

**DECLARATION FOR THE  
SECOND EXPLANATION OF SIGNIFICANT DIFFERENCES  
DURHAM MEADOWS SUPERFUND SITE  
DURHAM, CONNECTICUT  
September 2018**

**Site Name and Location**

Durham Meadows Superfund Site  
Durham, Middlesex County, Connecticut  
EPA ID#: CTD001452093

**Lead Agency**

United States Environmental Protection Agency

**Support Agency**

Connecticut Department of Energy and Environmental Protection

**Statement of Purpose**

This Second Explanation of Significant Differences (2018 ESD) to the 2005 Record of Decision (ROD) for the Durham Meadows Superfund Site (Site) is being issued to document changes to the Durham Manufacturing Company Study Area (DMC Study Area), Site-Wide Groundwater Study Area – Alternative Water Supply (Water Line), and Site-Wide Groundwater Study Area - Source Zone and Dissolved Plume components of the remedy. This 2018 ESD also documents that the additional studies to assess vapor intrusion for the Durham Manufacturing Company (DMC) facility and for structures in proximity to the DMC and Merriam Manufacturing Company (MMC) facilities have been completed. Based on these studies, EPA has determined that no additional actions to address vapor intrusion are necessary pursuant to the 2005 ROD.

EPA previously issued a 2011 ESD for the 2005 ROD pertaining to the Merriam Manufacturing Company Study Area (MMC Study Area) component of the remedy. EPA is required to publish this ESD pursuant to Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. § 9617(c), and the National Contingency Plan (NCP) at 40 C.F.R. § 300.435(c)(2)(i). The U.S. Environmental Protection Agency (EPA) developed this decision document after consulting with the Connecticut Department of Energy and Environmental Protection (CT DEEP), which submitted a letter of concurrence in support of the remedy change on August 22, 2018 (Attachment A).

EPA provided the public with an explanation of the proposed changes to the DMC Study Area and Water Line components of the 2005 ROD in a public information fact sheet posted on the

EPA website in August 2016. The public information fact sheet was also mailed to the 180 properties located along the water line route, including the properties in Middletown in the vicinity of the water storage tank. EPA presented the changes to the Water Line component of the 2005 ROD at public meetings in Durham on December 16, 2014, June 3, 2015, and March 29, 2017. Public input regarding the water storage tank and the components of the project in the City of Middletown were also received during hearings with: the Inland Wetland and Watercourses Agency on December 9, 2016, January 4, 2017, and November 1, 2017; the Zoning Board of Appeals on November 2, 2017; and the City of Middletown Planning and Zoning Commission on January 11, 2017, January 25, 2017, and January 10, 2018. In addition, a public workshop with the City of Middletown Common Council held on February 6, 2017 and four public outreach meetings with residents of Middletown in the vicinity of the water storage tank were held on February 21, 2017, February 28, 2017, October 26, 2017, and December 5, 2017.

### **Statutory Basis for Issuance of this 2018 ESD**

Pursuant to Section 117(c) of the CERCLA, as amended, 42 U.S.C. § 9617(c), and the NCP at 40 C.F.R. § 300.435(c)(2)(i), if EPA determines that 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 Significant Differences and the reasons such changes are being made. According to 40 C.F.R. § 300.435(c)(2)(i), and EPA guidance (Office of Solid Waste and Emergency Response (OSWER) Directive 9200.1-23-P, July 1999), an Explanation of Significant Differences, 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 2005 ROD provided in this 2018 ESD are significant but do not fundamentally alter the overall remedy for the Site with respect to scope, performance, or cost. Therefore, this 2018 ESD is being properly issued.

### **Background**

The Site is located in the Town of Durham, Middlesex County, Connecticut and includes an area of groundwater contamination generally centered on Main Street in Durham. The outer limits of the Site are defined by the extent of the groundwater contamination. Based on the current (through 2016) groundwater data, the groundwater contamination at the Site is generally bounded by Talcott Lane to the north; Brick Lane, Ball Brook and Allyn Brook to the East; wetlands west of Maple Avenue to the west; and, based on recent sampling, the intersections of Maple Avenue and Fowler Avenue with Main Street to the south. The Site is centered around the two source areas: DMC, a currently operating manufacturing facility located at 201 Main Street; and the former location of MMC at 281 Main Street. DMC was established in 1922 at 201 and 203R Main Street and includes three main buildings, including an office building and two manufacturing buildings. MMC was established in 1851 at 281 Main Street and operated at that location until March 1998, when the bulk of the factory was destroyed by fire, leaving only a small warehouse building towards the rear of the property.

Both companies manufactured metal cabinets, boxes and other items and at times used various solvents, including trichloroethene (TCE), 1,1,1-trichloroethane, and methylene chloride. The companies' past disposal of wastewater in lagoons or sludge drying beds, spills at both facilities,

and inadequate drum storage practices at MMC, among other things, contributed to the contamination at each facility and in the overall area of groundwater surrounding both facilities. Contamination from volatile organic compounds (VOCs) has been detected in soil and groundwater on both industrial properties, as well as in residential drinking water wells surrounding the former MMC facility and DMC facility.

In the 1970s, concerns regarding the drinking water at the Strong Middle School prompted investigations. VOCs were detected in Ball Brook adjacent to the MMC and DMC facilities. In 1982, CT DEEP began testing drinking water wells of residences near MMC and DMC along Main Street and a number of wells contained VOCs above the federal Maximum Contaminant Levels (MCLs). Under CT DEEP Water Supply orders, MMC and DMC installed carbon filters on impacted residential wells. Since then, up to 50 wells serving 54 locations have been found to contain VOCs and have carbon treatment systems. Of these, 10 locations were also found to contain 1,4-dioxane and are required to use bottled water for drinking water. The major contaminant at the Site is TCE, which continues to be detected in groundwater at concentrations as high as 1,400 parts per billion (280 times the 5 parts per billion EPA Safe Drinking Water Act standard).

The Site was finalized on the EPA National Priorities List in October 1989. A series of investigations were performed by consultants working separately for MMC and DMC as well as by consultants working for EPA. EPA took over and completed the entire Remedial Investigation and Feasibility Study (RI/FS) to support the 2005 ROD.

After the 2005 ROD, EPA continued with enforcement efforts to compel potential responsible parties to perform work or reimburse EPA for past and future costs. A summary of the cleanup related activities performed since the 2005 ROD is presented below:

**MMC Study Area:** EPA began the Remedial Design in 2006 and it was completed in 2010. The MMC Study Area Remedial Action began in 2011. The first ESD for the 2005 ROD was signed in September 2011 and related to changes to the MMC Study Area component of the 2005 ROD. The MMC Study Area remedial action was completed in 2013.

**DMC Study Area:** The Remedial Design was begun by DMC in 2007 and continued through 2013, when EPA took over the Remedial Design. EPA completed the Remedial Design in 2015. The Remedial Action has not yet been initiated. This ESD addresses changes to the selected remedy for the DMC Study Area.

**Site-Wide Groundwater Study Area – Alternative Water Supply (Water Line):** From 2009-2010, EPA participated in the revision of the Durham Water System Extension Feasibility Study, which was prepared by Fuss and O'Neill and funded by CT DEEP. In 2012, the City of Middletown signed a Memorandum of Understanding with the Town of Durham confirming its commitment to provide water to the Town of Durham. In 2013, EPA initiated the design for the Water Line, which was initially completed in 2015 but was revised in 2018 to incorporate the outcome of the public hearings for the wetland, variance, special exception permits and the 8-24 review. The construction for the water line is expected to begin in 2018. This 2018 ESD addresses changes to the selected remedy for the Water Line.

Site-Wide Groundwater Study Area - Source Zone and Dissolved Plume: The Remedial Design for this component of the 2005 ROD was initiated in 2016 and continues to be conducted.

Site-Wide Groundwater Study Area - Contingency Groundwater Extraction for Hydraulic Containment: No activities have been undertaken with respect to this component of the 2005 ROD.

The 2005 ROD identified the need for additional studies to assess potential vapor intrusion issues for structures in proximity to the DMC and former MMC facilities. These studies have been completed, and the results of the studies are described in this 2018 ESD.

The 2005 ROD also identified the need for additional studies to assess potential vapor intrusion at the DMC facility. DMC performed a Remedial Design for a sub-slab depressurization system from 2007 through 2012. The sub-slab depressurization system was installed and made operational during 2013, but does not extend throughout the entire DMC facility. Additional studies were performed in December 2017 to assess indoor air within the DMC facility. These studies have been completed, and the results of the studies are described in this 2018 ESD.

EPA completed the first Five-Year Review for the Durham Meadows Superfund Site in 2016.

## **Overview of the 2018 ESD**

This 2018 ESD documents the following changes to the 2005 ROD:

**Durham Manufacturing Company Study Area:** This 2018 ESD documents that the design investigations associated with the DMC Study Area component of the 2005 ROD identified the need for additional excavation to remove highly contaminated source material in the overburden soil. The estimated volume of excavation has increased from 5,100 cubic yards to 10,745 cubic yards. The final design also includes the placement of reactive backfill using zero valent iron (ZVI) in areas where contamination is excavated below the water table to address potential recontamination of soil from contaminated groundwater beneath the DMC building or from bedrock. The construction price index adjustment for the 2005 ROD estimate into 2018 dollars would revise the estimated 2005 ROD cost for the DMC Study Area cleanup from \$2.9 million to \$4.4 million. The revised estimated cost for the DMC Study Area cleanup has increased to the final design estimate of \$8 million based on general construction cost increases, increased volume of material that requires excavation, and use of ZVI backfill to minimize recontamination of the overburden soil.

**Site-Wide Groundwater Study Area – Alternative Water Supply (Water Line):** This 2018 ESD documents several changes to the Water Line component of the 2005 ROD to address the further migration of the contaminant plume and the need to eliminate the pumping wells at Regional School District (RSD) #13 and the Durham Fairgrounds to prevent even further migration of the groundwater contamination. The changes to the 2005 ROD for the Water Line include:

- Installation of a water storage tank;
- Installation of a separate booster system for Talcott Ridge Drive and Watch Hill Drive;
- Connection of the Durham Fairgrounds and RSD #13 Schools (Korn Elementary School, Strong Middle School, and Coginchaug High School) to the water line;
- Additional length and size of water line pipe and installation of fire hydrants; and
- Chlorine booster system.

The construction price index adjustment for the 2005 ROD estimate into 2018 dollars would revise the estimated 2005 ROD cost for the Water Line from \$4.6 million to \$6.9 million. The revised estimated cost for the Water Line component of the 2005 ROD is \$24 million based on the final design.

**Vapor Intrusion:** The 2005 ROD identified the need for additional studies to assess potential vapor intrusion issues for structures in proximity to the DMC and former MMC facilities. These studies have been completed and EPA has determined that there is not a complete vapor intrusion pathway for structures in the vicinity of the DMC and MMC facilities. This 2018 ESD documents that this issue has been resolved and no further investigations are necessary. Long-term monitoring of the overburden groundwater will be performed at 215 Main Street that is located immediately adjacent to the DMC facility to document that Site conditions do not change in a manner that would suggest a potential for a vapor intrusion threat.

The 2005 ROD also identified the need for additional studies to assess potential vapor intrusion within the DMC facility. DMC performed a Remedial Design for a sub-slab depressurization system from 2007 through 2012. The sub-slab depressurization system was installed and made operational during 2013, but does not extend throughout the entire DMC facility. Additional studies performed during 2017 along with an assessment of the sub-slab depressurization performance data supports that the vapor intrusion threat within the DMC facility has been addressed by the installation and operation of the sub-slab depressurization system. This 2018 ESD documents that this issue has been resolved and no additional mitigation measures are necessary to address vapor intrusion for the DMC facility except continuing operation of the sub-slab depressurization system.

