Soil Remediation Success Stories

Hollywood Cleaners
DSCA Site #32-0014

A Cleaner
DSCA Site #60-0001

Hollywood Cleaners – Durham, NC

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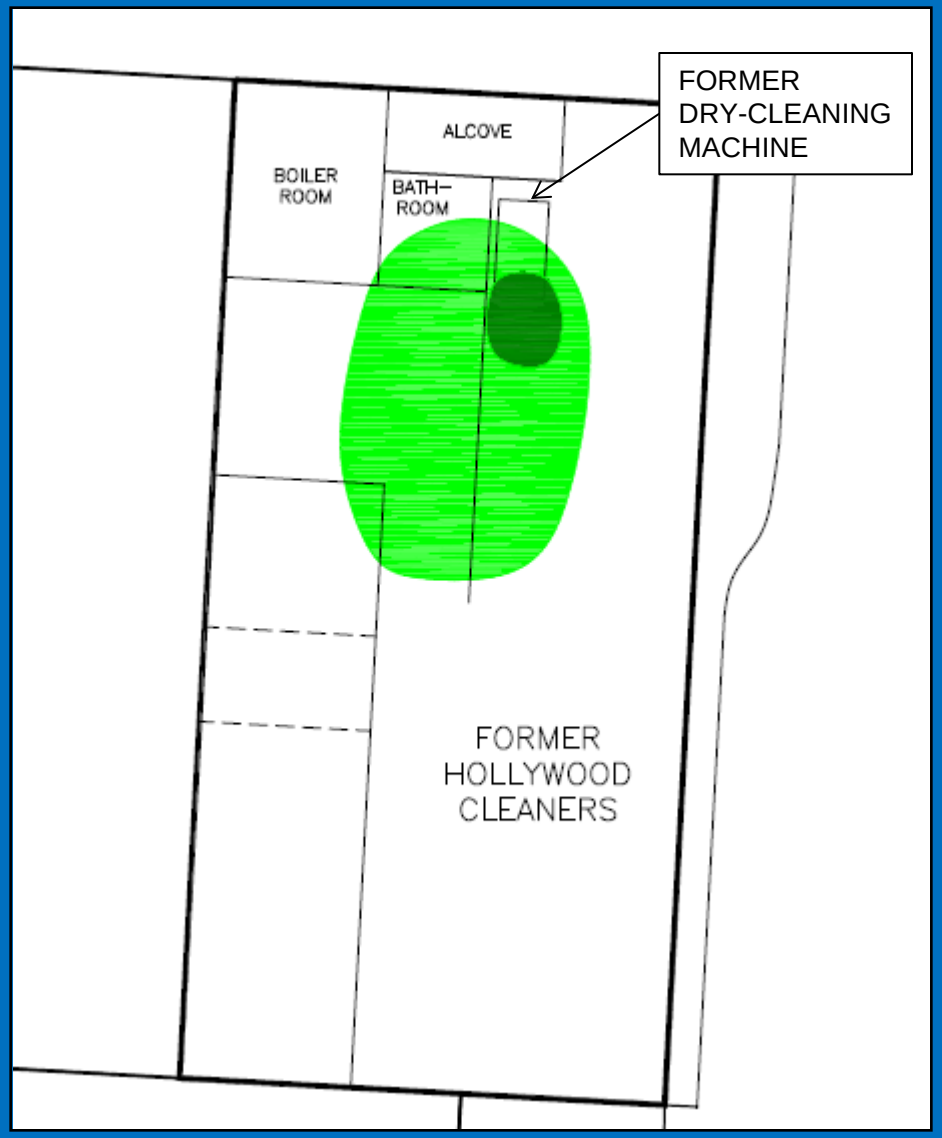
Hollywood Cleaners – Chronology

- **Tingen's Cleaners pre-1987**
- **Hollywood Cleaners from ~1987 to 2009**
  - **One PERC dry-to-dry machine**
- **April 2006 – PCE (10 mg/kg) identified in soil near dry-cleaning machine**
- **June 2007 – Hollywood Cleaners petitions into DSCA Program**
- **2007 to 2010 – Active assessment activities conducted by DSCA Program**
- **2011 and 2012 – Delays due to Petitioner non-payment and abandonment of facility**

