

Environmental Solutions

Unmatched Capabilities

Since 1985

GENERAL SERVICES ADMINISTRATION
FEDERAL SUPPLY SERVICE

FEDERAL SUPPLY SCHEDULE PRICE LIST



FSC GROUP: 899
CLASS: F999
CONTRACT NO. GS-10F-022BA
CONTRACT PERIOD: 10/25/13 TO 10/25/18

*BUSINESS SIZE: SMALL
WOMAN-OWNED BUSINESS*

CONTRACT ADMINISTRATOR:
DEBORAH MIGRIDICHIAN
dmigrichian@cea-inc.com

TECHNICAL CONTACT:
ADAM LAST, PE, LSP
alast@cea-inc.com

SIN 899-1 ENVIRONMENTAL CONSULTING SERVICES
SIN 899-8 REMEDIATION AND RECLAMATION SERVICES

CORPORATE ENVIRONMENTAL ADVISORS, INC.

**127 Hartwell Street, Suite 2
West Boylston, MA 01583-2409**
Toll Free No. (800) 358-7960
Tel No. (508) 835-8822
Fax No. (508) 835-8812
Web Site: www.cea-inc.com

A WBENC-certified Woman Business Enterprise



Online access to contract ordering information, terms and conditions, up-to-date pricing, and the option to create an electronic delivery order are available through *GSA Advantage!*™, a menu-driven database system. www.GSAAdvantage.gov

For more information on ordering from Federal Supply Schedules click on the FSS Schedules Button at <http://www.gsa.gov/schedules-ordering>

Customer Information

1a. SPECIAL ITEM NUMBER(S) (SINS)

SIN	Recovery	SIN Description
899-1	899-1RC	Environmental Consulting Services
899-8	899-8RC	Remediation and Reclamation Services

1b. Lowest Priced Model Number and Lowest Unit Price For Each SIN:

Unit Prices for SIN 899-1 and 899-8 are provided under Item 27, Table 1 below.

1c. Description of Commercial Job Titles, Experience, Functional Responsibility and Education for all Employees and Subcontractors

Labor Category Job Titles and Labor Category Descriptions are provided under Item 27, Tables 2 and 3.

2. Maximum Order: \$1,000,000.00

3. Minimum Order: \$100.00

4. Geographic Coverage (delivery Area): Domestic only

5. Point(s) of production: Corporate Environmental Advisor's, Inc. (CEA)
127 Hartwell Street, Suite 2
West Boylston, MA 01583-2409

6. Discount from list prices or statement of net price:

Government net prices (discounts already deducted)

7. Quantity discounts:

2.00% for a single order (1 job) over \$50,000 completed within one calendar year

8. Prompt payment terms: Net 30

9a. Acceptance of Government purchase cards up to the micro-purchase threshold: Yes

9b. Acceptance of Government purchase cards above the micro-purchase threshold:

Contact Contractor.

10. Foreign items: None

11a. Time of Delivery: As Specified on the Task Order

11b. Expedited Delivery. Items available for expedited delivery are noted in the price list shown on Table 1. Contact Contractor for more information.

11c. Overnight and 2-day delivery. Contact Contractor for rates for overnight and 2-day delivery.

11d. Urgent Requirements. Contact Contractor to effect a faster delivery.

12. F.O.B Points(s): Destination

13a. Ordering Address(es): Same as Company Address

13b. Ordering procedures: Same as Company Address

14. Payment address(es): Same as Company Address

Customer Information

- 15. **Warranty provision:** Contractor's standard commercial warranty
- 16. **Export Packing Charges (if applicable):** N/A
- 17. **Terms and conditions of Government purchase card acceptance:** Contact Contractor
- 18. **Terms and conditions of rental, maintenance, and repair (if applicable):** N/A
- 19. **Terms and conditions of installation (if applicable):** N/A
- 20. **Terms and conditions of repair parts:** N/A
- 20a. **Terms and conditions for any other services (if applicable):** N/A
- 21. **List of service and distribution points (if applicable):** N/A
- 22. **List of participating dealers (if applicable):** N/A
- 23. **Preventive maintenance (if applicable):** N/A
- 24a. **Environmental attributes:** N/A
- 24b. **Section 508 Compliance Information:** N/A
- 25. **Data Universal Numbering System (DUNS) number:** 161349170
- 26. **Registration in Central Contractor Registration (CCR) database:** Registered
- 27. **Final Pricing:** Rates below include the Industrial Funding Fee (IFF) of 0.75%

TABLE 1 FINAL PRICING

Labor Category	GSA Rate	Unit of Issue
Principal/Senior Consultant	\$149.62	Per Hour
Senior Project Manager	\$109.72	Per Hour
Senior Engineer/Geologist/Scientist	\$104.74	Per Hour
Health & Safety Manager (CIH)	\$99.75	Per Hour
Senior Risk Assessor	\$104.74	Per Hour
Environmental Scientist/Geologist II	\$83.93	Per Hour
Environmental Scientist/Geologist I	\$74.06	Per Hour
Field Services Manager	\$84.79	Per Hour
Senior Technician	\$69.82	Per Hour
Technician II	\$59.85	Per Hour
Technician I	\$49.87	Per Hour
Senior CADD Operator	\$64.84	Per Hour
Equipment Operator	\$64.84	Per Hour
Hazardous Waste Driver	\$59.85	Per Hour
Administrative Support	\$44.89	Per Hour

Customer Information

TABLE 2 LABOR CATEGORY AND JOB TITLE

SCA Eligible Contract Labor Category	SCA Equivalent Code and Title	WD Number
Senior Technician	30090 - Environmental Technician	2005-2255
Technician II	30090 - Environmental Technician	2005-2255
Technician I	30090 - Environmental Technician	2005-2255
Senior CADD Operator	30063 - Drafter/CAD Operator III	2005-2255
Equipment Operator	23440 - Heavy Equipment Operator	2005-2255
Hazardous Waste Driver	31363 – Truck Driver, Heavy	2005-2255
Administrative Support	01020 - Administrative Assistant	2005-2255

The Service Contract Act (SCA) is applicable to this contract and it includes SCA applicable labor categories. The prices for the indicated (***) SCA labor categories are based on the U.S. Department of Labor Wage Determination Number(s) identified in the SCA matrix. The prices offered are based on the preponderance of where work is performed and should the contractor perform in an area with lower SCA rates, resulting in lower wages being paid, the task order prices will be discounted accordingly.

