

**EPA Superfund
Explanation of Significant Differences**

**AUBURN ROAD LANDFILL SUPERFUND SITE
EPA ID: NHD980524086
LONDONDERRY, NH
July 2009**

**Explanation of Significant Differences
Auburn Road Landfill Superfund Site
July 2009**

TABLE OF CONTENTS

DECLARATION page 3

I. INTRODUCTION page 5

**II. SUMMARY OF SITE HISTORY, CONTAMINATION
PROBLEMS, AND SELECTED REMEDY page 8**

III. DESCRIPTION OF SIGNIFICANT DIFFERENCES page 15

IV. SUPPORT AGENCY COMMENTS page 16

V. STATUTORY DETERMINATION page 16

VI. PUBLIC INFORMATION page 16

**DECLARATION FOR THE
EXPLANATION OF SIGNIFICANT DIFFERENCES
AUBURN ROAD LANDFILL SUPERFUND SITE**

SITE NAME AND LOCATION

Auburn Road Landfill Superfund Site
Londonderry, New Hampshire

STATEMENT OF PURPOSE

This decision document sets forth the basis for the determination to issue the attached Explanation of Significant Differences (ESD) for the Auburn Road Landfill Superfund Site (the Site), Londonderry, New Hampshire.

STATUTORY BASIS FOR ISSUANCE OF THE ESD

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9617(c), Section 117(c) requires that, if the remedial action being undertaken at a site differs significantly from the Record of Decision (ROD) for that site, EPA shall publish an explanation of the significant differences and the reasons such changes were made. The National Contingency Plan (NCP), 40 C.F.R. § 300.435(c)(2)(i), and Office of Solid Waste and Emergency Response (OSWER) Directive 9355.3-02, indicate that an ESD, rather than a ROD amendment, is appropriate where the adjustments being made to the ROD are significant but do not fundamentally alter the remedy with respect to scope, performance, or cost. EPA has determined that the adjustments to the December 19, 1996 Amended ROD (AROD) provided in this ESD are significant but do not fundamentally alter the overall remedy for the Auburn Road Landfill Superfund Site with respect to scope, performance, or cost. Therefore, this ESD is being properly issued.

In accordance with Section 300.825(a)(2) of the NCP, this ESD will become part of the Administrative Record for the Site and will be available for public review at both the EPA Region 1 Record Center in Boston, Massachusetts and the Leach Public Library at 276 Mammoth Road, Londonderry, NH 03053.

OVERVIEW OF THE ESD

After the 1996 AROD was issued, the Safe Drinking Water Act Maximum Contaminant Level (MCL) for arsenic was revised from 50 ug/l to 10 ug/l. This ESD revises the arsenic cleanup level to 10 ug/l to ensure the protectiveness of the remedy in the future. In addition, the 1996 AROD had a typographical error in Table 6, "INTERIM CLEANUP LEVELS IN GROUND WATER." Instead of "1,2 Dichloroethylene", the table listed, "Trans-1,2 dichloroethene." Table 6 of the 1996 AROD should be corrected

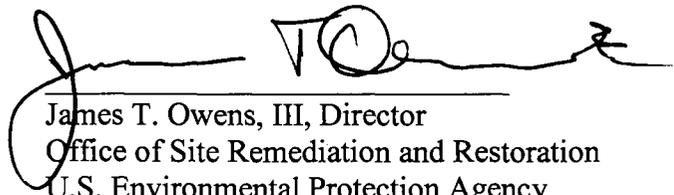
to include "1,2 Dichloroethylene" and to delete "Trans-1,2 dichloroethene" . The cleanup level remains unchanged at 70 parts per billion.

The State of New Hampshire has reviewed and commented on this ESD and concurs with its issuance.

DECLARATION

For the foregoing reasons, by my signature below, I approve the issuance of an Explanation of Significant Differences for the Auburn Road Landfill Superfund Site in Londonderry, New Hampshire, and the changes stated therein.

