

**DECLARATION FOR THE  
EXPLANATION OF SIGNIFICANT DIFFERENCES  
DURHAM MEADOWS SUPERFUND SITE  
DURHAM, CONNECTICUT  
September 2011**

**Site Name and Location**

The Durham Meadows Superfund Site is located in Durham, Connecticut.

**Lead Agency**

United States Environmental Protection Agency

**Support Agency**

Connecticut Department of Energy & Environmental Protection

**Statement of Purpose**

This decision document sets forth the basis for the determination to issue the attached Explanation of Significant Differences (ESD) for the Durham Meadows Superfund Site (the "Site"). The U.S. Environmental Protection Agency (EPA) developed this decision document after consulting with the Connecticut Department of Energy & Environmental Protection (CT DEEP). CT DEEP provided comments by electronic mail dated September 7, 2011; CT DEEP's comments were incorporated into this document.

**Statutory Basis for Issuance of the ESD**

Pursuant to Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9617(c), and 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 the 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 ESD, rather than a ROD amendment, is appropriate where the adjustments being made to the ROD are significant but do not fundamentally alter the remedy with respect to scope, performance or cost. EPA has determined that the adjustments to the ROD provided in this ESD are significant but do not fundamentally alter the overall remedy for the Site with respect to scope, performance, or cost. Therefore, this ESD is properly being issued.

In accordance with Section 117(d) of CERCLA, 42 U.S.C. § 9617(d), and 40 C.F.R. §§ 300.435(c)(2)(i)(A) and 300.825(a)(2), this ESD will be available for public review at the EPA Records Center in Boston, Massachusetts and the public information repository



located at the Durham Public Library at 7 Maple Avenue in Durham, Connecticut. The ESD will also be available at CT DEEP's offices in Hartford, Connecticut. 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.

## **Background**

The 2005 ROD for this Site required measures to address groundwater contamination as well as measures to address contaminant sources. Among other things, the ROD required a cleanup remedy for the Merriam Manufacturing Company Study Area (MMC Study Area) that includes treatment of volatile organic compounds (VOCs) first by soil vapor extraction (SVE) for up to seven years, followed by soil excavation and off-site disposal. The ROD anticipated that SVE would reduce concentrations of VOCs in soil over time and minimize the volume and depth of required excavation. At the time of the ROD, the estimated volume of contaminated soil to be excavated after SVE completion was approximately 4,800 cubic yards (CY) and the total cost of the MMC Study Area remedy was estimated at \$2.2 million.

At the time the ROD was issued, EPA did not expect excavation would occur in any wetlands at the MMC Study Area.

The ROD required institutional controls at the MMC Study Area, including, but not limited to, preventing the future use of groundwater for drinking water. The ROD also anticipated that an environmental monitoring program would be required after the cleanup was complete, including soil vapor monitoring, for an estimated duration of seven years, and groundwater monitoring, estimated for 50 years.

## **Overview of the ESD**

This ESD has four major components:

- A decision that the SVE component of the MMC Study Area remedy will not be implemented, and that the volume of soil requiring excavation and off-site disposal will increase, as will the cost of the soil excavation and disposal;
- Identification of wetlands at the MMC Study Area that will be impacted by the increased lateral extent of soil excavation, and restoration of these wetlands;
- Changes to institutional control provisions; and
- Changes to the environmental monitoring program to remove soil vapor and groundwater monitoring, and to add inspection of restored wetlands and monitoring and enforcement of institutional controls.

Data gathered after the ROD was issued show that much of the soil at the MMC Study Area contains levels of total and leachable lead exceeding Connecticut Remediation Standard Regulations, Pollutant Mobility Criteria. Based on the need to excavate more

soil laterally and vertically due to leachable lead contamination, and the questionable results of the SVE pilot test that EPA conducted in May 2007, EPA concluded that implementing the SVE portion of the remedy is unlikely to be cost-effective. In September 2010, EPA, in conjunction with the Connecticut Department of Environmental Protection (CT DEP, renamed CT DEEP as of July 1, 2011), finalized a Remedial Design for the MMC Study Area that includes only soil excavation and off-site disposal, without the SVE component. The amount of soil requiring excavation has increased from 4,800 CY to 32,600 CY, and the current cost estimate for the MMC Study Area remedy has increased from \$2.2 million to a range of approximately \$6 to 8 million. While the cost of the remedy has increased, the time needed to implement the remedy has decreased. The ROD anticipated up to seven years of SVE prior to soil excavation. Without the SVE component, the entire soil excavation remedy is expected to be complete within 1.5 years or less, which may allow the MMC facility properties to be reused or redeveloped earlier than anticipated.