TABLE 3 LABOR CATEGORY DESCRIPTIONS

SIN #s	PERSONAL CATEGORY	EDUCATION & CERTIFICATION	DESCRIPTION
899.1, 899.8	Principal/Senior Consultant	<ul style="list-style-type: none"> Licensed Site Professional (L.S.P.), Licensed Environmental Professional (L.E.P.), Minimum B.S. in Related Field, Over 10 Years Experience OSHA 40hr HazWOPER Minimum B.S. 	These professionals are in charge of all technical and financial aspects of a GSA Contract/Project. They oversee and direct all project team member activities. They are responsible for final oversight of all reporting details and keeping clients reporting schedules in compliance. They provide technical expertise to clients and project staff and prepare strategies for completing work according to regulations. They are licensed in their respective state to stamp approval of final environmental reports for review by regulatory agency/auditor. On the financial side they have the responsibility of negotiating contracts and pricing with GSA Clients, and maintaining approved budgets and timelines.
899.1, 899.8	Senior Project Manager	<ul style="list-style-type: none"> Sr. Geologist (CPG/PG Certification) Sr. Scientist 5Years Experience OSHA 40hr HazWOPER Minimum B.S. 	Manages a team and organizes and coordinates with technical staff. Assists in directing projects according to specifications and regulations, providing information to Principal. Ensures support staff is completing activities on-schedule and within budgets. In charge of completion and review of scientific activities including field and technical data collection.
899.1, 899.8	Senior Engineer Senior Geologist Senior Scientist	<ul style="list-style-type: none"> Professional Engineer (PE) Registration Sr. Geologist (CPG/PG Certification) Sr. Scientist OSHA 40hr HazWOPER 10 Years Experience Minimum B.S. 	Plans, schedules and conducts phases of engineering work within remedial projects. Ensures compliance with applicable regulations. Oversees and directs support staff in completion of activities. Conducts review of environmental technical data to ensure accurate direction of activities. Provides remedial selection and planning assistance to Project Managers and Principals.

Customer Information

TABLE 3 LABOR CATEGORY DESCRIPTIONS

SIN #s	PERSONAL CATEGORY	EDUCATION & CERTIFICATION	DESCRIPTION
899.1, 899.8	Health and Safety Manager/Certified Industrial Hygienist	<ul style="list-style-type: none"> • Certified Industrial Hygienist (C.I.H.) • OSHA Certified Trainer • OSHA 40hr HazWOPER • 10 Years Experience • Minimum B.S. 	A review project plans and sites, and prepares technical health and safety plans for project activities. Reviews with staff health and safety guidelines for each site including work safety and hazardous materials safety. Ensures that activities are being completed according to H&S plan and OSHA standards. Responsible for providing 40hr OSHA HazWOPER training to employees without certification, and providing 8hr annual refresher training. Also provides Confined Space Entry training.
899.1, 899.8	Senior Risk Assessor	<ul style="list-style-type: none"> • OSHA 40hr HazWOPER • 5 Years Experience Performing Risk Assessments • Minimum B.S. 	Conducts Method 1, 2, and 3 Risk Characterizations for contaminated sites. Determines the risk of the site to human health and the environment. Reports directly to the Project Manager and/or Principal. Works with project management to determine effective risk management and site closeout strategies.
899.1, 899.8	Environmental Scientist/Geologist II	<ul style="list-style-type: none"> • OSHA 40hr HazWOPER • 4 Years Experience • Minimum B.S. 	Provides scientific support to upper management including conducting onsite sample collection and field work. Coordinating with subcontractors, lab collection/analysis, drilling activities, and preparing initial report/review of data collected. Also provides mentoring to Environmental Scientist/Geologist I, preparing and training them to conduct field collection activities, methods, and preparing data presentation. Also prepares information in draft reports for review and editing by senior scientists.
899.1, 899.8	Environmental Scientist/Geologist I	<ul style="list-style-type: none"> • OSHA 40hr HazWOPER • 1 Year Experience • Minimum B.S. 	Provides scientific support to upper management including conducting data collection activities, records reviews, on site sampling of groundwater/soil, and preparing information for review by senior staff members. Prepares information in draft reports for review and finalization by senior scientists.
899.1, 899.8	Field Services Manager (formerly Field and Construction Manager)	<ul style="list-style-type: none"> • 5 Years Environmental Construction Experience • BA Degree • Required Applicable Equipment/Operators License • OSHA 40hr HazWOPER • Massachusetts Unrestricted Construction Supervisor 	Manages and oversees field laborers, environmental laborers, and technicians. Responsible for ensuring environmental construction projects are completed according to OSHA standards and other state applicable regulations. Completes projects at the direction of the Principals/Project Managers. Directs equipment operators, laborers, and field staff in construction activities, and ensures field staff is completing project as directed and according to safety practices. Prepares all necessary permits and licensing in order to complete projects, transfer waste, operate machinery, etc. At times negotiates pricing between client and company for completion of project.

