is located within the property occupied by the WYC. The reuse alternative selected for Charles River Park was public/open space access. In Areas M, N, O, P, and Q, soil cleanup goals were established for PAHs based on human health risk and pesticides based on ecological risk.

3.3 History of Contamination

OU1 Zones 1-4

The AMTL facility was established in 1816 by President James Madison, and was originally used for the storage, cleaning, and issuance of small arms. During the mid-1800s, the mission was expanded to include ammunition and pyrotechnics production; materials testing and experimentation with paints, lubricants, and cartridges; and the manufacture of breech loading steel guns and cartridges for field and siege guns. The mission, staff, and facilities continued to

expand until World War II, at which time the facility encompassed 131 acres, including 53 buildings and structures, and employed 10,000 people. Arms manufacturing continued until an operational phase down was initiated in 1967.

At the time of the operational phase-down, much of the Watertown Arsenal property was transferred to General Services Administration (GSA). In 1968, GSA sold approximately 55 acres to the Town of Watertown. This property was subsequently used for the construction of apartment buildings, the Arsenal Mall, and a public park and playground. The site contained 15 major buildings and 15 associated structures.

In 1960, the Army's first material research nuclear reactor was completed at AMTL. The reactor was used actively in molecular and atomic structure research activities until 1970, when it was deactivated. The research reactor was decommissioned under the jurisdiction of the Nuclear Regulatory Commission (NRC) in 1992 and the structure was demolished in 1994.

In 1987, the U.S. Army Toxic and Hazardous Material Agency initiated preliminary site studies, the first stage of the facility's closure plan. In late 1993, Congress officially recommended the closure of the facility. On September 29, 1995, the site was closed and reverted to a caretaker status.

The site was placed on the EPA NPL as a Superfund Site in May 1994 and in 1995 the Army signed an interagency Federal Facilities Agreement (FFA) with the EPA stipulating that site investigations and cleanup actions would follow CERCLA/Superfund Amendments and Reauthorization Act (SARA), under the regulatory guidance of the NCP.

A Technical Review Committee (TRC) was formed at the time, which has subsequently become the Restoration Advisory Board (RAB). In 1994, AMTL was placed on the Base Realignment and Closure (BRAC94) list. In August 1998, 36.5 acres of the 48-acre CERCLA site were transferred from the ownership of U.S. Army. At that time, the Watertown Arsenal Development Corporation (WADC) acquired 29.44 acres of the site. The Town of Watertown took ownership of 7.21 acres. In March of 2005, the remaining 11 acres of the site were transferred to the Commonwealth of Massachusetts, Department of Conservation and Recreation.

At the time of each transfer, the United States of America, acting by and through the Secretary of the Army, granted the MassDEP a Grant of Environmental Restriction and Easement (GERE) for each appropriate zone of the AMTL site. The purpose of this Grant was to provide a mechanism for the creation and enforcement of the necessary land use controls as required by the OU1 ROD for the site (August and September 1996). The Grant re-designated areas into lots for property transfer and future deed tracking. Environmental Zones 1, 2, and 3 (the parcel that was initially transferred to WADC) were designated Lot 1. Lot 1 was sold to Charles River Business Center Associates (CRBCA) in December 1998. CRBCA sold the Lot 1 property to President and Fellows of Harvard College (Harvard) in May 2001. Environmental Zone 4 (the parcel transferred to the Town of Watertown) was designated as Lot 2 (see Appendix 1 for site maps). Zones 1, 2, 3 and 4 were deleted from the NPL though the partial deletion process on November 22, 1999 and the site was entirely delisted from the NPL in November 2006. In May 2013, athenahealth completed its purchase of the entire (OU1 Zones 1-4) property.

Because of the complexity of this industrial complex, the site was divided into three areas for investigation. OU1, as specified in the September 1996 ROD, addressed most outdoor soil, except for a small area (Area I) near building 131, which was delineated as OU3 to facilitate

residential reuse, and all underlying groundwater. The indoor areas at OU1 and petroleum-related clean-ups were addressed under the Commonwealth of Massachusetts cleanup authority. Environment Zones 1-5 includes Areas A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, Q, T, metal “hot spots” based on ecological risk, and lead “hot spots” (Roy F. Weston, 1998). Zone 1 included Area A2, Zone 2 included Areas A1, A3, B, C, D, E, and G (west side). Area F was initially physically located in Zone 2; however, due to its potential reuse as a residential area, it was moved into Zone 3. Zone 3 included Area F, G (east side), and H. Zone 4 included J1, J2, K1, K2, K3, L1, L2, L3, and L4 (see Appendix 4 for Zone and Area identifications). Zone 5 includes the Charles River Park. Cleanup goals were based on background except for polychlorinated biphenyls (PCBs) and lead, which were based on EPA guidance levels and pesticides which were based on ecological risks.

The first Explanation of Significant Differences (ESD) for outdoor soil remediation was signed by the Army and the EPA in January 1998. This ESD established construction cleanup values to be used at depths of greater than 1 foot at OU1 Zones 1, 2 and 4. During remediation excavation activities it was realized that in the commercial zones, (Zones 1 and 2) a more realistic and appropriate exposure scenario for soils at a depth greater than 1 foot below ground surface (BGS) would be that of a construction worker. Because the Baseline Risk Assessment did not include the construction worker exposure scenario, additional risk assessment work was performed. The construction worker exposure scenario recognizes that periodic maintenance and/or installation of subsurface utilities/structures will be required in the future. In general, the construction worker exposure scenario differs from the commercial exposure scenario by evaluating risks from contaminated soils below one foot from ground surface using an exposure duration that mimics the potential need to perform periodic subsurface utility work. The top one foot of soil meets the appropriate risk-based clean-up goals for the zone. In addition, the construction worker exposure scenario is recognized as an appropriate risk scenario for the public benefit reuse areas (Zone 4) because the "open space" user will not be excavating below one foot and will be protected by the one foot of soil meeting its risk-based clean-up goals.

Additional risk assessment work was performed to estimate the carcinogenic risks and non-cancer hazard indices from exposure to PAHs in soil for a construction worker who may be performing building construction, excavation and/or other similar types of activities in Zones 1, 2, and 4 at AMTL. The construction worker exposure scenario was evaluated for soils using PAHs because the nature and extent of soil contamination encountered at AMTL primarily consisted of PAHs. Furthermore, revised risk-based soil clean-up goals were developed for the PAHs of concern based on the construction worker exposure scenario.

OU1 Zone 5 (Charles River Park)

In 1920, the Army granted a permanent Right-of-Way (ROW) for the Charles River Park parcel to the Commonwealth of Massachusetts. Through the grant, the Commonwealth assumed responsibility for the care, management, and police jurisdiction over the property. The Charles River Park has had no role in the site's mission related activities since the Army granted the ROW to the MDC in 1920. However, some portion of the property was used for employee parking to accommodate increased personnel stationed at the site during World War II. As part of the Remedial Investigation field activities at the site in 1991 and 1992, Weston collected surface soil samples and installed borings to various depths throughout the site. The overall areas targeted for remediation were delineated in the site Feasibility Study using the Remedial Investigation data.

The Charles River Park parcel was transferred to the Commonwealth of Massachusetts Department of Conservation and Recreation (DCR) (formally the Metropolitan District Commission, MDC) in May of 2005.

The remedial action work at the site was performed between November 1996 and December 1997 in response to the OU1 ROD. In particular, remedial work in the Charles River Park parcel commenced in May 1997, but was suspended in August 1997 pending a decision by the Army to re-evaluate the cleanup goals for Charles River Park.

In February 2000, Foster Wheeler Environmental Corporation completed the *Feasibility Study Addendum*, in which several different excavation and capping alternatives for Areas M and P/Q were identified, as well as the re-evaluation of PAH cleanup levels originally identified in the ROD.

A second ESD, specific for the Charles River Park, was signed by the Army and the EPA in June 2001. The MassDEP provided a letter of concurrence on this ESD. The ESD established construction worker cleanup values for PAHs to be used at depths greater than two feet BGS at the Charles River Park. The construction worker values were the same as those developed for use on the former AMTL reuse parcels of the site. Foster Wheeler Environmental Corporation completed the second phase of the remedial action on Areas M, P, Q, and the Riverbank Areas in the fall of 2001 in accordance with the June 2001 ESD. Site restoration monitoring and maintenance activities of Area P and Q riverbanks continued annually from 2002 through 2004 until completion of the three year program. In April 2005, goose netting was placed in the terrace wetland Area P riverbank to prevent the geese from eating the herbaceous plants that were planted in the spring of 2004 that replaced several of the original plants placed by the Army in 2002.

The second five-year review was completed in March 2006 and indicated that erosion along the Charles River adjacent to the park could lead to exposure of contaminated material that was left in place under the clean replacement fill placed during soil remediation and subsequent site restoration and that this issue should be addressed to prevent potential future exposure and reduce risk. In September of 2006, work began on a shoreline stabilization project to stabilize the entire reach by treating those remaining sections of eroded riverbank and to provide habitat enhancements at the Charles River Park.

3.4 Initial Response

There was no initial response prior to the AMTL site being investigated and remediated under CERCLA authorization. Remedial investigations of OU1 were conducted between 1987 and 1995 and concern was identified for groundwater, soil, surface water, and sediment. Only contaminants of concern (COCs) were identified for soil.

3.5 Basis for Taking Action

The basis for taking action at OU1 was the determination of risk due to exposure to soil at the site and baseline risks have been summarized for several areas. Land uses were identified as commercial at Zones 1, 2 and 3 (includes Area I), and open space recreational at Zones 4 and 5 (see Appendix 4). Fifteen contaminants of potential concern were evaluated, with the a total site cancer risk estimate of 3×10^{-5} for current land use, and 1×10^{-4} for future residential land use. The non-cancer hazard indices were 0.12 for current land use, and 0.3 for future

residential land use. The total site risk estimates fall below the limits specified for taking response actions by the NCP for cancer risk and non-cancer hazard.

Ecological risk estimates indicated potential ecological risk at Zone 4 and Charles River Park (Zone 5) (the only viable habitats), due to arsenic, chlordane, chromium, DDT, DDE, endrin, lead, nickel, and zinc. Ecological cleanup goals were not developed, since none of the substances were found at levels greater than background. The reported risk estimates did not exceed acceptable limits defined under the NCP, but they exceeded limits defined under the Massachusetts Contingency Plan (MCP). Cleanup goals were developed based on background levels, to address area where sample results exceeded the cleanup goals. The cleanup goals were based on background because the risk based goals were lower than background concentrations. The stated basis for the remedial action noted in the ROD was to address an imminent and substantial endangerment to public health, welfare, or the environment. The OU1 ROD notes that efforts were made to accommodate risk-based requirements under both the NCP and the MCP (which has lower limits for both cancer risk and non-cancer hazard).

Background concentrations were determined using soil data collected from numerous points off site from the AMTL property and from points near or along the northern property boundary (Arsenal Street). Since the Army and EPA do not require cleanup below background as a matter of the statutory requirements under CERCLA, the actual site cleanup goals were set at the background levels rather than the risk based cleanup goals.

Total site risk was estimated for a resident exposed to soil, surface water, sediment, and fish. The soil exposures differed by zone, whereas the added exposure to soil at the 11 acre River Park (public park and yacht club), and surface water, sediment, and fish from the Charles River was the same for every resident, as follows:

- Zone 1 total site cancer risk = 3×10^{-5}, hazard index (child) = 0.2
- Zone 2 total site cancer risk = 7×10^{-5}, hazard index (child) = 0.3
- Zone 3 total site cancer risk = 8×10^{-5}, hazard index (child) = 0.3
- Zone 4 total site cancer risk = 4×10^{-5}, hazard index (child) = 0.2

For commercial workers, exposures consisted of soil from each zone:

- Zone 1 total site cancer risk = 3×10^{-6}, hazard index = 0.007
- Zone 2 total site cancer risk = 1×10^{-5}, hazard index = 0.03
- Zone 3 total site cancer risk = 2×10^{-5}, hazard index = 0.02

For construction workers, exposures consisted of soil and dust from each zone:

- Zone 1 total site cancer risk = 1×10^{-6}, hazard index = 0.004
- Zone 4 total site cancer risk = 1×10^{-6}, hazard index = 0.02

None of the cancer risk estimates exceed risk-based limits that would warrant a response action as specified by the NCP. Cancer risk estimates of greater than 1×10^{-5} or a hazard index of 0.2 exceed limits under the Massachusetts Contingency Plan.

Risks for exposure to groundwater were not conducted, since it was determined that there was no potential for direct contact exposure. Risks for the vapor intrusion pathway were not assessed due to a presumed lack of exposure. Indoor air samples were collected in each

building in 1991 (*Final Phase II Remedial Investigation Report, Roy F. Weston, May 1994*), For each sample, a comparison of analytical results to both occupational and public health exposure scenarios was made. In no instance were public health guidelines or occupational exposure limits exceeded.

Ecological risks were initially not found to be significant due to lack of suitable habitat at the site. However, ecological risks were considered for fish inhabiting the Charles River and transient migratory birds. Subsequently, additional ecological risk characterization was conducted for terrestrial wildlife, terrestrial vegetation, and soil invertebrates. Ecological risk estimates were found to exceed 10 for the northern short-tailed shrew (chlordane, chromium, nickel, and zinc), the white-footed mouse (nickel), and the American robin (DDE, DDT, and endrin). Potential phyto-toxic effects were noted for some locations, relating to arsenic, cadmium, copper, lead, and zinc. Potential toxic effects for soil invertebrates were noted for earthworms exposed to chlordane, copper, DDE, and zinc.

Based on the results of the human health and ecological risk assessments, it was determined that remedial action was necessary to address unacceptable risk to human health and the environment.

Potential human health effects were evaluated for OU2 (Charles River) for exposure to COPCs via consumption of recreationally-caught fish, ingestion and dermal contact with river water and sediment during recreation, and external radiation exposure to river sediment. COPCs considered for the river were a subset of the COPCs that were detected in the river and at the upland site (since all were not detected in the river). It was determined that none of the COPCS at AMTL are solely attributable to activities at the site. The risk assessment concluded that there were no human health risks of concern, for either cancer (2×10^{-6}) or non-cancer (HI=0.02) effects.

The ecological risk assessment considered exposure in upstream, adjacent downstream, and in a back channel area adjacent to the site. Samples were collected of surficial sediments from 47 locations in the river and tested for a variety of analytes including PCB Aroclors, metals, and PAHs. Also considered at 16 of the 46 locations were:

- Short term (10 day exposure to midge) and longer term (42 day exposure to amphipod) toxicity tests in order to assess effects on reproduction, survival, and growth;
- Benthic macro-invertebrate communities in the river;
- Bioaccumulation into oligochaete worms (at 12 locations) by assessment at a laboratory;
- Uptake into bivalves taken from the river;
- Model estimates of uptake into fish tissue;
- Bathymetry, sediment thickness, and sediment profile surveys.

Benthic macro-invertebrates, fin fish, and their vertebrate consumers were evaluated in the ecological risk assessment. Using a weight of evidence approach, conditions in the river were evaluated for “no significant risk”, which is a term developed under the MCP. All four areas were determined to present risk to ecological receptors, particularly benthic macro-invertebrates. Fin fish were associated with a lower risk than benthic macro-invertebrates, and consumers of those organisms were associated with little or no risk. The lowest potential risk was associated with the backwater area, which was unexpected given its close proximity to AMTL. The

conclusion was that ecological conditions are indistinguishable from the anthropogenic urban background conditions.

During the remediation excavation activities at the main part of the Watertown installation, it was realized that for the commercial and open space zones, more realistic and appropriate cleanup values for soil greater than 1 foot BGS would be those developed for the construction worker scenario, rather than the background levels set in the ROD. Public access exposures are typically limited to interaction with the surface soil and possible minimal intrusive activity in the soil to a maximum depth of one foot (e.g., from incidental digging by children, dirt bikes, picnicking). The construction worker scenario was based on the potential need to perform periodic subsurface work. Because the construction worker scenario had not been evaluated in the baseline risk assessment, additional risk assessment was conducted. The results indicated that risks for exposure to the top 1 foot of soil were acceptable for the construction worker, as it was for the commercial exposure scenario. The risks for soil below 1 foot below the surface were acceptable for the construction worker, and exposure was assumed to not occur for the commercial worker. Nevertheless, cleanup goals were then developed for the construction worker exposed to soil deeper than one foot in depth, resulting in less soil excavated at Zones 1, 2, and 4. The updated cleanup goals corresponded to a cancer risk of 1×10-5, and a hazard quotient of 0.1.

4.0 REMEDIAL ACTIONS

The following section describes selection, implementation, and operation of the remedy.

4.1 OU1 Remedy Selection

The ROD for OU1 selected the following remedy:

- Excavation of areas with contaminated soil that was above cleanup goals.
- Confirmatory soil sampling within excavations after contaminated soil removal.
- Off-site landfill disposal or reuse of the excavated soil.
- Backfilling with clean fill soil into the excavations.
- Institutional controls and five-year site.

Land use controls were necessary following remediation in certain areas unsuitable for unrestricted (i.e., residential) future use, as well as for any contaminated soil beneath buildings. The restrictions control the demolition of buildings with underlying soil contamination that may be above cleanup goals by dictating the proper handling of any contaminated soil (i.e., excavation and disposal).

One remedial action objective (RAO) was stated in the ROD for OU1, which is to:

- Mitigate the risks to human health and the environment posed by direct contact with and incidental ingestion of contaminated soils.

The OU1 ROD explained that with the selected remedy, contaminated soil in excess of tabulated cleanup goals would be excavated and moved offsite.

The remedy was modified from that described in the ROD signed in 1996 by means of an ESD prepared in 1998. This was the first of two ESDs prepared to modify certain cleanup goals for soil at OU1. The second ESD was prepared in 2001 specifically for the Charles River Park.

4.2 Cleanup Levels for Soil

Preliminary ecological cleanup levels for soil were calculated for the short-tailed shrew and the American robin based on a target hazard index of 10 (*Feasibility Study Report (Outdoor) Army Materials Technology Laboratory, January 1996, Roy F. Weston)*. A hazard index of 10 was established as an acceptable preliminary goal since clean-up goals based on a hazard index of 1 yielded preliminary cleanup levels below background and analytical method detection limits.

Preliminary remediation goals (PRGs) for soil developed for SVOCs, PCBs, and lead were human health based since they were more stringent than the ecological cleanup levels. Cleanup goals for metals in soil (other than lead) were not established because metals on site did not exceed background levels.

CERCLA does not authorize cleanups below background levels that are determined using EPA guidance standards for determining background. For cleanup of surface soil of less than one foot BGS, an EPA-approved statistical evaluation of the background soil data set was used to calculate the 90% Upper Confidence Limit (UCL). The UCL calculated for each contaminant represented the contaminant's background level, which were above preliminary risk based goals that were calculated for all of the contaminants of concern at AMTL. For that reason,

background rather than risk based human or ecological levels were applied as the cleanup goals for shallow soil with the exception of PCB Aroclor-1260 and DDD. The cleanup level for Aroclor-1260 was based on EPA risk-based guidance, and for pesticides it was based on ecological risk (*Feasibility Study Report (Outdoor) Army Materials Technology Laboratory, Roy F. Weston, January 1996)*. Clean up goals for pesticides at Charles River Park and Zone 4 were ecological based and higher than the geometric mean in background soils.

OU1 is an area of mixed land use including Zones 1-4, and Zone 5 (Charles River Park). OU3 is an area of planned residential land use at Area I, which is within Zone 3. The clean-up goals of the RODs apply to a mix of future land uses at the site, including residential, commercial, and recreational. The cleanup levels for these areas do not differ by land use (see the exception for OU 3 below), however, the number of COCs does vary according to land use, as follows:

- Land use at Zone 1 is commercial, with no commercial cleanup goals, but exceedances of residential risk standards are the basis for requiring ICs preventing residential development.

- Land use at Zone 2 is commercial, with cleanup goals for five COCs.
    - Less stringent human health goals for commercial zones 1 and 2 were later set in the first explanation of significant differences dated 1998 for construction workers exposed to subsurface soil below 1 foot.
    - Residential exceedances of residential risk standards are the basis for requiring IC preventing residential development.
- Land use at Zone 3 is residential, with cleanup goals for nine COCs.
- Land use at Zone 4 is public access, with cleanup goals for twelve COCs.
- No ecological concerns (except for Zone 4 and Charles River Park, Zone 5).
- Contamination below buildings was not removed so ICs are required to prevent future exposure to potential contaminants.

Table 4-1 provides a summary of all surface and subsurface contaminants of concern and the maximum concentrations, cleanup levels, and applicable AMTL zones for cleanup. A cleanup level of 1.5 mg/kg for chlordane applies to a human resident at Zone 3, whereas for Zone 4 and Charles River Park (Zone 5) the goal is set at the slightly lower ecological cleanup level of 1.4 mg/kg.

Table 4-1: Soil Cleanup Levels for Contaminants of Concern at AMTL Site

Soil Contaminant of Concern		ROD Cleanup Level (mg/kg) (Surface/Subsurface Soil)	ESD Cleanup Level (mg/kg) (Subsurface Soil)	Zones	ICs Required to Prevent UU/UE?
PAHs	Benzo(a)anthracene	8.5	1,760	2,3,4	Yes[c]
	Benzo(a)pyrene	2	154	2,3,4	Yes[c]
	Benzo(b)fluoranthene	7.9	1,760	2,3,4	Yes[c]
	Benzo(k)fluoranthene	6.2	17,600	2,3,4	Yes[c]
	Indeno(1,2,3-cd)pyrene	3	1,760	2,3,4	Yes[c]
	Chrysene	11.1	176,000	2,3,4	Yes[c]
	Dibenzo(a,h)anthracene	0.27	154	3	Yes[c]
Pesticides	DDD	13.7	No Change	3,4	No[d]
	DDE	0.14	No Change	3,4	No[d]
	DDT	0.17	No Change	3,4	No[d]
	Dieldrin	0.35	No Change	4	No[d]
	Chlordane	1.4[b]	No Change	3,4	No[d]
PCB	Aroclor-1260	1	No Change	3,4	No[e]
Metals	Lead[a]	1,000	No Change	2	Yes

a Cleanup goals for all other metals were not determined because levels generally were consistent with background levels. Cleanup goal for lead was establish during the Remedial Design.

b Cleanup goal for chlordane is 1.4 mg/kg for ecological health, and 1.5 mg/kg for human resident health.

c To prevent contact with subsurface soil.

d Cleanup level is based on background.

e Based on a USEPA guidance value.

4.3 Remedy Implementation

OU1 Zones 1-4

Soil cleanup goals were established in the RODs for different zones at the site based on the intended future use of particular areas. The original cleanup goals were based on estimated background concentrations, with the exception risk-based goals for Aroclor 1260 (a polychlorinated biphenyl (PCB)) and DDD (dichlorodiphenyldichloroethylene, an insecticide).

During remediation and soil removal activities, the Army and regulators determined that a construction worker excavation scenario was a more realistic and appropriate exposure scenario for soil at a depth greater than one foot BGS. The construction and commercial worker exposure scenarios differ, in that more intense exposures could be encountered while performing periodic subsurface utility work. The baseline risk assessment did not include the construction worker exposure scenario, so additional post-ROD risk assessment work was performed to determine the appropriate extent of the ongoing remedial actions.

The modified cleanup levels were applied to subsurface soil below 1 foot BGS at Areas B, E, G, J, and L in Zones 1, 2 and 4. The risk estimates for the construction worker did not warrant further removal of subsurface soil. Confirmation samples indicated that the soil below one foot met the revised cleanup goals, so the existing excavations were considered to be complete and ready to backfill with clean material. The addition of one foot of clean soil met the cleanup goals for exposures to surface soil. In addition, the cleanup goals for the construction worker exposure

scenario was determined to be appropriate for the subsurface soil at the public areas at Zone 4 because the "open space" user would not be excavating below one foot.

Final remedial action for the northern zone of the site was started on November 20, 1996 and completed on July 27, 1998. All soil was disposed of off-site in accordance with state and federal requirements. Institutional controls were implemented during the transfer. Remedial action in OU3 (Area I) started on August 26, 1996 and was completed on January 10, 1997. All soil was disposed of off-site in accordance with state and federal requirements. As previously noted, institutional controls were not necessary at OU3 since all contamination exceeding residential standards was removed and clean replacement fill was protective of residential exposure to soil.

Annual institutional control reports are required by the MOA that was signed on 7 August 1998 by the EPA, MassDEP and the Army. The purpose of the reports is to document the condition of the institutional controls. The MOA recognizes that these annual reports are the responsibility of the Army. Currently, the Army has an agreement in place with the WADC and the DCR to develop the reports each year for their respective property. Since the last FYR, each of 5 annual reports were completed and submitted to the EPA.

OU1 Zone 5 (Charles River Park and WYC)

The initial phase of the remedial action in Charles River Park was conducted in 1997. Upon completion of the soil removal at each area, the excavation was filled with an equal volume of clean fill brought in from an outside source. The landscaping in the excavated area and other areas affected by excavation activities was generally restored to pre-excavation conditions. Trees were replaced as agreed upon in the April 24, 1997 meeting between USACE-NAE, WESTON, the Watertown Conservation Commission (WCC), AMTL Staff, MDC (now DCR), and the WYC. Sidewalks, roadways, and parking areas were also restored to pre-excavation conditions.

In 2001, cleanup goals for the Charles River Park area were amended with an explanation of significant difference, to risk-based cleanup goals corresponding to construction and utility workers. Because the updated goals are less stringent than the background levels, less soil was excavated. Exposure to the general public is prevented because the contaminated soil remaining at the park was covered with 2 feet of clean fill following excavation and ICs prevent disturbance of the cover material.

4.3.1 Remedy Implementation of Area M

Area M was initially excavated around soil boring GRSB-11 to dimensions of 25 ft × 25 ft × 3 feet (L×W×D) to remove soil contaminated with PAHs, pesticides, and lead. Excavation at Area M began on May 12, 1997. Some of the soil samples from the excavation bottom (3 ft BGS) exceeded applicable PAH cleanup goals. As a result, it was decided by Army that the entire excavation footprint should be excavated to 4 ft BGS prior to backfill. This excavation was completed on June 12, 1997.

During the excavation at Area M, several samples from the excavation sidewalls exceeded PAH cleanup goals. As a result, a program of soil borings was initiated in lieu of continued excavation in an attempt to define the lateral extent of contaminated area(s). Soil borings were performed at Area M in an attempt to define the contaminated area without substantial disturbance to WYC operations. These 24 soil boring locations were performed on June 10th and 13th 1997.

Laboratory analytical results generally showed PAHs in excess of soil cleanup goals approximately 75 to 100 ft from the excavation sidewalls, with the exception of the North Beacon Street embankment to the north, which was below the PAH cleanup goals.

From the initial excavation, three expansions were performed at Area M and a total of approximately 382 tons of soil was removed. The final excavation depth at Area M was four feet BGS with a maximum length and width of 55 ft and 40 ft, respectively.

Based on these findings, work at Area M was suspended pending reevaluation of the ROD. Once the revised cleanup levels per the second ESD were agreed to by the Army and EPA, Foster Wheeler Environmental Corporation resumed remedial activities in July 2001 at Area M. The remainder of the area was then excavated to a total depth of two feet BGS. The area was then backfilled and covered with a layer of asphalt.

Ultimately, the total soil removal from Area M, including that removed according to the original ROD and that removed according to the second ESD, was 3,077 cubic yards (5,325 tons). All confirmation soil sample concentrations were below the revised PAH, and the lead and pesticide cleanup goals.

4.3.2 Remedy Implementation of Area N

Area N was initially excavated around soil boring GRSB-19 to dimensions of 10 ft × 10 ft × 3 ft (L×W×D) to remove pesticide contaminated soil, which were the only Contaminants of Concern (COC) at Area N. Excavation at Area N occurred between 14 May and 30 June 1997. During the excavations at Area N, one large oak tree was removed from the excavation area. Two excavation expansions were performed at Area N and approximately 133 tons of soil was removed. The final excavation dimensions at Area N were 30 ft x 33 ft x 3 ft (L×W×D). The northeast corner of the excavation was excavated to 4 feet BGS. All confirmation soil sample concentrations were below the pesticide cleanup goals. No further remediation was required.

Area N restoration was performed on 30 June and July 1, 1997 using common borrow material as a base under 0.5 ft of loam. Trees were planted in June 1998 according to the restoration plan agreed upon between USACE-NAE and the WCC.

4.3.3 Remedy Implementation of Area O

Area O was initially excavated around soil sample 17SUB02 to dimensions of 10 ft × 10 ft × 3 ft (L×W×D) to remove PAH-contaminated soil, which were the only COCs at Area O. Excavation at Area O occurred between 14 May and 11 June 1997. During the excavation at Area O, one red oak tree was removed from the excavated area. Two excavation expansions were performed at Area O and approximately 86 tons of soil was removed. The final excavation dimensions at Area O were 23 ft × 10 ft × 3 ft (L×W×D). All confirmation soil sample concentrations were below ROD PAH cleanup goals. No further remediation was required. Area O restoration was performed on 30 June and 1 July 1997 using common borrow material as a base under 0.5 ft of loam. Three-quarter inch diameter stone was placed around the outfall of a drain pipe located just to the north of the excavation area. This stone was placed to prevent erosion during heavy drainage events. Trees were planted in June 1998 according to the restoration plan agreed upon by the USACE-NAE and the WCC.

4.3.4 Remedy Implementation of Area P

Area P was initially excavated around soil boring 17SB- 2 to dimensions of 25 ft × 25 ft × 3 ft (L×W×D) to remove PAH-contaminated soil, which were the only COCs at Area P. Excavation at Area P occurred between May 1 and 18 July 1997. Three excavation expansions were performed at Area P and approximately 2,730 tons of soil was removed. Final dimensions of the Area P excavation at its longest and widest points were 135 ft and 115 ft, respectively. The final excavation depth at Area P ranged from 3 to 4 ft BGS. Some confirmation sample results from the Area P excavation sidewalls still exceeded the PAH cleanup goals established in the September 1996 ROD. Work at Area P was temporarily suspended at this time. Remedial activities recommenced at Area P in September 2000. All confirmation soil sample concentrations were below the ESD PAH cleanup goals. The ESD was ultimately signed in May 2001. Because of the pre-historical significance of the Charles River Park parcel, archaeological oversight of the excavation activities was conducted in Area P during the remedial work. Excavation activities at Area P were monitored and documented by The Public Archaeology Laboratory, Inc. (PAL) of Pawtucket, Rhode Island. No items of historical significance were found during excavation activities in Area P.

4.3.5 Remedy Implementation of Area Q

Area Q was initially excavated around soil boring 17SB-3 to dimension of 25 ft x 25 x 3 ft (L x W x D) to remove PAH- and pesticide-contaminated soil. The initial Excavation at Area Q occurred between 14 May and 30 June 1997. Two expansions were subsequently performed at Area Q and approximately 1,030 tons of non-Resource Conservation and Recovery Act (RCRA) soil and 117 tons of RCRA soil were removed, where the soils were determined to RCRA if TCLP analysis resulted in a hazardous waste classification. Final dimensions of the Area Q excavation at its longest and widest points were 125 ft and 66 ft, respectively. The final excavation depth at Area Q was 4- ft BGS. Confirmation sample results from the Area Q excavation sidewalls exceeded the PAH cleanup goals established in the September 1996 ROD. So work in Area Q was temporarily suspended in June 1997. Area Q restoration was performed between 30 July and 9 September 1997 using common borrow material as a base under 0.5 ft. of loam. The fence surrounding the Area Q excavation area remained in-place until 23 October 1997 when the new grass was deemed established. During the excavation at Area Q, several trees including four small pines, one large pine, and two small boxwood trees were removed from the excavation area. No replacement of trees was required in Area Q.

Remaining contamination associated with Area Q was excavated between September and November 2000 during remediation of the combined Area P/Q. Because of the historical significance of the Charles River Park parcel, archaeological oversight of the excavation activities were conducted in Area Q. Excavation activities at Area Q were monitored and documented by PAL. No items of historical significance were found during excavation activities in Area Q.

4.3.6 Remedy Implementation of Area P/Q

Area P/Q was designated as the area between the Area P and Area Q excavations. A total of 7,556 cubic yards of soil was removed from Area P/Q during September through November 2000. For the Charles River Park, the ROD PAH cleanup levels applied to soil in the 0 to 2 foot depth interval. For soil below 2 ft, the ESD PAH cleanup levels governed. The excavation of Area P/Q was completed in a continuous fashion, starting at the western end and proceeding to the east. Once the excavation reached a depth of two feet, confirmatory soil samples were

collected from the excavation bottom and exterior sidewalls. A total of 100 samples were collected from this area (66 floor samples and 34 sidewall samples). The laboratory analytical results were compared to the appropriate cleanup goals to determine if further excavation was required. All 100 confirmatory soil sample results were below the established criteria; therefore, additional excavation was not necessary. Upon completion of the soil removal, the excavated area was filled with an equal volume of clean fill brought in from an outside source and was restored to pre-excavation conditions. A geo-textile marker fabric was also installed at the base of the 2 ft BGS excavation prior to clean backfilling to serve as a future warning to construction/utility workers in the event that excavation is needed.

