Advocates for VHA Groundwater Plume Resolution

700 South 1600 East PCE Plume – CERCLA NPL Site
Salt Lake City, Utah

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700 South 1600 East PCE Plume
Site History

- VHA operated a dry cleaning facility on-site in late 70s

- Tetrachloroethylene (PCE), sometimes called Perc, is used as a dry cleaning agent or metal degreaser

- PCE was first detected at Mount Olivet irrigation well in the 90s

- SLC municipal drinking well was temporarily taken off line as a precaution after low levels of PCE were found

700 South 1600 East PCE Plume
Site History

- PCE detected in East Side Springs area in 2010

- Site added to the National Priorities List in 2013

- VHA listed as potentially responsible party (PRP)

- VHA currently in the process of two remedial investigations

- ESS field work conducted from 2015 – 2017
  - 54 structures surveyed for vapor intrusion
  - Groundwater sampled at 42 locations
  - Surface water sampled at 50 locations

What is happening in 2018?

- Accelerated Operable Unit-1 (AOU-1) Indoor Air Investigation
  - Draft Remedial Investigation Report and Draft Focused Feasibility Study due to be submitted in June 2018
  - Reports will focus on the potential for vapor intrusion from groundwater contamination
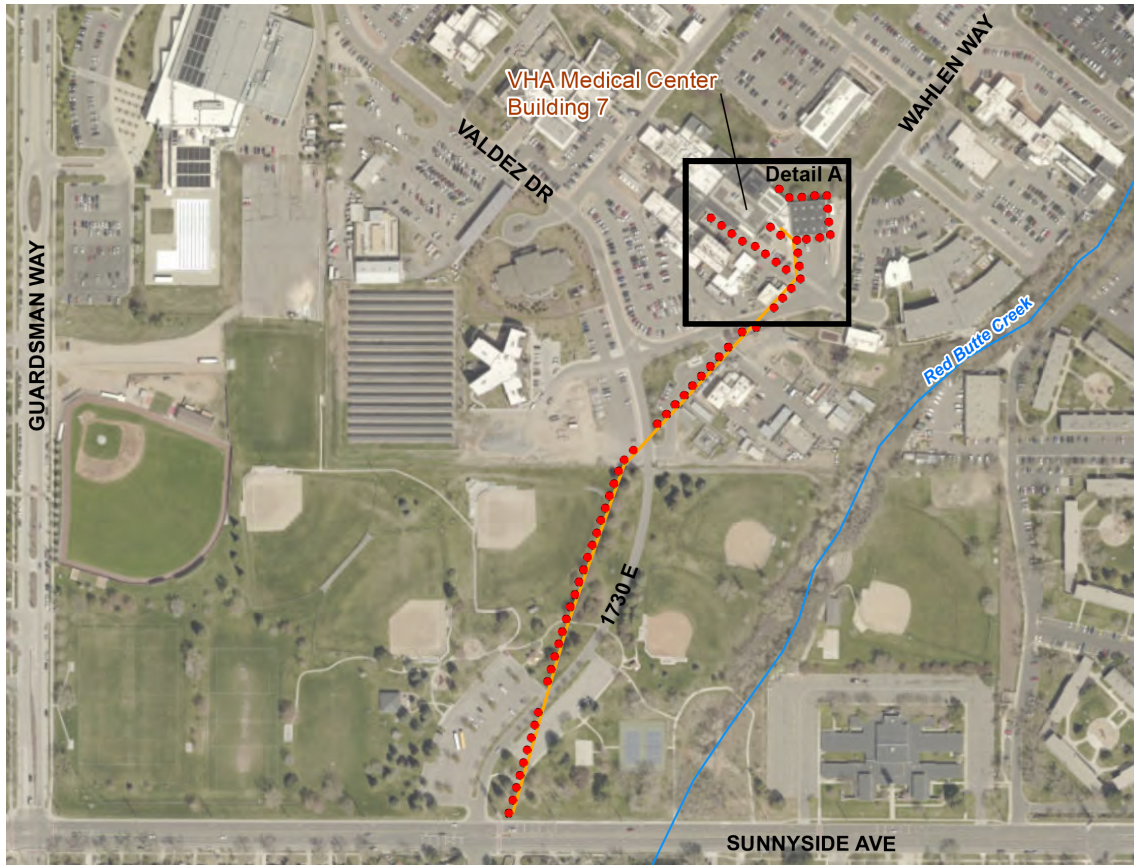
700 South 1600 East PCE Plume
What's Happening in 2018?