Customer Information

TABLE 3 LABOR CATEGORY DESCRIPTIONS

SIN #s	PERSONAL CATEGORY	EDUCATION & CERTIFICATION	DESCRIPTION
899.1, 899.8	Senior Technician	<ul style="list-style-type: none"> • Minimum Grade 2 Wastewater Treatment License • Grade 4 Wastewater Treatment License • OSHA 40hr HazWOPER • 4 Years in Operations and Maintenance Field • Experience with Programmable Logic Controls • High School Diploma 	Responsible for providing accurate operations and maintenance information to Project Managers, Principals, and Senior Scientists/Geologists as part of remedial cleanup projects. Responsible for coordinating operations and maintenance activities on sites, and preparing technicians to troubleshoot, and conduct O&M activities. Responsible for adhering to site health and safety plans, OSHA standards, and completing activities according to sampling protocols and standard operation procedures. Responsible for ensuring the correct labeling/chains of custody of lab samples.
899.1, 899.8	Technician II	<ul style="list-style-type: none"> • 4 Years Sampling and O&M Experience • High School Diploma Grade 2 or above Wastewater Treatment Operator preferred. • OSHA 40hr HazWOPER 	Completes field sampling activities according to direction of O&M Manager and/or Principal/Project Manager. Assists with operation and maintenance activities at remedial system sites. Responsible for completing sampling according to required methods/protocols, and providing accurate labeling/chain of custody for samples.
899.1, 899.8	Technician I	<ul style="list-style-type: none"> • 2 Years Sampling • High School Diploma OSHA 40hr HazWOPER 	Complete field sampling activities at direction of O&M Manager, and/or Principal/Project Manager. Responsible for collecting field samples according to QA/QC, and applicable methods and standards. Responsible for preparing labels/chains of custody for all field samples.
899.1, 899.8	Senior CADD Operator	<ul style="list-style-type: none"> • 5 Years AutoCADD Experience • BA Degree • OSHA 40hr HazWOPER 	Completes all AutoCADD/Draftsman activities for company projects. Responsible for creating site plans based on survey information, and/or previous record information. Plots wells, and sampling locations, as well as other environmental remedial/construction information provided by Engineers, Principals, and Project Managers. Responsible for conducting onsite survey for well head elevations and other site structure elevations. Plots groundwater contour maps. Responsible for keeping site information/database up to date.
899.1, 899.8	Equipment Operator	<ul style="list-style-type: none"> • Carries Required Equipment Operation Licenses • High School Diploma and 2 years experience • Hydraulic Licenses • OSHA 40hr HazWOPER 	Responsible for operating equipment as part of environmental remediation, construction and field team. Participates in environmental construction projects including excavating and removal of contaminated soil, underground storage tanks, and trenching for installation of remedial systems. Reports directly to Field and Construction Manager.
899.1, 899.8	Hazardous Waste Driver	<ul style="list-style-type: none"> • Required CDL Licenses • High School Diploma and 2 Years • OSHA 40hr HazWOPER 	Responsible for transportation and disposal of hazardous material including contaminated soil, sludge, water, oil, and other hazardous materials. Reports directly to Field and Construction Manager.
899.1, 899.8	Administrative Support	<ul style="list-style-type: none"> • Minimum High School Diploma and 1 Year 	Provides administrative support including typing, formatting, database updating and maintenance, proofing of documents, and preparation of reports and copies. Assists with first drafts of reports, and preparation of those reports. Assists with completing data information tables.

Environmental Consulting Services Offered by CEA

PLANNING AND DEVELOPMENT SERVICES

Environmental Program and Project Management

Economical, Technical and/or Risk Analysis

Identification/Mitigation of Threats and Implementation of Protective Measures

Other Environmentally Related Studies and/or Consultations

COMPLIANCE SERVICES

Review, Audit, Implement and Manage EMS Systems

Review, Audit, Implement and Manage Compliance Plans and Contingency Plans

Environmental Permitting

Spill Prevention/Control and Countermeasure Plans

Community Right To-Know Act Reporting

ADVISORY SERVICES

Hazardous Material Spills

Regulations and Environmental Policy/Procedure Updates

MSDS Management, Furnishing and/or Inventory

WASTE MANAGEMENT CONSULTING SERVICES

Waste-Related Data Collection, Feasibility Studies & Risk Analyses

Hazardous/Non-Hazardous Exposure Assessments

Review(s) of Waste Tracking and/or Waste Handling Systems

Development of Waste Management Plans and/or Surveys

Planning and Development Services

PLANNING AND DEVELOPMENT SERVICES

Environmental Program and Project Management

Economical, Technical and/or Risk Analysis

Identification/Mitigation of Threats and Implementation of Protective Measures

Other Environmentally Related Studies and/or Consultations

ENVIRONMENTAL PROGRAM AND PROJECT MANAGEMENT

CEA is prepared to offer programmatic and contract management support to federal agencies for all types of environmental projects. Over the past 28 years, CEA has completed over 8,000 site investigations and/or cleanup projects, many of which have been conducted under multi-order state-wide contracts for state agencies such as the Massachusetts Department of Environmental Protection and/or the Department of Conservation and Recreation. As such, CEA has developed the management systems needed to facilitate performance of work at many sites simultaneously while ensuring that each project proceeds in a manner which complies with its stated goals and regulatory requirements and deadlines.

ECONOMICAL, TECHNICAL AND/OR RISK ANALYSIS

CEA is prepared to offer economic, technical and/or risk analyses support to federal agencies with respect to the evaluation, selection and implementation of the most suitable remedial options and/or technologies at contaminated properties. Prior to implementing remedial actions, CEA uses a quantitative risk assessment approach to determine whether remediation is warranted, and if so, to identify the specific chemicals which warrant reduction(s) and to what levels. Once the site-specific cleanup goals are established, CEA evaluates the range of available processes and technologies with respect to economic and technical feasibility and then determines the most effective solution to address the contamination at the property.

