



Advanced Auto Parts and Former Fashions R Boutique

Targeted Brownfields Assessment Results

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Site Description and History

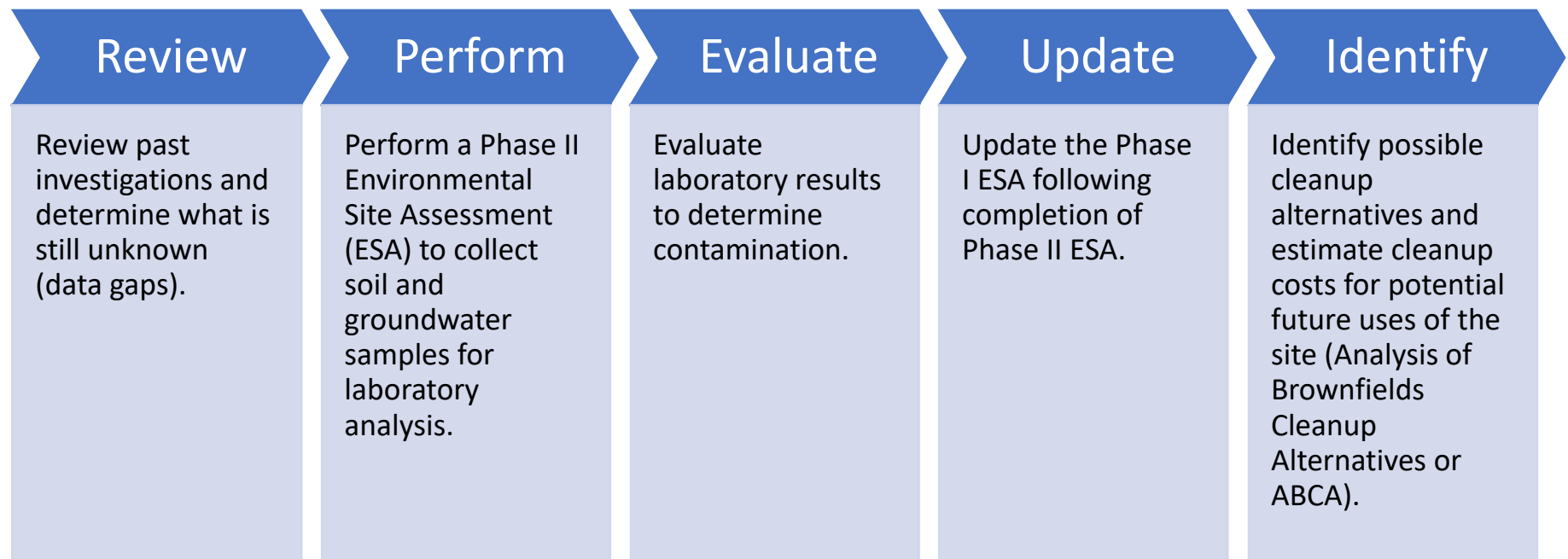
9844-9846 W. Florissant Ave.,
Dellwood, St. Louis County,
Missouri



Site Description and History (cont.)

- Two parcels:
 - 9844 W. Florissant Ave – 0.55 acres (formerly Dellwood Automotive and Fashions R Boutique)
 - 9846 W. Florissant Ave – 0.75 acres (formerly Advanced Auto Parts)
- Current owner: Urban League of St. Louis
- Vacant lots with paving and foundations only
- Historical use as gasoline service station (Dellwood Automotive)

Brownfields Assessment Objectives



What is a Phase I ESA?

- The purpose of a Phase I ESA is to identify recognized environmental conditions (REC), historical REC (HREC), or controlled REC (CREC).
- The Phase I ESA includes four components:
 1. Records review
 2. Site reconnaissance
 3. Interviews with current and previous owners and occupants of the subject property, adjacent property owners and occupants, and local government agencies
 4. Preparation of a report

What is a Phase II ESA?

- The purpose of a Phase II ESA is to evaluate the presence, or absence of, petroleum products or hazardous substances in the subsurface of the site, based on RECs identified during the Phase I ESA.
- The Phase II ESA includes sampling of soil, groundwater, and other media.



Previous Investigations

- Phase I ESA at 9844 W. Florissant Ave. – June 2017
 - Identified a REC associated with historical use of the subject property as an auto service and machine shop.
- Phase II ESA at 9844 W. Florissant Ave. – April 2018
 - Included collection of subsurface soil samples from direct-push technology (DPT) borings and of groundwater samples from temporary wells.
 - Based on detections of chemicals within the former building's footprint, a release of solvents, gasoline, and diesel fuel may have occurred associated with the historical use of that building as an auto service and machine shop.

