

Centredale Manor Restoration Project Annual Report



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Overview

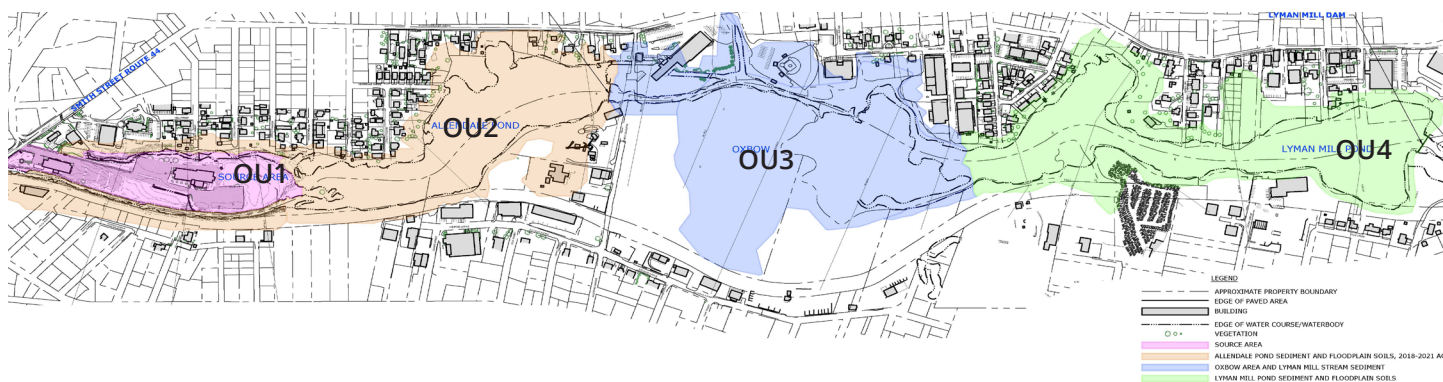
On July 9, 2018, the United States Environmental Protection Agency (EPA) lodged a Consent Decree (CD) with the United States District Court for the District of Rhode Island. The CD and its accompanying Statement of Work (SOW), and the 2012 Record of Decision (ROD), describe the Remedial Design (RD)/Remedial Action (RA) activities to be performed for the Centredale Manor Restoration Project (CMRP) Superfund Site in North Providence, Rhode Island (Site). The RD/RA activities are to be undertaken by Emhart Industries, Inc. and Black & Decker Inc. (collectively, “Settling Defendants” or “SDs”). The CD was subsequently entered on April 8, 2019. This Annual Compliance Report will cover the period of time from the lodging of the CD (July 9, 2018) through December 31, 2019. A complete summary of submitted work plans and reports for this period is provided in Table 1.

The Site consists of four OUs: OU1, or Source Area and Adjacent Areas, which is bounded to the north by Route 44 and to the south by Allendale Pond and includes the Centredale Manor and Brook Village properties; OU2, or Allendale Pond and Adjacent Areas; OU3, or Lyman Mill stream sediment and the Oxbow Wetland Area; and OU4, or Lyman Mill Pond and Adjacent Areas. The entire Site is referred to as OU00. The background area for the pre-design investigations (PDIs) consists of the area along the Woonasquatucket River from Route 44 in North Providence and Johnston to Georgiaville Pond in Smithfield, RI. A drawing depicting OU1 through OU4 is shown on the next page.

An Explanation of Significant Differences (ESD) was issued in September 2019 to modify certain sections of the ROD. Modifications to the ROD included EPA’s contained-in waste determination, which generally states that the contaminated sediment and soil that is to be excavated from the Site does not contain listed hazardous constituents above health-based levels (as long as concentrations are below the land disposal restrictions’ [LDRs] alternative treatment standards) and can be disposed of in an existing Subtitle D landfill (as long as it does not exceed certain levels of PCBs). Second, that EPA will defer to the State of Rhode Island’s classification of the groundwater and that the groundwater classification changes from the federal Class IIB to the Rhode Island GB. Subsequently, the applicable and relevant or appropriate requirements (ARARs) were modified based on the new classification to include Rhode Island GB leachability criteria and exclude maximum contaminant levels (MCLs) and non-zero maximum contaminant level goals (MCLGs). Additional modifications to the ROD include a reduction in the footprint of the Source Area groundwater cleanup area, elimination of three additional deep monitoring wells, and elimination of the required principal threat waste excavation in the Source Area.

