PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

TAX PARCEL 005019 00001C
EAST G.E. PATTERSON AVENUE AND HADDEN STREET
MEMPHIS, TENNESSEE 38126

EnSafe Project Number
0888810687/PH25.P and PH25.H

Prepared for:

Wolf River Brownfield Assessment Project
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March 15, 2013

Executive Summary

In support of the Wolf River Brownfields Assessment Project, EnSafe conducted a Phase I Environmental Site Assessment (ESA) of Tax Parcel 005019 00001C at East G.E. Patterson Avenue and Hadden Street in Memphis, Shelby County, Tennessee (subject property). Based on the Phase I ESA findings and recommendations, the subject property was selected for a Phase II ESA.

Site Description

The 0.264-acre vacant, unused subject property is irregularly shaped with a triangular portion at the north end (northern parcel) and a rectangular portion at the south end (southern parcel). Inner Vision Development Corporation purchased the subject property in 2007. The northern parcel is paved with deteriorated and cracked concrete, and the southern parcel is grass covered. The subject property and southeast-adjoining 0.09-acre property (Tax Parcel 005019 00002 at 521 South Third Street) — currently known as the Don Brignole Site — comprise a triangular piece of land bound on the north and east by South Third Street, on the south by East G.E. Patterson Avenue, and on the west by Hadden Street. Tax Parcel 005019 00002 is not part of the subject property.

An automobile hydraulic lift system and associated piping was discovered during the pre-drilling utility clearance survey. Hydraulic lift systems utilize an underground reservoir typically containing 60 gallons or less of hydraulic oil. Based on site observations, the underground hydraulic reservoir is assumed to remain onsite. Hydraulic automobile lift systems are exempt from current underground storage tank (UST) regulations.

Site History

The northern parcel was undeveloped in the late 1880s to early 1900s, at which time the north and east borders were the Gayoso Bayou. From 1932 to 1969, the northern parcel was developed with an irregularly shaped building that fronted South Third Street and Hadden Street and was occupied by automobile repair, tire sales and service, and wholesale automobile parts businesses. The building was demolished circa 1970, and the parcel sporadically used to park vehicles, semi-trucks, and/or trailers. Within the past decade, vehicle parking has ceased and the concrete appears to have deteriorated and become partially overgrown with grass.

The southern parcel was developed residentially in the mid- to late 1800s with single-family homes fronting Hadden Street, Rayburn Boulevard (prior name of South Third Street), East Calhoun Avenue (prior name of East G.E. Patterson Avenue) through the early 1900s. At the turn of the century, the ground floors of buildings fronting East Calhoun Avenue became stores and restaurants, with residents occupying upper floors. The Plaza Hotel operated at this corner from 1913 to 1958, providing service to the Union Station railroad depot to the southwest, across East Calhoun Avenue. The building was demolished circa 1970, and the parcel has remained unused.

Previous Environmental Investigations

In the Shelby County Brownfields Council Phase I ESA Application, the property owner, Mr. Gerald Robinson, indicated no knowledge of prior environmental assessments of the subject property. EnSafe was not made aware of or provided for review any prior environmental assessments during the Phase I ESA. During the Phase I ESA, EnSafe obtained documents related to building demolition and UST removal on the east-adjoining property.

Recognized Environmental Conditions

The historical uses of the northern parcel for automobile repair and tire sales and service and the east adjoining property (the Don Brignole Site) as a gas station and for automobile service and repair occurred prior to promulgation of environmental regulations that controlled the use, storage, and disposal of hazardous substances and petroleum products, and regulated closure of UST systems. Visual evidence of a release from historical operations onsite was not observed during the Phase I ESA. Based on the historical use as a gas station, the incomplete and/or non-compliant UST removal documentation, and potential for removal activities (particularly the emptying of hazardous waste sand/soil material) to have encroached on the subject property is considered a *recognized environmental condition* in connection with the subject property.

Phase II ESA Results and Recommendations

The Phase II ESA field investigation was performed January 8-10, 2013, to evaluate the potential release of hazardous materials and/or petroleum hydrocarbons to the subject property. Groundwater samples were collected from three temporary monitoring wells and soil samples were collected from nine soil borings for laboratory analysis. Below is a summary of the findings and recommendations for additional site action.

Groundwater Analytical Results

Laboratory analysis of groundwater samples detected four volatile organic compounds (VOCs) and seven polynuclear aromatic hydrocarbons (PAHs) in groundwater. Trichloroethene was the only VOC that exceeded the U. S. Environmental Protection Agency (USEPA) tap water regional screening level (RSL), but was below its USEPA maximum contaminant level for drinking water. Based on these results, no additional action is recommended regarding groundwater at the subject property.

Soil Analytical Results

Laboratory analysis of soil samples detected VOCs, metals, and PAHs. All VOC detections were below screening criteria. Arsenic exceeded its residential and industrial RSLs, but was below the generally accepted Shelby County residential arsenic background level. Lead was detected in one sample exceeding its residential RSL, but was below its industrial RSL.

Laboratory analysis indicated PAHs are present in soil at concentrations exceeding the Tennessee urban background concentration of 1 milligram per kilogram (mg/kg) for benzo(a)pyrene (BAP). As discussed in Section 5.2.3 of this report, a group of six PAHs with characteristics similar to BAP can be converted to BAP equivalent (BEQ) concentrations and compared to the BEQ urban background concentration to evaluate potential contamination associated with these compounds. The BEQ concentrations for this site ranged from 0.091 mg/kg to 34.4 mg/kg. The two highest BEQ concentrations were 19 mg/kg and 34.4 mg/kg in 0 to 1 foot deep samples collected from the southeastern portion of the site; the other 16 BEQ concentrations were less than 6 mg/kg. All exceedances were limited to the surficial 2 feet of soil in the grassy southern portion of the site.

Soil sample locations in the southern portion of the site were biased to the property boundary between the subject property and the Brignole property to the east. The Phase I ESA identified a recognized environmental condition associated with the removal of USTs in which potentially hazardous waste sand/soil material from inside the USTs was emptied onto the subject property along the property boundary. Information discovered during the Phase I ESA indicated the contents of the USTs had been gasoline; contaminants typically associated with gasoline include VOCs (benzene, ethylbenzene, toluene and xylenes), naphthalene, and lead. These compounds, along with PAHs (specifically, the BEQ-related compounds), were present in soil samples collected along the site boundary, but the detected concentrations were below those indicative of a

gasoline release. The presence of BEQ-related contaminants in the southern grassy portion of the site is likely related to other sources such as waste oil, rainwater runoff from adjacent asphalt covered areas, historical use of coal and/or fuel oil for heating building in the late 1800s and early 1900s, or other sources.

Recommendations

The presence of BAP-related compounds at concentrations above the Tennessee BEQ urban background and the industrial RSL for BAP should be assessed further. EnSafe recommends preparing a remedial options plan to address site contamination and removal of the hydraulic lift reservoir tank.

Additional assessment to delineate BAP contamination and evaluate remedial options may include collecting additional soil data to delineate hot spots and conducting a preliminary risk-based evaluation of site contamination to determine an acceptable remedial goal. Remedial actions may include capping or removal of contaminated soil.

The reservoir tank for the hydraulic lift should be removed and any contaminated soil removed, if present. Hydraulic lift reservoir tanks are usually 60 gallons or less and are not regulated under state UST regulations.