IDENTIFICATION/MITIGATION OF THREATS AND IMPLEMENTATION OF PROTECTIVE MEASURES

CEA is prepared to evaluate site-related data to determine whether the presence and/or concentrations of chemicals at a contaminated property pose an Imminent Hazard (IH) to human health or the environment, which is the threat of serious harm resulting from an exposure of short duration. Such conditions may be posed by the presence of certain highly-toxic chemicals in surface soils, groundwater, drinking water, surface water, soil gas and/or indoor air where ongoing exposures are possible. Upon discovering an IH condition, CEA typically notifies the client and/or regulatory authority and proceeds to implement measures to mitigate the exposure(s) such as: fencing at surface soil contaminated properties; treatment systems or bottled water for contaminated drinking water systems; and/or ventilation or air purification to mitigate adverse indoor air impacts.

OTHER ENVIRONMENTALLY RELATED-STUDIES AND/OR CONSULTATIONS

As a full service environmental consulting firm, CEA is in a position to offer support to government agencies in areas beyond site assessment or remedial work at contaminated properties. For instance, CEA is experienced in the development and implementation of public involvement plans and/or community relations plans, activity and use limitations (AULs) and Brownfield Grant applications, and is also prepared to provide peer review consultations and/or third party oversight of PRP-lead projects in these areas. CEA is also available to provide review and comment on new government policies.



Compliance Services

COMPLIANCE SERVICES

Review, Audit, Implement,
Manage EMS Systems

Review, Audit, Implement,
Manage Compliance Plans and
Contingency Plans

Environmental Permitting

Spill Prevention/Control,
Countermeasure Plans and
Community Right To-Know
Act Reporting



REVIEW, AUDIT, IMPLEMENT, MANAGE ENVIRONMENTAL MANAGEMENT SYSTEMS (EMS)

CEA is prepared to assist federal agencies in the development, implementation and management of EMS programs to ensure that the agency(s) have comprehensive and documented regulatory program that addresses both immediate and long-term environmental concerns. CEA's EMS development process starts with a comprehensive review of a facility's operations and processes, focusing on areas such as: waste generation and disposal; recycling; emissions to the environment; and current environmental goals. CEA is then in a position to develop a EMS that meets the agency's needs for improving environmental performance. CEA also performs EMS program audits to ensure that programs are functioning adequately and also to identify areas for improvement.

REVIEW, AUDIT, IMPLEMENT AND/OR MANAGE COMPLIANCE PLANS AND CONTINGENCY PLANS

CEA is prepared to conduct reviews and audits and/or assist federal agencies in the development, management or implementation of compliance plans and/or contingency plans within their existing EMS. CEA often discovers gaps in a facility's compliance plans when conducting a facility audit, such as identifying an upgraded or new process or system which is has not been incorporated into the current plan. Such is often the case for large or small quantity generators for which contingency plans have been developed but may be obsolete due to a change in the volumes or types of wastes generated.

ENVIRONMENTAL PERMITTING

CEA is experienced in obtaining federal, state and/or locals permits and approvals necessary for environmental remediation, hazardous waste transportation and solid waste management. CEA is experienced in obtaining environmental permits required to support large remedial projects, while also assisting in obtaining and complying with terms of other regulatory structures such as Brownfield Grants. CEA has obtained and maintains hazardous waste transporter permits from several northeast states, and assists clients in obtaining solid waste management and recycling permits at the local and state level.

SPILL PREVENTION/CONTROL, COUNTERMEASURES PLANS AND COMMUNITY RIGHT-TO-KNOW ACT REPORTING

CEA is prepared to develop, update and/or certify Spill Prevention and Countermeasure Control (SPCC) Plans for federal agencies, as we have done for many of our clients in the past. CEA's SPCC Plans are designed to facilitate the prevention of discharge of oil into navigable waters of the United States or adjoining shore-lines. CEA's SPCC Plans ensure compliance with the EPA requirements including facility operating procedures to prevent oil spills, control measures to prevent oil from entering navigable waters or adjoining shorelines and countermeasures to contain, cleanup, and mitigate the effects of an oil spill that may have an impact on navigable waters or adjoining shorelines.

CEA is also prepared to assist federal agencies who use or store hazardous chemicals in complying with all federal, state and local reporting obligations under the Emergency Planning and Community Right-to-Know Act (EPCRA).

Advisory Services

ADVISORY SERVICES

Hazardous Material Spills

Assist and Advise on Materials Safety Data (MSDS) Sheets

MSDS Management, Furnishing and/or Inventory



ADVICE AND ASSISTANCE FOR HAZARDOUS MATERIAL SPILLS

As a 24-hour on-call response clean up and environmental services firm, CEA is prepared to provide technical assistance to government agencies and individuals involved in responding to a release of a hazardous material. Our staff of industrial hygienists, risk assessors, professional engineers and environmental professionals have extensive experience and knowledge in the areas of chemical safety, personal protective equipment, worker and community exposure assessment, response and remediation techniques and response equipment needed when addressing a hazardous material spill or release.

CEA has designed and implemented an Emergency Response and Contingency Plan (ERCP) for its 127 Hartwell Street facility which addresses all anticipated hazardous materials releases, fires and/or explosions at the facility and which also serves as template when developing such plans for outside agencies and clients. For instance, CEA's ERCP addresses: (1) the roles of responders, and lines of authority and communication; (2) the establishment of safe distances and places of refuge; (3) needs for site security and control; (4) designation of evacuation routes; (5) decontamination procedures; (6) plans to provide medical treatment/first aid; (7) emergency alerting and response procedures; and (8) procedures for reporting incidents to local, state, and Federal agencies.

