Aberjona Study

EPA Seeks Additional public comment on Proposed Plan

Industri-Plex and Wells G & H Superfund Sites, Woburn MA

October 2005

In June 2005, EPA released a proposed cleanup plan for groundwater, soil, sediment, and surface water contamination at the Industri-plex Superfund Site Operable Unit 2 (including Wells G&H Operable Unit 3) in Woburn. After a 60-day public comment period, EPA received hundreds of pages of comments from over forty stakeholders regarding the proposal. Subsequently, EPA released an October 2005 Technical Memorandum summarizing information regarding ammonia contamination at the site. This fact sheet supplements the June 2005 Proposed Plan, summarizes the Technical Memorandum, re-opens the public comment period, and invites public comment on the ammonia contamination, EPA's decision to include it as a contaminant of concern, and any new comments on the June 2005 Proposed Plan.

Background

After careful study of the impacts of contamination at the Industri-plex Superfund Site Operable Unit 2 (and including Wells G& H Superfund Site Operable Unit 3), EPA proposed on June 30, 2005 a cleanup plan to address soil, sediment, groundwater and surface water contamination at the site. The proposed cleanup plan, called a Proposed Plan, was issued following extensive investigations at the site. Although hundreds of chemicals were analyzed during the investigation of the site, EPA highlighted two contaminants of concern in the Proposed Plan. These contaminants were arsenic contamination in soil and sediment, and arsenic and benzene contamination in the groundwater. In addition, arsenic in deep surface water of the HBHA Pond exceeded National Recommended Water Quality Criteria (NRWQC). The public was invited to comment on the proposed cleanup plan between July 1st and August 31st.

Prior to releasing the Feasibility Study and the Proposed Plan, EPA reviewed ammonia data from the EPA Office of Research and Development's June 24, 2005 memorandum (ORD Memo) and the March 2005 MSGRP Remedial Investigation Report (MSGRP RI) (Appendix 4B-1), and determined that ammonia in the HBHA Pond also exceeded the NRWQC. The remedial alternatives identified in the Feasibility Study and Proposed Plan addressed these ammonia concerns; however, in response to comments received from the public and the Commonwealth of Massachusetts regarding the impact of ammonia on the environment, EPA has prepared the Technical Memorandum and documented that ammonia should be included as a contaminant of concern along with arsenic and benzene.

In addition to the ammonia data collected as part of the MSGRP RI and the ORD Memo, EPA also collected 12 surface water samples from the study area while in the field in July 2005. The purpose of the surface water samples was to evaluate background concentrations of ammonia in surface water entering HBHA Pond. In July 2005, EPA also collected 12 soils samples between former production wells G and H at the request of the City of Woburn. These new soil and surface water sampling locations are illustrated in Figure 1 and discussed in the Technical Memorandum.

Areas exhibiting elevated concentrations of ammonia in groundwater are located within the groundwater plumes area (GW) presented in the Proposed Plan, with the highest concentrations found near existing buried animal hide waste at the Industri-plex Site Operable Unit 1 (see figure 2). As described in the MSGRP RI, the Feasibility Study and Proposed Plan, these groundwater plumes migrate and discharge into HBHA Pond. Similar to arsenic and benzene in HBHA Pond, the highest concentrations of ammonia are found below the chemocline in deep surface water, while lower concentrations are found above

EPA Re-Opens Public Comment Period and Holds Public Hearing

EPA is accepting public comment from October 20, 2005 through November 18, 2005. During the 30-day public comment period EPA is encouraging comment specifically on the ammonia data, however will also consider new comments that you may have regarding the June 30th Proposed Plan.