Because the area of soil requiring excavation at the MMC Study Area has increased laterally, the excavation will now impact wetlands towards the extreme east of the MMC Study Area. This ESD identifies wetlands where EPA has determined that there is no practical alternative to conducting the excavation work. EPA will use best management practices to minimize adverse impacts on the wetlands, wildlife and its habitat. Damage to these wetlands will be mitigated through erosion control measures and proper regrading and revegetation of the impacted area with indigenous species after the soil excavation in the area is complete, consistent with the requirements of the federal and state wetlands protection laws.

The ROD states that one significant restriction of the ELURs will be to ensure that any new structures on the property will be constructed to minimize potential inhalation risks from any remaining contamination. The ROD also originally stated that institutional controls at the MMC Study Area would include preventing the future use of groundwater for drinking water. EPA and CT DEEP have determined that this provision shall be modified to prevent the future use of groundwater for drinking water unless the water supply is approved and meets potability requirements pursuant to Connecticut Public Health Code. EPA and CT DEEP have further determined that additional restrictions are needed to: (1) prevent excavation or any other activity below the seasonal low groundwater table to minimize potential exposure to any remaining contamination, and (2) prevent activities within a 25-foot protective radius around monitoring wells that could interfere with the structural integrity or functioning of the wells or could interfere with access by EPA or CT DEEP, or access by other parties with the approval of EPA or CT DEEP.

Finally, modifications to the Operation & Maintenance requirements shall remove environmental monitoring requirements for soil vapor and groundwater monitoring, and add inspection of restored wetlands and a plan for the monitoring and enforcement of the institutional controls needed for the MMC Study Area.

**Declaration**

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

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

9/13/11  
\_\_\_\_\_  
Date

**EXPLANATION OF SIGNIFICANT DIFFERENCES  
DURHAM MEADOWS SUPERFUND SITE  
DURHAM, CONNECTICUT  
September 2011**

**Site Name:** Durham Meadows Superfund Site

**Site Location:** Durham, Connecticut

**Lead Agency:** United States Environmental Protection Agency (EPA)

**Support Agency:** Connecticut Department of Energy & Environmental Protection (CT DEEP)

## **I. INTRODUCTION**

This Explanation of Significant Differences (ESD) is being issued for the Durham Meadows Superfund Site (the "Site") to address differences between the remedial action being undertaken there and the remedy that was set forth in the Record of Decision (ROD) for the Site on September 30, 2005. EPA is required to publish this ESD by Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9617(c), and 40 C.F.R. § 300.435(c)(2)(i).

This ESD focuses on the Merriam Manufacturing Company Study Area (MMC Study Area) portion of the Site, and has four major components:

- A decision that the soil vapor extraction (SVE) component of the MMC Study Area remedy will not be implemented, and that the volume of soil requiring excavation and off-site disposal will increase, as will the cost of the soil excavation and disposal;
- Identification of wetlands at the MMC Study Area that will be impacted by the increased lateral extent of the soil excavation, and restoration of these wetlands;
- Changes to institutional control provisions; and
- Changes to the environmental monitoring program to remove soil vapor and groundwater monitoring, and to add inspection of restored wetlands and monitoring and enforcement of institutional controls.