- Operable Unit 2 (OU-2) Groundwater Investigation
  - EPA approved Remedial Investigation Work Plan
  - VHA to install shallow and deep monitoring wells, along with groundwater sampling, soil-gas analysis and surface water sampling
  - VHA will define dimensions and extent of plume, trace PCE plume to source and use research to help develop remedial methods

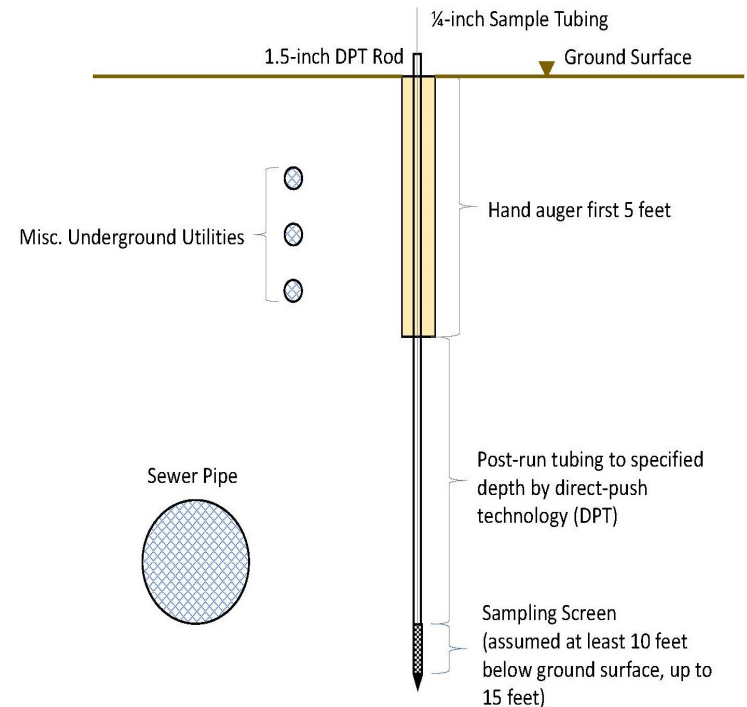# 700 South 1600 East PCE Plume
Soil Gas Sampling

- **Yellow line:** Sanitary sewer line
- **Red dots:** Planned sampling locations
- Additional locations in this area are expected to be sampled

700 South 1600 East PCE Plume
Soil Gas Sampling along sewer line

Installation:

- Will perform Blue Stakes, as well as private utility locate of probe installation locations, prior to work
- Install temporary soil gas probes with direct-push technology (DPT) rig
  - In park, mats can be laid down to protect grass
  - Hand auger to 5 feet
  - 1.5-inch outer–diameter hollow DPT rod pushed to specified depth
  - Install ¼-inch tubing within DPT rod and sample soil gas
  - Remove tubing and rod
  - Backfill boring from bottom to top with bentonite (clay) and auger cuttings. In grass areas, replace top foot of boring with top soil. In asphalt areas, use cold patch to repair the boring through the asphalt.

¼-inch Sample Tubing

1.5-inch DPT Rod

Ground Surface

Misc. Underground Utilities

Hand auger first 5 feet

Sewer Pipe

Post-run tubing to specified depth by direct-push technology (DPT)