**Clarification of cleanup level for 1,2-dichloroethene (1,2-DCE):** The 2016 Five Year Review identified that the 1,2-DCE (total) cleanup level of 104 µg/l was not fully protective of a residential drinking water scenario. The primary concern related to a monitoring outcome when the 1,2-DCE total was comprised entirely of cis-1,2-DCE, which has a lower cleanup level. To avoid this possibility, this 2018 ESD requires that the groundwater monitoring analyze for and report both cis-1,2-DCE and trans-1,2-DCE. The 2005 ROD established a cleanup level for cis-1,2-DCE at 70 µg/l based on the EPA established Maximum Contaminant Levels (MCLs) pursuant to the Safe Drinking Water Act. The cleanup level for cis-1,2-DCE will remain unchanged. This 2018 ESD establishes a new cleanup level of 100 µg/l for trans-1,2-DCE. The use of the cleanup level of 100 µg/l for trans-1,2-DCE versus the 104 µg/l cleanup level for total 1,2-DCE is a minor change in concentration and does not impact the protectiveness, cost, or scope of the selected remedy. The reliance on cleanup levels for cis-1,2-DCE and trans-1,2-DCE

individually will avoid any confusion with respect to which constituent may be a component of a total 1,2-DCE result.

**Declaration**

For the foregoing reasons and as explained herein, by my signature below, I approve the issuance of the Second Explanation of Significant Differences for the 2005 ROD at the Durham Meadows Superfund Site in Durham, Connecticut and the changes stated therein.



\_\_\_\_\_  
Bryan Olson, Director  
Office of Site Remediation and Restoration  
U.S. Environmental Protection Agency – New England

9/12/18  
Date

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Durham, Middlesex County, Connecticut  
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**I. INTRODUCTION**

This Second Explanation of Significant Differences (2018 ESD) to the 2005 ROD for the Durham Meadows Superfund Site (Site) is being issued to document changes to the Durham Manufacturing Company Study Area (DMC Study Area), Site Wide Groundwater Study Area – Alternative Water Supply (Water Line) and Site-Wide Groundwater Study Area - Source Zone and Dissolved Plume components of the remedy. This 2018 ESD also documents that the additional studies to assess vapor intrusion for the Durham Manufacturing Company (DMC) facility and for structures in proximity to the DMC and Merriam Manufacturing Company (MMC) facilities have been completed. Based on these studies, EPA has determined that no additional actions to address vapor intrusion are necessary pursuant to the 2005 ROD. EPA had previously issued a 2011 ESD for the 2005 ROD pertaining to the Merriam Manufacturing Company Study Area (MMC Study Area) component of the remedy. EPA is required to publish this ESD pursuant to Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. § 9617(c), and the National Contingency Plan (NCP) at 40 C.F.R. § 300.435(c)(2)(i). The U.S. Environmental Protection Agency (EPA) developed this decision document after consulting with the Connecticut Department of Energy and Environmental Protection (CT DEEP), which submitted a letter of concurrence in support of the remedy change on August 22, 2018 (Attachment A).

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recontamination of soil from contaminated groundwater beneath the DMC building or from bedrock. The construction price index adjustment for the 2005 ROD estimate into 2018 dollars would revise the estimated 2005 ROD cost for the DMC Study Area cleanup from \$2.9 million to \$4.4 million. The revised estimated cost for the DMC Study Area cleanup has increased to the final design estimate of \$8 million based on general construction cost increases, increased volume of material that requires excavation, and use of ZVI backfill to minimize recontamination of the overburden soil.

**Site-Wide Groundwater Study Area – Alternative Water Supply (Water Line):** This 2018 ESD documents several changes to the Water Line component of the 2005 ROD to address the further migration of the contaminant plume and the need to eliminate the pumping wells at Regional School District (RSD) #13 and the Durham Fairgrounds to prevent even further migration of the groundwater contamination. The changes to the 2005 ROD for the Water Line include:

- Installation of a water storage tank;
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**Vapor Intrusion:** The 2005 ROD identified the need for additional studies to assess potential vapor intrusion issues for structures in proximity to the DMC and former MMC facilities. These studies have been completed and EPA has determined that there is not a complete vapor intrusion pathway for structures in the vicinity of the DMC and MMC facilities. This 2018 ESD documents that this issue has been resolved and no further investigations are necessary. Long-term monitoring of the overburden groundwater will be performed at 215 Main Street that is located immediately adjacent to the DMC facility to document that Site conditions do not change in a manner that would suggest a potential for a vapor intrusion threat.

The 2005 ROD also identified the need for additional studies to assess potential vapor intrusion within the DMC facility. DMC performed a Remedial Design for a sub-slab depressurization system from 2007 through 2012. The sub-slab depressurization system was installed and made operational during 2013, but does not extend throughout the entire DMC facility. Additional studies performed during 2017 along with an assessment of the sub-slab depressurization performance data supports that the vapor intrusion threat within the DMC facility has been addressed by the installation of the sub-slab depressurization system. This 2018 ESD documents that this issue has been resolved and no additional mitigation measures are necessary to address vapor intrusion for the DMC facility.

**Clarification of cleanup level for 1,2-dichloroethene (1,2-DCE):** The 2016 Five Year Review identified that the 1,2-DCE (total) cleanup level of 104 µg/l was not fully protective of a residential drinking water scenario. The primary concern related to a monitoring outcome when the 1,2-DCE total was comprised entirely of cis-1,2-DCE, which has a lower cleanup level. To avoid this possibility, this 2018 ESD requires that the groundwater monitoring analyze for and report both cis-1,2-DCE and trans-1,2-DCE. The 2005 ROD established a cleanup level for cis 1,2-DCE at 70 µg/l based on the EPA established Maximum Contaminant Levels (MCLs) pursuant to the Safe Drinking Water Act. The cleanup level for cis-1,2-DCE will remain unchanged. This 2018 ESD establishes a new cleanup level of 100 µg/l for trans-1,2-DCE. The use of the cleanup level of 100 µg/l for trans-1,2-DCE versus the 104 µg/l cleanup level for total 1,2-DCE is a minor change in concentration and does not impact the protectiveness, cost, or scope of the selected remedy. The reliance on cleanup levels for cis-1,2-DCE and trans-1,2-DCE individually will avoid any confusion with respect to which constituent may be a component of a total 1,2-DCE result.

In accordance with CERCLA Section 117(d), 42 U.S.C. § 9617(d), and the NCP at 40 C.F.R. §§ 300.435(c)(2)(i)(A) and 300.825(a)(2), the 2018 ESD and its supporting documents will be added to the Administrative Record file for the Site.

The Administrative Record for this 2018 ESD is available for public review at the EPA Region 1 Superfund Records Center in Boston, Massachusetts, at the addresses listed below:

U.S. Environmental Protection Agency  
Records Center  
5 Post Office Square, Suite 100  
Boston, MA 02109  
617-918-1440  
Monday-Friday: 9:00 am - 5:00 pm  
Saturday and Sunday: Closed

The 2018 ESD and administrative record index along with other Site information can be viewed at: [www.epa.gov/superfund/durham](http://www.epa.gov/superfund/durham).

## **II. SITE HISTORY AND CONTAMINATION**

### **Site History**

The Site is located in the Town of Durham, Middlesex County, Connecticut and includes an area of groundwater contamination generally centered on Main Street in Durham. The outer limits of the Site are defined by the extent of the groundwater contamination. Based on the current (through 2016) groundwater data, the groundwater contamination at the Site is generally bounded by Talcott Lane to the north; Brick Lane, Ball Brook and Allyn Brook to the East; wetlands west of Maple Avenue to the west; and, based on recent sampling, the intersections of Maple Avenue and Fowler Avenue with Main Street to the south. The Site is centered around the two source areas: DMC, a currently operating manufacturing facility located at 201 Main

Street; and the former location of MMC at 281 Main Street. DMC was established in 1922 at 201 and 203R Main Street and includes three main buildings, including an office building and two manufacturing buildings. MMC was established in 1851 at 281 Main Street and operated at that location until March 1998, when the bulk of the factory was destroyed by fire, leaving only a small warehouse building towards the rear of the property. Figure 1 shows the general location of the Site. Figures 2 and 3 show the extent of groundwater contamination at the Site.

Both companies manufactured metal cabinets, boxes and other items and at times used various solvents, including trichloroethene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), and methylene chloride. The companies' past disposal of wastewater in lagoons or sludge drying beds, spills at both facilities, and inadequate drum storage practices at MMC, among other things, contributed to the contamination at each facility and in the overall area of groundwater surrounding both facilities. Contamination from volatile organic compounds (VOCs) has been detected in soil and groundwater on both industrial properties, as well as in residential drinking water wells surrounding the former MMC facility and DMC facility.

In the 1970s, concerns regarding the drinking water at the Strong Middle School prompted investigations. VOCs were detected in Ball Brook adjacent to the MMC and DMC facilities. In 1982, the CT DEEP began testing drinking water wells of residences near MMC and DMC along Main Street and a number of wells contained VOCs above the federal Maximum Contaminant Levels (MCLs). Under CT DEEP Water Supply orders, MMC and DMC installed carbon filters on impacted residential wells. Since then, up to 50 wells serving 54 locations have been found to contain VOCs and have carbon treatment system. Of these, 10 locations were also found to contain 1,4-dioxane and are required to use bottled water for drinking water. The major contaminant at the Site is TCE, which continues to be detected in groundwater at concentrations as high as 1,400 parts per billion (280 times the 5 part per billion EPA Safe Drinking Water Act standard).

The Site was finalized on the EPA National Priorities List in October 1989. A series of investigations were performed by consultants working separately for MMC and DMC, as well as by consultants working for EPA. EPA took over and completed the entire Remedial Investigation and Feasibility Study (RI/FS) to support the 2005 ROD. The 2005 ROD separated the cleanup into three study areas: MMC Study Area; DMC Study Area; and the Site-Wide Groundwater Study Area. The Study Areas are shown on Figure 2.

After the 2005 ROD, EPA continued with enforcement efforts to compel potential responsible parties to perform work or reimburse EPA for past and future costs. A summary of the cleanup related activities performed since the 2005 ROD is presented below:

**MMC Study Area:** EPA began the Remedial Design in 2006 and it was completed in 2010. The MMC Study Area Remedial Action began in 2011. The first ESD for the 2005 ROD was signed in September 2011 and related to changes to the MMC Study Area component of the 2005 ROD. The MMC Study Area remedial action was completed in 2013.

**DMC Study Area:** The Remedial Design was begun by DMC in 2007 and continued through 2013, when EPA took over the Remedial Design. EPA completed the Remedial Design in 2015.

The Remedial Action at the DMC Study area has not yet been initiated. This 2018 ESD addresses changes to the selected remedy for the DMC Study Area.

Site-Wide Groundwater Study Area – Alternative Water Supply (Water Line): From 2009-2010, EPA participated in the revision of the Durham Water System Extension Feasibility Study, which was prepared by Fuss and O’Neill and funded by CT DEEP. In 2012, the City of Middletown signed a Memorandum of Understanding with the Town of Durham confirming its commitment to provide water to the Town of Durham. In 2013, EPA initiated the design for the Water Line, which was initially completed in 2015 but was revised in 2018 to incorporate the outcome of the public hearings for the wetland, variance, special exception permits and the Section 8-24 review. The construction for the water line is expected to begin in 2018. This 2018 ESD addresses changes to the selected remedy for the Water Line.

Site-Wide Groundwater Study Area - Source Zone and Dissolved Plume: The Remedial Design for this component of the 2005 ROD was initiated in 2016 and continues to be conducted.

Site-Wide Groundwater Study Area - Contingency Groundwater Extraction for Hydraulic Containment: No activities have been undertaken with respect to this component of the 2005 ROD.

The 2005 ROD identified the need for additional studies to assess potential vapor intrusion issues for structures in proximity to the DMC and former MMC facilities. These studies have been completed, and the results of the studies are described in this 2018 ESD.

The 2005 ROD also identified the need for additional studies to assess potential vapor intrusion at the DMC facility. DMC performed a Remedial Design for a sub-slab depressurization system from 2007 through 2012. The sub-slab depressurization system was installed and made operational during 2013, but does not extend throughout the entire DMC facility. Additional studies were performed in December 2017 to assess indoor air within the DMC facility. These studies have been completed, and the results of the studies are described in this 2018 ESD.

EPA completed the first Five-Year Review for the Site in 2016.