4.3.7 Remedy Implementation of Riverbank Excavations

In support of the riverbank remediation in Area P/Q that occurred in the fall of 2000 and in Area M in July 2001, two separate riverbank sampling programs were completed in Areas P/Q and M. The first sampling event was conducted between 31 July and 3 August 2000 in accordance with the EPA-approved *Final Sampling and Analysis Plan Addendum*, dated August 2000. This event involved the collection of soil samples at ten sampling locations along the approximate 10 ft wide riverbank strip in Area P/Q (samples RB1-S01 through RB1-S12). All of the samples were collected from 0 to 2 ft (BGS) and were analyzed for PAHs and pesticides. The second riverbank sampling event occurred in January 2001 to supplement the original August 2000 riverbank data. The sampling was conducted between January 3rd and 4th, 2001 in accordance with the EPA-approved *Sampling and Analysis Plan Addendum*, dated December 2000. This event involved the collection of soil samples at twenty sampling locations along the approximate 10 ft wide riverbank strip in Area P/Q from depths between 0 and 2 ft BGS and 2 to 4 ft BGS.

Samples were collected from 2 to 4 ft BGS at the same ten locations as the August sampling event (RB-B1 through RB-B10) as well as from multiple depths at ten new locations (RB-B11 through RB-B20). The samples collected from 0 to 2 ft BGS were analyzed for PAHs and pesticides, while the samples from 2 to 4 ft BGS were analyzed for PAHs only. The ROD cleanup levels for pesticides applied only to the upper two feet of soil based on the ecological risk assessment. The results of both of these sampling events were used as the basis for determining the extent of riverbank excavation required.

The results for Area M riverbank showed that the ROD cleanup levels for some PAH compounds were exceeded in the upper two ft of soil in two locations (RB1-S11 and RB1- S12) at the west end of Area M riverbank. In Area P riverbank, the ROD cleanup level for one pesticide compound (DDT) was exceeded in the upper two feet of soil in two locations (RB-B19 and RB-B20). In Area Q riverbank, ROD cleanup levels for some PAH compounds were exceeded in two locations (RB-B10 and RB-EH1).

No exceedances of ESD criteria were identified in any of the riverbank samples. Since no ESD criteria were exceeded, all riverbank excavations were terminated at 2 ft BGS and followed by confirmatory sampling. The Areas P, Q, and M riverbank excavations can be seen in. Following completion of the excavation in each area, confirmatory soil samples were collected from the excavation bottom and exterior sidewalls of any excavation that was not backfilled with two feet of cover. All confirmation sample concentrations were below the PAH and pesticide ROD and ESD cleanup goals and were taken at representative locations of all areas where excavation was required.

4.3.8 Remedy Implementation of Area M Riverbank

The estimated riverbank area that required excavation was approximately 1,100 square feet. The Area M riverbank was limited by the Charles River along the southern edge, the existing parking lot to the north (Area M), the limit of Area M to the west, and the boat ramp to the east. Excavation to the north was terminated at the edge of the existing pavement, as the paved area was remediated as part of Area M excavation in July 2001. A 2 ft excavation depth was reached and 75 cubic yards (cy) of soil (112 tons) was removed. Excavation along the Area M Riverbank was performed using a small backhoe and by hand in places to avoid damage or impacts to existing utilities. The electrical lines servicing the docks in this area were de-energized prior to the start of work. Since the excavations are to be only 2 ft deep, the slope of this excavation was not shored. The excavation sides were sloped as necessary to prevent sidewall collapse. Confirmation sampling determined that ROD and ESD cleanup goals were met.

4.3.9 Remedy Implementation of Areas P and Q Riverbank

For the Area P Riverbank, the estimated area that required excavation was approximately 1,400 square feet. Using sample locations B-19 and B-20, the area was defined by the existing fence to the north (Area P/Q), half the distance between B-19/B-20 and B-4 to the south, half the distance between B-19 and B-18 to the west, and half the distance between B-20 and B-5 to the east. The southern extent of the excavation remained in the upland portion of the riverbank. A 2 ft excavation depth was reached and 140 cy of soil (210 tons) were removed. For the Area Q Riverbank, the estimated area that required excavation was approximately 1,820 square feet. Using the sample locations B-10 and B-11, the area was defined by the existing fence to the north (Area P/Q), the Charles River to the south, half the distance between B-10 and B-9 to the west, and half the distance between B-11 and B- 12 to the east. The original excavation length of this riverbank was 150 ft, but after a field review, excavation was stopped prior to the root system of one large tree along the riverbank. The final length of excavation was 120 ft. A 2-ft excavation depth was reached and 127 cy of soil (191 tons) were removed. Confirmation sampling determined that ROD and ESD cleanup goals were met.

4.4 System Operation/Operation and Maintenance

OU1 Zones 1-4

The remedy required the Army to perform periodic inspections to verify that ICs are being implemented and that the remedy remains protective. There is no system in place that requires operation or maintenance in Zones 1-4.

OU1 Zone 5 (Charles River Park)

The remedy required the Army to perform periodic inspections of the restorations at Area P and Area Q during the three-year monitoring and maintenance plan program that concluded in 2004. The Army placed goose netting in 2005 along the immediate riverbank to assist in the development of the Area P terrace wetland by preventing overgrazing by the large resident population of Canada geese, which would destroy the new plantings.

5.0 PROGRESS SINCE THE LAST FIVE-YEAR REVIEW

The last five year review indicated that "Because the remedial actions at all OUs are protective, the site is protective of human health and the environment." The following sections summarize the progress that has been made in OU1 since the third FYR.

5.1 Progress at OU1 Zones 1-4 and Zone 5

Annual IC inspections have continued in OU1 (Zones 1-4) since the last FYR, with the thirteenth, fourteenth, fifteenth, sixteenth, and seventeenth on file. Most of the buildings are now tenant (88% leased) occupied. Since the last five-year review, no GEREs have been approved.

All site restoration work was completed by the first FYR (2001) including the riverbank restoration work at Areas P and Q, conducted in May 2001 at Area Q and in October 2001 at Area P. An annual monitoring and maintenance plan program at Riverbank Areas P and Q was conducted between 2002 and 2004. Annual IC inspections started in this area in 2004 continue in accordance with the IC MOA signed by the Army, EPA and MassDEP in October 2003. The Park was transferred to the DCR in May of 2005.

The "Second Five-year review Report (2002-2006) for the US Army Materials Technology Laboratory, Watertown, Massachusetts, NPL" was completed in March 2006 (Calibre, 2006). This report concluded that the remedy at the Charles River Park parcel, which is an area with contaminated soil remaining in the subsurface, is protective of human health and the environment in the short-term because there is no evidence of exposure. However, in order for the remedy to remain protective in the long-term, stabilization of the river bank was needed to eliminate erosion into the Charles River. Consequently, the Charles River Enhanced Shoreline Stabilization Project (CRESSP) was constructed to stabilize the riverbank and prevent any erosion into the Charles River to ensure that the remedial actions previously conducted at the Charles River Park remain protective of human health and the environment in the long-term. In addition to its primary purpose of stabilizing the riverbank, the CRESSP also enhanced the wildlife habitat by planting a variety of conservation seed mixes, woody plants such as elderberry and silky dogwood and river birch and silver maple trees.

In general, the work included the clearing of brush, installation of boulders, riprap and coir fascine as a slope toe, placement of fill materials, geo-textile fabric, topsoil, conservation seed mix, select trees and shrub plantings to stabilize portions of the riverbank (USACE, 2006 a; USACE, 2006b). Work began on September 19, 2006 and the project was substantially complete by October 26, 2006. Work began with the setup of temporary facilities and controls followed by the installation of the turbidity barrier in the river, the clearing of brush in Treatment Zone 1 and the removal of sumac growth in Treatment Zones 3 (northern portion) and 4. Work then proceeded within Treatment Zone 1 with the placement of boulders at the toe of slope and partial placement of the fill material. Riprap material was then placed at Treatment Zone 2 (north). Once the fill materials were completed in Zones 1 and 3 (north) the work generally proceeded from north to the south across Zones 4 and 3. Following the placement of the compost amended topsoil the entire site was hydro-seeded.

To document the progression and success of the riverbank stabilization and habitat enhancements, a 3-year operation and maintenance monitoring plan was required. The monitoring plan was designed to document vegetation establishment and survival, structural stability of the stabilization treatments, and invasive species colonization. Control of invasive

plant species (black alder, glossy buckthorn, *Phragmites*, purple loosestrife, and yellow flag) by USACE personnel occurred yearly through August of 2009.

The first year O&M Plan Report (Watermark and USACE, 2007) summarized the findings and work conducted during each of four quarterly monitoring periods. The visits identified specific problems associated with restoration and the steps taken to remediate the unexpected deficiencies, address invasive plant issues, monitor stabilization and erosion, and perform general maintenance. The same was true for the second year O&M Report (USACE, 2008) and the third year O&M Report (USACE, 2009). The findings reported in the third and final O&M report indicated that the bank stabilization and re-vegetation of the shoreline habitats was effective.

5.2 Improvements to OU1 during Review Period

Since the third five-year review, several improvements have been completed including 1) adding rip-rap to the shoreline of Charles River Park, 2) abandonment of a former monitoring well along Arsenal Street, and 3) addition of a container vegetable garden and paving of a gravel walkway. These improvements are described below.

5.2.1 Rip-Rap Added to CRPP Shoreline

During the third Five-year review site walk in June 2010, the inspection team observed an area of shoreline erosion and geo-textile raveling. USACE performed a follow-up inspection of the shoreline in March 2012, which revealed additional areas of shoreline erosion and geo-textile raveling. Subsequently, a Statement of Work (SOW) was developed to mitigate these areas of concern. The work was awarded to Tantara Environmental Corporation of Worcester, MA, and site work was performed July 11 and 12, 2012.

USACE performed oversight on the placement of 23 tons of angular, 6 to 12 inch stone from the S.M. Lorusso quarry in West Roxbury (West Roxbury Crushed Stone) at the five areas to be repaired. The rock selected for the project was based on the size of the pre-existing rock observed during the USACE site inspection. Brush clearing and log moving was required to obtain access to all of the sites. The stone was dumped on sheets of plywood to minimize damage to the existing grass surface. The Skid Steer was used to move the stone to the specific areas. Both pieces of excavation equipment were rubber tracked which minimized surface disturbance and damage.

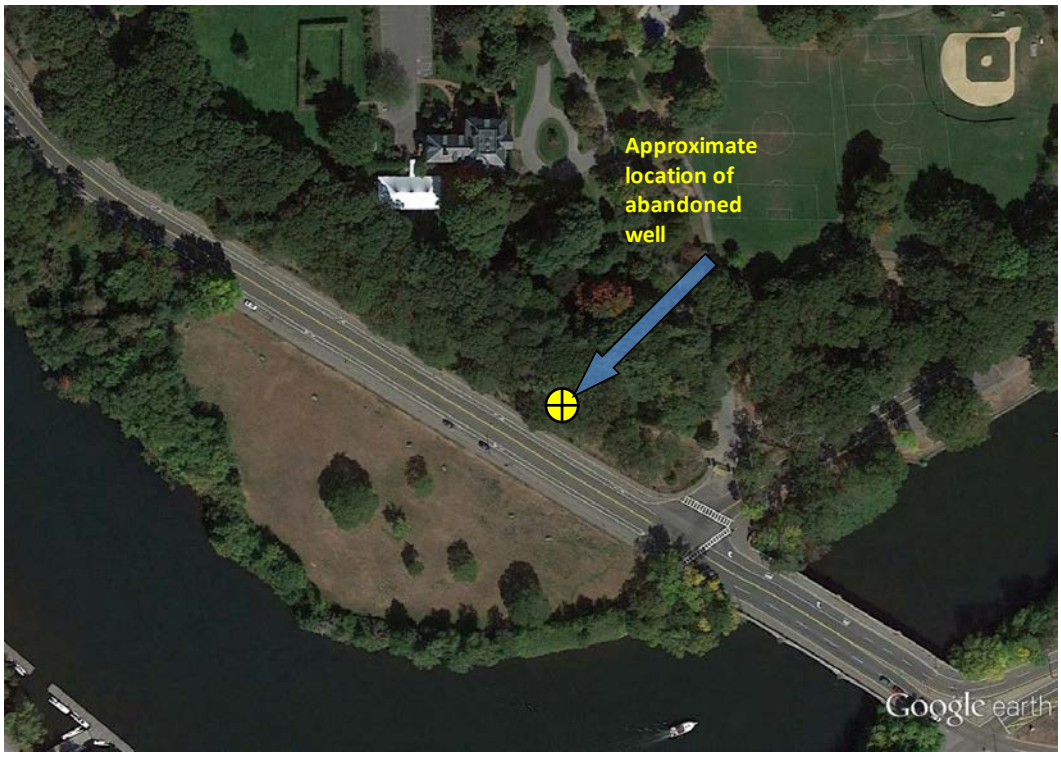
As specified in the SOW there are 5 Areas of Interest (i.e. Areas 1, 2, 3, 4, 5) (Figure 5-1). Upon completion of the erosion repairs, additional stone was left over and the balance of it was placed in each of the areas to reinforce the erosion repairs. Overall, the shoreline erosion repairs were performed according to the SOW.

Figure 5-1: Orthophoto of Charles River Park showing areas of shoreline erosion

5.2.2 Well Abandonment

During the site visit for the third five-year review in June 2010, an old monitoring well was identified adjacent to Arsenal Road and within the AMTL fence line (Figure 5-2). A review of historic information found no record of the well's ownership or usage so the well was abandoned by Technical Drilling Services, Inc. of Sterling, Massachusetts on 18 May 2011. The 3 inch steel casing was measured at the time to be 53 feet deep and to have a water table depth of 7.5 feet. The well was abandoned in place per MassDEP Guidelines by cutting the casing to 6 inches BGS and pulling the PVC and then filling the remaining hole with Portland cement and covering with loam (Figure 5-2).

Figure 5-2: Orthophoto of AMTL and CRPP showing location of abandoned well

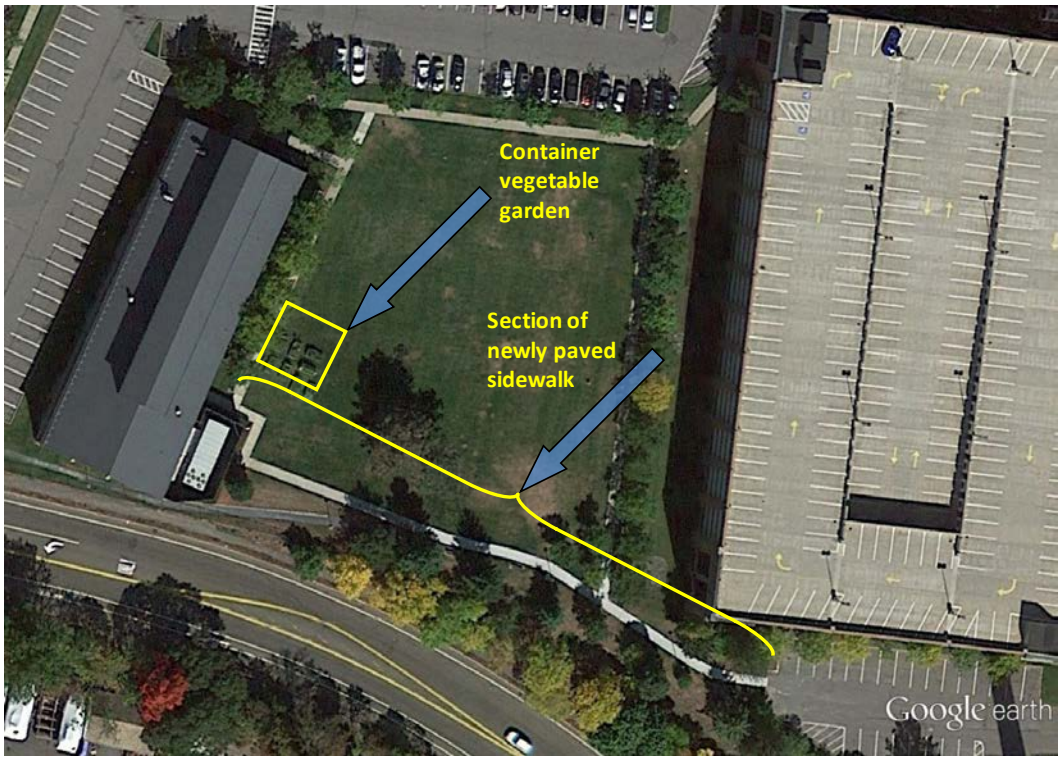


Uncut Casing w/ PVC **Cut Casing w/o PVC** **Filling with Grout** **Abandoned Well**

5.2.3 Container Vegetable Garden and Paving of Gravel Sidewalk

Since the completion of the third five-year review in March 2011, there have been two improvements in the immediate vicinity of Area E including 1) the addition of several small wooden sided container vegetable gardens in the southwest corner of the area and 2) the paving of a previously graveled sidewalk at the south side of the area (Figure 5-3). The vegetable gardens are contained on each of the four sides and on the bottom so that that plantings and associated root systems are not in contact with the soil beneath each container. The paving of the sidewalk was completed to avoid having pedestrians walk on a loose and uneven surface on their way from the nearby parking garage. Paving also made it easier to clear snow and ice thereby making slips during winter months less likely.

Figure 5-3: Orthophoto showing areas modified since previous five-year review



6.0 FIVE-YEAR REVIEW PROCESS

This section indicates the status of the major components of the FYR within this report.

6.1 Administrative Components

Refer to Section 1.1.

6.2 Community Involvement

Refer to Section 1.1.

6.3 Document Review

Documents reviewed are referenced in Appendix 5.

6.4 Data Review

OU1 Zones 1-4

The ROD for OU1 and the ESDs for the commercial areas and Charles River Park do not require long term monitoring or other ongoing data collection. ICs required by the Grant (soil management requirements and notification requirements to the Army, EPA & MassDEP if any covers are impacted by intrusive activities) have been implemented and are inspected on an annual basis in accordance with the IC MOA. Minor violations have occurred and have been resolved.

OU1 Zone 5 (Charles River Park)

The OU1 ROD and ESD do not require data collection. The Army will evaluate the riverbank for erosion on an annual basis. ICs required by the Grant have been implemented and are inspected on an annual basis in accordance with the IC MOA. Minor violations have occurred and have been resolved.

6.5 Site Inspections

The Site inspection for this fourth five-year review was conducted simultaneously with the 2015 annual inspection on June 1, 2015 by Mark Brodowicz of CALIBRE (acting Base Environmental Coordinator Technical Assistant and Army Representative). For AMTL, Robert Weikel, site manager for athenahealth, was present. In attendance were the following:

- Kenneth Heim, USACE
- Mark Brodowicz, Calibre
- Robert Weikel, athenahealth
- Ken Gendron, Weston & Sampson
- Jenna Newcombe, Geosyntec
- Christine Williams, USEPA
- Joanne Dearden, MassDEP
- Marie Wojtas, USACE
- Mike Penko, USACE

The site inspection meeting took place at the office of Robert Weikel where the IC interview assessment was conducted and the group was provided a detailed summary of the progress made and changes that have occurred since the previous five-year review. It was determined that there have been no changes in site usage that is out of compliance with the ICs that are currently in place. Following the meeting, the group conducted a site walk and was apprised of an area on the property of paved walkway and a small raised-bed vegetable garden, both of which were constructed since the previous five-year review. All elevation monuments at athenahealth property were identified during the site walk. The site inspection continued at the Charles River Park where the elevation monuments were identified and the shoreline was inspected to identify any soil erosion. The Charles River Park shoreline was observed at several locations and, at a later date, by small watercraft and no areas of erosion were identified. No evidence of excavation or erosion was observed anywhere on the Charles River Park Property during the site visit. The site inspection ended with a visit to the Watertown Yacht Club property where elevations monuments were identified and the site was evaluated for signs of excavation and erosion. The Yacht Club property has been observing required ICs since the previous five-year review and there has been no excavation at the property. There was evidence of erosion on the Charles River side of the granite block wall supporting the upstream side of the property and adjacent to the boat storage area. While protectiveness in the boat storage area has not yet been compromised the erosion should be addressed in the future to ensure protectiveness.

A supplemental Site inspection of the Charles River Park shoreline was conducted by Mike Penko (USACE) on July 18, 2015.

The 2015 Annual Activities and Uses Limitations (AUL) Site Inspection Reports can be found in Attachments 1 and 2. All annual inspection reports are maintained at the project information repository [Watertown Free Public Library, 30 Common Street, Watertown, MA].

6.6 Interviews

Robert Weikel, site manager for athenahealth was interviewed regarding OUs 1, 2, and 3. Robert Lowell, the Environmental Section Chief at the MA DCR, was interviewed to provide comment and perspective on the Charles River Park area. Finally, Norman Kenney from the Watertown Yacht Club was interviewed to provide insight into operations at the club.

Mr. Weikel indicated that since the previous five-year review inspection (2010) athenahealth has purchased the entire complex and are currently pursuing making additions, changes, and maintenance to the site. Many of these changes are outlined in a Master Plan developed by athenahealth and currently under review by the Town of Watertown. During the pursuit of removing the recreational land use restriction at Lot 1 athenahealth decided to pursue having the recreational land use restriction removed from the entire site as a GERE, to be approved by the MassDEP. This GERE is currently in process and is fully supported by the MassDEP and approval is expected in the near future, although EPA has requested the risk assessment be revised to be CERCLA compliant. The only upcoming construction under consideration by athenahealth is to replace utilities along Kingsbury Avenue and tie it into the Town's storm water system. Additionally, during the construction there may be some lateral construction to install equipment and fixtures to facilitate future upgrades of the water supply to adjacent buildings. This project is currently in the design phase and athenahealth is fully aware of usage and construction restrictions at the site and will work with the Army, EPA, and MassDEP throughout the construction process. Mr. Weikel indicated that athenahealth is fully aware of all restrictions and requirements at the site and there are no concerns related to the ability of the remedy to continue to remain protective.

Mr. Lowell indicated that there are two minor and two more significant foot paths allowing access from the park to the Charles River, presumably for fishing. The two minor paths are clear; however, the vegetation (i.e.; poison ivy) is growing in on the paths and will ultimately limit access. The two more significant paths have logs across them but allow easy access to the river. The rip-rap along non-vegetated shoreline sections of both the minor and more significant paths is in good condition and there are only very small fragments of geo-textile fabric exposed at the shoreline of the widest access point. Mr. Lowell was pleased with the condition of the park and had no concerns with the potential for contaminant exposure due to any unexpected degradation of the remedy.

Mr. Kenney indicated that there has been no excavation at the site and that no soil was disturbed since the previous five-year review inspection in 2010. Additionally, there is no residential or daycare use at the property; however, the WYC does occasionally host events at the property as a service to the community. There was a concern expressed by Mr. Kenney that a granite block retaining wall along the shoreline and immediately adjacent to a boat storage area at the east side of the property is in need of repair to keep it from collapsing into the river. The section of retaining wall in need of repair was inspected and it was determined the degradation of the wall was likely initiated by a tree that had grown through the wall to a diameter of approximately 1 foot before being cut down several years earlier. The damaged section of wall extends from approximately lat/long 42.361618; -71.166575 to lat/long 42.361653; -71.166651. Also, it appears that the damaged section of the wall is below the level of the geo-textile fabric layer that is located at a depth of 2.5 feet below grade.

The interviews were all conducted to fulfill the requirements of the FYR process and are documented in Appendix 6. No other interviews were conducted.

7.0 TECHNICAL ASSESSMENT

The following questions are a critical component of the FYR process and address the protectiveness of the site to human and ecological receptors.

Question A: *Is the Remedy functioning as intended by the decision documents?*

Yes. The remedy for OU1 Zones 1-4 and Zone 5 is functioning as intended by the ROD published on September 26, 1996 and the first ESD completed in 1998 and the second ESD completed in 2001. Depending on locations specified in the land use plan, the Army has concluded that the remedy corresponds to the highest and best use, which is either commercial, recreational, or residential. Institutional Controls are being met and are documented during annual site inspection visits and in associated summary reports. The land use (commercial, recreational, or residential) has not changed and the areas remain protective of human health and the environment.

Question B: *Are the exposure assumptions, toxicity data, cleanup values, and Remedial Action Objectives (RAOs) used at the time of the remedy selection still valid?*

No. The RAO is to mitigate the risks to human health and the environment posed by direct contact with and incidental ingestion of contaminated soils. This is accomplished with Institutional Controls and clean soil and building covers in place to mitigate exposure. However, a vapor intrusion study was never performed and some toxicity data has changed.

Background levels were used as cleanup goals for soil at depths of less than 1 foot, and direct contact exposure to deeper residual soil contamination (at levels protective for a construction worker) is prevented to all but construction workers. Accordingly, changes to exposure assumptions, toxicity data, or cleanup values since the remedy was selected will not have any effect on the validity of the remedy. Although risk assessment parameters were subject to change during the review period, local background conditions have not changed. Land use remains commercial and industrial, and site activities appear to be consistent with the intent of the remedy. Site inspections confirm that the soil covers and paved areas remain undisturbed, and are intact barriers that prevent direct contact exposure.

Exposure factors recommended by USEPA for use in human health risk assessments have been recently updated (OSWER Directive 9200.1-20). In the case of exposure to soil, the updates result in slightly less stringent cleanup goals, so the existing cleanup goals remain protective as intended by the ROD. EPA guidance standards pertaining to assessing potential vapor risks have not been evaluated under the OU1 remedy.

Toxicity data for the contaminants of concern were reviewed during this FYR to determine if any revisions have occurred, as summarized in Table 7-1.

Table 7-1. Updated USEPA Toxicity Values for COC at AMTL

Chemical	Toxicity Value (ROD)	Toxicity Value (Now)
Benzo(a)anthracene	0.1 (toxicity equivalence factor)	0.1 (toxicity equivalence factor)
Benzo(a)pyrene	7.3 per mg/kg-day (oral cancer slope)	7.3 per mg/kg-day (oral cancer slope)
Benzo(b)fluoranthene	0.1 (toxicity equivalence factor)	0.1 (toxicity equivalence factor)
Benzo(k)fluoranthene	0.01 (toxicity equivalence factor)	0.01 (toxicity equivalence factor)
Chlordane	0.35 per mg/kg-day (oral cancer slope) 0.0005 mg/kg-day (oral reference dose) 0.0007 mg/kg-day (oral reference dose)	0.35 per mg/kg-day (oral cancer slope) 0.0005 mg/kg-day (oral reference dose) 0.0007 mg/kg-day (oral reference dose)
Chrysene	0.001 (toxicity equivalence factor)	0.001 (toxicity equivalence factor)
DDD	0.24 per mg/kg-day (oral cancer slope)	0.24 per mg/kg-day (oral cancer slope)
DDE	0.34 per mg/kg-day (oral cancer slope)	0.34 per mg/kg-day (oral cancer slope)
DDT	0.34 per mg/kg-day (oral cancer slope) 0.0005 mg/kg-day (oral reference dose)	0.34 per mg/kg-day (oral cancer slope) 0.0005 mg/kg-day (oral reference dose)
Dibenzo(a,h)anthracene	1.0 (toxicity equivalence factor)	1.0 (toxicity equivalence factor)
Dieldrin	0.16 per mg/kg-day (oral cancer slope) 0.00005 mg/kg-day (oral reference dose)	0.16 per mg/kg-day (oral cancer slope) 0.00005 mg/kg-day (oral reference dose)
Indeno(1,2,3-cd)pyrene	0.1 (toxicity equivalence factor)	0.1 (toxicity equivalence factor)

Note: Toxicity equivalence factors are used to calculate cancer slope factors for carcinogenic polycyclic aromatic hydrocarbons from that of benzo(a)pyrene, since only it has a cancer slope factor.

The cleanup levels for PAHs were based on human carcinogenicity and USEPA toxicity values. Accordingly, current USEPA toxicity values for the COCs were checked using the EPA Integrated Risk Management System (IRIS), a peer reviewed toxicity database. Those toxicity values for the carcinogenic PAHs have not changed since the remedy was selected. However, methods to evaluate toxicity of carcinogenic PAHs have changed since the time of the ROD. Because numerous carcinogenic PAHs also are mutagenic, cancer risk estimates for children could be increased to 10 fold for children ages 0-2 years and 3 fold for children ages 2-16 years. This would result in higher risks from toxicity of PAHs over a lifetime due to increased risk of exposure when the receptor is less than 16 years old (child resident and adolescent trespasser). However, this would not change the intent of the RAOs for PAHs because: 1) the selected remedy is based on attaining local background concentrations that would mitigate incremental increases of risk due to site-related contamination beyond that expected in the background, and; 2) the remedy is based on preventing toxicity of PAHs by means of a soil cover and in some cases an asphalt or building foundation cover that eliminates direct contact exposure to soils contaminated at greater than background levels.

The cleanup goals for pesticides were based on ecological toxicity. EPA issued avian and mammalian toxicity screening values for DDT and its metabolites, including DDD, in April 2007[1] and for dieldrin in April 2007[2]. The new screening values are based on exhaustive literature

[1] *Ecological Soil Screening Levels for DDT and Metabolites*, OSWER Directive 9285.7-57, U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response, 1200 Pennsylvania Avenue, N.W. Washington, DC 20460.

[2] *Ecological Soil Screening Levels for Dieldrin, Interim Final*, OSWER Directive 9285.7-56, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460, March 2005, Revised April 2007.

reviews, but are not cleanup goals, and have no impact on protectiveness of the remedy. Clean backfill remains in place, preventing exposure of ecological receptors to pesticides and other site related COCs. No new complete exposure pathways were observed during the site visit.

The cleanup level for Aroclor-1260 is based on an EPA policy goal[3] that has not changed but that is currently being reassessed by the EPA. Furthermore, the non-cancer and cancer toxicity values for PCBs have not changed since the remedy was selected.

The cleanup goal for lead is based on a risk-based consensus value developed during the remedial design, and that has not changed. The cleanup goals remain valid today.

The 1996 ROD for OU1 soils and groundwater stated that no risk assessment was performed for groundwater because of a lack of receptors. According to the ROD, although some contamination is present in certain areas of on-site groundwater, this does not pose a current risk because the groundwater is not used as a water supply, and no significant migration of contamination is occurring in off-site groundwater. Although groundwater meets MA DEP definition of GW-3 for a non-drinking water aquifer and there is no risk identified for human receptors from direct contact with groundwater, the future potential risk of a person being exposed to contaminants from groundwater via the vapor intrusion exposure pathway needs to be addressed.

Question C: *Has any other information come to light that could call into question, the protectiveness of the remedy?*

No. There has been no other information that has come to light to question the protectiveness of the remedy. Also, the bank stabilization project completed in 2006 has addressed the concerns identified in the second five-year review that shoreline erosion could lead to exposure of contaminated material. Continuing operations and maintenance and annual inspections have indicated that the remedy selected for the Charles River Park is protective and no other information has come to light to question the protectiveness of the remedy.

7.1 Technical Assessment Summary

Based on the data reviewed and the site information, the remedy is functioning as intended in the ROD. There have been no changes in TBCs, screening levels, or toxicity criteria for the COPCs, and there have been no changes to the standardized risk assessment methodology that affects the protectiveness of the remedy. However, since there are volatiles in the groundwater that were noted in the ROD and the vapor intrusion risk pathway was not evaluated, a vapor intrusion study will need to be performed. Indoor air samples were collected in each building in 1991 (*Final Phase II Remedial Investigation Report, Roy F. Weston, May 1994*), For each sample, a comparison of analytical results to both occupational and public health exposure scenarios was made. In no instance were public health guidelines or occupational exposure limits exceeded. However the vapor intrusion pathway was not evaluated in accordance with current vapor intrusion assessment guidance. The presence of vapor-forming chemicals and potential receptors raise the possibility of a completed vapor intrusion pathway which may call into question the protectiveness of the remedy. Therefore, the protectiveness of this remedy is deferred until further information is obtained since available

[3] *Guidance on Remedial Actions for Superfund Sites with PCB Contamination*, U.S. Environmental Protection Agency Office of Emergency and Remedial Response, Washington DC 20460. August 1990.

data are insufficient to determine whether there is a potential or actual vapor intrusion exposure pathway; therefore, there is a recommendation that vapor intrusion risks need to be assessed.

There are several missing or changed ARARs from those cited in the OU1 ROD that should be added to the OU1 remedy as part of any future CERCLA decision document (see Section 8.2, below). None effect the immediate protectiveness of the remedy.

8.0 ISSUES

8.1 Issues

Vapor intrusion investigation is an issue to be identified in this FYR. In addition, a historical spill was recently identified (relating to a test pit environmental sampling program conducted in August 2015).

8.2 Concerns

WYC Shoreline Granite Block

The following summarizes a concern at OU1 Zone 5 (Charles River Park), but not one that immediately affects either the remedy or the protectiveness of the site. For these reasons, this is considered a concern and is not an immediate issue.

During a visit to the Watertown Yacht Club in June 2015 to conduct an interview with the Commodore of the WYC, a structural problem with the granite block retaining wall was observed. The granite block wall at the upstream end of the boat yard has been compromised by a tree and lateral root (Figure 8-1). The tree and root grew behind one of the granite blocks and eventually displaced the block, which likely ended up falling into the Charles River. With the tree cut down and only a stump remaining, the root has since decayed to the point that it will eventually not be able to support the granite block above it.

The concern raised by the WYC is that once the granite block above the decaying root is dislodged, the boat storage area adjacent to the block wall will likely be compromised and unable to safely support the adjacent parking area. Compounding the problem is that the decaying root appears to occur at a depth of greater than the 2½ foot depth of the geo-textile fabric, which was installed as part of the remedy. Therefore, a repair of the block wall may result in the disturbance of the protective geo-textile fabric and while not considered an issue, it is a concern.

