ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Bahama Avenue and Bimini Lane Water Quality Assurance Revolving Fund (WQARF) Site

Draft Remedial Investigation and Remedial Objective Solicitation Community Meeting

Hazel Cox, Project Manager

9/1/2026

Overview

- General Information and Water Quality Assurance Revolving Fund (WQARF) overview
- Draft Remedial Investigation Report Findings
  - Defined the areas of soil, soil-gas, and groundwater contamination
  - Found no known current exposure to the contamination
- Remedial Objective (RO) Solicitation
  - ROs come from the public, per law
  - State regulations state how they are written
- Next Steps in WQARF

General Information
&
WQARF Process

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What is WQARF?

- 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.

azdeq.gov/WQARF

Soil and Groundwater

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

- Note: “Aquifer” is an area of groundwater

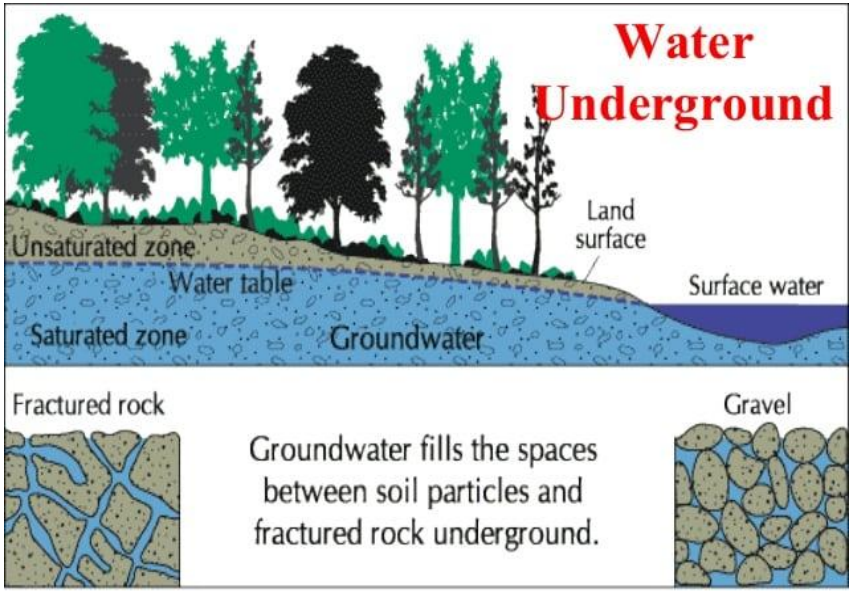
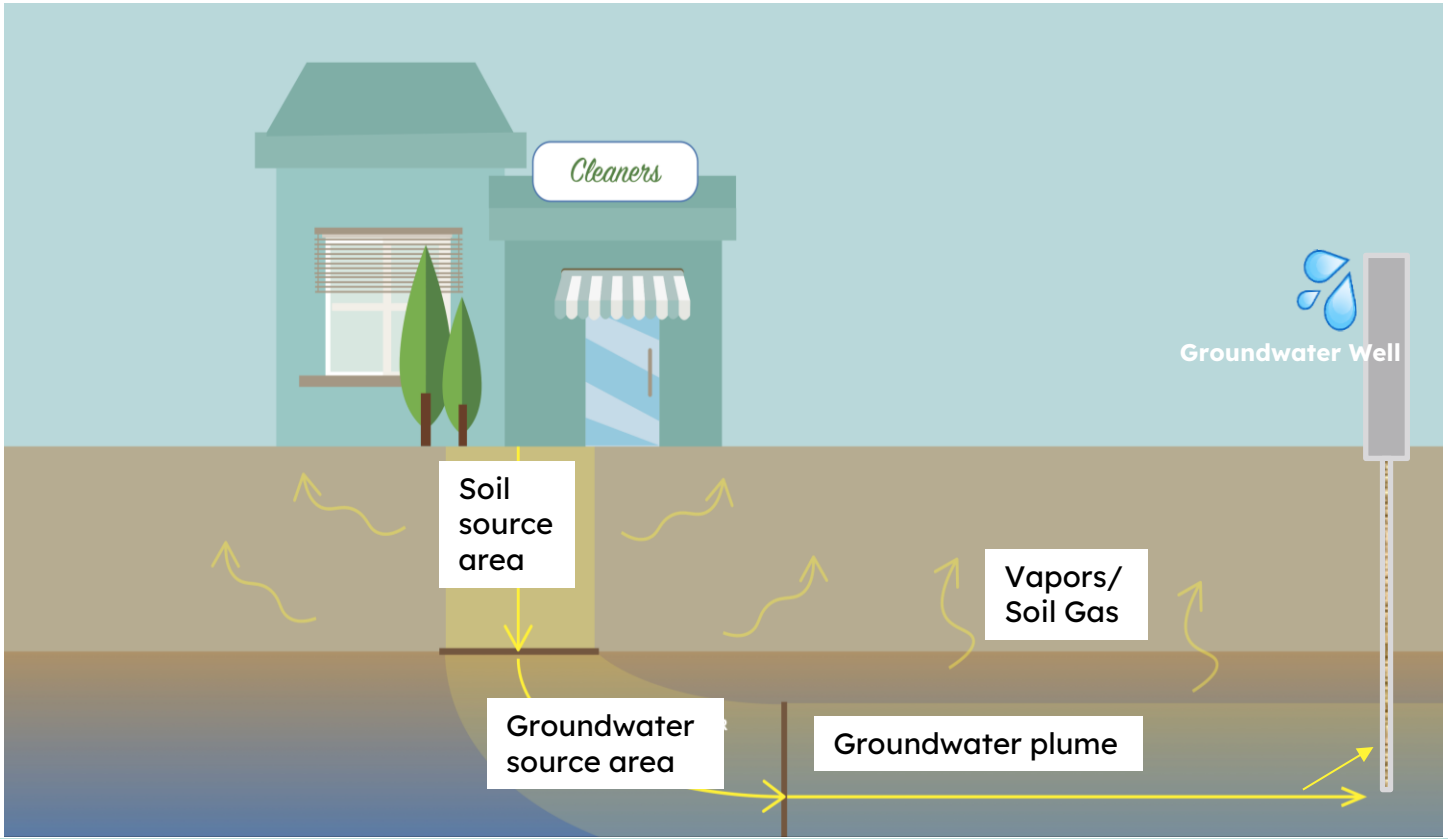