### Summary of Differences

Data gathered after the ROD was issued show that much of the soil at the MMC Study Area contains levels of total and leachable lead exceeding Connecticut Remediation Standard Regulations (RSR) Pollutant Mobility Criteria (PMC). Based on the need to

excavate more soil laterally and vertically due to leachable lead contamination, and the questionable results of the SVE pilot test that EPA conducted in May 2007, EPA concluded that implementing the SVE portion of the remedy is unlikely to be cost-effective. In September 2010, EPA, in conjunction with the Connecticut Department of Environmental Protection (CT DEP, renamed CT DEEP as of July 1, 2011), finalized a Remedial Design for the MMC Study Area that includes only soil excavation and off-site disposal, without the SVE component. The amount of soil requiring excavation has increased from 4,800 cubic yards (CY) to 32,600 CY, and the current cost estimate for the MMC Study Area remedy has increased from \$2.2 million to a range of approximately \$6 to 8 million. While the cost of the remedy has increased, the time needed to implement the remedy has decreased. The ROD anticipated up to seven years of SVE prior to soil excavation. Without the SVE component, the entire soil excavation remedy is expected to be complete within 1.5 years or less, which may allow the MMC parcels to be reused or redeveloped earlier than anticipated. The remedy will still address current and future residential risk by excavating and removing soil that exceeds risk-based goals and CT RSR PMC and Direct Exposure Criteria (DEC). The excavation will include all soils that were originally intended to be treated with SVE.

A large wetland area is located at the extreme east of the MMC Study Area and continues east well beyond the MMC Study Area boundary. The ROD did not envision that remediation would impact these wetlands. Because the area of soil requiring excavation at the MMC Study Area has increased laterally, the excavation will now impact a portion of the wetlands towards the extreme east of the MMC Study Area. This ESD identifies approximately 14,000 square feet of wetlands where EPA has determined that there is no practical alternative to conducting the excavation work. EPA will use best management practices to minimize adverse impacts on the wetlands, wildlife and its habitat. Damage to these wetlands will be mitigated through erosion control measures and proper regrading and revegetation of the impacted area with indigenous species after the soil excavation in the area is complete, consistent with the requirements of the federal and state wetlands protection laws.

The ROD states that one significant restriction of the ELURs will be to ensure that any new structures on the property will be constructed to minimize potential inhalation risks from any remaining contamination. The ROD also originally stated that institutional controls at the MMC Study Area would include preventing the future use of groundwater for drinking water. EPA and CT DEEP have determined that this provision shall be modified to prevent the future use of groundwater for drinking water unless the water supply is approved and meets potability requirements pursuant to Connecticut Public Health Code. EPA and CT DEEP have further determined that additional restrictions are needed to: (1) prevent excavation or any other activity below the seasonal low groundwater table to minimize potential exposure to any remaining contamination, and (2) prevent activities within a 25-foot protective radius around monitoring wells that could interfere with the structural integrity or functioning of the wells or could interfere with access by EPA or CT DEEP, or access by other parties with the approval of EPA or CT DEEP.

Finally, modifications to the Operation & Maintenance (O&M) requirements shall remove environmental monitoring requirements for soil vapor and groundwater monitoring, and add inspection of restored wetlands and a plan for the monitoring and enforcement of the institutional controls needed for the MMC Study Area.

In accordance with CERCLA §117(d), 42 U.S.C. § 9617(d), and 40 C.F.R. §§ 300.435(c)(2)(i)(A) and 300.825(a)(2), this ESD and its supporting documents will be made available for public inspection and will be added to the Administrative Record for the Site. The Administrative Record is available for public review at the EPA Region 1 Records Center in Boston, Massachusetts, and the repository located near the Site, at the addresses listed below:

EPA Region 1 Records Center  
5 Post Office Square, Suite 100  
Boston, Massachusetts 02109-3912  
By appointment only: 617-918-1440

Public Information Repository  
Durham Public Library  
7 Maple Avenue  
Durham, Connecticut, 06422

The ESD is also available at CT DEEP's offices in Hartford, Connecticut. 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.

## **II. SITE HISTORY, CONTAMINATION, AND THE SELECTED REMEDY**

The Durham Meadows Superfund Site is located in the Town of Durham, Middlesex County, Connecticut, and includes an area of groundwater contamination generally centered on Main Street. The Site includes historic Main Street in Durham center, and contains industrial and residential properties. The Site is generally bounded by Talcott Lane to the north; Brick Lane, Ball Brook and Allyn Brook to the East; Allyn Brook to the south; and wetlands west of Maple Avenue to the west.