ASSIST AND ADVISE ON MATERIAL SAFETY DATA SHEETS

CEA is prepared to offer assistance to government agencies in the development of Material Safety Data Sheets (MSDS) for their facilities, including the transition of their existing MSDS into the new format Safety Data Sheets (SDS) required by the revised OSHA Hazard Communication Standard published in 2012. CEA is also prepared to provide assistance relative to the identification of information hotlines and poison control centers, and with respect to environmental regulations, policy and procedure updates

MSDS MANAGEMENT, FURNISHING AND/OR INVENTORY

CEA is prepared to offer comprehensive MSDS management services to federal agencies. Such services may include: (1) performing an inventory of hazardous chemicals at a client's site, (2) obtaining required MSDSs from the supplier or manufacturer, (3) reviewing the client's current MSDSs for completeness and accuracy, and (4) providing training on the specific chemical safety information included in the MSDSs.

CEA's experience and capabilities in this area results from the fact that CEA has developed, implemented and maintains its own internal Hazardous Communication Program in order to comply with Title 29 Code of Federal Regulations 1910.1200, OSHA's Hazard Communication Standard (specifically the revised Hazard Communication Standard or HCS 2012). Under the HazCom Program, CEA maintains a Hazardous Chemical Inventory List and current Safety Data Sheets (SDSs) to ensure that its employees have access to all of the information and training needed to ensure property use, handling, and disposal of chemicals used in the workplace (which includes all CEA activities conducted at client field worksite and all office locations). CEA's HazCom program applies to all work operations in our company where hazardous chemicals are used under normal working conditions or during an emergency.

Waste Management Consulting Services

WASTE MANAGEMENT CONSULTING SERVICES

Waste-Related Data Collection, Feasibility Studies & Risk Analyses

Hazardous/Non-Hazardous Exposure Assessments

Review(s) of Waste Tracking Systems and/or Waste Handling Systems

Development of Waste Management Plans and/or Surveys

ENVIRONMENTAL WASTE-RELATED DATA COLLECTION, FEASIBILITY STUDIES & RISK ANALYSIS

CEA is prepared to offer waste-related data collection services to all federal agencies. Such services are crucial to the determination as to whether a waste is being properly managed, controlled, treated, packaged, stored, recycled and/or disposed. As a licensed Hazardous Waste Transporter, CEA's staff routinely perform on-site sampling and testing of waste material, waste profiling, and the sourcing and selection of approved recycling, transfer, storage, and disposal facilities. Also, as an environmental engineering firm, CEA routinely performs feasibility studies to determine the most cost-effective means of managing a waste material, while also using various methods of risk analyses to identify the level of risk reduction afforded by different waste management options. Feasibility studies and risk analyses are essential components of our waste management services.

HAZARDOUS/NON-HAZARDOUS EXPOSURE ASSESSMENTS

CEA is prepared to offer occupational exposure assessment services to the federal government as needed to evaluate exposures incurred by workers and/or the public in the event of a release of hazardous materials. Such services may involve modeling of hazardous material transport pathways, and investigations of the likely populations that may be affected by the release. CEA has conducted numerous exposure assessments in industrial and remedial settings including: manufacturing facilities, laboratories, administrative offices, retail facilities and private homes. Our industrial hygiene and environmental professionals are trained to consider information affecting exposure including: the characteristics of the locations where exposure occurs, population traits of the exposed individuals, and properties of the chemicals and/or materials involved.

REVIEWS OF WASTE TRACKING AND/OR HANDLING SYSTEMS

CEA is prepared to provide waste management consulting services to the federal government with respect to the procedures that they have in place for the handling of potentially hazardous chemicals and/or solid wastes. Such services are designed to assist an agency or facility in complying with all applicable hazardous and/or solid waste regulations, and to facilitate protection of the environment and the community. CEA services include: auditing and review of current waste generation and on-site handling practices, review of waste tracking processes, development of waste management plans, third-party waste inspections, and determination of waste disposal options.

DEVELOPMENT OF WASTE MANAGEMENT PLANS OR SURVEYS

CEA is prepared to develop waste management plans for government agencies in the event that existing plans are not in place, and/or to upgrade or replace an existing plan if it is obsolete or otherwise found to be deficient. CEA usually begins the process of developing waste management plans by conducting a comprehensive survey of the facility to identify all chemical used and all wastes generated. Such plans are designed to assist out clients in complying with all applicable hazardous and solid waste regulations, and also help the client protect the environment and the community.



Remediation and Reclamation Services Offered By CEA

REMEDICATION SERVICES

Excavation, Removal and Disposal of Hazardous Waste

Site Preparation, Characterization, Field Investigations

Conservation and Closures

Wetland Restoration

Emergency Response Clean Up (ERC)

UST/AST Removal

Air Monitoring

Soil Vapor Extraction/High Vacuum Extraction

Stabilization/Solidification/Containment

Carbon Absorption

Monitoring and/or Reduction of Hazardous Waste Sites

Remediation-Related Laboratory Testing

RECLAMATION SERVICES

Land Restoration (Restoring Area to a More Natural State, such as
after Pollution has made it unusable)

Remediation Services

REMEDICATION SERVICES

Excavation, Removal and Disposal of Hazardous Waste

Site Preparation, Characterization, Field Investigations



EXCAVATION, REMOVAL AND DISPOSAL OF HAZARDOUS WASTE

CEA has the capabilities and experience needed to provide soil excavation, removal and disposal services to federal agencies for all types of contaminated properties. CEA has performed such activities at many different types of contaminated sites, including: residential properties and/or gasoline stations impacted by releases of heating oil and/or gasoline, and/or former industrial properties in response to releases of hazardous materials such as lead. CEA has the equipment and personnel needed to execute large scale excavation projects such as installation of protective shoring, initiation of dewatering systems and implementation of onsite groundwater treatment systems. CEA personnel are also experienced in performing oversight of soil excavation projects including field screening of soil samples in order to guide excavation activities, and collection of confirmatory samples for laboratory analysis.