Updating/Replacing ARAR Citations

There are several missing or changed ARARs that should be added to the OU1 remedy as part of any future CERCLA decision document. None effect the immediate protectiveness of the remedy.

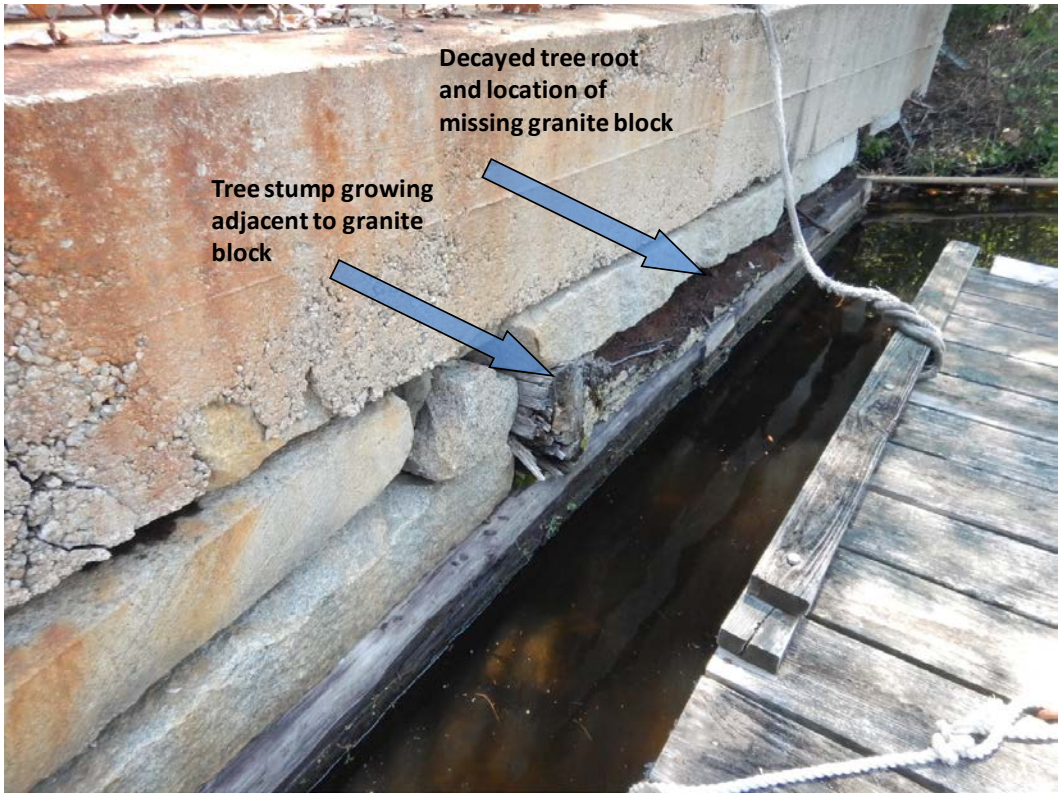
Federal floodplain regulations at 40 CFR Part 6 cited as a location-specific ARAR in the OU1 ROD no longer exist. As part of a future OU1 CERCLA decision document, floodplain standards under 44 CFR Part 9 should be cited that incorporate the requirements of the Floodplain Management Executive Order that formerly were incorporated into the regulations at 40 CFR Part 6. One difference between the two regulations is that under the requirements in 44 CFR Part 9 any areas of covered/capped contamination within the 500-year floodplain need to be covered/maintained so as not to cause a release during flooding, up to a 500-year event. The previous regulations only required protective measure to address up to a 100-year flood event in the 100-year floodplain.

Two new action-specific standards should be added to the OU1 remedy through a future CERCLA decision document. These testing and PCB waste management standards would

primarily apply to any future actions that disturb the currently capped/covered contaminated soils:

- Requirements for testing for hazardous waste should be cited under the MA Hazardous Waste Regulations at 310 C.M.R 30.100, rather than the guidance citation used in the OU1 ROD.
- The OU1 ARARs do not include regulations under the Toxic Substances Control Act (TSCA), 15 U.S.C. 2601 *et seq.*; PCB Remediation Waste, 40 C.F.R. 761.61(a), which regulates PCB remediation waste, including contaminated soil over 1 ppm mg/kg. These regulations would be applicable to any PCB contaminated soil still located in inaccessible areas, including under building foundations.

Figure 8-1: Photograph showing granite block wall at Watertown Yacht Club



9.0 RECOMMENDATIONS AND FOLLOW UP ACTIONS

Army will evaluate the possibility of vapor intrusion with any available volatile organic compound data in groundwater or quantitatively with plans to collect groundwater data. The evaluation will be proposed in a work plan to be submitted by December 2016. For informational purposes, this work plan will also include the soil, groundwater, and indoor air data currently being collected by the new owners of the property. The remedy for this newly discovered historical contamination will be fully reviewed in the next FYR due in 2021.

It is recommended that the concern regarding the shoreline retaining wall at the Watertown Yacht Club in OU1 Zone 5 be evaluated to determine the nature and to approximate cost and timeline of necessary repairs and that the regulatory requirements necessary to execute such repairs be identified.

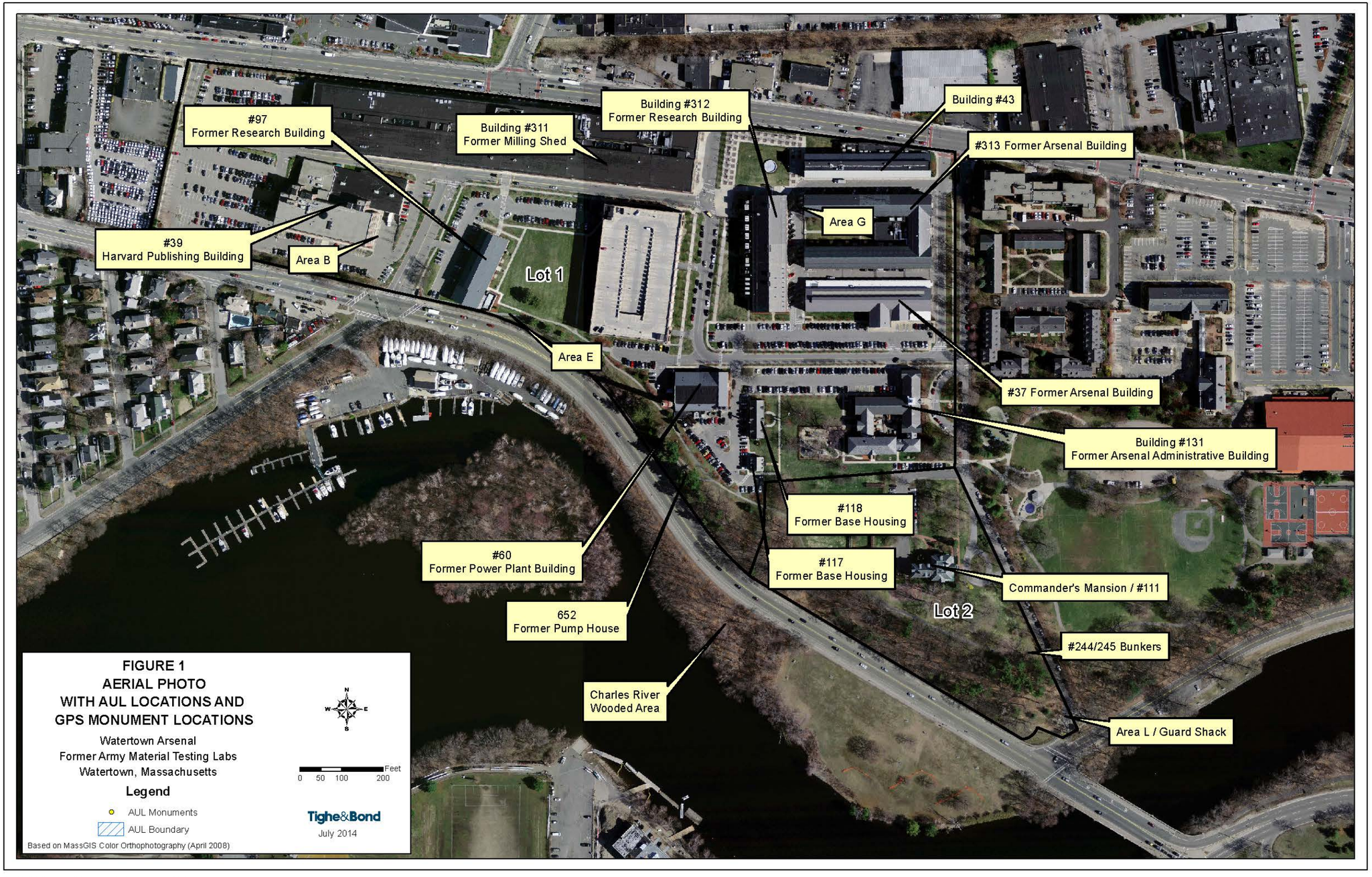
10.0 PROTECTIVENESS STATEMENT

A protectiveness determination of the remedy at OU 1 cannot be made at this time until further information is obtained. Further information will be obtained by taking the following actions: perform either a qualitative or quantitative vapor intrusion study. It is expected that these actions will take approximately 2 years to complete, at which time a protectiveness determination will be made.

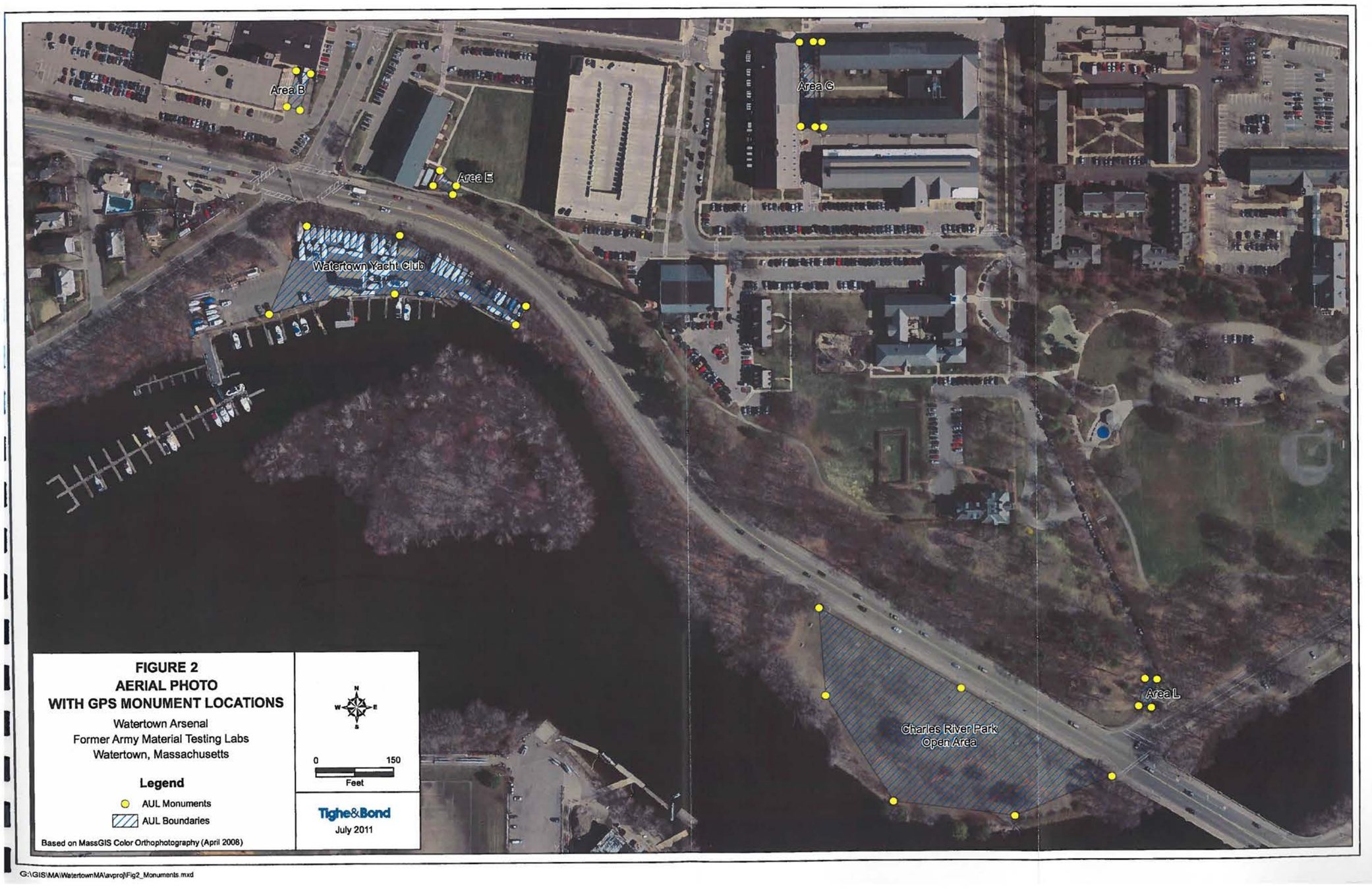
11.0 NEXT REVIEW

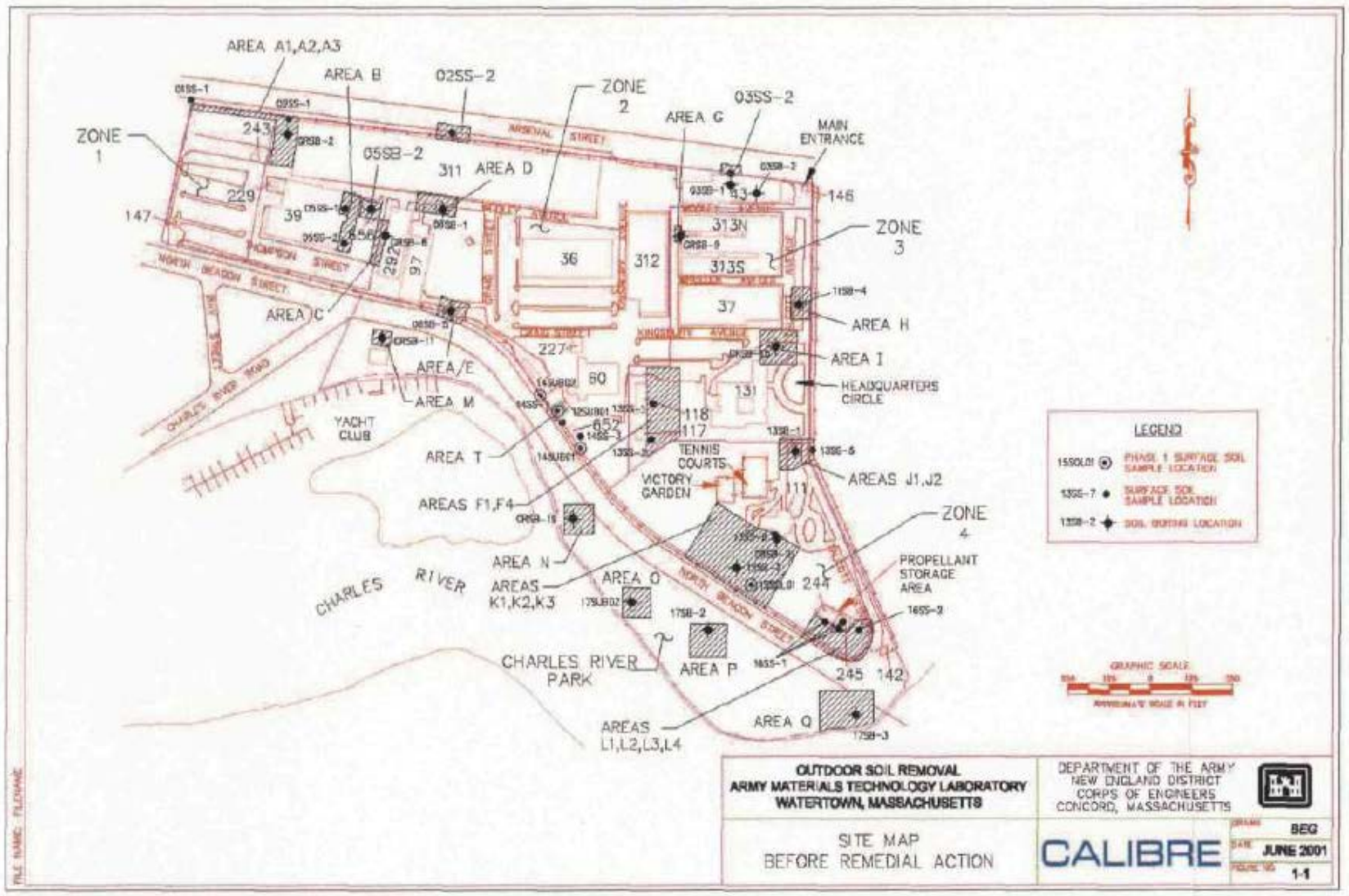
The next five-year review for AMTL, including the Charles River Park, should be performed within five-years of the completion of this review and should be completed by March 2021. The completion date is the date at which EPA issues its letter to the U.S. Army either concurring with its findings or documenting reasons for non-concurrence.

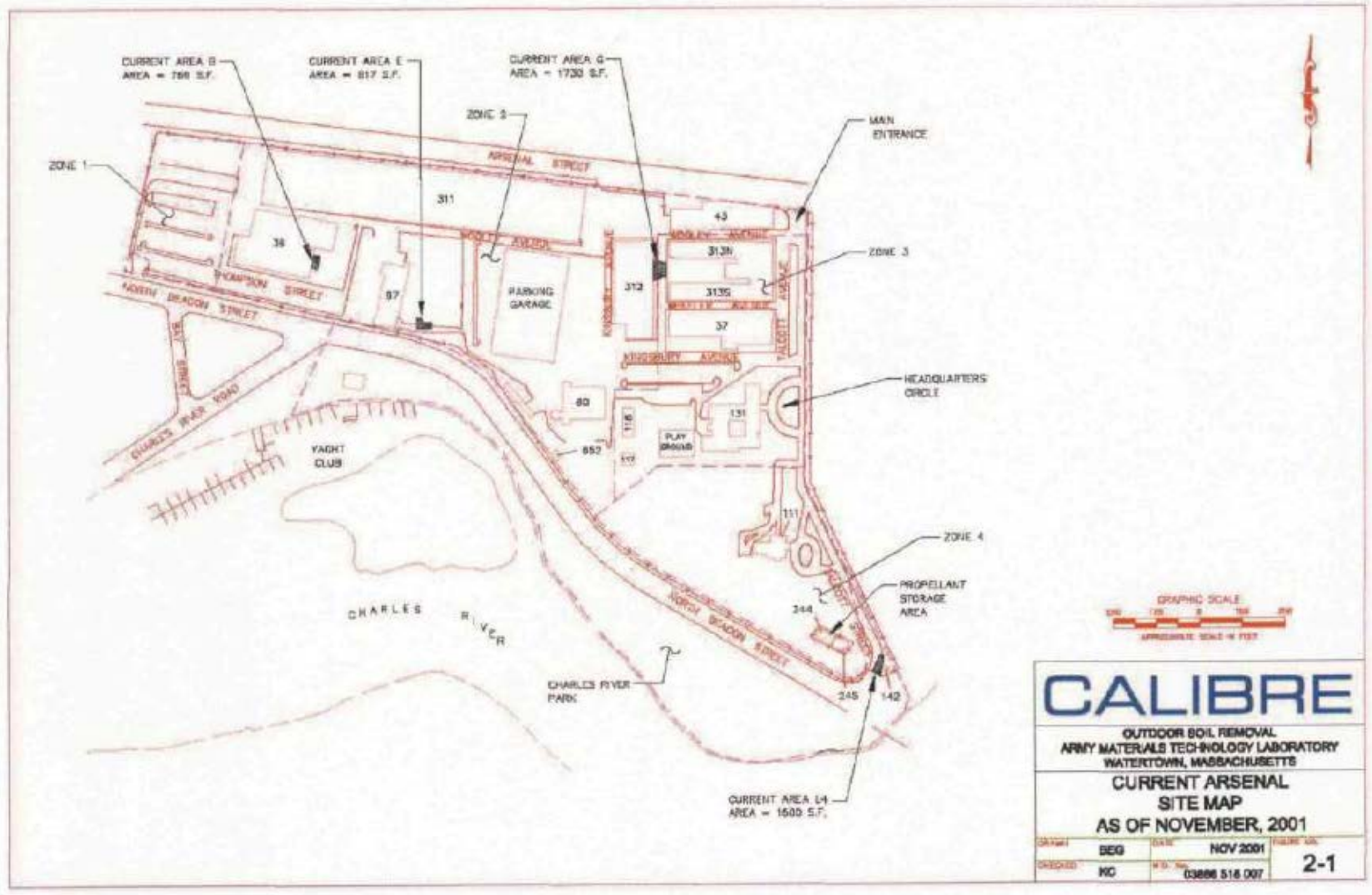
Appendix 1: AMTL and Charles River Park Site Maps

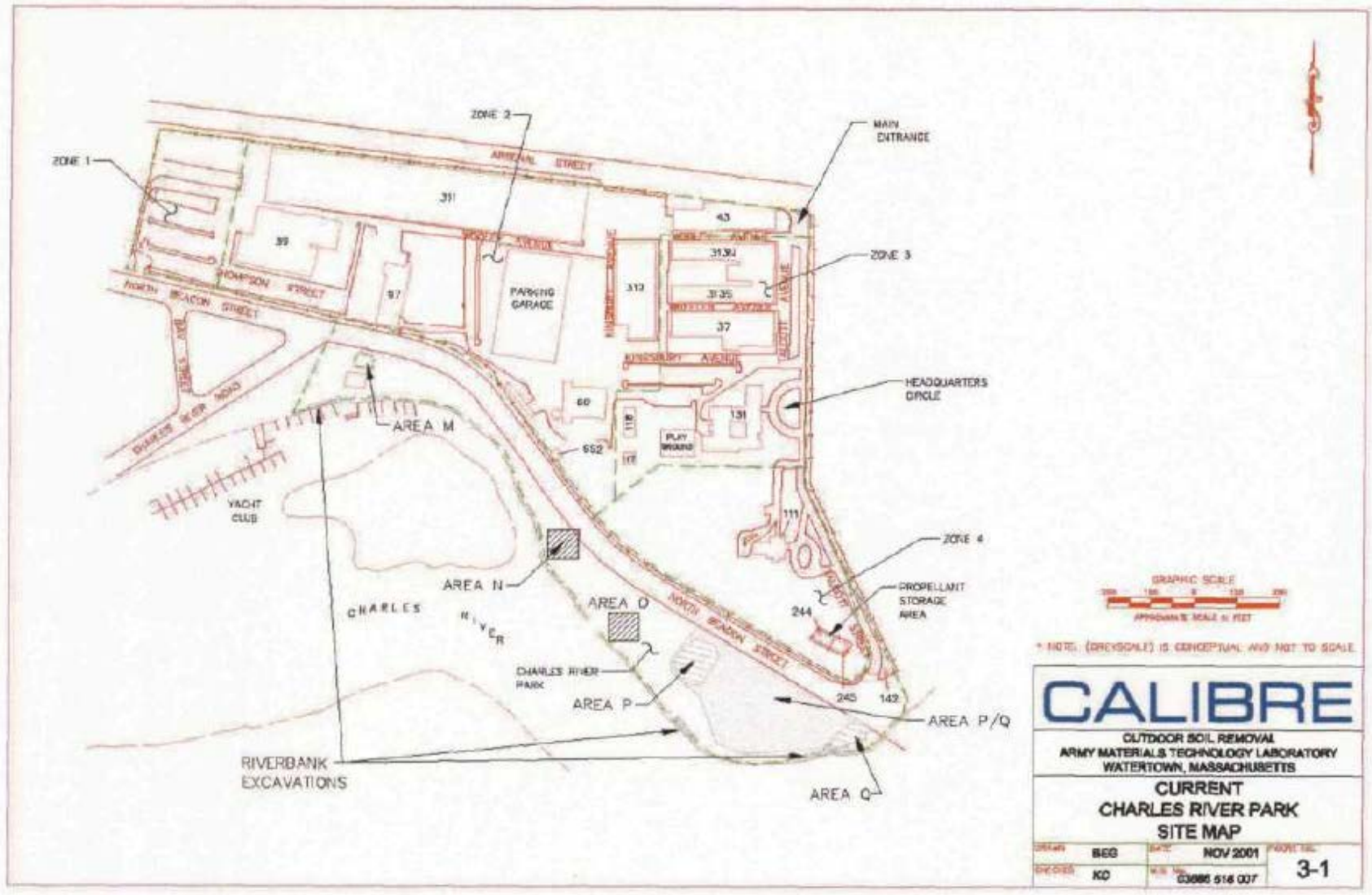


G:\GIS\MA\WatertownMA\avproj\Fig1_AUL_Locations2013.mxd


Area B
Area E
Area G
Watertown Yacht Club
Charles River Park
Open Area
Area L
FIGURE 2
AERIAL PHOTO
WITH GPS MONUMENT LOCATIONS
Watertown Arsenal
Former Army Material Testing Labs
Watertown, Massachusetts
Legend
AUL Monuments
AUL Boundaries
Based on MassGIS Color Orthophotography (April 2008)
N
W
E
S
0
150
Feet
Tighe&Bond
July 2011
G:\GIS\MA\WatertownMA\avproj\Fig2_Monuments.mxd


AREA A1,A2,A3
AREA B
0255-2
ZONE 2
0355-2
AREA G
MAIN ENTRANCE
ZONE 1
0558-2
311 AREA D
ZONE 3
AREA C
AREA E
AREA M
AREA H
AREA I
HEADQUARTERS CIRCLE
YACHT CLUB
AREA T
TENNIS COURTS
VICTORY GARDEN
AREAS J1,J2
AREAS F1,F4
ZONE 4
AREA N
AREA O
AREAS K1,K2,K3
PROPELLANT STORAGE AREA
CHARLES RIVER
CHARLES RIVER PARK
AREA P
AREAS L1,L2,L3,L4
AREA Q
LEGEND
OUTDOOR SOIL REMOVAL
ARMY MATERIALS TECHNOLOGY LABORATORY
WATERTOWN, MASSACHUSETTS
DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS
SITE MAP
BEFORE REMEDIAL ACTION
CALIBRE
BEG
JUNE 2001
1-1


CURRENT AREA B
AREA = 798 S.F.
CURRENT AREA E
AREA = 817 S.F.
CURRENT AREA G
AREA = 1730 S.F.
ZONE 2
ZONE 1
ZONE 3
ZONE 4
MAIN ENTRANCE
HEADQUARTERS CIRCLE
PROPELLANT STORAGE AREA
ARSENAL STREET
NORTH BEACON STREET
THOMPSON STREET
BAY STREET
CHARLES RIVER PARK ROAD
PARKING GARAGE
YACHT CLUB
CHARLES RIVER
CHARLES RIVER PARK
CURRENT AREA L4
AREA = 1500 S.F.
311
38
97
312
313N
313S
37
43
80
116
131
111
852
244
245
142
GRAPHIC SCALE
CALIBRE
OUTDOOR SOIL REMOVAL
ARMY MATERIALS TECHNOLOGY LABORATORY
WATERTOWN, MASSACHUSETTS
CURRENT ARSENAL
SITE MAP
AS OF NOVEMBER, 2001
DRAWN BY BEG
DATE NOV 2001
CHECKED KC
W.O. No. 03886 516 007
FIGURE NO. 2-1


ZONE 1
ZONE 2
ZONE 3
ZONE 4
MAIN ENTRANCE
HEADQUARTERS CIRCLE
PARKING GARAGE
AREA M
AREA N
AREA O
AREA P
AREA P/Q
AREA Q
RIVERBANK EXCAVATIONS
YACHT CLUB
CHARLES RIVER PARK
PROPELLANT STORAGE AREA
CHARLES RIVER
NORTH BEACON STREET
GRAPHIC SCALE
* NOTE: (GREYSCALE) IS CONCEPTUAL AND NOT TO SCALE
CALIBRE
OUTDOOR SOIL REMOVAL
ARMY MATERIALS TECHNOLOGY LABORATORY
WATERTOWN, MASSACHUSETTS
CURRENT
CHARLES RIVER PARK
SITE MAP
BEG
NOV 2001
KD
G3686 516 007
3-1

Appendix 2: Public Notice

Army Announces start of Five-Year Review of Army Materials Technology Laboratory, Charles River Park and Charles River in Watertown, MA.

The U.S. Army is starting the fourth Five-Year Review of the selected cleanup actions that were implemented at the former Army Materials Technology Laboratory (AMTL) and associated Charles River Park. The purpose of the Five-Year Review is to determine if the cleanup actions implemented at AMTL and Charles River Park are still protective of human health and the environment. AMTL was divided into five zones based upon intended future reuse. Selected cleanups for each zone were addressed by the level and type of contamination. All zones had either polynuclear aromatic hydrocarbons (PAH), metals (such as lead, nickel, or chromium) or pesticides (DDE or DDT). All cleanup goals were achieved. Additional institutional controls were implemented and remain today as part of the cleanup actions.

The public is invited to provide any information regarding these sites that it deems relevant to the review process. Public input will be accepted through September 30, 2015 and should be directed to the U.S. Army's point of contact listed below. The Five-Year is scheduled for completion in March 2016. Upon completion, the report will be placed in the Information Repository, and another public notice will be issued to present findings of the review.

