

**Environmental
Resources
Management**

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26 June 2000
Reference: 143.51

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup
Northeast Regional Office
205 A Lowell Street
Wilmington, MA 01887



RE: Release Notification Form, Imminent Hazard Evaluation, and
Immediate Response Action Plan
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts
Permit No. 133939

Dear Sir or Madam:

On behalf of Raytheon Company (Raytheon), Environmental Resources Management (ERM) is submitting a Release Notification Form, an Imminent Hazard Evaluation, and an Immediate Response Action Plan for a site located at 430 Boston Post Road, Wayland, Massachusetts. This submittal was prepared in accordance with the requirements of the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000.

BACKGROUND

In accordance with the requirements of the Massachusetts Contingency Plan (MCP), 310 CMR 40.0480, Environmental Resources Management (ERM) submitted a Phase I-Initial Site Investigation (Phase I) report for the site to the Massachusetts Department of Environmental Protection (DEP or Department) in July 1996 and a Tier Classification filing in January 1997. The Department issued Raytheon a Tier IB Permit, effective 21 May 1997. A Phase II-Comprehensive Site Assessment (Phase II) of the site is currently in progress.

Assessment activities have been ongoing at the site since 1989. Recent results of an on going Phase II - Comprehensive Site Assessment have linked a suspected area of stunted growth to elevated levels of metals, polychlorinated biphenyls (PCBs) and polynuclear aromatic hydrocarbons (PAHs). The reduced stem count of biota in this area

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indicates that a potential imminent hazard may exist, based on the criteria set forth in 310 CMR 40.0955(3). The potential Imminent Hazard Condition was reported to the Northeast Regional Office on 26 April 2000.

Pursuant to 310 CMR 40.0530, re-evaluation of the site Numerical Ranking Score (NRS) indicated the need to file a Major Permit Modification Application in order to upgrade the site tier classification and permit from IB to IA. The Major Permit Modification was submitted to the Department on 26 May 2000.

RELEASE NOTIFICATION FORM

The Release Notification Form (Appendix A) provides notification that a 2-hour reporting condition exists at the site due to potential Imminent Hazard to the environment.

Licensed Site Professional (LSP) for the Site

John C. Drobinski (LSP # 2196)
ERM
399 Boylston Street, 6th Floor
Boston, MA 02116

IMMINENT HAZARD EVALUATION

Correlation of areas of sediment impact with the results of vegetative mapping and analysis of plant tissue suggested the potential for an Imminent Hazard (IH) Condition. As defined in 310 CMR 40.0955 (3), "The following conditions shall constitute and Imminent Hazard to the environment; a) evidence of stressed biota attributable to the disposal site." A quantitative assessment of the potential risk to human health, suggests site conditions do not pose an IH to human health or safety. Therefore, the potential IH condition is specific to the evidence of stressed biota associated with historic releases at the site.

The results of the Imminent Hazard Evaluation are summarized below:

- Conditions at the disposal site do not pose a potential an Imminent Hazard to human health

- Conditions at the disposal site do not pose a potential an Imminent Hazard to safety
- Conditions at the disposal site pose a potential an Imminent Hazard to the environment

Based on the finding of an Imminent Hazard an Immediate Response Action will be implemented at the site in accordance with 310 CMR 40.0410

The Imminent Hazard Evaluation in its entirety can be found in Appendix B.

IMMEDIATE RESPONSE ACTION PLAN

The remainder of this Immediate Response Action (IRA) Plan is formatted consistent with the requirements of 310 CMR 40.0424. The IRA Transmittal Form (BWSC Form 103) is located in Appendix C.

- a) Name, address, telephone number and relationship of the person assuming responsibility for the IRA*

Please refer to BWSC Form 103 Section I.

- b) Description of the release, site conditions and surrounding receptors*

The subject site is an approximately 83-acre facility located at 430 Boston Post Road in Wayland, Massachusetts (Figure 1). Raytheon operated the facility under a long term lease from 1955 to 1995. Operations included electronic testing and chemical process research to support Raytheon's in-house prototype manufacturing. Raytheon operations have been terminated, and the facility decommissioned. The facility has since been sold by the owner (CNA) and leased to a new tenant.

The 15-acre wetland on-site has historically received treated wastewater and stormwater discharges from the site. Currently, the wetland receives stormwater as well as treated wastewater effluent from the on-site treatment plant, being operated by the Town of Wayland, via a National Pollution Discharge Elimination System (NPDES) permitted outfall.