CEA is also prepared to perform waste characterization and waste profiling to assist federal agencies in the selection of approved recycling, transfer, storage, and disposal facilities, and also to perform transportation of hazardous and non-hazardous materials to the disposal facilities. Our staff routinely perform the proper identification, management, packaging, labeling, manifesting, loading, transportation and disposal of a wide range of materials. CEA's transportation capabilities include bulk loads of liquids and contaminated soils, totes, drums and specialty containers comprised of solids, liquids and sludge. CEA's integrated and comprehensive hazardous waste transportation services are designed to meet all required safety needs and concerns, while protecting our clients from liability.

SITE PREPARATION, CHARACTERIZATION, FIELD INVESTIGATIONS

CEA is prepared to provide site preparation, characterization and field investigation services to all federal agencies. CEAs has conducted such activities at hundreds of contaminated properties over the past 28 years for numerous municipalities, federal and state agencies and private clients. Prior to conducting site preparation, characterization and/or site investigations, CEA typically conducts: (1) a comprehensive review of background and historical information relative to the project site including disposal history and nature of the material and/or substances released to the environment (i.e., solvents, metals, fuel oil, gasoline, etc.), and (2) a site visit in order to observe current site conditions including condition(s) that may pose an immediate hazard to human health or the environment, and to identify human and environmental receptors. The above activities typically involve a regulatory file review and/or consultations with local officials.

Once CEA has determined the types of materials or substance(s) released to the environment and the nature and/or pattern of the disposal or release, CEA then develops and implements the scope for work (SOW) designed to meet the objective(s) of the project. The goal of most preliminary site investigations is to confirm or deny the presence of contamination at a site and typically involves the advancement of three (3) soil borings which are completed as monitoring wells to assess subsurface soil and groundwater quality. The goal of most follow-up investigations is to collect the information and data needed to: (1) determine the lateral and vertical extent of the contamination; (2) develop a Conceptual Site Model (CSM) for the site, (3) evaluate human health and ecological risks, and (4) to support the development, evaluation and selection of remedial alternatives (if warranted) that are best suited to address the contamination identified at the property.

Remediation Services

REMEDICATION SERVICES

Conservation and Closures

Wetland Restoration



CONSERVATION AND CLOSURES

A major goal of CEA is to assist our clients in achieving their environmental conservation goals while also achieving the goal of regulatory closure. Environmental conservation relates to the preservation of natural resources and is typically achieved by implementing response actions which are designed to most closely achieve naturally-occurring background conditions (to the extent feasible) while also minimizing impact on the environment. Regulatory closure evaluation(s) are conducted to identify the most efficient means of achieving a regulatory endpoint which satisfies all applicable regulatory authorities. The desired regulatory end point is typically the point where site conditions no longer pose an unacceptable level of risk to human or environmental receptors.

Considering the above, CEA typically uses a quantitative risk assessment approach to determine whether existing site conditions pose an unacceptable level of risk to human receptors (considering the current or intended uses of the property) and to determine whether response actions or land use restrictions are warranted at a site. If response actions are deemed warranted, the quantitative risk assessment approach is then used to develop site-specific cleanup goals and targeted remediation plans which are designed to achieve an acceptable level of risk at the site in the most efficient manner (by focusing the remediation on the media and chemicals which actually drive the health risks).

WETLAND RESTORATION

CEA is prepared to assist all federal agencies in designing, implementing and/or coordinating wetland restoration projects. CEA has completed a number of such wetland restoration projects within the past 5 years, including the restoration of: (1) a bordered vegetative wetland (BVW) located off Route 195 in Swansea, Massachusetts which had been impacted by the release of approximately 7,500 gallons of gasoline to a nearby highway drainage swale, and (2) a wetland in Northborough Massachusetts which had been impacted by lead and arsenic associated with a former rifle and skeet shooting range.

In Massachusetts, CEA conducts wetland restorations in accordance with the General Performance Standards issued under 310 CMR 10.55(4) which requires:

- 1) The surface area of the replacement area to be equal to the area that was lost.
- 2) The ground water and surface elevation of the replacement area to be approximately equal to that of the lost area.
- 3) The overall horizontal configuration and location of the replacement area with respect to the bank to be equal to that of the lost area.
- 4) The replacement area to have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area.
- 5) The replacement area to be located within the same general area of the water body or reach of the waterway as the lost area.
- 6) At least 75% of the surface of the replacement area to be reestablished with indigenous wetland plant species within two growing seasons.

CEA coordinated restorations are typically designed and implemented in a manner which restore an impacted wetland to pre-remediation conditions with respect to hydrology, soil type and vegetation in an effort to replicate the wildlife habitat value and functional value of the wetland (including capacity for flood protection and stormwater management).

Remediation Services

REMEDICATION SERVICES

Emergency Response Clean Up (ERC)

UST/AST Removal



EMERGENCY RESPONSE CLEAN-UP (ERC)

CEA is prepared to offer emergency response clean-up (ERC) services to federal agencies throughout New England. CEA's field service teams are able to: (1) mobilize quickly in response to sudden releases of oil and hazardous material (OHM), (2) to quickly identify the magnitude of the release and to notify regulatory authorities on behalf of our clients to gain the approvals to perform response actions, (3) initiate response actions to contain, eliminate and/or prevent further migration of the release. CEA's experience with mobile remedial treatment systems enables us to begin treatment quickly – a critical factor in emergency response actions. If necessary, we can install these systems within hours to protect public health, water resources, and environmentally sensitive areas to prevent exposure to surrounding populations. Our resources include spill cleanup equipment, trucks, boats, absorbents, containment booms, and storage drums.