You may also attend a Public Hearing on:

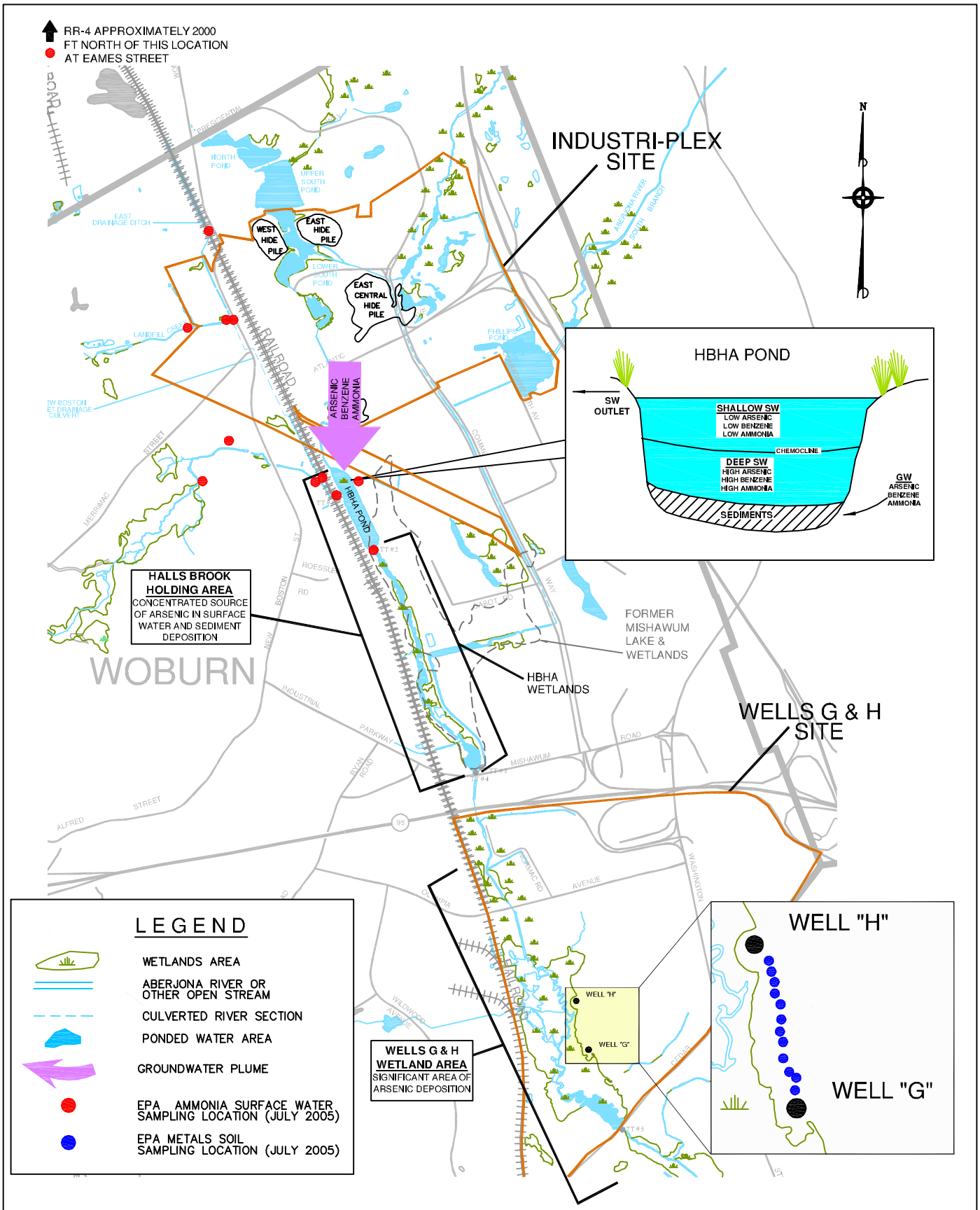
7:00 PM, Thursday, November 17, 2005
Shamrock Elementary School Cafeteria
60 Green Street, Woburn

To provide comments, you may offer oral comments during the public hearing or send written comments postmarked no later than November 18, 2005 to:

Joseph F. LeMay
Remedial Project Manager
US EPA – New England
One Congress Street, Suite 1100 (HBO)
Boston MA 02114-2023

Comments can be faxed or emailed no later than November 18, 2005 to: Fax: 617-918-1291
E-mail: lemay.joe@epa.gov

This document supplements EPA's June 2005 Proposed Plan for the Industri-plex Superfund Site Operable Unit 2 (including Wells G&H Operable Unit 3). For detailed information on the options evaluated at the site, see the Feasibility Study and June 2005 Proposed Plan, or information supporting the Proposed Plan, see the March 2005 MSGRP RI, October 2005 Technical Memorandum and Administrative Record, available for review on-line at www.epa.gov/ne/superfund/sites/industriplex or at the information repositories at the Woburn Public Library, 45 Pleasant Street in Woburn; the Winchester Public Library, 80 Washington Street in Winchester; and at EPA's Record Center at One Congress Street, Boston.



