



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JUL 15 2009

SUBJECT: Request for Funding a Removal Action at the
Millsboro TCE Groundwater Contamination Site
Millsboro, Sussex County, Delaware 19966

FROM: *Generalist: West*
Michael Towle, On-Scene Coordinator
Eastern Response Branch (3HS31)

TO: Kathryn A. Hodgkiss, Acting Director
Hazardous Site Cleanup Division (3HS00)

I. PURPOSE

The purpose of this Action Memorandum is to request funding and document approval for a time-critical Removal Action to mitigate threats posed by the release of hazardous substances at the Millsboro TCE Groundwater Contamination (Millsboro TCE) site ("Site"). The Site includes a large area of groundwater contaminated by trichloroethylene (TCE). The contaminated groundwater serves as the source of drinking water for the Town of Millsboro, Sussex County, Delaware, and the nearby community of Dagsboro. A removal site evaluation initiated by the On-Scene Coordinator (OSC) in accordance with Section 300.410 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.410, has identified a threat to public health or welfare or the environment due to hazardous substances at the Site. To mitigate the threat, CERCLA funding is necessary to conduct a Removal Action pursuant to Section 300.415 of the NCP, 40 C.F.R. § 300.415, which minimizes the public's exposure to TCE (trichloroethylene) via ingestion and inhalation of TCE within the public water supply. A Removal Action Project Ceiling of \$420,000, of which \$385,000 are from the Regional Removal Allowance, is necessary to mitigate the threats as identified in this Action Memorandum. There are no nationally significant or precedent-setting issues associated with the response.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal Site Evaluation

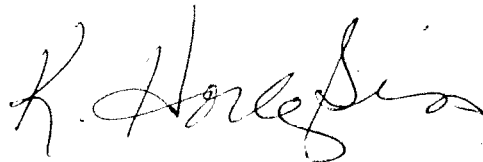
The Site is situated in the Town of Millsboro, Sussex County, Delaware. The Site includes an area of TCE-contaminated groundwater affecting public water supply wells operated by the Town of Millsboro. The OSC initiated the removal site evaluation by examining a summary of available groundwater analytical data obtained by the Delaware Department of Natural Resources and Environmental Control (DNREC). Analytical data collected from two

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SUBJECT: Approval of a Request for Funding for a Removal Action at the
Millsboro Groundwater TCE Contamination Site
Millsboro, Sussex County, Delaware

FROM: Kathryn A. Hodgkiss, Acting Director
Hazardous Site Cleanup Division (3HS00)



TO: Mathy Stanislaus, Assistant Administrator
Office of Solid Waste and Emergency Response (5101T)

THRU: Deborah Y. Dietrich, Director
Office of Emergency Management (5104A)

ATTN: Gilberto Irizarry, Director
Program Operation and Coordination Division (5104A)

ISSUE

The attached Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Action Memorandum ("funding request") pertains to the Millsboro Groundwater TCE Contamination Site (Site) located in Millsboro, Sussex County, Delaware. A removal site evaluation performed in accordance with Section 300.410 of the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) has identified a threat to public health or welfare or the environment due to the uncontrolled presence of hazardous substances, pollutants, or contaminants at the Site. The removal site evaluation found the hazardous substance trichloroethylene (TCE) contaminating public supply wells serving approximately 4000 residents in the communities of Millsboro and Dagsboro, Delaware. The TCE poses a risk above the 10^{-4} excess cancer risk level to the public considering inhalation and ingestion pathways.

The OSC has determined that this Site meets the criteria for a removal action under Section 300.415 of the NCP and documented the threats in the attached Action Memorandum. The Region has also approved the attached Action Memorandum pursuant to delegation of authority 14-2 and the Removal Action Project Ceiling of \$420,000, of which \$385,000 are from the Regional Removal Allowance. There are no nationally significant or precedent-setting issues associated with the response.