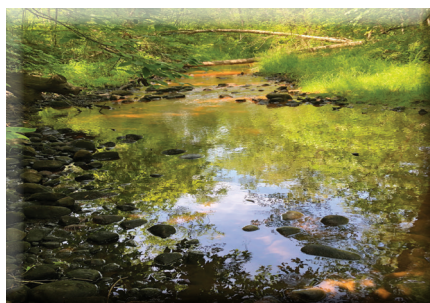
Prior to any field work being conducted on site, Loureiro Engineering Associates, Inc. (LEA) submitted the Quality Assurance Project Plan (QAPP), Health and Safety Plan (HASP), and Remedial Design Work Plan (RDWP) for all four OUs. The QAPP describes the applicable analytical methods and measurements, Quality Assurance (QA)/Quality Control (QC) protocols, and data assessment procedures for data evaluation and the identification of any data limitations. The HASP defines personnel and remediation protection and monitoring protocols to be followed during RD and RA activities at the Site. The RDWP summarizes pertinent site-related background information, identifies and describes the scopes and procedures for various PDIs, describes the anticipated RD/RA process, and discusses the RD/RA-related deliverables and schedule.

Overview Continued



Source Area

Remedial Design



Description	Initiation Date	Completion Date	Percent of Field Work Complete	Total Samples Collected
Source Area Soil Pre-Design Investigation				
Study A/B Soil Sampling	January 2019	September 2019	100%	2176
Study C Soil Sampling	December 2018	Ongoing	20%	
Source Area Baseline Groundwater Sampling	December 2019	March 2020	10%	0

RD activities at the Site began in December 2018 with soil sampling for the Source Area PDI, which was split into two study areas, Study A/B and Study C. The purpose of Study A/B was to delineate the extent of contamination in the Source Area to support the design and installation of a Resource Conservation and Recovery Act (RCRA) Subtitle C cap. The purpose of Study C was to delineate contamination north of Brook Village and determine whether the excavation of contaminated soil as described in the ROD would be adequate or whether a RCRA Subtitle C cap was needed in this area of the site. The investigation of Study A/B was completed in 2019. However, during the investigation of Study C, contamination was observed outside of the Site boundaries and deeper than identified in the ROD. Contamination has been observed north of Route 44, farther west across the River in the former railroad right of way and farther east and to a depth of at least four feet below ground surface. Additional investigations are planned in 2020 to delineate the full extent of contamination.

Source Area continued

RIDOT Drainage Relocation



Description	Initiation Date	Completion Date	Percent of Field Work Complete	Volume Removed
RIDOT Drainage Outlet Relocation	July 2019	December 2019	100%	~2330 tons

RA activities at the Site started in July 2019 with the initiation of the relocation of a Rhode Island Department of Transportation (RIDOT) stormwater drain within the Source Area. The purpose was to divert the RIDOT stormwater drain that was discharging into the tailrace directly to the River, so that within the tailrace a RCRA Subtitle C cap could be constructed above the water table by raising the surface elevation. This cap would be more effective than a cap installed to maintain the existing drainage over the top of it as RCRA C caps are typically designed to shed water. Construction of the stormwater diversion concluded in December 2019. Source Area Cap RA activities began in October 2019 and are planned to be completed in 2020. Activities completed in 2019 included the construction of a temporary soil staging area, test pits, clearing and grubbing activities, and installation of a steel sheet pile bulkhead along peninsula. The temporary soil staging area and the test pits are precedent tasks to the clean utility corridor work planned for January 2020. The temporary soil staging area was constructed to stockpile contaminated material excavated during the construction of the clean utility corridors. Test pits were completed to verify design assumptions for the clean utility corridors. Clearing and grubbing was necessary to remove brush, shrubs, and trees prior to the installation of the bulkhead.

Bulkhead Construction



The sheet pile bulkhead was installed along the southern perimeter of the Source Area that abuts Allendale Pond. The purpose of the sheet pile bulkhead is twofold: 1) it will facilitate the construction of the RCRA Subtitle C cap in Area III (former Cap 1) above the existing grade to promote drainage of the geomembrane; and 2) it will enable future sediment removal activities for Allendale Pond without disturbing the RCRA Subtitle C cap. First quarter 2020 activities will include the installation of a concrete cap on the sheet pile bulkhead and installation of a concrete retaining wall along the northern perimeter of Area III.

Additional Pre-Design Investigations

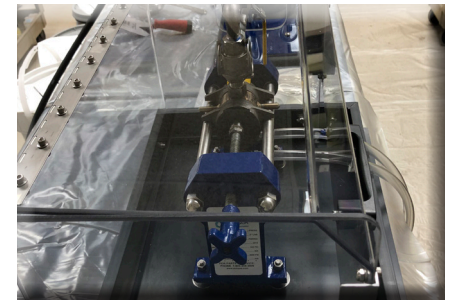
Background Sediment



Description	Initiation Date	Completion Date	Percent of Field Work Complete	Total Samples Collected
Background Sediment Pre-Design Investigation	June 2019	Ongoing	100%	143

The Background Sediment PDI, which consisted of sediment sampling in upstream portions of the River as well as in Greystone Pond and Georgiaville Pond, was initiated in June 2019 and completed in November 2019. The objective of this PDI was to collect additional sediment data to characterize background sediment conditions. EPA will use the additional sediment data to either verify or modify the background-based cleanup goals identified in the ROD. Data collected as part of this study will be compiled into a representative and defensible data set to support those calculations.