Sampling Screen (assumed at least 10 feet below ground surface, up to 15 feet)
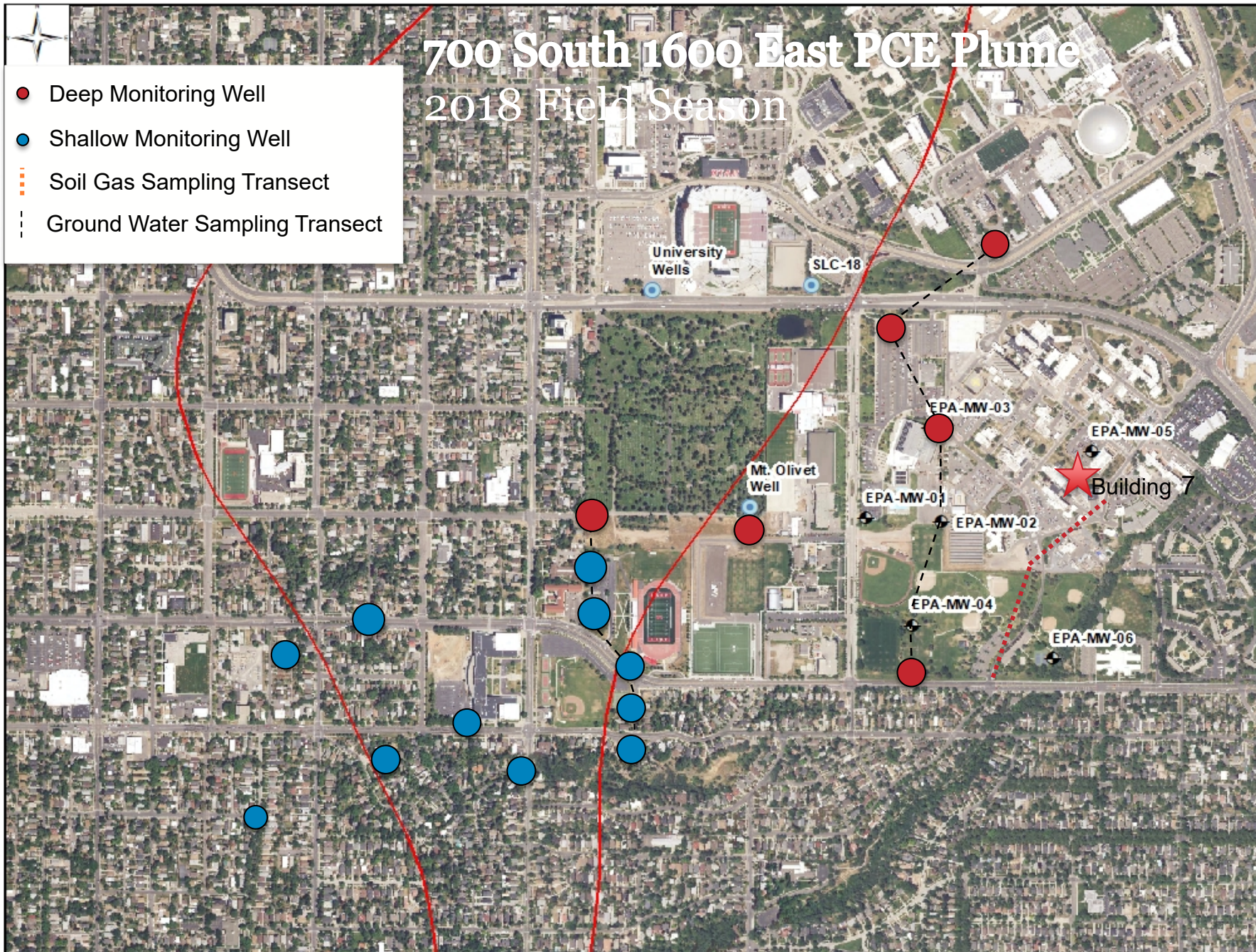
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700 South 1600 East PCE Plume
Direct-push rig

700 South 1600 East PCE Plume
2018 Field Season

Legend:
- Deep Monitoring Well
- Shallow Monitoring Well
- Soil Gas Sampling Transect
- Ground Water Sampling Transect