Phase II ESA – Toeroek June 2021

- Purpose: to determine if subsurface soils, soil gas, or groundwater were contaminated by historical activities at the subject property.
- Prior to sampling, a ground-penetrating radar (GPR) surveyed 55,000 square feet to a depth of 3 feet, looking for underground storage tanks (USTs) or other debris.
 - GPR did not identify any USTs.
 - Several buried utility lines were identified and marked on site maps.



Phase II ESA – Toeroek June 2021 (cont.)

- **Sampling Plan**

- 12 soil samples, nine groundwater samples, and 12 soil-gas samples throughout the site. Samples were in areas that had not been previously sampled in 2018.
- Samples were analyzed for:
 - Volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs).
 - Total petroleum hydrocarbons (TPH)—gasoline-range organics (GRO); TPH—diesel-range organics (DRO); and TPH—oil-range organics (ORO).
 - Some types of metals.



Site Layout and Sampling Locations



Phase II Soil Results

- EPA and Missouri have developed screening levels to help determine whether a detected chemical is a potential hazard to human health.
 - These screening levels differ for residential use or industrial use.
 - Samples with concentrations of chemicals below their screening levels typically do not require further remediation or action during redevelopment of the site.
- Low levels of VOCs were detected in soil samples, but were 10 to 1,000 times less than the most stringent screening levels.
- TPH-GRO was detected in three samples exceeding the EPA residential and industrial screening levels and in one sample exceeding the most stringent Missouri screening level from 9844 W. Florissant Ave. There were no exceedances at 9846 W. Florissant Ave.
- TPH-GRO was not evident in soils near the surface, but was detected 10-25 feet below ground surface depending on the sample location.

Phase II Soil Results (cont.)

- Pentachlorophenol, a chemical used as a wood preservative for structures like telephone poles, was detected in two samples at 9846 W. Florissant Ave.
 - The concentrations were just above the most stringent Missouri screening level.
 - The concentrations were 10x less than the EPA screening level for residential soil.
- Lead and arsenic were detected in all samples; some exceeded EPA and Missouri screening levels.
 - Both are naturally occurring, and concentrations not likely a result of past use.
 - St. Louis County average background levels for arsenic exceed the EPA screening level.
 - Lead sample results are above the Missouri screening level, but well below the EPA level.

Phase II Groundwater Results

- Groundwater generally had low concentrations of VOCs.
 - Methyl tertiary butyl ether (MTBE), a historical gasoline additive, slightly exceeded the EPA screening level for tap water in one sample.
 - Local regulations prevent use of groundwater for drinking water.
 - TPH was detected in groundwater, but was below EPA and Missouri screening levels.
 - Arsenic and chromium (likely from background sources) in unfiltered samples were above EPA tap water screening levels, but the concentrations in filtered groundwater were below those levels. This result is likely explained by suspended sediment in the groundwater samples.

Analysis of Brownfields Cleanup Alternatives (ABCA)

- Considers past use, sample results, and future intended use(s).
- **Alternative 1:** No Action is always included as an option based on EPA guidance but is not recommended in this case.
- **Alternative 2:** Soil Management Plan (SMP) with Institutional Controls (ICs); doesn't require remediation.
 - Leaves contaminated soil in place.
 - Manages potential exposure by maintaining existing pavement and soil cover.
 - Uses deed restrictions to ban excavation of soil below 8 feet.
 - This solution is less expensive than Alternative 3, but requires ongoing inspections and monitoring and restricts use of the property.

Analysis of Brownfields Cleanup Alternatives (ABCA) (cont.)

- **Alternative 3: Soil Excavation with Off-Site Disposal**
 - Excavates and disposes of approximately 1,100 cubic yards of contaminated soil from three locations at 9844 W. Florissant Ave.
 - Requires confirmation sampling to ensure that all contaminated soil has been removed.
 - Backfills with clean material.
 - This is the most expensive alternative, but it eliminates future restrictions on use of the property.

Recommended Cleanup Alternative

- **Alternative 2:** SMP with ICs recommended
 - Most cost-effective.
 - No remediation required.
 - Total estimated cost of \$187,200; much of this is spread over 10 years for long-term stewardship.
 - Cost includes enrollment in Missouri Brownfields/Voluntary Cleanup Program (B/VCP).
 - More details available in the ABCA report.

Questions?



**Link to reports for 9844 W.
Florissant Ave.:**

https://response.epa.gov/site/site_profile.aspx?site_id=12552

**Link to reports for 9846 W.
Florissant Ave.:**

https://response.epa.gov/site/site_profile.aspx?site_id=15395

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