Potential impacts to sediment from PAHs, PCBs and metals were discovered near the former facility storm water outfall in July 1989 by the US Fish & Wildlife Service (USFWS) as part of a study of the Great Meadows National Wildlife Refuge. Subsequent sampling performed by ERM in May 1990 and July 1995 did not confirm the results reported by USFWS.

In November 1998 during the Phase II site assessment activities, verification sampling of wetland sediments was conducted along a series of transects. Sediment sampling results indicated the presence of PCBs and metals in wetland sediments adjacent to the combined outfall.

Two additional rounds of sampling and analysis were conducted in October and November 1999. Sampling locations are displayed on Figure 2. A preliminary evaluation of results suggest:

- The extent of impact associated with organic compounds (including EPH, PAHs and PCBs) is largely confined to an area near the combined outfall and within approximately 175 feet from the eastern bank of the wetland.
- The extent of impact associated with metals (primarily chromium and silver) requires additional analysis to define the western extent of impact in wetland sediments.

All sediment data for the site quantified to date is available in the Major Permit Modification dated 26 May 2000.

Additional characterization of the wetland habitat was conducted by qualified wildlife biologists. Activities included mapping wetland vegetation, compiling an inventory of potential site-specific environmental receptors and collecting plant tissue samples. Preliminary results indicate an area of stunted vegetative growth was mapped in the southeast portion of the wetland. See Figure 2. The growth density of cattails within this area was estimated at 5 stems/square meter versus an average stem density of 50- stems/square meter in the wetland outside of this area. Samples of cattail roots collected from within the area of stunted growth indicated uptake of chromium at concentrations up to 60 ppm.

Wildlife biologists also identified the following receptors:

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1. Terrestrial receptors include meadow vole and muskrat (observed on site), sparrow, red-winged blackbird and Northern Harrier (an endangered raptor species observed downstream of the study area).
2. One endangered plant species, River Bulrush was observed along the western edge of the wetland bordering the Sudbury River outside of the suspected area of impact.
3. The wetland is a habitat for both aquatic and terrestrial receptors, depending on the flood stage of the river. During periods of inundation, the habitat is not suitable for terrestrial receptors, but available to potential aquatic receptors.

Correlation of areas of sediment impact with the results of vegetative mapping and analysis of plant tissue suggested the potential for an Imminent Hazard (IH) Condition, as defined in 310 CMR 40.0955(3).

c) Description of any Immediate Response Actions undertaken to date at the site

Assessment activities have been conducted at the site as outlined in Phase II Scope of Work and Phase II Scope of Work - Addendum No. 1. See Appendix D and E respectively.

The initial Phase II SOW excluded sediment sampling pending further investigation of existing site data. ERM submitted an addendum to the Phase II Scope of Work (SOW) dated 20 September 1999 describing additional sediment and surface water sampling planned to further define the nature and extent of impact to wetland sediment.

d) Reason why an Immediate Response Action is required

Pursuant to 40.0321, Raytheon and ERM verbally notified DEP of the potential IH condition on 26 April 2000 and agreed to conduct an IRA pursuant to 310 CMR 40.0412. On 4 May 2000, Tim Boyle of the DEP verbally authorized the IRA to include continued assessment of the nature and extent of impact in the wetlands and further evaluation of potential risks to human health and the environment consistent with the existing Phase II Scope of Work.

e) Objectives, specific plans, and proposed implementation schedule for the IRA

Assessment activities will continue according to the Phase II SOW and addendum in the wetlands to delineate the extent of impact in sediment and surface water, and assess risks to human health and the environment.

Results of sampling conducted in November 1998, October 1999 and November 1999 indicated further evaluation of the nature and extent of impact to wetland sediment quality and potential for impacts to other media (surface water and biota) will be required. The following actions are planned:

- 1.) Evaluation of the Nature & Extent of Impact to Wetland Sediment.
 - A non-intrusive sampling program to evaluate the extent of contamination in transects T-8 through T-15. Archived sediment samples from the wetlands will be analyzed for PCBs and heavy metals. The analytical data received will be used in completing the site Risk Characterization.
 - Based on the results of the above analysis, additional sediment samples may be taken and analyzed for target contaminants for the purpose of defining the extent of impact to the site.
- 2.) Determine Potential for Impact to Surrounding Media.