University Wells
SLC-18
EPA-MW-03
EPA-MW-05
Mt. Olivet Well
EPA-MW-01
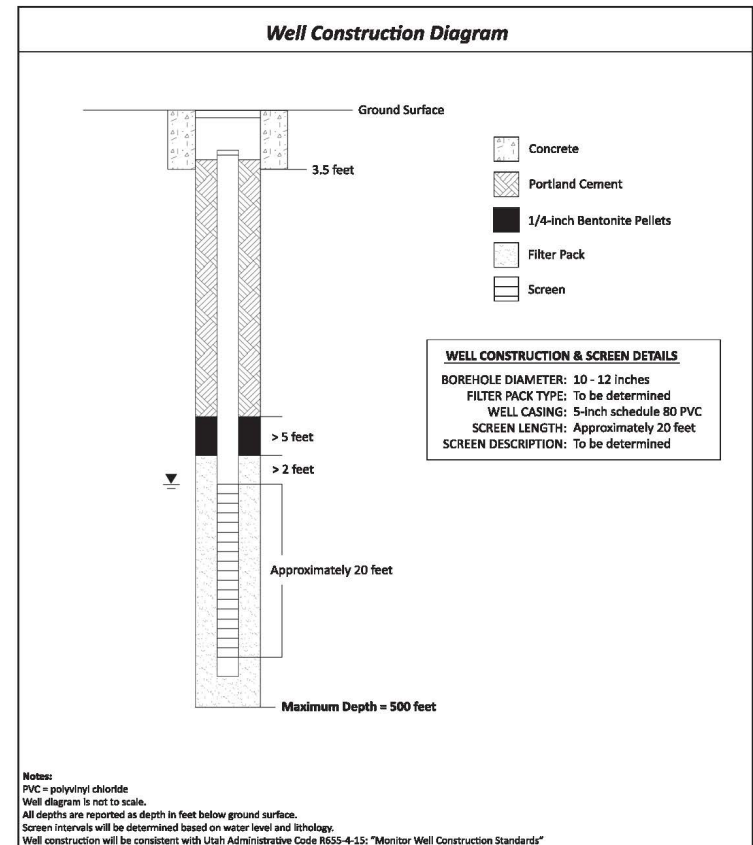EPA-MW-02
Building 7
EPA-MW-04
EPA-MW-06

700 South 1600 East PCE Plume
Groundwater investigation

Installation:
- Will perform Blue Stakes, as well as private utility locate for monitoring well installation locations, prior to work
- Install monitoring well with rotary sonic drill rig
  - In grassy areas, mats can be laid down to protect grass
  - Hand auger to 5 feet
  - Either a mini-sonic or full size sonic drill rig will be used depending on depth needed for monitoring well
  - Install either a 2- or 5-inch inside diameter well
  - Flush-mount monitoring well completion
  - Backfill boring from bottom to top with bentonite (clay) and auger cuttings. In grass areas, replace top foot of boring with top soil. In asphalt areas, use cold patch to repair the boring through the asphalt
  - Develop the monitoring well within 48-hours

Well Construction Diagram

Ground Surface
3.5 feet

Concrete
Portland Cement
1/4-inch Bentonite Pellets
Filter Pack
Screen

> 5 feet
> 2 feet

Approximately 20 feet

Maximum Depth = 500 feet

WELL CONSTRUCTION & SCREEN DETAILS
BOREHOLE DIAMETER: 10 - 12 inches
FILTER PACK TYPE: To be determined
WELL CASING: 5-inch schedule 80 PVC
SCREEN LENGTH: Approximately 20 feet
SCREEN DESCRIPTION: To be determined

Notes:
PVC = polyvinyl chloride
Well diagram is not to scale.
All depths are reported as depth in feet below ground surface.
Screen intervals will be determined based on water level and lithology.
Well construction will be consistent with Utah Administrative Code R655-4-15: "Monitor Well Construction Standards"

FIGURE 3-5
TYPICAL 5-INCH MONITORING WELL CONSTRUCTION
FIELD SAMPLING PLAN
OU-2 REMEDIAL INVESTIGATION
700 SOUTH 1600 EAST PCE PLUME
SALT LAKE CITY, UTAH

700 South 1600 East PCE Plume
"Mini" drill rig installing shallow well on city street

700 South 1600 East PCE Plume
Drilling rig for deep wells

700 South 1600 East PCE Plume
Monitoring well completion

700 South 1600 East PCE Plume

Questions?