### **Contamination:**

DMC Study Area: Contaminants of concern in overburden groundwater at the DMC Study Area include chlorinated VOCs and, to a lesser extent, benzene, toluene, ethylbenzene, and xylene (BTEX). Chlorinated VOCs detected in groundwater include TCE; tetrachloroethene (PCE); 1,1,1-TCA; 1,1-DCA; 1,1-dichloroethene (1,1-DCE); 1,2-dichloroethene (1,2-DCE); methylene chloride; and vinyl chloride. The highest single detection of TCE was in the former leach field adjacent to the former industrial waste gallery (170,000 µg/l in August 1984). Overburden groundwater samples from the north driveway area indicate that there may be a source area in the vicinity of the former solvent storage area. The extent of groundwater TCE and PCE contamination includes the north driveway and the property east of the main (western) manufacturing building. The highest concentrations of TCE (66,000 µg/l) were detected near the solvent storage area, and at (4,200 µg/l), less than 100 feet northeast of the aeration pond, with concentrations decreasing toward the center of the property from these two areas. Overburden

groundwater collected east of the main building contained elevated concentrations of non-chlorinated VOCs, including ethyl benzene, toluene, and total xylenes. Metals and semi-volatile organic compounds (SVOCs) concentrations in overburden groundwater at the DMC Study Area have been generally low.

PCE and TCE are found in the groundwater at the DMC property. Daughter compounds of these contaminants were also detected at 205 Main Street, near the northwest corner of the DMC property; however, little historic daughter compound data was available for DMC Well Nos. 1 and 2. Concentrations of 1,1,1-TCA appear to be declining near the DMC property; however, 1,1,1-TCA daughter compound data is sparse for these wells. PCE and TCE concentrations at the Strong School have been relatively elevated and persistent. Degradation may be indicated by the presence of daughter compounds cis-1,2-DCE and vinyl chloride. Septic systems in the area provide bacteria and nutrients that may assist natural attenuation.

Site-Wide Groundwater Study Area: The primary contaminants of concern at the Site in groundwater include methylene chloride, PCE, TCE, 1,1,1-TCA, and their daughter compounds cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride, 1,1-dichloroethane (1,1-DCA), chloroethane, and chloromethane. The compound 1,4-dioxane was detected in 21 bedrock wells within the Site-wide Groundwater Study Area. Detections of 1,4-dioxane were generally coincident with detections of 1,1,1-TCA. BTEX compounds were detected in overburden groundwater in one boring at the DMC Study Area. The data suggest that neither BTEX nor SVOCs are widespread in groundwater at the Site.

Chlorinated solvents are the primary contaminants of concern across the Site and are pervasive throughout the DMC, MMC, and Site-wide Groundwater Study Areas. These solvents were introduced into the environment at the MMC and DMC Study Areas as a result of materials handling, waste disposal practices, and industrial processes.

While monitoring wells were installed at and in the proximity of the two source areas during remedial investigations at those facilities, the extent of the groundwater contamination outside the source areas is based almost entirely on results from the sampling of approximately 100 water supply wells in the surrounding community (on Main Street, Maple Street, Brick Lane, Wallingford Road, Maiden Lane, and Fowler Avenue). The monitoring of supply wells is currently done by DMC in the southern part of the Site and by CT DEEP in the northern part. Prior to 2004, MMC was responsible for the supply well monitoring in the northern area of the Site.

The 2005 ROD established a technical impracticability (TI) zone, which was the area where contaminated groundwater could not be restored and groundwater use restrictions would be implemented. At the time of the 2005 ROD, the southern edge of the contaminated groundwater plume and the associated TI zone did not extend south of Allyn Brook based on the assumption that Allyn Brook was a groundwater discharge boundary limiting the extent of contamination. However, in the fall of 2013, several residential wells south of Allyn Brook were added to the residential well sampling program in the DMC Study Area. In two of these well, TCE was detected at concentrations of 560 µg/l and 74 µg/l. Continued sampling of those wells in 2014 showed similarly high concentrations; as a result, when the extent of the contaminated

groundwater plume was updated and extended to the southwest, beyond Allyn Brook and toward the Fairground wells. The conceptual Site model has been modified to recognize that Allyn Brook does not constitute a discharge boundary that prevents plume movement beyond it to the southwest. Since no Site contaminants had been detected in the Fairground wells since they were put into service in the fall of 2007, the plume extent in 2014 was not drawn as far as those wells. The extent of the groundwater contamination at the Site is shown in Figure 2. The expansion of the groundwater contamination since the 2005 ROD is shown in Figure 3.

The 2005 ROD identified the need to further assess the potential for vapor intrusion based on the presence of VOCs in the bedrock groundwater throughout the Groundwater Study Area. To address this issue, EPA installed and sampled shallow groundwater wells for VOCs in 2006 and 2007, and also collected sub-slab and indoor air data from several area homes and a school in order to assess the potential for vapor intrusion. There were numerous non-detections for VOCs in shallow groundwater and indoor air samples. Where detected, concentrations of VOCs were generally low and confounding in that the concentrations of VOCs measured in indoor air samples from living spaces often exceeded concentrations measured in basement samples (the opposite of what is typical with vapor intrusion), and/or indoor air samples were lower or equal to nearby ambient air samples. A review of the data did not indicate a complete vapor intrusion pathway in any building. However, due to the low detections of VOCs in some samples, and in recognition of the highly variable nature of indoor air data in general, EPA performed additional sampling of the shallow groundwater and indoor air in 2017.

### **III. THE SELECTED REMEDY**

The 2005 ROD set forth the selected remedy for the Site. The selected remedy is a comprehensive remedy which addresses principal Site risks by mitigating all current and potential future human health risks at the MMC Study Area, the DMC Study Area, and the Site-wide Groundwater Study Area. The MMC Study Area consists of the MMC facility property, and includes the abutting residential property at 275 Main Street. The DMC Study Area consists of the DMC facility property, excluding the portion of the property located east of Ball Brook. The Site-wide Groundwater Study Area consists generally of groundwater in the bedrock aquifer within the limits of the Site, including the MMC and DMC facilities, as well as residential areas impacted by groundwater contamination from the source areas. The Site-wide Groundwater Study Area has three components: Site-wide Groundwater Study Area – Alternative Water Supply (Water Line); Site-wide Groundwater Study Area-Source Zone and Dissolved Plume; and Site-wide Groundwater Study Area – Contingency Groundwater Extraction for Hydraulic Containment. The Study Areas are shown in Figure 2.

The major components of the 2005 ROD are:

- Soil excavation and off-site disposal, in conjunction with soil vapor extraction, at the MMC Study Area to address risks to human health from contamination in soil and soil vapor, along with excavation of a localized area of surface soil contamination on an adjacent residential parcel. The 2011 ESD eliminated the soil vapor extraction component and expanded the excavation and off-site disposal component of the MMC Study Area remedial action.

- Excavation and off-site disposal of soil hot spot areas at the DMC Study Area in order to address risks to human health from contamination in overburden (shallow) groundwater and to address source contamination.
- Connection to the Middletown Water Distribution System to distribute an alternative source of public water to all residences currently affected by groundwater contamination and a buffer zone of residences located near the contaminated area. Development of and connection to a new groundwater source is retained as a contingency measure in the event that a connection to the City of Middletown Water Distribution System cannot be implemented for administrative or other reasons, or cannot be implemented in a timely manner. Also included is the interim measure of continued monitoring and filtration, and provision of bottled water as necessary, of impacted private (mostly residential) wells, and any other private wells within the Site-wide Groundwater Study Area that come to be impacted by Site-related contamination, as currently required under state order and state regulations, to ensure continued protectiveness of human health and the environment until construction of the alternate water supply portion of the remedy is complete and operational. This alternative addresses current and future risk to human health from ingestion of contaminated groundwater.
- For the overall area of groundwater contamination, implementation of a monitoring network for the dissolved plume to ensure no migration of groundwater beyond its current general boundary.
- Contingency to implement a groundwater extraction system for hydraulic containment if monitoring indicates that the overall plume or source zone is spreading or migrating beyond its current general boundary.
- Implementation of a technical impracticability (TI) waiver of the applicable or relevant and appropriate requirements that would normally require cleanup of the groundwater, since it is not technically practicable to clean up the groundwater to drinking water and other standards in a reasonable amount of time.
- Institutional controls, primarily in the form of Environmental Land Use Restrictions (ELURs) as defined in the Connecticut Remediation Standard Regulations (CT RSRs), and/or by local ordinance, in a variety of areas to prevent unrestricted future use of certain areas of the Site or use of contaminated groundwater.
- Further delineation of areas posing potential indoor air risks on and outside of the MMC and DMC Study Areas by further characterization, including the collection of shallow groundwater data. If there are unacceptable risks, then further actions will be taken to address such risks, including without limitation, sub-slab depressurization systems and institutional controls on vacant properties or portions of properties, in accordance with EPA and Connecticut Department of Environmental Protection requirements.

- Five-year reviews to ensure that the remedy continues to be protective of human health and the environment.

#### **IV. BASIS FOR THIS 2018 ESD**

The revisions to the DMC Study Area and Water Line components of the Site remedy are an outcome of the Remedial Design for each component of the 2005 ROD. The pre-design investigations and studies to support the final Remedial Design identified areas where the conceptual description of the remedy components required refinement to achieve the objectives of the 2005 ROD. The specific revisions are discussed in greater detail below.

**DMC Study Area:** To refine the volume of soil that required excavation, a series of soil investigation programs were performed to support the DMC Study Area remedial design. The soil investigation programs were performed from 2008 to 2014. The final refinement of the soil excavation extent and volume was created as a result of 2014 field program which included a total of 29 soil borings and nine test permits. This information provided for a more accurate identification of the areas that would require excavation to meet the objectives of the 2005 ROD. Based on the Remedial Design investigations, the estimated volume of excavation has increased from 5,100 cubic yards to 10,745 cubic yards.

The 2005 ROD required that the Remedial Design target the removal of hot spots, even if the contamination is below the water table. For those areas where high concentrations of contamination were identified below the water table and are targeted for excavation and off-site disposal, the Remedial Design evaluated measures to prevent the clean backfill from becoming contaminated by contact with contaminated groundwater. To accomplish this objective, the Remedial Design also includes the placement of reactive backfill using zero valent iron (ZVI) in areas where contamination is excavated below the water table to address potential recontamination of soil from contaminated groundwater beneath the DMC building or from bedrock. The goal of placing reactive backfill between the seasonal low water table and bedrock is to provide passive treatment of residual VOCs not removed through excavation. ZVI can react directly with chlorinated VOCs and would also stimulate anaerobic biodegradation.

The estimated cost for the DMC Study Area cleanup has increased from the 2005 ROD estimate of \$2.9 million to the final design estimate of \$8 million. One component of the increase is the time that has elapsed since the initial cost estimate was developed for the 2005 ROD. The construction price index adjustment from 2005 to 2018 would increase the 2005 ROD cost estimate from \$2.9 to \$4.4 million. The primary reason for the cost increase is the more detailed understanding of the challenges to excavate the contaminated soil adjacent to an operating facility in an area where high voltage electric lines and high pressure propane lines are present. The 2005 ROD estimate only estimated about \$0.4 million for the site management and soil excavation whereas the final Remedial Design estimated \$4.1 million for these activities. The remaining cost difference is due to the increase in the estimated volume of material from 5,100 cubic yards to 10,745 cubic yards and the addition of the treated backfill. Figure 4 shows the areas to be excavated and the locations targeted for the ZVI backfill.

**Water Line:** The 2005 ROD provided an extent of the water line based on the contaminant delineation at the time of the ROD and the assumption that the City of Middletown could directly extend the water line down South Main Street from the Long Hill pump station. Changes to the 2005 ROD for the Water Line include:

**Water Tank:** The City of Middletown provided comment on the 2005 ROD indicating that an atmospheric water tank would be necessary to provide water service to the Site because the Long Hill pump station had limited capacity. EPA indicated that this issue would be re-visited as part of the design. The design confirmed that the Long Hill pump station was inadequate to support the Site and that an atmospheric tank would be necessary. The water tank included in the Remedial Design was designed based on State of Connecticut Department of Public Health and City of Middletown Water and Sewer Department requirements.

**Booster Station:** Several residents of the City of Middletown are located in close proximity to the water tank included in the Remedial Design. The elevation of these residents' homes is too high to be served by the water tank, so they will remain on a hydro-pneumatic system similar to the one that currently supplies water to these residents at the Long Hill pump station. Because the hydro-pneumatic system is a closed pressure system and the atmospheric water tank is an open pressure system, the two systems cannot share the same water line. A design value engineering decision was made to relocate the hydro-pneumatic system to near the atmospheric water tank to use the existing water line. This eliminates the need to install 4,800 linear feet of additional water line to build a dedicated water main to feed the tank. The re-location of the booster station is more cost effective than constructing 4,800 linear feet of water line.

