453 Pine Street Brownfield Redevelopment, Burlington, Vermont

STONE 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
Brownfield Redevelopment
High-Resolution Site Characteristics
NAPL Delineation and Monitoring
Groundwater Monitoring
Community Involvement
Zoning Review
Permitting
Stormwater Management
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, 2018-2019; 2022-present

Project Owner
453 Pine Enterprises, LLC

Project IDs#
13-082, 15-147, 2022-1060

Project Team
Dan Voisin (Project Manager); Les Carver, PG; Peter Lazorchak, PE; Katrina Mattice, PE; Annemarie Fortune; Brandon Martin, PE; Alex Huizenga, EIT; Julia Marcello; Meghan Arpino; Laura Rajnak; 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 since 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 that can occur on the 453 Pine Street site. Development must 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 both sites resulting from 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 to development. Working with the client, state and federal regulators, and an engineering partner, we developed a clear understanding of permissible development, including stormwater management alternatives. We determined what 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 for inclusion in the Brownfield Economic Redevelopment Alliance (BERA) pilot program, and Stone was retained by the property owner to expand upon our earlier work. Site investigation tasks have included delineation of DNAPL coal tar 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.

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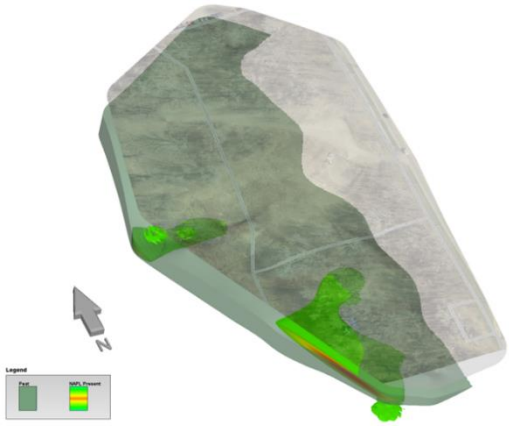
DNAPL delineation efforts included high-resolution site characterization using the Tar-Specific Green Optical Screening Tool with confirmation soil borings.

Stone developed an ongoing monitoring program to capture natural variability within the hydrogeologic system of the site to allow for comparison of conditions during and following construction. The monitoring program includes installing groundwater monitoring wells with pressure transducers equipped with telemetry. Geotechnical evaluations were performed by project partners to evaluate the feasibility of the construction of a commercial office building. Findings of the assessment and monitoring program were presented to the City of Burlington, Chittenden County Regional Planning Commission, US EPA Superfund and Brownfield divisions, and the Vermont Agency of Natural Resources. Ultimately, the project owner determined the cost of redeveloping the site was too great.



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

In 2021, with the passage of Vermont H315, the state made brownfield redevelopment funding available through the General Fund surplus. A new development team is considering the site for a Nordic bathhouse project. In 2023, Stone completed an Evaluation of Corrective Action Alternatives and re-implementing the Ongoing Monitoring Program with a focus on a planned redevelopment of the 453 Pine Street property, and presented the project to the Burlington Conservation Commission and Planning and Zoning Review boards, as well as neighborhood and local conservation groups. Stone is preparing the Corrective Action Plan, bid specifications, and permit applications for city and state stormwater and wetland permits, among others.

Construction of the project is slated to begin in late spring 2024.