8/4/09
Date


James T. Owens, III, Director
Office of Site Remediation and Restoration
U.S. Environmental Protection Agency
Region 1 New England

**EXPLANATION OF SIGNIFICANT DIFFERENCES
AUBURN ROAD LANDFILL SUPERFUND SITE
LONDONDERRY, NEW HAMPSHIRE**

I. INTRODUCTION

A. Site Name and Location

Site Name: Auburn Road Landfill Superfund Site (the “Site”)

Site Location: Town of Londonderry, Rockingham County,
New Hampshire (see figure 1, Site Location Map)

B. Lead and Support Agencies

Lead Agency: United States Environmental Protection Agency
(EPA)

Support Agency: New Hampshire Department of Environmental
Services (NH DES)

C. Legal Authority

Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9617 (c), 40 C.F.R. § 300.435(c) of the National Contingency Plan (NCP), and Office of Solid Waste and Emergency Response (OSWER) Directive 9355.3-02, if EPA determines that differences in the remedial action significantly change but do not fundamentally alter the remedy selected in the Amended Record of Decision (AROD), dated December 19, 1996, for the Site with respect to scope, performance, or cost, EPA shall publish an Explanation of Significant Differences (ESD). The ESD shall explain the differences between the remedial action being undertaken and the remedial action set forth in the AROD and the reasons such changes are being made.

D. Summary of Circumstances Necessitating this Explanation of Significant Differences

The 1996 AROD identified the Safe Drinking Water Act (42 U.S.C. §300f *et seq.*), Maximum Contaminant Levels (MCLs) (40 C.F.R. 141, Subpart B and G), as chemical-specific ARARs for the purpose of establishing cleanup levels for groundwater at the Site.

