

Water Quality Assurance Revolving Fund (WQARF) Overview

Lake Havasu City Public Meeting

December 7, 2022

Hazel Cox, Project Manager



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.



Soil and Groundwater

- Soil
 - Unsaturated (dry)
 - From ground surface to water table
- Groundwater
 - Saturated (wet)
 - Can also be in fractured rock

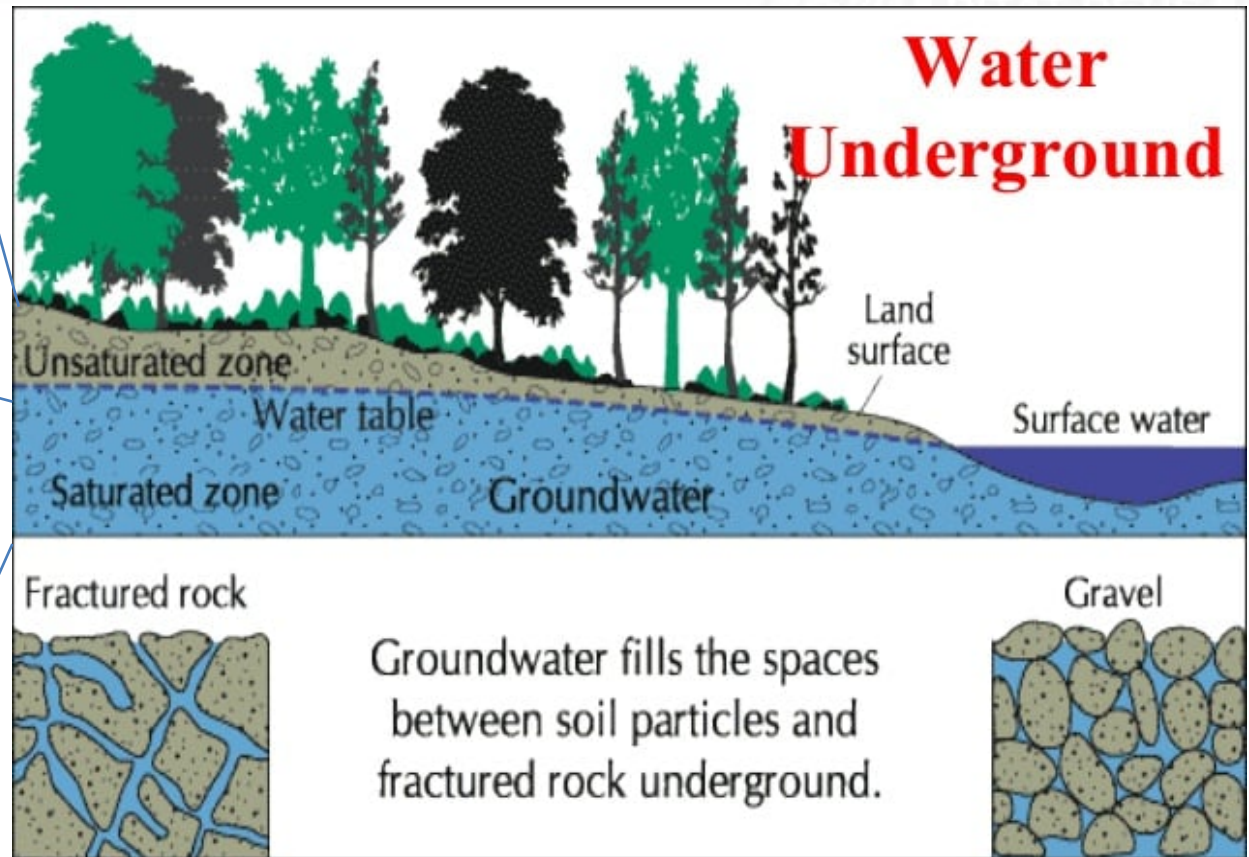
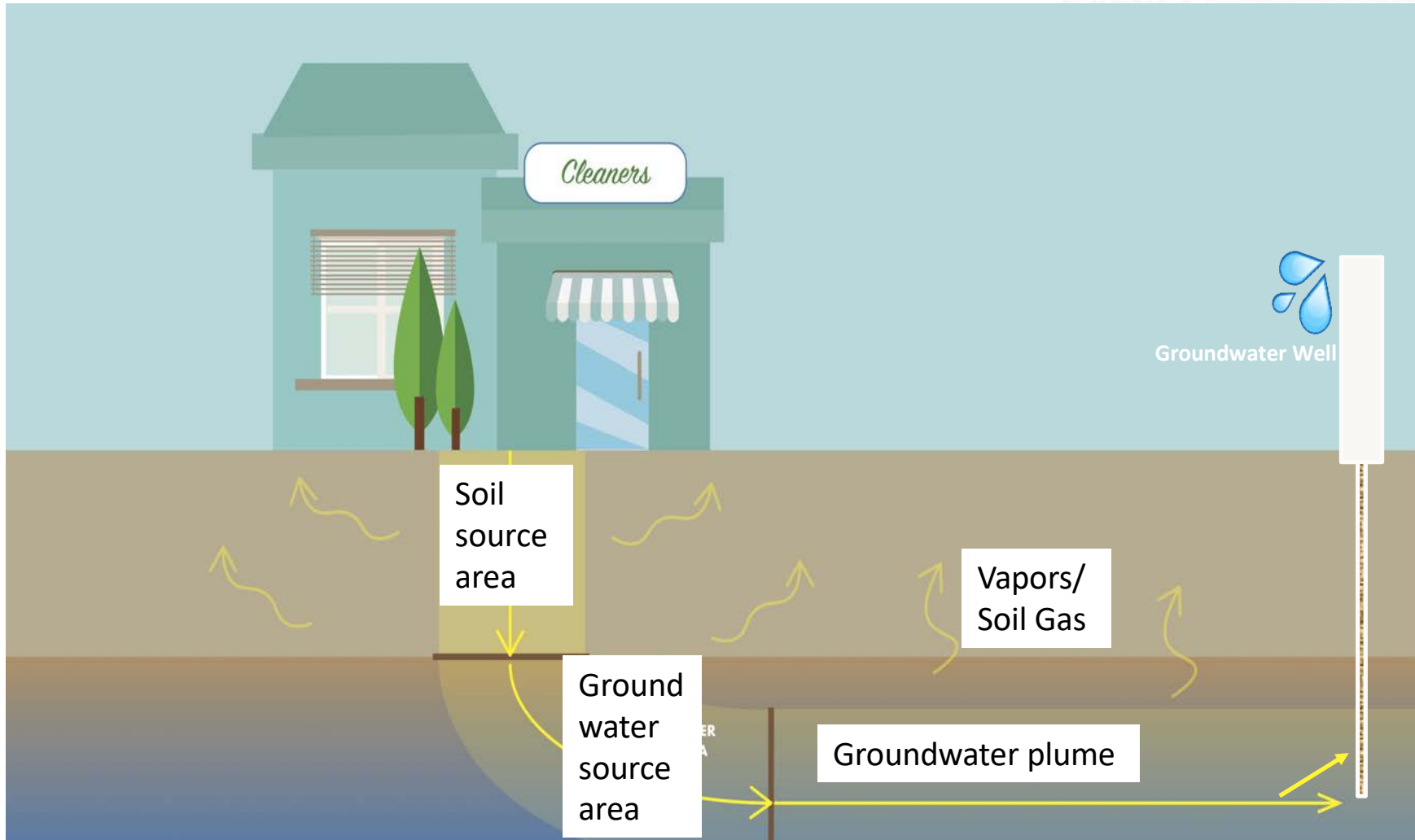


