



PROFESSIONAL PROFILE



Jesse Freeman, PE

Senior Engineer II

EXPERIENCE SUMMARY

Over twenty years of experience in environmental remediation, regulatory compliance, vapor mitigation, and construction projects: Senior Engineer II at Roux (2024-present); The Vertex Companies, Inc (2011-2024), and GeoInsight Inc. (now Verdantas) (2002-2011).

TECHNICAL SPECIALTIES

Mr. Freeman is a Massachusetts Licensed Site Professional (LSP); a registered Professional Engineer (PE) in Massachusetts, Rhode Island, and New Hampshire; and maintains the [National Radon Proficiency Program](#) (NRPP) radon measurement, mitigation, and radon-resistant new construction certification. Mr. Freeman's expertise includes environmental engineering; site investigation; remediation; environmental permitting; and compliance for stormwater, wastewater, and air emissions. Mr. Freeman has worked on a wide variety of projects and has successfully conducted remediation for releases of chlorinated solvents, metals, petroleum, LNAPL/DNAPL, VOCs, SVOCs, PAHs, PCBs, reactive and hazardous waste, and sub-slab and indoor air contamination. Projects for which Mr. Freeman has provided environmental services have ranged from small residential releases, gasoline stations, and dry cleaners, to large industrial operations, off-shore oil spills, and multi-acre brownfield projects undergoing development.

Mr. Freeman's technical expertise includes:

- Design and evaluation of engineering remedies to remediate and/or mitigate environmental contamination in soil, sediments, groundwater, soil vapor, and indoor air.
- Environmental remediation using in situ treatment (oxidation, biological agents, reductive amendments, mechanical remediation, LNAPL recovery, and excavation).
- Design, construction and operation of vapor mitigation systems using vapor barriers, sub-slab depressurization systems, positive pressure (air recirculation) systems, and air filtration.
- Environmental compliance including the preparation of Emergency Planning and Community Right-to-Know Act, Spill Control Countermeasure Plans (SPCCs), National Pollutant Discharge Elimination System (NPDES) both industrial and construction related NOIs, Limited Plan Approval (LPA) and Non-Major Comprehensive Emissions Plans, Source Registration and Toxic Use Reduction Act (TURA) Reporting.
- Environmental Data Analysis includes establishing a database and GIS system to track more than 3,000 chemicals and chemical groups.
- Developed corporate training programs, standard operating procedures used to guide environmental investigation and remediation, and health and safety programs to maintain compliance with the Occupational Safety and Health Administration (OSHA).

REPRESENTATIVE PROJECTS

Radon Measurement & Mitigation

- **Project Manager and Certified Radon Measurement Professional and Radon Mitigation Specialist for the Sampling and Mitigation of Radon within a School Building.** Conducted a radon sampling event in accordance with ANSI/AARST MA-MFLB-2023 Protocol for Conducting Measurements of Radon and Radon Decay Products in Multifamily, School, Commercial and Mixed-Use Buildings. Radon sampling indicated elevated radon concentrations within an office on the lower floor of the school. The school was constructed directly on bedrock, and a bedrock outcrop was present within the office and the neighboring storage space (which was behind a block and concrete wall).

CONTACT INFORMATION

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EDUCATION

MS, Environmental Engineering
University of Massachusetts –
Lowell, 2002
BA, Environmental Policy and
Analysis, Minor in Computer
Science, Boston University,
1998

PROFESSIONAL LICENSES

Licensed Professional Engineer
Commonwealth of
Massachusetts (#52993)
State of Rhode Island
(PE.0014996)

Radon Measurement
Professional, Certified by the
National Radon Proficiency
Program (NRPP), NRPP
Certification #108637-RMP

Radon Mitigation Specialist,
Certified by the National
Radon Proficiency Program
(NRPP), NRPP Certification
#108891-RMS

AARST Advanced Radon
Measurement/Mitigation
Professional (ARP)

PROFESSIONAL AFFILIATIONS

Licensed Site Professional
Association

This created a unique challenge, where the route of entry where the route of entry could not be mitigated using standard sub-slab depressurization system. To address the issue, Roux constructed an “airtight” PVC box around the outcrop in the office and connected PVC piping to the box to work as the radon mitigation system.