FACT SHEET – FIGURE 1
PARTIAL KEY CONTAMINANT MIGRATION PATHWAYS WITH AMMONIA AND JULY 2005 SAMPLING LOCATIONS

the chemocline in shallow surface water. Similar to arsenic and benzene, ammonia presents a human health risk to potential future groundwater users, and an ecological risk to aquatic life in HBHA Pond .

While the Proposed Plan took into consideration the presence of ammonia contamination at the site and was designed to address ammonia as well as other contamination at the site, ammonia was not highlighted along with arsenic and benzene as a contaminant of concern. EPA is releasing this fact sheet, the technical memorandum, and holding a public hearing on Thursday, November 17, 2005, so that the interested public has an opportunity to review and comment on the ammonia data for the site, and on EPA's decision to include ammonia as a contaminant of concern.

Ammonia and Supplemental Data Technical Memorandum

The MSGRP RI, which identified potential contaminant migration pathways and the risks to people and the environment associated with contamination in the study area, identified arsenic, benzene and volatile organic compounds (VOCs) as primary contaminants of concern. However, in addition to these compounds, the study area is also contaminated with ammonia.

Contaminated groundwater plumes identified in the Proposed Plan (illustrated in Figure 1 and 2) contain high concentrations of arsenic, benzene and ammonia. The decomposition of buried animal hide wastes at Industri-plex Site Operable Unit 1 contributes significantly to the generation and release of ammonia in groundwater.

At locations adjacent to or down-gradient of the existing animal hide piles or in other areas where animal wastes have been buried, such as the NSTAR (formerly Boston Edison Co.) right-of-way, high concentrations of ammonia up to 2,710 PPM (parts per million or mg/L) were found in the groundwater. Figure 2 shows the highest concentrations of ammonia in relation to the previously identified arsenic and benzene plumes at the site. The fate and transport of ammonia is consistent with the fate and transport patterns observed for dissolved arsenic and benzene groundwater plumes. These groundwater plumes originate at Industri-plex Site Operable Unit 1 and migrate and discharge into HBHA Pond, where they impact aquatic life in the pond. Similar to the processes that are attenuating arsenic and benzene, the presence of the chemocline in HBHA Pond (see HBHA Pond cross-section insert in Figure 1) serves to sequester the highest concentrations of ammonia at depth, while lower concentrations are present above the chemocline in the shallow surface water. Concentrations of up to 1,270 ppm were observed in the deep surface water of HBHA Pond and concentrations in the shallow surface water were slightly elevated, ranging from 4.0 ppm to 17.9 ppm.

After further evaluating the data included in the MSGRP RI, the ORD Memo, and the new data collected in July 2005, EPA has identified the following scenarios and areas of the site where ammonia presents an unacceptable risk to people or the environment:

- The ammonia plume, along with the arsenic and benzene plumes, beneath the Industri-plex Site may cause future health risks to people who come into contact with the groundwater.
- The ammonia plume contributes to significant environmental risks in HBHA Pond. High concentrations of ammonia in deep surface water present a risk, along with arsenic and benzene, to aquatic life in HBHA Pond. Elevated levels of ammonia in the shallow surface water also present a risk to aquatic life.

As shown in the box below, EPA has updated the risks to people and the environment as presented in the *April 2005 Aberjona River Study Comprehensive Multiple Source Groundwater Response Plan Remedial Investigation Fact Sheet* to reflect the risks presented by ammonia as well as those presented by arsenic and benzene.