Attachment: Action Memorandum Funding Request



water supply wells indicate the presence of trichloroethylene which is a hazardous substance within the meaning of CERCLA because it is listed in Section 302.4 of the NCP, 40 C.F.R. § 302.4. The drinking water has been routinely sampled and analyzed at least monthly for TCE since the discovery of the contamination problem in 2005; analytical results within the past 12 months in well #1 indicate TCE at concentrations steadily between approximately 200 and 350 ug/l. TCE levels were in the 400 to 800 range in well #1 in 2006 and 2007. Levels in well #2 were consistently in the 100 to 200 ug/l range in 2006 and early to mid 2007, exceeded 200 ug/l in mid 2008, lowered to below 20 ug/l in the late 2008/early 2009 period and were again approaching 100 ug/l in January and February of 2009. Therefore, historic trends show that concentrations can fluctuate significantly.

2. Physical Location/Site Characteristics

The Site includes a probable source area, a contaminated ground water plume, and the public drinking water supply system operated by the Town of Millsboro. The probable TCE source area is located at the intersection of Wharton Street and South DuPont Highway. The area is presently a vacant lot. Formerly, the property at the probable source area included a laboratory facility which manufactured poultry vaccines between approximately 1952 and 1999. The facility included an underground tank suspected to be the probable source of the TCE contamination to the public water supply wells. The approximate geographic coordinates of this location are N 38 degrees 35 minutes 17 seconds and West 75 degrees 17 minutes 55 seconds.

The Site additionally includes a plume of TCE-contaminated groundwater migrating from the probable source area towards and into public drinking water supply wells serving the Town of Millsboro. There are two supply wells known to be contaminated by TCE. The entire area of the Site is located on relatively flat ground and under both residentially and commercially populated areas of Millsboro, DE. The contaminated groundwater is flowing from the probable source area towards the public supply wells and Millsboro Pond (a surface water body).

3. Quantities and Types of Substances Present

The analytical results of the routine analysis of water samples collected from the public supply wells indicate the presence of trichloroethylene. Since 2005, TCE in the most contaminated well has been detected at concentrations as high as about 800 ug/L; but within the past year TCE has been routinely detected between approximately 200 and 350 ug/L. The area of contaminated groundwater is estimated to be approximately 1500 feet long and 300 feet wide.

4. National Priorities List Status

The Site is not presently on the National Priorities List (NPL), but may ultimately be proposed to the NPL. The OSC will forward appropriate information to the site assessment program for consideration or follow up as needed.

B. Other Actions to Date

Several response actions were conducted at the Site between the late 1980's and the late 1990's that involved the removal of underground and above-ground storage tanks. However, it is unknown if any of these actions involved the removal of any source of TCE. Additionally, environmental evaluations of the Site were performed in 1997, but the suspected source of TCE was not established.

After discovery of the elevated TCE in the drinking water supply of the Town of Millsboro in 2005, the public wells were initially taken out of service and then ultimately fitted with granular activated carbon units to remove TCE from the wells. Following an investigation in 2005 by a DNREC contractor, the probable source area was identified. The DNREC conducted an interim action at the Site which involved the removal of underground tanks and piping which were suspected to function as drywell, septic, or leaching tanks. The sludge in at least one of these tanks contained elevated concentrations of TCE. DNREC removed the sludge and approximately 209 tons of contaminated soils surrounding the underground tanks. Investigation and cleanup activities by the State have exceeded \$1.5 million.

C. State and Local Authorities' Roles

The Site initially came to the attention of the OSC through a request from the EPA pre-remedial program inquiring whether the Site might qualify for EPA response actions under the removal program. The OSC contacted DNREC and received a request to consider assisting the State and the Town of Millsboro with removing the TCE from the drinking water supply. The State is currently paying for the removal of the TCE and has done so since December 2005. The Town of Millsboro, with the assistance of the Safe Drinking Water Act revolving loan program, is also working to install new additional wells which are expected to be free of the TCE contamination. DNREC is currently planning response actions at the Site which include continuation of TCE removal from the public supply wells among other actions. However, as a result of an increase in high priority projects and dwindling State funds, DNREC has informed EPA that it needs assistance with the removal of the TCE until the Town of Millsboro installs new, deeper public supply wells free of TCE contamination. Reportedly, new well installation and operation may occur by early to mid 2010. The Site may be listed on the National Priorities List and EPA assistance may be needed until such time that a Remedial Action can be initiated.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Section 300.415 of the NCP, 40 C.F.R. § 302.415, lists the factors to be considered in determining the appropriateness of a Removal Action. Specifically, paragraphs (b) (2) (i), (ii), and (vii) of Section 300.415 apply as follows to the conditions as they exist at the Millsboro TCE Groundwater Contamination Site.