The Site is centered around the Durham Manufacturing Company (DMC), a currently operating manufacturing facility located at 201 Main Street, and the former location of Merriam Manufacturing Company, Inc. (MMC) at 281 Main Street.

DMC was established in 1922 at 201 and 203R Main Street in Durham, Connecticut. Three main buildings, including an office building and two manufacturing buildings, are currently located on the property. MMC was established in 1851 at the 281 Main Street location in Durham, Connecticut, 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. The MMC Study Area includes all areas where contamination from MMC has come to be located, including the MMC facility properties at 281 Main Street (the "MMC Parcels") and the abutting residential parcel at 275 Main Street.

Both companies manufactured metal cabinets, boxes and other items. During their respective operating histories, both companies used various solvents, including trichloroethene, 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 MMC and DMC facilities.

In 1982, CT DEP issued Water Supply orders to MMC and DMC requiring the companies to install carbon filters on impacted residential wells. Since then, the two companies have monitored and maintained up to 38 filtered wells on at least a quarterly basis. Currently, DMC is responsible for servicing 14 of these wells. MMC was responsible for servicing 24 of these wells, but the company ceased these activities in late 2004; CT DEP has taken over monitoring and maintenance of these wells.

EPA also discovered 1,4-dioxane in 2003-2004 in wells at MMC, DMC, and at a number of residences. Because this compound is not effectively captured by the current carbon filters, CT DEEP is supplying bottled water for drinking to several affected homes in the northern portion of the Site, and requires monitoring for this compound at a number of residences throughout the Site.

On September 30, 2005, EPA issued a Record of Decision (ROD) for the Site, which concluded that potential threats to human health and the environment could occur via ingestion of contaminated groundwater, physical contact with wastes in soil and shallow groundwater, and vapor intrusion from contamination in soil, soil gas, and groundwater.

As outlined in the ROD, the major components of the selected remedy for the Site are:

- Soil excavation and off-site disposal, in conjunction with SVE, at the MMC Study Area to address risks to human health from contamination in soil and soil vapor.
- 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 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. 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 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 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 CT DEEP requirements.
- Five-year reviews to ensure that the remedy continues to be protective of human health and the environment.

On July 27, 2007, EPA issued a Unilateral Administrative Order to DMC requiring remedial design sampling of soil and groundwater at the DMC Study Area to more fully define the lateral and vertical extent of soil contamination, and the installation of a sub-slab system to depressurize the area under the entire foundation of the main manufacturing building at the DMC Study Area. To date, DMC has conducted three separate soil sampling events at the DMC Study Area property and is currently awaiting results from a fourth soil sampling event. DMC has also conducted sampling of soil gas beneath the slab of its main manufacturing building and has submitted a draft design for a partial sub-slab system to depressurize a portion of the building.

In 2008, CT DEP approved a Potable Water Grant application from the Town of Durham to conduct an engineering study for extension of a public water supply from the City of Middletown to the Town of Durham. The study's main focus is to address areas

impacted by the Durham Meadows Superfund Site contamination; however, the study includes discussion and cost estimates regarding the potential extension of a public water supply to other areas in central Durham that are impacted by groundwater contamination unrelated to the Site. The Town of Durham is also required to conduct an Environmental Impact Evaluation of the water supply extension. CT DEP worked with EPA, the Connecticut Department of Health, the Town of Durham, and the City of Middletown to provide ongoing review and input on these studies. Final reports were issued in December 2010.

At the MMC Study Area, beginning in 2006 and continuing through 2010, EPA conducted a number of additional soil sampling efforts to further define the extent of contamination in soil. Sampling results show that much of the soil at the MMC Study Area contains levels of total and leachable lead exceeding CT RSR PMC, and that leachable lead contamination in soil extends to certain abutting residential properties. The discovery of leachable lead increased the excavation area both laterally and vertically throughout the MMC Study Area.