Sediment Treatability Study

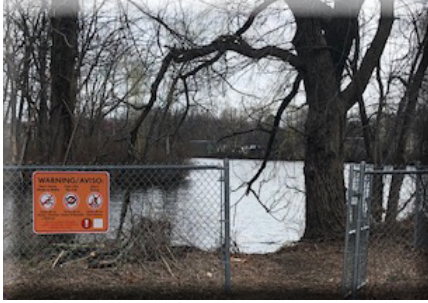


Description	Initiation Date	Completion Date	Percent of Field Work Complete	Total Samples Collected
Sediment Treatability Study	April 2019	May 2020	80%	152

In 2019, a Sediment Treatability Study was conducted to select a preferred option for dewatering and solidifying excavated pond sediment prior to disposal. The results of this study will be reported in second quarter of 2020 and will be used to assist in determining design requirements for the full scale remedy. The results will also be used to help determine the size of the facility required for solidification/dewatering of contaminated sediment. A property for the sediment treatability facility has been identified and conceptual terms for a purchase and sale agreement have been agreed upon between the seller and Stanley Black & Decker, Inc. The purchase and sale agreement is expected to be signed in early 2020.

Additional Pre-Design Investigations Continued

Allendale Pond Sediment and Floodplain Soils

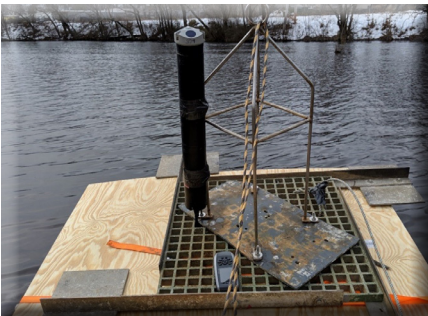


Description	Initiation Date	Completion Date	Percent of Field Work Complete	Total Samples Collected
Allendale Pond Sediment Pre-Design Investigation	August 2019	August 2020	75%	1124

Sediment sampling for the Allendale Pond Sediment PDI began in August 2019. The primary objective of the PDI is to provide enough data to generate a three-dimensional quantitative analysis of the sediments in order to define the depth of excavation without the need for post-excavation confirmation sampling and analyses. In addition, data are being collected to generate a three-dimensional delineation of all areas of sediment contamination in excess of the applicable LDRs. Sediment that exceeds the LDRs will be excavated, dewatered, and shipped offsite for incineration. Excavated sediment that is below applicable LDRs will be solidified and disposed of at a Subtitle D Landfill. Concurrently, a hydrodynamic modeling study is being conducted to assist in the design of the thin layer cover which will be installed throughout the river and ponds after sediment excavation.

An Allendale Pond Floodplain Soil PDI was not initiated in 2019. The sampling approach outlined in the ROD differs from Rhode Island Department of Environmental Management (RIDEM) Remediation Regulations. A practical approach that complies with both RIDEM Remedial Regulations and the ROD is still being negotiated between LEA, EPA and RIDEM.

Ecological Assessment



Description	Initiation Date	Completion Date	Total Samples Collected
Baseline Ecological Assessment	October 2019	December 2020	102

Additional Pre-Design Investigations Continued

An ongoing site-wide ecological assessment was conducted simultaneously with the work described above in OU1 and OU2. The Baseline Ecological Assessment is comprised of physical and ecological surveys to further delineate wetlands functions and values and to identify any potential vernal pools. It includes collection of benthic organisms, sediment, and surface water samples to establish pre-construction baseline conditions. The study also includes fish tissue sampling to characterize pre-construction fish communities in Site and upstream ponds and river reaches in support of post-construction long-term monitoring.

Community Outreach



In addition to field work on site, LEA conducted or participated in various community outreach initiatives. On several occasions, LEA conducted door-to-door outreach to various property owners around the site that would be affected by upcoming field work and to answer any questions residents may have. EPA, LEA, and RIDEM also held three informational meetings for the residents of Centredale Manor and Brook Village to explain the different phases of work being conducted in the Source Area, and met with the Mayors of North Providence and Johnston to discuss upcoming work. In addition to outreach among residents, LEA met with the Narragansett Indian Tribal Historic Preservation Office and the RI Historical Preservation and Heritage Commission to discuss potential RD/RA impacts on cultural and historic resources and submitted reports to both offices detailing those potential impacts. On September 9, 2019, LEA and RIDEM attended the Superfund Task Force press conference held by the EPA at Centredale Manor. The purpose of this press conference was to announce the completion of the Superfund Task Force and to celebrate the significant progress made on Superfund sites such as the CMRP Superfund Site. LEA also continues to meet and coordinate with the Woonasquatucket River Watershed Council (WRWC) and their Technical Assistants Grant (TAG) consultant, regarding RA work and future uses of the river that remain consistent with WRWC priorities.