- A. 300.415 (b) (2) (i) “Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants”

The Town of Millsboro water supply system serves residents of the towns of Millsboro and Dagsboro. Approximately 4000 citizens receive public water. Currently, the residents are protected from harmful concentrations of TCE as a result of granular activated carbon treatment of the contaminated well water, periodic sampling of both the treated and untreated water and carbon changeout when needed. DNREC has indicated that this work effort costs approximately \$350,000 per year. State funding constraints are threatening to end continued funding of treatment and sampling and thus DNREC is seeking EPA assistance.

Cessation of treatment would result in TCE exposure by ingestion and inhalation to approximately 4000 residents (inhalation through showering, laundering, cooking, etc). Exposure would be frequent and occur for as long as the residents live in the home serviced by the affected public water supply. The current unfiltered TCE concentrations from well #1 range between 200 and 350 ug/L and could be higher during fluctuation periods. These levels easily exceed the Safe Drinking Water Act Maximum Contaminant Level (MCL) of 5 ug/l and the calculated 10^{-4} ingestion/inhalation cancer risk level of 170 ug/l listed in EPA Region III's most recent (April 2009) Risk Based Concentration Table. (The 10^{-4} cancer risk value is routinely used by EPA On-Scene Coordinators as a benchmark for considering the need for a removal action.) The cancer risk value includes an inhalation exposure component because TCE is a volatile organic compound and vapors will be released during household water use including showering, cooking, etc. The most recent levels reported to EPA in well #2 are near 100 ug/l also exceeding the MCL and approaching the 10^{-4} cancer risk level.

ATSDR Region 3 and ATSDR Emergency Response at ATSDR Headquarters were consulted on this situation and concur that mitigative actions are warranted to ensure residents are not exposed to the maximum TCE concentrations identified in the untreated groundwater.

- B. 300.415 (b) (2) (ii) “Actual or potential contamination of drinking water supplies or sensitive ecosystems”

Since 2005 on at least a monthly basis, DNREC has documented that the groundwater used by the Towns of Millsboro and Dagsboro for drinking, bathing and household use is significantly contaminated with TCE. Both public water wells have had TCE values exceeding the MCL and are above or near to EPA Region III's calculated 10^{-4} cancer risk level.

- C. 300.415 (b) (2) (vii) "The availability of other appropriate federal or state response mechanisms to respond to the release"

DNREC has requested that EPA consider this Site for inclusion on the National Priorities List. Furthermore, in a discussion between the OSC and DNREC, DNREC agreed that EPA resources are necessary to assist the State and Local government with the removal of TCE from the drinking water in a timely manner. The OSC has consulted with the Office of Drinking Water and has found that no other federal response mechanism is available to provide for the removal of TCE in a timely manner.

IV. ENDANGERMENT DETERMINATION

Actual and threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

At this time, the Removal Action addresses only the removal of the TCE from the drinking water supply of the Town of Millsboro. Additional response actions to address the probable source area or to control the migration of the TCE are not a primary component of the response action at this time.

A. Proposed Action Description

1. Remove TCE from the drinking water wells in the Town of Millsboro through utilization of treatment media or systems, e.g., granular activated carbon, so that the water attains the Safe Drinking Water Act standard for TCE (5 ug/l);
2. Periodically remove and replace the treatment media so that the treated water continues to attain the Safe Drinking Water Act standard for TCE (5 ug/l);
3. Conduct sampling and analysis to verify treatment of TCE, and any of its breakdown products which may appear in the well water, to a standard consistent with the Safe Drinking Water Act;
4. Prepare hazardous waste, hazardous substances and liquids for off-Site transportation and arrange transportation off-Site. Preparation activities may include marking, labeling, placarding, sampling, pumping, bulking, consolidating, drumming, or treating wastes to ensure they are transported safely and consistent with RCRA Part 262 and U.S. Department of Transportation requirements;
5. Dispose off-site the hazardous wastes, hazardous substances, and liquids identified in items #1 and #2 above, and other wastes generated during the Removal Action, in accordance with CERCLA 121(d)(3) and 40 C.F.R 300.440. Activities may include sampling, bulking, consolidating, drumming, pumping, or otherwise handling the hazardous wastes, hazardous substances, liquids, and wastes to ensure that they are properly transported.