Additional AMTL and the Charles River Park environmental cleanup information is available at the following Information Repository:

Watertown Free Public Library

Main Library

30 Common Street

Watertown, MA 02472

(617) 972-6436

For further information or to submit written comments, please contact:

Kenneth Heim

Army Technical Manager

U.S. Army Corps of Engineers - New England District

Engineering/Planning Division

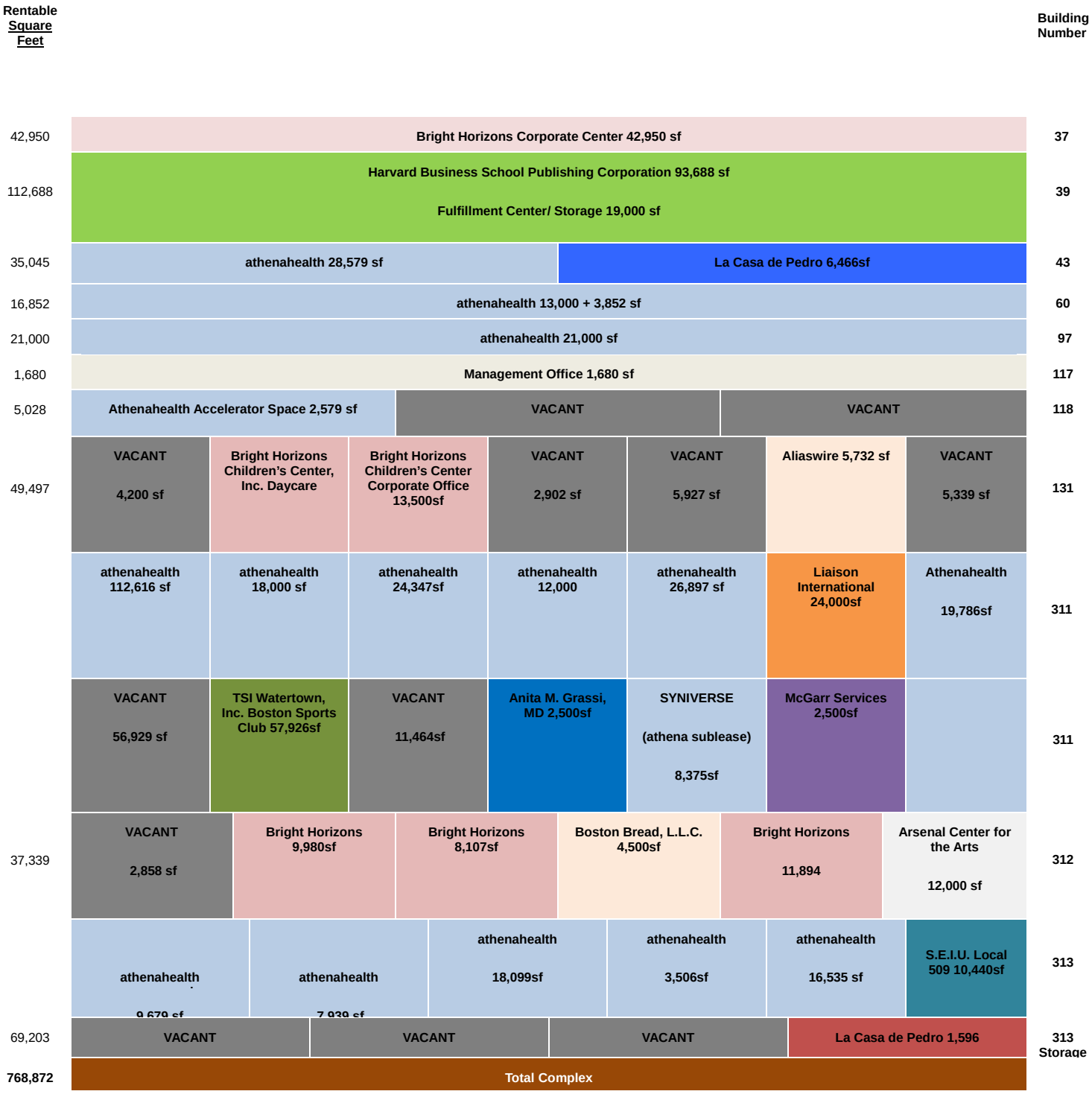
696 Virginia Road

Concord, MA 01742-2751

(978) 318-8650

Email: kenneth.j.heim@usace.army.mil

Appendix 3: Tenants of AMTL



Total athenahealth space: 347,039 sf (57% of total property)

Appendix 4: Chemicals of Concern and Use at AMTL Zones

Zone	Site/Area	Samples	Contaminants	Cleanup Goals (mg/kg)	Cleanup Goals Achieved	Land Reuse Expectation	Land Reuse Current	Notes
1 and 2	A (Subareas A1, A2, A3)	Boring GRSB-2	Indeno(1,2,3-cd)pyrene	3.0	Yes to ROD cleanup goals	Commercial	Area is Commercial	Lot 1 Under Grant, Commercial Reuse
		Surface Soil 01SS-1	Benzo(a)pyrene					
		Surface Soil 02SS-1		2.0				
2	B (Subareas B1, B2)	Surface Soil 05SS-1	Benzo(a)anthracene	8.5	Yes to construction worker risk based cleanup goals and ROD cleanup goals to a depth of 1' BGS	Commercial with Deed Restrictions	Area is zoned Commercial with deed restrictions; is currently a paved driveway	Lot 1 under Grant, was re-excavated by O'Neill
		Surface Soil 02SS-1	Benzo(a)pyrene	2.0				
			Benzo(b)fluoranthene	7.9				
			Benzo(k)fluoranthene	6.2				
			Indeno(1,2,3-cd)pyrene	3.0				
2	C	Boring GRSB-6	Benzo(a)pyrene	2.0	Yes to ROD Cleanup Goals	Commercial	Commercial	Lot 1 under Grant
2	D	Boring 06SB-1	Indeno(1,2,3-cd)pyrene	3.0	Yes to ROD Cleanup Goals	Commercial	Commercial	Lot 1 under Grant
			Benzo(a)pyrene	2.0				
2	E	Boring 06SB-5	Indeno(1,2,3-cd)pyrene	3.0	Yes to Construction worker risk based cleanup goals and ROD cleanup goals to a depth of 1' BGS	Commercial with Deed Restrictions	Commercial with Deed Restrictions	Lot 1 under Grant, Grant violations have occurred at Area E
			Benzo(a)pyrene	2.0				
2	Metals Hot Spot Areas	Surface Soil 14SS-3	Chromium	Ecological Risk Reduction greater than 25%	Yes to ROD Cleanup Goals	Commercial	Commercial	Lot 1 under grant
			Nickel					
		Subsurface Soil 14SUB01	Nickel					
			Zinc					
		Subsurface Soil 14SUB02	Chromium					
			Nickel					
2	Lead Hot Spots Areas	Surface Soil 02SS-2	Lead	1,000	Yes to ROD Cleanup Goals	Commercial	Commercial	Lot 1 under grant
		Surface Soil 03SS-2	Lead	1,000				
		Boring 05SB-2	Lead	1,000				
3	F (Subareas F1, F2)	Surface Soil 13SS-1	Indeno(1,2,3-cd)pyrene	3.0	Yes to ROD Cleanup Goals	Unrestricted	Commercial	Lot 1 under grant
			Benzo(a)pyrene	2.0				
		Surface Soil 13SS-2	Chlorodane	1.4				
			DDE	0.1				
			DDT	0.2				
3	G	Boring GRSB-9	Indeno(1,2,3-cd)pyrene	3.0	Yes to Construction worker risk based cleanup goals and ROD cleanup goals to a depth of 1' BGS	Commercial with Deed Restrictions	Area is zoned commercial with deed restrictions; is currently under asphalt paving	Lot 1 under Grant, out of compliance with Grant due to permanent reduction in grade
			Benzo(a)pyrene	2.0				
3	H	Boring 11SB-4	Benzo(a)pyrene	2.0	Yes to ROD Cleanup Goals	Unrestricted	Commercial	Lot 1 under Grant
			Dibenz(a,h)anthracene	0.27				

Zone	Site/Area	Samples	Contaminants	Cleanup Goals (mg/kg)	Cleanup Goals Achieved	Land Reuse Expectation	Land Reuse Current	Notes
3	I	Boring GRSB-15	Benzo(a)anthracene	8.5	Yes to ROD Cleanup Goals	Unrestricted	Commercial	Lot 1 under grant
			Benzo(a)pyrene	2.0				
			Benzo(b)fluoranthene	7.9				
			Benzo(k)fluoranthene	8.2				
			Chrysene	11.1				
			Indeno(1,2,3-cd)pyrene	3.0				
			Chlorodane	1.5				
			DDD	0.3				
			DDE	0.4				
			DDT	0.6				
			Dieldrin	0.1				
4	J (Subareas J1, J2)	Boring 13SB-1	Chlorodane	1.4	Yes to ROD Cleanup Goals	Open Space	Open space	Lot 2 under Grant
			DDE	0.14				
		Surface Soil 13SS-5	DDT	0.17				
			Arochlor 1280	1.0				
4	K (Subareas K1, K2, K3)		Chlorodane	1.4	Yes to ROD Cleanup Goals	Open Space	Open Space	Lot 2 under Grant
			DDE	0.14				
		Boring GRSB-21	DDT	0.17				
		Surface Soil 13SS-8	Arsenic	16.9				
		Boring 15SB-2	Lead	291				
		Surface Soil 15SOL01	Nickel	33.8				
4	L (Subareas L1, L2, L3, L4)		Chlorodane	1.4	Yes-L1, L2, L3 were cleaned up to ROD cleanup goals. Area L4 was cleaned up to construction worker risk based cleanup goals and ROD cleanup goals to 1' BGS	Open space with deed restrictions	Open space with deed restrictions. L4 is partially under paving and landscape area	Lot 2 under Grant
		Surface Soil 16SS-1	Chromium	26.8				
		Surface Soil 16SS-2	Nickel	33.8				
			Zinc	157				
			DDE	0.14				
			DDT	0.17				
			Arochlor 1280	1.0				
2	T (Subareas T1, T2)		Chlorodane	Ecological Risk Reduction greater than 25%	Yes to ROD Cleanup Goals	Open Space	Open Space	Lot 1 under Grant
		Surface Soil 14SS-1	DDT					
		12SUB01	Nickel					
			Zinc					
5	M		Benzo(a)anthracene	8.5	Yes to ROD Cleanup Goals. Construction worker values applied at depths >2' BGS	Open Space	Open Space/Yacht Club	Remediation field work is complete. Closeout report and implementation of Institutional Controls pending
			Benzo(a)pyrene	2.0				
			Benzo(b)fluoranthene	7.9				
			Benzo(k)fluoranthene	6.2				
			Chrysene	11.1				
			Dieldrin	0.4				
			Lead	1,000				

Zone	Site/Area	Samples	Contaminants	Cleanup Goals (mg/kg)	Cleanup Goals Achieved	Land Reuse Expectation	Land Reuse Current	Notes
5	N		Chlorodane	1.4	Yes to ROD Cleanup Goals	Open Space	Open Space	Remediation field work is complete. Closeout report and implementation of Institutional Controls
			DDT	0.17				
5	O		Benzo(a)anthracene	8.5	Yes to ROD Cleanup Goals	Open Space	Open Space	Remediation field work is complete. Closeout report and implementation of Institutional Controls pending
			Benzo(a)pyrene	2.0				
			Benzo(b)fluoranthene	7.9				
			Benzo(k)fluoranthene	6.2				
			Chrysene	11.1				
			Dibenz(a,h)anthracene	0.3				
			Indeno(1,2,3-cd)pyrene	3.0				
5	P		Benzo(a)pyrene	2.0	Yes to ROD Cleanup Goals, Construction worker values applied at depths >2' BGS	Open Space	Open Space	Remediation field work is complete. Closeout report and implementation of institutional controls
			Indeno(1,2,3-cd)pyrene	3.0				
5	Q		Benzo(a)	2.0	Yes to ROD Cleanup Goals, Construction Worker values applied at depths >2' BGS	Open Space	Open Space	Remediation field work is complete. Closeout report and implementation of institutional controls
			Indeno(1,2,3-cd)pyrene	3.0				
			DDE	0.14				
			DDT	0.17				

Appendix 5: List of Documents Reviewed

Army Corps of Engineers, New England District, Revised Final Five-Year Review Report Army Materials Technology Laboratory, Watertown, MA, March 2002.

Calibre, 2006. Second Five-Year Review Report, U.S. Army Materials Technology Laboratory, Watertown, Massachusetts. Prepared for: US Army Installation Support Management Activity Washington, D.C. Prepared by: CALIBRE Alexandria, Virginia March 1, 2006.

CEA. 2012 Fourteenth Annual AUL Inspection Report. Former Army Materials Technology Laboratory (AMTL) and Charles River Park Parcel (CRPP) Property. Prepared for Massachusetts Department of Conservation and Recreation by Corporate Environmental Advisors, Inc. October 2012.

CEA. 2013 Fifteenth Annual AUL Inspection Report. Former Army Materials Technology Laboratory (AMTL) and Charles River Park Parcel (CRPP) Property. Prepared for Massachusetts Department of Conservation and Recreation by Corporate Environmental Advisors, Inc. August 2013.

CEA. 2014 Sixteenth Annual AUL Inspection Report. Former Army Materials Technology Laboratory (AMTL) and Charles River Park Parcel (CRPP) Property. Prepared for Massachusetts Department of Conservation and Recreation by Corporate Environmental Advisors, Inc. July 2014.

CEA. 2015 Seventeenth Annual AUL Inspection Report. Former Army Materials Technology Laboratory (AMTL) and Charles River Park Parcel (CRPP) Property. Prepared for Massachusetts Department of Conservation and Recreation by Corporate Environmental Advisors, Inc. August 2015.

CPI Environmental Services, "Application for Sixth Amendment of the Grant of Environmental Restriction and Easement at the Former Army Materials Technology Laboratory, Watertown, Massachusetts", Prepared for Watertown Arsenal Development Corporation and the President and Fellow of Harvard University, November 2004.

CPI Environmental Services, "Application for Seventh Amendment of the Grant of Environmental Restriction and Easement at the Former Army Materials Technology Laboratory, Watertown, Massachusetts", Prepared for Watertown Arsenal Development Corporation and the President and Fellow of Harvard University, April 5, 2005.

CPI Environmental Services, "Second Revised Response Action Outcome Statement, Former Army Materials Technology Laboratory, 395 Arsenal Street, Watertown, Massachusetts", Prepared for the President and Fellows of Harvard University and Watertown Arsenal Development Corporation, March 2005. The Second Amendment to the Activity and Use Limitation (AUL) for 3-17606 is included within this document.

Department of the Army, Headquarters, U.S. Army Materiel Command letter from Stanley R. Citron to John Beling, USEPA and Andy Cohen, Commonwealth of Massachusetts Executive Office of Environmental Affairs Department of Environmental Protection dated 5 July 2001.

Department of the Army, Institutional Control Memorandum of Agreement, Memorandum of Agreement Among the US Army, the US Environmental Protection Agency and the Massachusetts Department of Environmental Protection, Subject: The Charles River Park NPL Site Institutional Controls, 1998.

EG& G Idaho Inc., Preliminary Assessment Site Inspection, March 1988.

EG& G Idaho Inc., USAMTL Remedial Investigation (Volume I and II), September 1989.

ENSR, Screening Level Ecological Risk Assessment, Charles River Operable Unit, Army Materials Technology Laboratory, Watertown, Massachusetts, April 2002.

ENSR, Final Baseline Ecological Risk Assessment, Charles River Operable Unit, Army Materials Technology Laboratory, Watertown, Massachusetts, February 2005.

ENSR, Final Record Of Decision, Operable Unit 2 Charles River Operable Unit, Army Materials Technology Laboratory, Watertown, Massachusetts, September 2005.

ENSR, Real Estate Transfer Package, Army Materials Technology Laboratory, Watertown, Massachusetts, September 1998. (AMTL)

ENSR, Real Estate Transfer Package, Army Materials Technology Laboratory, Watertown, Massachusetts, September 2005 (GRP)

Foster Wheeler Environmental Corporation, Draft Final Feasibility Study Addendum Report for the Charles River Park of the Army Research Laboratory - Watertown, Water) own, Massachusetts, February 2000.

Foster Wheeler Environmental Corporation, Final Remedial Action Report for the Charles River Park Parcel Soil and Groundwater Operable Unit of the Army Materials Technology Laboratory, Watertown, Massachusetts, March 2002.

Kirkpatrick & Lockhart LLP Army Materials Technology Laboratory Institutional Control Checklist First Annual Report, August 2002 (Fourth)

Kirkpatrick & Lockhart LLP Army Materials Technology Laboratory Institutional Control Checklist First Annual Report, August 2003 (Fifth).

Kirkpatrick & Lockhart LLP Army Materials Technology Laboratory Institutional Control Checklist Second Annual Report, August 2004 (Sixth).

McPhail and Associates, First Annual Institutional Control Inspection Report of Charles River Park Parcel, May 31, 2005

McPhail and Associates, Seventh Annual Institutional Control Inspection Report of Army Materials Technology Laboratory and Charles River Park Parcel, October, 2006 (Seventh)

Plexus Scientific Corporation, Final Supplemental Phase 2 Remedial Investigation Charles River, Prepared for the US Army Environmental Center, March 1998.

Roy F. Weston Inc, Phase I Remedial Investigation Report, April 1991.

Roy F. Weston Inc, Final Phase II Remedial Investigation Report (Volume I through V), May 1994.

Roy F. Weston Inc, (Life Systems Inc), Baseline Risk Assessment - Environmental Evaluation, December 1993.

Roy F. Weston Inc, Final Phase II Remedial Investigation Report (Volume I through III), December 1993.

Roy F. Weston Inc, Final Terrestrial Risk Assessment, August 1995.

Roy F. Weston Inc, Final Feasibility Study Report (Outdoor) (Volume I and II), January 1996.

Roy F. Weston Inc, Draft Addendum to Human Health Evaluation, February 1996.

Roy F. Weston, Inc., Final Record of Decision Soils and Groundwater Operable Unit Army Materials Technology Laboratory, Prepared for the U.S. Army Environmental Center, September 1996.

Roy F. Weston, Inc., Final Record of Decision Area I Army Materials Technology Laboratory, Prepared for the U.S. Army Environmental Center, August 1996.

Roy F. Weston, Inc., Task Work Plan Addendum Outdoor Soil Remediation Army Research Laboratory - Watertown, Watertown, Massachusetts, Prepared for the U.S. Army Environmental Center, October 1996.

Roy F. Weston, Inc., Final Remediation Action Completion Report for Outdoor Soils Remediation – Building 131 Army Research Laboratory - Watertown, Watertown, Massachusetts, December 1996.

Roy F. Weston, Inc., Supplemental Risk Assessment for Polycyclic Aromatic Hydrocarbons in Soil Samples, Army Research Laboratory, Watertown, Massachusetts, May 28, 1997.

Roy F. Weston, Inc., Explanation of Significant Difference (ESD), For Remedial Action at Operable Unit 1, Soil and Groundwater, Army Materials Technology Laboratory, Watertown, Massachusetts, January 1998.

Roy F. Weston, Inc., Final Remedial Action Report: Zones 1-4 Outdoor Soil Removal Army Materials Technology Laboratory, Watertown, Massachusetts, Prepared for the US Army Corps of Engineers, New England District, May 1998.

Roy F. Weston, Inc., Final Remedial Action Report for Charles River Park Army Materials Technology Laboratory, Watertown, Massachusetts, Prepared for the US Army Corps of Engineers, New England District, April 1999.

Roy F. Weston, Inc., Explanation of Significant Difference (ESD), Charles River Park Area, Outdoor Soil Remediation Unit, Army Materials Technology Laboratory, Watertown, Massachusetts, 14 May 2001.

Tighe & Bond. Army Materials Technology Laboratory & Charles River Park Parcel. Watertown, MA. 2009 Eleventh Annual AUL Inspection Report. Prepared for Calibre, Indianapolis, Indiana. August 2009.

Tighe & Bond. Army Materials Technology Laboratory & Charles River Park Parcel. Watertown, MA. 2010 Twelfth Annual AUL Inspection Report. Prepared for Calibre, Indianapolis, Indiana. September 2010.

Tighe & Bond. Army Materials Technology Laboratory, Watertown Arsenal. Watertown, MA. 2012 Fourteenth Annual AUL Inspection Report. Prepared for Calibre, Indianapolis, Indiana. October 2012.

Tighe & Bond. Army Materials Technology Laboratory, Watertown Arsenal. Watertown, MA. 2013 Fifteenth Annual AUL Inspection Report. Prepared for Calibre, Indianapolis, Indiana. September 2013.

Tighe & Bond. Army Materials Technology Laboratory, Watertown Arsenal. Watertown, MA. 2014 Sixteenth Annual AUL Inspection Report. Prepared for Calibre, Indianapolis, Indiana. August 2014.

Tighe & Bond, Army Materials Technology Laboratory, Watertown Arsenal. Watertown, MA. 2015 Seventeenth Annual AUL Inspection Report. Prepared for Calibre, Indianapolis, Indiana. September 2015.

USACE 2006a. Charles River Enhanced Shoreline Stabilization Project Specifications and Plans, U.S. Army Materials Technology Laboratory, Watertown, Massachusetts. Contract No. W912WJ-06-C-0011. Prepared and Issued by U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742. September 2006.

USACE 2006b. Construction Completion Report Charles River Enhanced Shoreline Stabilization Project, Watertown, MA. USACE Contract No. W912WJ-06-C-0011 Prepared by Watermark, 175 Cabot Street, Lowell, MA 01854, with Technical Assistance from the U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742. December 2006.

USACE 2008. Year 2 Operation & Maintenance Plan Report, Charles River Enhanced Shoreline Stabilization Project, Watertown, MA. United States Army Materials Technology Laboratory, Watertown, MA. Prepared by U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742. August 2008.

USACE 2009. Year 3 Final Operation & Maintenance Plan (OM&P) Report, Charles River Enhanced Shoreline Stabilization Project, Watertown, MA. United States Army Materials Technology Laboratory, Watertown, MA. Prepared by U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742. September 2009.

USACE, 2011. Third Five-Year Review Report, U.S. Army Materials Technology Laboratory, Watertown, Massachusetts. Prepared for: US Army Installation Support Management Activity Washington, D.C. Prepared by: USACE New England District, January 2011.

Watermark and USACE 2007. Year 1 Operation & Maintenance Plan Report, Charles River Enhanced Shoreline Stabilization Project, Watertown, MA. United States Army Materials Technology Laboratory, Watertown, MA. Prepared by Watermark, 175 Cabot Street, Lowell, MA 01854, with Technical Assistance from the U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742. November 2007.

Appendix 6: Interview Records

INTERVIEW RECORD			
Site Name: U.S. Army Materials Technology Laboratory, Watertown, Massachusetts		EPA ID No.: MAD213820939	
Subject: AMTL Fourth Five-Year Review for OU1 and OU3		Time: 0900	Date: 6/10/15
Type: _ Telephone X Site Visit _ Other Location of Visit: Charles River Park Parcel		_ Incoming _ Outgoing	
Contact Made By:			
Name: Kenneth Heim	Title: Hydrogeologist	Organization: USACE-New England District	
Individual Contacted:			
Name: Mr. Rob Lowell	Title: Environmental Section Chief	Organization: Mass. Dept. of Conservation and Recreation (DCR)	
Telephone No.: 508-509-1757 Fax No.: 617-626-1455 E-Mail Address: robert.lowell@state.us.ma		Street Address: 251 Causeway Street, Ste. 600 City, State, Zip: Boston, MA 02114	
Summary of Conversation:			

Mr. Lowell was interviewed because DCR is the owner of the Charles River Park Parcel and, as a representative of the DCR, Mr. Lowell has a detailed understanding of the cleanup, remediation, and re-vegetation history, and is familiar with activities occurring at the parcel. A summary of the interview with Mr. Lowell follows.

Kenneth Heim (USACE) met Mr. Lowell (DCR) at the Charles River Park Parcel the on the morning of 6/10/15 for a site walk and to discuss any concerns with the parcel related to the function of the site remedy or protectiveness of the remedy.

The perimeter of the site was inspected to evaluate known points of access to the Charles River and the potential for erosion. There are two minor and two more significant foot paths allowing access from the park to the Charles River, presumably for fishing. The two minor paths are clear; however, the vegetation (i.e.; poison ivy) is growing in on the paths and will ultimately limit access. The two more significant paths have logs across them but allow easy access to the river.

The rip-rap along non-vegetated shoreline sections of both the minor and more significant paths is in good condition and there are only very small fragments of geo-textile fabric exposed at the shoreline of the widest access point. Mr. Lowell was pleased with the condition of the park and had no concerns with the potential for contaminant exposure due to any unexpected degradation of the remedy.

INTERVIEW RECORD			
Site Name: U.S. Army Materials Technology Laboratory, Watertown, Massachusetts		EPA ID No.: MAD213820939	
Subject: AMTL Fourth Five-Year Review for OU1 and OU3		Time: 1000	Date: 6/10/15
Type: _ Telephone X Site Visit _ Other Location of Visit: Beal Companies Office at the AMTL site		_ Incoming X Outgoing	
Contact Made By:			
Name: Kenneth Heim	Title: Hydrogeologist	Organization: USACE-New England District	
Individual Contacted:			
Name: Mr. Robert Weikel	Title: Manager	Organization: athenahealth, Inc.	
Telephone No.: 617-799-4481 Fax No.: E-Mail Address: rweikel@athenahealth.com		Street Address: 3 Kingsbury Avenue City, State, Zip: Watertown, MA 02472	
Summary of Conversation:			

Mr. Weikel was interviewed because he is the contracted site manager for the owner of AMTL, Athena Arsenal LLC., which is where OU1 (Zones 1-4) and OU3 is located. Since he is present at AMTL during working hours Monday through Friday, he would have the opportunity to observe trespasser or other unexpected activity at OU1 and OU3. A summary of the interview with Mr. Weikel follows.

Kenneth Heim (USACE) met Mr. Weikel (athena) at the Management Office at the AMTL site on the morning of 6/10/15 to discuss any concerns with the parcel related to the function of the site remedy or protectiveness of the remedy.

Mr. Weikel indicated that since the previous five-year review inspection (2010) athenahealth has purchased the entire complex and are currently pursuing making additions, changes, and maintenance to the site. Many of these changes are outlined in a Master Plan developed by athenahealth and currently under review by the Town of Watertown. During the pursuit of removing the recreational landuse restriction at Lot 1 athenahealth decided to pursue having the recreational landuse restriction removed from the entire site as a GERE, to be approved by the MADEP. This GERE is currently in process and is fully supported by the MADEP and approval is expected in the near future.

The only upcoming construction under consideration by athenahealth is to replace utilities along Kingsbury Avenue and tie it into the Town's storm water system. Additionally, during the construction there may be some lateral construction to install equipment and fixtures to facilitate future upgrades of the water supply to adjacent buildings. This project is currently in the design phase and athenahealth is fully aware of usage and construction restrictions at the site and will work with the MADEP throughout the construction process.

Mr. Weikel indicated that athenahealth is fully aware of all restrictions and requirements at the site and there are no concerns related to the ability of the remedy to continue to remain protective.

INTERVIEW RECORD			
Site Name: U.S. Army Materials Technology Laboratory, Watertown, Massachusetts		EPA ID No.: MAD213820939	
Subject: AMTL Fourth Five-Year Review for OU1 and OU3		Time: 1100	Date: 6/10/15
Type: _ Telephone X Site Visit _ Other Location of Visit: Watertown Yacht Club		_ Incoming X Outgoing	
Contact Made By:			
Name: Kenneth Heim	Title: Hydrogeologist	Organization: USACE-New England District	
Individual Contacted:			
Name: Mr. Norman Kenney	Title: Commodore	Organization: Watertown Yacht Club	
Telephone No.: 617-924-9848 Fax No.: E-Mail Address:		Street Address: 425 Charles River Road City, State, Zip: Watertown, MA 02471	
Summary of Conversation:			

Mr. Kenney was interviewed because he is the Commodore of the Watertown Yacht Club. As such, he is knowledgeable of the day to day operations at the Club and has a thorough understanding of the Club property. A summary of the interview with Mr. Kenney follows.

Kenneth Heim (USACE) met Mr. Kenney at the Watertown Yacht Club the on the morning of 6/10/15 for a site walk and to discuss any concerns with the parcel related to the function of the site remedy or protectiveness of the remedy.

During the interview, Mr. Kenney indicated that there has been no excavation at the site and that no soil was disturbed since the previous five-year review inspection in 2010. Additionally, there is no residential or daycare use at the property; however, the WYC does occasionally host events at the property as a service to the community.

There was a concern expressed by Mr. Kenney that a granite block retaining wall along the shoreline and immediately adjacent to a boat storage area at the east side of the property is in need of repair to keep it from collapsing into the river. The section of retaining wall in need of repair was inspected and it was determined the degradation of the wall was likely initiated by a tree that had grown through the wall to a diameter of approximately 1 foot before being cut down several years earlier. The damaged section of wall extends from approximately lat/long 42.361618; -71.166575 to lat/long 42.361653; -71.166651. Also, it appears that the damaged section of the wall is below the level of the geo-textile fabric layer that is located at a depth of 2.5 feet below grade.

Mr. Kenney had no other concerns regarding the site of the WYC's ability to maintain the current usage restrictions.

Appendix 7: ARARs Table

Media	Requirement	Requirement Synopsis	Action to be Taken to Attain Requirement	Status
CHEMICAL SPECIFIC				
Soil	FEDERAL-EPA Risk Reference Doses (RfDs)	RfDs are dose levels developed based on the noncarcinogenic effects and are used to develop Hazard Indices. A Hazard Index of less than or equal to 1 is considered acceptable.	EPA RfDs have been used to characterize risks caused by exposure to contaminants in soil. Excavation and off-site disposal or reuse of contaminated soils will minimize risks.	TBC
Soil	FEDERAL-EPA Carcinogen Assessment Group Potency Factors	Potency Factors are developed by EPA from Health Effects Assessments or evaluation by the Carcinogenic Assessment Group and are used to develop excess cancer risks. A range of $< 10^{4}$ to 10^{6} is considered acceptable.	EPA Carcinogenic Potency Factors have been used to compute the individual incremental cancer risk resulting from exposure to site contamination in soil. Excavation and off-site disposal or reuse of contaminated soils will minimize risks.	TBC
Soil	FEDERAL-Guidance on Remedial Actions for Superfund Sites with PCB Contamination, OSWER Directive No. 9355.4-01 (8/90)	Describes the recommended approach for evaluating and remediating sites with PCB contamination.	This guidance has been used in establish a cleanup goal for PCBs at the site. Excavation and off-site disposal or reuse of contaminated soils will attain the cleanup goals.	TBC
LOCATION SPECIFIC				
Soil	FEDERAL-16 USC 470 et seq.. National Historic Preservation Act and 7 CFR Part 650	Requires that action be taken to preserve historic properties. Planning action is required to minimize the harm to national historic landmarks.	MTL is a historic district and the Command Quarters is on the National Register of Historic Places. Army will consult with State Historiton's Office to ensure that actions that may cause structural damage to any building will be minimized.	Applicable
Soil	FEDERAL-16 USC469A-1. Archeologicai and Historic Preservation Act	Provides for the preservation of historical and archaeological artifacts that might be lost from alterations of the terrain. The Act requires data recovery and preservation activities be conducted if any project may cause irreparable loss or destruction to scientific, prehistoric, or archaeological data.	Actions involving intrusive work (e.g.. excavation and construction) will require involvement of archaeologists and regulatory agencies if artifacts are found. Two known historic sites and one suspected prehistoric site are present at the MTL site	Applicable

Media	Requirement	Requirement Synopsis	Action to be Taken to Attain Requirement	Status
Soil	FEDERAL-Executive Order 11988 (Protection of Floodplains) 40 CFR 6, Appendix A	Requires that any action within a flood plain be conducted so as to avoid adverse effects, minimize harm, and restore natural and beneficial values.	Part of the River Park is a designated floodplain. Any excavation or other activities will be conducted to minimize harm, and all areas disturbed will be restored.	Applicable
Soil	STATE-Massachusetts Historical Commission Regulations (950 CMR 70-71)	Establishes regulations to minimize or mitigate adverse effects to properties listed in the State Register of Historic Places. MTL is listed in the State Register. The regulations contain standards that protect the public's interest in preserving historic and archaeologi properties as early as possible in the planning process of any project.	Requirements include notification to the Massachusetts Historical Commission (MHC). MHC will make a determination as to whether the actions planned will have an adverse impact. If so, the MHC and party responsible for the action will consult to determine ways to minimize adverse impacts.	Applicable
ACTION SPECIFIC				
Soil, Hazardous Waste	FEDERAL-Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846	This guidance document sets forth the methods for conducting TCLP testing.	The guidance will be used when testing soils at the site to determine whether they constitute hazardous waste. Any soils that are found to be hazardous will be disposed of in a licensed facility.	TBC
Soil, Hazardous Waste	STATE-310 CMR 30.300, Hazardous Waste Generator Requirements	Establishes requirements for generators of hazardous wastes.	Any generation of hazardous waste will comply with these requirements	Applicable
Soil, Hazardous Waste	STATE-310 CMR 30.640, Waste Piles	Establishes requirements for waste piles containing hazardous waste.	Any piles of hazardous excavated soil will comply with these requirements	Relevant and Appropriate, Applicable for any soil classified as hazardous waste.
Soil, Hazardous Waste	STATE-310 CMR 30.680, Use and Management of Containers	Establishes requirements for the management of containers, such as drums, that would hold field-generated hazardous waste.	Any hazardous waste containers would comply with these requirements.	Relevant and Appropriate, Applicable for any soil classified as hazardous waste.

Media	Requirement	Requirement Synopsis	Action to be Taken to Attain Requirement	Status
Soil	STATE-310 CMR 19, Solid Waste Management	Establishes requirements for the treatment, storage, and disposal of nonhazardous solid waste. Has additional rules for the management of Special Waste, which is defined as solid waste that is nonhazardous for which special management controls are necessary to protect adverse impacts.	Nonhazardous excavated soil or treatment residues will be handled in accordance with substantive requirements. If soils or residues meet the definition of Special Waste, management will be in compliance with these requirements.	Relevant and Appropriate
Air	FEDERAL-CAA 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAPs)	Sets air emission standards for 189 designated hazardous air pollutants (HAPs) from designated source activities.	Sampling at MTL has indicated the presence of several HAPs in soils. Since site remediation is a designated source category (but in this case is unlikely to be a major source), NESHAPs are relevant and appropriate and all remedial activities will be designed to meet Maximum Achievable Control Technology (MACT).	Relevant and Appropriate
Air	STATE-31D CMR 7, Air Pollution Control Regulations	Establishes requirements for attaining ambient air quality standards by setting emission limitations, design specifications, and permitting. Watertown is in an attainment area for lead, nitrous oxide, sulfur dioxide, and particulate matter, and is in a nonattainment area for ozone and carbon monoxide. Pertinent sections of the regulation include Visible Emissions (310 CMR 7.06); Dust, Odor, Construction, and Demolition (310 CMR 7.09); Noise (310 CMR 7.10); and Volatile Organic Compounds (310 CMR 7.18).	Remedial activities will be conducted so as to incorporate Reasonably Available Control Technology (RACT) for emissions of lead, nitrous oxide, sulfur dioxide, and particulate matter and to achieve Lowest Achievable Emission Rate (LAER) for VOCs and carbon monoxide.	Applicable (310 CMR 7.06, 7.09, and 7.10) Relevant and Appropriate (310 CMR 7.18)
Air	STATE-DAQC Policy 90-001, Allowable Sound Emissions	This policy considers sound emissions to be in violation of 310 CMR 7.10 if the source increases the broadband sound level by more than 10 dB(A) above ambient, or produces a "pure tone" condition as measured at both the property line and at the nearest inhabited residence.	Remedial activities will be conducted so as not to exceed the policy's allowable noise levels.	TBC

Appendix 8: List of Acronyms

ACA	Arsenal Center for the Arts
AEC	Army Environmental Center
AMTL	U.S. Army Material Technology Laboratory
ARAR	Applicable or Relevant and Appropriate Requirements
BERA	Baseline Ecological Risk Assessment
BGS	Below Ground Surface
BRAC	Base Realignment and Closure
BRACO	Base Realignment and Closure Office
CENAE	U.S. Army Corp of Engineers New England District
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
COC	Contaminants of Concern
COPCs	Contaminates of Potential Concern
CRBCA	Charles River Business Center Associates
CRESSP	Charles River Enhanced Shoreline Stabilization Project
DCR	Department of Conservation and Recreation
DDD	Dichloroethylidene
DDE	Dichlorodiphenyldichloroethene
DDT	Dichlorodiphenyltrichloroethane
DERP	Defense Environmental Restoration Program
EPA	Environmental Protection Agency
ESD	Explanation of Significant Differences
FFA	Federal Facilities Agreement
FS	Feasibility Study
GERE	Grant of Environmental Restriction and Easement

GPS	Global Positioning System
GSA	General Services Administration
Harvard	Harvard College
HI	Hazard Indices
IC	Institutional Control
IRIS	Integrated Risk Information System
kg	Kilograms
MassDEP	Massachusetts Department of Environmental Protection
MCP	Massachusetts Contingency Plan
MDC	Metropolitan District Commission
mg	Milligrams
MOA	Memorandum of Agreement
NAE	New England District
NCP	National Contingency Plan
NFA	No Further Action
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
OU	Operable Unit
PAH	Polycyclic Aromatic Hydrocarbon
PAL	Public Archaeology Laboratory, Inc.
PCBs	Polychlorinated Biphenyls
PRG	Preliminary Remediation Goal
RA	Risk Assessment
RAB	Restoration Advisory Board
RAO	Remedial Action Objectives
RCRA	Resource Conservation Recovery Act

RI	Remedial Investigation
ROD	Record of Decision
ROW	Right-of-Way
SARA	Superfund Amendments and Reauthorization Act
SI	Site Investigation
Site	U.S. Army Material Technology Laboratory
SOW	Statement of Work
SVOCs	Semivolatile Organic Compounds
TBC	To-Be-Considered
TEF	Toxicity Equivalency Factor
TRC	Technical Review Committee
UCL	Upper Confidence Limit
USACE	US Army Corps of Engineers
UU/UE	Unlimited use and unrestricted exposure
VOCs	Volatile Organic Compounds
WADC	Watertown Arsenal Development Corporation
WCC	Watertown Conservation Commission
WOE	Weight of Evidence
WYC	Watertown Yacht Club

Attachment 1: 2015 Seventeenth Annual AUL Inspection Report - Watertown Arsenal

Weston&Sampson®
environmental/infrastructure consultants

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report

2015 SEVENTEENTH ANNUAL AUL INSPECTION REPORT

Army Materials Technology Laboratory Watertown Arsenal
Watertown, Massachusetts

Prepared For:
Calibre
Charlotte, North Carolina

September 2015

CALIBRE
Our Success Follows Yours

September 9, 2015

ATTN: Ms. Christine Williams
US EPA New England – Fed. Fac. Superfund Section
5 Post Office Square - Suite 100; Mail Code - OSRR 07-3
Boston MA 02109-3912

Commonwealth of Massachusetts
Department of Environmental Protection; Bureau of Waste Site Clean-up
ATTN: Joanne Dearden
1 Winter Street, 8th Floor
Boston, MA 02108

RE: Seventeenth Annual Institutional Control (IC) Report, Army Materials Technology Laboratory (AMTL), Watertown, MA

Dear Ms. Williams & Ms. Dearden,

1. The Army is in receipt of the Seventeenth Annual Institutional Control (IC) Report of the former Army Materials Technology Laboratory (AMTL), Park, Watertown, MA. The Army participated in the annual inspection and concurs with the conclusions in the report provided by Weston & Sampson that the institutional controls are being effectively implemented at the site.