2020 Activities

Upcoming fieldwork planned for 2020 includes Source Area Baseline Groundwater Sampling, Allendale Reach Sediment Sampling, Allendale Pond Floodplain Sampling, Source Area Study C soil sampling, Source Area RA Construction, Lyman Mill Sluice Gate Repair, Initial phases of the Sediment Processing Facility construction, Oxbow Sediment and Floodplain soil and sediment sampling, surface water sampling, and physical and ecological surveys in OU4.



Table 1

Author(s)	Report Date	Title in Report	Date Approved
LEA	September 2018	Remedial Design Work Plan	10/22/2018
LEA	September 2018	Source Area Cover System Design Pre-Design Investigation Work Plan	10/22/2018
LEA	November 2018	Source Area Pre-Design Investigation Work Plan	12/9/2018
LEA	October 2018	Site-Specific Health And Safety Plan	Not Applicable
LEA	November 2018	Remedial Design Quality Assurance Project Plan	12/9/2018
LEA	December 2018	Remedial Design Quality Assurance Project Plan Addendum 002	12/12/2018
LEA	December 2018	Remedial Design Quality Assurance Project Plan Addendum 001	12/21/2018
Integral	March 2019	Quality Assurance Project Plan Hydrodynamic Modeling Pre-Design Investigation	3/18/2019 (Conditional Approval)
LEA	February 2019	Sediment Treatability Study Work Plan	3/13/2019
LEA	April 2019	Remedial Design Quality Assurance Project Plan Addendum 003	4/11/2019
LEA	April 2019	Email Source Area Pre-Design Investigation Work Plan Additional Study A/B Delineation Sampling	Not Applicable
LEA	May 2019	Email Source Area Pre-Design Investigation Work Plan Additional Study C Delineation Sampling	5/22/2019
LEA	May 2019	Background Sediment Pre-Design Investigation Work Plan	6/9/2019
LEA	June 2019	Allendale Reach Sediment Pre-Design Investigation Work Plan	7/1/2019
LEA	June 2019	Relocation Of The RIDOT Stormwater Drainage Discharge 100% Remedial Design Report	6/28/2019
LEA	June 2019	Relocation of The RIDOT Stormwater Drainage Discharge Draft Remedial Action Work Plan	6/28/2019

Table 1 Continued

Author(s)	Report Date	Title in Report	Date Approved
LEA	July 2019	Quality Assurance Project Plan Ecological Baseline Pre-Design Investigation—Part I Site Wetland, Floodplains, And Aquatic Zones	7/24/2019 (Conditional Approval)
LEA	July 2019	Remedial Design Quality Assurance Project Plan Addendum 005	8/5/2019
LEA	August 2019	Quality Assurance Project Plan Ecological Baseline Pre-Design Investigation—Part II Aquatic Biota And Surface Water	Pending Approval
LEA	August 2019	Remedial Design Quality Assurance Project Plan Addendum 004	8/26/2019
LEA	September 2019	Remedial Design And Remedial Action Impacts On Cultural Resources For Rhode Island Historical Preservation And Heritage Commission	Pending Approval
Integral	September 2019	Authorization For Benthic Macroinvertebrate Community Assessment Field Task—Ecological Baseline Pre-Design Investigation Part II	9/9/2019
Integral	September 2019	Authorization For Fish Community Survey And Tissue Assessment Sampling Field Task—Ecological Baseline Pre-Design Investigation Part II	9/20/2019
Integral	September 2019	Protocol For Fish Community Assessment, Fish Tissue Sample Collection, And Fish Tissue Sample Processing	9/20/2019
LEA	October 2019, Rev November 2019	Draft Final Source Area 100% Remedial Design Report	9/30/2019 (Conditional Approval)
LEA	October 2019, Rev November 2019	Source Area Remedial Action Work Plan	9/30/2019 (Conditional Approval)
LEA	September 2019	Allendale Pond Sediment Pre-Design Investigation Work Plan	10/8/2019
LEA	October 2019	Attachment A Allendale And Lyman Mill Pond Sediment Pre-Design Investigation Supplemental Field Sampling Plan	10/24/2019
LEA	November 2019	Allendale And Lyman Mill Pond Sediment Pre-Design Investigation Work Plan Additional Sampling Locations in Greystone and Georgiaville Ponds	11/4/2019
LEA	November 2019	Groundwater Sampling Plan	11/11/2019
LEA	November 2019	Draft Allendale Pond Floodplain Soil Field Sampling Plan	Pending Approval



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