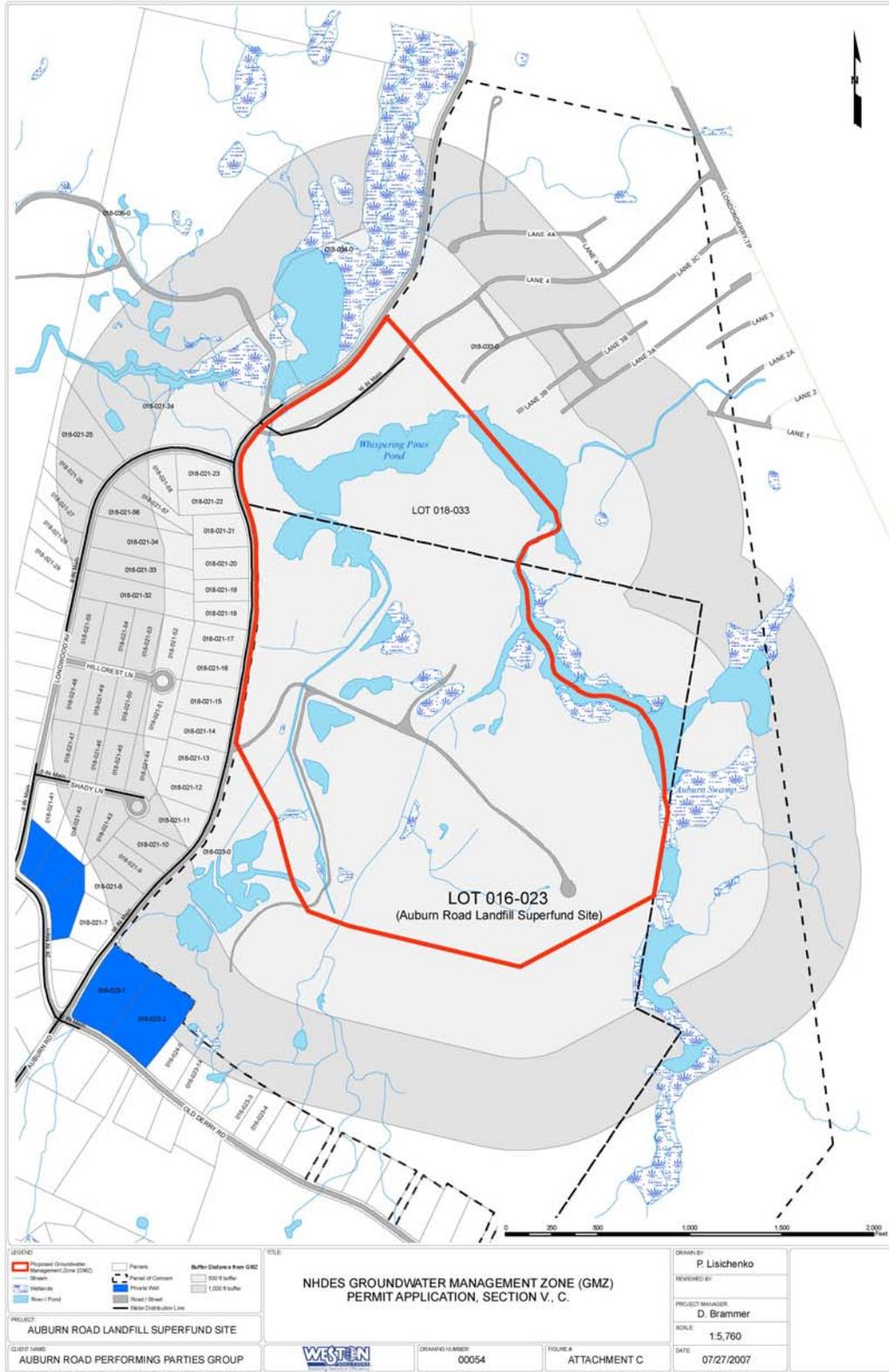


Figure 1: Site Location Map –NHDDES Proposed GMZ (2007).

In 1996, the Safe Drinking Water Act was amended and required EPA to review drinking water standards for arsenic and propose a new MCL. Through proper rulemaking, the MCL for arsenic in drinking water was changed from 50 ug/l to 10 ug/l (effective as of February 22, 2002). Because groundwater at and beyond the compliance boundary at the Site is federally classified as a current or potential drinking water source, the performance standard for arsenic for monitoring the protectiveness of the remedy is being changed from 50 ug/l to 10 ug/l. This change in the arsenic MCL does not affect the protectiveness of the remedy in the short term since the installed source control remedy and the installation/availability of a municipal water supply to the area are preventing consumption of groundwater on the property and by residents within and near the Site. Institutional controls on and off the Site have not been implemented as of this writing, but will have an impact on the long-term protectiveness of the Site.

This ESD also documents the correction of a typographical error found in “TABLE 6 – INTERIM CLEANUP LEVELS IN GROUND WATER” of the 1996 AROD. The Table should have listed “1,2 Dichloroethylene”, and not “Trans-1,2 dichloroethene”. Table 6 of the 1996 AROD should be corrected to reflect “1,2 Dichloroethylene”. The cleanup level remains unchanged at 70 parts per billion.

E. Availability of Documents

This Explanation of Significant Differences (ESD) and supporting documentation shall become part of the Administrative Record for the Site. The ESD, supporting documentation for the ESD, and the Administrative Record are available to the public at the following locations and may be reviewed at the times listed below.

U.S. Environmental Protection Agency
Records Center
One Congress Street
Suite 1100
Boston, MA 02114-2023
(617) 918-1440

Monday – Friday 9:00 a.m. to 5:00 p.m.

Leach Public Library
276 Mammoth Road,
Londonderry, NH 03053

The Library is open Monday - Thursday 9:00 am - 8:00pm, Friday and Saturday 9:00am - 5:00pm and closed Sundays

II. SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS AND SELECTED REMEDY

A. SITE HISTORY AND CHRONOLOGY

The Auburn Road Landfill Superfund Site (the “Site”) is located in the Town of Londonderry, Rockingham County, New Hampshire. The 180-acre property is owned by the Town of Londonderry, and is bordered by Auburn Road and residences to the west, Old Derry Road and residences to the south, an unnamed stream and wetland areas to the east, and Whispering Pines Pond and a mobile home park to the north (see Figure 1).