Hollywood Cleaners – PCE in Soil



- **Maximum detected PCE concentration = 10 mg/kg**

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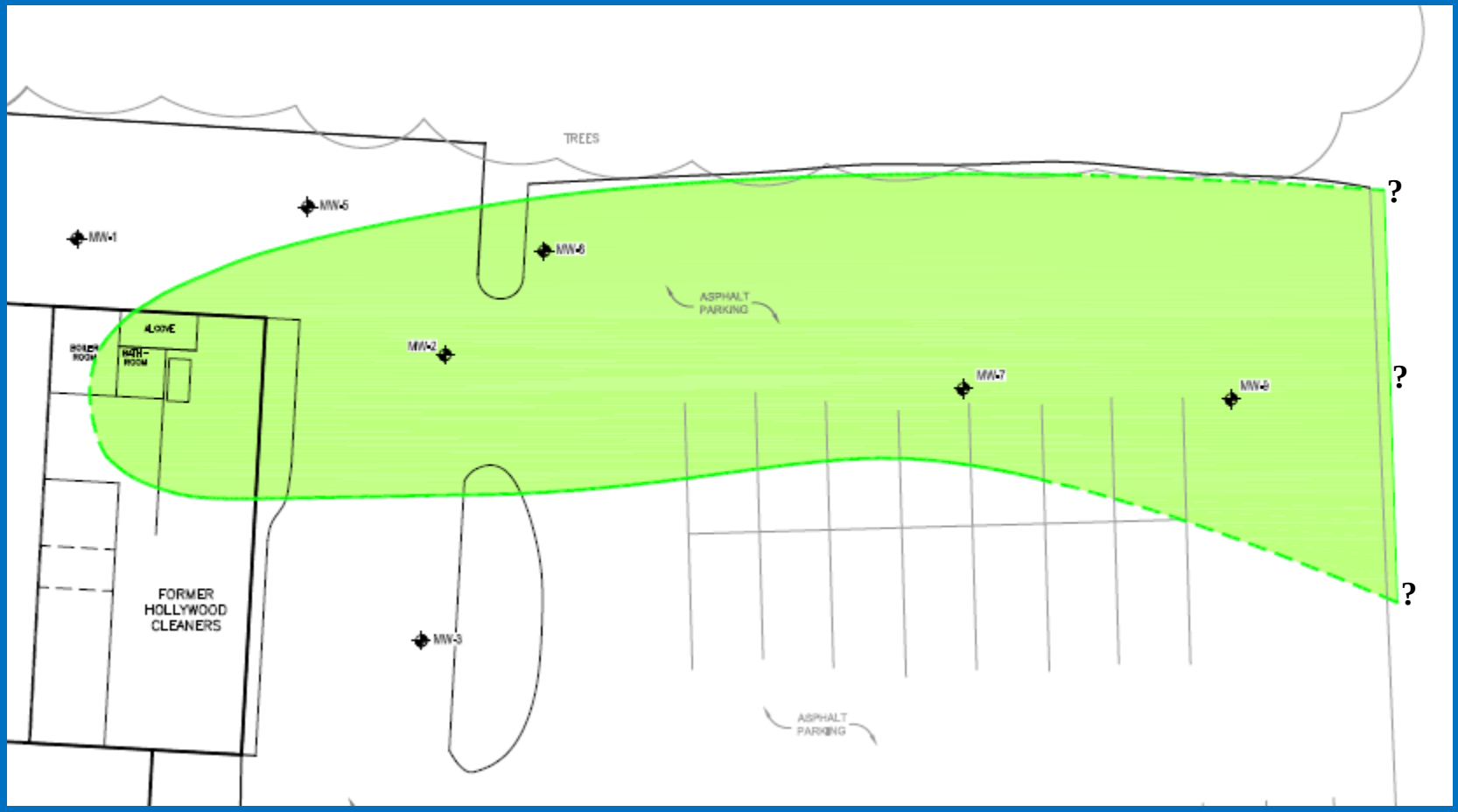
Hollywood Cleaners – PCE in Groundwater



- **Maximum detected PCE concentration = 66 µg/L**
- **Possible increasing concentrations over time**
- **Not delineated**

