

# Broadway-Pantano WQARF Site Public Meeting

January 31, 2023

Project Manager: Mary Charlson

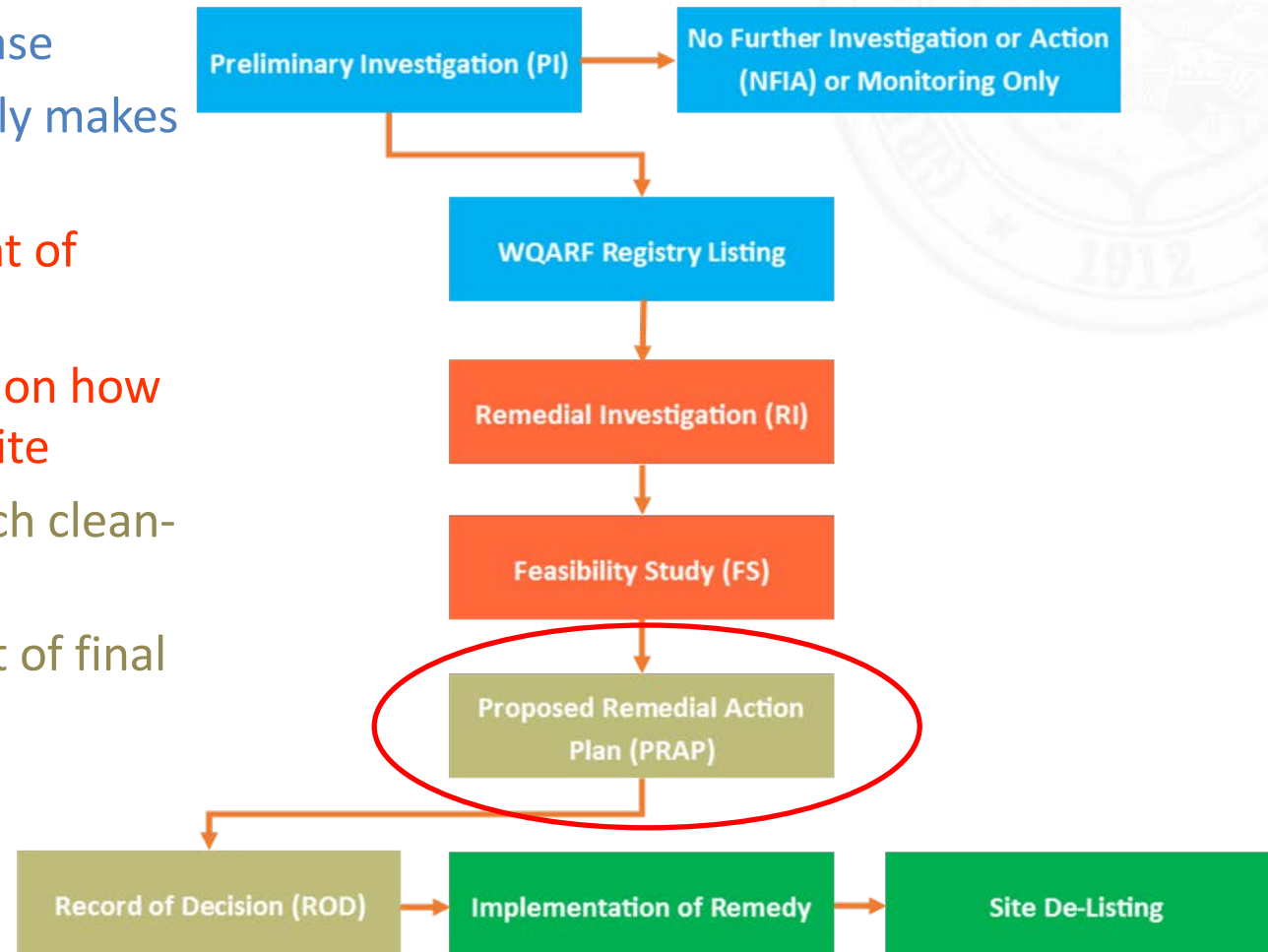


# What is WQARF?

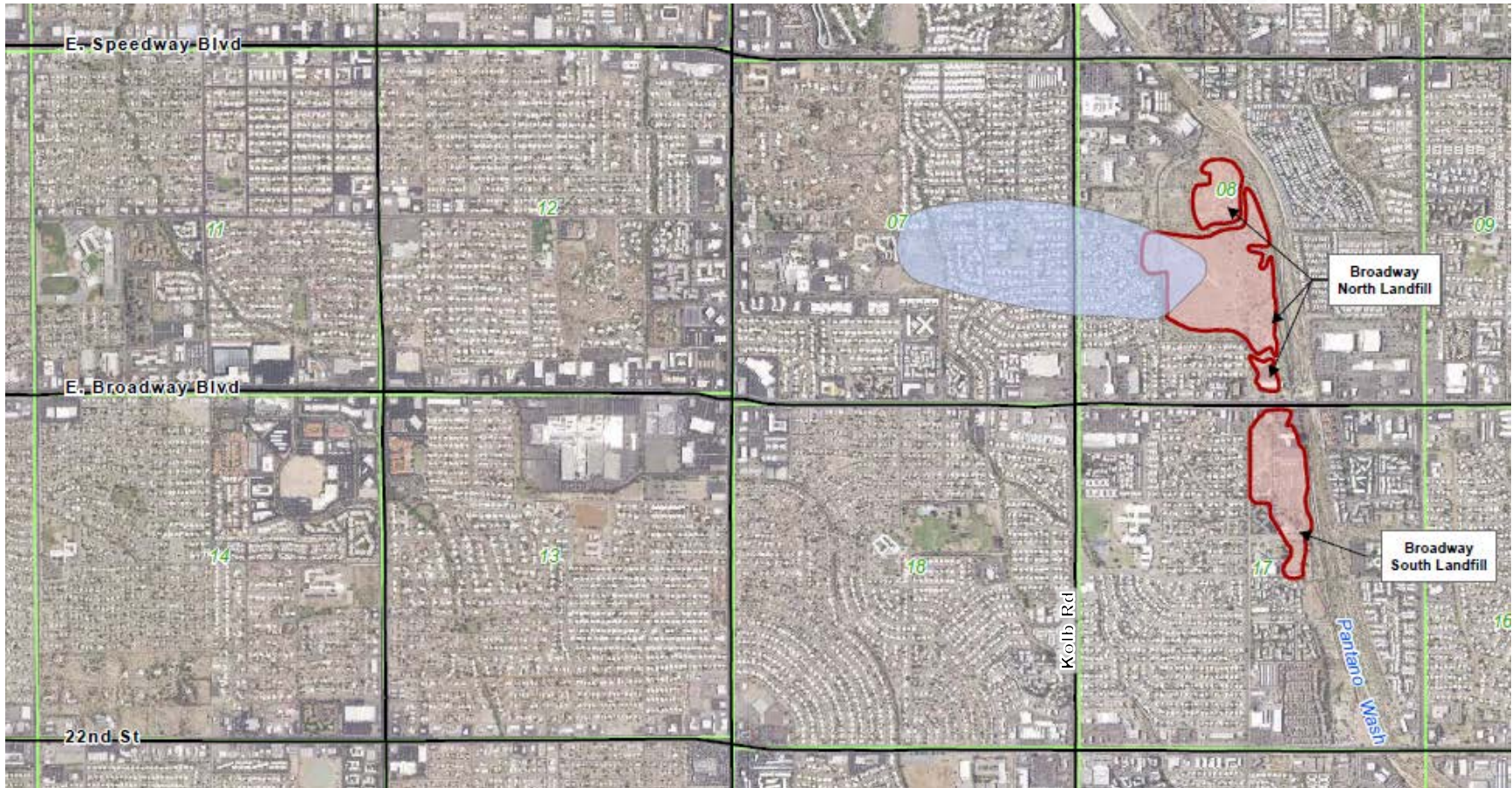
- WQARF =  
**Water Quality Assurance Revolving Fund**
- Also called State Superfund program
  - WQARF uses state funds to investigate and clean up soil and groundwater contamination in Arizona
  - Also oversees privately funded efforts.