Total lead and other metals contamination was discovered at locations where paint waste was disposed or discharged. Background sampling at nearby locations with similar geologic conditions did not result in detections of leachable lead exceeding CT RSR PMC. The leachable lead exceedances are mostly confined only to the MMC Parcels and where exceedances extend onto abutting parcels, the exceedances have been fully bounded on those parcels. The agencies therefore conclude that the leachable lead is related to former activities at the MMC Parcels.

The ROD anticipated that VOCs be treated via SVE first in order to reduce concentrations of VOCs in soil over time and minimize the volume and depth of required excavation needed to address all contaminants at the MMC Study Area. Remaining soil that exceeded cleanup levels would be excavated and shipped off-site to an approved disposal facility. The ROD further anticipated that SVE operation would be required for seven years before soil excavation would occur. EPA conducted a SVE pilot test in May 2007. The pilot test concluded that SVE may not be as effective as previously anticipated, and may require additional wells and/or time beyond the original estimates to capture VOCs at depth. Further, even if SVE were effective, the reduction of VOCs in soil would not have as significant a reduction as previously expected on the remaining volume of soil to be excavated, given the significant increase in volume of soil requiring excavation due to the presence of leachable lead. (SVE would have no impact on reducing leachable lead in soil.) EPA therefore concluded that the implementation of the SVE portion of the remedy is unlikely to be cost-effective.

In September 2010, EPA, in conjunction with CT DEP, finalized a Remedial Design for the MMC Study Area that includes only soil excavation and off-site disposal, without the SVE component. The MMC Study Area remedy will remove all soil with contaminants above cleanup levels, including leachable lead, which will include all soils that were originally intended to be treated with SVE. Also in September 2010, EPA and CT DEP

finalized a Superfund State Contract for the performance of the Remedial Action at the MMC Study Area. Site clearing and demolition of an on-site building began in April 2011, and EPA began soil excavation in September 2011.

### **III. BASIS FOR THIS ESD**

#### **A. Selected Remedy for the MMC Study Area and Subsequent Investigations**

At the time the ROD was issued, the agencies were not aware of the prevalence of leachable lead contamination in soil throughout the MMC Study Area. The ROD outlined the selected remedy for the MMC Study Area using a combination of two alternatives: Alternative MMC S-3C Excavation and Off-site Disposal, and Alternative MMC SV-3 Soil Vapor Extraction (SVE). This combination of alternatives require that VOCs in soil vapor be treated via SVE first in order to reduce concentrations of VOCs in soil over time and minimize the volume and depth of required excavation. Remaining soil that exceeds cleanup levels shall be excavated and shipped off-site to an approved disposal facility. The ROD remedy addresses current and future residential risk by excavating and removing soil that exceeds risk-based goals, CT RSR residential and industrial/commercial DEC, and CT RSR PMC. At the time of the ROD, the estimated volume of contaminated soil to be excavated after SVE completion was approximately 4,800 CY, and the estimated depth ranged to four feet, although soils deeper than four feet were planned to be remediated in accordance with applicable or relevant and appropriate requirements. The ROD estimated the total cost of the MMC Study Area remedy at \$2.2 million.

As previously outlined, additional soil sampling efforts conducted after ROD issuance show that much of the soil at the MMC Study Area contains levels of total and leachable lead exceeding CT RSR PMCs, and that leachable lead contamination in soil extends to certain abutting residential properties. Based on the need to excavate more soil laterally and vertically due to leachable lead contamination, and the questionable results of the SVE pilot test conducted in May 2007, EPA concludes that implementing the SVE portion of the remedy is unlikely to be cost-effective.

#### **B. Identification of Wetland Areas at the MMC Study Area**

At the time the ROD was issued, EPA identified wetlands areas that may be disturbed only at the DMC Study Area. While wetland areas were identified at the extreme rear (east) of the MMC Parcels, EPA did not expect that excavation would occur anywhere near these areas.

Since the discovery of leachable lead contamination in soil, the extent of required soil excavation has extended to a portion of the wetlands. An investigation in 2010 identified and demarcated the extent of wetlands on the MMC Study Area. The soil excavation will impact approximately 14,000 square feet of these wetlands.