Image compliments of US Geological Survey, adapted by The Groundwater Foundation.

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

Contamination of Soil and Groundwater



Common WQARF Site Contaminants

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

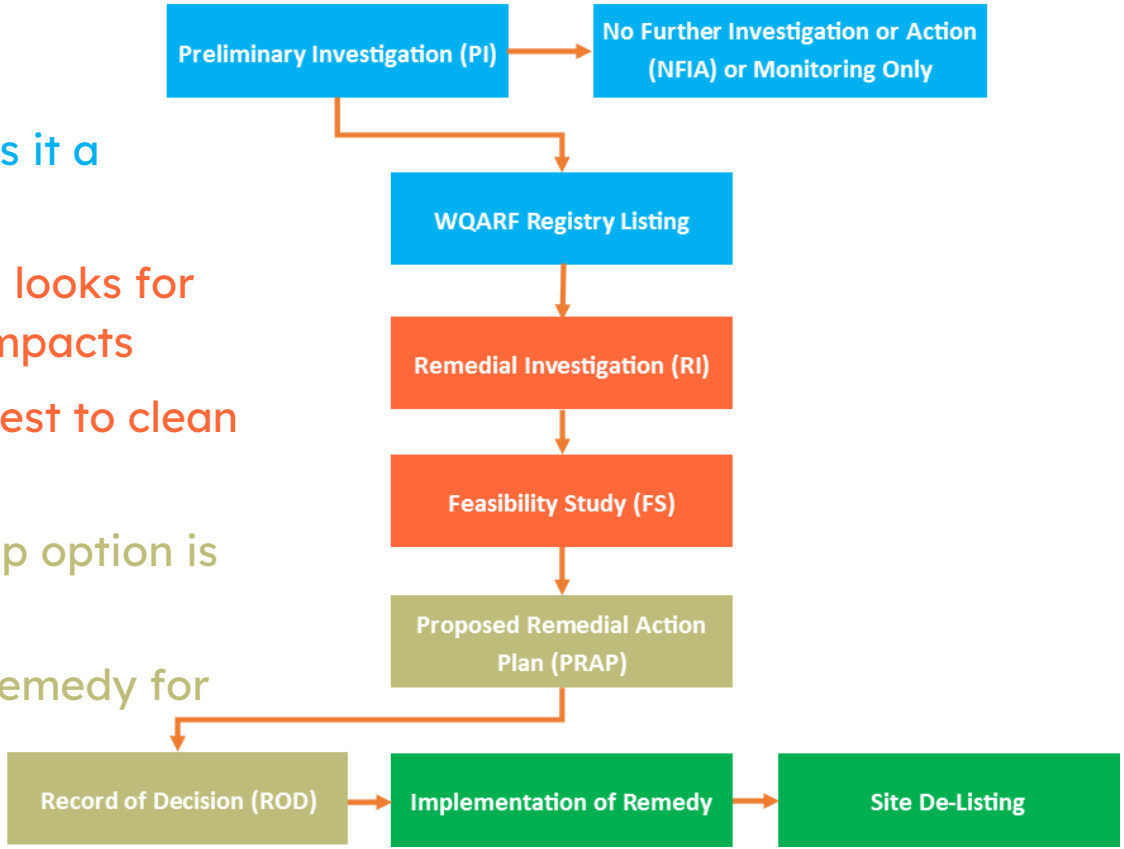
WQARF Standards and Screening Levels

- Water and Soil Standards