# Steps in WQARF

- PI - confirms the release
- Registry Listing - legally makes it a WQARF site
- RI – determines extent of release
- FS – provides options on how best to clean up the site
- PRAP – proposes which clean-up option is the best
- ROD – announcement of final remedy for the site

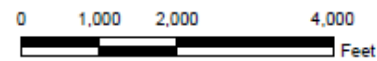


# Site Location Map

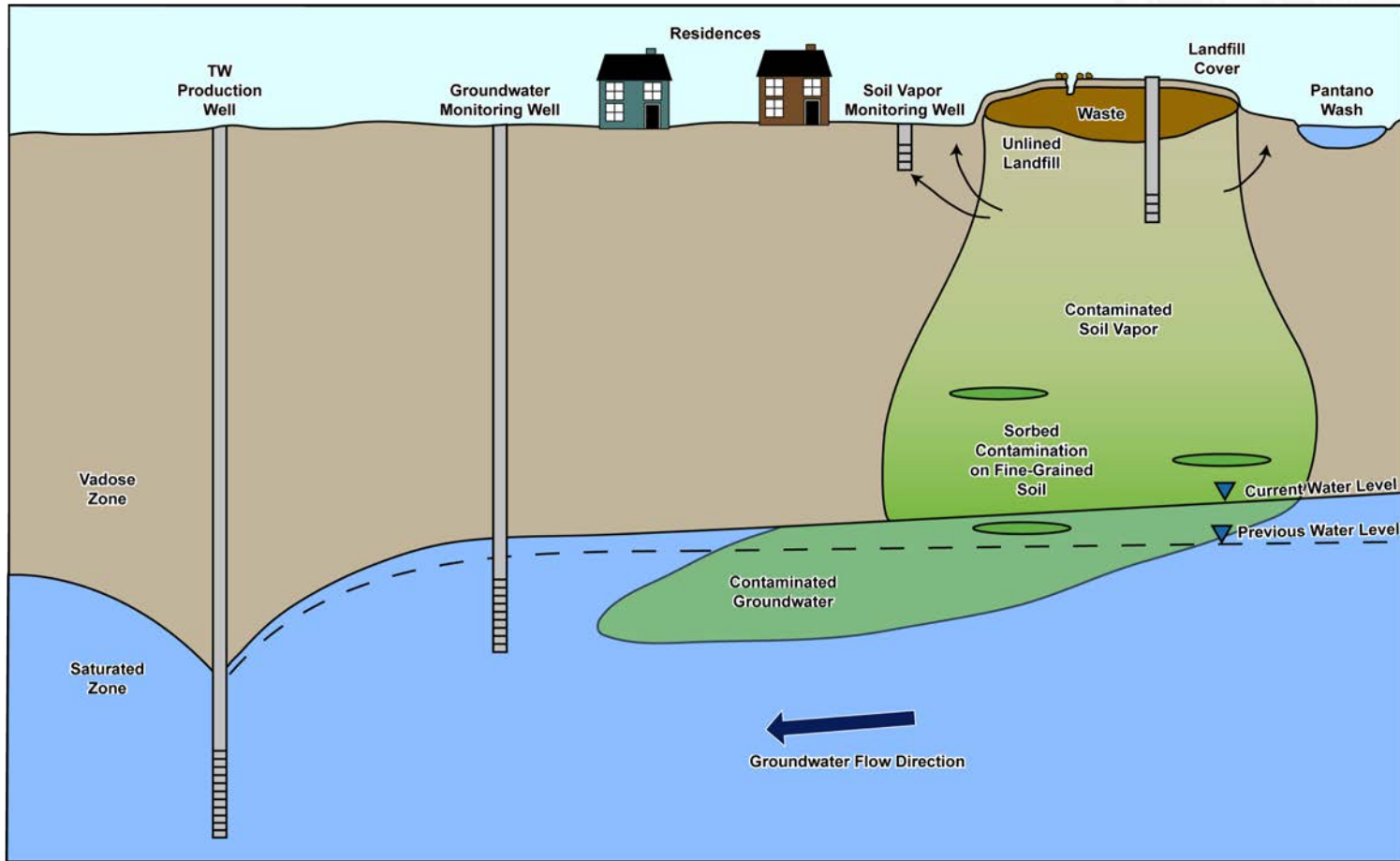


### Legend

- Approximate Extent of Groundwater Operable Unit Based on 2022 Data
- Landfill Operable Unit Boundaries



