

DRAFT - Rough Order of Magnitude Costs For Site Remediation
 State of Connecticut Department of Community and Economic Development
 Former Mystic Oral School for the Deaf
 0 Oral School Road, Groton, CT

Option B

Option B Summary: Site will be entered into either Voluntary Remediation Program or Property Transfer Program, and identified impacts to soil at concentrations above RDEC and / or GA PMC numerical threshold values contained in the RSRs will be addressed via a combination of excavation and use of ELUR and/or Engineered Controls to allow impacted soil to remain on-site.

Task Name	Unit Cost	Units	Number of Units	Extended Cost
Engineering/Design/Construction Administration (10% of Construction Cost)				
Assumes engineering/construction/administration will be conducted concurrent with each task		%	20	\$183,736
Subtotal				\$183,736
Project Administration				
HASP/JHA Update	\$1,000	Lump Sum	1	\$1,000
Voluntary Remediation Program Document Preparation (ECAFP)	\$5,000	Lump Sum	1	\$5,000
Potable Well Receptor Survey and Ecological Risk Assessment	\$10,000	Lump Sum	1	\$10,000
Permitting, Public Notice, and Meeting with Agencies	\$15,000	Lump Sum	1	\$15,000
Establish RDEC, GA PMC, GWPC, & SWPC for SVOCs, Pesticides, Other Additional Polluting Substances	\$10,000	Lump Sum	1	\$10,000
Preparation and Submittal of CTDEEP Completion of Investigation Form and Final Investigation Report by LEP	\$25,000	Lump Sum	1	\$25,000
Remedial Action Plan	\$10,000	Lump Sum	1	\$10,000
Engineered Control Variance Request and Design of Engineered Control	\$25,000	Lump Sum	1	\$25,000
Construction Contract Administration	\$5,000	Lump Sum	1	\$5,000
Subtotal				\$106,000
Site Preparation				
Erosion control	\$10	Linear Foot	400	\$4,000
Temporary construction fence	\$6	l.f.	200	\$1,200
Clearing and Grubbing	\$5,000	Lump Sum	1	\$5,000
Private Utility Mark-out Services	\$20,000	Lump Sum	1	\$20,000
Construct Anti-Tracking Pad	\$5,000	Lump Sum	1	\$5,000
Decontamination facilities	\$5,000	Lump Sum	1	\$5,000
Subtotal				\$40,200
UST Removal (AOC 5)				
Removal of three 10,000-gallon heating oil UST systems (LCI construction costs)	\$35,000	each	3	\$105,000
Post excavation confirmatory soil sampling (assumes one staff for two 1-hour field days per tank)	\$1,600	each	3	\$4,800
Tank excavation soil sample analysis (assumes 10 soil samples per tank excavation for ETPH, PAHs, and VOCs.)	\$2,400	each	3	\$7,200
Subtotal				\$117,000
Wetland Delineation and Permitting Associated with Excavation Activities at AOC 3				
Municipal Permitting and Plan Submittal for Addressing Potential Wetland Impacts	\$10,000	Lump Sum	1	\$10,000
Third Party Monitoring as Required by Town of Groton	\$30,000	Lump Sum	1	\$30,000
Subtotal				\$40,000
Soil Remediation (Unit Cost Includes Excavation, Transportation, and On-Site Re-Use)				
AOC 1 - Excavate 31 cubic yards of soil impacted with ETPH and SVOCs and place at AOC 3 to be capped	\$30	cubic yard	31	\$939
AOC 2 - Excavate 31 cubic yards of soil impacted with Acetone and place at AOC 3 to be capped	\$30	cubic yard	31	\$939
AOC 3 - 13,000 cubic yards of soil impacted with ETPH and PAHs (will be capped with impermeable liner)	\$0	cubic yard	13,000	\$0
AOC 4 - Excavate 31 cubic yards of soil impacted with ETPH and SVOCs and place at AOC 3 to be capped	\$30	cubic yard	31	\$939
AOC 7 - Excavate 233 cubic yards of non-hazardous soil impacted with Pesticides and Metals and place at AOC 3 to be capped	\$30	cubic yard	233	\$6,975
AOC 7 - Excavate 78 cubic yards of hazardous soil, impacted with Pesticides and Metals and dispose at off-site approved facility	\$1,100	cubic yard	78	\$85,250
AOC 10 - Excavate 20 cubic yards of soil impacted with ETPH and SVOCs and place at AOC 3 to be capped	\$900	cubic yard	20	\$18,000
AOC 13 - Excavate 4,100 cubic yards of soil impacted with ETPH and SVOCs and place at AOC 3 to be capped	\$30	cubic yard	4,100	\$123,000
AOC 14 - Excavate 35 cubic yards of soil impacted with ETPH and SVOCs and place at AOC 3 to be capped	\$600	cubic yard	35	\$21,000
AOC 16 - Excavate 31 cubic yards of soil impacted with Arsenic and place at AOC 3 to be capped	\$30	cubic yard	31	\$939
Waste characterization sampling	\$2,500	Lump Sum	1	\$2,500
Post Excavation Sample Analysis (assumes up to 100 samples for constituents of concern)	\$40,000	Lump Sum	1	\$40,000
Subtotal				\$300,481
Engineered Control Design/Approval/Installation (AOC 3 Cap)				
Obtain CT DEEP Approval for Use of Engineered Control at Site	\$5,000	Lump Sum	1	\$5,000
Install Engineered Control at Site (impermeable cap over AOC 3)	\$10	Square Foot	27,000	\$270,000
Subtotal				\$275,000
Groundwater Monitoring Well Construction				
Monitoring Well Construction (assumes twelve additional wells will be needed)	\$3,000.0	well	12	\$36,000
Subtotal				\$36,000
Environmental Land Use Restriction				
Public Notice	\$2,000	Lump Sum	1	\$2,000
A2 Level Survey for Exhibit C of ELUR Package	\$30,000	Lump Sum	1	\$30,000
Preparation of ELUR package and submittal to CT DEEP	\$15,000	Lump Sum	1	\$15,000
Subtotal				\$47,000
Financial Assurance				
Preparation of Financial Assurance Proposal and Submittal to CT DEEP	\$50,000	Lump Sum	1	\$50,000
Financial Assurance Bond	\$50,000	Lump Sum	1	\$50,000
Financial Assurance	\$15,000	Lump Sum	1	\$15,000
Subtotal				\$115,000
Site Verification				
Updated Phase I ESA To Substantiate Conceptual Site Model (to be conducted in approximately 2018)	\$10,000	Lump Sum	1	\$10,000
Preparation and Submittal of LEP Verification Report	\$25,000	Lump Sum	1	\$25,000
Subtotal				\$35,000