Although ammonia is now being highlighted as a contaminant of concern, the cleanup alternatives evaluated in the June 2005 Feasibility Study and the preferred alternatives presented the June 2005 Proposed Plan considered and addressed ammonia in groundwater and surface water along with the arsenic and benzene contamination. Additional pre-design investigations would be necessary to further understand ammonia background conditions.

Risks Presented to People and the Environment:

◆ The arsenic, ammonia and benzene plumes beneath the Industri-Plex site may cause future health risks to people who come into contact with the water.

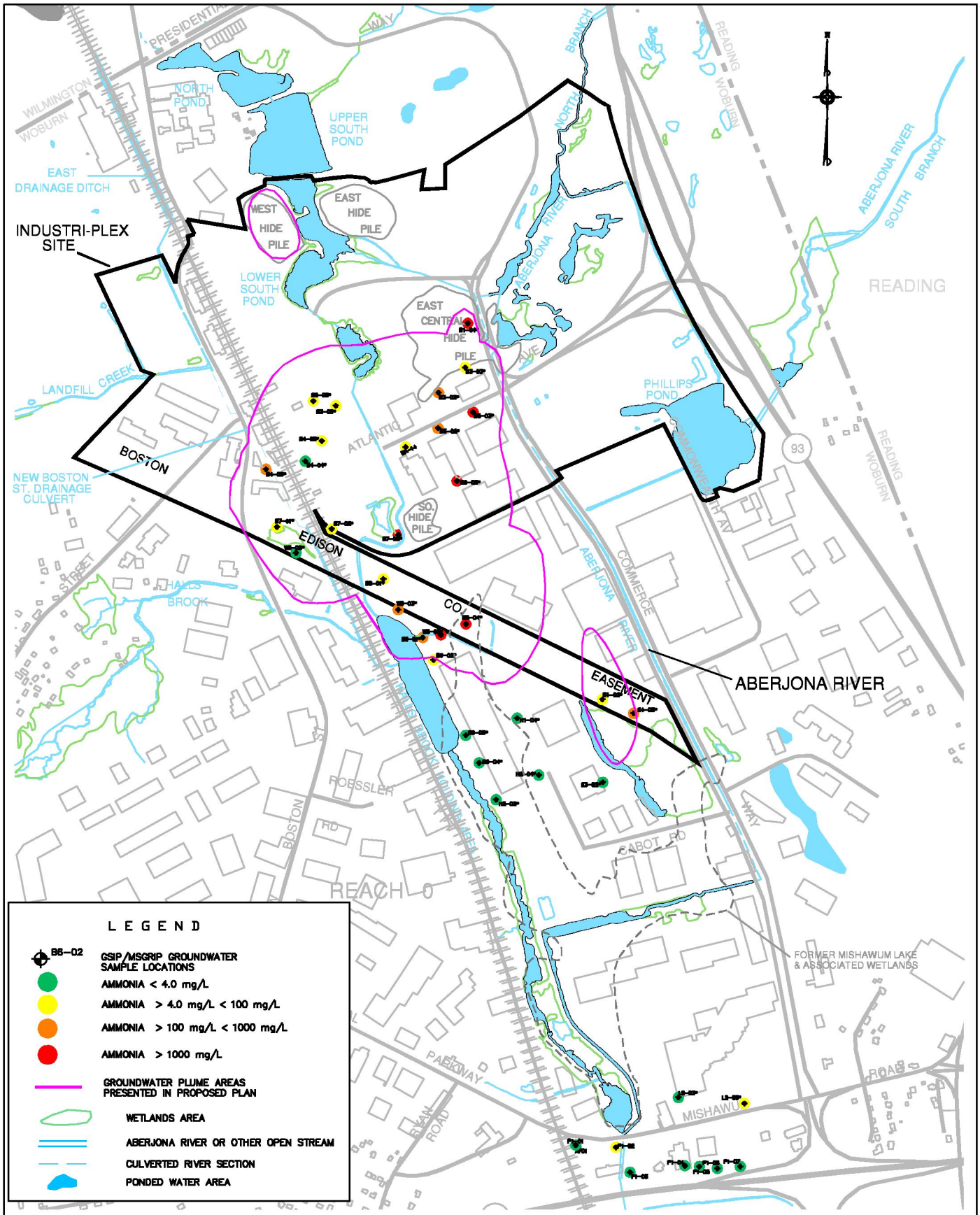
◆ The arsenic plume from the Industri-Plex Site, contributes to the migration of arsenic downstream where its presence in shoreline sediments presents a health risk to people who might come into contact with the sediment.