**Connection of RSD #13 and the Fairgrounds:** As part of the Remedial Design, EPA worked with the Town of Durham and CT DEEP to establish a groundwater restriction zone that would include the areas currently impacted by contamination and the areas where contamination could migrate in the future. Of particular concern was the migration of the contamination after all of the existing water supply wells cease operation because these wells could be limiting the movement of the contamination. The groundwater use restriction was finalized in 2015 and included the three public schools adjacent to the DMC property. One of these schools, the Strong Middle School, has a well that is contaminated and the decision was made to connect all three schools to the water line to prevent any future contamination of the other two schools' wells. In addition, the wells that support the Durham Fairgrounds are downgradient and appear to be in the path of the contaminant plume. As a result, the Remedial Design identified the Fairground Wells as wells to eliminate and required connection of the Fairgrounds to the water line.

**Additional Water Line Piping and Dimension:** The extent of water line has expanded to include the connection to the water tank, the RSD #13 public schools, Durham Fairgrounds and the extension of the water line down the entire length of Maple Ave. The 2005 ROD anticipated that the extent of Maple Ave north of Wallingford Road would be part of the water line. Since the 2005 ROD, groundwater contamination

associated with the Site has extended further south reaching John's Way and properties on Maple Ave south of Wallingford Rd. As a result, the water line has been extended to connect the area where the contamination has migrated. The water line size has also increased to address the additional flow requirements for the inclusion of the Fairground and RSD #13 Schools and to include flow for fire suppression at the RSD #13 Schools. The fire suppression at the RSD #13 Schools relies on the existing supply well which, pursuant to Connecticut Department of Public Health (CTDPH) regulations, must be abandoned once public water is connected. To allow RSD #13 Schools to maintain the existing fire suppression capacity, the water line size was increased to allow sufficient flow. The 2005 ROD included 15,400 LF of 6" water line, and the final Remedial Design includes 30,300 LF of water line ranging in size from 8" to 20".

**Chlorine Booster:** The Remedial Design identified that a chlorine booster system would be required to meet CTDPH requirements for residual chlorine levels throughout the water line distribution system.

**Cost:** The construction price index adjustment for the 2005 ROD estimate into 2018 dollars would revise the estimated 2005 ROD cost for the Water Line from \$4.6 million to \$6.9 million. The 2015 final design estimate for the water line component is \$24 million.

Figure 5 presents a schematic of the water line and associated features and Figure 6 shows the changes in the water line extent between the 2005 ROD and final design.

**Vapor Intrusion.** The 2005 ROD identified the need for additional studies to assess potential vapor intrusion issues for structures in proximity to the DMC and former MMC facilities. These studies have been completed and EPA has determined that there is not a complete vapor intrusion pathway for structures in the vicinity of the DMC and MMC facilities. Additional studies were not performed at the former MMC property because the soil remediation for the property is complete and the property has an environmental land use restriction that requires any new structures to include proper mitigation measures to prevent vapor intrusion because the shallow groundwater on the MMC property remains contaminated.

In May 2005, EPA performed soil gas and indoor air sampling within and surrounding 12 residences and one public school building. Low levels of VOCs were detected in several of the residences and one school building crawl space. In 2017, EPA performed indoor air quality testing at six residences and the same public school building crawl space. The data is presented in Indoor Air Vapor Intrusion Study Report dated March 9, 2017. The majority of samples did not detect any of the site specific contaminants. At one location a low concentration of TCE was detected. This location did not have TCE in the groundwater suggesting that the source of the contamination is not groundwater.

In addition to the soil gas and indoor air sampling, EPA also performed groundwater sampling to assess the potential for vapors to off-gas from the groundwater into structures. The initial groundwater sampling that was performed in 2006 and 2007 is presented in Technical

Memorandum for Site-Wide Shallow Groundwater Investigation Summary of Five Quarterly Sampling Rounds (August 2006 - August 2007) dated November 2007. Additional groundwater sampling was performed in May 2017. The May 2017 groundwater results are presented in Technical Memorandum for 2017 Site-Wide Shallow Groundwater Investigation of TCE and PCE dated December 2017. TCE and PCE were detected in groundwater at low levels at two locations. The presence of these contaminants at levels just above the EPA vapor intrusion screening levels warranted indoor air testing at these locations. The indoor air testing documented that TCE and PCE were not present in the indoor air at these locations.

Based on the shallow groundwater and indoor air sampling, EPA has determined that the vapor intrusion pathway is not complete for the residential areas at the Site. EPA will continue to evaluate the potential for vapor intrusion as part of future Five Year Reviews and will collect groundwater data at 215 South Main Street as part of the Site-wide monitoring program to assess the overburden and groundwater contamination at this location.

Although sub-slab soil vapor was not sampled for these residential homes, the non-detects and low levels of detection in groundwater and indoor air indicate that the vapor intrusion exposure pathway is not complete at these residential homes and there are no imminent health risks from the vapor intrusion pathway at these homes. This 2018 ESD documents that this issue has been resolved and no further investigations are necessary.

The 2005 ROD also identified the need for additional studies to assess potential vapor intrusion within the DMC facility. DMC performed a Remedial Design for a sub-slab depressurization system from 2007 through 2012. The sub-slab depressurization system was installed and made operational during 2013, but does not extend throughout the entire DMC facility. Additional studies performed during 2017 along with an assessment of the sub-slab depressurization performance data support that the vapor intrusion threat within the DMC facility has been addressed by the installation of the sub-slab depressurization system. This 2018 ESD documents that this issue has been resolved and no additional mitigation measures are necessary to address vapor intrusion for the DMC facility.

**Clarification of cleanup level for 1,2-dichloroethene (1,2-DCE):** The 2016 Five-Year Review identified that the 1,2-DCE (total) cleanup level of 104 µg/l was not fully protective of a residential drinking water scenario. The primary concern related to a monitoring outcome when the 1,2- DCE total was comprised entirely of cis-1,2-DCE, which has a lower cleanup level. To avoid this possibility, this 2018 ESD requires that the groundwater monitoring analyze for and report both cis-1,2-DCE and trans-1,2-DCE. The 2005 ROD established a cleanup level for cis 1,2-DCE at 70 µg/l based on the EPA established Maximum Contaminant Levels (MCLs) pursuant to the Safe Drinking Water Act. The cleanup level for cis-1,2-DCE will remain unchanged. This 2018 ESD establishes a new cleanup level of 100 µg/l for trans-1,2-DCE based on the EPA MCL. The use of the cleanup level of 100 µg/l for trans-1,2-DCE versus the 104 µg/l cleanup level for total 1,2-DCE is a minor change in concentration and does not impact the protectiveness, cost, or scope of the selected remedy. The reliance on cleanup levels for cis-1,2-DCE and trans 1,2-DCE individually will avoid any confusion with respect to which constituent may be a component of a total 1,2-DCE result.

## V. DESCRIPTION OF SIGNIFICANT DIFFERENCES

This 2018 ESD documents the following changes to the 2005 ROD for the Site:

| <b>2005 ROD for DMC Study Area Component of Remedial Action</b>   | <b>Changes resulting from 2018 ESD</b>  |
|---|---|
| 2005 estimated volume of soil to be excavated was 5,100 cubic yards.  | Final design estimated volume of soil to be excavated is 10,745 cubic yards.  |
| The design did not include a reactive backfill to treat contaminated water that may flow into the clean backfill.         | The final design includes the placement of a zero valent iron reactive backfill in select locations to treat contaminated water that may flow into the clean backfill.  |
| The 2005 ROD estimated the capital cost as \$2.9 million.   | The final design cost estimate is \$8 million.  |
| <b>2005 ROD for Site-Wide Groundwater Study Area – Alternative Water Supply Component of Remedial Action (Water Line)</b> |   |
| <b>2005 ROD for Site-Wide Groundwater Study Area – Alternative Water Supply Component of Remedial Action (Water Line)</b> | <b>Changes resulting from 2018 ESD</b>  |
| Water tank to be considered in design   | Inclusion of a water tank.  |
| Assumed Long Hill hydro-pneumatic system could serve Middletown and Durham  | Relocation of the hydro-pneumatic booster station to allow the water tank to use the existing 4,800 lf of water line.   |
| 15,400 linear feet (lf) of 6 inch diameter water line   | 30,300 lf of water line ranging from 8 inch to 20 inch diameter   |
| Only included one of the 3 schools and considered allowing Fairgrounds to continue use of its well                        | Connection of public schools at RSD#13 and the Fairgrounds to the water line to prevent expansion of contamination.   |
| No chlorine booster   | Addition of a chlorine booster station to meet CTDPH requirements.  |
| Estimated cost was \$4.6 million.   | The final design cost estimate is \$24 million.   |
| <b>2005 ROD requirements for further assessment of vapor intrusion and indoor air</b>                                     |   |
| <b>2005 ROD requirements for further assessment of vapor intrusion and indoor air</b>                                     | <b>Changes resulting from 2018 ESD</b>  |
| 2005 ROD required additional investigations for vapor intrusions.   | A partial sub-slab depressurization system has been installed and is operating at the DMC facility. Additional investigations in the vicinity of the DMC and MMC facilities has provided the data to document that the vapor intrusion pathway is not complete and that additional studies or response actions are not necessary with respect to vapor intrusion. In addition, the monitoring data and indoor air sampling document that the SSDS is mitigating the potential vapor intrusion threat to the DMC facility. |
| <b>2005 ROD Site-Wide Groundwater Study Area - Source Zone and Dissolved Plume components of the remedy</b>               |   |
| <b>2005 ROD Site-Wide Groundwater Study Area - Source Zone and Dissolved Plume components of the remedy</b>               | <b>Changes resulting from 2018 ESD</b>  |
| 2005 ROD established cleanup level for cis-1,2-DCE and total 1,2-DCE.   | To address the possibility that when only total 1,2-DCE is analyzed, the cleanup level may not be protective if the composition of the total 1,2-DCE is entirely cis-1,2-DCE, this 2018 ESD establishes that monitoring should be performed for cis-1,2-DCE and trans-1,2-DCE and that the cleanup levels for total 1,2-DCE will be replaced by the MCL for cis- and trans-1,2-DCE.   |

## Change in Expected Outcomes

There is no change in the expected outcome for the Remedial Action. The expected outcome is that the Water Line component of the 2005 ROD will provide clean drinking water to the residences, businesses, public buildings, and schools currently or potentially impacted by the contamination associated with the Site and that the contaminated source material will be removed from the overburden soil at the DMC Study Area to reduce the threat from vapor emissions into occupied structures and reduce the contaminant mass in the overburden soil and groundwater.

## **VI. Support Agency Comments**

CT DEEP participated with EPA in developing the changes to the DMC Study Area, Water Line, Vapor Intrusion, and Cleanup Level components of the selected remedy described herein. The State letter of concurrence with respect to this 2018 ESD is included at Attachment A to this ESD. The CT DEEP noted that the CTDPH Drinking Water Action Levels for TCE and 1,4 dioxane, which are 1 ug/l and 3 ug/l respectively, should be used as action levels when evaluating potable drinking water wells.

## **VII. Statutory Determinations**

There are no substantive changes to the applicable or relevant and appropriate requirements (ARARs) identified in the 2005 ROD as a result of remedy changes documented in this 2018 ESD.

Although not ARARs, Connecticut General Statutes Sections 25-32(a) and 25-33(b), and Sections 19-13-B102(d)(2) and 19-13-B80 of the CT Public Health Code provide the Connecticut Department of Public Health with responsibility for the review and approval of waterworks projects for public water systems. The water line project design was reviewed by the Connecticut Department of Public Health and the water line was designed to comply with the following guidelines:

- Guidelines for the Design and Operation of Public Water System Treatment, Works and Sources, State of Connecticut Dept. of Public Health, Water Supplies Section, Jan. 1999, updated 2006.
- Recommended Standards for Water Works, Great Lakes--Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers.
- Purchasing Standards for Waterworks Material, Connecticut Water Company (Rev. May 1, 2012).
- General Requirements, Water main and Service Installation, City of Middletown Water and Sewer Department, (July 2010).
- American Water Works (AWWA) D110: Wire- and Strand-Wound, Circular, Prestressed Concrete Water Tanks.-Fine with AWWA standard.
- Water Main Design and Construction Guidelines, State of Connecticut Department of Public Health Drinking Water Section. Effective October 1, 2006

- STORAGE TANK DESIGN AND CONSTRUCTION GUIDELINES, State of Connecticut Department of Public Health Drinking Water Section, Water Works Design and Construction Effective Date: August 8, 2006
- LIQUID CHEMICAL FEED SYSTEM DESIGN AND INSTALLATION GUIDELINES, State of Connecticut Department of Public Health Drinking Water Section, Treatment Works Design and Construction. Effective Date: 05/08/2008

EPA believes that the remedy as adjusted herein remains protective of human health and the environment and satisfies the requirements of Section 121 of CERCLA, 42 U.S.C. § 9621. The changes made in this 2018 ESD are consistent with and do not change the remedial action objectives for the 2005 ROD. The modifications to the remedy described herein will allow the remedy to continue to perform in the most timely and cost-effective manner practicable while meeting all of the statutory requirements of CERCLA.