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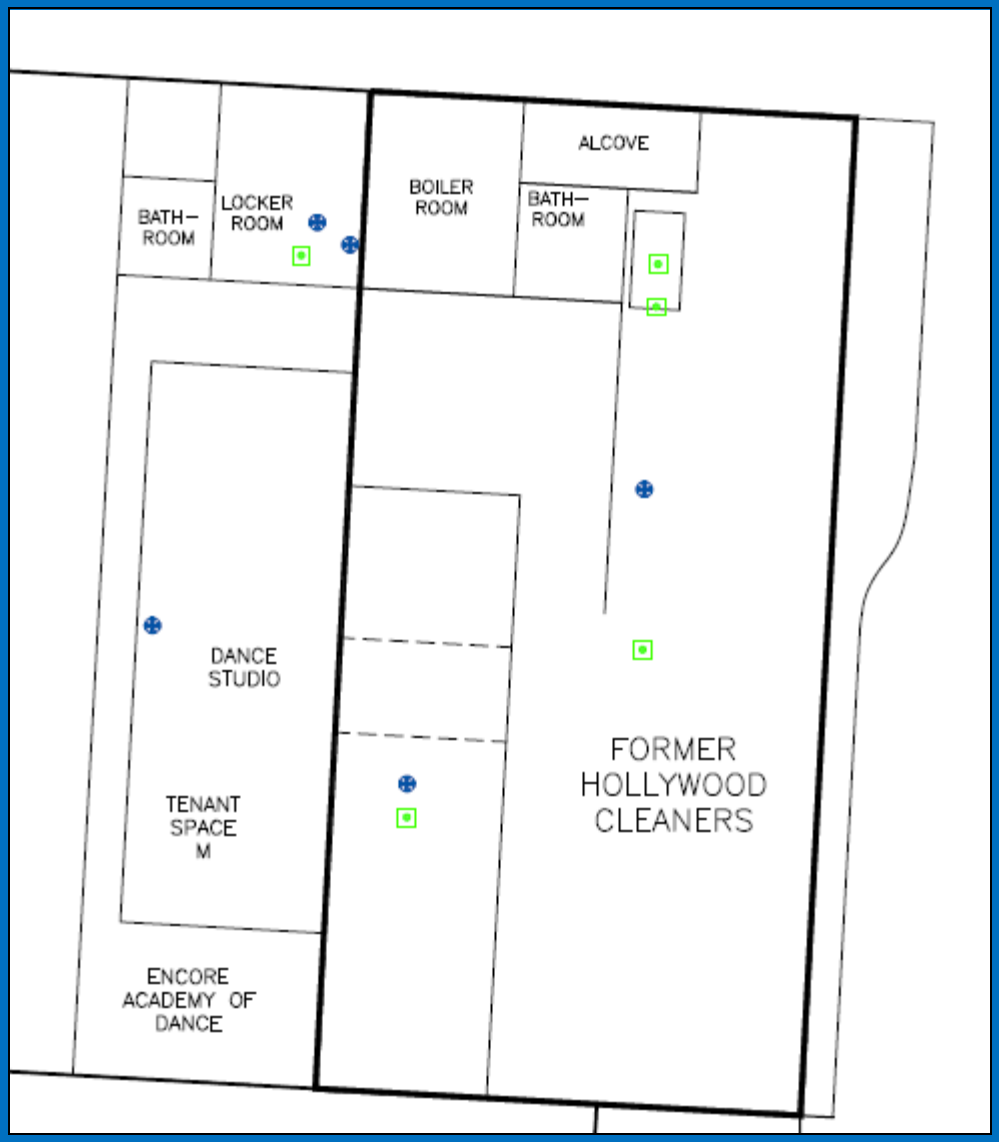
Hollywood Cleaners – Vapor Intrusion



Hollywood Cleaners

- Sub-slab vapor PCE = up to 3,200,000 µg/m^3
- Indoor air PCE = up to 780 µg/m^3
- Hazard Index = 4.5

Adjacent Tenant

- Sub-slab vapor PCE = up to 330 µg/m^3
- Indoor air PCE = up to 370 µg/m^3
- Hazard Index = 2.15

