



EDi No. 108 Colonie Interim Storage Site FUSRAP

22. Year Completed Professional Service:	Year Completed Construction: (if applicable)	1130 Central Avenue Colonie, New York 12205
2002	2007	Contract Role: <input type="checkbox"/> Prime Contractor <input checked="" type="checkbox"/> Subcontractor
CAGE Code: ID1U3		DUNS Number: 61.680.5073

23 a. Project Owner/Customer:	23 b. Point of Contact Name:	23 c. POC Contact Info.:
Shaw Environmental & Infrastructure, Inc. 13 British American Boulevard Latham, New York 12110	Kevin Dufek Project Manager	518.783.1996, phone 518.783.8397, fax kevin.dufek@shawgrp.com

Key Personnel:			
Mike Bradshaw, VP	Albuquerque Corporate	mbradshaw@edi-nm.com	505.341.3578
Mike Marable, Project Manager	Tennessee Satellite Office	mmarable@edi-nm.com	865.482.7789

24. (Include scope, size, and cost) Brief Description of Project and Relevance to this Contract:	
Awarded Price: \$4,100,000.00	Final/Projected Cost: \$4,100,000.00
Award Date: 1998	USACE Contract NO: DACW41-01-D-0031 Contract No.: Shaw P.O. #203603
Period of Performance: 1998 – 03.02.2007	Final or Projected Schedule: 03.02.2007
Contract Type: <input checked="" type="checkbox"/> Firm Fixed Price <input type="checkbox"/> Cost Reimbursement <input type="checkbox"/> Time and Materials <input type="checkbox"/> Cost Plus Fixed Fee <input type="checkbox"/> Cost Plus Award Fee <input type="checkbox"/> Performance Based	
Type of Work Performed: 562910, Environmental Remediation	
% of Work Self Performed: 100%	% of Work as Subcontractor: 100%
Comments/Notes: EDi's performance to date is exemplified by the client's decision to make multiple subsequent awards to EDi on a non-competitive basis. EDi was originally awarded a one-year contract in 1998.	

Technical Representative (if applicable):	Tech Rep. Agency & Address:	Tech Rep. Contact Info.:
David Sendra Site Super	Shaw Environmental & Infrastructure, Inc. 13 British American Boulevard Latham, New York 12110	518.783.1996, phone 518.783.8397, fax david.sendra@shawgrp.com

Background

The site consists of a total area of 11.2 acres plus 56 vicinity properties. The site was owned and operated by National Lead Industries (NL) from 1937-1984. The facility was used for electroplating and manufacturing various components using uranium and thorium. Radioactive materials released from the plant exhaust stacks spread to site buildings, portions of the grounds, and 56 commercial and residential vicinity properties (VPs). NL also dumped/filled in large portions of the site with metals (mostly lead) contaminated casting sands. The New York State Supreme Court shut down the NL plant in 1984.



Colonie FUSRAP Site, Colonie, New York

Responsibility for the Colonie site was assigned to the U.S. Department of Energy (DOE) as a decontamination research and development project by the U.S. Congress through the *Energy and Water Development Appropriations Act* of 1984. DOE placed the site in their Formerly Utilized Sites Remedial Action Program (FUSRAP). In October 1997, responsibility for executing FUSRAP was transferred from DOE to the USACE by further

Congressional action. Uranium, thorium, lead, copper and tetrachloroethene are the principal contaminants at the site. Two types of contaminated media are present at the site: source media (which includes soil, processing waste, and bulk waste) and remnants of structures on Colonie.

Remediation of the site is performed through the Formerly Utilized Sites Remedial Action Program (FUSRAP), administered by the U.S. Corp of Engineers (USACE). Uranium, thorium, lead, copper, and tetrachloroethene are the principal contaminants at the site. Two types of contaminated media are present at the site: source media (which includes soil, processing waste, and bulk waste) and remnants of structures on Colonie.



Remediation work at the Colonie FUSRAP site.

Scope of Work

Under this \$4.1 million project, EDi is the Radiological Services Subcontractor responsible for providing technical and professional health physics services, instrumentation and operation of on-site gamma spectroscopy laboratory. EDi is responsible for the implementation of a comprehensive Radiation Protection Program (RPP) to support the remediation of soils contaminated with Uranium and other uranium waste materials. EDi currently provides senior and junior cross-trained radiological control and industrial hygiene technicians. Other services provided include: CHP support, radioactive waste management support, transportation/ disposal support, GPS/GIS support, and environmental sampling support. EDi established the radiological program at Colonie per the following regulatory guidance documentation:

- ❑ USACE, Management Guidelines for Low-Level Radioactive Waste (LLRW) and Mixed Waste (MW) Site Remediation, EM 1110-35-1, 30 June 1997
- ❑ USACE, Radiological Safety, ER 385-1-80, 30 May 1997
- ❑ USACE, Radiation Protection Manual, EM 385-1-80, 30 May 1997
- ❑ NRC Regulation 10 CFR 20 Standards for Protection Against Radiation
- ❑ DOD 1997, Multi-Agency Radiation Survey and Site Investigation Manual (MARRSIM), NUREG-1575, EPA 402-R-97-016, Department of Defense et al., December 1997
- ❑ EPA 520/1-88-020, Federal Guidance Report No. 11, Limiting Values of Radionuclide Intake and Air Concentrations and Dose Conversion Factors for Inhalation, Submersion, and Ingestion, 1988.
- ❑ NRC Regulatory Guide 8.25, "Air Sampling in the Workplace"
- ❑ EDi; Health Physics Operational Procedures Manual

Since 1998, EDi has conducted thousands of pre-remediation, remediation and post-remediation Radiation surveys at the Colonie Site and has collected over 2,000 samples.

Pre-remediation Activities

Pre-remediation activities included establishing and delineating site boundaries and work areas, implementation of site radiological monitoring equipment, performing contamination control surveys, implementing a comprehensive radiological and safety monitoring program for soil, sediment, surface water, ground water and air to ensure the Colonie Site's compliance with all federal, state and local requirements. This information was used to establish work boundaries, identify key site features, represent sampling locations and delineate excavation areas. EDi's Professional Health Physics Staff and Shaw worked with multiple agencies (i.e., USACE, EPA, New York State) to establish Derived Concentration Guidelines (DCGLs) for cleaning up the radiological contamination at Colonie.



RCTs on site at Colonie FUSRAP



EDi developed a correlation study for the excavation of soils to determine the approximate counts per minute on a FIDLER (Field Instrument for Detecting Low Energy Radiation) to pCi/gm of soil. EDi collected count rate data taken at selected *in situ* locations with the FIDLER; collected a 12" x 3" sample and counted the sample using an on-site gamma spectroscopy detection system using a high efficiency Germanium Lithium (GeLi) detector to determine the exact amount of U-238 in the soil. The sample results were then compared to the original counts in the field with the FIDLER and a correlation was developed. Once this correlation was developed, EDi used the FIDLER to field screen and compare against the derived site DCGLs to protect against over excavation of soils. This systematic approach was reviewed and endorsed by USACE and was implemented for site activities in 2000. EDi used Global Positioning System (GPS) and ArcView software connected to a portable gamma radiation detector to determine the exact locations of data points, sample points and excavation/survey grids during the excavation process. The data was downloaded and correlated to civil survey horizontal site coordinates to provide mapping and other representative tools for progress analysis.

Remediation Activities

Remediation activities performed included maintaining site contamination control by conducting personnel monitoring, equipment and materials monitoring and routine site surveys. EDi established Radiation Control Areas (RCA); personnel and equipment were scanned for radiation upon exiting control area; issued and tracked dosimetry to workers, created and assigned Hazardous Work Permits for worker protection, issued PPE (Personal Protective Clothing) assignments, and maintained the ALARA (As Low As Reasonably Achievable) Program. EDi also implemented the radiation worker training EDi also conducted industrial hygiene monitoring for airborne contaminants and hazards in work areas and in worker breathing zones for emissions of CO, CO₂, H₂S, Organic Vapors, and Explosive Atmospheres. EDi strictly followed EM-385-1-1, USACE Safety and Health Requirements (9/96, 11/03) for implementation of the site Health and Safety Plan. EDi also utilized portable radiation detection instrumentation to guide the excavation of more than 150,000 cubic yards of radiologically contaminated soils at Colonie. EDi operated and maintained the on-site gamma spectroscopy laboratory which featured a High Purity Germanium Detection System to analyze soil samples in support of soils remediation.

Post-Remediation Activities

EDi implemented and completed over 50 MARSSIM/ Final Status Surveys to ensure that the applicable soil cleanup criterion had been achieved. The GPS/GIS system was utilized to determine the location of sampling points and verification of survey data in the MARSSIM Final Status Survey process. The on-site gamma spectroscopy capability was key in expediting the remedial action process. All MARSSIM surveys were completed with no additional requirement to excavate or remove contaminated soils from the final survey units.

EDi operates the onsite radiological/analytical laboratory; performs radiological testing, sampling, analysis and training; develops work permits; and provides radiation detection instrumentation for the site. EDi's onsite staff includes a Radiological Control Supervisor, Radiological Control Technicians and a Laboratory Manager. EDi's Health Physics staff has implemented statistical evaluations of radiological contamination under MARSSIM guidance.