Environmental Remediation and Development

- **Brownfields Redevelopment Cambridge, Somerville, and Boston, Massachusetts.** The project manager and LSP of record for the remediation of a 37-acre parcel as part of redevelopment of the property from industrial activities to mixed-use residential, commercial, life sciences, commercial space, and green space. Contamination at the project included PCB at concentrations regulated under the Toxic Substances Control Act, asbestos containing materials, heavy metals, VOCs, SVOCs, sulfide reactive soil, characteristic hazardous waste, LNAPL (petroleum), and DNAPL (MGP). Oversaw the submittal of Permanent Solutions as required by the Massachusetts Contingency Plan on parcels closed with and without Activity and Use Limitations (AULs). Successfully completed closure of a parcel with LNAPL present at measurable quantities using the MassDEP approved LNALP transmissivity calculations. Coordinated the environmental activities associated with the installation of the majority of the projects subsurface utilities roadways, pedestrian walkways, parks, and public transportation system connections. Designed water treatment systems to treat water from the building underdrain systems to allow off-site discharge to the City of Cambridge stormwater system. This project was multi-disciplinary in addition to meeting the regulatory requirements described above, environmental solutions were developed to complement the work proposed by other members of the project design team (Civil Engineers, Architects, Landscape Architects, Geotechnical Engineering). The preparation and submittal of Massachusetts Department of Revenue Brownfields Tax Credit applications totaling nearly \$20,000,000.00.
- **Former Industrial Plot Development, Wayland, Massachusetts.** Project Manager and principal decision maker for the redevelopment of a parcel of land formerly occupied by a defense contractor. Releases of PCBs, CVOCs, coal and coal ash, and metals to soil and groundwater were identified at the project. Coordinated the excavation, cleaning, removal of multiple underground storage tanks (USTs), and subsurface structures (former building rooms that had been abandoned in place), hydraulic lifts were encountered during development of the property. Designed and oversaw the installation of sub-slab vapor mitigation systems to mitigate petroleum and chlorinated solvent vapors from entering buildings being constructed at the development site.
- **Petroleum Service Station, Connecticut.** Designed a remediation system to address release of petroleum hydrocarbons to the subsurface. The release occurred from a gasoline station located at the top of a hill. In addition, a release from an adjacent dry cleaner was co-mingled with the petroleum release. Petroleum hydrocarbons traveled down to a depth of approximately 25 feet below grade at the service station, to 3 to 5 feet below ground surface at the head of the plume. Remediation was initiated at the property by the former station owner who used in situ chemical oxidation (ISCO) to remediate the release. Approximately \$750,000 had been spent to remediate the release and LNAPL was still present in the subsurface. Recognizing that ISCO was not the appropriate remedy as the majority of the oxidant was consumed by the surrounding soil, designed a soil vapor extraction (SVE) and air sparge (AS) system to complete remediation. Within 30 minutes of activation, the soil vapor extraction system had collected the remaining LNAPL. LNAPL was no longer present at measurable quantities at the project site. Based upon this success, CTDEP requested that this system be used to train their personnel for the construction, and operation of SVE and AS systems for which I provided multiple training sessions.
- **CERCLA Superfund Landfill, New Hampshire.** Responsible for coordinating environmental investigations to evaluate potential remedial options for multiple releases coming from a former municipal landfill. Releases included VOCs, metals, methane, landfill leachate, methyl mercaptan, and corrosive groundwater. Conducted a field gas chromatography (GC) testing program to identify the extent of a VOC plume below the northern portion of the landfill. The GC successfully identified the extent of the release by analyzing samples of groundwater on-site. The release was identified in both the northern portion of the landfill, and in areas along the eastern portion of the landfill which were previously not identified. Field GC results were generally within 10% of those samples submitted for analysis at an independent laboratory. A second release was identified to extend from the landfill to a nearby river. Coordinated and collected samples of river sediment samples to be submitted for site-specific toxicological analysis. Toxicological analysis was conducted at a laboratory using benthic organisms which concluded that the release was not affecting the river organisms. A third release was identified in groundwater migrating towards the town pond used for potable water. This release included the chemicals identified in other releases at the landfill; however, groundwater in this area was also highly corrosive. The groundwater sampling program was initiated to help design a groundwater extraction system to collect the impacted groundwater before it discharged to the pond. Due to the corrosive nature of the groundwater the groundwater treatment system was required to use stainless steel components.



• **CERCLA Superfund Landfill, Massachusetts (2004-Present).**

Primary field technician evaluating a release from a former drum disposal project in Massachusetts. Duties included overseeing the installation of groundwater monitoring wells, advancement of soil borings, installation of a sheet pile wall containment cell, and the implementation of the remedial alternative ISCO using potassium permanganate within the sheet pile walls. DNAPL (CVOCs) was present in several wells. Concentrations of CVOCs identified during the installation of the groundwater monitoring wells were high enough that Level B personal protective equipment was required during the installation of groundwater monitoring wells. The ISCO mitigation was successful in reducing the overall contaminant mass; however, layers of silt and clay present in the subsurface continued to act as a source of contamination. Using knowledge of the Site, the limitations, and requirements from the USEPA during the initial work, vetted remedial contractors to continue and complete the remediation at the property.

PROFESSIONAL TRAININGS

Multi-Family Measurement Certificate (MFM)

Multi-Family Mitigation Certificate (MFMT)

Radon Resistant New Construction Certificate (RRNC)

Member Technical Practices Committee heading up the Artificial Intelligence and Emerging Technologies effort.

Presentation for Emerging Professionals “to LSP or Not LSP” – March 2024

Indoor Environments Association (formerly AARST)

OSHA 29 CFR 1910.120 40-hour Safety Trained

OSHA 29 CFR 1910.120(e)(8) 8-hour Refresher

OSHA 29 CFR 1910.120 8-hour Site Supervisor Trained

OSH 10-Hour Construction