Table 1: Auburn Road Landfill Londonderry, New Hampshire Chronology of Site Events	
Date	Event
Up to 1965	Sand and gravel operation.
1965 – 1980	Operated as a municipal solid waste landfill accepting all wastes. Disposal activities ceased and landfill shutdown in 1980.
8 September 1983	Site listed on National Priorities List (NPL), ranking 383 out of 416 sites nationally.
1985 – 1986	<i>Remedial Investigation</i> found buried drums containing hazardous material.
Spring 1986	EPA excavated and removed approximately 1,900 drums from the Site.
17 September 1986	EPA signed <i>Record of Decision</i> (ROD) for construction of a public water supply line.
18 February 1987	EPA issued the Town of Londonderry an Administrative Order to install a municipal water supply line to residents potentially affected by Site contamination.
November 1987	Public water supply line constructed by the Town of Londonderry. Potentially affected residents along portions of Auburn Road (including Whispering Pines Pond Mobile Home Park), Longwood Avenue, and Shady Lane served by public water line.
1988	EPA removed 316 additional drums from the Site.
29 September 1989	Following additional investigations, EPA signed a second ROD that directed the construction of a cap over the on-site wastes as well as the design and construction of a pump and treat groundwater remedy.
31 August 1990	A group of Potentially Responsible Parties (PRPs) were issued an Administrative Order to perform the remedies selected in the 29 September 1989 ROD.

**Table 1: Auburn Road Landfill
Londonderry, New Hampshire
Chronology of Site Events**

Date	Event
30 September 1992	First Five-Year Review. EPA found the installation of a public water supply line to residents near the Site (along portions of Auburn Road (including Whispering Pines Pond Mobile Home Park), Longwood Avenue, and Shady Lane) to be protective of human health and the environment (EPA, 1992).
24 July 1996	<i>Remedial Action Completion Report</i> signed by EPA. The Town of Londonderry completed the landfill cap construction and drainage improvements.
19 December 1996	EPA signed an <i>Amended ROD</i> (AROD). The AROD, based on investigations over the previous five years and then-current Site conditions, chose not to implement the pump and treat groundwater remedy and instead to utilize an alternative remedy of monitored natural attenuation (MNA) of the arsenic contamination.
29 September 1997	EPA issued second Five-Year Review. EPA found the water line and the landfill cap construction at the Site to be protective of human health and the environment (EPA, 1997).
22 November 1999	EPA signed a Consent Decree with PRP groups for monitoring groundwater, surface water, and sediments. The agreement also bound the PRPs to performing a groundwater remedial action, if necessary.
February 2000	First annual report submitted for the Long-Term Environmental Monitoring Program (LTEMP). Subsequently, reports have been submitted annually from 2000 to 2006 (SME, 2000; WESTON, 2001 through 2006a and 2007).
24 March 2000	<i>Natural Attenuation Remedy Project Operations Plan</i> (NARPOP) for the LTEMP completed (WESTON, 2000).
24 September 2002	EPA issued third Five-Year Review. EPA found the water line and the capping of the disposal areas to be protective of human health and the environment. EPA determined that the MNA groundwater remedy for arsenic was protective of human health and the environment in the short-term. EPA believed that for the groundwater remedy to be protective in the long-term, it will be necessary to increase hydraulic and contaminant monitoring in groundwater and surface water and increase maintenance of drainage structures near the landfills (EPA, 2002).
29 September 2006	<i>Field Sampling Plan</i> and a <i>Quality Assurance Project Plan</i> completed to address additional tasks associated with the fall 2006 LTEMP sampling, including installation of two additional well couplets at downgradient locations of the proposed GMZ boundary (WESTON, 2006).
2 March 2007	Draft updated Site Conceptual Model submitted with LTEMP 2006 Annual Report (WESTON, 2007).
15 May 2007	Groundwater Management Zone (GMZ) Permit Application submitted to NHDES.

Table 1: Auburn Road Landfill Londonderry, New Hampshire Chronology of Site Events	
Date	Event
August 2007	Revised Groundwater Management Zone (GMZ) Permit Application submitted to NHDES per comments received on 24 July 2007.
September 2007	EPA issues fourth Five-Year Review.

B. SITE CONDITIONS/CONTAMINATION PROBLEMS

Although the Site property consists of approximately 180 acres, the three disposal areas occupy only a total of approximately 12 acres and are each approximately 4 acres in size. The disposal areas received a mix of domestic wastes and various hazardous wastes beginning in 1965 until the landfills at the Site were closed in 1980. The northernmost of the three disposal areas is the “Old Town Dump”, which is the oldest of the disposal areas and has an approximate refuse thickness of 8 to 15 ft.. The “Tire Pile” area is slightly larger than the “Old Town Dump”, and has an approximate thickness of 10 to 20 ft.. The “Solid Waste Landfill” has an approximate thickness of 8 to 10 ft (EPA, 1996a). Formerly, a septage disposal area existed to the north of the solid waste dump area; however, the Town excavated that area and disposed of it in the solid waste area in 1993.