### **VIII. Public Participation Compliance**

In accordance with Section 117(d) of CERCLA, 42 U.S.C. § 9617(d), and Section 300.825(a) of the NCP, this 2018 ESD and supporting documentation shall become part of the Administrative Record for the Site, which is available for public review at the locations identified in the introduction to this document.

EPA provided the public with an explanation of the proposed changes to the DMC Study Area and Water Line components of the 2005 ROD in a public information fact sheet posted on the EPA website in August 2016. The public information fact sheet was also mailed to the 180 properties located along the water line route, including the properties in Middletown in the vicinity of the water storage tank. EPA also presented the changes to the Water Line component of the 2005 at public meetings in Durham on December 16, 2014, June 3, 2015, and March 29, 2017. Public input regarding the water storage tank and the components of the project in the City of Middletown were also received during: hearings with the Inland Wetland and Watercourses Agency on December 9, 2016, January 4, 2017, and November 1, 2017; the Zoning Board of Appeals on November 2, 2017; and the City of Middletown Planning and Zoning Commission on January 11, 2017, January 25, 2017, and January 10, 2018; a public workshop with the City of Middletown Common Council held on February 6, 2017; and four public outreach meetings with residents of Middletown in the vicinity of the water storage tank on February 21, 2017, February 28, 2017, October 26, 2017, and December 5, 2017. To ensure good communication with state and local stakeholders, EPA has hosted monthly conference calls and meetings with: CT DEEP; Connecticut Department of Public Health; City of Middletown Water and Sewer Department; Town of Durham Selectboard; and Town of Durham Health Department.

As required by 40 C.F.R. § 300.435(c)(2)(i)(B), EPA will publish a notice of availability and a brief description of this ESD in a major local newspaper of general circulation following the signing of this ESD.

**ATTACHMENT A** – CT DEEP Concurrence Letter  
**ATTACHMENT B** - Figures  
**ATTACHMENT C** – Administrative Record Index

ATTACHMENT A  
CTDEEP LETTER OF CONCURRENCE



**AUG 22 2018**

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**DEEP-REMEDIATION DIVISION**

SITE NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
TOWN \_\_\_\_\_  
FILE TYPE \_\_\_\_\_

Ed Hathaway  
US EPA, Region 1  
5 Post Office Square  
Mailcode: OSRR07-1  
Boston, MA 02109-3912

RE: Declaration for the Second Explanation of Significant Differences (ESD)  
Durham Meadows Superfund Site  
Durham, Connecticut

Dear Mr. Hathaway:

The Remediation Division of the Bureau of Water Protection and Land Reuse has reviewed the document titled, "Declaration for the Second Explanation of Significant Differences, Durham Meadows Superfund Site, Durham, Connecticut, 2018" (2018 ESD). The 2018 ESD was prepared by the United States Environmental Protection Agency (EPA) and was received by the Connecticut Department of Energy and Environmental Protection (CT DEEP) on July 30, 2018. The first ESD was issued in 2011 pertaining to the modifications of remedy selections in the Merriam Manufacturing Company Study Area, portion of the Durham Meadows Superfund Site.

EPA is required to publish an ESD by Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9617(c), and the National Contingency Plan (NCP) at 40 C.F.R. § 300.435(c)(2)(i). Public notice of the 2018 ESD will not be conducted since intensive public outreach, including public information fact sheets, public meetings, and public workshop, has been conducted at the site pertaining to the proposed changes to the Durham Manufacturing Company Study Area and Water Line components. However, as required by 40 C.F.R. 300.435(c)(2)(i)(B), EPA will publish a notice of availability and a brief description of this ESD in a major local newspaper of general circulation following the signing of this ESD.

Durham Meadows Superfund Site (the "Site") was listed on the National Priority List (NPL) on October 4, 1989. The Record of Decision (ROD) for this Site was issued on September 30, 2005.

The 2018 ESD proposes changes to four (4) components of the remedy selected in 2005 ROD. Descriptions of each proposed change are summarized below.

**A. Soil Remediation for DMC Study Area Component**

The 2005 ROD includes excavation of approximately 5,100 cubic yards of soil for offsite disposal and replacement of clean backfill in this area. The 2018 ESD proposes to excavate approximately 10,745 cubic yards of soil and placement of a zero valent iron reactive backfill in

Mr. Hathaway

RE: 2018 Explanation of Significant Differences, Durham Meadows, Durham

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select locations to address residual contamination below groundwater table. The cost estimate has been increased from \$2.9 million to \$8 million.

### **B. Water Main Extension for Site-Wide Groundwater Study Area (Water Line)**

The 2005 ROD selected an extension of water main directly from Middletown Water Distribution System to the Superfund Site area. The 2018 ESD proposes several changes to the Water Line component. The key changes to the Water Line includes an installation of a water tank, relocation of the hydro-pneumatic booster station, extra water lines ranging from 6 inch to 20 inch diameter, connection of three public schools, connection of Fairground wells that serve the Durham Center Water System, and a chlorine booster station to meet the CT Department of Public Health (CTDPH) requirements. The cost estimate has been increased from \$4.6 million to \$24 million.

### **C. Further Assessment of Vapor Intrusion Potential**

The 2005 ROD required collection of additional data to further assess areas at the Site posing potential indoor air risks. Additional soil gas and indoor air samples were collected within and surrounding residential properties and a public school. EPA also performed shallow groundwater sampling to assess the potential for vapors from groundwater into structures. Based on the analytical results of shallow groundwater and indoor air sampling, EPA has determined that the vapor intrusion pathway is “incomplete” such that persons residing in neighboring residential parcels are not being exposed to vapors originating from the site contamination and is within EPA’s acceptable risk range for residential dwellings in the vicinity of the DMC and MMC facilities. However, EPA will continue monitoring the quality of shallow groundwater at a residential property that borders the north of the DMC facility to continue evaluation of the potential for vapor intrusion to the residential structure as part of future Five Year Reviews.

A sub-slab depressurization system has been installed and operated at portion of the DMC facility to prevent vapor intrusion into the facility. Based on the performance data, the sub-slab depressurization system has been mitigating the vapor intrusion threat to the DMC facility and EPA concludes no additional study or measures are necessary in addition to the continuing operation of the mitigation system.

The 2018 ESD proposes to close out this component.

### **D. Clarification of a New Cleanup Level for Total 1,2-DCE**

Total 1,2-dichloroethene (total 1,2-DCE) includes cis-1,2-DCE and trans-1,2-DCE. The 2005 ROD established a cleanup level for cis-1,2-DCE at 70 µg/l and total 1,2-DCE at 104 µg/l. Cleanup level for trans-1,2-DCE was not established in 2005.

The 2016 Five-Year Review identified that total 1,2-DCE cleanup level of 104 µg/l was not fully protective in a residential drinking water scenario for a concern that total 1,2-DCE may comprise entirely of cis-1,2-DCE. The 2018 ESD established a new cleanup level of 100 µg/l for trans-1,2-DCE and 70 µg/l for cis-1,2-DCE (unchanged). The 2018 ESD also requires that the

Mr. Hathaway

RE: 2018 Explanation of Significant Differences, Durham Meadows, Durham

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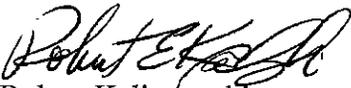
groundwater monitoring analyze for and report both cis-1,2-DCE and trans-1,2-DCE to avoid any confusion with respect to which constituent may be a component of a total 1,2-DCE result.

The Connecticut Department of Energy and Environmental Protection, Remediation Division, supports the recommendations contained in the 2018 ESD, with the following comments that are noted in Section VI. Support Agency Comments of the ESD.

1. The 2005 ROD established cleanup levels of 5 µg/l for TCE based on the EPA established Maximum Contaminant Levels (MCLs) and CT RSRs standards. CTDPH has established a Drinking Water Action Level (DWAL) of 1 µg/l for TCE in 2013. The cleanup level of 1 µg/l for TCE shall be used for the potable wells at the Site.
2. The 2005 ROD established cleanup levels of 5.2 µg/l for 1,4-dioxane. CTDPH has established a DWAL of 3 µg/l for 1,4-dioxane in 2013. The cleanup level of 3 µg/l for 1,4-dioxane shall be used for the potable wells at the Site.

The CT DEEP is committed to working with EPA to continue achieving positive remedial outcomes on the Site. If you have any questions, please contact Jing Chen of my staff at (860) 424-3391.

Sincerely,

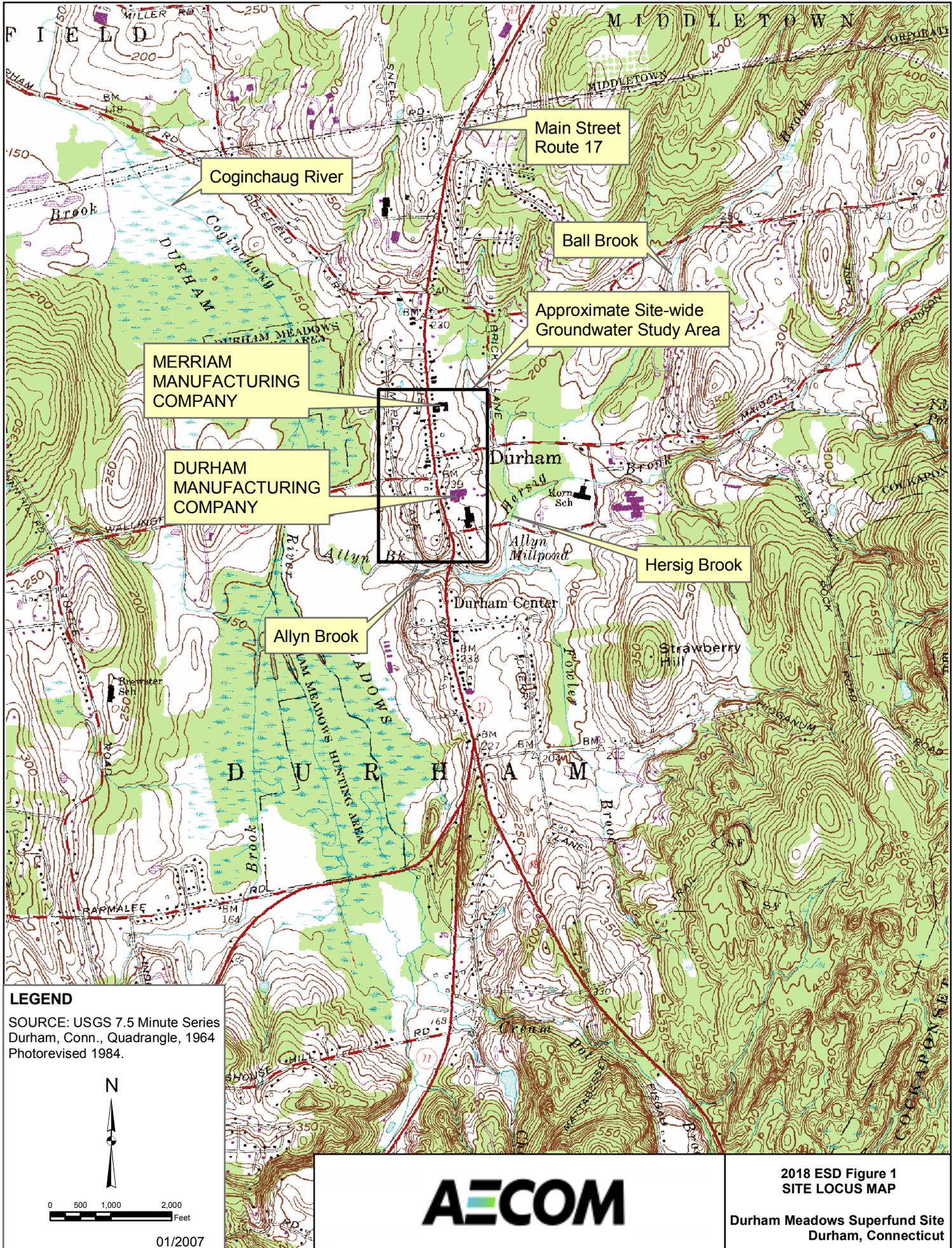


Robert Kaliszewski  
Deputy Commissioner

RK:JC

cc: Lori DiBella, Assistant Attorney General  
William Warzecha, CTDEEP

ATTACHMENT B  
FIGURES



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**LEGEND**

SOURCE: USGS 7.5 Minute Series Durham, Conn., Quadrangle, 1964 Photorevised 1984.