  - Groundwater: Aquifer Water Quality Standards (AWQS)
  - Drinking water: Maximum Contaminant Levels – from the U.S. Environmental Protection Agency (EPA)
  - Soil: Soil Remediation Levels (SRLs)

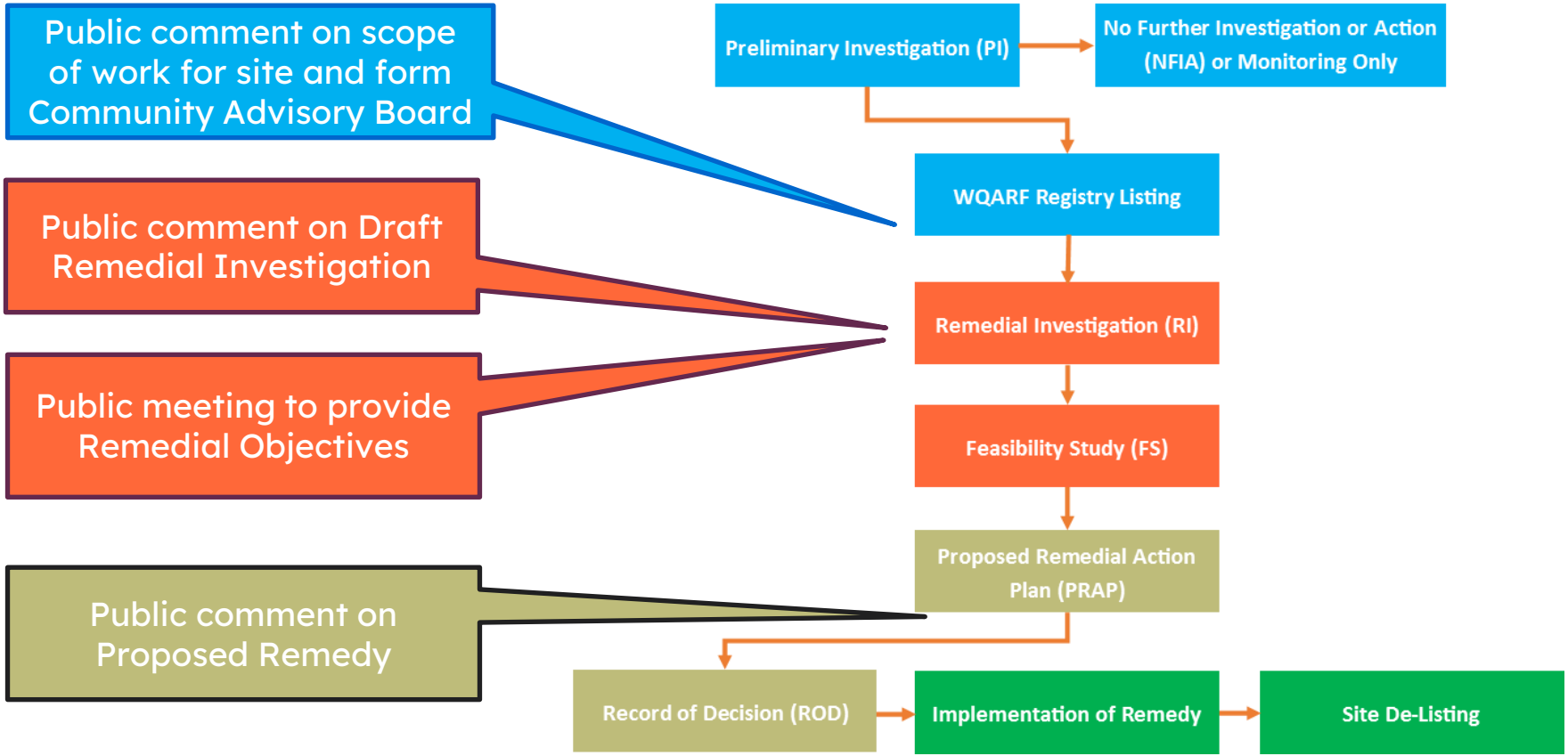
- Screening Levels
  - Soil gas: Soil Vapor Screening Levels
  - Indoor air: Regional Screening Levels – from EPA