The disposal areas currently have a top cover consisting of a modified Resource Conservation and Recovery Act (RCRA)-type C cap, roughly 4 feet (ft) thick with a geotextile impermeable membrane, clay liner, and a vegetated (grass) cap.

Prior to 1987, all of the local residents used the groundwater for drinking water. Because of concerns that this groundwater may have been contaminated, in 1987, residents in the area along portions of Auburn Road (including Whispering Pines Pond Mobile Home Park), Longwood Avenue, and Shady Lane were connected to the Town’s drinking water supply. In 2000, EPA and the State required that institutional controls be put in place to preclude the use of groundwater. Currently, there are no known uses of groundwater in the area.

Groundwater monitoring in the early 1990's found concentrations of volatile organic compounds (VOCs) decreasing until only one well, directly adjacent to the Old Town Dump (MW-102A), contained any concentrations over interim cleanup levels. It is believed the VOC contamination declined due to dilution, biodegradation, and abiotic processes. In response to this information, EPA reconsidered the groundwater remedy at the Site outlined in the 1989 ROD and issued an Amended Record of Decision (AROD) on December 19, 1996. The 1996 AROD changed the groundwater remedy from pump-and-treat to monitored natural attenuation for arsenic with a contingency, engineered remedy to be used under certain, specific conditions.

Contaminants at the Site included semi-volatile organic compounds (SVOCs) and poly-

chlorinated biphenyls (PCBs) in drums and soils, and VOCs as well as metals in groundwater. The response actions performed at the Site by EPA, the State, and the Town of Londonderry have either removed or encapsulated contaminants in soils. EPA established the following interim cleanup levels for groundwater in the 1989 Record of Decision (ROD):

Table 2: Cleanup Goals set in the 1989 Record of Decision and retained in 1996 Amended ROD	
Contaminant of Concern	Cleanup Level Goal (parts per billion)
Inorganic compounds	
Arsenic	50
Lead	50
Volatile Organic Compounds	
Vinyl chloride	2
Trans-1,2 dichloroethene	70
2-Butanone	172
Trichloroethene	5
Tetrachloroethene	5
Toluene	2,000
Benzene	5

The arsenic contamination plume at the Site from the 1999 Consent Decree is shown in Figure 2. The arsenic plume is from data representing site conditions in 1995 (EPA, 1996a). No distinction between the overburden and bedrock contaminant plumes was made at the time.