### **C. Institutional Controls Required at the MMC Study Area**

Institutional controls in the form of ELURs pursuant to CT RSRs will be required at the MMC Study Area. The ROD states that the significant restrictions of the ELURs will be to (i) ensure that any new structures on the property will be constructed to minimize potential inhalation risks from any remaining contamination, and (ii) prevent the future use of groundwater for drinking water.

Although part of the Site remedy includes extending an alternate water supply to affected structures in the Site area, currently, all homes and businesses in the area have potable water wells. Wells with groundwater impacted by site contamination are filtered and/or otherwise treated prior to use, and bottled water is provided to certain wells. Until the alternate water supply portion of the remedy is implemented, new structures in the area must rely on groundwater wells to provide water, with filtration as required to ensure potability. The ELUR restriction as currently written, "prevent the future use of groundwater for drinking water use," without a release of restriction provision, essentially causes the MMC Parcels to be undevelopable prior to the construction of an alternate water supply.

Additionally, the CT RSRs require soil excavation only to the seasonal low groundwater table. The ELUR restriction as currently written does not address contamination below the seasonal low groundwater table.

Last, the ELUR restriction as currently written does not provide any protection to ensure that monitoring wells remaining on site retain their structural integrity, functionality, or the continued ability to be accessed.

### **D. Environmental Monitoring Program (O&M) for the MMC Study Area**

The ROD anticipated that after cleanup levels were met and the remedy was determined to be protective, an environmental monitoring program would be required as part of Operation & Maintenance (O&M) for the MMC Study Area. The ROD envisioned the environmental monitoring program to include soil vapor monitoring, for an estimated duration of seven years, and groundwater monitoring, estimated for 50 years, to ensure that the cleanup levels continue to be met and the remedy remains protective.

As previously described, the MMC Study Area remedy will now rely only on soil excavation and off-site disposal, and will remove all soil with contaminants above cleanup levels. The remedy will not include SVE. Additionally, wetlands have now been identified at the MMC Study Area that will be impacted by soil excavation.

## **IV. DESCRIPTION OF SIGNIFICANT DIFFERENCES**

### **A. Changes to the Remedial Action and Remedy Cost for the MMC Study Area**

The remedy presented in the ROD was to first treat VOCs in soil vapor with SVE to reduce concentrations of VOCs in soil over time and minimize the volume and depth of required excavation. Remaining soil that exceeded cleanup levels would be excavated and shipped off-site to an approved disposal facility. As previously outlined, an SVE pilot test concluded that SVE may not be as effective as previously anticipated, and may require additional wells and/or time beyond the original estimates to capture VOCs at depth. Also, additional soil sampling efforts indicate that much of the soil at the MMC Study Area contains levels of total and leachable lead exceeding CT RSR PMCs, which would not be affected by the SVE.

Based on the need to excavate more soil laterally and vertically due to leachable lead contamination, and the questionable results of the SVE pilot test, EPA concludes that implementing the SVE portion of the remedy is unlikely to be cost-effective.

In September 2010, EPA, in conjunction with CT DEP, finalized a Remedial Design for the MMC Study Area that includes only soil excavation and off-site disposal, without the SVE component. The amount of soil requiring excavation has increased from 4,800 CY to 32,600 CY, and the current cost estimate for the MMC Study Area remedy has increased from \$2.2 million to a range of approximately \$6 to 8 million.

#### Change in Expected Outcomes

While the cost of the remedy has increased, the time needed to implement the remedy has decreased. The ROD anticipated up to seven years of SVE prior to soil excavation. Without the SVE component, the entire soil excavation remedy is expected to be complete within 1.5 years or less. This may allow the MMC Parcels to be reused or redeveloped earlier than anticipated. The remedy will still address current and future residential risk by excavating and removing all soil that exceeds risk-based goals and CT RSR DEC and PMCs, just as the ROD originally intended. The excavation will include all soils that were originally intended to be treated with SVE.

### **B. Change in Identified Wetlands to Include a Portion of the Wetlands in the MMC Study Area**

Because the area of soil requiring excavation at the MMC Study Area has increased laterally, the excavation will now impact a portion of the wetlands towards the extreme rear (east) of the MMC Parcels. Based on an investigation that demarcated the extent of these wetlands, EPA currently expects to excavate and backfill 14,000 square feet within the wetlands.