Barring any unforeseen circumstances, it is estimated that the project will be completed within the statutory twelve-month time limit and \$1 million limit for Removal Actions. Post Removal Site Controls to support implementation of the Removal Action are not required.

B. Contribution to Remedial Performance

The Millsboro TCE Groundwater Contamination Site is not proposed for inclusion on the CERCLA National Priorities List (NPL). The Removal Action is consistent with accepted removal practices and is expected to abate the threats that meet the NCP removal criteria. Should the site be proposed and listed on the NPL, the proposed removal action will not impede future remedial or removal actions based upon available information.

C. Applicable or Relevant and Appropriate Requirements (ARARs)

The Removal Action will attain ARARs to the extent practicable given the exigencies of the situation. This action will need to meet the standards of the Safe Drinking Water Act as they relate to TCE in drinking water; specifically, this action will need to achieve a standard of 5 ug/l in the treated water.

On June 25, 2009, the OSC requested any additional ARARs for the Site from the State of Delaware. EPA will comply with additional identified requirements to the extent practicable given the exigencies of the situation.

D. Estimated Costs

The proposed distribution of funding is as follows:

Extramural Costs	
Regional Allowance Costs: (contractors and subcontractors)	\$ 350,000
Contingency (10%)	\$ 35,000
Other Extramural Costs Not Funded from the Regional Allowance: START Contractor	\$ 35,000
TOTAL REMOVAL ACTION PROJECT CEILING	\$ 420,000

VI. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If no action is taken or the action is delayed, the threat of an exposure to hazardous substances in the drinking water of the Town of Millsboro will increase.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues pertaining to the Millsboro TCE Groundwater Contamination Site.

VIII. ENFORCEMENT

The EPA Region III Removal Enforcement Section has been provided with all background information available to pursuant Enforcement Actions pertaining to the Millsboro TCE Groundwater Contamination Site. (See attached Confidential Enforcement Addendum)

The total EPA costs for this removal action based upon full-cost accounting practices that will be eligible for cost recovery are estimated to be \$ 726,106.¹

Direct Extramural Costs	\$ 420,000
Direct Intramural Costs	\$ 25,000
Total, Direct Costs	\$ 445,000
Indirect Costs (63.17 % x Direct Costs)	\$ 281,106
Estimated EPA Costs for a Removal Action	\$ 726,106

IX. RECOMMENDATION

This Action Memorandum decision document represents the recommended Removal Action for the Millsboro TCE Groundwater Contamination Site in Millsboro, Delaware, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. Conditions at the Site meet the NCP Section 300.415(b)(2) factors for a removal and I

¹Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

recommend your approval of the Removal Action. The total project ceiling will be \$ 420,000. Of this, an estimated \$ 350,000 comes from the Regional Removal Allowance.

Action by the Approving Official:

This Action Memorandum represents the selected Removal Action for the Millsboro TCE Groundwater Contamination Site, in Millsboro, Sussex County, Delaware, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Pursuant to Section 113(k) of CERCLA, 42 U.S.C. 9613(k) and EPA delegation No. 14-22, I hereby establish the documents identified in Attachment B hereto as the Administrative Record supporting the issuance of the Action Memorandum.

I have reviewed the above-stated facts and based upon those facts and the information compiled in the documents described above, I hereby determine that the release or threatened release of hazardous substances at and/or from the Site presents or may present an imminent and substantial endangerment to the public health or welfare or to the environment. I concur with the Removal Action as outlined in the Action Memorandum.

APPROVED:



Kathryn A. Hodgkiss, Acting Director
Hazardous Site Cleanup Division
EPA Region 3

DATE:

7/14/09

Attachments:

- A. Enforcement Confidential Memo
- B. Administrative Record documents

ATTACHMENT B

- 1. Email Correspondence summarizing request for EPA assistance
- 2. Proposed Plan of Remedial Action, DNREC, August 2007
- 3. TCE Analytical Summary Graphs