2. Based on the above information, this completes the Seventeenth annual report for AMTL.

3. If you have any questions, you can contact me at (704) 846-9727.

Sincerely,

Mark Brodowicz
BRAC Environmental Coordinator
CALIBRE

cc w/Enclosure:
Bridger McGaw, Athena
James Okun, O'Reilly, Talbort & Okun
Mary Ellen Iorio, Corps of Engineers
Warren Switzer, ODB
Steve Magoon, Planning Director, Watertown
Rob Lowell, MA DCR
Rob Weikel, Beal Management
Susan Falkoff, former RAB Co-Chair

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engineering, energy, planning, permitting, design, construction, operation, maintenance

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To: Steve Magoon
Kirkpatrick & Lockhart, LLP
75 State Street
Boston, MA 02109-1808

To: Thomas Lederle
Dept. of the Army
NC3/Taylor Buildings
DAIM-BD/RM 5000 (Office 5062)
2530 Crystal Drive
Arlington, VA 22202

To: Mr. Mark Brodowicz
Calibre, Inc.
624 Matthews Mint Hill Road
Suite 208
Matthews, NC 28105

RE: Summary of Environmental Consultation Services
Army Materials Technology Laboratory – Arsenal Street
Watertown, Massachusetts
Seventeenth Annual Review of 1998 and 2004 Grants of Environmental Restriction and Easement

Gentlemen,

In accordance with our discussions and your authorization to proceed, Weston & Sampson has provided environmental consultation services relative the above referenced project. Specifically, Weston & Sampson has (1) reviewed available documentation, (2) interviewed specific individuals deemed sufficiently familiar with conditions on portions of the Army Materials Technology Laboratory (AMTL) properties (hereinafter, collectively referred to as the "subject site"), (3) conducted a visual inspection of the subject site, (4) conducted photographic documentation of current site conditions which represent a change from previously-observed conditions, and (5) prepared this summary letter report. Herein is a summary of work performed.

PURPOSE AND SCOPE

The purpose of the work has been to assist our Clients, namely (i), (ii) the Department of the Army (the Army) as “Responsible Agency", (iii) the Town of Watertown, and (iv) Athena Arsenal, LLC in their obligation to provide the Massachusetts Department of Environmental Protection (MassDEP) and the United States Environmental Protection Agency (USEPA) with the results of an “Annual Review”, documenting certain tasks required by Institutional Controls (IC) that apply to the subject sites.

This Memorandum concerns the contents and scope Grants of Environmental Restriction (the “Grants"), placed on the AMTL (1998) portions of the subject sites on the basis of the findings of past environmental risk characterizations. Weston & Sampson has performed the tasks outlined above to

assist, the Army, the Town of Watertown, and Athena Arsenal, LLC with this obligation.

This letter report is intended to provide the, the Army, the Town of Watertown, and Athena Arsenal, LLC with a summary of tasks performed by Weston & Sampson as noted above. This submittal is anticipated to be made part of the Seventeenth Annual Report to be prepared by the Army.

BACKGROUND

The subject site has been the focus of investigation and remedial efforts by the Army (the "Grantor" of this Grant) with the concurrence of the USEPA and the MassDEP. In accordance with a 1996 Final Record of Decision (ROD) and 1998, 2001 and 2006 amendments to the ROD (collectively, the "Soil ROD"), the Army conducted certain remediation, including the removal of up to three feet of material in specific areas of the site. As part of the final risk assessment of conditions on the site, restrictions to soil access were implemented, in order that a condition of "no significant risk" is maintained over time. The Grant provides this implementation, serving as an institutional use, access, guidance and control document to current and future land users. In order to ensure that the requirements of the Grant, specifically, the restricted uses, permitted uses, temporary reduction in surface grades and excavation of soils, excavation below foundations and slabs, increases in grade, soil sampling maintenance obligations, soil storage, soil management, and conditional exceptions, are adhered to, the Grantor is obligated to arrange for an "Annual Inspection" of the site. This inspection includes a visual inspection of the site, and interviews of individuals deemed sufficiently familiar with activities during the inspection period as to convey information pertinent to an assessment of those activities and compliance with the Grants.

This report has been prepared by Weston & Sampson who is sufficiently familiar with pertinent aspects of the Massachusetts Contingency Plan (MCP 310 CMR 40.0000), the concepts as presented in the Grant inspection process, and with this inspection process and the expectations and requirements of the regulatory agencies.

ATTACHMENTS

The following attachments are referenced as part of this submittal. These attachments provide supporting documentation for the observations and conclusions presented in this report. It is anticipated that these attachments will be made part of the Seventeenth Annual Inspection Report package.
Individual Inspection Reports, summarizing Weston & Sampson's field notes and the interviews of key persons, prepared by Kenneth J. Gendron, for Weston & Sampson. These Inspection Reports were prepared during the June 1, 2015 field inspections. During field inspections, a representative of the Department of the Army (Mark Brodowicz), a representative from the United States Environmental Protection Agency (EPA) (Christine Williams), two representatives of the United States Army Corp of Engineers (USACE, Ken Heim and Marie Wojtas), one representative of MassDEP, Joanne Dearden, two representatives of Geosyntec (Peter King and Jenna Newcombe), and one representative of Beal & Company, Inc. (Robert Weikel, Jr.) accompanied Weston & Sampson on the field inspection of both the Lot #1 and Lot #2 portions of the AMTL.

1. Building Permit records obtained from the Town of Watertown Building Department, for work performed at the AMTL.

2. Aerial photograph identifying AUL boundaries and monuments surveyed with GPS (Figure 1).

CONTRIBUTING PERSONNEL

With respect to the AMTL, the following personnel contributed to materials reviewed, or were interviewed by Weston & Sampson during the course of the execution of the above referenced tasks:

Rob Weikel, The Beal Companies (Beal), Property Manager of the Site for Athena Arsenal, LLC. Beal has provided property management services of the AMTL portion of the subject site since 2001, and is considered familiar with ongoing property use on the AMTL portion relevant to the Annual Inspection.

With respect to the subject site in its entirety, the following personnel contributed to materials reviewed, or were interviewed by Mr. Gendron during the course of the execution of the above referenced tasks.

Mark Brodowicz, Calibre Corporation is the representative of the Department of the Army (Army) with respect to BRAC coordination of activities on the both potions of the subject site. Mr. Brodowicz will be compiling all materials, including this report and attachments, into the Army's 20152015 Annual Inspection report.

SUMMARY OF ANNUAL INSPECTION TASKS

Review of Available Documentation

As part of previous and current Annual Reviews since July 1999, Weston & Sampson has reviewed available and applicable documentation. Specifically, documentation reviewed has included the two original Grants, seven “Amendments” to the Materials Testing Laboratories Grant, Site Plans, Conditional Exceptions, material management documentation (Area “B”), Town of Watertown permit documents and a Grant of Environmental Restriction and Easement.

As part of the 2015 Annual Review, Weston & Sampson has received and/or discussed specific current documentation provided by others as follows:

1. "Grant Amendment (Seventh) Approval Subject to Conditions, Former Army Materials Technology Laboratory (AMTL), Watertown, Massachusetts, MA DEP Site No. 3-0455.
2. Institutional Control Memorandum of Agreement; Memorandum of Agreement Among the US Army, The US Environmental Protection Agency, and the Massachusetts Department of Environmental Protection; Subject: The Charles River Park NPL Site Institutional Controls"
3. Building Permit records obtained from the Town of Watertown Public Works Department, for work performed at the AMTL.
4. Occupancy List, AMTL portion of the subject site.
5. Grant of Environmental Restriction and Easement for AMTL, DEP Release Tracking No. 3-0455, Book 28978, Page 549.

According to the Second Revised Response Action Outcome (RAO), following risk assessment, there are no longer use restrictions on the interior space within Building 312.

The amendment does require that certain building components remain encapsulated. Collectively, these documents memorialize response actions (de-leading of surfaces and encapsulation) and subsequent re-assessment of risk associated with exposures at Building 312.

The filing of these Amendments has allowed the Arsenal Center for the Arts to be developed in Building 312. Re-development of this building had been completed at the time of Weston & Sampson's 2012 inspection. During the 2015 annual inspection, it was observed that the encapsulation was intact and being respected.

“Area” Inspection Reports

“Area” inspections are documented on attached “INSPECTION REPORTS” and were prepared on the basis of interview information, and observations made at the Site by Weston & Sampson and others on June 9, 20152015. Inspection reports document relevant details of the Grant, subsequent Amendments, and Activity and Uses Limitations (AULs), as these institutional controls pertain to each area. Status quo and changes in each area are discussed.

Benchmark Maintenance

A GPS survey was conducted at each benchmark location at the AMTL and Town of Watertown sites and a digital record for each location was created in 2006. These data are presented on the aerial photograph (Figure 2).

During the 2010 Annual Inspection a benchmark in “Area B” was identified as damaged and required repairs. This damage was repaired, and the monument re-surveyed since the 2010 visit.

Photograph Record

For the 2015 Annual Review, no “new” conditions were noted during the course of the inspection.

Summary of Permitted Uses and Activities

For the AMTL portions of the subject site, according to personnel knowledgeable about the project, none of the excavation-related permitted activities, including temporary reduction in surface grades, excavation of soils, excavation below the foundations and slabs, sampling of soils, or permanent increase in grade have occurred on any area of the subject site, for the 2015 Annual Review.

Summary of Obligations and Conditions

With regards to the soil management protocol on the AMTL and portions of the subject site, inclusive of soil sampling and management and disposal obligations, and notices to the Grantee regarding these actions, as noted above, none of the "permitted activities” have occurred on any area of the site during this annual inspection period. As such, these obligations and conditions do not apply to site activities documented in the 2015 Annual Review.

With regards to benchmark maintenance issues on the AMTL portions of the subject site, according to personnel knowledgeable about the project, the benchmarks have been maintained as originally installed during the inspection period. As no increases in grade in benchmark areas has been conducted, no repositioning, and no reinstallation of benchmarks as occurred during the inspection period of the 2015 Annual Review. During the 2010 Annual Inspection a benchmark in “Area B” was identified as damaged and required repairs. This damage was repaired, and the monument re-surveyed since the 2010 visit.

With regards to the temporary on-site storage of soil, as noted above, none of the "permitted activities", including excavation, soil disturbance, or generation of soil, have occurred on any area of the site during this annual period. As such, these obligations and conditions do not apply to site activities documented in this report.

With respect to soil management, as none of the “permitted activities”, including excavation or soil disturbance, have occurred on any area of the site during this 2015 Annual Review period. As such, these obligations and conditions do not apply to site activities documented in this report.

Conditional Exceptions from Restricted Uses and Activities

For the AMTL portion of the subject site, according to personnel knowledgeable about the project, no

application for any “Conditional Exceptions” from restricted uses or activities have been made during the inspection period for the 2015.

Applicability

With respect to the AMTL portion of the subject site, according to personnel knowledgeable about the project, no response actions exempt from the “Restricted Uses and Activities” section of the grant were undertaken during the inspection period for the 2015 Annual Review.

Emergency Excavation

According to the personnel knowledgeable about the project, no emergency excavations for utility repair, related structures, or other emergency responses occurred in the restricted areas of site during the inspection period for the 2015 Annual Review.

FINAL OBSERVATIONS

Based on our understanding of the Grant, Amendments, and available documentation, as well as information obtained during the interviews of personnel noted above, and the visual inspection of the Site, Weston & Sampson has identified no current use activities and/or conditions which would suggest that activities prohibited under the Grant and Amendments have/are occurring at the Site. We trust the above and attached will prove sufficient in your efforts to comply with the requirements of the IC Memorandum of Understanding. Should you have any questions or require additional information, please contact the undersigned.

Very truly yours,

WESTON & SAMPSON, INC.

Kenneth J. Gendron, P.G., LSP
Project Manager

Enclosures:
Appendix A – Individual Inspection Reports
Appendix B – Permits
Appendix C – Figures
Appendix D – Occupancy List

APPENDIX A

Individual Inspection Reports

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F51F, Light Rain
LOT#: 2 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: Lot 2

No changes have occurred since the June 2014 Sixteenth Annual inspection.

No representatives of the Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the Inspection of this date. Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. Mr. Brodowicz is knowledgeable relative to Site History, Past and Present Use, and Response Actions which have occurred prior to, and subsequent to the implementation of the Grant in 1998. Based on Weston & Sampson's knowledge of these issues, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.
No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant were observed.

General, Conditions and Observations
Levels of recreational activity on a property are classified in the Massachusetts Contingency Plan (MCP) by the frequency of use, and the intensity of use (310 CMR 40.0933 (4)). The frequency and intensity of recreational use are considered to be 'Low' for Lot 2. According to the Town of Watertown personnel, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: Commercial Reuse Area

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. Mr. Weikel is knowledgeable of site conditions and the day to day site use and has provided property management services of the "Lot 1" AMTL portion of the subject site since 2001. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.
No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant were observed.

General Conditions and Observations

According to the Town of Watertown personnel, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F51F, Light Rain
LOT#: 2 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #142, Guard Shack

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, or school uses were observed.

No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant were observed.

No excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs was observed.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would or would likely result in human contact with the underlying soils was observed.

General Conditions and Observations

Building #142, the Guard Shack, has been rehabilitated. According to the Town of Watertown, no occupancy of this structure occurs. No evidence of hazardous substances in the building or area immediately surrounding the building impacting the general environment was observed. According to Town of Watertown, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 2 ISPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: “Area L4”

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson’s knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.

No reduction of the grade below the surface grade, as defined in subparagraph 2.C. of the Grant was observed.

No movement of soils located at a depth of one (1) foot or more below the surface grade, as defined in subparagraph 2.C. of the Grant, above that depth, unless disposed of off-Site in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant was observed.

General Conditions and Observations

Area "L4" has and remains within an “access” area to Lot #2. The area is principally beneath asphalt paving (access road) leading from the intersection of Beacon Street and Charles River Road, to the Lot #2 portion of the Site. A gate continues to limit access from the above noted public ways to the Site.

Access to the rest of Lot #2 is not limited. According to Mr. Weikel, and Mr. Brodowicz, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 2 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #244/245, Bunkers

No significant changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, or school uses were observed.

No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant were observed.

No excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs was observed.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would or would likely result in human contact with the underlying soils was observed.

General Conditions and Observations

Buildings #244/245, Bunkers, were observed in their original state during the inspection. New locks were observed to have been installed on the building doors after the 2014 annual inspection. The doors are locked. No occupancy occurs. No evidence of hazardous substances in the building and the areas immediately surrounding the bunkers impacting the general environment were observed. According to Town of Watertown, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area. Additionally, an un-identified groundwater monitoring well was discovered at the tree line in this area near the fence during the 2010 field inspection. This well was addressed as part of the 5-year review process and was properly abandoned on May 18, 2011 by Technical Drilling Services, Inc. of Sterling, Massachusetts.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 2 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #111, Commander's Mansion

No significant changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, or school uses were observed.

No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant were observed.

No excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs was observed.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would or would likely result in human contact with the underlying soils was observed.

General Conditions and Observations

Building #111, the Commander's Mansion, has been rehabilitated for use. Interior surfaces (walls, ceilings, trim, and floors) have been refinished and/or replaced. The heating system was also updated. The Town of Watertown, which utilizes the property for social activities and historic tours, occupies the property. No evidence of hazardous substances in the building and area immediately surrounding the building impacting the general environment were observed. No soil was removed from the site in conjunction with the renovations or patio construction. Visual inspection revealed no evidence of soil disturbance in this area. It was noted that in 2014 there was a water main break from a fire hydrant in the roadway in front of the building. Emergency repairs were made to the water main, and all activities were conducted outside of the AUL area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #131, Former Arsenal Administrative Building

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No excavation, drilling, or disturbance of the soils under the building foundation and slabs (utility installations) were reported to have occurred since the last Annual Inspection. Restrictions to perforations of the slab have been lifted in the Amendments to the Grant.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would or would likely result in human contact with the underlying soils were reported or observed. Again, restrictions to contact with sub-slab/sub-foundation soils have been removed under Grant Amendments.

General Conditions and Observations

Building #131, a former Army administrative building, has been rehabilitated and continues to be utilized as an office use and daycare center (basement). According to Beal, the building was 77% occupied or leased at the time of this inspection. Interior improvements have been completed, and the heating system has also been updated. The property occupancy is limited to commercial (office) and day care uses. Office and day care space has been completed in basement spaces of the building. No evidence of hazardous substances in the building and area immediately surrounding the building impacting the general environment were observed. An outside playground associated with the day care center is located immediately west of the building. According to Beal, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #117, Former Base Housing

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs was reported or observed.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would or would likely result in human contact with the underlying soils was observed.

General Conditions and Observations

Building #117, a former Base Housing building, has been rehabilitated for office use. Interior surfaces (walls, ceilings, trim, and floors) have been refinished and/or replaced. The heating system has also been updated. The property is occupied by Beal as office space at this time. No evidence of hazardous substances in the building and area immediately surrounding the building impacting the general environment were observed. According to Beal, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #118, Former Base Housing

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

With the exception of sampling points during assessment of soils beneath the basement floor prior to the 1999 inspection, no excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs has occurred. As a result of this testing, soils beneath the building were found to comply with the ROD requirements, and access to these soils is no longer restricted.

No drilling or other disturbance of the building foundations and stabs which would compromise their integrity in a manner that would or would likely result in human contact with the underlying soils was observed.

General Conditions and Observations

Building #118, a former Base Housing building, has been rehabilitated for office use. Interior surfaces (walls, ceilings, trim, and floors) have been refinished and/or replaced. The heating system is original, and contains asbestos materials (pipe wrap, insulation materials). No evidence of hazardous substances in the building and area immediately surrounding the building impacting the general environment were observed. According to Beal, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: Ken Gendron

SUBJECT BUILDING/AREA: #60, Former Power Plant Building

No significant changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.
No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant were observed.

No excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs was observed. Special concrete coatings on portions of the slab where past PCB abatement occurred remain in place.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would, or would likely result in human contact with the underlying soils was observed.

General Conditions and Observations

Building #60, a former Power Plant building, has been rehabilitated for laboratory use. The building was vacant at the time of the Inspection. No evidence of hazardous substances in the area immediately surrounding the building impacting the general environment was observed.

No excavation has reportedly occurred in this area since August 2000. Based on observations made during the 2001 inspection, landscaping and paving activities did not appear to have impacted soils at 12 feet below surface grade (BSG) in the Activity and Use Limitation (AUL) area.

It was reported by Athena that there is a potential for the installation of a new elevator in Building #60. This installation may penetrate the floor of the building, and, if excavation for the elevator pit exceeds a depth of four feet, would require the development of a soil management plan (SMP). No timetable has been provided for the completion of this work at this time. It was noted during the inspection that the chimney for this building had been repointed since the 2014 annual inspection.

An AUL Instrument, as defined in the Massachusetts Contingency Plan (310 CMR 40.0000), to institutionalize restrictions to soils in the area of Building 60 was modified in 1999. The initial AUL filing for this building identified an area surrounding the smokestack at the power plant, and was prepared to restrict access to all soils (surface to infinite depth). The 1999 modification allowed access to soils without restriction for the first 4.0 feet BSG in this same area. As documented in previous annual inspection reports, contaminated soils remain in this area at 12.0 feet BSG.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #652, Former Pump House

No significant changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.

No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant were observed.

No excavation, drilling, or otherwise disturbing the soils under the building foundation and stabs was observed.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would, or would likely result in human contact with the underlying soils was observed.

General Conditions and Observations

Building #652, a former Pump House (water), was observed in an secured state during the inspection, and the interior of the building was not able to be accessed. It was noted during the inspection that the exterior of the building had been repainted since the 2014 annual inspection. The building was not occupied at the time of the inspection. No evidence of hazardous substances immediately surrounding the building impacting the general environment was observed. According to Beal, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: “Area E”

No significant changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson’s knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.

Weston & Sampson observed no readily apparent reduction of the grade below the surface grade, as defined in subparagraph 2.C. of the Grant was observed. No apparent movement of soils, located at a depth of one foot or more below the surface grade, as defined in subparagraph 2.C. of the Grant, above that depth, unless disposed of off-Site in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant was observed.

General Conditions and Observations

Numerous changes and subsequent activity including communications between relevant entities have occurred with respect to Area E, and have been documented in past Inspection Reports. In the current inspection period, it was noted that the walkway leading from Building #60 had been paved with concrete joining it with the previously concreted section of walkway within Area E leading to Building #97. It was reported by Beal that this action was completed in order to render the area safer and easier to clear of snow during the winter months. The paving action did not violate any terms of the AUL for the area surrounding Area E.

The previously described picnic tables that had been placed in the area were still being utilized for meal/break purposes. These activities are considered passive recreation according to the AUL and therefore, are not a violation of the AUL restrictions. There were also several raised garden beds located outside of the Area E monument AUL area; however, these raised gardens do not violate any restrictions set forth in the AUL.

According to relevant documentation, “Area E”, a soil excavation exclusion area, was the site of extensive landscaping and soil disturbance activities between 1999 and 2000. The area remains unchanged since between the 2001 and 2015 inspection, and is maintained as a grassy open space with rock wall and concrete (formerly gravel) walk way elements. It was noted in 2001 that lighting was installed and existing walls were repaired to reduce the effects of erosion on the protective soil cover.

Changes in this area with respect to area grade, benchmark construction, and benchmark location were documented in the Seventh Amendment to the Grant. According to Beal, no disturbance of underlying soils has occurred during the current inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #97 - Former Research Building

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.

No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant were observed.

Excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs are allowed in this building as a "permitted activity" with notice to MA DEP. This work must be completed within a 6-month time frame, and only as allowed based on certain assumptions in the risk characterization of the AMTL portion of the subject site. A copy of correspondence associated with this special exemption and notice is attached to the First Annual Report for reference purposes. All other restrictions of the Grant apply.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would or would likely result in human contact with the underlying soils was observed.

General Conditions and Observations

Building #97, a former Army research building, has been rehabilitated for use. The building was occupied with Athena Health at the time of the inspection, and due to patient privacy concerns, the interior of the building could not be inspected. No evidence of hazardous substances area immediately surrounding the building impacting the general environment was observed.

Excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs was observed in 1999. According to the owners at the time (the developer), the work was completed within the allowed 6-month time frame. According to Beal, no disturbance of underlying soils has occurred during the current inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: "Area B"

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.

No reduction of the grade below the surface grade, as defined in subparagraph 2.C. of the Grant was observed. No movement of soils, located at a depth of one foot or more below the surface grade, as defined in subparagraph 2.C. of the Grant, above that depth, was observed. Work as documented in previous inspection Reports was completed in accordance to an Amendment to the Grant.

General Conditions and Observations

The "Area B" excavation exclusion area has not been significantly altered via excavation and re-grading since the August 2000 inspection. Work conducted in 1998 and 1999 was performed under a Grant Amendment. Soils generated as a result of work were managed under the Soil Management Plan in Paragraph 4 of the Grant, under a MA DEP Material Shipping Record or "MSR".

Currently, "Area B" consists of a small area of contaminated soils located behind, and adjacent to a concrete retaining wall in the loading dock area of Building #39. Restrictions, which applied to the original Area B piece, now apply to this relatively smaller area. Area B is paved, and is utilized as the loading dock approach area and sidewalk area for Building #39.

The Fourth Amendment to the Grant relative to this work was filed on August 3, 2000.

As discussed in the 2002 Annual Review the MA DEP, CRBCA, and the Army discussed replacement of two scraped benchmarks, which were observed to remain largely intact and in place. These benchmarks were subsequently replaced with similar markers and set flush with respect to surrounding concrete and asphalt pavement. The elevations of the replacement benchmarks have been established. The Seventh Amendment documented the changes in elevation and construction of these benchmarks. According to Beal, no disturbance of underlying soils has occurred during the current inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

During the 2010 Annual Inspection a benchmark in “Area B” was identified as damaged and required repairs. This damage was repaired, and the monument has been re-surveyed since the 2010 visit.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #39, Harvard Publishing Building

No significant changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 year of age), and/or recreational uses or activities uses were observed.

No excavation, drilling, or other disturbance of the soils under the building foundation and slabs (utility installations) was observed at the time of the inspection. According to the LSP-of-Record for the AMTL portion of the subject site (Bruce Hoskins of CPI), soil disturbance occurred and were completed in 1999. Restrictions to perforations of the slab were lifted in an Amendment to the Grant at that time, based on additional risk assessment.

General Conditions and Observations

Building #39, a former Army research building, has been rehabilitated for office use (Harvard Publishing). As noted in previous inspection reports, the construction is complete. Interior surfaces (walls, ceilings, trim, and floors) have been refinished and/or replaced. The heating system has been updated. No evidence of hazardous substances in the building and area immediately surrounding the building impacting the general environment were observed. The building is occupied for commercial purposes. According to Beal, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

It was reported that a collapsed sewer line was identified in the street between Buildings #39 and #311. The sewer line required repairs and the street needed to be excavated to facilitate the repairs, thus disturbing the soils, but not violating the restrictions in the AUL. These activities had been completed at the time of the 2015 annual inspection.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #43

No significant changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.

No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant were observed.

General Conditions and Observations

Building #43 has been rehabilitated for restaurant and commercial use. The interior surfaces (walls, ceilings, trim, and floors) have been refinished and/or replaced. It was noted during the inspection that the fountain previously located at the front of the building had been removed. Additionally, market stalls, along with a 1 inch, underground waterline, had been installed since the 2014 annual inspection. The installation of the waterline was done at the request of the Town of Watertown, and did not violate the AUL restrictions. No evidence of hazardous substances in the building and area immediately surrounding the building impacting the general environment were observed. According to Beal, no disturbance of underlying soils has occurred during the inspection period that violated the AUL restrictions. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #311, Former Milling Shed Building

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant, were observed.

Restrictions regarding excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs were removed in an earlier Grant Amendment.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would, or would likely result in human contact with the underlying soils was observed. Again, all soil contact restrictions with respect to commercial redevelopment of this building area were removed in an earlier Grant Amendment.

General Conditions and Observations

It was reported that a collapsed sewer line was identified in the street between Buildings #39 and #311. The sewer line required repairs and the street needed to be excavated to facilitate the repairs, thus disturbing the soils, but not violating the restrictions in the AUL. These activities had been completed at the time of the 2015 annual inspection.

At the time of the 2011 inspection, it was noted that the reparations to the cork paneling in the lobby of the building have been completed. During the June 2009 annual inspection, it was reported that the paneling was detaching from portions of the wall and was replaced with a brick façade. No soil was removed from the site in conjunction with these renovations.

It was noted during the 2010 Inspection that a 530 KW solar array, consisting of 1,680 3 feet by 5 feet panels had been constructed on the roof of the building. No soil was removed from the site in conjunction with the construction of the solar array.

Building #311, the former Milling Shed Building, has been documented as being rehabilitated for future commercial use (office space) in previous reports. The building was occupied for commercial purposes at the time of the inspection. According to Beal, the building is leased or occupied. Renovation of the health club located on the first floor of the eastern end of the building, as well as the construction of a pool associated with the athletic club has been completed. The concrete base of the pool is at the original surface grade and no soil excavation was performed in conjunction with the construction of the pool.

As noted in previous inspection reports, the concrete slab was perforated in several locations in 1999 for the purpose of utility and structural installations in the building and building area. These perforations were conducted at a time when certain restrictions to access to soils underlying the building were specified in the Grant.

These perforations were not observed in subsequent annual inspections. According to previous owners (CWCA), the perforations were filled and sealed over.
At this time, all commercial use restrictions have been removed from future use of Building #311. A “First Amendment to the Activity and Use Limitation” for Release Tracking Number (RTN) 3-17606 was recorded in August 2004. The Second Amendment to the AUL is also known as the Seventh Amendment to the Grant of Environmental Restriction and Easement and Grant Integration, the overall document governing future use of the MTL property. The Seventh Amendment to the Grant was approved on August 9, 2006.

According to Beal, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #312, Former Research Building

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No transportation, disposal, or deposition of soils from within this parcel to areas outside of this parcel, unless in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant, were observed.

Excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs are allowed in this building as a "permitted activity" with notice to MA DEP. This work must be completed within a 6-month time frame, as is allowed based on certain assumptions in the risk characterization of the AMTL portion of the subject site. A copy of correspondence associated with this special exemption and notice is attached to the First Annual Report for reference purposes. All other restrictions of the Grant apply.

General Conditions and Observations

The renovation of Building #312, a former Research Building (firing range, crane bay) had been observed to be completed during the 2012 annual inspection. During the 2015 annual inspection the building was 94% occupied with commercial tenants.
Harvard and the Town of Watertown have prepared and submitted the Second Amendment to the AUL and Second Revised Response Action Outcome Statement for RTN 3-17606 pertaining to the Building #312 renovation. RTN 3-17606 was assigned to response actions at the AMTL portion of the subject site as they pertain to exposures in building interiors, and the reasonably foreseeable occupancy of those buildings.

According to the Second Revised RAO, following risk assessment, there are no longer use restrictions on the interior space within this building. The amended AUL does require that certain building components remain encapsulated. Collectively, the Second Revised RAO and the amended AUL memorialize response actions (de-leading of surfaces and encapsulation) and subsequent re-assessment of risk associated with exposures at Building 312. The filing of these Amendments allowed the Arsenal Center for the Arts to be developed in Building 312. During the inspection it was observed that the encapsulation was intact and being respected.

The Town of Watertown and Harvard filed with MA DEP an Application for 7th Amendment to the Grant (dated April 5, 2005) proposing to remove from the Commercial Reuse Area Building 312 and the Plaza Area between Building 312 and Arsenal Street for the annual inspection process. The 7th Amendment to the Grant was approved on August 9, 2006.

During the current inspection, no drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would, or would likely result in human contact with the underlying soils was observed. According to Beal, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #313-C, Former Arsenal Building

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

Excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs (utility installations) was completed in 1999. Restrictions to perforations of the slab were lifted in the Amendments to the Grant, for western areas of the building. Restrictions remain for an area in the building's eastern end, where PCB contamination in sub-slab soils remains.

Drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would, or would likely result in human contact with the underlying soils was observed in the building's western half. Again, restrictions to contact with sub-slab/sub-foundation soils have been removed under Grant Amendments for this area only.

General Conditions and Observations

As noted in previous inspection reports, Building #313-C (central wing), a former Arsenal Building, has been rehabilitated for office use. The building is currently partially occupied. No evidence of hazardous substances in the building and area immediately surrounding the building impacting the general environment were observed.

As noted above, via soil testing results, Amendments to the Grant lifted restrictions to soil access for western portions of this building. The western portion of the building has been razed. This area was landscaped during 1999-2000. Soil access restrictions remain for the area beneath the current building footprint. Visual inspection revealed no evidence of soil disturbance in this area at the time of the 2015 inspection.