Total Capital Costs **\$1,295,417**
Contingency (25% of total): **\$323,854**
Total Capital Cost with Contingency **\$1,619,000**

Long-term Monitoring Costs

Engineered Control Groundwater Monitoring and Inspections (assumes 30 years of annual monitoring and semi-annual inspections; NPV @ I = 3%)	\$6,000	year	30	\$117,603
Post-Remediation / Compliance Groundwater Monitoring (assumes 4 semi-annual monitoring events)	\$25,000	event	4	\$100,000
Total Long-term Monitoring Costs				\$217,603
<i>Contingency (25% of total):</i>				\$54,401
Total Long-term Monitoring Cost with Contingency				\$272,000

TOTAL ESTIMATED COST **\$1,891,000**

NOTES:

- Cost Estimate for Site Verification does not include costs associated with responding to a CT DEEP Audit of the Verification (if needed);
- Estimates assume Site will be entered into the CT DEEP Voluntary Remediation Program and Site will be subject to the Connecticut Property Transfer Act;
- Estimates assume CT DEEP will approve placement of impacted soil from various locations throughout the Site at AOC, and that CT DEEP will approve the Use of an Engineered Control at the Site;
- Legal costs associated with the ECAFP, Potential Transfer Act filings, ELUR, and Financial Assurance have not been included;
- Costs associated with ELUR assume Subordination Agreements will not be needed and /or DEEP will provide a Subordination Agreement Waiver;
- Compliance Ground Water Monitoring cost estimates assume that four consecutive quarterly sampling events will be conducted and that test results will support closure;
- Costs associated with post-remediation ground water monitoring assume favorable results (within regulatory requirements) supporting closure;
- Costs presented are estimates based upon our current understanding of Site conditions; future data may indicate that additional investigation is needed; and