Image compliments of US Geological Survey, adapted by The Groundwater Foundation.

- Note: “Aquifer” is an area of groundwater

Source: <https://studylib.net/doc/9682822/water-underground>

Contamination of Soil and Groundwater



Source: enviroforensics.com/blog/the-environmental-consultants-remediation-tool-belt-for-dry-cleaners/

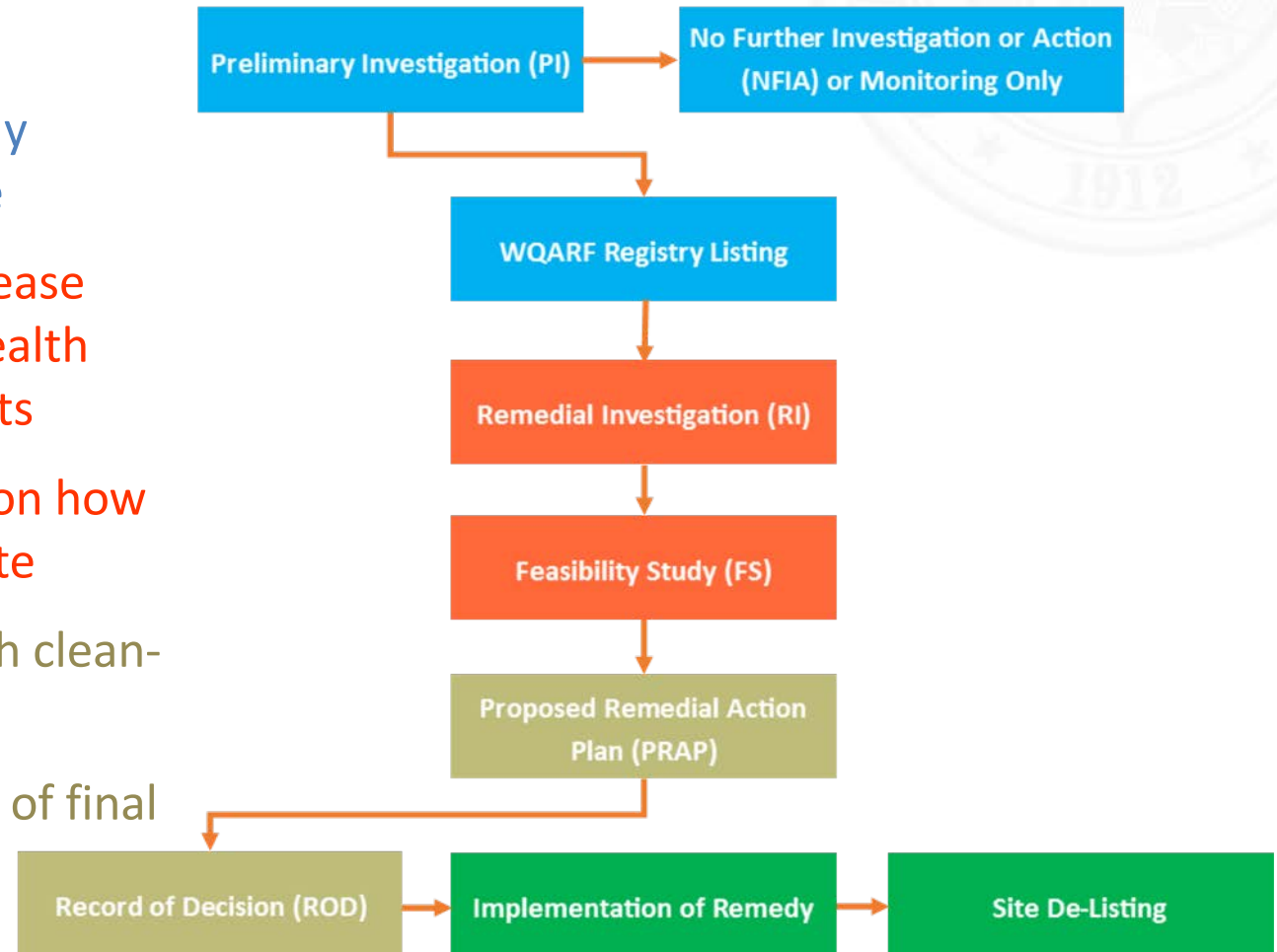
- Solvents/degreasers, e.g.
 - Tetrachloroethene – PCE
 - Trichloroethene – TCE
- Heavy metals, e.g.
 - Chromium
 - Arsenic