Wildlife biologists conducted a quantitative assessment of the wetlands during inundation in June. The assessment included a growing season field survey and flood characterization. The tasks included:

 - gathering additional site-specific wildlife and rare plant observations during the growing season to supplement 1999 observations. Surveys will focus on animal species that are potentially nesting in the area and plants that grow in the project area.
 - compiling flood data for the project area using USGS gauging data and estimate under what stage the project area floods. Then by comparing topography in the

project area with flood elevation data, estimate flooding frequency and duration.

As previously verbally approved by the Department, surface water sampling was conducted 9 May 2000 over the wetland during flooding. Currently, analytical results will be compiled and quantified. The correlation of surface water and co-located sediment data will determine if collection of edible portions of plant tissue and aquatic species are necessary. Evaluation of the need to analyze earthworms, other terrestrial invertebrates (e.g., beetles, caterpillars, etc.), and co-located soil to evaluate bioavailability of chemicals of concern (COCs) along concentration gradients, will also be conducted.

- 3.) Continue to monitor and evaluate the existing Volatile Organic Compound (VOC) plume in groundwater. Additional aquifer studies and assessment activities will be conducted
- 4.) Conduct quantitative Risk Characterization to assess the potential risks posed to human health, safety, public welfare and the environment.
- 5.) Evaluate remedial alternatives and identify the preferred alternative

Following receipt of assessment findings, an evaluation of potential impacts on site specific receptors will be continued.

The Phase II activities are projected to be complete by the end of December 2000.

f) Statement as to whether Remediation Waste will be excavated, collected, stored, treated or re-used at the site

No waste will be removed from site as part of the IRA. IRA activities will be assessment only.

g) Proposed environmental monitoring during and after the IRA

Due to the nature of the release, no monitoring is planned during IRA activities. Assessment activities will continue.

h) Listing of all federal, state and local permits likely to be needed for the IRA

None.

i) Seal and signature of the LSP who prepared the IRA Plan

Please refer to BWSC Form 105, Section H.

SUMMARY

DEP has verbally approved the IRA to consist of continued assessment of the nature and extent of risks as part of the Phase II Comprehensive Site Assessment. Phase II and Phase III activities are currently ongoing and are projected for completion by the end of December 2000.

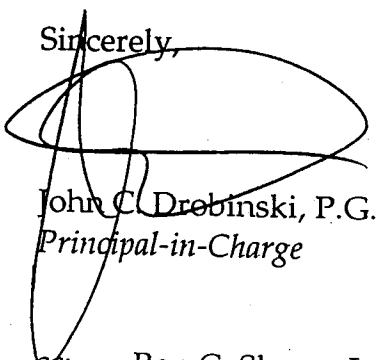
Remedial actions are not warranted or practical at the site at this time due to:

- Need to further assess the nature and extent of impact requiring remediation
- Historic nature of the release and absence of a continuing source
- The results of the Imminent Hazard Evaluation concluded that conditions at the disposal site do not pose a potential an Imminent Hazard to human health or safety.

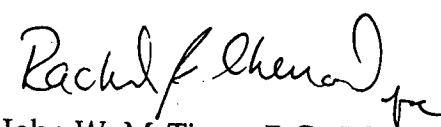
The need for and scope of potential remedial activities will be more effectively evaluated as part of the Phase II and Phase III Comprehensive Response Actions.

If the Department requires additional information or clarification regarding this submittal, please contact us at (617) 267-8377.

Sincerely,



John C. Drobinski, P.G., LSP
Principal-in-Charge



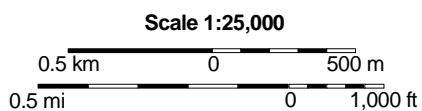
John W. McTigue, P.G., LSP
Project Manager


cc: Ron C. Slager, Jr., Raytheon Company

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SITE



 ENVIRONMENTAL RESOURCES MANAGEMENT			
399 Boylston Street, Boston, Massachusetts 02116 (617) 267-8377			
CLIENT NAME:	Raytheon	DRAWN BY: RBC	DATE: 5/25/00
FILE NAME:	Locus Map	SCALE: 1:25,000	PROJ: 143.51
RAYTHEON COMPANY dba RAYTHEON SYSTEMS COMPANY WAYLAND, MA			
LOCUS MAP			FIGURE NO: 1
PRINCIPAL-IN-CHARGE: JD		PROJECT MANAGER: JMcT	

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THE UNITED STATES OF AMERICA
FISH AND WILDLIFE

SUDBURY RIVER

HAMLEN PARCEL

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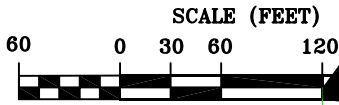
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