



Facts About...

101 Garrett Street
(Brownfields Site)

Site Location

The 101 Garrett Street property is located in the southwestern section of Baltimore, Maryland. The property, which is owned by the City of Baltimore, comprises approximately 8 acres and is located near the boundaries of Baltimore City, Baltimore County, and Anne Arundel County. The Harbor Tunnel Thruway (I-895) to the west, an unnamed stream to the north, Garrett Street to the east, and Riverside Road to the south bound the property.

Site History

Prior to 1953, the majority of the property consisted of undeveloped marshland adjoining the eastern bank of the Patapsco River. Previous reports indicate that uncontrolled landfill activities on the property began in 1953 and continued until 1974. The former marshland area was filled with large quantities of construction debris, soil, wood, tires, glass, and municipal waste. After filling, the western and central portions of the properties were used as a junkyard for automobiles by "Chernock's Junkyard". The junkyard operated from approximately 1956 to 1981. Sometime in the mid-1980s, the junked automobiles were removed and on-site business ceased. A filling station was reported to have operated in the 1960s in the eastern portion of 101 Garrett Street. The property is currently undeveloped.

Environmental Investigations and Actions

A geotechnical investigation of the Garrett Street property was conducted by E2SI in 1984 and 1990. According to a summary report (SSM, 1990) soil boring and test pit results by E2SI indicated detections of total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs) and metals. No significant detections were reported from surface water samples collected from the pond. A Phase I Environmental Site Assessment of the Garrett Street property was conducted by the Maryland Department of the Environment (MDE) in 1994. In 2003, soil and groundwater results from a site investigation by EA Engineering, Science, and Technology confirmed previous results and also detected significant concentrations of pesticides. A geophysical survey on the eastern portion of the Garrett Street property located fuel-related piping related to a former service station, but no underground storage tanks.

In 2005, MDE conducted a comprehensive Brownfields site investigation to assess contaminant impacts from uncontrolled dumping to soil, surface water, sediment, groundwater and soil vapor at the site. During the investigation, test pits, monitoring wells and soil gas locations were installed. A total of 22 surface and subsurface soil samples were collected from the 11 test pits, three groundwater samples were collected from the three monitoring wells, two sets of surface water and sediment samples were collected, and 41 soil gas samples were collected. All soil, groundwater, surface water and sediment samples were analyzed for contaminants of concern. Soil gas samples were analyzed for methane and volatile organic compounds (VOCs).



Analytical results from samples collected from surface water indicated the presence of metals, pesticides and VOCs; however, arsenic was the only compound detected above surface water comparison values. Soil gas analytical results revealed the concentrations of methane and VOCs were low for a former landfill.

Soil analytical results indicated widespread detections of arsenic, iron, lead and mercury at concentrations that exceeded MDE as well as Environmental Protection Agency (EPA) comparison values. Several polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs) were detected above MDE and EPA comparison values. PCBs were sporadically detected at various concentrations across the site. The distribution of 4,4'-DDT in surface soil was primarily limited to the western and central portions of the site. The detections of 4,4'-DDT typically occurred in conjunction with other pesticides including 4,4'-DDD, 4,4'-DDE and dieldrin. TPH diesel range organics (DRO) were detected at various concentrations below MDE and EPA comparison values throughout the site. Chromatographic signatures from analysis of TPH-DRO indicate that a heavy fuel oil residue was present in nearly every test pit.

Analytical results for sediment samples collected from the pond and unnamed stream revealed the detections of 13 metals; however, only arsenic, lead, mercury and zinc exceeded comparison values. It should be noted that the concentrations of arsenic and lead were considerably higher in the downgradient unnamed stream sediment location than the upgradient pond location. The detections of the remaining metals were below comparison values. Three pesticides (4,4'-DDD, 4,4'-DDE and 4,4'-DDT) were detected in the unnamed stream, but not in the pond. The concentrations of 4,4'-DDD and 4,4'-DDE were several magnitudes above comparison values.

Analytical results from groundwater samples collected from three on-site monitoring wells (MW101, MW102, and MW103) indicate that the downgradient well, MW102, was the most contaminated well. At MW102, arsenic exceeded both MDE and EPA comparison values and manganese exceeded MDE standards, but the detection was below the EPA comparison value. Four pesticides were detected above MDE and EPA comparison values in both the normal and duplicate samples. All four pesticides were isomers of BHC: alpha-, beta-, delta- and gamma-BHC. Only one pesticide was detected above comparison values at the other monitoring wells (beta-BHC at MW103). The only metal detected above MDE standards at upgradient and cross-gradient monitoring wells MW101 and MW102 was manganese. Seven VOCs were detected during groundwater sampling. Benzene, chlorobenzene, and 1,4-dichlorobenzene were detected above comparison values at MW102. Methyl tertiary-butyl ether was the only VOC detected at all three wells; however, the concentrations were below comparison values at MW101 and MW102, but above the EPA comparison value at MW103.

A toxicological evaluation of surface soil indicated that the estimated risks from incidental ingestion or dermal contact of carcinogenic or noncarcinogenic contaminants in the surface or subsurface soil exceeded MDE and EPA recommended ranges for multiple population groups. The primary risk drivers in soil were arsenic, vanadium and benzo(a)pyrene. Lead in soil may also pose a threat to the health of sensitive populations in discrete locations of the site. In groundwater, the risk from incidental ingestion exceeded MDE and EPA recommended ranges for all population groups with the primary risk drivers being arsenic, alpha-BHC and benzene. Benzene in groundwater was the primary driver of elevated risk for dermal contact with the adult worker population. Arsenic, beta-BHC and delta-BHC were detected in surface water at concentrations that exceeded human health fish consumption criteria. Arsenic was the primary risk driver for the incidental ingestion of sediment. No detected contaminant in on-site soil exceeded a cancer risk of 1×10^{-5} for commercial populations from vapor intrusion to indoor air.



Current Status

The property is vacant and are currently covered with stressed vegetation ranging from grass and scrub to trees. A pond exists in the eastern portion of the property. The central section is hummocky with mounds of soil and debris. During the 2005 Brownfields investigation, it was noted that sporadic uncontrolled dumping still continues on the Garrett Street property. Evidence of the recent dumping of bricks, cinderblocks, trash, bedding, furniture, wood debris and construction materials were observed on the eastern portion of the property.

Planned or Potential Future Action

Most of the 101 Garrett Street property consists of a solid waste landfill for construction debris, automobile parts and general household wastes. The primary concerns for development of the 101 Garrett Street property include the risk of methane and mercury gas intrusion into structures; contact between users of the property with buried medical waste and site contaminants in soil and groundwater; and the impacts construction would have on water quality. Issues such as differential settlement and stability as well as construction costs have not been evaluated.

Results from this Site-Specific Brownfields Assessment, support the planned use of the 101 Garrett Street property for commercial activities if appropriate measures are implemented to mitigate potential risks.

Facility Contacts

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