

453 Pine Street Brownfield Redevelopment, Burlington, Vermont

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ENVIRONMENTAL
100% EMPLOYEE-OWNED

Services / Expertise

EPA-Funded Brownfield Redevelopment
Brownfield Economic Revitalization Alliance
Site-Specific Quality Assurance Project Plan
Remedial Site Investigation / Phase III ESA
Environmental Assessment and Remediation
Brownfields Redevelopment
High-Resolution Site Characteristics
NAPL Delineation and Monitoring
Groundwater Monitoring
Vapor Intrusion Assessment and Mitigation
Urban Soil Management

Markets

Commercial Site/Property Owners
State and Local Government

Project Location

Burlington, Vermont

Date Completed

2013-2016, 2018 to present

Project Owner

453 Pine Enterprises, LLC

Project IDs#

13-082, 15-147, 2022-1060

Project Manager

Daniel Voisin

Project Team

Dan Voisin, Les Carver, PG, Peter Lazorchak, PE, LEED AP, Lee Rosberg, Katrina Mattice, PE, Annemarie Fortune, Brandon Martin, PE, Meghan Arpino, Sandra Walser, Laura Rajnak, Erin Coates, EIT, Jodie Wright, Jenn Cypher

Subcontractors

Cascade
Platform
Pace Analytical
Eurofins
GeoDesign
Weston & Sampson Engineers
Button Surveying
Arrowwood Environmental
US Ecology



453 Pine Street and surroundings, 1953.

THE 453 PINE STREET property in Burlington, Vermont has been the focus of several attempts at redevelopment dating to the 1980s. The site, residing in a growing section of Burlington's south end, is positioned immediately adjacent to the Pine Street Canal Superfund Site and has institutional controls limiting the types of development and requires any development not adversely affect the Superfund Site remedy. In addition, physical characteristics and the natural setting of the property require non-standard design for foundations and stormwater management. Dense, Non-Aqueous Phase Liquid (DNAPL) coal tar can be found on the site and Superfund Site resulting from past use of the 501 Pine Street property for coal gas manufacturing.

In 2005, Stone conducted a thorough review of existing site conditions, opportunities, and constraints regarding potential site development. Working with the client, state and federal regulators, and an engineering partner, we developed a clear understanding of permissible development at the site, including appropriate stormwater management alternatives. We determined which stormwater treatment standards and treatment practices applied to the site under Vermont's 2002 stormwater regulations and created a conceptual stormwater management scenario that was tested using a two-dimensional hydrogeologic model. The information we provided was used for decision-making by the client and other stakeholders.

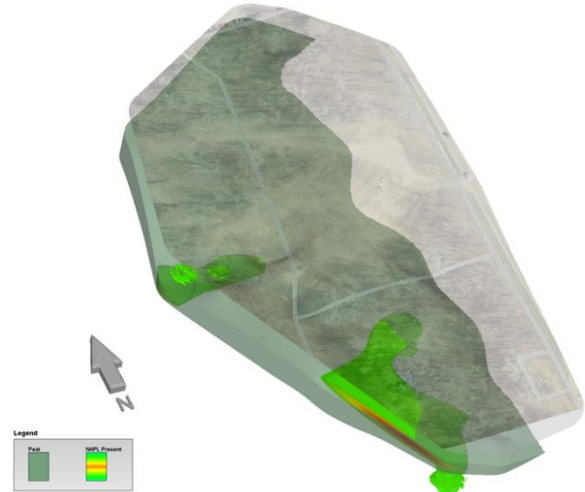
In 2013, the site was selected to participate in the Brownfield Economic Redevelopment Alliance (BERA) pilot program and Stone was retained by the Property Owner to expand upon our earlier work for this brownfield redevelopment project of a former industrial property adjacent to the Pine Street Canal Superfund site. Site investigation tasks have included delineation of coal tar non-aqueous phase liquid (NAPL) and polycyclic aromatic hydrocarbons (PAHs), geotechnical assessment, geotechnical project feasibility, stormwater feasibility, and development of an ongoing monitoring program to ensure a proposed redevelopment would comply with institutional controls related to the Superfund site. NAPL delineation efforts included high-resolution site characterization using Tar-Specific Green Optical

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Screening Tool (TarGOST®) with confirmation soil borings. Stone developed an ongoing monitoring program to capture natural variability within the hydrogeologic system of the site such to allow for comparison of conditions during and following construction. The monitoring program include the installation of groundwater monitoring wells with pressure transducers equipped with telemetry. Geotechnical evaluations were performed by project partners (Weston & Sampson) to evaluate the feasibility of constructing a commercial office building. Findings of the assessment and monitoring program were presented to City of Burlington, Chittenden County Regional Planning Commission, US EPA Superfund and Brownfield Divisions, and Agency of Natural Resources staff. Ultimately, the cost of redeveloping the site for a commercial office building was too great in comparison to the expected revenues.

In 2021, with the passage of Vermont H315, brownfield redevelopment funding has been made available from the State of Vermont General Fund surplus. Stone is currently completing an Evaluation of Corrective Action Alternatives and re-implementing the Ongoing Monitoring Program with a focus on a planned redevelopment of the 453 Pine St. property. Current redevelopment plans call for construction of a Nordic bathhouse and spa and bowling alley and restaurant. Remediation of the site is expected to begin in the fall of 2023.



Three-dimensional visualization of the extent of coal tar non-aqueous phase liquid in peat deposits at the 453 Pine Street Property.