# Conceptual Site Model



- Contaminants of Concern: Tetrachloroethene (PCE), Trichloroethene (TCE), Vinyl Chloride (VC), methylene chloride, 1,2-dichloroethene (DCE), and dross (arsenic, cadmium and lead)
- Source of Contamination: Broadway North Landfill (BNL) and Broadway South Landfill (BSL)
- Impacted Media: Soil and Groundwater
- Potential Receptors: Downgradient water supply wells
- Last Milestone: Proposed Remedial Action Plan PRAP (June, 2019)
- Next Milestone: Record of Decision (ROD)

- The PRAP was issued in June 2019. The proposed remedy includes the following:
  - Engineering Controls
    - Landfill soil cover (existing)
    - Asphalt cap over dross area (completed in 2019)
  - Institutional Controls
    - Declaration of Environmental Use Restriction (DEUR)
  - Soil Vapor Extraction (SVE) at BSL
    - Completed in 2020
  - In-Situ Chemical Oxidation (ISCO) at BNL
    - Currently ongoing
  - Monitored Natural Attenuation (MNA)

# Engineering Controls

- Existing landfill soil cover
- Asphalt cap at dross area
  - Installed in 2019 as an Early Response Action (ERA)





- Declaration of Environmental Use Restriction (DEUR)
  - Limit residential use at property
- DEUR outline property owner responsibilities
  - Annual inspection
  - Maintenance of soil cover, asphalt cap, fence, & signage

# Soil Vapor Extraction (at BSL)

- SVE system operated from January 2020 to December 2020 as an ERA.
- Soil vapor concentrations fell below the level that could lead to impacts in groundwater above the Arizona Water Quality Standards (AWQS).
- SVE system and supporting infrastructure was removed completely by January 2022.



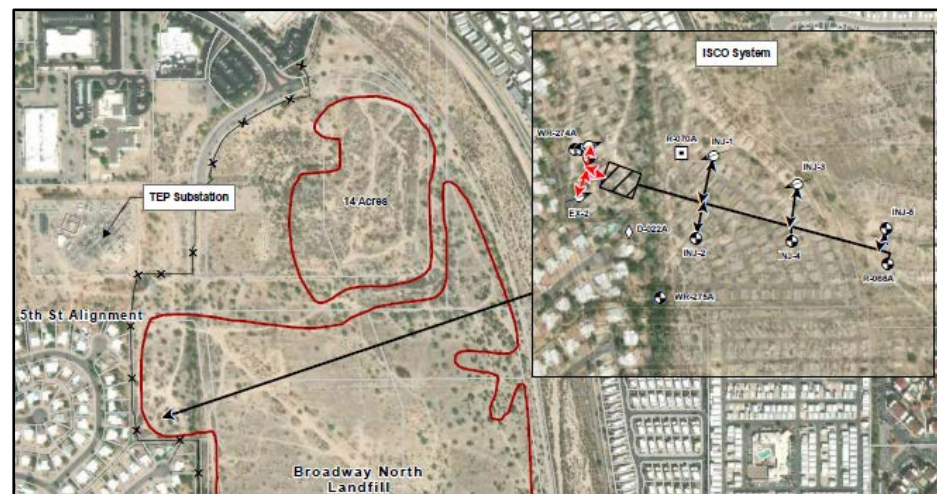
After installation (2019)