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Hollywood Cleaners – Interim Action

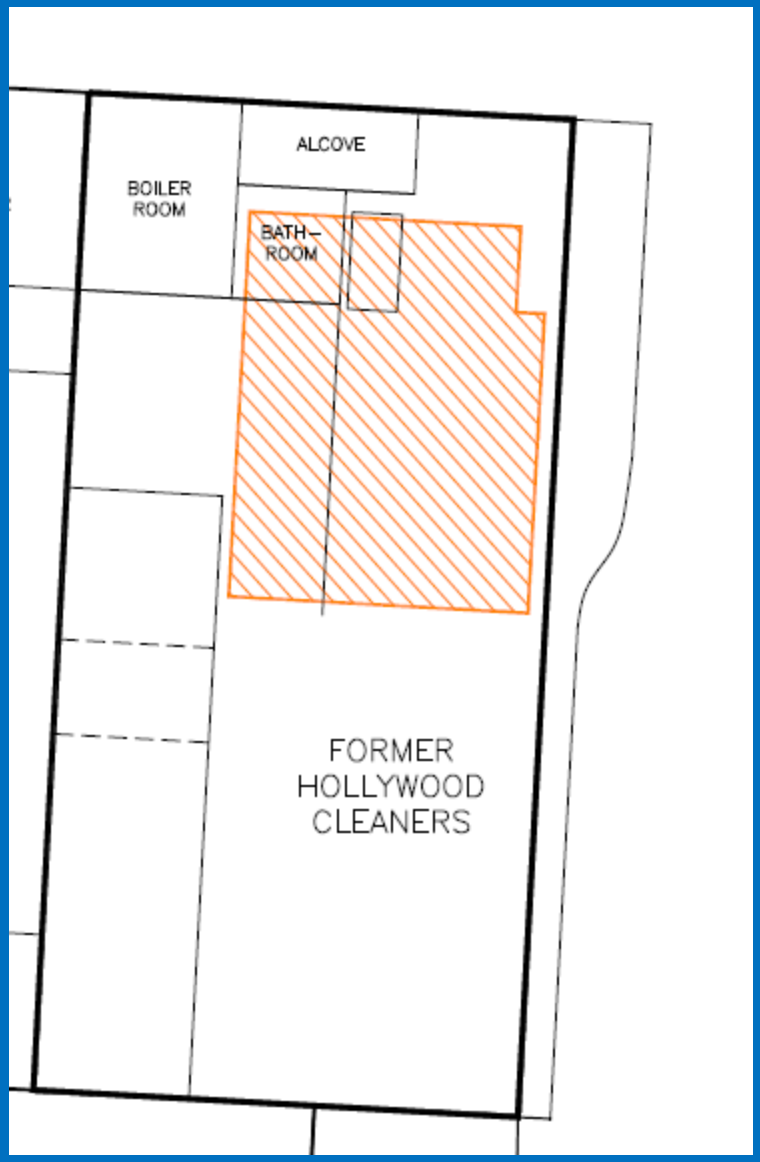
Purpose

- Address unacceptable vapor intrusion risks at the site
- Facilitate sale of the property / Reuse of the tenant space

Selected Interim Action

- Soil excavation
- Installation of passive venting system (for future use, if needed)

Hollywood Cleaners – Interim Action



Purpose

- Address unacceptable vapor intrusion risks at the site
- Prevent further leaching from soil to groundwater
- Facilitate sale of the property / Reuse of the tenant space

Selected Interim Action

- Soil excavation
- Installation of passive venting system (for future use, if needed)

Hollywood Cleaners – Interim Action

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Hollywood Cleaners – Interim Action

Summary

- Removed ~ 116 tons of PCE-impacted soil
- Installed passive sub-slab venting system (if needed in future)

Post-Excavation Results

- Soil: risk-based goal achieved
- Indoor air:
  - Concentrations reduced by an order of magnitude
  - Hazard index values less than 1 (range from 0.24 to 0.51)
- Groundwater: additional delineation and plume stability sampling planned