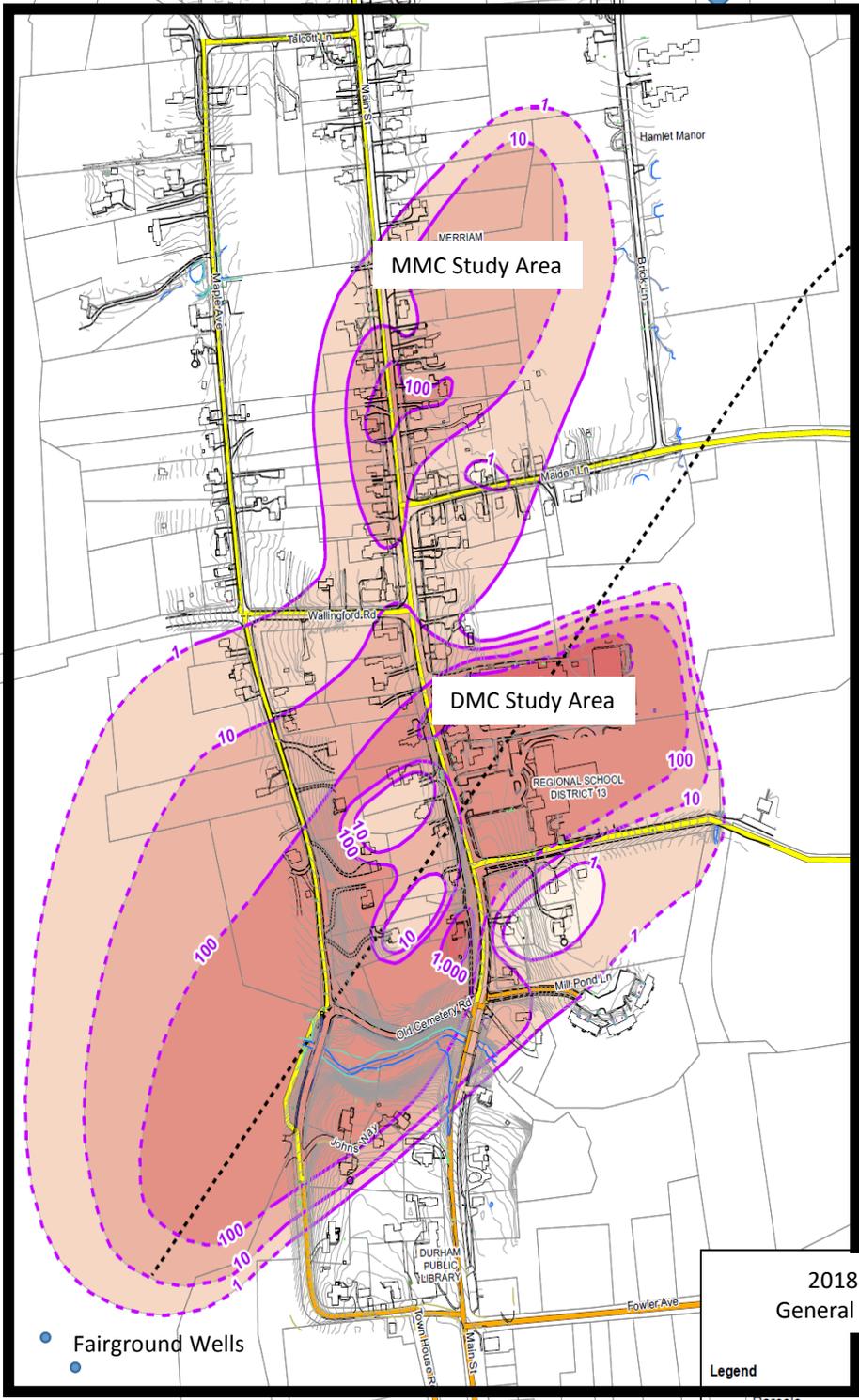
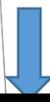
01/2007



2018 ESD Figure 1  
SITE LOCUS MAP

Durham Meadows Superfund Site  
Durham, Connecticut

# Site-Wide Groundwater Study Area



2018 ESD Figure 2  
General Site Study Areas

### Legend

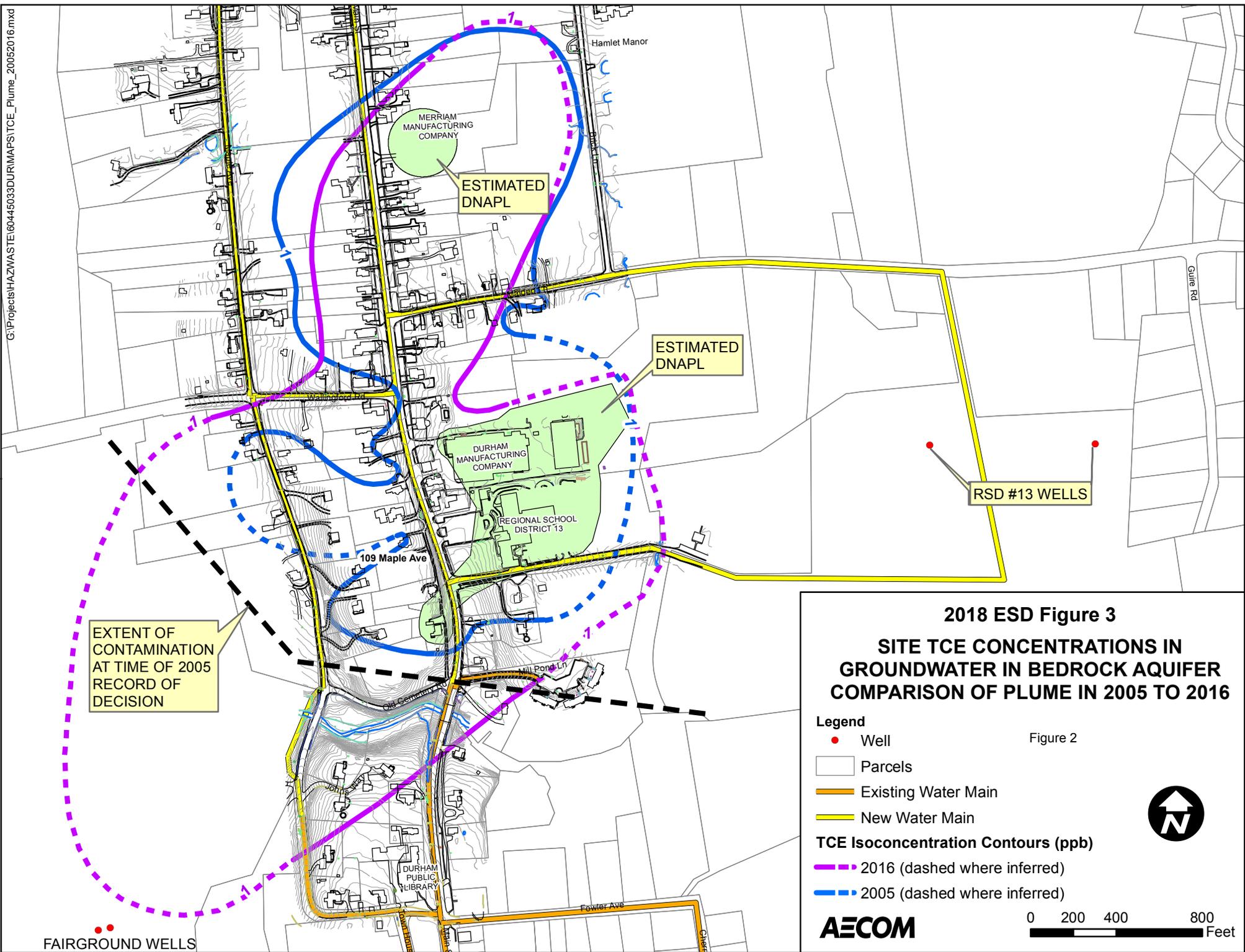
- Parcels
- Ball Brook Fault
- Existing Water Main
- New Water Main
- TCE Isoconcentration contour (Dashed Where Inferred)



Property lines are based on Town of Durham Assessor Maps.

AECOM

0 135 270 540 Feet



**2018 ESD Figure 3**  
**SITE TCE CONCENTRATIONS IN GROUNDWATER IN BEDROCK AQUIFER**  
**COMPARISON OF PLUME IN 2005 TO 2016**

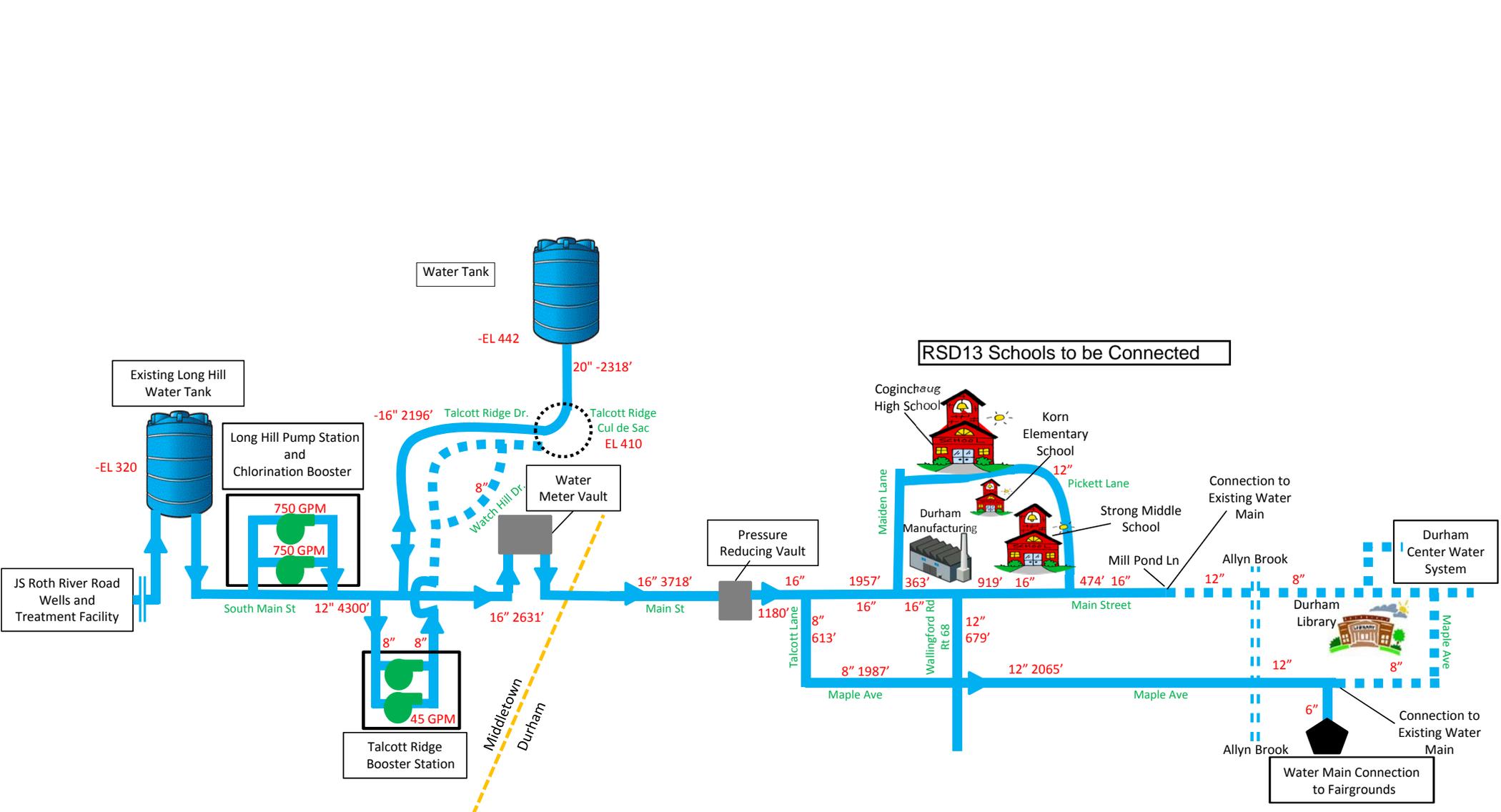
- Legend**
- Well
  - Parcels
  - Existing Water Main
  - New Water Main
- TCE Isoconcentration Contours (ppb)**
- 2016 (dashed where inferred)
  - 2005 (dashed where inferred)