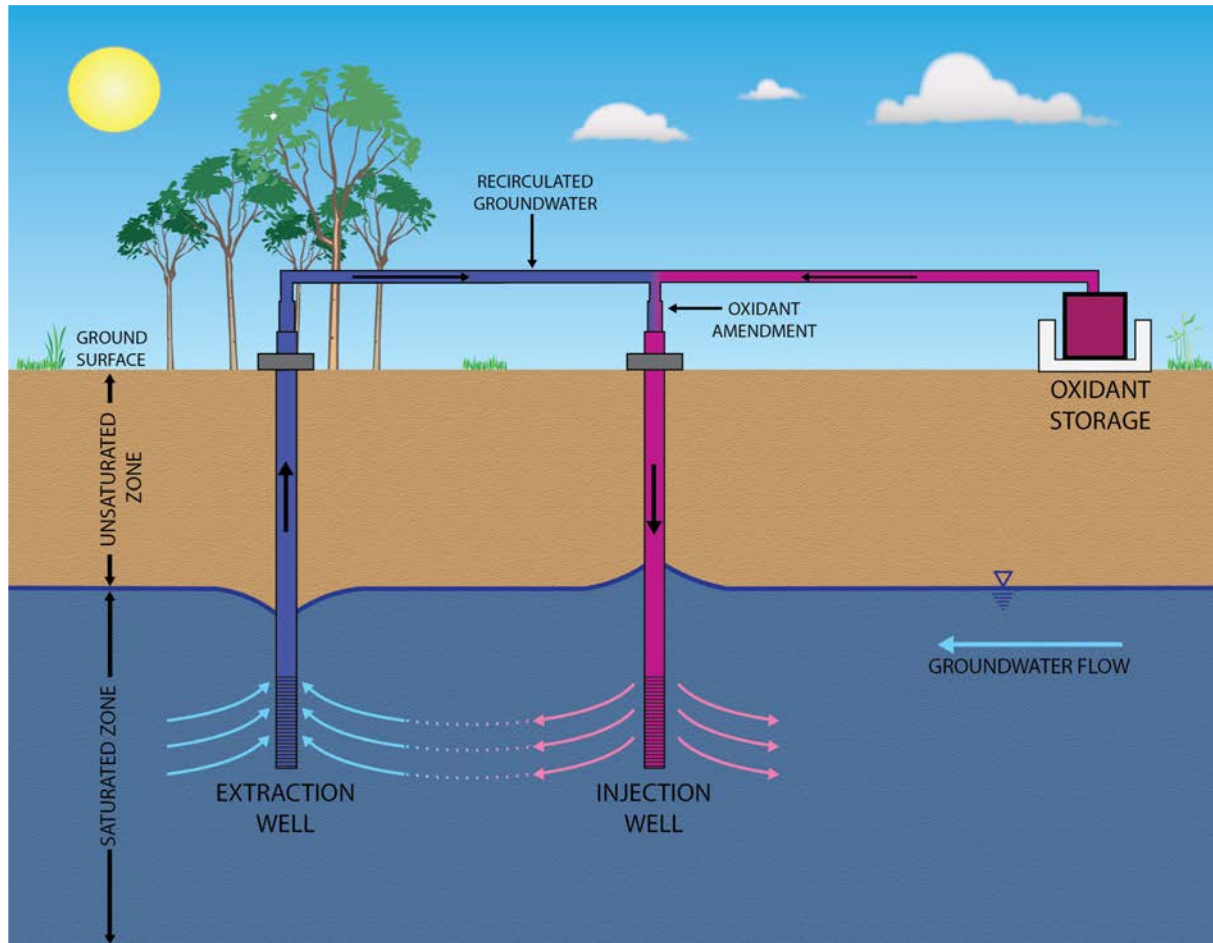
After demolition (2022)