During inspection of the PCB restriction area, no evidence of disturbance of the slab was noted. Interior floor surfaces (carpet/tile) were intact. According to Beal, no disturbance of underlying soils has occurred during the inspection period.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #313-S, Former Arsenal Building

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No. excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs (utility installations) was observed. Restrictions to perforations of the slab remain for this building, due to the presence of PCBs in soils beneath the slab. A "conditional exception" was granted during the 1999/2000 period, for the installation of a footing. CRBCA reported in 2000 that no PCB-contaminated material was generated as a result of this work.

General Conditions and Observations

Building #313-S (south wing), a former Arsenal Building, has been rehabilitated for office use. As noted in previous inspection reports, construction is observed to be complete. The building is currently partially occupied. No evidence of hazardous substances in the building and area immediately surrounding the building impacting the general environment were observed. Inspection of the Conditional Exception area revealed an intact concrete slab, and no evidence of perforation or exposure to underlying soils.

No drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would, or would likely result in human contact with the underlying soils was observed. According to Beal, no disturbance of underlying soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: "Area G"

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

No residential, daycare, school (for children under 18 year of age), hotel, motel, community center (for children under 18 years of age), and/or recreational uses or activities uses were observed.

No reduction of the grade below the surface grade, as defined in subparagraph 2.C. of the Grant, or movement of soils, located at a depth of one (1) foot or more below the surface grade, as defined in subparagraph 2.C. of the Grant, above that depth, unless disposed of off-Site in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant is permitted.

General Conditions and Observations

"Area G", an excavation exclusion area, was substantially or significantly disturbed (fill placement raised preexisting grade) in 1999. The area was utilized as an access point for equipment, labor, and material associated with demolition/renovation work being conducted on nearby buildings (313-C specifically). Other than the temporary placement of clean demolition debris as a temporary construction "ramp" to facilitate work on Building #313-C during that period, no alteration to the area was observed or reported.

At the time of the August 2000 inspection, Area G appeared to have been restored to its relative previous grade and landscaping/sidewalk/pavement have been installed in the area. Subsequent grade verification by Dunn-McKenzie in February 2001 however, documented lower grades in the area of two benchmarks, than those documented as status quo in 1999. CRBCA reported during interviews for the 2001 Third Annual report that MA DEP was currently evaluating the need to submit an Amendment to the Grant documenting the change (lower) in elevation of benchmarks in this area. As discussed in the Third Annual Review report, an evaluation of existing conditions by the LSP of record suggested that risk and soil management goals of the Grant are intact. Nonetheless, regulators have determined that activities at Excavation Area "G" had violated the Grant. An assessment of the nature of these activities and the current conditions in the area by the LSP of Record (Mr. Hoskins) suggested that no significant risks were present. The Fifth Amendment documented the changes in elevation or the area and benchmarks, construction of these benchmarks, and established annual inspection guidelines to ensure benchmark integrity.

For the current inspection Report period, no reduction of the grade below the surface grade, as defined in subparagraph 2.C. of the Grant was observed. No movement of soils, located at a depth of one (1) foot or more below the surface grade, as defined in subparagraph 2.C. of the Grant, above that depth, unless disposed of off-Site in compliance with the Soil Management Protocol set forth in Paragraph 4 of the Grant was observed.

All benchmarks were observed to be maintained in accordance with the provisions of the Grant. The benchmarks were visible and accessible. According to Beal, no disturbance of pavement or soils has occurred during the inspection period. Visual inspection revealed no evidence of soil disturbance in this area.

INSPECTION REPORT
Army Materials Technology Laboratory – Seventeenth Annual Report
DATE: 6/1/2015 WEATHER: 51F, Light Rain
LOT#: 1 INSPECTOR: K. Gendron, W&S

SUBJECT BUILDING/AREA: #37, Former Arsenal Building

No changes have occurred since the June 2014 Sixteenth Annual inspection.

Mr. Brodowicz (Army), Christine Williams (EPA), Peter King and Jenna Newcombe (Geosyntec), Robert Weikel, Jr. (Beal), Ken Heim and Marie Wojtas of USACE and Joanne Dearden of MassDEP accompanied Weston & Sampson during the inspection. No representatives of The Town of Watertown, owner of "Lot 2" of the AMTL portion of the subject site subject to the 1998 Grant of Environmental Restriction accompanied Weston & Sampson during the inspection of this date. Mr. Brodowicz is generally knowledgeable of matters pertaining to Site History, Past and Present Use, and Response Actions which have occurred prior to and subsequent to the implementation of the Grant of Environmental Restriction and Easement for the AMTL portion of the subject site in 1998. Based on Weston & Sampson's knowledge of these issues through the inspection/interview process, and the information provided by these individuals, to the extent that they have knowledge, the inspection focused on pertinent issues since the 2014 inspection.

Specific Grant Restrictions

Excavation, drilling, or otherwise disturbing the soils under the building foundation and slabs (utility installations) observed in 1999 no longer exist. Restrictions to perforations of the slab were lifted in the Amendments to the Grant, as a result of soil testing.

General Conditions and Observations

Building #37, a former Arsenal Building, has been rehabilitated for office use. As discussed in previous inspection reports, construction appeared to be essentially complete by the 2000 inspection. The building is currently occupied by a day care corporate office. No evidence of hazardous substances in the building and area immediately surrounding the building impacting the general environment were observed.

According to Beal, no drilling or other disturbance of the building foundations and slabs which would compromise their integrity in a manner that would or would likely result in human contact with the underlying soils was observed. Based on the current status, a report for Building #37 will no longer appear as part of the Annual Review.

APPENDIX B

Permits

Permit No. 0647-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts July, 15 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Eagle Fire Protection

has permission to: relocate sprinkler heads per plans Any shut downs arange with Fire Dept

Street and No 311 ARSENAL ST POD 2300

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E. Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0603-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts

June, 30 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Medford Wellington

has permission to: install ductwork, VAV's, RAD's, balance insulation PERMIT CONDITION: ANY NEW ROOF ~~OR GROUND MECHANICAL EQUIP. TO BE SCREENED.~~

Street and No 311 ARSENAL ST POD 3100 & 3200

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0457-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts May, 27 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Wise Construction Corp.

has permission to: interior renovations to existing space. All interior work

Street and No 311 ARSENAL ST POD 4200 & 4300

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E. Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0423-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts May, 15 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Wise Construction Corp.

has permission to: install steel catwalk system to connect North & South side of West Atrium

Street and No 311 ARSENAL ST - West Atrium Catwalk

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0421-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts May, 15 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Medford Wellington

has permission to: HVAC-renovations, ductwork, air balancing

Street and No 311 ARSENAL ST POD 2300

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E. Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0393-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts May, 12 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Interstate Electrical Services Corp.

has permission to: Fire Alarm - renovate existing system, install new smokes, horn/strobes/strobe only - all off exist system see note on field drawing

Street and No 311 ARSENAL ST POD #3300

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0368-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts May. 8 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Professional Fire Systems

has permission to: add sprinklers to renovation and connect to existing all shut downs to be coordinated with fire department

Street and No 311 ARSENAL ST Pod #3300

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0367-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts May. 8 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Professional Fire Systems

has permission to: install 2 sprinklers in 2 offices where ceilings are being added all shut downs to be coordinated with F D

Street and No 311 ARSENAL ST (100 Talcott Bldg 313

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0320-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts

April, 27 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Legacy Fire Protection, Inc.

has permission to: 4th fl-relocate 1 sprinkler head for new IT closetAll shut downs coordinate withj Firew Dept

Street and No 311 ARSENAL ST - 4th fl

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0312-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts April, 27 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Medford Wellington

has permission to: install 8 vav's and 1 in-line exhaust fan w/duct insulation, balancing

Street and No 311 ARSENAL ST pod 3300

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0282-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts April, 14 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Wise Construction Corp.

has permission to: 3rd/4th flr-make safe & rmvl of existing non load bearing office partitions & finishes. Interior demo only

Street and No 311 ARSENAL ST

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0251-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts April, 7 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Tremont Interiors, LLC

has permission to: 4th fl - build wall and install door to creat tel/data closet, build wall&install door to close off collaborations space.

Street and No 311 ARSENAL ST

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0225-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts April, 2 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Wise Construction Corp.

has permission to: removal of existing, non load bearing office partitions and finishes

Street and No 311 ARSENAL ST #2100 & #2200

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0224-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts April, 2 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Wise Construction Corp.

has permission to: renovation of existing space-drywall, flooring, ACT, Elect, HVAC, Fire, Security & finishes

Street and No 311 ARSENAL ST #2300

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E. Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0177-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts

March, 10 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Divine Signs, Inc

has permission to: permit to install signage separate elect permit required

Street and No 395 ARSENAL ST

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

Permit No. 0162-15

Town of Watertown

OFFICE OF INSPECTOR OF BUILDINGS
(617) 972-6480
Watertown, Massachusetts March, 3 2015

PERMIT TO BUILD

THIS IS TO CERTIFY THAT Wise Construction Corp.

has permission to: Make safe and removal of existing, non load bearing office partitions & finishes - 6500 sf

Street and No 311 ARSENAL ST, #2300

Providing that the person accepting this permit shall in every respect conform to the terms of the application on file in this office, and to the provisions of the Statutes and Ordinances relating to the construction of Buildings in the Town of Watertown. Any Violation of any of the terms above noted shall cause an immediate revocation of this permit.
Under the Acts of 1972 Chapter 802 applicant shall comply to the Commonwealth of Massachusetts State Building Code, 8th Edition effective 2/7/11. (INCLUDING STRETCH CODE)

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

K.E Thompson

Ken Thompson
Inspector of Buildings

This card must be displayed in a conspicuous place on the premises and not torn down or removed
No insulating to be done until approved by the Inspectors
No footings/foundations to be poured until excavation has been inspected

311 Arsenal St, 2015 Permits (through 9/10/15)

Permit	IssueDate	StNo	StName	WorkCateg	WorkDesc	WorkArea	Contractor
103-15	2/3/15	311	ARSENAL ST	Alterations	Permit to demo a non load bearing partitions & finishes Interior demo	311 ARSENAL ST, suite 3300	Wise Construction Corp.
129-15	2/13/15	311	ARSENAL ST	Alterations	1st fl renovation/drywall,floor,act,elect,hvac,fire prot, security,finishes	311 ARSENAL ST, suite 3300	Wise Construction Corp.
162-15	3/3/15	311	ARSENAL ST	Alterations	Make safe and removal of existing, non load bearing office partitions & finishes - 6500 sf	311 ARSENAL ST, #2300	Wise Construction Corp.
177-15	3/10/15	311	ARSENAL ST	Sign	permit to install signage separate elect permit required	395 ARSENAL ST	Divine Signs, Inc
224-15	4/2/15	311	ARSENAL ST	Alterations	renovation of existing space-drywall, flooring, ACT, Elect, HVAC, Fire, Security & finishes	311 ARSENAL ST #2300	Wise Construction Corp.
225-15	4/2/15	311	ARSENAL ST	Alterations	removal of existing, non load bearing office partitions and finishes	311 ARSENAL ST #2100 & #2200	Wise Construction Corp.
251-15	4/7/15	311	ARSENAL ST	Alterations	4th fl - build wall and install door to creat tel/data closet, build wall&install door to close off collaborations space.	311 ARSENAL ST	Tremont Interiors, LLC
282-15	4/14/15	311	ARSENAL ST	Alterations	3rd/4th flr-make safe & rmvl of existing non load bearing office partitions & finishes. Interior demo only	311 ARSENAL ST	Wise Construction Corp.
320-15	4/27/15	311	ARSENAL ST	sprinkler	4th fl-relocate 1 sprinkler head for new IT closetAll shut downs coordinate withJ Firew Dept	311 ARSENAL ST - 4th fl	Legacy Fire Protection, Inc.
312-15	4/27/15	311	ARSENAL ST	Sheet Metal	install 8 vav's and 1 In-line exhaust fan w/duct insulation, balancing	311 ARSENAL ST pod 3300	Medford Wellington
368-15	5/8/15	311	ARSENAL ST	sprinkler	add sprinklers to renovation and connect to existingall shut downs to be coordinated with fire department	311 ARSENAL ST Pod #3300	Professional Fire Systems
367-15	5/8/15	311	ARSENAL ST	sprinkler	Install 2 sprinklers in 2 offices where ceilings are being addedall shut bdowns to be coordinated with F D	311 ARSENAL ST (100 Talcott Bldg 313	Professional Fire Systems
393-15	5/12/15	311	ARSENAL ST	Fire Alarm	Fire Alarm - renovate existing system, install new smokes, horn/strobes/strobe only - all off exist system see note on field drawing	311 ARSENAL ST POD #3300	Interstate Electrical Services Corp.
423-15	5/15/15	311	ARSENAL ST	Alterations	install steel catwalk system to connect North & South side of West Atrium	311 ARSENAL ST - West Atrium Catwalk	Wise Construction Corp.
421-15	5/15/15	311	ARSENAL ST	Sheet Metal	HVAC-renovations, ductwork, air balancing	311 ARSENAL ST POD 2300	Medford Wellington
412-15	5/15/15	311	ARSENAL ST	Alterations	renovate exist space see notes on field drawings	311 ARSENAL ST POD 2100 & 2200	Wise Construction Corp.
457-15	5/27/15	311	ARSENAL ST	Alterations	Interior renovations to existing space. All interior work	311 ARSENAL ST POD 4200 & 4300	Wise Construction Corp.
523-15	6/11/15	311	ARSENAL ST	Alterations	Interior demofor new office layout See notes on field set of drawings	311 ARSENAL ST (bldg 118 / 2 Kingsbury)	Tremont Interiors, LLC
552-15	6/18/15	311	ARSENAL ST	Alterations	Interior renovation of existing space	311 ARSENAL ST POD 3100 & 3200	Wise Construction Corp.
568-15	6/19/15	311	ARSENAL ST	Sheet Metal	new duct work	311 ARSENAL ST POD 2100 & 2200	T. Dupre Co
587-15	6/26/15	311	ARSENAL ST	Fire Alarm	instal fire alarml control module for fan shutdown	311 ARSENAL ST - Atrium Walkway	Interstate Electrical Services Corp.
586-15	6/26/15	311	ARSENAL ST	Fire Alarm	renovate existing fire alarm system for tenant fit-upany shut down of system to be scheduled with fire department	311 ARSENAL ST POD 2100 & 2200	Interstate Electrical Services Corp.
603-15	6/30/15	311	ARSENAL ST	Sheet Metal	install ductwork, VAV's, RAD's, balance insulation PERMIT CONDITION: ANY NEW ROOF OR GROUND MECHANICAL EQUIP. TO BE SCREENED.	311 ARSENAL ST POD 3100 & 3200	Medford Wellington
608-15	7/2/15	311	ARSENAL ST	Fire Alarm	renovate existing Fire Alarm System for tenant fit up All shut downs will be coordinated with Fire Dept	311 ARSENAL ST POD 4200 & 4300	Interstate Electrical Services Corp.
622-15	7/9/15	311	ARSENAL ST	Fire Alarm	relocate smoke detectors & pull stations Fire Dept to verify at completion	311 ARSENAL ST - 2 Kinsgbury	current solutions
647-15	7/15/15	311	ARSENAL ST	sprinkler	relocate sprinkler heads per plans Any shut downs arange with Fire Dept	311 ARSENAL ST POD 2300	Eagle Fire Protection
644-15	7/15/15	311	ARSENAL ST	Fire Alarm	renovate existing Fire Alarm system for tenant fit up	311 ARSENAL ST POD 3100 & 3200	Interstate Electrical Services Corp.
751-15	8/7/15	311	ARSENAL ST	Tent set-up	install temporary tent 8/10/15 - 8/14/15 no cooking on siteOwner is responsible to monitor weather conditions to assure public safety	311 ARSENAL ST	Atent for rent
767-15	8/14/15	311	ARSENAL ST	Fire Alarm	install 14 horn/strobes & 7 strobe only fire dept to verify final inspection	311 ARSENAL ST POD 2300	current solutions
779-15	8/14/15	311	ARSENAL ST	sprinkler	relocate sprinkler heads all shut downs to be arranged with fire dept	311 ARSENAL ST	Eagle Sprinkler Fire Protection
778-15	8/14/15	311	ARSENAL ST	sprinkler	relocate sprinkler heads all shut downs to be arranged through Fire Dept.	311 ARSENAL ST	Eagle Sprinkler Fire Protection
828-15	8/27/15	311	ARSENAL ST	sprinkler	relocate 81 sprinkler heads all shut down to be cooerdinated with fire dept	311 ARSENAL ST POD POD 3100& 3200	Eagle Sprinkler Fire Protection

APPENDIX C

Figures

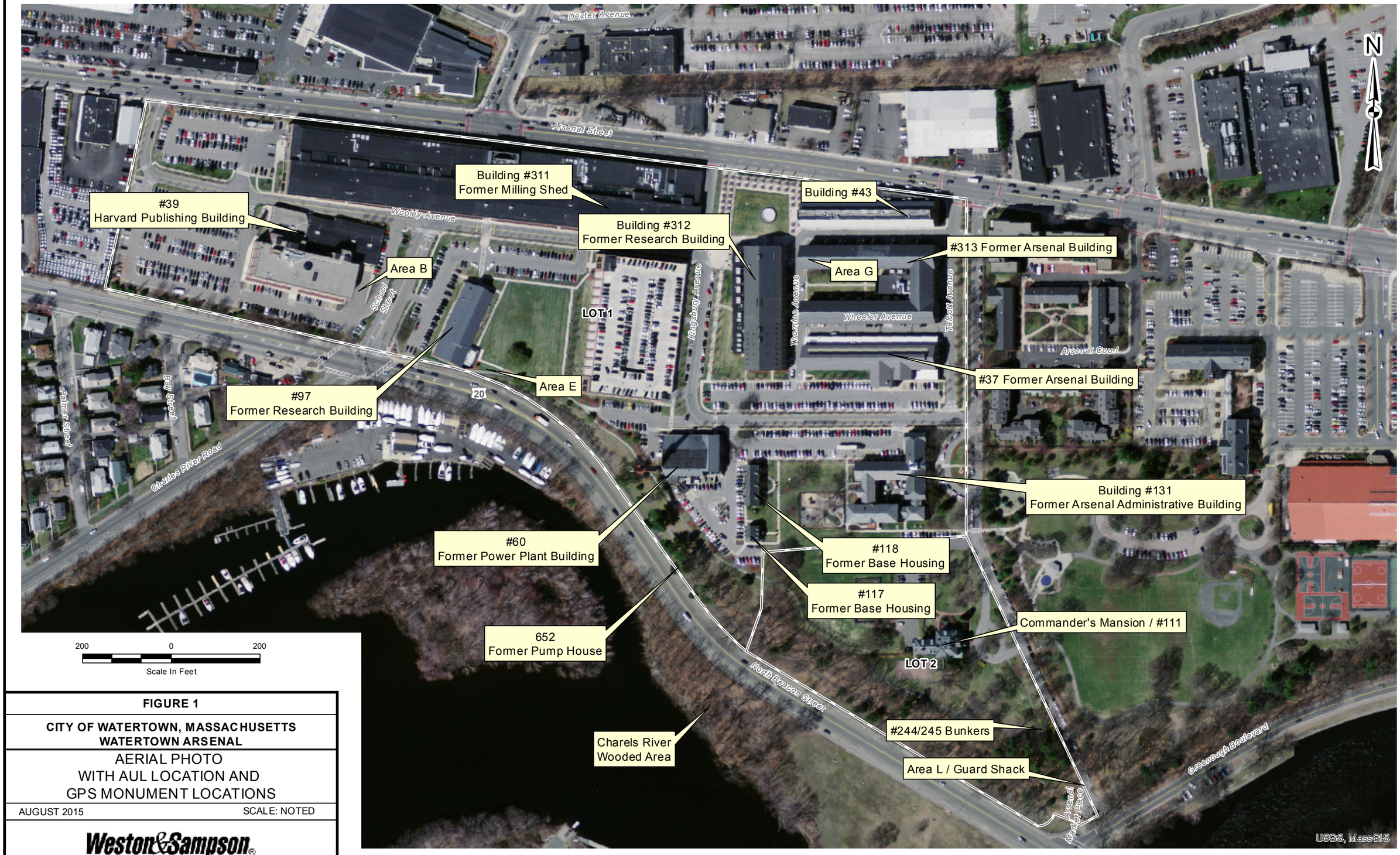


FIGURE 1

CITY OF WATERTOWN, MASSACHUSETTS
WATERTOWN ARSENAL

AERIAL PHOTO
WITH AUL LOCATION AND
GPS MONUMENT LOCATIONS

AUGUST 2015 SCALE: NOTED

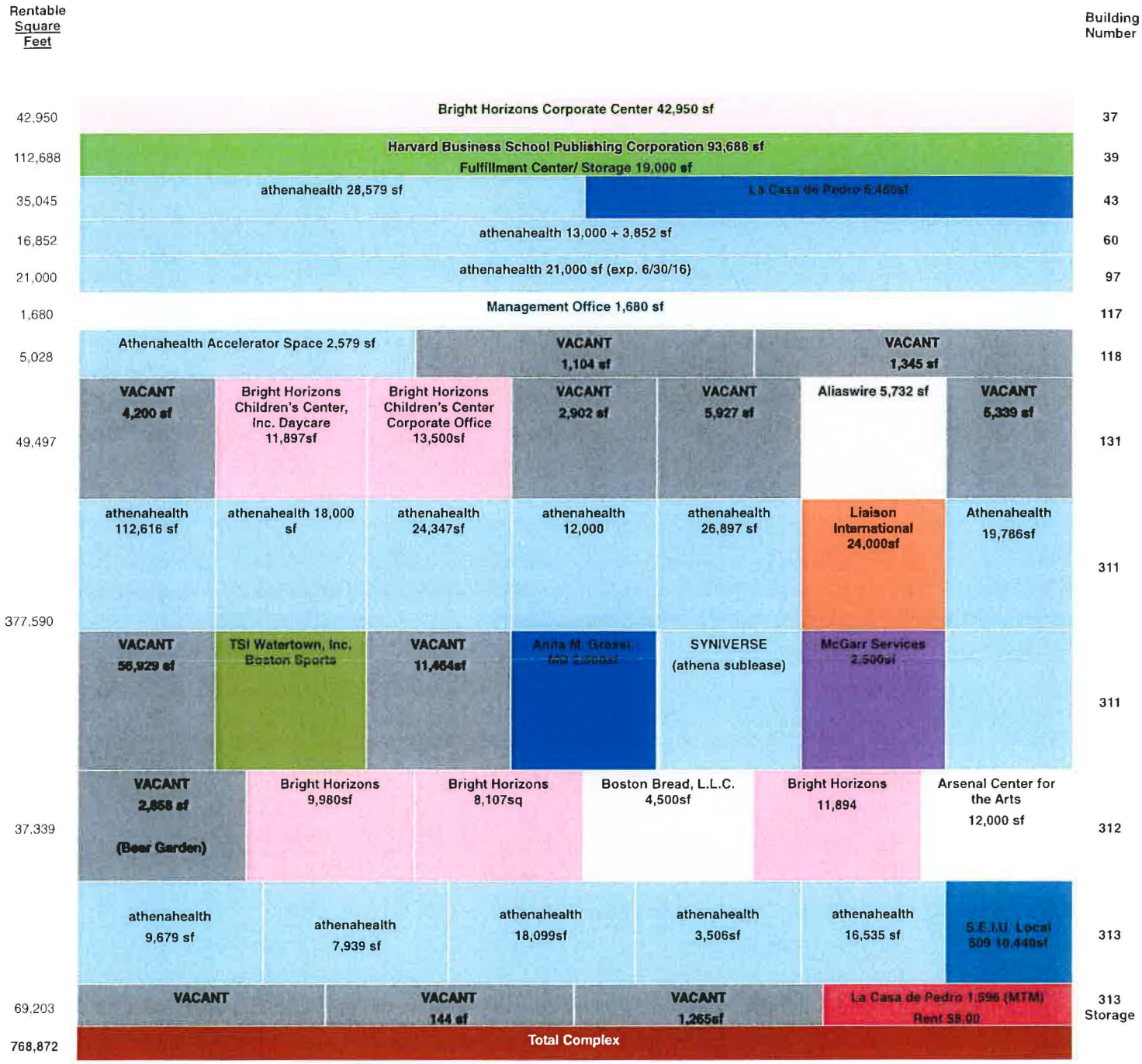
Weston&Sampson

Path: \\gisdatasrv\GIS\DataStore\Client\Watertown MA\2150340 C.aib\ref\Figure 1.mxd User: OczekoZ Saved: 8/24/2015 4:49:38 PM Opened: 8/24/2015 4:50:11 PM

Appendix D

Occupancy List

THE ARSENAL ON THE CHARLES STACKING PLAN 06/01/15



Total athenahealth space: 347,039 sf (57% of total property)

Attachment 2: 2015 Seventeenth Annual AUL Inspection Report - Charles River Park

CALIBRE
Our Success Follows Yours

September 2, 2014

ATTN: Ms. Christine Williams
US EPA New England – Fed. Fac. Superfund Section
5 Post Office Square - Suite 100; Mail Code - OSRR 07-3
Boston MA 02109-3912

Commonwealth of Massachusetts
Department of Environmental Protection; Bureau of Waste Site Clean-up
ATTN: Joanne Dearden
1 Winter Street, 8th Floor
Boston, MA 02108

RE: Seventeenth Annual Institutional Control (IC) Report, Charles River Park, Watertown, MA

Dear Ms. Williams & Ms. Dearden,

1. The Army is in receipt of the Seventeenth Annual Institutional Control (IC) Report of the former Army Materials Technology Laboratory (AMTL) Charles River Park Parcel, Watertown, MA. The Army participated in the annual inspection and concurs with the conclusions in the report provided by CEA that the institutional controls are being effectively implemented at the site.

2. The Memorandum of Agreement (MOA) for the Charles River Park was reviewed as part of the Seventeenth annual inspection, with all parties in compliance.

3. Based on the above information, this completes the Seventeenth annual report at Charles River Park.

4. If you have any questions, you can contact me at (704) 846-9727.

Sincerely,

Mark Brodowicz
BRAC Environmental Coordinator
CALIBRE

cc w/Enclosure:
Bridger McGaw, Athena
James Okun, O'Reilly, Talbort & Okun
Ellen Iorio, Corps of Engineers
Warren Switzer, ODB AMTL PM
Steve Magoon, Planning Director, Watertown
Rob Lowell, MA DCR
Rob Weikel, Beal Associates
Susan Falkoff, former RAB Co-Chair

2015 SEVENTEENTH ANNUAL
AUL INSPECTION REPORT

Former Army Materials Technology Laboratory (AMTL) and
Charles River Park Parcel (CRPP) Property
Watertown, Massachusetts

MassDEP RTN 3-0455

September 2015

Prepared for:

MASSACHUSETTS DEPARTMENT OF CONSERVATION & RECREATION
251 Causeway Street, Suite 600
Boston, MA 02114-2104

Prepared by:

CORPORATE ENVIRONMENTAL ADVISORS, INC.
127 Hartwell Street, Suite 200
West Boylston, Massachusetts 01583
(508) 835-8822

CEA Project No. 7426-12

TABLE OF CONTENTS

FIGURES

ATTACHMENTS

2015 SEVENTEENTH ANNUAL AUL INSPECTION REPORT
Former Army Materials Technology Laboratory and Charles River Park Parcel
Watertown, Massachusetts
MassDEP RTN 3-0455

1.0 INTRODUCTION

On behalf of the Massachusetts Department of Conservation and Recreation (DCR), Corporate Environmental Advisors, Inc. (CEA) has prepared this 2015 Seventeenth Annual Activity and Use Limitation (AUL) Inspection Report for the former Army Materials Technology Laboratory (AMTL) and Charles River Park Parcel (CRPP) properties addressed in the Grant of Environmental Restriction (GER) and Easement (GER&E) prepared on May 25, 2004. The GER&E was recorded with the Southern Middlesex Registry of Deeds on October 6, 2004 (Book 43851, Page 336) and designed to address the following five (5) properties to which Massachusetts Department on Environmental Protection (MassDEP) has assigned Release Tracking Number (RTN) 3-0455:

1. Charles River Open Area
2. Charles River Wooded Area
3. Watertown Yacht Club Open Area and Building Structures
4. North Beacon Street Area
5. North Beacon Street Wooded Area

The GER&E outlines the Restricted Uses and Activities for the five (5) properties which are necessary to ensure that a condition of No Significant Risk (NSR) to human health and the environment is maintained at the aforementioned properties. The purpose of this 2015 Annual AUL Audit Inspection Report is to document CEA's inspection of the properties and the results of CEA's background research and interviews with key personnel with respect to adherence to the GER&E requirements. The terms GER&E and Activity and Use Limitation (AUL) are used synonymously throughout this report.

2.0 METHODOLOGY

In accordance with CEA's most recent proposal to the Commonwealth of Massachusetts DCR, CEA has conducted the following audit activities.

Task 1 – Audit Support - Field Work, Site Visit and AUL Audit

Under Task 1, on June 1, 2015, Adam Last, P.E., LSP of CEA conducted an audit site inspection of the five (5) properties noted above. Photographic documentation of current site conditions was also compiled during the June 2015 site inspection. The results of the 2015 inspection were used to determine whether any changes have occurred at the properties since the previous audit inspection(s) conducted of the properties on June 25, 2014 by Mr. Last of CEA, and also to determine whether any activities or uses have occurred at the properties that are inconsistent with the applicable GER&E requirements. Also conducted on June 1, 2015 was an interview with Commodore Norman Kenney of the Watertown Yacht Club to determine whether any changes or new activities occurred relative to the Watertown Yacht Club.

No new conditions or new uses of the five (5) properties were identified during CEA's Audit Inspection and interview(s) that warranted notification to the City of Watertown Building Department or Department of Public Works.

Mr. Last also contacted the City of Watertown Building Department to determine whether any building permits had been issued for any of the parcels applicable to this Annual AUL Audit Inspection Report. CEA was informed that no building permits have been issued for any of the applicable parcels within the past year.

Task 2 – Audit Report Preparation

Under Task 2, CEA reviewed historical information regarding the aforementioned properties and corresponding GER&E. The following documents are among those accessed online at http://yosemite.epa.gov/r1/npl_pad.nsf/51dc4f173ceef51d85256adf004c7ec8/d98829ad20e19d6f852568ff005adb08!OpenDocument&Highlight=0,watertown and used in preparing this Seventeenth Annual AUL Audit Inspection Report:

- 2014 Sixteenth Annual AUL Inspection Report. Former Army Materials Technology Laboratory (AMTL) and Charles River Park Parcel (CRPP) Property, MassDEP RTN 3-0455. Prepared by Corporate Environmental Advisors. August 2014.
- 2013 Fifteenth Annual AUL Inspection Report. Former Army Materials Technology Laboratory (AMTL) and Charles River Park Parcel (CRPP) Property, MassDEP RTN 3-0455. Prepared by Corporate Environmental Advisors. August 2013.
- 2012 Fourteenth Annual AUL Inspection Report. Former Army Materials Technology Laboratory (AMTL) and Charles River Park Parcel (CRPP) Property, MassDEP RTN 3-0455. Prepared by Corporate Environmental Advisors. October 2012.
- 2011 Thirteenth Annual AUL Inspection Report. Charles River Park Parcel, Charles River Road and North Beacon Street. Watertown, MA. Prepared by Tighe & Bond. October 2011.
- Third Five-Year Review Report, Army Material Testing Laboratory. Prepared by U.S. Army Corp of Engineers (USACE), New England District, MA. January 2011.
- Grant of Environmental Restriction and Easement (42 U.C.S. 9601). DEP Site Name: Army Material Testing Laboratory, Charles River Park Property. DEP RTN 3-0455. Dated May 25, 2004. Recorded Southern Middlesex Registry of Deeds. Book 43851. Page 336.
- Technical Plan for the Army Material Testing Laboratory, Remedial Investigation/Feasibility Study (RI/FS), Draft. September 9, 1987.

3.0 BACKGROUND INFORMATION FOR CHARLES RIVER PARK AREA

According to the Third Five-Year Review Report prepared for the AMTL (USACE, 2011), the Commonwealth of Massachusetts assumed responsibility for the care, management and police jurisdiction of Charles River Park Parcel (CRPP) in 1920. In May 2005, the CRPP property which included a public park, a yacht club and North Beacon Street were transferred to the Commonwealth of Massachusetts Department of Conservation and Recreation (DCR).

Historically, portions of the CRPP property had been used for employee parking to accommodate increased personnel stationed at the AMTL during World War II. Assessment activities conducted at the Site in 1991 and 1992 had revealed that soils on the CRPP properties contained polycyclic aromatic hydrocarbons (PAHs), pesticides and metals at concentrations posing an unacceptable level of risk to human and environmental receptors.

Because land use at the CRPP was available as open space with public access, in September 1996, a Record of Decision (ROD) was executed for the parcel which outlined the selected remedial actions for the CRPP properties including: excavation and removal of soils containing contaminants of concern above cleanup goals, backfilling of clean fill into the excavation areas, and institutional controls with mandatory five-year (5) reviews. The institutional controls were designed to restrict residential use of the five (5) properties and all other designated activities that could allow contact with any of the contaminated soils remaining at the Site.