CEA has been retained by numerous state agencies throughout New England to provide ERC services including the MassDEP. CEA also provides hazardous waste transportation services and utilizes highly trained and medically monitored personnel to operate a well maintained fleet of vehicles. Our staff are experienced in perform on-site sampling and testing, waste characterization and profiling, and the sourcing and selection of approved recycling, transfer, storage and disposal facilities. Our day-to-day operation involves the proper identification, management, packaging, labeling, manifesting, loading, transportation and disposal of a wide range of materials. Transportation capabilities include bulk loads of liquids and contaminated soils, totes, drums and specialty containers comprised of solids, liquids and sludge. CEA's integrated and comprehensive hazardous waste transportation services are designed to meet all safety concerns and protect our clients from liability.

UST/AST REMOVAL

CEA has the experience and capabilities necessary to provide our federal agencies with a full array of services relating to the removal and disposal of underground storage tank (UST) and related subsurface structures and aboveground storage tanks (ASTs). CEA is also prepared to provide comprehensive AST and UST closure services including preparation of all required reports to applicable federal, state or local agencies or offices. CEA has not only provided UST and AST tank removal and closure services to numerous private sector clients (including retail gasoline service station providers, residences and commercial property owners) but public sector clients as well including the MassDEP. CEA has recently been approved to perform such activities for the Massachusetts Department of Environmental Conservation.

CEA begins each project by developing a solid understanding of the nature of the work activities and site conditions associated with the project. For instance, prior to conducting a tank removal, CEA evaluates: (1) the type, location and quantities of the tanks requiring removal, (2) the nature of the materials present within the tanks; (2) the geologic and hydrogeologic conditions of the area, (3) the presence of nearby buildings and/or structures that may affect the removal action, (4) health & safety concerns associated with the project; and (5) all required federal, state and local permits and approvals. CEA then secures all required Tank Removal permits, identifies the disposal and/or recycling facility where the tanks shall be delivered, and secures prior approvals from the facility for receipt of the tanks.

Remediation Services

REMEDICATION SERVICES

Air Monitoring

Soil Vapor Extraction/High Vacuum Extraction



AIR MONITORING

CEA is prepared to offer comprehensive air monitoring services to federal agencies for all types of environment projects. CEA often conducts air monitoring while performing building demolition projects or projects involving excavation and/or remediation of hazardous materials, as needed to obtain quantitative or qualitative information regarding airborne contaminant concentrations in order to protect worker safety or the public. Air monitoring is generally conducted within the breathing zone of onsite personnel and the air monitoring requirements are typically outlined in the site-specific Health and Safety Plan (HASP) prepared for the project. The site-specific HASP indicates what chemical compounds need to be monitored for during specific site tasks, provides action levels for each compound, and provide guidelines to be followed if an airborne compounds contaminant concentrations are detected above the action levels.

CEA utilizes the following air monitoring equipment during our onsite operations: Thermo Environmental Model 580-B Photo-ionization Detector (PID), MiniRae PCM-7600 PID, RAE PGM-50 Multi-gas Monitor and Industrial Scientific MG 140, LP 322, TMX 412 Multi-gas Monitors and Draeger tubes. CEA air monitoring personnel are required to have adequate training to utilize the equipment, to interpret the information that the monitor is providing, and also be familiar with calibration and limitations of the device(s). Equipment calibrations must be performed at the beginning of each workday using standard calibration gases. If the unit experiences abnormal perturbation or erratic readings during the day, additional calibration(s) may be required. Results of calibration procedures are recorded on calibration logs which are maintained for each air monitoring device.

SOIL VAPOR EXTRACTION/HIGH VACUUM EXTRACTION

CEA is experienced in the design, installation, and operation and maintenance (O&M) of soil vapor extraction (SVE), air sparge (AS) and high vacuum extraction (HVE) systems. SVE systems are designed to recover hydrocarbon impacted soil vapor from the subsurface as means of reducing hydrocarbon mass in the subsurface. SVE wells are typically screened above or across the water table as needed to facilitate mass removal of contaminated vapors from the vadose zone (above the water table). AS systems consists of well points screened beneath the water table and are used as injection points to introduce ambient air into the water to facilitate volatilization of dissolved-phase hydrocarbons out from the water so that they can be captured by the SVE system. HVE systems are also referred to as multi-phase extraction systems and are designed to recover impacted soil vapor, impacted-groundwater and/or pure-phase product from the subsurface.

CEA typically conducts pilot testing prior to implementing SVE or HVE systems at a project site in order to determine the radius of influence of applied vacuum at each extraction point, and the achievable air flow rates of the system(s). The system(s) are then sized (scaled up) based upon the spatial dimension(s) of the area requiring treatment, and the mass of contamination to be recovered. CEA is also experienced in performing O&M of SVE/AS and HVE systems which involves: (1) routine site visits to examine equipment operation, (2) taking field measurements of air flow rates, pressure and total organic vapor concentrations at various points throughout the system, and (3) collection of influent and effluent (post-treatment) air samples for laboratory analysis of target constituents. The above data is used to determine hydrocarbon removal efficiencies of the systems.