Figure 2

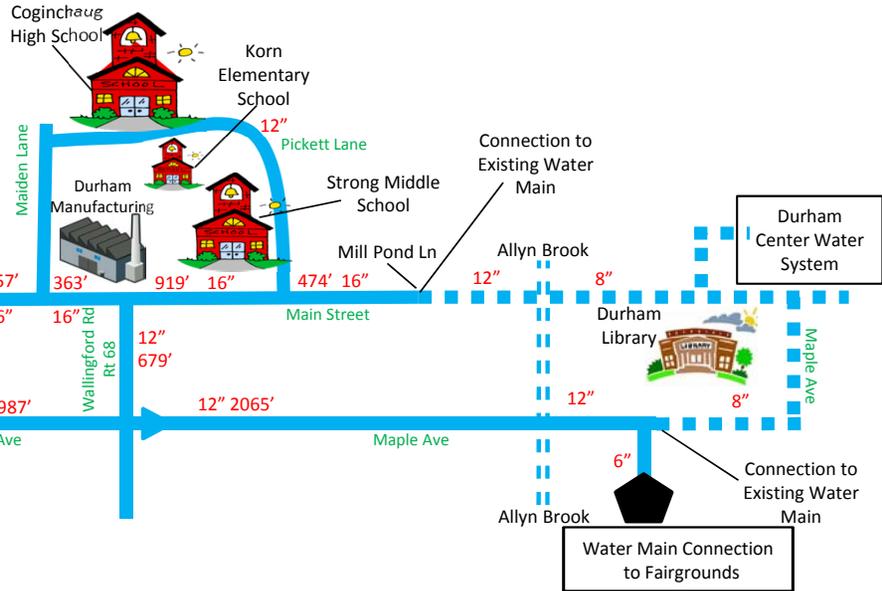


**AECOM**





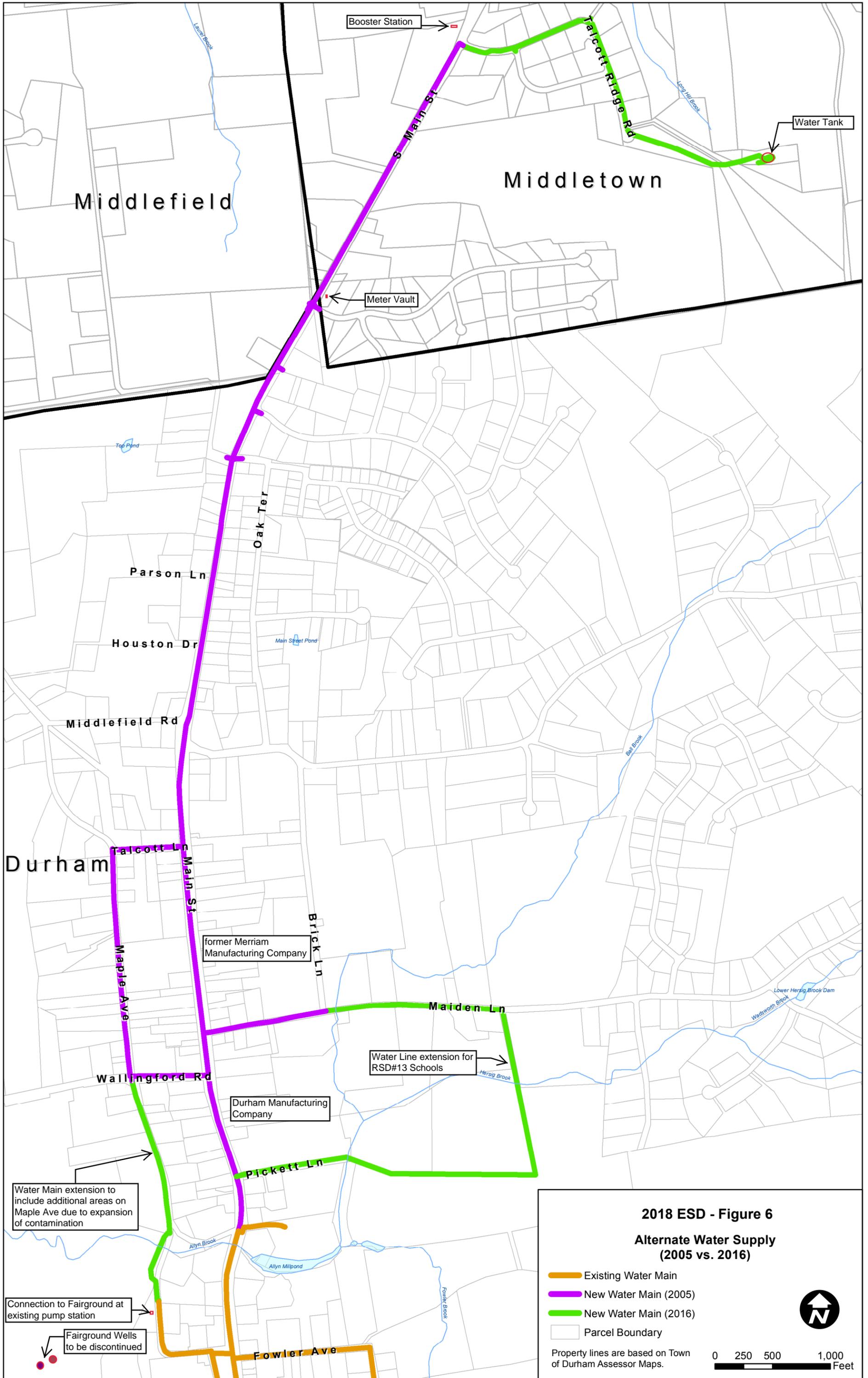
**RSD13 Schools to be Connected**



2018 ESD Figure 5  
 Durham Meadows Waterline RD  
 Schematic Drawing

Not to Scale





Water Main extension to include additional areas on Maple Ave due to expansion of contamination

Connection to Fairground at existing pump station

Fairground Wells to be discontinued

Booster Station

Water Tank

Meter Vault

former Merriam Manufacturing Company

Durham Manufacturing Company

Water Line extension for RSD#13 Schools

Durham

Middlefield

Middletown

ATTACHMENT C  
ADMINISTRATIVE RECORD INDEX  
FOR 2018 ESD

Durham Meadows  
NPL Site Administrative Record  
Explanation of Significant Differences  
(ESD)

Index

ESD Dated September 2018  
Released September 2018

Prepared by  
EPA New England  
Office of Site Remediation & Restoration

## Introduction to the Collection

This is the administrative record for the Durham Meadows Superfund Site, Durham, CT, Explanation of Significant Differences (ESD), released September 2018. The file contains site-specific documents used by EPA staff in selecting a response action at the site.

This record includes, by reference, administrative record for the Record of Decision (ROD), issued September 2005; the Unilateral Administrative Order (UAO), issued July 2007; the Administrative Order for Property Access, issued June 2011; and the Explanation of Significant Differences, issued September 2011. Documents listed as bibliographic sources in individual reports might not be listed separately in the index.

The administrative record file is available for review at:

Online: <https://semspub.epa.gov/src/collection/01/AR65566> or <https://go.usa.gov/xPqC2>

Additional information about the site is also available at [www.epa.gov/superfund/durham](http://www.epa.gov/superfund/durham)

EPA New England  
Office of Site Remediation & Restoration  
Records and Information Center  
5 Post Office Square, Suite 100 (OSRR02-3)  
Boston, MA 02109-3912  
(by appointment)  
617-918-1440 (phone)  
617-918-0440 (fax)

Durham Public Library  
7 Maple Avenue  
Durham, CT 06422  
(860) 349-9544 (phone)  
<http://www.durhamlibrary.org/>

An administrative record file is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).

Questions about this administrative record file should be directed to the EPA New England site manager, Ed Hathaway (617) 918-1372, [hathaway.ed@epa.gov](mailto:hathaway.ed@epa.gov)