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



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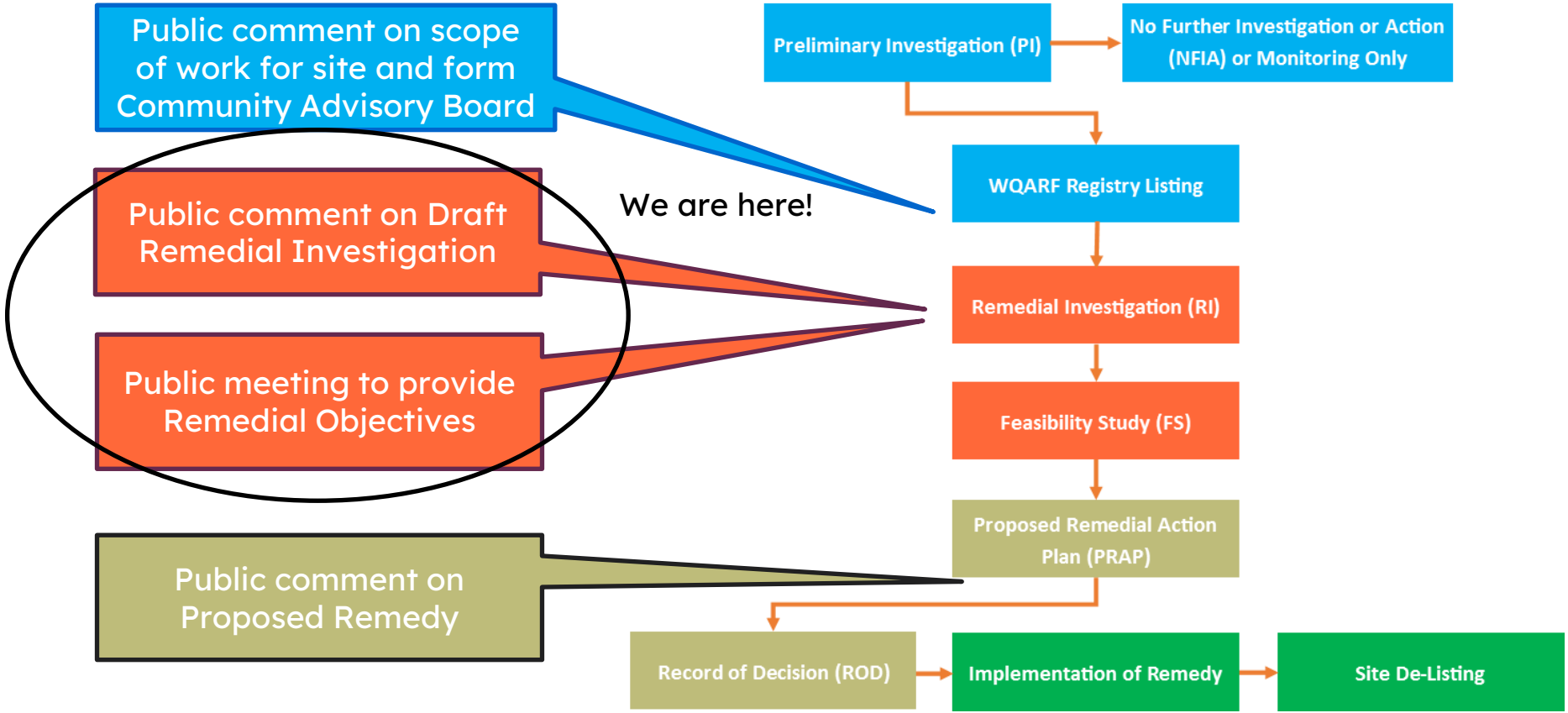