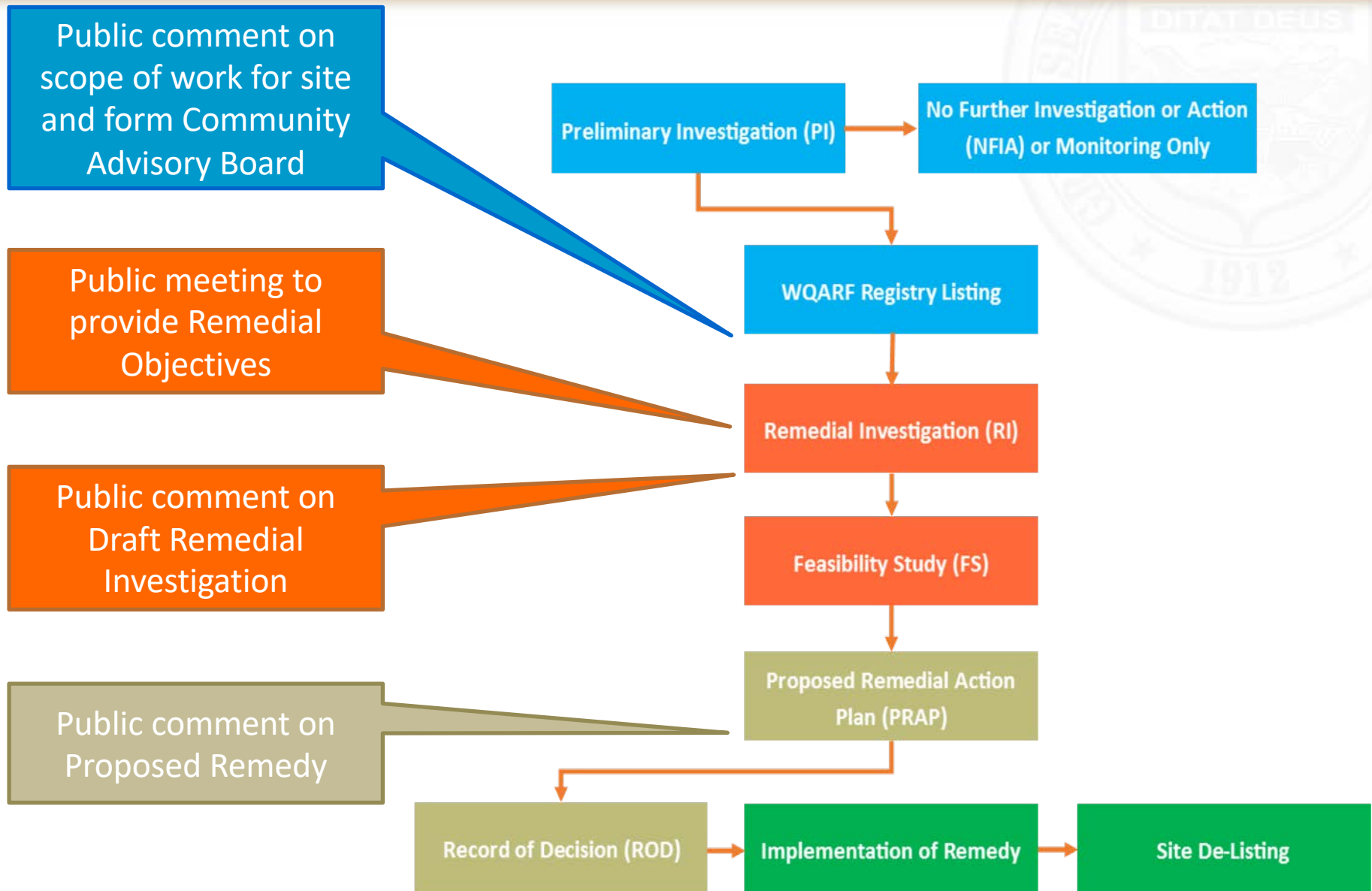
- **Water and Soil Standards**
 - Groundwater: Aquifer Water Quality Standards (AWQS)
 - Drinking water: Maximum Contaminant Levels (MCLs) – from Environmental Protection Agency (EPA)
 - Soil: Soil Remediation Levels (SRLs)
- **Screening Levels**
 - Soil gas: Soil Vapor Screening Levels (SVSLs)
 - Indoor air: Regional Screening Levels (RSLs) – from EPA

Steps in WQARF

- PI – Is there a release/further investigation needed?
- Registry Listing - Legally makes it a WQARF site
- RI – Finds extent of release and looks for public health /environmental impacts
- 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