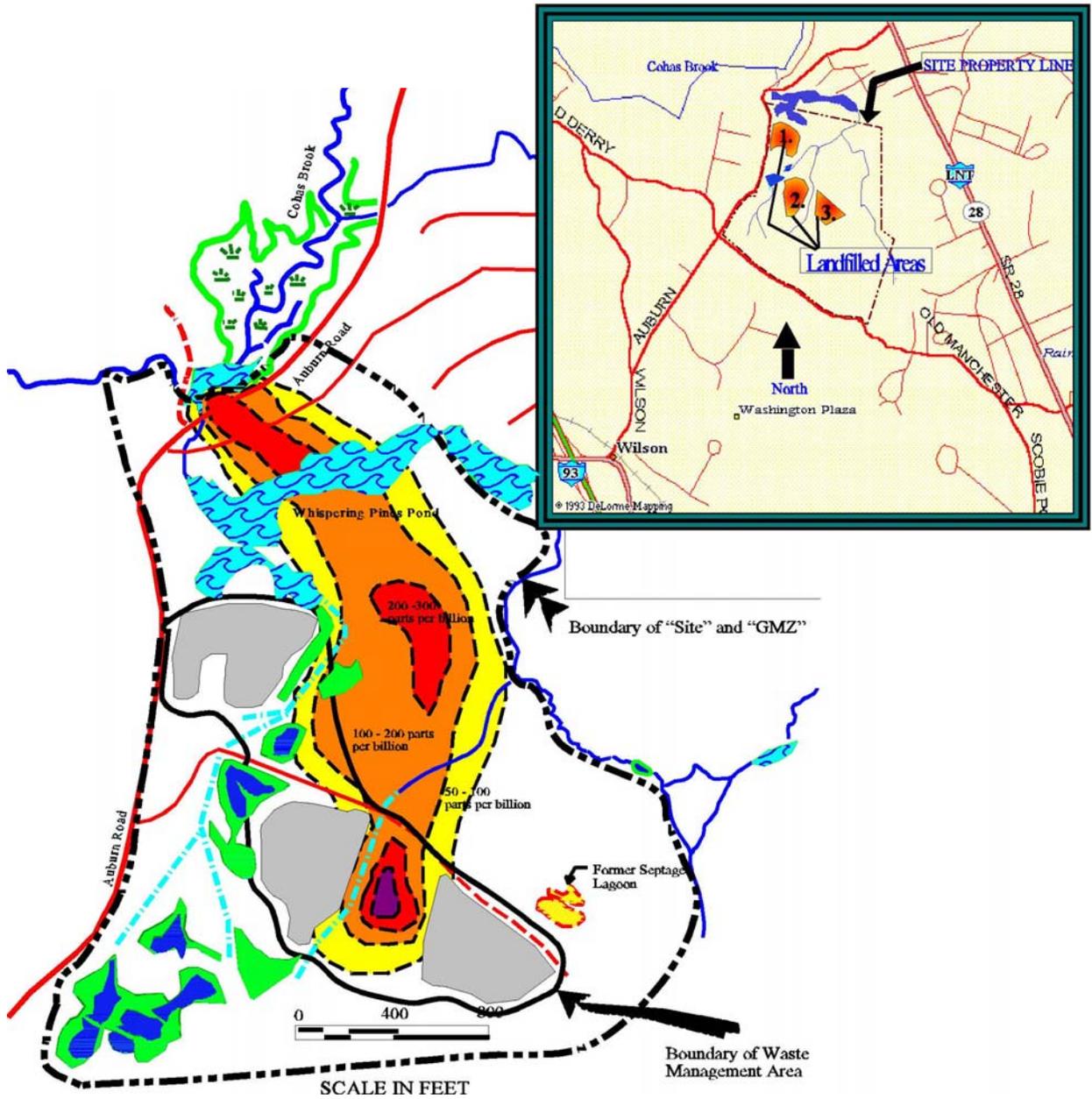


Figure 2: Figure from 2002 Five-Year Review showing arsenic plume based on 1999 Consent Decree.

The arsenic contamination plume in the overburden and bedrock aquifers based on data collected in the October 2006 expanded LTEMP sampling round are shown in Figures 3a and 3b, respectively (WESTON, 2007).