In August 1997, remediation activities were initiated at the CRPP property but were subsequently suspended based on a decision by the Army to reevaluate the cleanup goals (based on evolving risk assessment assumptions and methodologies).

In January 1998, the first set of revised cleanup goals were established for the CRPP and remediation activities commenced at the property in accordance with those goals. In September 1999, it was again determined that reassessment of the CRPP soil cleanup goals was necessary, which led to new cleanup goals being established for soils at the CRPP in June 2001. Subsequently, the second phase remedial actions were conducted at the CRPP (which included portions of the riverbank) in the Fall of 2001. Between 2002 and 2004, site restoration monitoring and maintenance activities were conducted annually at the CRPP.

On October 6, 2004, a Grant of Environmental Restriction and Easement (GER&E) was recorded at the Southern Middlesex Registry of Deeds for the CRPP which outlined the restricted site activities and uses for the CRPP properties including: the (1) Charles River Open Area, (2) the Charles River Wooded Area, (3) the Watertown Yacht Club (WYC) Open Area and Building Structures, (4) the North Beacon Street Area, and (5) the North Beacon Street Wooded Area. Maps 1 trough 9 provided in **Attachment A** provide depictions of the five (5) areas addressed in the October 2004 GER&E and illustrate the precise locations of the individual properties, the locations of AUL monuments and other markers, and other relevant site features.

In 2006, site inspections revealed that that erosion was occurring along the Charles River bank that could lead to exposures to contaminated soils that were left in place along the riverbank beneath the clean replacement fill. In September and October 2006, remedial activities were conducted along the riverbank to stabilize the riverbank soils and prevent further erosion of contaminated soils into the river. The work included the placement of new fill material in areas along the riverbank along with the installation of boulders, rip rap, geotextile fabrics and various types of vegetation throughout the bank to provide the necessary riverbank stabilization. Subsequently, annual inspections continued to be conducted of the five properties.

The most recent Annual AUL Audit Inspection performed of the CRPP parcels for the DCR was conducted on June 25, 2014 by Corporate Environmental Advisors (CEA), as documented in the 2014 Sixteenth Annual AUL Inspection Report (CEA, August 2014). Previously, an Annual AUL Audit Inspections were performed of the CRPP parcels on June 3, 2013 and on September 19, 2012 by CEA. No significant observations were made during these inspections, as documented in later sections of this report.

On January 2011, the Third Five-Year Review Report was prepared for the AMTL by the USACE addressing Operable Unit 1 (OU 1) which includes the CRPP properties noted above. One observation noted by USACE personnel during the August 20, 2010 inspection of the Charles River Park Open Area (Zone 5) concerned the fact that some of the fishing and wildlife

access paths from the park to the river shoreline had seen minor erosion to the point that the protective geo-membrane had become exposed. The USACE inspector recommended that these areas of erosion be addressed to minimize any risk of exposure to the contaminated media and to minimize exposure of the protective soil barrier along the shoreline.

During the Summer of 2012, rehabilitation was conducted at five (5) areas along the shoreline to restore and upgrade the riverbank stabilization measures put into place in 2006, including placement of new rip rap onto the exposed areas.

In August 2013, CEA prepared an Annual AUL Inspection Report which presented the results of CEA's June 3, 2013 site inspection. The 2014 Annual AUL Inspection Report presented the results of CEA's June 25, 2014 site inspection and utilized the June 2013 inspection results made by CEA as the baseline for assessing whether any changes had been made to the aforementioned five (5) parcels since completion of the 2013 inspection.

This 2015 Annual AUL Inspection Report presented the results of CEA's June 1, 2015 site inspection and utilizes the June 2014 inspection results made by CEA as the most recent baseline for assessing whether any change(s) have been made to the aforementioned five (5) parcels since completion of the June 2014 inspection.

4.0 SUMMARY OF AUL RESTRICTIONS FOR CRPP PARCELS

4.1 Charles River Park Parcel Open Area

The Charles River Park Open Area is an approximately 3.3 acre open parcel located directly south of North Beacon Street (near the intersection of North Beacon Street and Charles River Road). The area is used for passive, non-intrusive recreational activities. Riverbank reconstruction activities have been conducted on this parcel in September and October 2006. An AUL has been implemented for the area to restrict activities that could result in contact with impacted subsurface soils located along the riverbank and/or destabilize the riverbank.

The Charles River Park Open Area is shown on Figure 1 (Aerial Photos with AUL Locations) and Maps 1, 7, 8 and 9 provided in **Attachment A**. The AUL area and the AUL monuments are shown on Figure 2 (Aerial Photo with GPS Monument Locations) and Map 6 of 9 provided in **Attachment A**. As stated in the October 2004 GER&E, Restricted Site Activities and Uses for the Charles River Park Parcel Open Area include:

i. Residential, daycare, or school activities (except for daycare or school activities incidental to recreational park activities);

ii. Reduction in the grade below the surface grade, as defined in subparagraph 2.G; and

iii. Excavation, drilling or otherwise disturbing the soils located two (2) feet or more below the surface grade, as described in subparagraph 2.G.

A total of six benchmarks (PQ-1 through PQ-6) have been installed on the Charles River Park Parcel and define the boundaries of the AUL area. All benchmarks installed on the Charles River Park Parcel are to be maintained in accordance with paragraph 4.B.ii.c of the GER&E. Also, according to the Institutional Control Memorandum of Agreement, the condition of the benchmarks and of the grade relative to the benchmarks as shown on the survey plans are to documented during the annual on-site inspection.

4.2 Charles River Park Parcel Wooded Area

The Charles River Park Wooded Area is an approximately 1.7 acre wooded parcel that abuts the Charles River Park Open Area to the west and is located along the south side on North Beacon Street, as shown on Figure 1 (Aerial Photos with AUL Locations) and Maps 1, 5 and 8 provided in **Attachment A**. As stated in the October 2004 GER&E, Restricted Site Activities and Uses for the Charles River Park Wooded Area include:

i. Residential, daycare, or school activities (except for daycare or school activities incidental to recreational park activities).

4.3 Watertown Yacht Club Open Area and Building Structures

The Watertown Yacht Club (WYC) Open Area is an approximately 1.4 acre parcel that abuts the CRPP Wooded Area to the west. The area is located along the south side of North Beacon Street near the western-most intersection of North Beacon Street and Charles River Road.

The WYC parcel is occupied by two building structures including: the yacht club building which occupies an area measuring approximately 1,399.4 square feet, and the garage building which occupies an area measuring approximately 867.3 square feet.

The southern portion of the parcel that runs along the Charles River measures approximately 522 feet in length. A concrete retaining wall runs along most of the southern side of the parcel overlooking the Charles River. The area is shown on Figure 1 (Aerial Photos with AUL Locations) and Maps 1, 2, 3, 4 and 8 provided in **Attachment A**. The AUL area and the AUL monuments are shown on Figure 2 (Aerial Photo with GPS Monument Locations) and Map 3 of 9 provided in **Attachment A**.

As stated in the October 2004 GER&E, Restricted Site Activities and Uses for the Watertown Yacht Club Open Area include:

i. Residential, daycare, or school activities (except for daycare or school activities incidental to recreational park activities);

ii. Reduction in the grade below the surface grade, as defined in subparagraph 2.G; and

iii. Excavation, drilling or otherwise disturbing the soils located two (2) feet or more below the surface grade, as described in subparagraph 2.G.

As stated in the October 2004 GER&E, Restricted Site Activities and Uses for the Structures of the Watertown Yacht Club (Yacht Club Building and Garage Building) include:

i. Residential, daycare, or school activities (except for daycare or school activities incidental to recreational park activities);

ii. Disturbance of the building foundations and slabs which would compromise their integrity in a manner that would or would be likely to result in human contact with the underlying soils; and

iii. Excavation, drilling or otherwise disturbing the soil underlying building foundations and slabs.

A total of six benchmarks (M-1 through M-6) have been installed on the WYC open area and define the boundaries of the AUL area. All benchmarks installed on the WYC open area are to

be maintained in accordance with paragraph 4.B.ii.c of the GER&E. Also, according to the Institutional Control Memorandum of Agreement, the condition of the benchmarks and of the grade relative to the benchmarks as shown on the survey plans are to documented during the annual on-site inspection.

4.4 North Beacon Street Area

The North Beacon Street Area is an approximately 3.6 acre portion of the North Beacon Street roadway and sidewalk. The North Beacon Street Area begins near the intersection of North Beacon Street and Charles River Road to the west (just north of the Watertown Yacht Club) and runs in an easterly direction to just beyond the point where North Beacon Street again intersects Charles River Road (north of the Charles River Park Open Area). The North Beacon Street Area is shown on Map 1 provided in **Attachment A**.

As stated in the October 2004 GER&E, Restricted Site Activities and Uses for the North Beacon Street Area include:

i. Residential, daycare, or school activities (except for daycare or school activities incidental to recreational park activities);

ii. Disturbance of the roadway or sidewalk pavement which would compromise their integrity in a manner that would or would be likely to result in human contact with underlying soils; and

iii. Excavation, drilling or otherwise disturbing the soils underneath the roadway or sidewalks.

4.5 North Beacon Street Wooded Area

The North Beacon Street Wooded Area which begins at the northeast corner of North Beacon Street and Charles River Road. The area consists of two parcels, one measuring approximately 1,236 square feet which is located at the eastern corner of North Beacon Street and Charles River Road, and a second parcel measuring approximately 3,428 square foot parcel that runs underneath the Charles River. The North Beacon Street Wooded Area parcels are shown on Figure 1 (Aerial Photos with AUL Locations) and Maps 1, 7, 8 and 9 provided in **Attachment A**.

As stated in the October 2004 GER&E, Restricted Site Activities and Uses for the North Beacon Street Wooded Area include:

i. Residential, daycare, or school activities (except for daycare or school activities incidental to recreational park activities).

5.0 ANNUAL AUDIT INSPECTION RESULTS

5.1 Charles River Park Parcel Open Area

5.1.1 Recent Audit Inspection Results, 2011 through 2014

Prior to 2015, the Charles River Park Parcel (CRPP) Open Area had been inspected on June 21, 2011 by T&B personnel, and on September 19, 2012, June 3, 2013 and June 25, 2014 by Mr. Adam Last, LSP of CEA. According to the 2011 inspection report, the completed 2006 riverbank reconstruction activities consisted of the addition of rip rap along the water's edge, the re-contouring of portions of the shoreline, the addition of native vegetation, and the removal of invasive vegetation from the rehabilitated areas.

Also noted in the 2011 inspection report was the construction of two (2) shallow drainage trenches consisting of parallel rows of trapped rock emplaced just beneath the soil surface for the purpose of preventing soil erosion at the site due to surface water runoff.

The T&B report noted that, according to knowledgeable personnel, no residential, day care, or school activities except those activities incidental to recreational park activities where occurring at the site. Also, all AUL benchmarks were visible and accessible and observed to be maintained in accordance with the provisions of the GER&E.

As documented in CEA's 2012 Fourteenth Audit Inspection Report, during the Summer of 2012, rehabilitation was conducted at five (5) areas along the shoreline of the CRPP Open Area to restore and upgrade the riverbank stabilization measures put into place in 2006. The measures included placement of new rip rap onto the exposed areas.

During the September 19, 2012 inspection conducted of the area by Mr. Adam Last, the five (5) areas subject to riverbank stabilization were observed to be in good condition and all stabilized areas appeared to be intact with no geo-membrane material being exposed. No residential, day care, or school activities except those incidental to recreational park activities were observed to be occurring at the site, and all AUL benchmarks were observed to be in good condition and flush with the surrounding grade.

However, one tree measuring approximately 40 feet in length was observed to have broken above grade and fallen into the river at 2012 bank stabilization area 5. A boat hazard marker was observed upstream of the tree in the Charles River, presumably to warn boaters of the safety hazard posed by the fallen tree. No other pertinent observations were noted during the inspection and no AUL violations were identified during the 2012 Annual AUL Audit Inspection.

During the June 2013 inspection of the CRPP Open Area, no residential, day care, or school activities were observed at the site except those incidental to recreational park activities. Also, according to knowledgeable personnel, no residential, day care, or school activities except those activities incidental to recreational park activities had occurred at the site. Field observations did not detect evidence of a reduction in the grade below surface grade nor evidence that excavation, drilling or other activities have occurred that resulted in disturbance of the soils located at two (2) feet or more below surface grade. All AUL benchmarks were observed to be in good condition and flush with the surrounding grade. In summary, no AUL violations were identified during the 2013 Annual AUL Audit Inspection.

During the June 2014 inspection, no residential, day care, or school activities except those incidental to recreational park activities were observed to be occurring at the site. Field observations did not detect evidence of a reduction in the grade below surface grade nor evidence that excavation, drilling or other activities have occurred that resulted in disturbance of the soils located at two (2) feet or more below surface grade. Also, all benchmarks were visible and accessible and observed to be maintained in accordance with the provisions of the GER&E.

To enhance the visibility of AUL benchmark PS-5 at the CRPP Open Area an open hole concrete chimney block was placed directly above the PS-5 marker. The concrete chimney block is similar to those used at the Watertown Yacht Club to facilitate easy identification of the markers during site inspections.

In summary, no AUL violations were identified during the 2014 Annual AUL Audit Inspection of the CRPP Open Area. Photo-documentation of the June 25, 2014 inspection was provided in the 2014 Sixteenth Annual AUL Inspection Report.

5.1.2 CEA Audit Inspection Results, June 2015

On June 1, 2015, Mr. Adam Last of CEA conducted the 2015 Annual AUL Inspection of the CRPP Open Area. During the inspection, no residential, day care, or school activities except those incidental to recreational park activities were observed to be occurring at the site. Field observations did not detect evidence of a reduction in the grade below surface grade nor evidence that excavation, drilling or other activities have occurred that resulted in disturbance of the soils located at two (2) feet or more below surface grade.

All benchmarks were located and observed, however, a few benchmarks were difficult to locate due to the vegetative growth. Vegetation along the riverbank is becoming overgrown and encroaching onto the cleared park parcel inhibiting the visual observation of the benchmarks

In summary, no AUL violations were identified during the 2015 Annual AUL Audit Inspection conducted of the CRPP Open Area. Photo-documentation of the June 1, 2015 inspection is provided in **Attachment B**.

5.2 Charles River Park Parcel Wooded Area

5.2.1 Recent Audit Inspection Results, 2011 through 2014

Prior to 2015, the CRPP Wooded Area had been inspected on June 21, 2011 by T&B personnel, and on September 19, 2012, June 3, 2013 and June 25, 2014 by Mr. Adam Last, LSP of CEA. According to the 2011 report, the wooded area appeared to have been used for passive, non-intensive purposes. No evidence of un-permitted use was evident during the inspections. The report also noted that, according to knowledgeable personnel, no residential, day care, or school activities except those activities incidental to recreational park activities had occurred at the site. During the 2012, 2013 and 2014 inspections, no residential, day care, or school activities except those incidental to recreational park activities were observed to be occurring at the site.

No other pertinent observations were noted during the inspection of the CRPP Wooded Area and no AUL violations were identified during the 2012, 2013 and 2014 Annual AUL Audit Inspections.

5.2.2 CEA Audit Inspection Results, June 2015

On June 1, 2015, Mr. Adam Last of CEA conducted the 2015 Annual Audit Inspection of the CRPP Wooded Area. During the inspection, Mr. Last observed that no residential, day care, or school activities except those incidental to recreational park activities were occurring at the site. No other pertinent observations were noted and no AUL violations were identified during the 2015 Annual AUL Audit Inspection. Photo-documentation of the June 1, 2015 inspection is provided in **Attachment B**.

5.3 Watertown Yacht Club Open Area

5.3.1 Recent Audit Inspection Results, 2011 through 2014

Prior to 2015, the WYC Open Area had been inspected on June 21, 2011 by T&B personnel, and on September 19, 2012, June 3, 2013 and June 25, 2014 by Mr. Adam Last, LSP of CEA.

According to the 2011 report, no residential, day care, or school activities except those activities incidental to recreational park activities had occurred at the site. According to WYC personnel, no activities which resulted in reduction in grade, floor perforations or soil disturbance on the WYC Open Area had occurred. The report had indicated that the boat launch rail bed had been upgraded prior to the June 2011 site inspection. However, reportedly, any soil disturbance that took place during the upgrade was less than two (2) feet below grade and occurred outside the AUL area. Therefore, the upgrade activities did not constitute an AUL violation.

Also documented in the 2011 report, no disturbance of building foundations and slabs (including excavation or drilling) had occurred that would allow contact with impacted subsurface soils. All benchmarks were observed to be in good condition and flush with the surrounding grade.

During the September 2012 inspection conducted by Mr. Last of CEA, no residential, day care, or school activities, except those incidental to recreational park activities, were occurring at the property. Additionally, no disturbance of the building foundations and/or slabs was observed which would compromise their integrity in a manner that would be likely to result in human contact with the underlying impacted soils appears to have occurred at the Site.

Also, no excavation, drilling or other intrusive activities which could potentially disturb the soil underlying building foundations, slabs and/or soils greater than two feet below grade appeared to have been conducted at the Site. Additionally, all benchmarks were visible and accessible and observed to be maintained in accordance with the provisions of the GER&E.

Also during the 2012 inspection, four (4) monitoring wells were observed on the WYC property that were likely to have been installed to evaluate site conditions relative to the underground storage tank (UST) removal action referenced in the 2011 report. The protective road boxes for three of the wells appeared to be in good condition and the road box for the fourth well had been compromised. The well cover on the fourth well was missing which had the potential to allow infiltration of surface water runoff into the well. Therefore, CEA's 2012 Annual Inspection Report recommended that the monitoring well road box be replaced to eliminate this concern. No other pertinent observations were noted during the 2012 inspection of the WYC Open Area and Building Structures and no AUL violations were identified.

On June 3, 2013, Mr. Adam Last of CEA conducted an inspection of the WYC Open Area. During the inspection, Mr. Last observed that no residential, day care, or school activities except those incidental to recreational park activities were occurring at the property. No excavation, drilling or other intrusive activities which could potentially disturb the soil underlying building foundations, slabs and/or soils located at depths greater than two feet appeared to have been conducted at the Site. Additionally, all benchmarks were visible and accessible and observed to be maintained in accordance with the provisions of the GER&E.

During the June 2013 inspection, Mr. Last again noted that four (4) monitoring wells had been installed on the WYC property and that the protective road box for one of the monitoring wells was still missing which could potentially allow infiltration of surface water runoff into the well. Mr. Last discussed the compromised monitoring well cover with Dennis Regan and Jose Rodriguez, Shop Steward for the Watertown Yacht Club. Subsequently, on August 7, 2013, the missing monitoring well cover was replaced by WYC personnel thereby mitigating the potential for surface water runoff to enter the well.

No other pertinent observations were noted during the 2013 inspection of the WYC Open Area and Building Structures and no AUL violations were identified during the inspection. Photodocumentation for the 2013 inspection, including photographs of the repaired monitoring well road box, was included in the 2013 Annual Inspection Report.

During the June 2014 inspection, Mr. Last observed that no residential, day care, or school activities except those incidental to recreational park activities were occurring at the property. No excavation, drilling or other intrusive activities which could potentially disturb the soil underlying building foundations, slabs and/or soils located at depths greater than two feet appeared to have been conducted at the Site. According to the building department, no building permits had been issued for the WYC property within the past year. Also, all benchmarks were visible and accessible and observed to be maintained in accordance with the provisions of the GER&E. No other pertinent observations were noted during the June 2014 inspection of the WYC Open Area and Building Structures and no AUL violations were identified.

5.3.2 CEA Audit Inspection Results, June 2015

On June 1, 2015, Mr. Adam Last of CEA conducted an inspection of the WYC Open Area. During the inspection, Mr. Last observed that no residential, day care, or school activities except those incidental to recreational park activities were occurring at the property. No excavation, drilling or other intrusive activities which could potentially disturb the soil underlying building foundations, slabs and/or soils located at depths greater than two feet appeared to have been conducted at the Site. Additionally, all benchmarks were visible and accessible and observed to be maintained in accordance with the provisions of the GER&E.

No other pertinent observations were noted by Mr. Last during the inspection of the WYC Open Area and Building Structures and no AUL violations were identified during the inspection. Photo documentation for the June 1, 2015 annual inspection is provided in **Attachment B**.

5.4 North Beacon Street Area

5.4.1 Prior Audit Inspection Results, 2011 through 2015

Prior to 2015, the North Beacon Street Area (NBSA) had been inspected on June 21, 2011 by T&B personnel, and on September 19, 2012, June 3, 2013 and June 25, 2014 by Mr. Adam Last, LSP of CEA. The 2011 report noted that, according to knowledgeable personnel, no residential, day care, or school activities except those activities incidental to recreational park activities were occurring at the site. Also, disturbance of the roadway or sidewalk pavement which would compromise their integrity and which could result in contact with the underlying soils is not known to have had occurred at the Site.

According the 2012, 2013 and 2014 Audit Inspection Reports completed by CEA, no residential, daycare, or school activities except for daycare or school activities incidental to recreational park activities were occurring at the site. Also, no disturbance of the roadway or sidewalk pavement which would compromise their integrity in a manner that would or would be likely to result in human contact with underlying soils had occurred. No other pertinent observations were noted during the recent inspections of the North Beacon Street area and no AUL violations were identified during the inspections. Also, no evidence of recent excavation, drilling or other activities which would disturb the soils underneath the roadway or sidewalks was observed.

5.4.2 CEA Audit Inspection Results, June 2015

On June 1, 2015, Mr. Adam Last of CEA conducted an audit inspection of the Site. During the inspection, Mr. Last observed that no residential, daycare, or school activities except for daycare or school activities incidental to recreational park activities were occurring at the site. Also, no disturbance of the roadway or sidewalk pavement which would compromise their integrity in a manner that would or would be likely to result in human contact with underlying soils had occurred. Also, no recent excavation, drilling or other activities which would disturb the soils underneath the roadway or sidewalks appeared to have occurred.

No other pertinent observations were noted by Mr. Last during the inspection of the North Beacon Street area and no AUL violations were identified during the inspection. Photo documentation for the 2015 inspection is included in **Attachment B**.

5.5 North Beacon Street Wooded Area

5.5.1 Prior Audit Inspection Results, 2011 through 2014

Prior to 2015, the North Beacon Street Wooded Area had been inspected on June 21, 2011 by T&B personnel, and on September 19, 2012, June 3, 2013 and June 25, 2014 by Mr. Adam Last, LSP of CEA. The prior reports noted that, according to knowledgeable personnel, no residential, day care, or school activities except those activities incidental to recreational park activities were occurring at the site. Also, no evidence of un-permitted use was evident during the course of the inspections. No other pertinent observations were noted during the prior inspections of the North Beacon Wooded area and no AUL violations were identified during the inspection.

5.5.2 CEA Audit Inspection Results, June 2015

On June 15, 2015, Mr. Adam Last of CEA conducted the most recent audit inspection of the North Beacon Street Wooded Area. During the inspection, Mr. Last also observed that no residential, day care, or school activities except those incidental to recreational park activities were occurring at the site. No other pertinent observations were noted by Mr. Last during the inspection of the North Beacon Wooded area and no AUL violations were identified.

6.0 CONCLUSIONS AND RECOMMENDATIONS

CEA has completed the 2015 Seventeenth Annual AUL Audit Inspections of the five (5) CRPP properties including: the (1) Charles River Open Area, (2) the Charles River Wooded Area, (3) the Watertown Yacht Club (WYC) Open Area and Building Structures, (4) the North Beacon Street Area, and (5) the North Beacon Street Wooded Area.

The audit inspections of the properties were completed on June 1, 2015 by Adam Last, P.E., LSP. Based on the completed 2015 Annual AUL Audit Inspections, CEA has concluded that no AUL and/or GER&E violations have been identified at any parcel. CEA recommends that AUL audit inspections continue to be performed on an annual basis. In addition, CEA recommends vegetation maintenance of the Charles River Park Parcel Open Area to enhance the visibility of the AUL benchmarks.

FIGURES

FIGURE 1
AERIAL PHOTO
WITH AUL LOCATIONS

Watertown Arsenal
Former Army Material Testing Labs
Watertown, Massachusetts

Legend

AUL Boundaries

Based on MassGIS Color Orthophotography (April 2008)

N
W E
S

0 250
Feet

Tighe&Bond
July 2011

G:\GIS\MA\WatertownMA\avpro\Fig1 AUL Locations.mxd

Area B

Area E

Watertown Yacht Club

Area G

Area L

Charles River Park
Open Area

FIGURE 2
AERIAL PHOTO
WITH GPS MONUMENT LOCATIONS

Watertown Arsenal
Former Army Material Testing Labs
Watertown, Massachusetts

Legend

- AUL Monuments
- AUL Boundaries

Based on MassGIS Color Orthophotography (April 2008)

N
W E
S

0 150
Feet

Tighe&Bond
July 2011

G:\GIS\MA\WatertownMA\avproj\Fig2_Monuments.mxd

ATTACHMENT A

I CERTIFY THAT THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES OF EXISTING OWNERSHIP, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

KENNETH G. McKENZIE, Jr., P.L.S. #34099

COMMONWEALTH OF MASSACHUSETTS
KENNETH G. McKENZIE, JR.
No. 34099
REGISTERED LAND SURVEYOR

PLAN NO. 823(C-9) OF 2004
RECORDED BOOK ____ PAGE ____

I CERTIFY THAT THIS PLAN COMPLIES WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

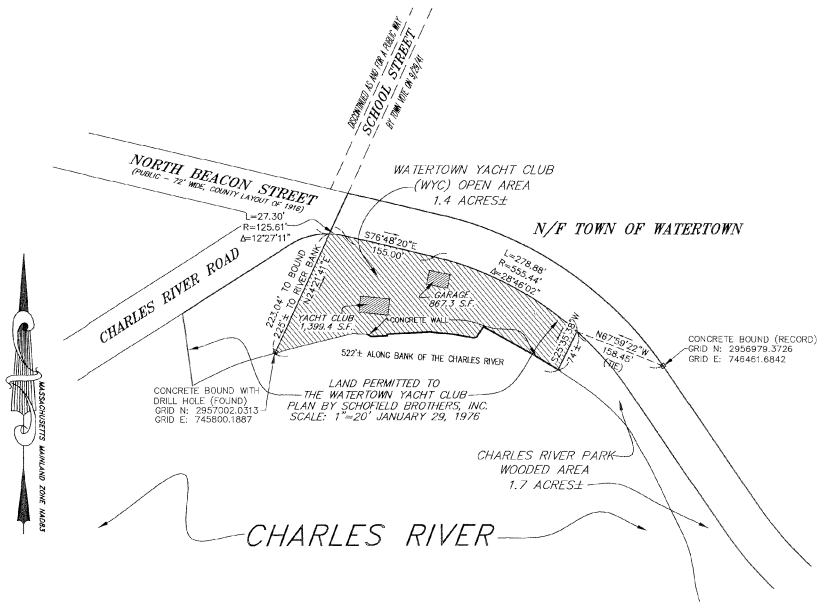
KENNETH G. McKENZIE, JR., P.L.S. #34099

DEED REFERENCE:

1) DEED RECORDED IN DEED BOOK 4366, PAGE 310, DATED JUNE 17, 1920 IN THE MIDDLESEX COUNTY REGISTRY OF DEEDS.

PLAN REFERENCES:

1) SITE PLAN OF LAND IN WATERTOWN, MASS., LEASED BY WATERTOWN YACHT CLUB, DATED JANUARY 29, 1976, BY SCHOFIELD BROTHERS, INC.



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

CONTRACT No. DACW33-02-C-0013

Dunn . McKenzie, Inc.
LAND SURVEYING AND CIVIL ENGINEERING
206 DEDHAM STREET
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(508) 384-3990 – FAX (508) 384-3905
EMAIL : staff@dunnmckenzie.com

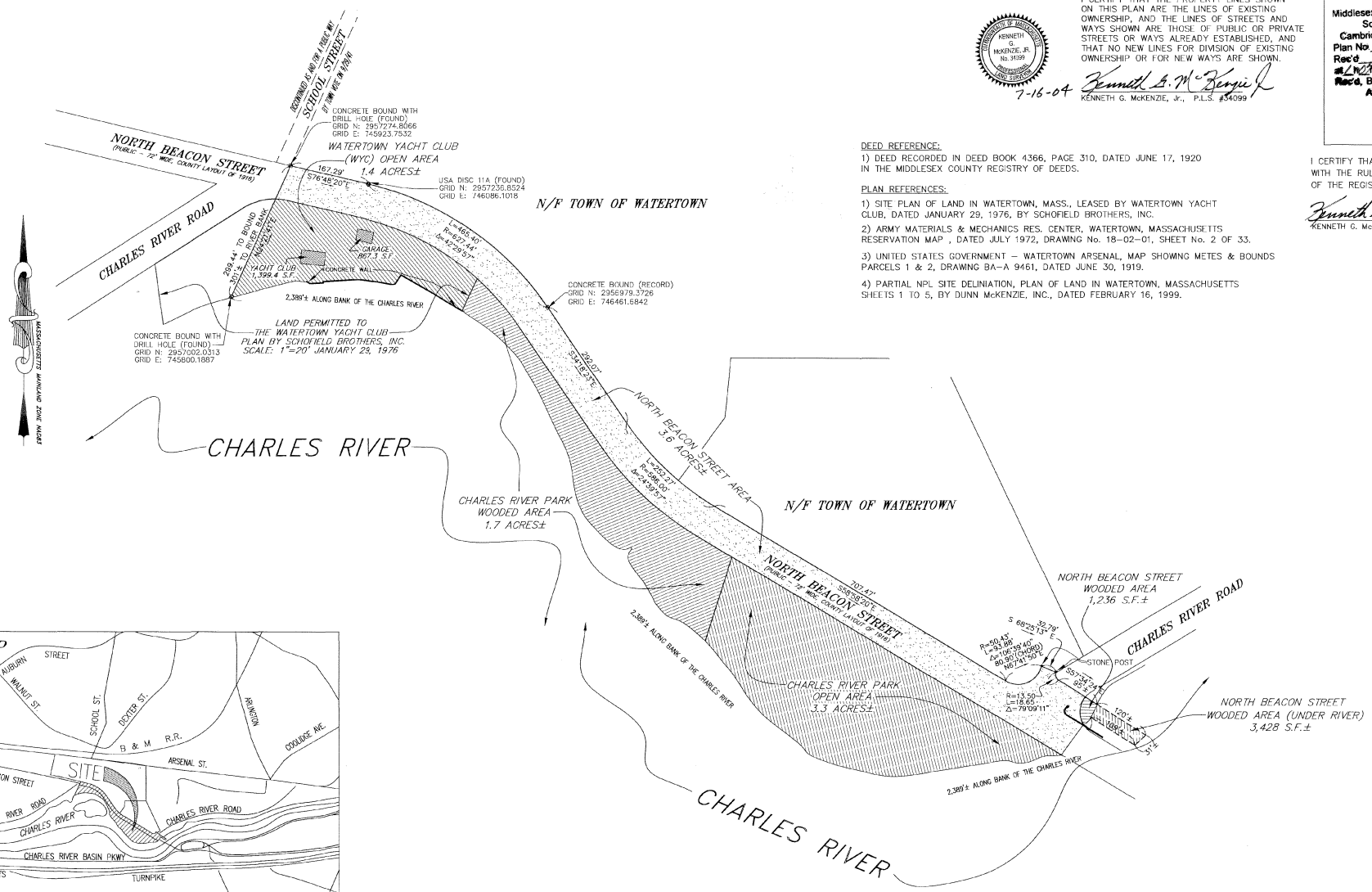
PREPARED FOR:
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742

OWNED BY:
UNITED STATES OF AMERICA

PLAN OF WATERTOWN YACHT CLUB OPEN AREA
CHARLES RIVER PARK PARCEL
WATERTOWN, MASSACHUSETTS

SHEET NO.	DATE	PROJECT NO.
2 OF 9	AUG. 13, 2003	3875

823(C-9)



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7-16-04

KENNETH G. McKENZIE, Jr., P.L.S. #34099

Middlesex Registry of Deeds, Southern District
Cambridge, Massachusetts
Plan No. 823 of 2004
Rec'd 7-22 2004
at 1 h 27 m Doc No.
Rec'd, Bk Page
Attest
Register

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2) ARMY MATERIALS & MECHANICS RES. CENTER, WATERTOWN, MASSACHUSETTS RESERVATION MAP , DATED JULY 1972, DRAWING No. 18-02-01, SHEET No. 2 OF 33.

3) UNITED STATES GOVERNMENT – WATERTOWN ARSENAL, MAP SHOWING METES & BOUNDS PARCELS 1 & 2, DRAWING BA-A 9461, DATED JUNE 30, 1919.

4) PARTIAL NPL SITE DELINIATION, PLAN OF LAND IN WATERTOWN, MASSACHUSETTS SHEETS 1 TO 5, BY DUNN McKENZIE, INC., DATED FEBRUARY 16, 1999.