Public Participation in WQARF



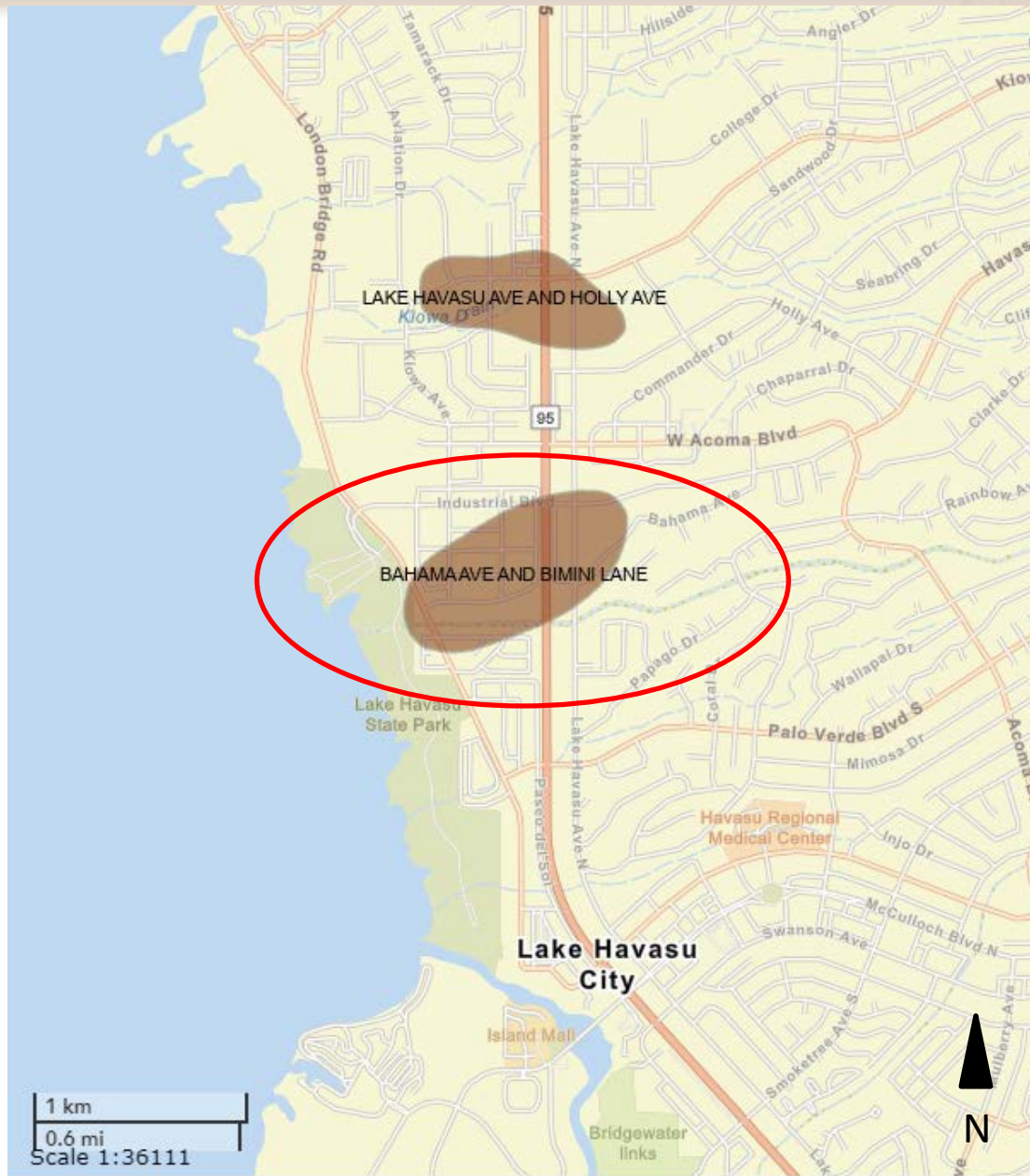
Bahama Avenue and Bimini Lane Water Quality Assurance Revolving Fund (WQARF) Site Lake Havasu City Public Meeting

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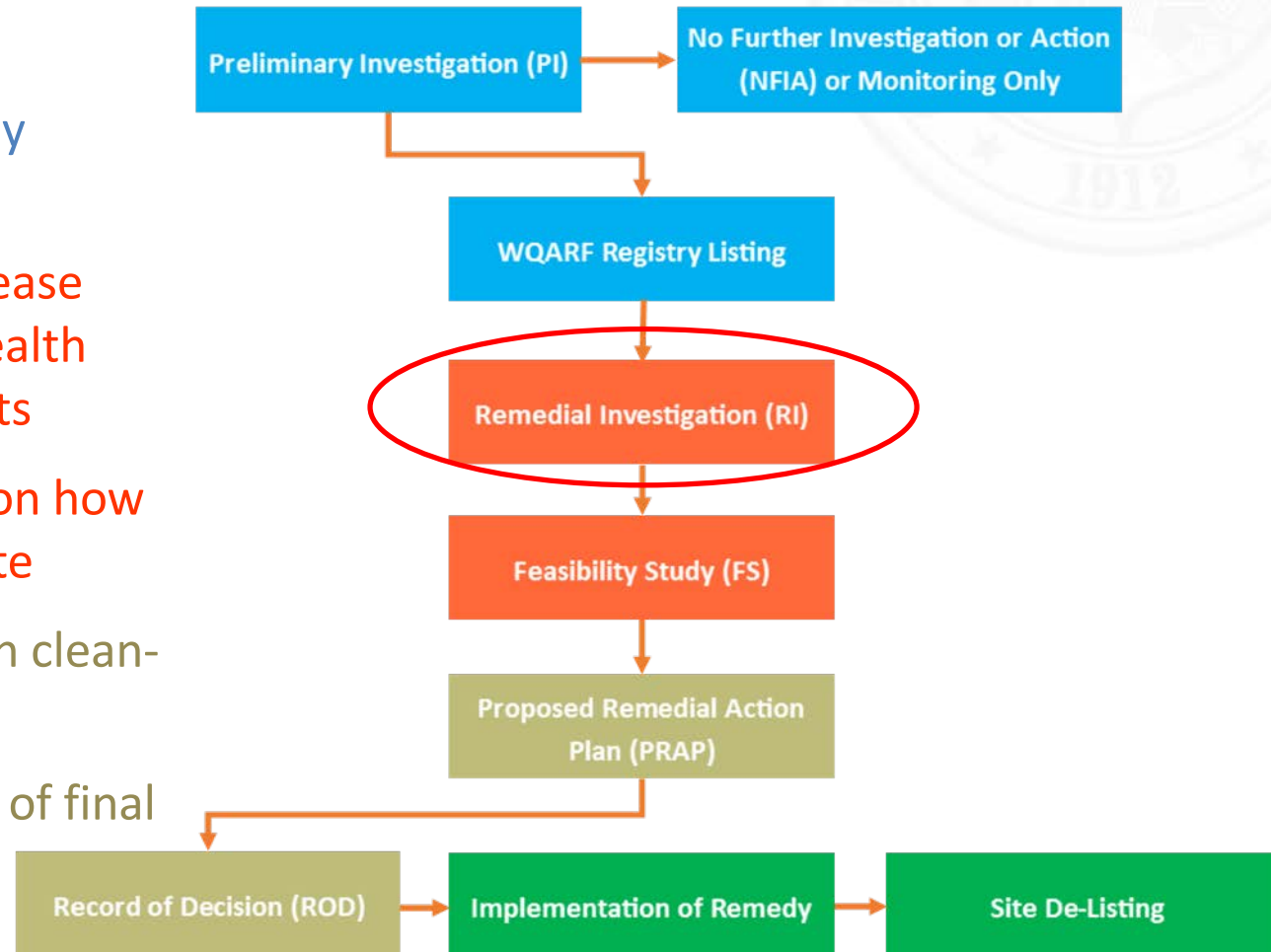