Draft Remedial Investigation

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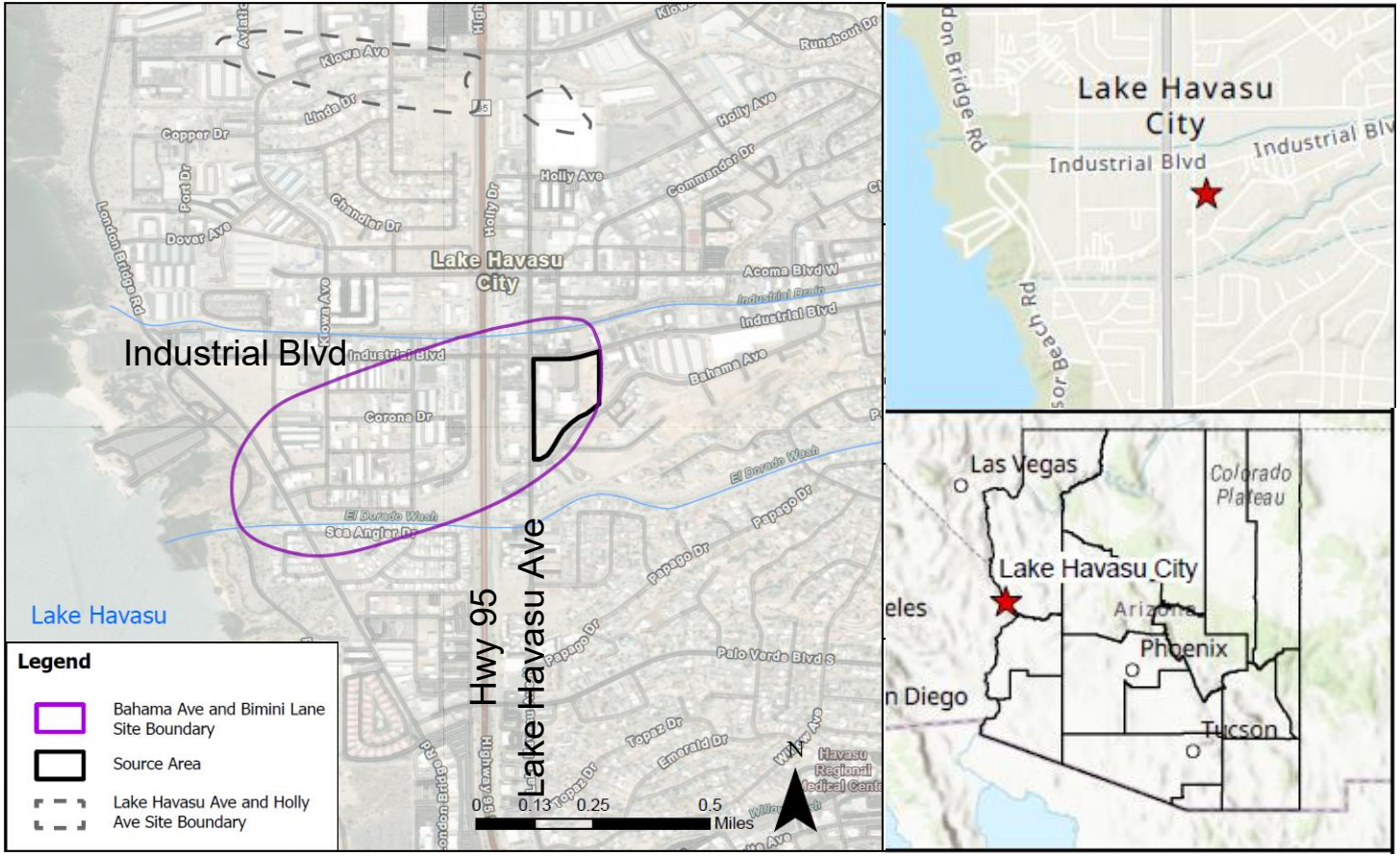
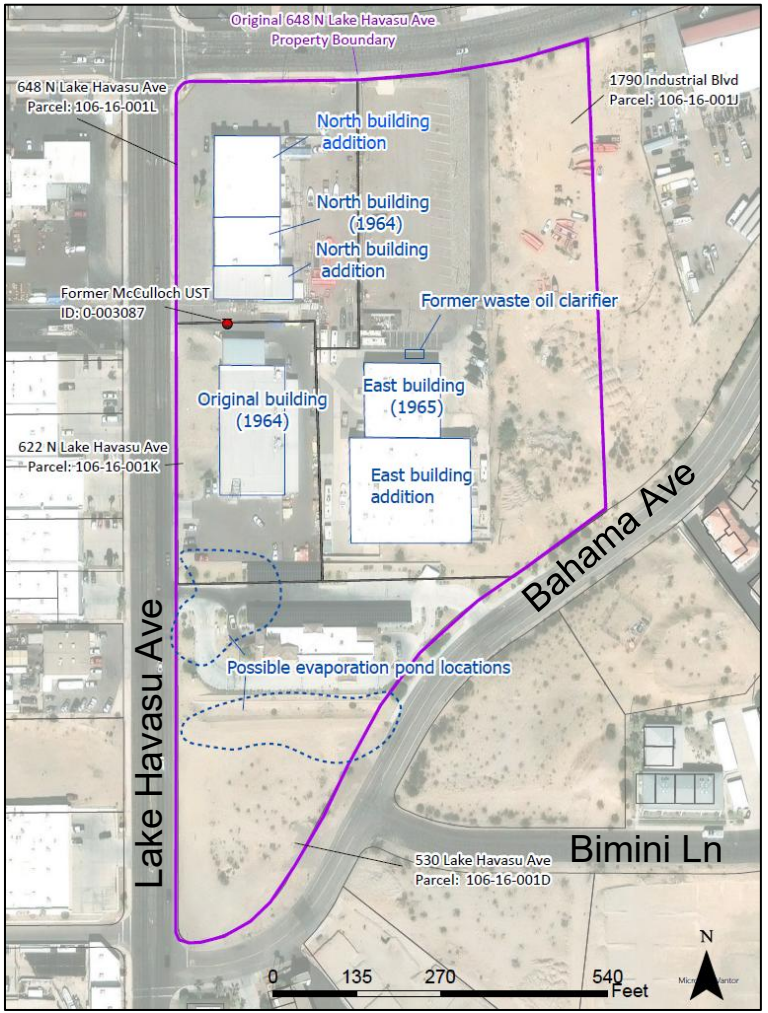
Site Location



Former Facility Layout

- Original facility operated 1964 to 1989
- Property split into multiple parcels and sold
- Various commercial and light industrial companies at the site since
- Further parcel splits occurred after the RI investigations