# ISCO Groundwater Treatment (at BNL)

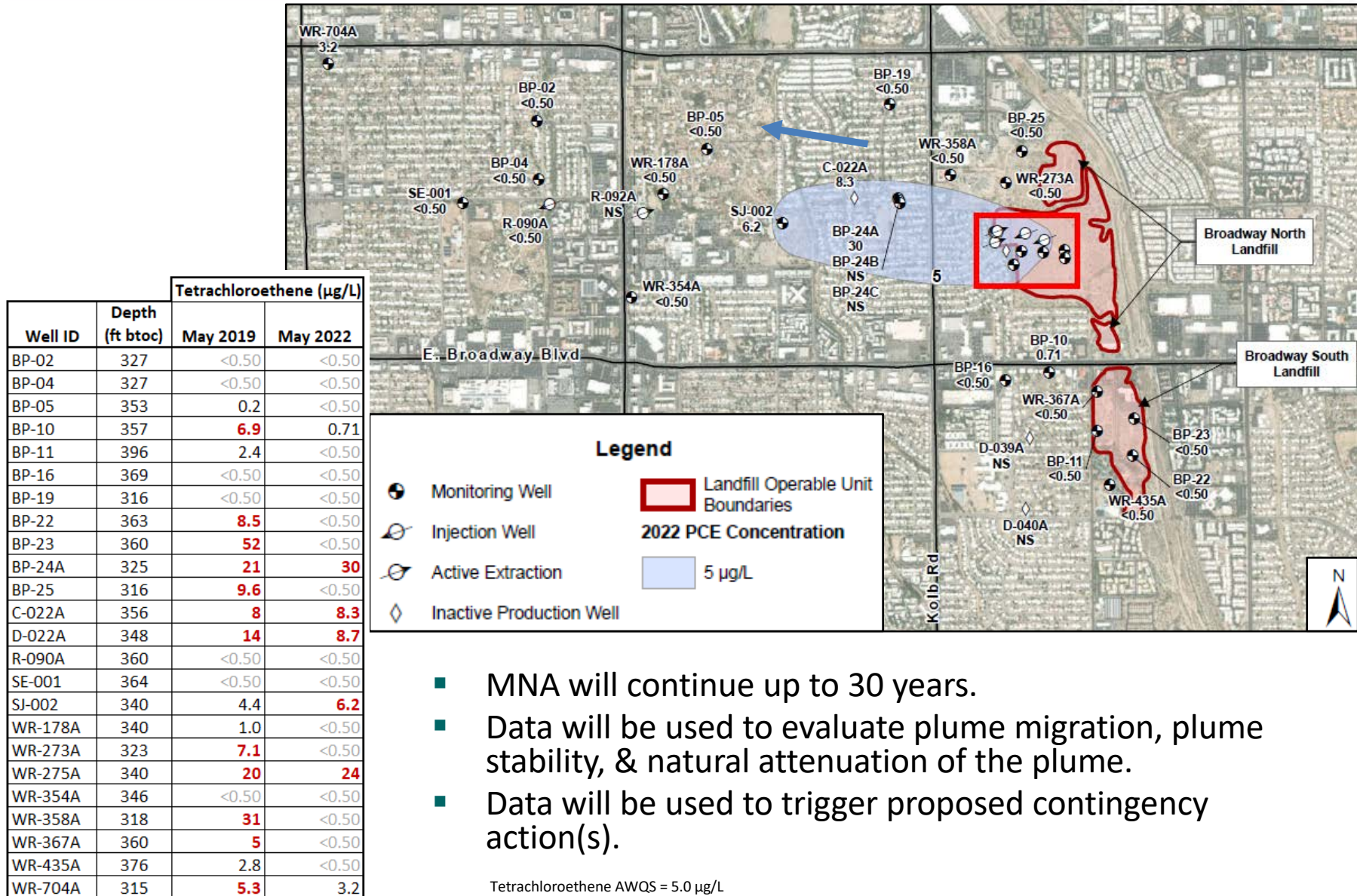
- In-Situ Chemical Oxidation (ISCO) system was installed in 2019 as an ERA. Operation is currently ongoing.
- Approximately 25 million gallons of water are pumped and injected annually.
- PCE and TCE concentrations are decreasing, indicating the system is containing downgradient migration of contaminated groundwater.



# ISCO Conceptual Design



# MNA & Groundwater Monitoring



- MNA will continue up to 30 years.
- Data will be used to evaluate plume migration, plume stability, & natural attenuation of the plume.
- Data will be used to trigger proposed contingency action(s).

Tetrachloroethene AWQS = 5.0 µg/L

- ROD is the next milestone document.
- Continuation of ISCO system at BNL.
- Continue with annual monitoring.



## Contact Information



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