Site Location



Bahama Ave and Bimini Ln in WQARF Process

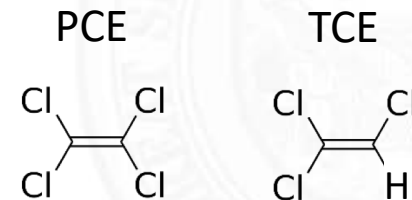
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Main site contaminants:

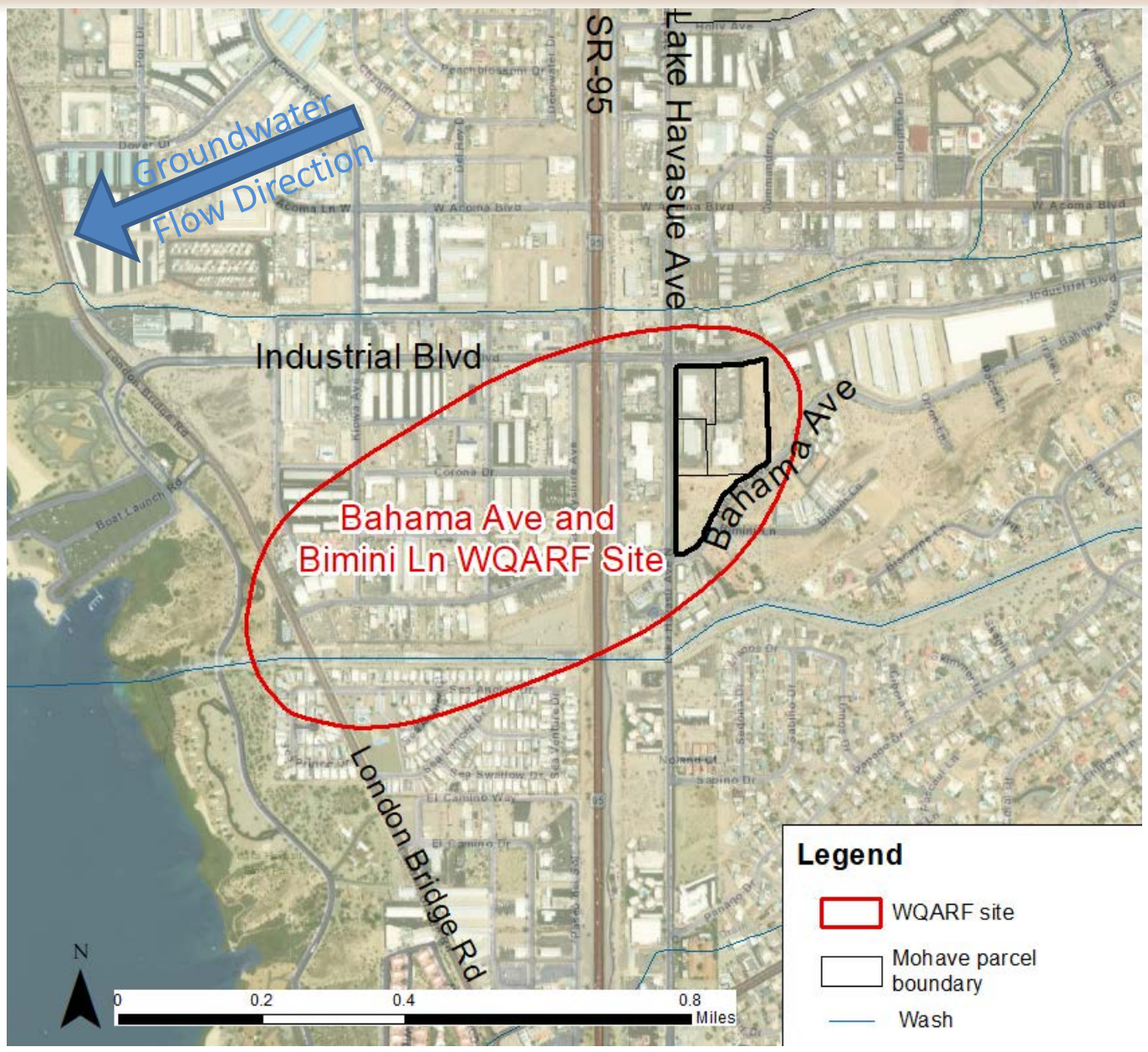
- PCE and TCE

- Found in soil-gas and groundwater
- Soil Gas Screening Levels
 - TCE = 16 or 100 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)
 - PCE = 366 or 1,566 $\mu\text{g}/\text{m}^3$
- AWQS for PCE and TCE = 5 micrograms per liter ($\mu\text{g}/\text{L}$)



- Micrograms per liter (used for water)
 - $\mu\text{g/L}$
 - Parts per billion (ppb)
 - $1 \mu\text{g/L} \approx 1$ drop of water in a backyard swimming pool
- Micrograms per cubic meter (used for soil gas)
 - $\mu\text{g/m}^3$
 - Mass of contaminant in a cube of air 1 meter per side