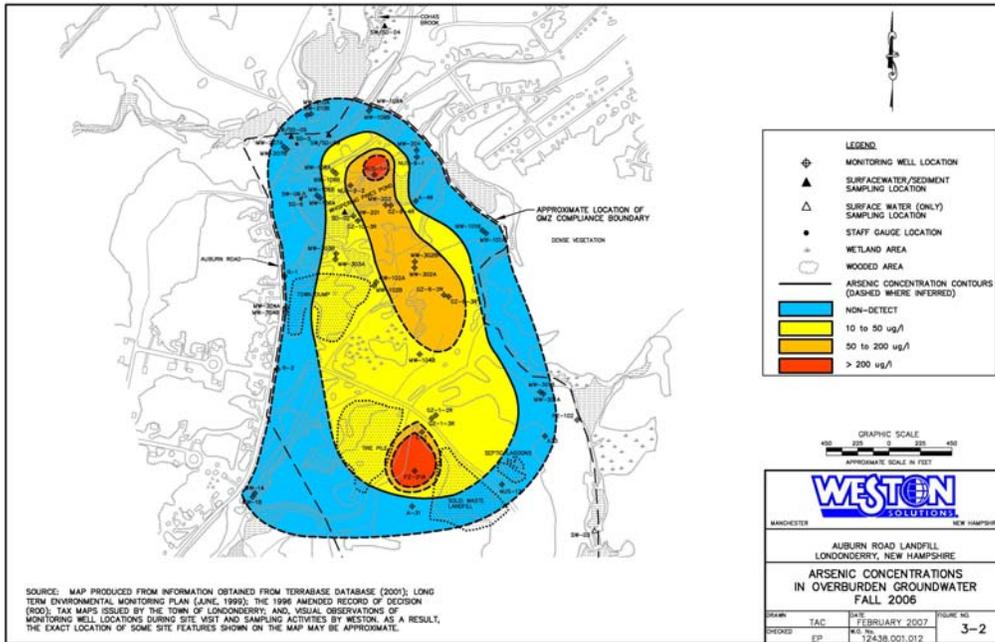


Figure 3a: Overburden arsenic concentrations October 2006.

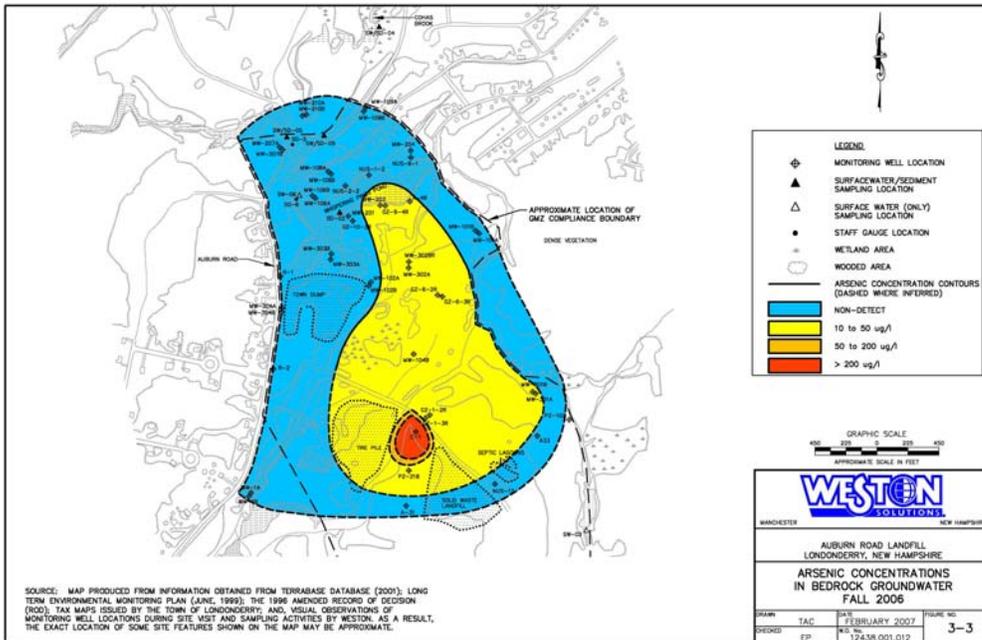


Figure 3b: Bedrock arsenic concentrations October 2006.

C. REMEDIAL ACTIONS

Remedy Selection

Three Records of Decision (ROD) have been issued for this Site. Following additional investigation at the Site by EPA and its contractors in 1986, the first *ROD* was signed on 17 September 1986 (EPA, 1986), and directed the installation of a 9,000-foot (ft) municipal waterline to supply drinking water to the residents surrounding the landfill. The remedial action objective was to eliminate the potential for abutting residents to drink groundwater contaminated from the Site.

After the Town installed the waterline in 1987, and EPA had removed over 2,000 drums of hazardous wastes from the Site in 1986, EPA believed that conditions at the Site had changed sufficiently to re-evaluate the property. Based on the additional investigations, EPA signed a 29 September 1989 ROD that directed the construction of a groundwater treatment plant to remove metals and VOCs from groundwater, and a cap over the disposal areas to prevent infiltration through landfilled wastes. On 31 August 1990, EPA issued an Administrative Order to two groups of potentially responsible parties (PRPs) to perform the remedies outlined in the 1989 ROD (EPA, 1989). The Administrative Order directed the Town to perform the Source Control component of the remedy, which was to cap the landfills and perform drainage improvements to minimize the contact of groundwater with waste materials in the landfills. The landfills were subsequently capped with modified Resource Conservation and Recovery Act (RCRA)-type C caps by the Town in 1994.