Remediation Services

REMEDICATION SERVICES

Stabilization/Solidification,
Containment

Carbon Absorption

Monitoring and/or Reduction of
Hazardous Waste Sites

Remediation-Related
Laboratory Testing



STABILIZATION/SOLIDIFICATION/CONTAINMENT

CEA is prepared to offer stabilization, solidification and containment services to federal agencies for their remedial projects. CEA has successfully used stabilization technologies at sites involving the excavation and stockpiling of hazardous material-impacted soils. CEA has used phosphate based binders to reduce leachable levels of metals in soil to below RCRA-based Hazardous Waste Thresholds allowing the soils to be transported offsite as non-hazardous material. The binders react with the metal ions to form insoluble metal phosphate complexes causing the formerly soluble fraction of the metal contaminant to become bound by the phosphate binders. The phosphate-based binders combined with the metals-impacted soil can then be disposed of at an approved facility. Bench scale testing is often performed to determine the appropriate phosphate-based binder solution which is most effective in stabilizing metals in soils and sediment.

CARBON ABSORPTION

CEA is experienced in the use of granular activated carbon absorption (GACA) units to remove petroleum and/or chlorinated volatile organic compounds (VOCs) from impacted media during a variety of remediation and/or treatment programs. CEA uses GACA units to: (1) remove contaminants from recovered groundwater prior to discharge under a NPDES exclusion, (2) to remove contaminants from soil vapor recovered from a SVE, HVE, or sub-slab depressurization (SSD) system, and/or (3) to remove contaminants from drinking water at the point of entry. CEA is also experienced in the design(s) of such system(s) which are based on an evaluation of media flow rates, influent contaminant levels, and effluent concentration goals. CEA is also experienced in monitoring GACA units for signs of breakthrough including performing field screening for total organic vapors and collecting influent and effluent media samples for laboratory analysis.

MONITORING AND/OR REDUCTION OF HAZARDOUS WASTE SITES

CEA routinely conducts monitoring of contaminant concentrations at hazardous waste sites in cases where compounds may exceed regulatory limits and/or guidelines, but are expected to show reductions over time due to the implementation of passive or active remedial measures. An example is a site where monitored natural attenuation (MNA) is expected to reduce contaminant concentrations over time. Monitoring of hazardous waste sites is also conducted in cases where the presence of contamination at a site has the potential of posing an unacceptable level of risk to human receptors if site conditions were to worsen. CEA is experienced in conducting all forms of field monitoring and/or sample collection for laboratory analysis.

REMEDICATION-RELATED LABORATORY TESTING

CEA routinely performs collection and analysis of media samples for laboratory analysis as needed to determine the effectiveness of a remediation program. Media sampling and analysis is initially required to determine pre-remediation site conditions, to assess risk to health and the environment, and to determine cleanup goals for remediation programs. Sampling media of concern generally includes soil, groundwater, soil vapor and indoor air, and in some cases, surface water and sediment. Post-remediation sampling and analysis is also conducted upon completion of the remediation to determine whether the cleanup goals of a remedial program have been achieved.

Reclamation Services

RECLAMATION SERVICES

Land Restoration (Restoring Area to a More Natural State, such as after Pollution has made it unusable)

LAND RESTORATION (RESTORING AREA TO A MORE NATURAL STATE, SUCH AS AFTER POLLUTION HAS MADE IT UNUSABLE)

CEA is prepared to assist federal agencies in designing, performing and/or coordinating restoration of contaminated land to a more natural state after pollution has made it unusable. CEA is also prepared to work with EPA in the preparation of Site-Specific Quality Assurance Project Plans (QAPPs) in accordance with the USEPA Region I “Planning and Documenting Brownfields Projects Generic QAPPs and Site-specific QAPP Addenda” (Final Version, March 2009), as needed to execute federal restoration projects.

A recent example of a land restoration project performed by CEA involved a former rifle range and skeet shooting property located in south/central Massachusetts for which soils and sediments had become contaminated by lead and arsenic from the gunshot. Following the initial discovery of an Imminent Hazard condition posed by lead and arsenic-impacted soil and sediment at the Site, CEA performed Phase I & II site assessments, human health and ecological risk assessments, remedial designs, Brownfields support, contractor bidding support, remedial oversight, and development of closure documentation which led to what is presently unrestricted reuse of the property for passive recreation.

Project Highlights include:

- Completed Massachusetts Contingency Plan (MCP) Phase I and II Assessment Activities, and successfully defined the nature and extent of arsenic and lead impacts in upland soil, wetland soils, sediment and surface water throughout subject property and abutting property.
- Drafted Proposal to USEPA Region I Brownfields Division in November 2004 which led to the Town being awarded a USEPA Brownfields Cleanup Grant totaling \$200,000 in May 2005.
- Drafted Proposal to Massachusetts Executive Office of Environmental Affairs (EOEA) in November 2005 which led to the Town being awarded a \$63,551 Brownfields Assessment Grant in February 2006.
- Drafted Proposal to USEPA Region I Brownfields Division in October 2009 which led to the Town being awarded a second USEPA Brownfields Cleanup Grant totaling \$200,000 in August 2010. Also assisted Town in Preparation of Contractor Documents, Bidding Process and Oversight of Cleanup Effort.
- Prepared all remedial designs, construction documents, and technical specifications for the cleanup project and oversaw all aspects of the contractor bidding and selection process, and the remedial action which led to the cleanup of the property, and assist the Town in Complying with Federal, State and Local Rules, Regulations and Guidelines.
- Obtained all Environmental Permits and assisted the Town in Complying with terms of three Brownfield Grants which included at a minimum: (1) development of Master and Site-Specific QAPPs to satisfy the technical requirements of the Grants; (2) preparation and implementation of Community Relations Plans (CRPs), and (3) ongoing preparation of Project Status Reports to the state and federal government.