EPA has determined that there is no practical alternative to conducting the excavation work in the wetland area at the MMC Study Area. EPA will use best management practices to minimize adverse impacts on the wetlands, wildlife and its habitat. Damage to these wetlands will be mitigated through erosion control measures, backfilling excavated areas with organic soil compatible with wetlands, and proper regrading and revegetation of the impacted area with indigenous species after the soil excavation in the area is complete, consistent with the requirements of the federal and state wetlands protection laws. Inspections will occur during the two-year period following wetland restoration. If needed, impacted wetland areas may be re-seeded or replanted.

In a fact sheet mailed March 1, 2011, EPA requested comments by April 15, 2011 on the proposed determination that a portion of the MMC Study Area where soil excavation will occur contains wetlands, and EPA's determination that soil excavation is required in these wetlands. EPA also described and noted the comment period for the wetlands issues during the March 8, 2011 public meeting. EPA did not receive any comments on the wetlands issues.

#### Change in Expected Outcomes

Remediation and restoration work will now be required in a portion of the wetlands at the MMC Study Area.

#### **C. Change to Institutional Controls Required at the MMC Study Area**

As previously outlined, the ROD states that the significant restrictions of the ELURs will be to (i) ensure that any new structures on the property will be constructed to minimize potential inhalation risks from any remaining contamination, and (ii) prevent the future use of groundwater for drinking water. The second portion of the ELUR restriction as currently written essentially causes the MMC Parcels to be undevelopable prior to the construction of an alternate water supply.

EPA and CT DEEP have determined that the ELUR restriction requirement at the MMC Study Area shall be modified to include a release of restriction provision that allows the ELUR to be modified, but only if CT DEEP and EPA's written approval of the proposed modification is first recorded upon the land records of the Town of Durham.

EPA and CT DEEP have also determined that three additional ELUR restrictions are required. One additional restriction will prohibit soil exposure or disturbance below the seasonal low groundwater table. The two additional restrictions will prevent activities within a 25-foot protective radius around monitoring wells on the MMC Parcels that could interfere with the structural integrity or functioning of the wells or could interfere with actions being carried out by or with the approval of EPA or CT DEEP. All additional restrictions are also subject to the release of restriction provision described above.

### Change in Expected Outcomes

The first requirement of the original institutional controls provision for the MMC Study Area, to ensure that any structures on the Parcels shall be constructed to minimize potential inhalation risks from remaining contamination, remains the same.

The modification to the second ELUR requirement will allow the MMC Parcels to be redeveloped and the water supply to be reinstated at the 275 Main Street residential parcel after cleanup, but prior to the construction of an alternate water supply.

The additional ELUR requirement prohibiting soil excavation below the seasonal low groundwater table will minimize potential exposure to any remaining contamination.

The second additional ELUR requirement will ensure that monitoring wells on the MMC Parcels remain usable and will ensure that EPA and CT DEEP are able to continue accessing these wells.

### **D. Changes to the Environmental Monitoring Program (O&M) for the MMC Study Area**

The ROD requires an environmental monitoring program as part of O&M for the MMC Study Area to include soil vapor monitoring, for an estimated duration of seven years, and groundwater monitoring, estimated for 50 years, to ensure that the cleanup levels continue to be met and the remedy remains protective.

The MMC Study Area remedy will now rely only on soil excavation and off-site disposal, and will not include SVE. As a result, all soil vapor monitoring requirements shall be deleted from the O&M program.

Additionally, groundwater monitoring shall be deleted from the O&M requirements, given the volume of soil that will be excavated from the MMC Study Area and the fact that all CT RSRs shall be met by the excavation remedy. The agencies expect that soil cleanup will remove a source of ongoing contamination to groundwater in the area; however, the agencies do not expect that soil excavation will have an immediate and significant impact on contamination levels in bedrock groundwater. (The ROD includes a technical impracticability waiver for the overburden and bedrock aquifers that are currently, or conceivably could be, impacted by contamination emanating from the Site.)