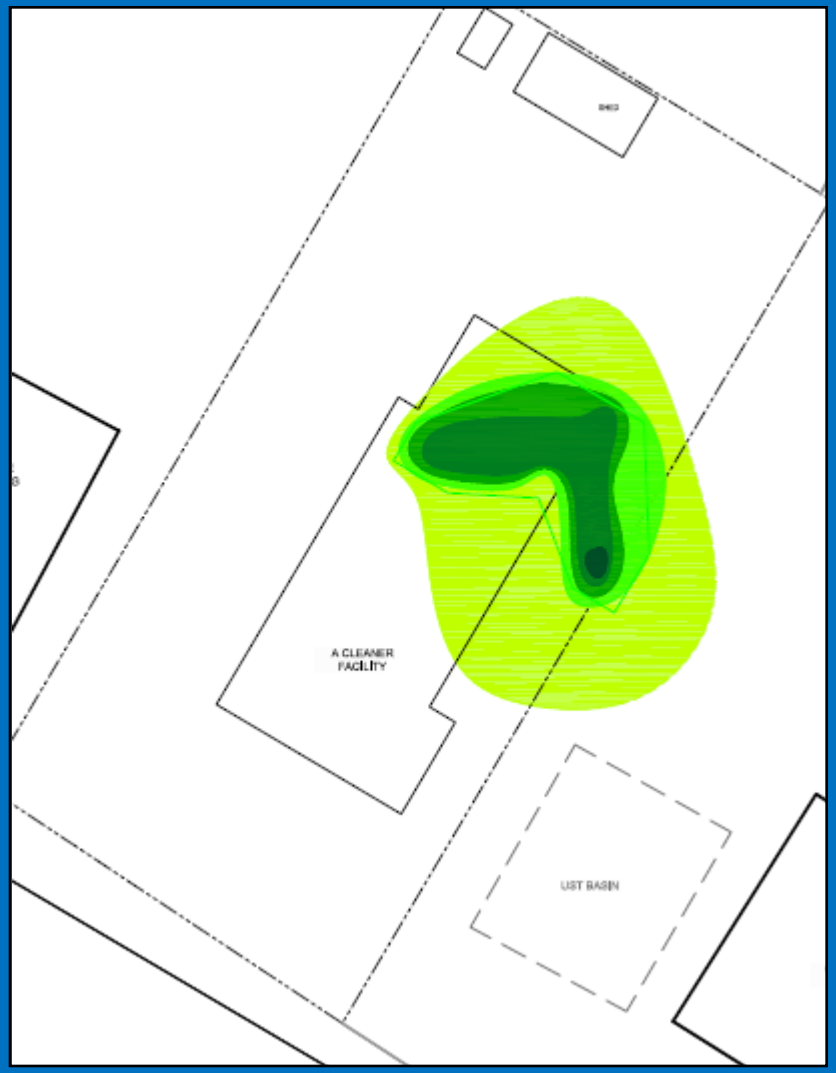
Property was sold in August 2013

Former dry-cleaning space is being marketed for new tenant

A Cleaners – Charlotte, NC

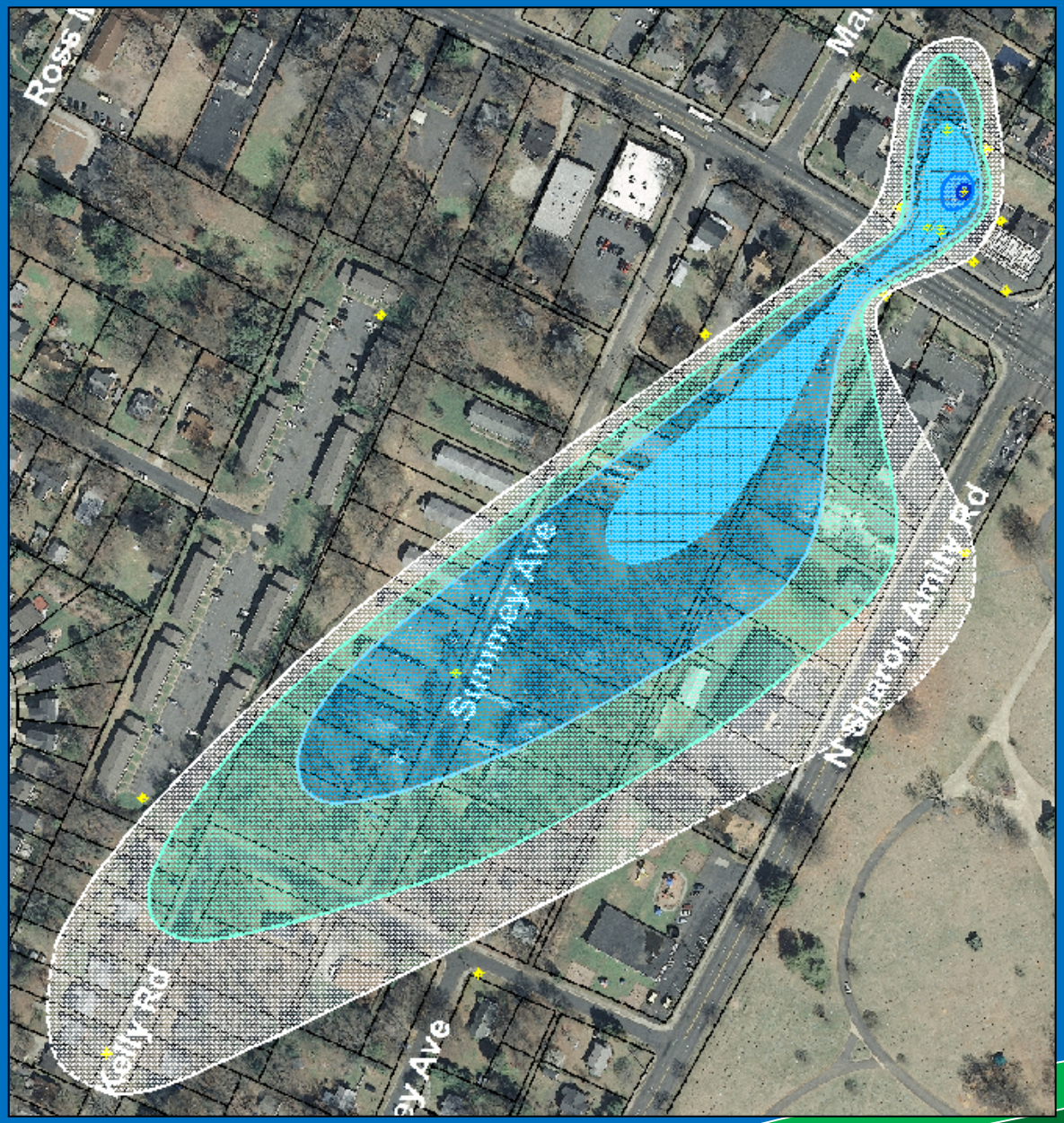
- **PERC dry-cleaning facility from 1971 to 2013**

A Cleaners – PCE in Soil



- **Up to 1,600 mg/kg PCE**

A Cleaners – PCE in Groundwater



- **Up to 134 mg/L PCE**
- **PCE concentrations increasing downgradient**

A Cleaners – Interim Action

2012

- **Goal: Reduce further leaching from soil to groundwater**
  - **Limit further plume migration**
  - **Protect water supply well**
- **Facility is active with no known plans for redevelopment**
- **Soil vapor extraction selected as interim action**

2013

- **Property owner announces plans for redevelopment**
- **Facility will be demolished and new convenient store constructed**
- **Additional Goal: Protect against future vapor intrusion**
- **New interim action: Excavation and soil blending**

A Cleaners – Interim Action

Soil Excavation and In Situ Soil Blending

- Excavate impacted soil from 0 to 4 ft
- Blend chemical oxidant from 4 ft to 20 ft

Advantages

- Remove surficial soil impacts
- Aggressively treat subsurface soil impacts
- Treat shallow groundwater impacts

A Cleaners – Interim Action

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A Cleaners – Interim Action

Summary

- Excavated ~ 380 tons of PCE-impacted soil
- Treated ~ 650 cubic yards of PCE-impacted soil in place with ~ 12,000 lbs of potassium permanganate
- Blended 5 wt % Portland to stabilize soil after treatment

Results

- Soil excavation samples: risk-based goal achieved
- Post-blending samples: no VOCs detected
- Groundwater: future sampling planned

Property currently being redeveloped