| Document ID | Title  | Document Date | Page Count | Author  | Addressee   | Resource Type                  | Program Information   | Access Control     | Document URL  |
|-------------|--|---------------|------------|---|---|--------------------------------|---|--------------------|---|
| 70005991    | FINAL FACT SHEET: SUPERFUND COMMUNITY UPDATE - JANUARY 2012  | 1/1/2012      | 4          | R01: (US EPA REGION 1)  |   | PUB / Publication              | 051-COMMUNITY INVOLVEMENT/0511-Community Involvement Activities/13.05-FACT SHEETS/INFORMATION UPDATES | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/70005991">https://semspub.epa.gov/srr/document/01/70005991</a>   |
| 537843      | SITE UPDATE, DURHAM MEADOWS SUPERFUND SITE   | 5/1/2013      | 3          | R01: (US EPA REGION 1)  |   | PUB / Publication              | 051-COMMUNITY INVOLVEMENT/0511-Community Involvement Activities/13.05-FACT SHEETS/INFORMATION UPDATES | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/537843">https://semspub.epa.gov/srr/document/01/537843</a>       |
| 540467      | PRESENTATION, PUBLIC MEETING REGARDING WATER EXTENSION PROJECT AND SITE STATUS   | 6/6/2013      | 39         | R01: (US EPA REGION 1)  |   | MTG / Meeting Document         | 051-COMMUNITY INVOLVEMENT/0511-Community Involvement Activities/13.04-PUBLIC MEETINGS/HEARINGS        | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/540467">https://semspub.epa.gov/srr/document/01/540467</a>       |
| 564679      | LETTER REGARDING CONDITIONAL APPROVAL OF SUB-SLAB DEPRESSURIZATION SYSTEM (SSDS) INSTALLATION REPORT, DURHAM MANUFACTURING COMPANY (DMC) STUDY AREA  | 8/13/2014     | 4          | R01: Loughlin, Amni (US EPA REGION 1)   | R01: Lamonica, Robert (GZA GEONVIRONMENTAL INC)                                 | LTR / Letter                   | 053-REMEDIAL/0532-Remedial Design/06.04-REMEDIAL DESIGN REPORTS                                       | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/564679">https://semspub.epa.gov/srr/document/01/564679</a>       |
| 564678      | LETTER REGARDING RESPONSE TO CONDITIONAL APPROVAL LETTER, SUB-SLAB DEPRESSURIZATION SYSTEM (SSDS) INSTALLATION REPORT, DURHAM MANUFACTURING COMPANY (DMC) STUDY AREA (REVISED DRAFT SSDS INSTALLATION REPORT ATTACHED) | 9/3/2014      | 1955       | R01: Ruszczyk, David (GZA GEONVIRONMENTAL INC), R01: Lamonica, Robert (GZA GEONVIRONMENTAL INC)                 | R01: Loughlin, Amni (US EPA REGION 1)   | LTR / Letter                   | 053-REMEDIAL/0532-Remedial Design/06.04-REMEDIAL DESIGN REPORTS                                       | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/564678">https://semspub.epa.gov/srr/document/01/564678</a>       |
| 100009968   | PRESENTATION: PUBLIC HEARING REGARDING PROPOSED GROUNDWATER ORDINANCE  | 12/16/2014    | 17         | R01: (US EPA REGION 1)  |   | MTG / Meeting Document         | 051-COMMUNITY INVOLVEMENT/0511-Community Involvement Activities/13.04-PUBLIC MEETINGS/HEARINGS        | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100009968">https://semspub.epa.gov/srr/document/01/100009968</a> |
| 100009967   | PRESENTATION: PUBLIC HEARING, PROPOSED GROUNDWATER ORDINANCE   | 6/3/2015      | 15         | R01: (US EPA REGION 1)  |   | MTG / Meeting Document         | 051-COMMUNITY INVOLVEMENT/0511-Community Involvement Activities/13.04-PUBLIC MEETINGS/HEARINGS        | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100009967">https://semspub.epa.gov/srr/document/01/100009967</a> |
| 586247      | GROUNDWATER ORDINANCE  | 12/14/2015    | 7          | R01: (DURHAM (CT) TOWN OF)  |   | LGL / Legal Instrument         | 053-REMEDIAL/0534-Post Construction/08.07-INSTITUTIONAL CONTROLS                                      | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/586247">https://semspub.epa.gov/srr/document/01/586247</a>       |
| 591990      | SITE UPDATE, DURHAM MEADOWS SUPERFUND SITE   | 7/1/2016      | 6          | R01: (US EPA REGION 1)  |   | PUB / Publication              | 051-COMMUNITY INVOLVEMENT/0511-Community Involvement Activities/13.05-FACT SHEETS/INFORMATION UPDATES | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/591990">https://semspub.epa.gov/srr/document/01/591990</a>       |
| 591261      | DECLARATION OF ENVIRONMENTAL LAND USE RESTRICTION (ELUR) AND GRANT OF EASEMENT FOR 281 MAIN STREET, MAP 27, LOT 59 AND MAP 38, LOT 17 (MERRIAM MANUFACTURING COMPANY STUDY AREA)                                       | 7/29/2016     | 16         | R01: Wingfield, Betsy (CT DEPT OF ENVIRONMENTAL PROTECTION), R01: Pearson, Daniel (ESTATE OF ALLAN E ADAMS)     |   | LGL / Legal Instrument         | 053-REMEDIAL/0534-Post Construction/08.07-INSTITUTIONAL CONTROLS                                      | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/591261">https://semspub.epa.gov/srr/document/01/591261</a>       |
| 591262      | DECLARATION OF ENVIRONMENTAL LAND USE RESTRICTION (ELUR) AND GRANT OF EASEMENT FOR 275 MAIN STREET, MAP 38, LOT 17 (MERRIAM MANUFACTURING COMPANY STUDY AREA)  | 7/29/2016     | 15         | R01: Wingfield, Betsy (CT DEPT OF ENVIRONMENTAL PROTECTION), R01: Pearson, Daniel (ESTATE OF ALLAN E ADAMS)     |   | LGL / Legal Instrument         | 053-REMEDIAL/0534-Post Construction/08.07-INSTITUTIONAL CONTROLS                                      | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/591262">https://semspub.epa.gov/srr/document/01/591262</a>       |
| 593608      | BASIS OF DESIGN REPORT FOR THE DURHAM MANUFACTURING COMPANY (DMC) STUDY AREA SOIL REMEDIAL DESIGN (RD), REVISED FINAL  | 9/1/2016      | 269        | R01: (AECOM)<br>R01: Ruszczyk, David (GZA GEONVIRONMENTAL INC), R01: Lamonica, Robert (GZA GEONVIRONMENTAL INC) | R01: (US EPA REGION 1)  | RPT / Report                   | 053-REMEDIAL/0532-Remedial Design/06.04-REMEDIAL DESIGN REPORTS                                       | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/593608">https://semspub.epa.gov/srr/document/01/593608</a>       |
| 100009987   | LETTER REGARDING UPPER FLOOR SUB-SLAB SOIL VAPOR SAMPLING  | 9/21/2016     | 507        | R01: (AECOM)<br>R01: Lamonica, Robert (GZA GEONVIRONMENTAL INC)   | R01: Hathaway, Edward M (US EPA REGION 1)                                       | ADD / Analytical Data Document | 053-REMEDIAL/0531-Remedial Action/07.05-Characterization/04.02-SAMPLING & ANALYSIS DATA (FS)          | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100009987">https://semspub.epa.gov/srr/document/01/100009987</a> |
| 593668      | FIRST FIVE-YEAR REVIEW REPORT  | 9/28/2016     | 128        | R01: (US EPA REGION 1)  |   | RPT / Report                   | 053-REMEDIAL/0534-Post Construction/08.03-LONG-TERM RESPONSE REPORTS                                  | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/593668">https://semspub.epa.gov/srr/document/01/593668</a>       |
| 597054      | PRESENTATION: MIDDLETOWN COMMON COUNCIL WORKSHOP FOR MIDDLETOWN MUNICIPAL IMPROVEMENTS RELATING TO WATER MAIN EXTENSION AND WATER TANK   | 2/13/2017     | 52         | R01: (US EPA REGION 1)  |   | MTG / Meeting Document         | 053-REMEDIAL/0533-Remedial Action/07.05-REMEDIAL ACTION DOCUMENTS                                     | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/597054">https://semspub.epa.gov/srr/document/01/597054</a>       |
| 100002489   | INDOOR AIR VAPOR INTRUSION (VI) STUDY REPORT   | 3/9/2017      | 130        | R01: Kahn, Peter (US EPA REGION 1)  |   | RPT / Report                   | 053-REMEDIAL/0533-Remedial Action/07.05-REMEDIAL ACTION DOCUMENTS                                     | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100002489">https://semspub.epa.gov/srr/document/01/100002489</a> |
| 100009969   | PRESENTATION: ALTERNATIVE WATER SUPPLY UPDATE  | 3/29/2017     | 15         | R01: (US EPA REGION 1)  |   | MTG / Meeting Document         | 051-COMMUNITY INVOLVEMENT/0511-Community Involvement Activities/13.04-PUBLIC MEETINGS/HEARINGS        | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100009969">https://semspub.epa.gov/srr/document/01/100009969</a> |
| 100002488   | TECHNICAL MEMORANDUM FOR 2017 SITE-WIDE SHALLOW GROUNDWATER INVESTIGATION  | 12/1/2017     | 35         | R01: (US EPA REGION 1)  |   | RPT / Report                   | 053-REMEDIAL/0533-Remedial Action/07.05-REMEDIAL ACTION DOCUMENTS                                     | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100002488">https://semspub.epa.gov/srr/document/01/100002488</a> |
| 100002487   | MEMO REGARDING VAPOR INTRUSION (VI) RISK EVALUATION, RESIDENTIAL HOMES ON MAIN STREET AND MAPLE AVENUE AND STRONG SCHOOL   | 12/13/2017    | 8          | R01: Vu, Chau (US EPA REGION 1)   | R01: Dilorenzo, Jim (US EPA)  | MEMO / Memorandum              | 053-REMEDIAL/0533-Remedial Action/07.02-SAMPLING & ANALYSIS DATA (RA)                                 | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100002487">https://semspub.epa.gov/srr/document/01/100002487</a> |
| 100009970   | PRESENTATION: CITY OF MIDDLETOWN MUNICIPAL IMPROVEMENTS FOR WATER MAIN ASSOCIATED WITH DURHAM WATER PROJECT, PLANNING AND ZONING COMMISSION 08/24/2017 REVIEW  | 1/10/2018     | 57         | R01: Hathaway, Edward M (US EPA REGION 1)   |   | MTG / Meeting Document         | 051-COMMUNITY INVOLVEMENT/0511-Community Involvement Activities/13.04-PUBLIC MEETINGS/HEARINGS        | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100009970">https://semspub.epa.gov/srr/document/01/100009970</a> |
| 100002486   | EMAIL REGARDING VAPOR INTRUSION (VI) RISK, NO FURTHER TESTING OR EVALUATIONS NECESSARY (EMAIL HISTORY ATTACHED)  | 2/15/2018     | 1          | R01: Dilorenzo, James M (US EPA REGION 1)   | R01: Hathaway, Edward M (US EPA REGION 1), R01: Finkel, Ethan (US EPA REGION 1) | EML / Email                    | 053-REMEDIAL/0533-Remedial Action/07.01-CORRESPONDENCE (RA)   | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100002486">https://semspub.epa.gov/srr/document/01/100002486</a> |
| 626588      | DURHAM MEADOWS WATERLINE REMEDIAL DESIGN (RD) 100% SUBMITTAL DESIGN DRAWINGS   | 4/1/2018      | 104        | R01: (AECOM)  | R01: (US EPA REGION 1)  | FIG / Figure/Map/ Drawing      | 053-REMEDIAL/0532-Remedial Design/06.04-REMEDIAL DESIGN REPORTS                                       | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/626588">https://semspub.epa.gov/srr/document/01/626588</a>       |
| 626589      | SPECIFICATIONS, DURHAM WATERLINE REMEDIAL DESIGN (RD), 100% DESIGN SUBMITTAL, VOLUME 1 OF 2  | 4/1/2018      | 819        | R01: (AECOM)  | R01: (US EPA REGION 1)  | RPT / Report                   | 053-REMEDIAL/0532-Remedial Design/06.04-REMEDIAL DESIGN REPORTS                                       | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/626589">https://semspub.epa.gov/srr/document/01/626589</a>       |
| 626590      | SELECTED PAGES FROM SPECIFICATIONS, DURHAM WATERLINE REMEDIAL DESIGN (RD), 100% DESIGN SUBMITTAL, VOLUME 1 OF 2, DIVISION 2 - SITE WORK  | 4/1/2018      | 635        | R01: (AECOM)  | R01: (US EPA REGION 1)  | RPT / Report                   | 053-REMEDIAL/0532-Remedial Design/06.04-REMEDIAL DESIGN REPORTS                                       | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/626590">https://semspub.epa.gov/srr/document/01/626590</a>       |
| 626591      | SPECIFICATIONS, DURHAM WATERLINE REMEDIAL DESIGN (RD), 100% DESIGN SUBMITTAL, VOLUME 2 OF 2  | 4/1/2018      | 697        | R01: (AECOM)  | R01: (US EPA REGION 1)  | RPT / Report                   | 053-REMEDIAL/0532-Remedial Design/06.04-REMEDIAL DESIGN REPORTS                                       | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/626591">https://semspub.epa.gov/srr/document/01/626591</a>       |
| 626587      | BASIS OF DESIGN REPORT - DURHAM WATERLINE REMEDIAL DESIGN (RD) APPENDICES  | 5/1/2018      | 473        | R01: (AECOM)  | R01: (US EPA REGION 1)  | RPT / Report                   | 053-REMEDIAL/0532-Remedial Design/06.04-REMEDIAL DESIGN REPORTS                                       | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/626587">https://semspub.epa.gov/srr/document/01/626587</a>       |
| 100009976   | BASIS OF DESIGN REPORT - DURHAM WATERLINE REMEDIAL DESIGN (RD)   | 5/1/2018      | 58         | R01: (AECOM)  | R01: (US EPA REGION 1)  | RPT / Report                   | 053-REMEDIAL/0532-Remedial Design/06.04-REMEDIAL DESIGN REPORTS                                       | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100009976">https://semspub.epa.gov/srr/document/01/100009976</a> |
| 100009975   | SITE UPDATE, JULY 2018   | 7/24/2018     | 3          | R01: (US EPA REGION 1)  |   | PUB / Publication              | 051-COMMUNITY INVOLVEMENT/0511-Community Involvement Activities/13.05-FACT SHEETS/INFORMATION UPDATES | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100009975">https://semspub.epa.gov/srr/document/01/100009975</a> |
| 100009988   | LETTER REGARDING APPROVAL OF SUB-SLAB DEPRESSURIZATION SYSTEM (SSDS) SYSTEM  | 7/26/2018     | 2          | R01: Hathaway, Edward M (US EPA REGION 1)   | R01: Gowac, John J (DURHAM MANUFACTURING CO)                                    | LTR / Letter                   | 053-REMEDIAL/0533-Remedial Action/07.01-CORRESPONDENCE (RA)   | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100009988">https://semspub.epa.gov/srr/document/01/100009988</a> |
| 100010190   | LETTER REGARDING STATE CONCURRENCE WITH EXPLANATION OF SIGNIFICANT DIFFERENCES (ESD)   | 8/22/2018     | 3          | R01: Kaliszewski, Robert (CT DEPT OF ENERGY AND ENVIRONMENTAL PROTECTION)                                       | R01: Hathaway, Edward M (US EPA REGION 1)                                       | LTR / Letter                   | 053-REMEDIAL/0531-Remedial Characterization/05.04-RECORD OF DECISION (ROD)                            | UJCL(Uncontrolled) | <a href="https://semspub.epa.gov/srr/document/01/100010190">https://semspub.epa.gov/srr/document/01/100010190</a> |