The Administrative Order also directed a group of PRPs known as the Auburn Road Performing Parties Group (ARPPG) to design and build the groundwater treatment plant. In 1991, the PRPs began the pre-design investigation to build the groundwater cleanup facility; however, the groundwater data from the pre-design investigation caused EPA to reconsider the necessity for constructing a groundwater pump and treat system. In 1991 it was noted that only arsenic was present in the groundwater and it was the only contaminant that posed a risk off-site. Based on the observations of declining concentrations and the belief, based on groundwater modeling, that capping the landfill would eventually halt the arsenic contamination, EPA issued an AROD in 1996. The 1996 AROD determined that no active groundwater remedy would be implemented except as a contingency and that institutional controls to prohibit the use of groundwater would be established throughout the area of contamination.

Remedy Implementation

The Town completed construction of the waterline (OU1) in 1987 and of the landfill cap (OU2) in 1994. The remedial action objectives were to halt the contact of water with wastes. Since that time, the Town has performed air monitoring and other maintenance activities to protect the integrity of the cap.

With respect to groundwater (OU3), the 1996 AROD held that lowering the water table through capping would stop groundwater contamination by arsenic. Since the issuance of the 1996 AROD, a group of responsible parties has been monitoring the conditions surrounding the Site. A Long-Term Environmental Monitoring Program (LTEMP), including the submission of annual reports, has been in place since 1999. Monitoring consists of groundwater, surface water, and sediment samples taken at and near the landfill and Cohas Brook.

The 1996 AROD also required institutional controls be put in place to prevent the use of groundwater. These institutional controls are being implemented through the State's Groundwater Management Zone (GMZ) permit process. The ARPPG submitted a GMZ permit application to NHDES on 15 May 2007. After receiving comments from NHDES on 24 July 2007, a revised final GMZ permit application was submitted to NHDES on 15 August 2007.

III. DESCRIPTION OF SIGNIFICANT DIFFERENCES

In 1996, the Safe Drinking Water Act was amended and required EPA to review drinking water standards for arsenic and propose a new MCL. Through proper rulemaking, the MCL for arsenic in drinking water was changed from 50 ug/l to 10 ug/l (effective February 22, 2002). Because groundwater at and beyond the compliance boundary at Auburn Road Landfill Site is federally classified as current or potential drinking water, the groundwater cleanup standard for arsenic is being changed from 50 ug/l to 10 ug/l.

That change is being made to ensure the protectiveness of the remedy at this Site.

This ESD also documents the correction of a typographical error found in "TABLE 6 – INTERIM CLEANUP LEVELS IN GROUND WATER" of the 1996 AROD. The Table incorrectly listed Trans-1,2 Dichloroethene." Trans-1,2 Dichloroethene will be deleted from the Table and replaced with "1,2 Dichloroethylene. The cleanup level remains unchanged at 70 parts per billion.

AROD Interim Groundwater Cleanup Levels

Original Remedy

The interim cleanup goal for arsenic was 50 ug/l. No standard was listed for 1,2 Dichloroethylene. Trans-1,2 Dichloroethene was listed at 70 parts per billion.

Modified Remedy

Based on a revised MCL, the interim cleanup goal for arsenic is being changed to 10 ug/l. “Trans-1,2 Dichloroethene” on Table 6 of the 1996 AROD is being replaced with “1,2 Dichloroethylene” with an interim cleanup goal of 70 parts per billion (ug/l).

IV. SUPPORT AGENCY COMMENTS

The State of New Hampshire has participated with EPA in reviewing the modifications to the remedy that are described herein and concurs with the approach adopted by EPA.

V. STATUTORY DETERMINATION

Considering the above outlined adjustment to the selected remedy set forth in the AROD, EPA believes that the remedy remains protective of human health and the environment, complies with all Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective.

VI. PUBLIC INFORMATION

This ESD and the Administrative Record are available for public review at the locations and times listed in Section 1 above as well as on the internet at http://yosemite.epa.gov/r1/npl_pad.nsf/701b6886f189ceae85256bd20014e93d/2c43f97d54689b82852568ff005adb0d!OpenDocument. Adobe Reader is required to review the documents. Notice of the release of the ESD will be published in the Union Leader.