Site Detail Map

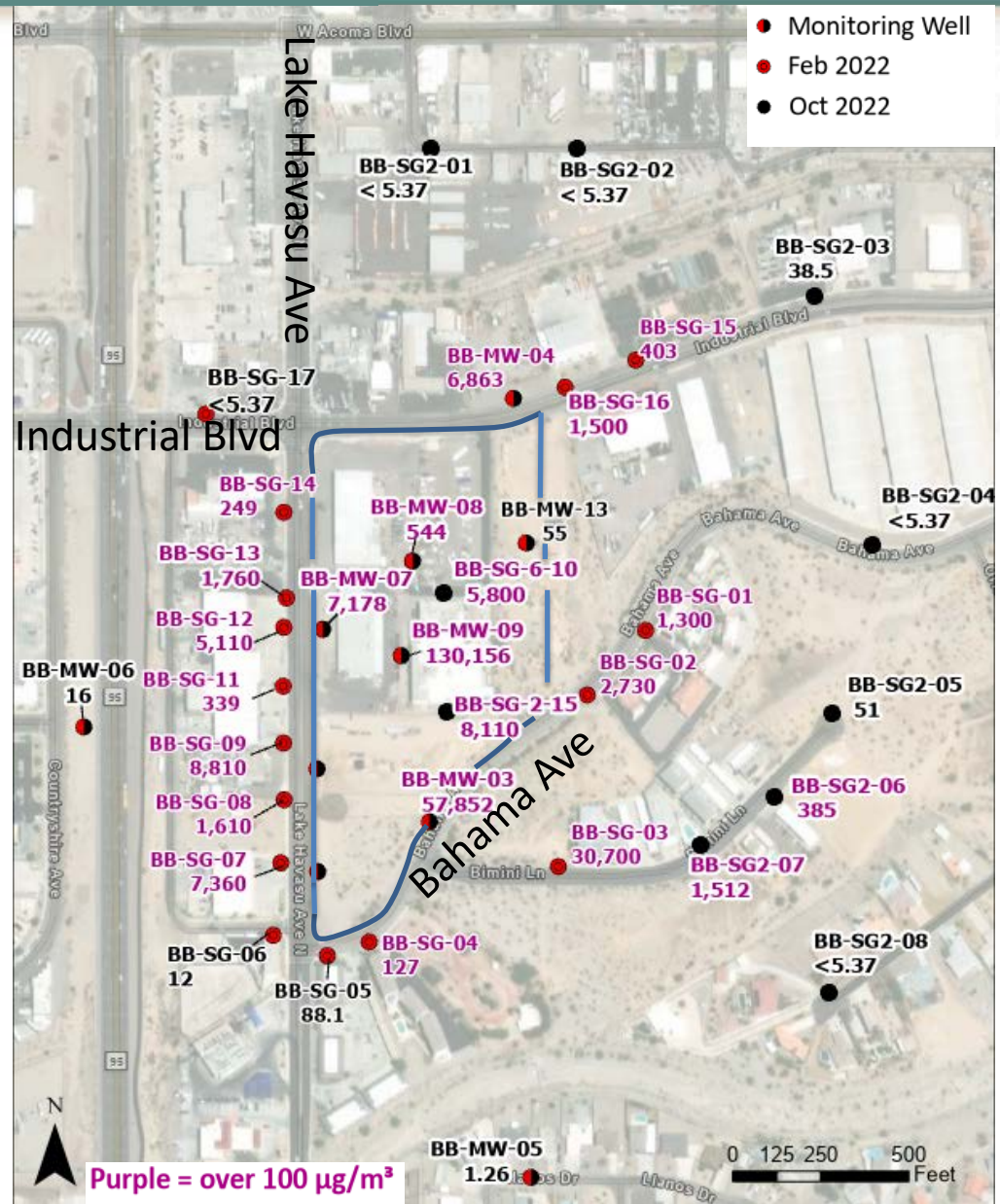


Site Detail Map

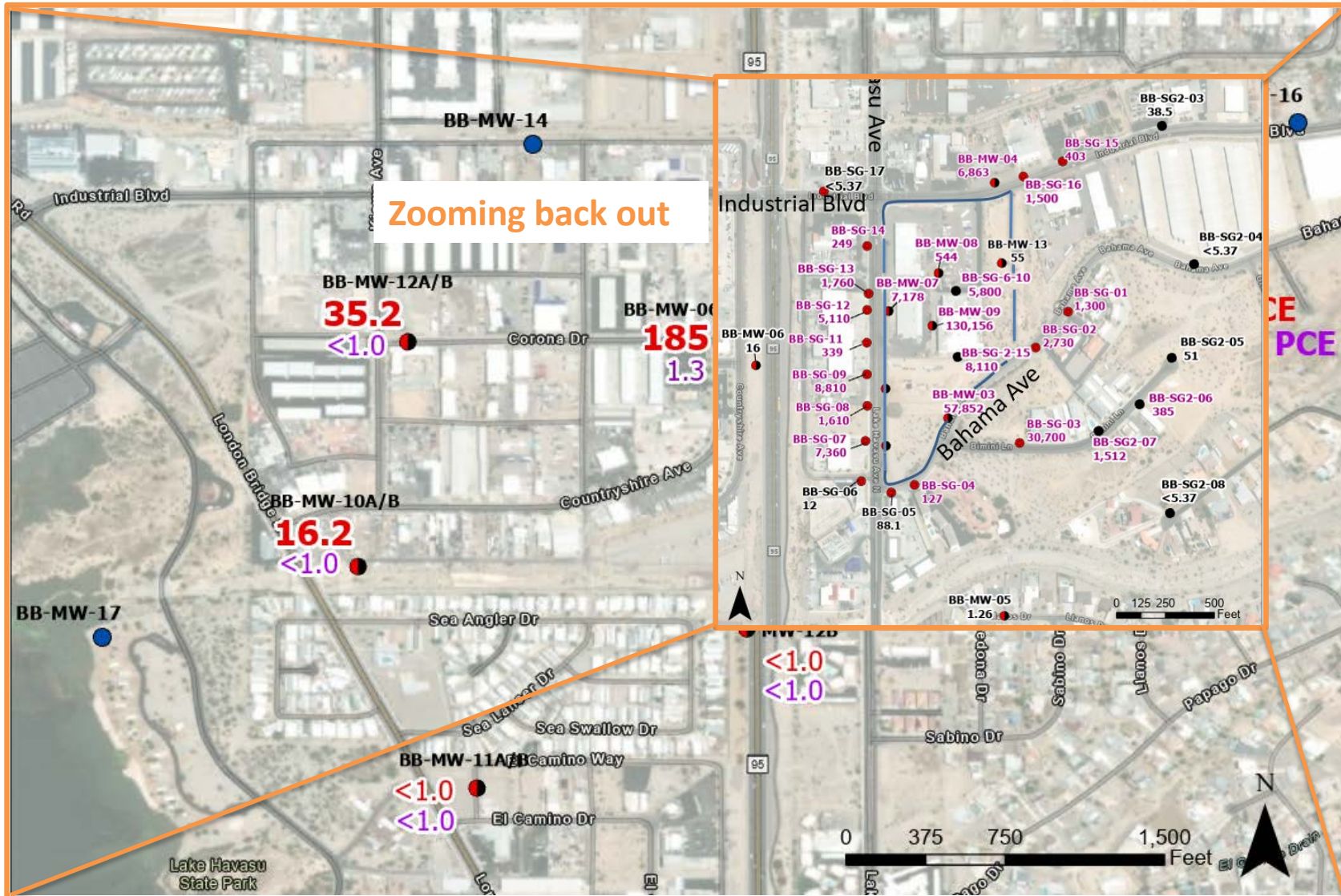


Soil Gas Results

- TCE in soil gas approx. 15 ft deep
- Numbers are in $\mu\text{g}/\text{m}^3$
- Soil Gas Screening Level = $100 \mu\text{g}/\text{m}^3$
- Highest concentration $130,156 \mu\text{g}/\text{m}^3$