With the identification of wetlands at the MMC Study Area that will be impacted by soil excavation, O&M shall now include two inspections during the two year period following wetland restoration, plus additional inspections if needed. If needed, impacted wetlands may be re-seeded or replanted by the Remedial Action contractor.

O&M shall also include a plan for the monitoring and enforcement of the institutional controls needed for the MMC Study Area.

#### Change in Expected Outcomes

The O&M requirements for the MMC Study Area are reduced considerably, without any loss of protection of human health and the environment. Environmental monitoring of soil vapor and groundwater is no longer required. O&M will now include at least two inspections per year for a two year period of the impacted wetlands to ensure these areas are properly restored, as well as a plan for monitoring and enforcement of institutional controls at the MMC Study Area.

The change in the O&M requirements at the MMC Study Area does not impact the technical impracticability waiver outlined in the ROD. This change also does not impact the ROD requirement for the overall area of groundwater contamination to implement a monitoring network for the dissolved plume to ensure no migration of groundwater beyond its current general boundary after implementation of the water line portion of the remedy.

### **V. SUPPORT AGENCY COMMENTS**

CT DEEP participated with EPA in developing the changes to the selected remedy described herein and concurs with these changes as provided by electronic mail dated September 7, 2011.

### **VI. STATUTORY DETERMINATIONS**

EPA believes that the remedy as adjusted herein remains protective of human health and the environment and satisfies the requirements in Section 121 of CERCLA. The changes made in this ESD have not changed the remedial action objectives for the Site. Rather, 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.

### **VII. PUBLIC PARTICIPATION COMPLIANCE**

In accordance with Section 117(d) with CERCLA and 40 C.F.R. § 300.825(a), this ESD will become part of the Site's Administrative Record which is available for public review at the locations identified in the introduction to this document.

EPA held a public meeting on March 8, 2011 to describe the MMC Study Area cleanup and answer questions. EPA also outlined changes to the selected remedy and its plan to issue an ESD to address those changes.

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.

EPA did not hold a formal comment period for this ESD; however, EPA solicited comments on the proposed determination that a portion of the MMC Study Area where soil excavation will occur contains wetlands, and EPA's determination that soil excavation is required in these wetlands. EPA mailed a fact sheet on March 1, 2011 that requested comments on the wetlands issue be submitted by April 15, 2011. EPA also described and noted the comment period for the wetlands issues during the March 8, 2011 public meeting. EPA did not receive any comments on the wetlands issue.

## REFERENCES

United States Environmental Protection Agency  
Record of Decision  
Durham Meadows Superfund Site  
September 30, 2005

Technical Memorandum, MMC Study Area Soil Vapor Extraction Pilot Test Results  
Metcalf & Eddy  
September 2007

Technical Memorandum for MMC Study Area, Pre-Remedial Design Investigation,  
Second Revised Draft  
Metcalf & Eddy  
October 2009

Memo, Durham Meadows MMC Study Area Value Engineering Screening of the  
Remedial Design  
Metcalf & Eddy  
February 4, 2010

Basis of Design Report for the MMC Study Area Remedial Design  
Metcalf & Eddy  
September 2010

Final 100% Remedial Design, Merriam Manufacturing Company Study Area, Index and  
Drawings  
Metcalf & Eddy  
September 2010

Remedial Action Schedule, MMC Study Area  
Metcalf & Eddy  
September 2010

Construction Specifications, 100% Design  
Metcalf & Eddy  
September 2010

Final 100% Remedial Design, Merriam Manufacturing Company Study Area, Index and  
Drawings, Revised  
Metcalf & Eddy  
December 2010

Remedial Action Schedule, MMC Study Area, Revised  
Metcalf & Eddy  
December 2010

Construction Specifications, Revised 100% Design  
(Includes as Appendix D, Durham Meadows Superfund Site, Wetland Investigation)  
Metcalf & Eddy  
January 2011

Durham Meadows Site Update, Includes Announcement of Public Meeting on 3/8/11,  
dated February 2011.

Electronic mail, "RE: Merriam Mfg. – draft ELUR, Decision Document, ESD"  
CT DEEP to EPA  
September 7, 2011