



King County

Department of
Natural Resources and Parks
Solid Waste Division

**KING COUNTY BROWNFIELDS PROGRAM
12th AVENUE AND EAST JEFFERSON STREET PROJECT
BROWNFIELDS ASSESSMENT FACT SHEET #3
NOVEMBER, 2009**

Project Name:	12 th Avenue & East Jefferson Street Workforce Housing Project.
Location:	The project site now consists of one parcel located at the northeast corner of 12 th Avenue and East Jefferson Street in the Squire Park neighborhood of Capitol Hill. The address is 500 12 th Avenue, Seattle WA, 98122.
Site Description:	The subject parcel is an empty 0.22 acre lot with parcel number 7948300165.
Site History:	The site was residential until 1926 when a one story gasoline station and garage was built on the western half of the property. This station was in business up until the 1950s when it became primarily an auto repair facility. In the 1960s it was used as a trailer rental office. In the 1970s, the site was acquired by Seattle University who tore down the existing structure and converted the lot into parking. In 1990, Seattle University sold it to the City of Seattle who has used it most recently as a staging and storage area for construction materials. Reports from 1990 indicate that two 750 gallon underground storage tanks (USTs) were removed in late 1989 by a geotechnical contractor working for Seattle University.
King County Brownfields Program:	The King County Solid Waste Division has received grant funds from the U.S. Environmental Protection Agency (EPA) to conduct environmental assessment and cleanup on contaminated brownfield properties. King County's Brownfields Program uses the funds to hire consultants to conduct the assessment and cleanup work on behalf of public and nonprofit entities. For more information on the Brownfields Program visit the website at: http://your.kingcounty.gov/solidwaste/brownfields/index.asp .
Assessment Description:	Using its consultant, the King County Brownfields Program conducted a Phase I environmental site assessment (ESA) on this site in December 2008 and January 2009. The Phase I verified the above site history and also identified the following recognized environmental conditions (RECs) on the site: the former service station and auto repair facility represent potential sources of petroleum contamination to soil and/or groundwater. In addition, dry cleaning operations north of the site represent a potential threat of solvent contamination migrating on site. In April 2009, the consultant prepared a Quality Assurance Project Plan (QAPP) which was approved by EPA to direct field activities for a Phase II ESA which was conducted in August 2009. Subsurface investigation consisted of drilling nine borings at the site. Eight of these borings were drilled to between 14 and 22 feet below ground surface and one was advanced to 52 feet. Soil samples were collected at less than 10 feet in three of the bore holes and between 14 and 17 feet in all of the bore holes. Groundwater samples were collected from seven of the boreholes. The samples were analyzed for petroleum hydrocarbons; Benzene, Ethylbenzene, Toluene and Xylenes (BETX); and lead. Selected samples analyzed for volatile organic compounds (VOCs) and chlorinated solvents (i.e. halogenated VOCs). A Phase II ESA Report that detailed findings from the soil and groundwater sampling program was released in October 2009.

Reason for Assessment:	<p>Capitol Hill Housing (CHH), a community based non-profit housing development and management organization is planning to buy the property and redevelop it into workforce housing and commercial space to anchor the 12th Avenue Neighborhood Business District. Due to the possibility of petroleum contamination from the former gas station, CHH needed an ASTM Phase I Site Assessment to establish itself as a bona fide prospective purchaser with limited liability for cleanup under EPA regulations.</p> <p>When the Phase I ESA report was completed, it confirmed the site history and recommended a follow-up Phase II environmental site assessment be completed to characterize soil and groundwater for petroleum and possibly solvent contamination.</p>
Results:	<p>The Phase II assessment confirmed the presence of significant petroleum contamination on the west side of the property in both soil and groundwater. Gasoline-range hydrocarbons above Washington State Department of Ecology Model Toxics Control Act (MTCA) Method A cleanup standards (30 mg/kg) were detected in soils from five borings at depths of 5.5, 7.0, 10.5, and 16.5 feet below ground surface. The highest concentration was at 12,000 mg/kg in boring B-4 at 16.5 feet and the lowest was 220 mg/kg in B-6 at 14 feet. Free product was observed in B-4 between depths of 16 feet and the bottom of the hole at 18 feet. Benzene concentrations above cleanup standards of 0.03 mg/kg were also detected in four of the above five borings. None of the soil samples contained detectable chlorinated solvent.</p> <p>Shallow groundwater was found at between 15 and 19 feet below ground surface and water samples from four contained petroleum hydrocarbons above the state MTCA cleanup level of 1000 µg/L. Water from B-4 contained 22,000 µg/L gasoline plus 2,400 µg/L benzene and 2,820 µg/L total xylenes. The cleanup standards for benzene and xylene are 5 and 1000 µg/L respectively. Water from B-9 contained 8,200 µg/L gasoline 17 µg/L benzene plus 770 µg/L ethylbenzene whose cleanup standard is 700 µg/L.</p>
Conclusions/ Next Steps:	<p>The Phase II assessment identified significant petroleum contamination on the site. The total extent of the plume is unknown; since borings B-4 and B-3 were the westerly most borings drilled and found contamination within 10 feet of the property line. This contamination could very well have migrated beyond these sample points and into the city's right-of-way. In addition, the depth of contamination is unknown. Free product was observed in B-4 all the way to the bottom of the hole at 18 feet, and field instrumentation detected organic vapor readings in the bottom of B-3 and B-5 which reached 21 feet below ground surface.</p> <p>Further programs will be necessary to obtain enough information to develop a cleanup action plan (CAP) for the site. A CAP requires 1) evaluation of the nature and extent of the contaminant plume, 2) evaluation of remedial alternatives, and 3) implementation of pilot studies, bench scale tests and/or treatability studies to cleanup the site.</p> <p>Because of the high levels of petroleum contamination, and the fact that the extent and depth of the plume are unknown, these next steps will be expensive and time consuming.</p>
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