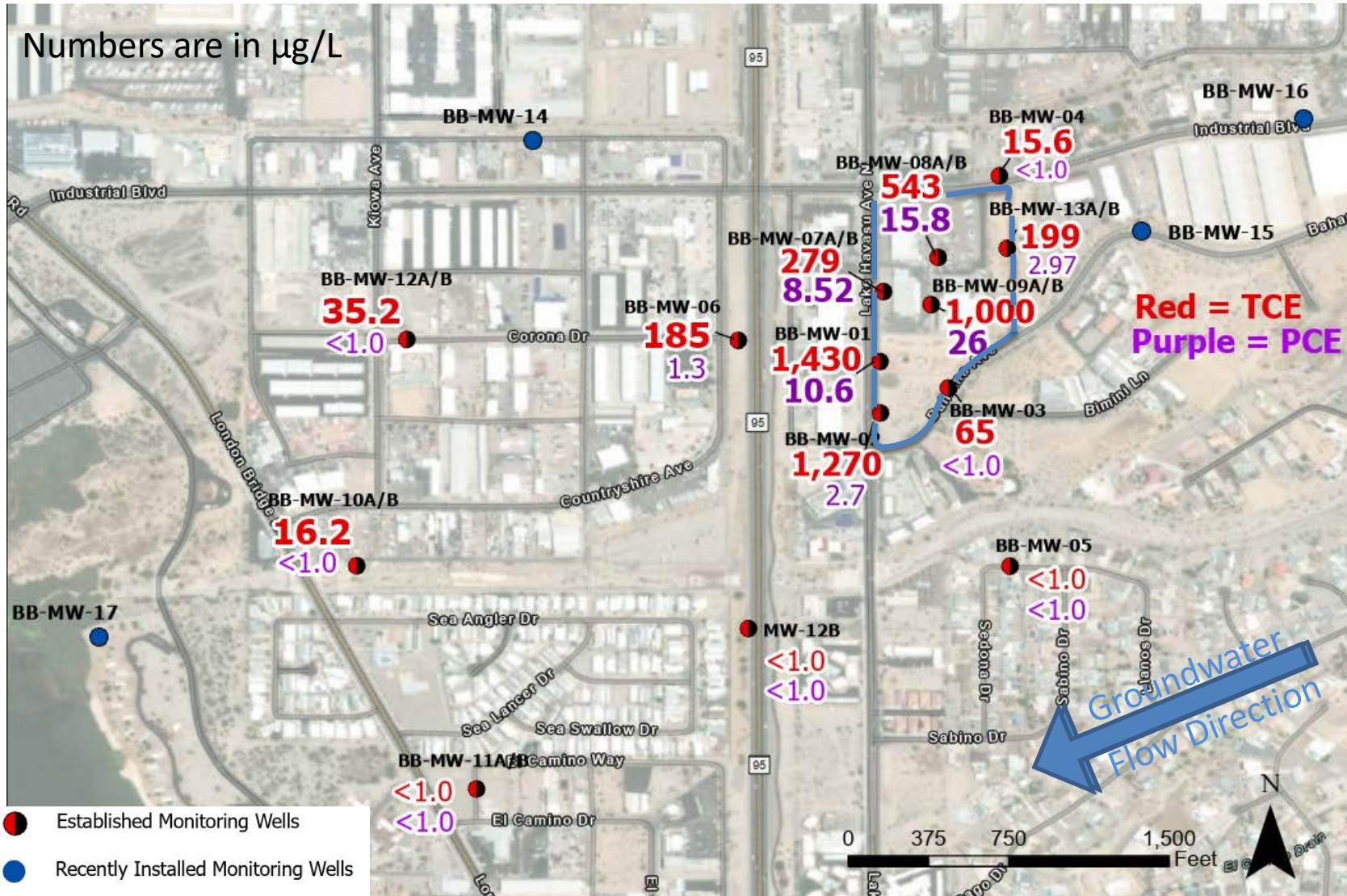


Soil Gas Results

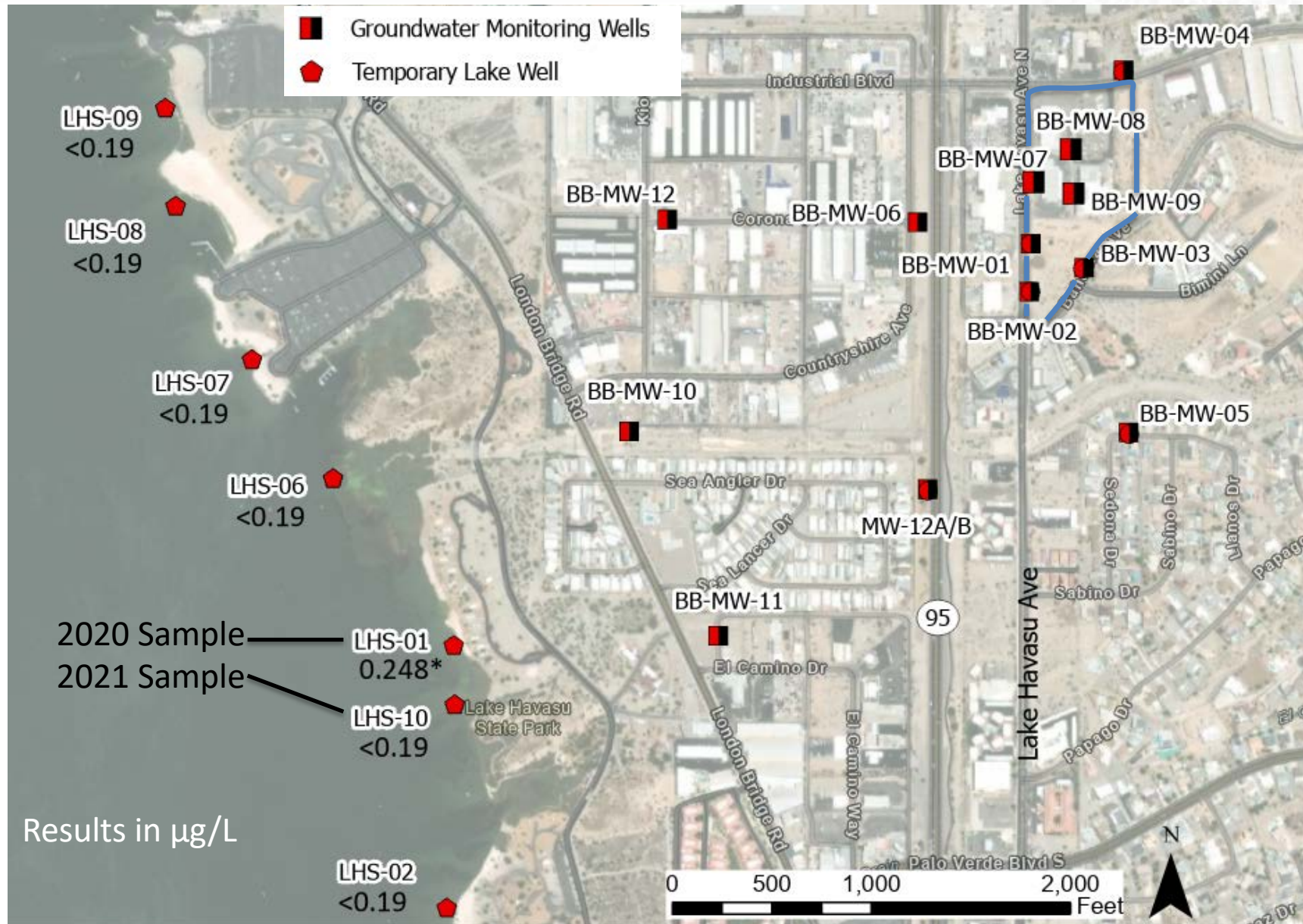


Groundwater Results

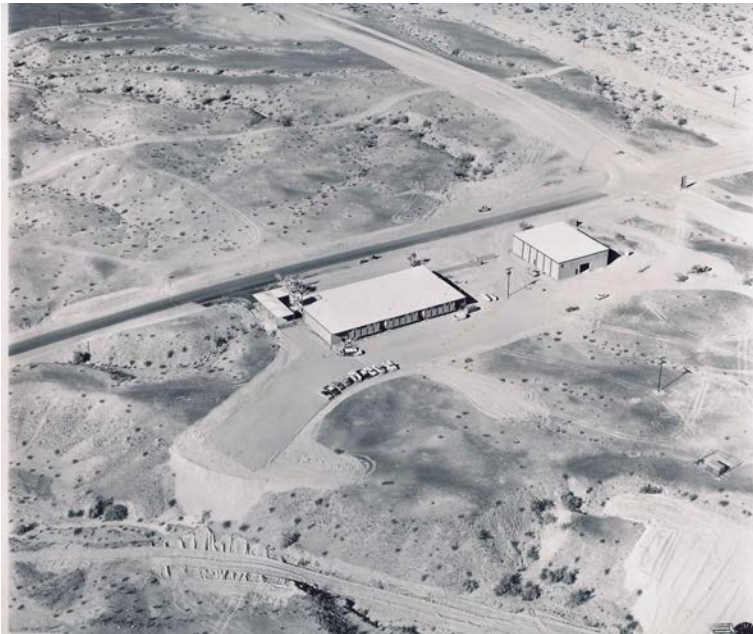
- AWQS of TCE and PCE = 5 µg/L



Lake Sampling Results



- Remedial Investigation Report
 - Will show where contamination is currently – both distance from the Site and how deep
 - Will have a risk evaluation on the Site
 - Will detail the current and future land and water use in the area



Early 2023:

- Draft Remedial Investigation Public Comment Period
- Public Meeting for Remedial Objectives (ROs) Solicitation
 - ROs are the clean-up goals for the site





- ADEQ's promise to CABs:
 - Keep CABs informed
 - Ask for CAB feedback on our activities and decisions

What do CABs do?

- Meet with ADEQ
- Learn about the site
- Give ADEQ feedback
- Share updates with community

We Need YOU!

Contact us!

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