◆ High concentrations of arsenic in both the surface and deep soils in the area of the former Mishawum Lake Bed may cause future health risks to people who come into contact with the soils.

◆ High concentration of arsenic in sediments located in three distinct areas along the shoreline of the Wells G&H Wetland and Cranberry Bog Conservation Area present a current and/or future health risk to people recreating along the shoreline.

◆ The arsenic, ammonia and benzene plumes contribute to significant environmental risks in HBHA Pond :

- Arsenic in HBHA Pond sediments presents a significant environmental risk to the benthic invertebrate community (organisms residing in the pond sediments).
- High concentrations of arsenic, ammonia and benzene in the deep surface water present a risk to aquatic life in HBHA Pond.
- Elevated levels of ammonia in the shallow surface water present a risk to aquatic life.



FACT SHEET – FIGURE 2
GROUNDWATER PLUME AREAS WITH
AMMONIA SAMPLING LOCATIONS

Proposed Cleanup Plan

After careful study of the impacts of contamination at the Industri-plex Superfund Site Operable Unit 2 (including Wells G&H Operable Unit 3), EPA's June 2005 Proposed Cleanup Plan included the following actions to address soil, sediment, groundwater and surface water contamination at the site:

- Dredging and off-site disposal of contaminated sediments in the southern portion of the Halls Brook Holding Area Pond (approximately 6,200 cubic yards) and the near shore sediments at the Wells G&H Wetland and Cranberry Bog Conservation Area (approximately 2,300 cubic yards). All disturbed areas will be restored.
- The northern portion of Halls Brook Holding Area Pond will be incorporated into the cleanup plan and serve as a sediment retention area to minimize the downstream migration of metals. The northern portion will be separated from the southern portion by various cofferdams. Natural processes and aeration will be used to reduce contaminants. Sediments in the northern portion will be dredged periodically and sent off-site for disposal.
- Capping and stabilizing sediments and preventing groundwater discharge along approximately 1,000 linear feet of the New Boston Street drainway.
- Capping and stabilizing soils adjacent to the NSTAR and MBTA rights-of-way.
- Establishing institutional controls to ensure that no one comes into contact with soils, groundwater, or deeper wetland sediments above cleanup standards.
- Any loss of wetlands will be compensated for elsewhere in the watershed.
- Long-term monitoring of the groundwater, surface water and sediments.

Next Steps

After the close of the public comment period, EPA will review and consider comments received on the technical documents and Proposed Plan, and issue a Record of Decision (ROD) which will outline the selected remedy for the site. EPA will respond to comments in a Responsiveness Summary which will accompany the ROD.

EPA United States Environmental Protection Agency New England

Project Contacts

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Copies of the Technical Memorandum and related documents are available at the following locations:

Woburn Public Library
45 Pleasant St.
Woburn, MA

Winchester Public Library
80 Washington St.
Winchester MA

EPA Records Center
One Congress St.
Boston, MA

The June 30th Proposed Plan and Public Comments submitted to EPA by August 31st, as well as the Technical Memorandum and related documents can also be found under "links to other site information" on EPA's web site at:

http://www.epa.gov/ne/superfund/sites/industriplex

All documents may be downloaded and printed
(Adobe Acrobat Reader is required)

Send us Your Comments

You may use the form below to provide EPA with your written comments about the Industri-plex Superfund Site Operable Unit 2 (including Wells G&H Operable Unit 3). Please mail this form and any additional written comments, postmarked no later than November 18, 2005 to:

Joseph F. LeMay

U.S. EPA

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Boston MA 02114

fax: 617-918-1291

e-mail: lemay.joe@epa.gov

Comments Submitted by: _____ (attach additional sheets as needed)

public comment sheet (continued)

Fold, staple, stamp, and mail

place
stamp
here

Mr. Joseph F. LeMay
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