I CERTIFY THAT THIS PLAN COMPLIES WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

KENNETH G. McKENZIE, Jr., P.L.S. #34099

CONTRACT No. DACW33-02-C-0013

ASSESSORS REFERENCE	
BLOCK No.1, SECTION No.13 LOT No.1	
ZONING REFERENCE	
OPEN SPACE CONSERVATION	

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

NO.	DATE	REFERENCE
		REVISIONS

DATE : AUGUST 13, 2003

RESEARCH BY:
FIELD SURVEY: KGM
COMPUTED BY: RGB
DRAFTED BY: RGB
DESIGNED BY: N/A
CHECKED BY: JMD

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U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742

OWNED BY:
UNITED STATES OF AMERICA

ARMY MATERIALS TECHNOLOGY LABORATORY
CHARLES RIVER PARK PARCEL
WATERTOWN, MASSACHUSETTS

SHEET NO.	SCALE	PROJECT NO.
1 OF 9	1'=100'	3875 .DWG

Plan #823 (1-9) of 2004 7-22-2004 1:27 P.M.

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I CERTIFY THAT THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES OF EXISTING OWNERSHIP, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

KENNETH G. McKENZIE, Jr., P.L.S. #34099 7-16-04

COMMONWEALTH OF MASSACHUSETTS KENNETH G. McKENZIE, JR. No. 34099 REGISTERED LAND SURVEYOR

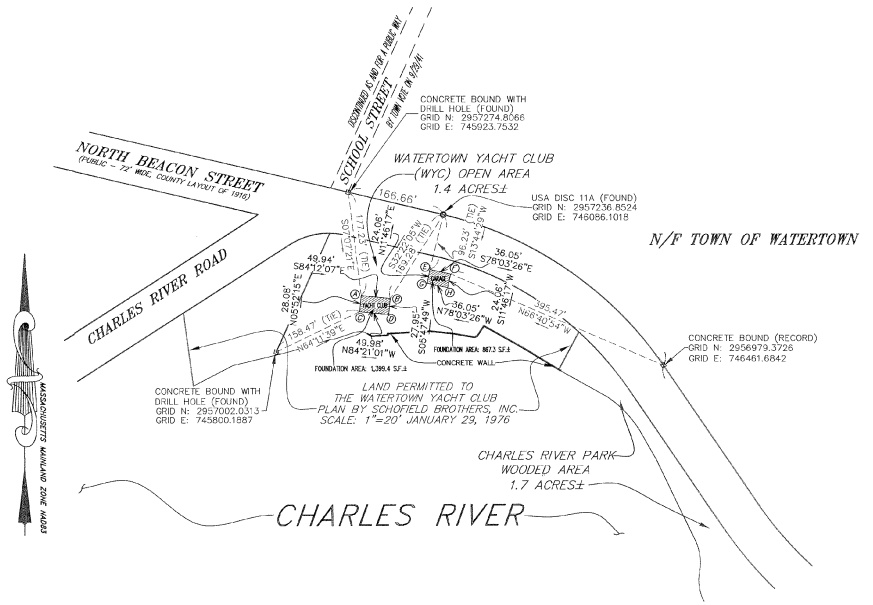
I CERTIFY THAT THIS PLAN COMPLIES WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

KENNETH G. McKENZIE, Jr., P.L.S. #34099

PLAN NO. 823(4-9) OF 2004
RECORDED BOOK _____ PAGE _____

FOUNDATION COORDINATES

DESIGNATION	DESCRIPTION	GRID NORTH	GRID EAST
A	N.W. CORNER OF YACHT CLUB FOUNDATION	2957098.92	745945.79
B	N.E. CORNER OF YACHT CLUB FOUNDATION	2957093.87	745995.48
C	S.W. CORNER OF YACHT CLUB FOUNDATION	2957070.99	745942.92
D	S.E. CORNER OF YACHT CLUB FOUNDATION	2957066.07	745992.65
E	N.W. CORNER OF GARAGE FOUNDATION	2957143.38	746063.24
F	N.E. CORNER OF GARAGE FOUNDATION	2957135.92	746098.52
G	S.W. CORNER OF GARAGE FOUNDATION	2957119.83	746058.34
H	S.E. CORNER OF GARAGE FOUNDATION	2957112.37	746093.61



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2) MONUMENTATION PLAN OF AREA M, CHARLES RIVER PARK, WATERTOWN, MASSACHUSETTS DATED JUNE 20, 2002, BY DUNN McKENZIE, INC., DRAWING No. 3654–1.

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

CONTRACT No. DACW33-02-C-0013

Dunn · McKenzie, Inc.
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PREPARED FOR:
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742

OWNED BY:
UNITED STATES OF AMERICA

FOUNDATION LOCATION PLAN

WATERTOWN YACHT CLUB – CHARLES RIVER PARK PARCEL

WATERTOWN, MASSACHUSETTS

SHEET NO.	DATE	PROJECT NO.
4 OF 9	AUG. 13, 2003	3875

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823(4-9)

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Kenneth G. McKenzie Jr. 7-16-04

KENNETH G. McKENZIE, Jr., P.L.S. #34099

COMMONWEALTH OF MASSACHUSETTS — KENNETH G. McKENZIE, JR. No. 34099 — PROFESSIONAL LAND SURVEYOR

PLAN NO. 823(3-9) OF 2004
RECORDED BOOK _____ PAGE _____

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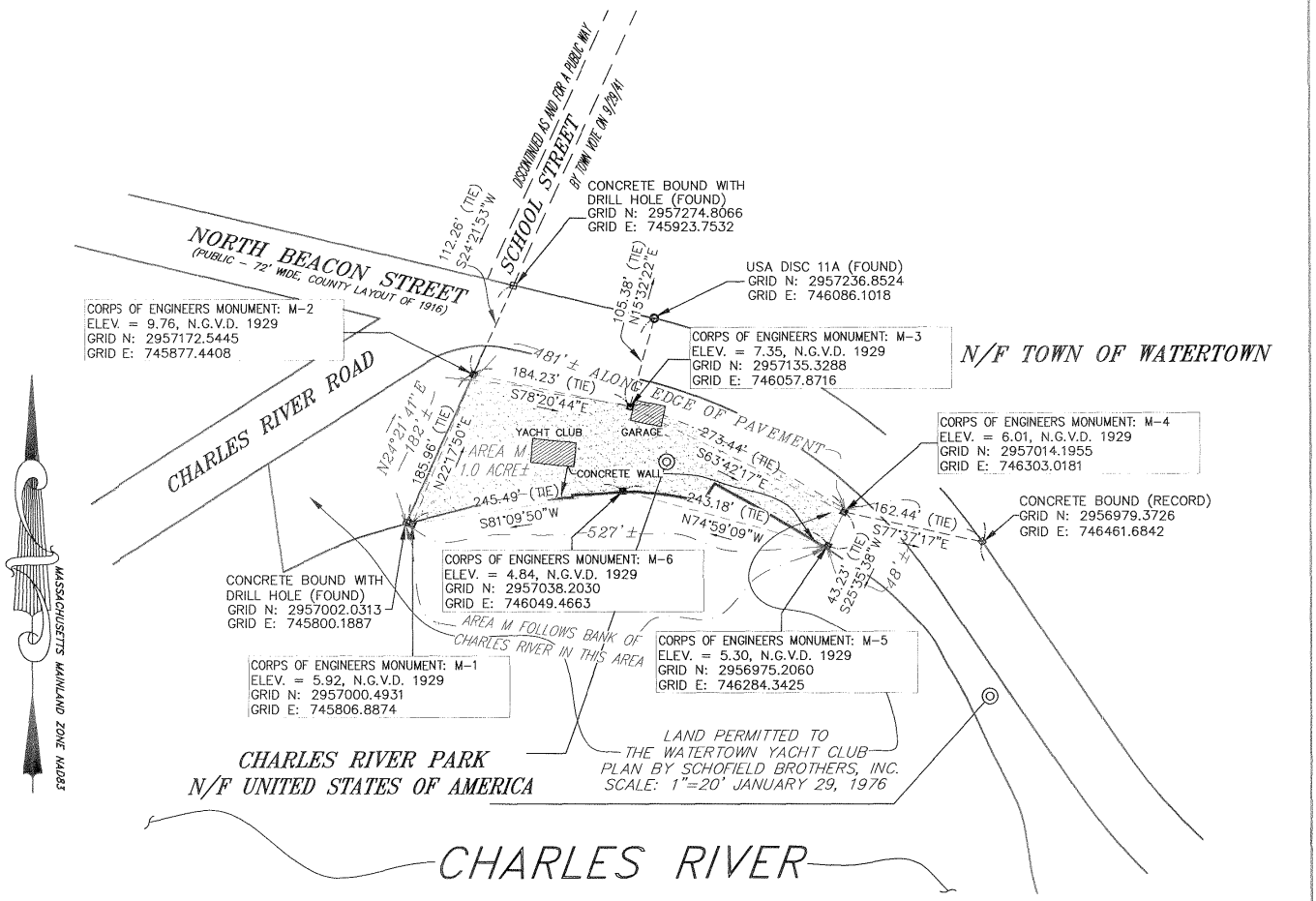
Kenneth G. McKenzie Jr.

KENNETH G. McKENZIE, Jr., P.L.S. #34099

AREA "M"				BENCH MARK
ACTUAL POINT	BENCH MARK	BEARING	DISTANCE	ELEV.
M-1	236 (TOP OF DISK)	N 22°17'50" E	185.96'	5.92
M-2	237 (TOP OF DISK)	S 78°20'44" E	184.23'	9.76
M-3	239 (TOP OF DISK)	S 63°42'17" E	273.44'	7.35
M-4	240 (TOP OF DISK)	S 25°35'38" W	43.23'	6.01
M-5	241 (TOP OF DISK)	N 74°59'09" W	243.18'	5.30
M-6	242 (TOP OF DISK)	S 81°09'50" W	245.49'	4.84



MONUMENTATION NOTE:

CORPS OF ENGINEERS MONUMENTS M-1 THROUGH M-6 ARE BERNTSEN CAST PRODUCTS MODEL B-1(MAGNETIC) SET IN CONCRETE AND STAMPED WITH MONUMENT DESIGNATION AND ELEVATION.
MONUMENTS WERE SET ON JUNE 4, 2002 BY DUNN McKENZIE, INC., NORFOLK, MASSACHUSETTS.

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

CONTRACT No. DACW33-02-C-0013

Dunn · McKenzie, Inc.
LAND SURVEYING AND CIVIL ENGINEERING
206 DEDHAM STREET
NORFOLK, MASSACHUSETTS 02056
(508) 384-3990 - FAX (508) 384-3905
EMAIL : staff@dunnmckenzie.com

PREPARED FOR:
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742

OWNED BY:
UNITED STATES OF AMERICA

MONUMENTATION PLAN OF AREA M
CHARLES RIVER PARK PARCEL
WATERTOWN, MASSACHUSETTS

SHEET NO.	DATE	PROJECT NO.
3 OF 9	AUG. 13, 2003	3875

823(3-9)

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I CERTIFY THAT THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES OF EXISTING OWNERSHIP, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

Kenneth G. McKenzie 7-16-04

KENNETH G. McKENZIE, Jr., P.L.S. #34099

COMMONWEALTH OF MASSACHUSETTS — KENNETH G. McKENZIE, JR. No. 34099 — PROFESSIONAL LAND SURVEYOR

I CERTIFY THAT THIS PLAN COMPLIES WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

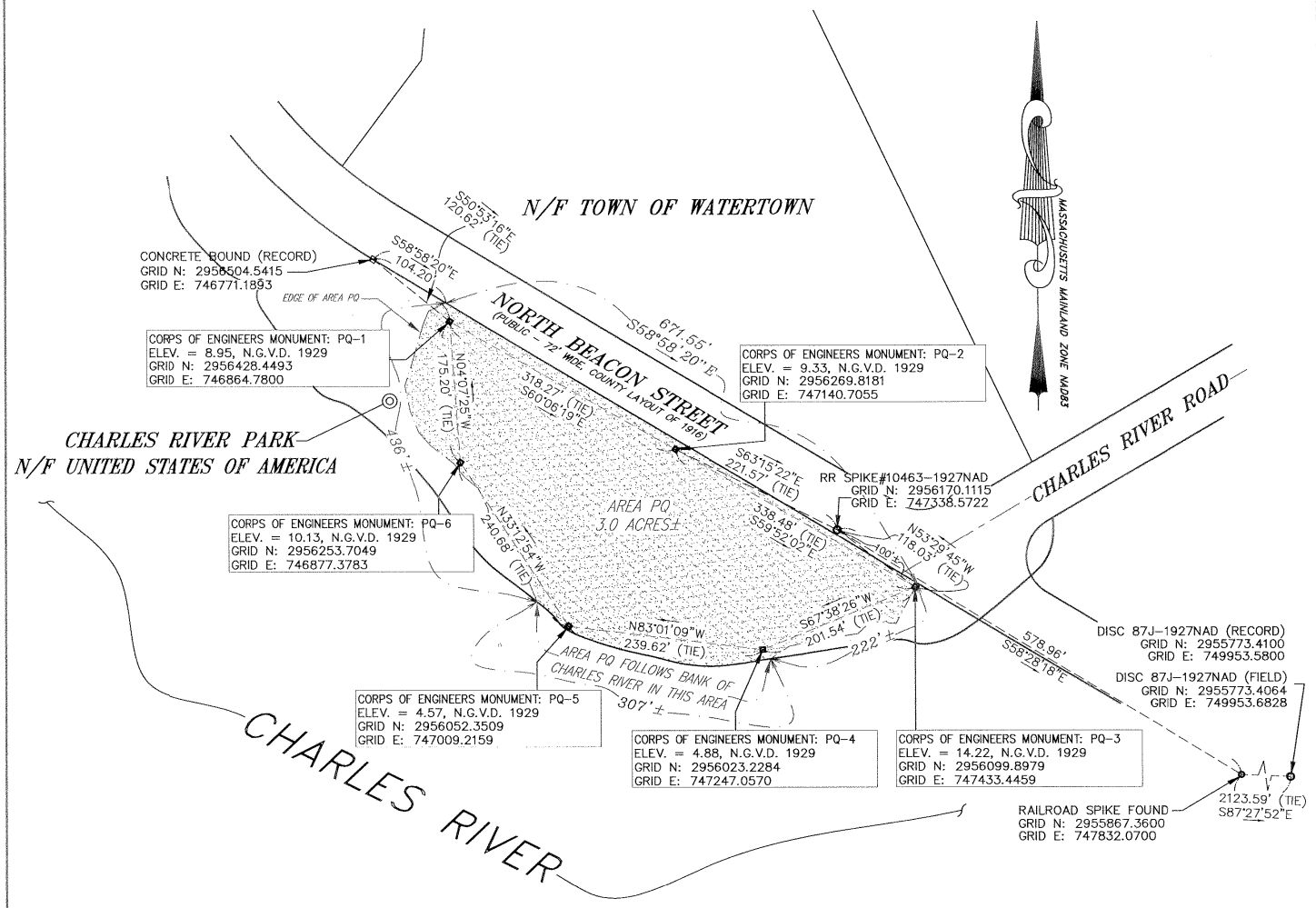
Kenneth G. McKenzie

KENNETH G. McKENZIE, Jr., P.L.S. #34099

PLAN NO. 823(6-9) OF 2004
RECORDED BOOK ____ PAGE ____

AREA "PQ"

ACTUAL POINT	BENCH MARK	BEARING	DISTANCE	BENCH MARK ELEV.
PQ–1	230 (TOP OF DISK)	S 60°06'19" E	318.27'	8.95
PQ–2	231 (TOP OF DISK)	S 59°52'02" E	338.48'	9.33
PQ–3	232 (TOP OF DISK)	S 67°38'26" W	201.54'	14.22
PQ–4	233 (TOP OF DISK)	N 83°01'09" W	239.62'	4.88
PQ–5	234 (TOP OF DISK)	N 33°12'54" W	240.68'	4.57
PQ–6	235 (TOP OF DISK)	N 04°07'25" W	175.20'	10.13



MONUMENTATION NOTE:

CORPS OF ENGINEERS MONUMENTS P–Q1 THROUGH P–Q6 ARE BERNTSEN CAST PRODUCTS MODEL B–1(MAGNETIC) SET IN CONCRETE AND STAMPED WITH MONUMENT DESIGNATION AND ELEVATION.
MONUMENTS WERE SET ON MAY 30, 2002 BY DUNN McKENZIE, INC., NORFOLK, MASSACHUSETTS.

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

CONTRACT No. DACW33–02–C–0013

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CONCORD, MASSACHUSETTS 01742

OWNED BY:
UNITED STATES OF AMERICA

MONUMENTATION PLAN OF AREA P–Q

CHARLES RIVER PARK PARCEL

WATERTOWN, MASSACHUSETTS

SHEET NO.	DATE	PROJECT NO.
6 OF 9	AUG. 13, 2003	3875

823(6-9)

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I CERTIFY THAT THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES OF EXISTING OWNERSHIP, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

Kenneth G. McKenzie Jr. 7-16-04

KENNETH G. McKENZIE, Jr., P.L.S. #34099

COMMONWEALTH OF MASSACHUSETTS — KENNETH G. McKENZIE, JR. No. 34099 — REGISTERED LAND SURVEYOR

PLAN NO. 823(5-9) OF 2004
RECORDED BOOK ____ PAGE ____

I CERTIFY THAT THIS PLAN COMPLIES WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

Kenneth G. McKenzie Jr.

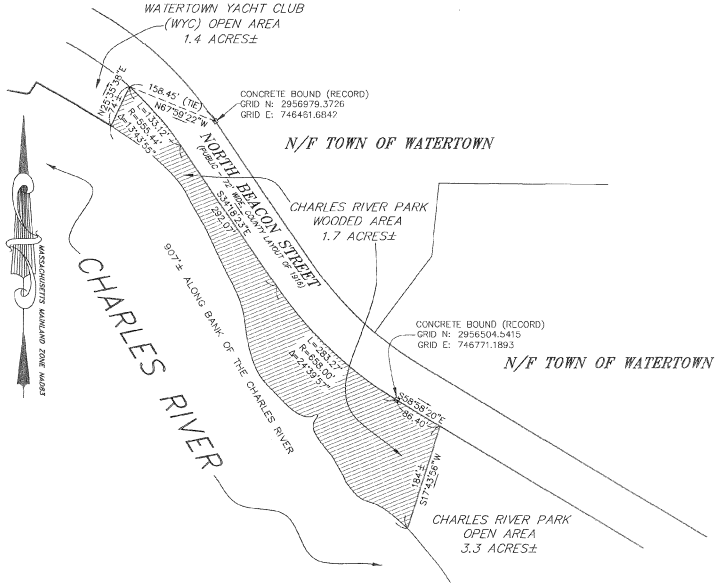
KENNETH G. McKENZIE, Jr., P.L.S. #34099

DEED REFERENCE:

1) DEED RECORDED IN DEED BOOK 4366, PAGE 310, DATED JUNE 17, 1920 IN THE MIDDLESEX COUNTY REGISTRY OF DEEDS.

PLAN REFERENCES:

1) SITE PLAN OF LAND IN WATERTOWN, MASS., LEASED BY WATERTOWN YACHT CLUB, DATED JANUARY 29, 1976, BY SCHOFIELD BROTHERS, INC.



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

CONTRACT No. DACW33-02-C-0013

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NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742

OWNED BY:
UNITED STATES OF AMERICA

PLAN OF CHARLES RIVER PARK WOODED AREA
CHARLES RIVER PARK PARCEL
WATERTOWN, MASSACHUSETTS

SHEET NO.	DATE	PROJECT NO.
5 OF 9	AUG. 13, 2003	3875

823(5-9)

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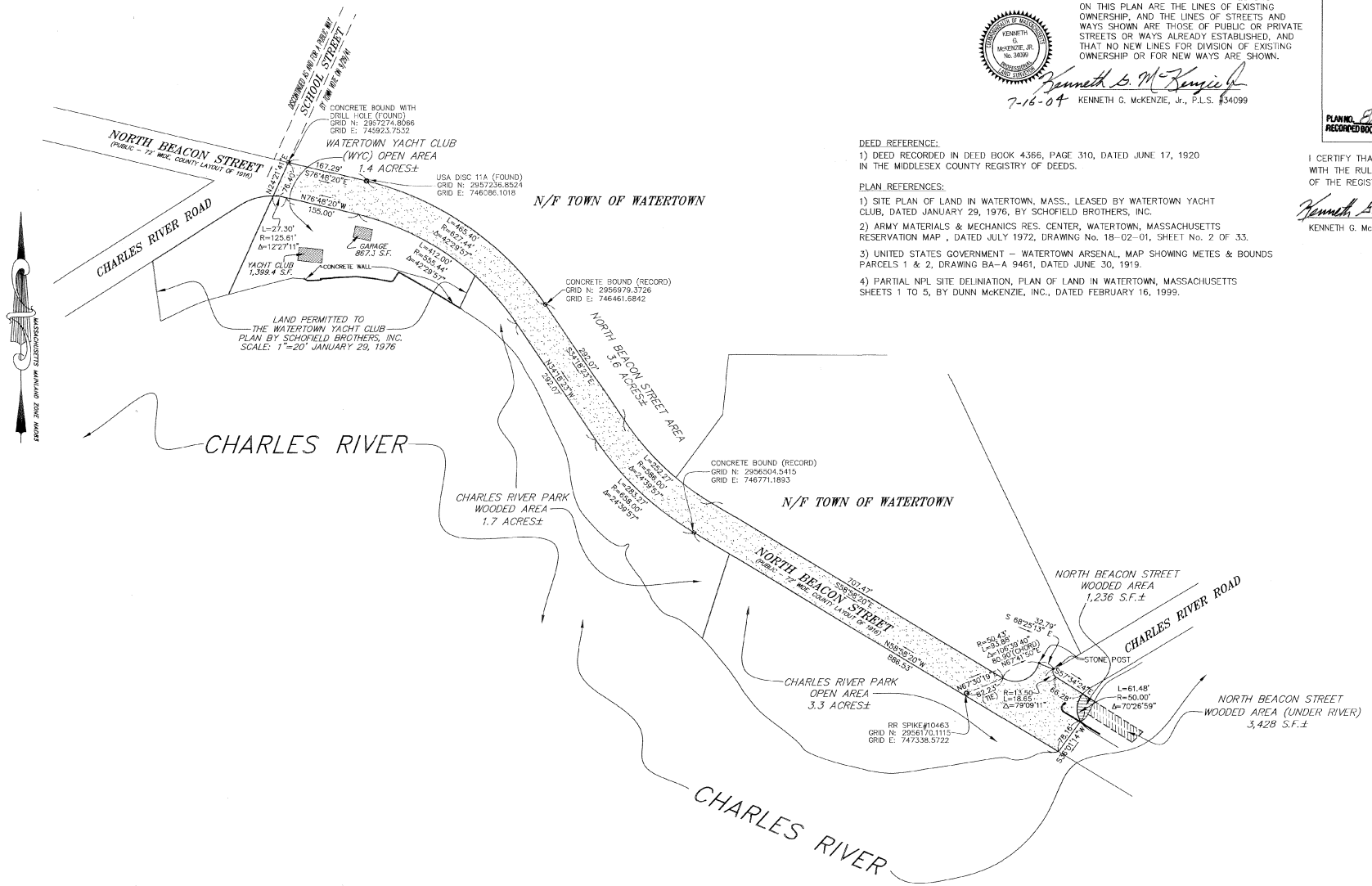

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Kenneth G. McKenzie, Jr.
7-16-04 KENNETH G. McKENZIE, Jr., P.L.S. #34099

PLAN NO. 823(B-9) OF 2004
RECORDED BOOK ____ PAGE ____

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Kenneth G. McKenzie, Jr.
KENNETH G. McKENZIE, Jr., P.L.S. #34099

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1) SITE PLAN OF LAND IN WATERTOWN, MASS., LEASED BY WATERTOWN YACHT CLUB, DATED JANUARY 29, 1976, BY SCHOFIELD BROTHERS, INC.

2) ARMY MATERIALS & MECHANICS RES. CENTER, WATERTOWN, MASSACHUSETTS RESERVATION MAP , DATED JULY 1972, DRAWING No. 18-02-01, SHEET No. 2 OF 33.

3) UNITED STATES GOVERNMENT – WATERTOWN ARSENAL, MAP SHOWING METES & BOUNDS PARCELS 1 & 2, DRAWING BA-A 9461, DATED JUNE 30, 1919.

4) PARTIAL NPL SITE DELINIATION, PLAN OF LAND IN WATERTOWN, MASSACHUSETTS SHEETS 1 TO 5, BY DUNN McKENZIE, INC., DATED FEBRUARY 16, 1999.

CONTRACT No. DACW33-02-C-0013

ASSESSORS REFERENCE	
BLOCK No.1, SECTION No.13 LOT No.1	
ZONING REFERENCE	
OPEN SPACE CONSERVATION	

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

NO.	DATE	REFERENCE
		REVISIONS
		DATE : AUGUST 13, 2003

RESEARCH BY:
FIELD SURVEY: KGM
COMPUTED BY: RGB
DRAFTED BY: RGB
DESIGNED BY: N/A
CHECKED BY: JMD

Dunn · McKenzie, Inc.
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NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742

OWNED BY:
UNITED STATES OF AMERICA

PLAN OF NORTH BEACON STREET AREA
CHARLES RIVER PARK PARCEL
WATERTOWN, MASSACHUSETTS

SHEET NO.	SCALE	PROJECT NO.
8 OF 9	1"=100'	3875 .DWG

823(B-9)

PLAN NO. 823(9-9) OF 2004
RECORDED BOOK _____ PAGE _____

I CERTIFY THAT THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES OF EXISTING OWNERSHIP, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

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COMMONWEALTH OF MASSACHUSETTS
KENNETH G. McKENZIE, JR. No. 34099 PROFESSIONAL LAND SURVEYOR

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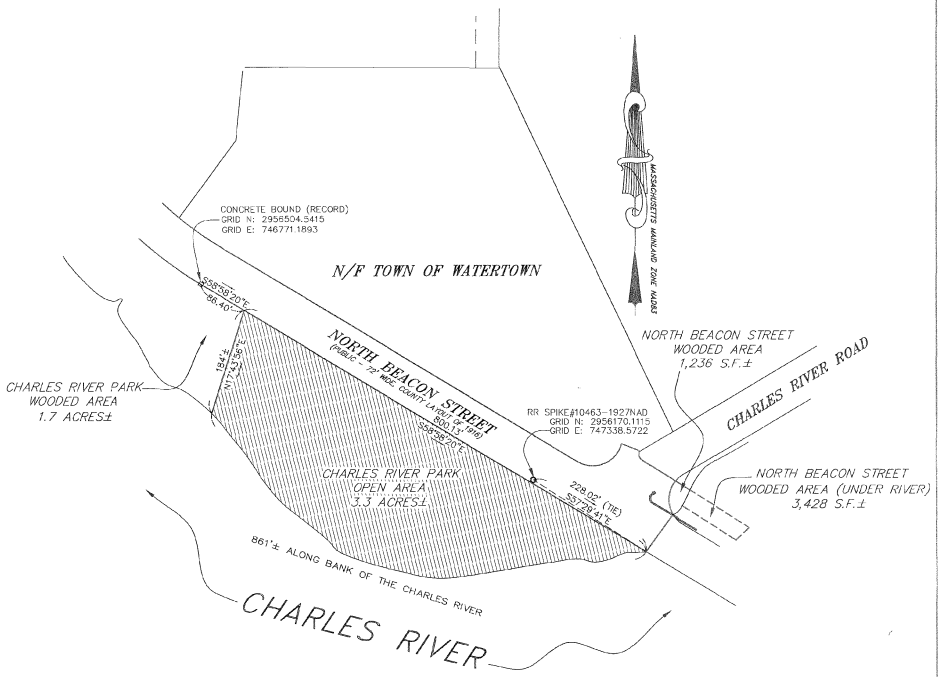

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OWNED BY:
UNITED STATES OF AMERICA

PLAN OF CHARLES RIVER PARK OPEN AREA
CHARLES RIVER PARK PARCEL
WATERTOWN, MASSACHUSETTS

SHEET NO.	DATE	PROJECT NO.
7 OF 9	AUG. 13, 2003	3875

823(9-9)

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I CERTIFY THAT THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES OF EXISTING OWNERSHIP, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

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PLAN NO. 823(9-9) OF 2004
RECORDED BOOK _____ PAGE _____

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COMMONWEALTH OF MASSACHUSETTS
KENNETH G. McKENZIE, JR. No. 34099
PROFESSIONAL LAND SURVEYOR

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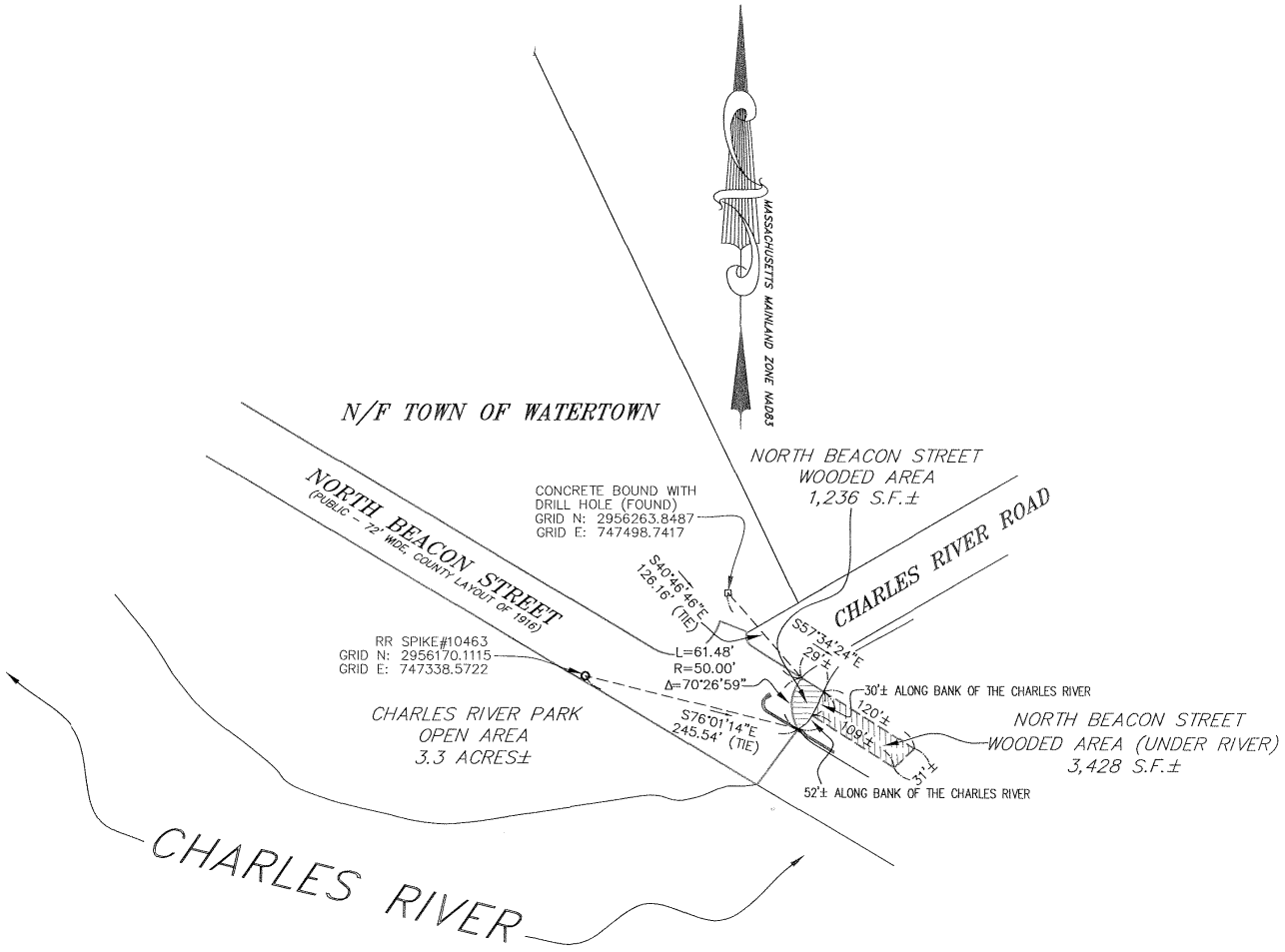

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(IN FEET)

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PLAN OF NORTH BEACON STREET WOODED AREA
CHARLES RIVER PARK PARCEL
WATERTOWN, MASSACHUSETTS

SHEET NO.	DATE	PROJECT NO.
9 OF 9	AUG. 13, 2003	3875

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823(9-9)

ATTACHMENT B

Photo 1: Entrance to Charles River Park Parcel Property

Photo 2: AUL Marker at Charles River Park Parcel (CRPP) Open Area

Photo 3: Riverbank of Charles River at CRPP Open Area

Photo 4: Placement of Concrete Marker at CRPP Open Area

Photo 5: Placement of AUL Marker at CRPP Open Area

Photo 6: Parking Area at Watertown Yacht Club (WYC)

Photo 7: Parking Area at Watertown Yacht Club (WYC)

Photo 8: Parking Area at Watertown Yacht Club (WYC)

Photo 9: Entrance to Watertown Yacht Club (WYC)

Photo 10: AUL Benchmark at Watertown Yacht Club (WYC)

Photo 11: Parking Area at Watertown Yacht Club (WYC)

Photo 12: Parking Area at Watertown Yacht Club (WYC)

Photo 13: Parking Area at Watertown Yacht Club (WYC)

Photo 14: AUL Benchmark PQ-3 at CRPP Open Area

Photo 15: View of Charles River from CRPP Open Area

Photo 16: Charles River

Photo 17: North Beacon Street Area