Legend

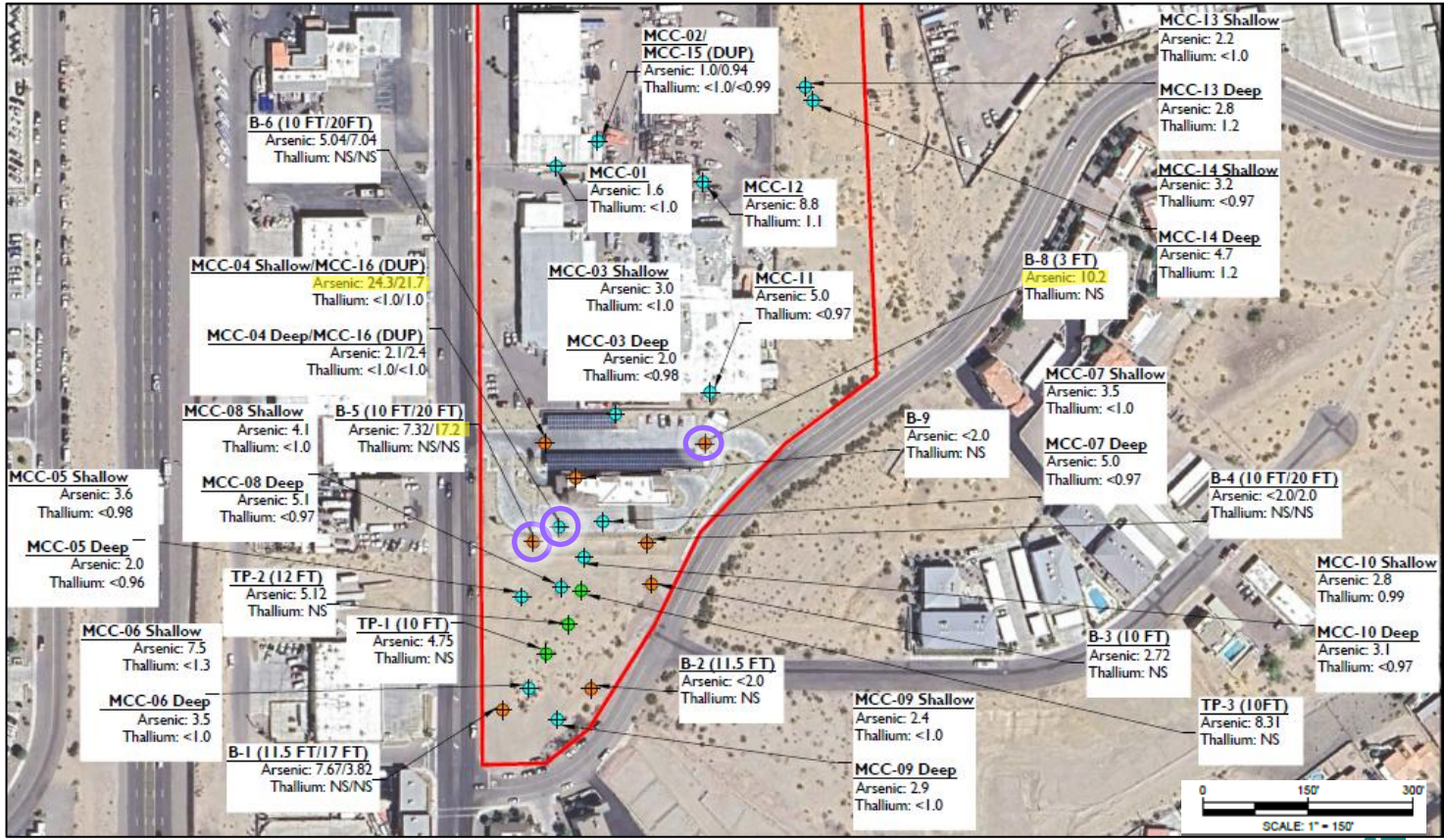
- Former Facility Area
- Facility Features
- Property Boundaries
- Former Underground Storage Tank (UST)

Soil Contamination

Results shown in milligrams per kilogram (mg/kg)
Soil Remediation Level = 10 mg/kg

Arsenic

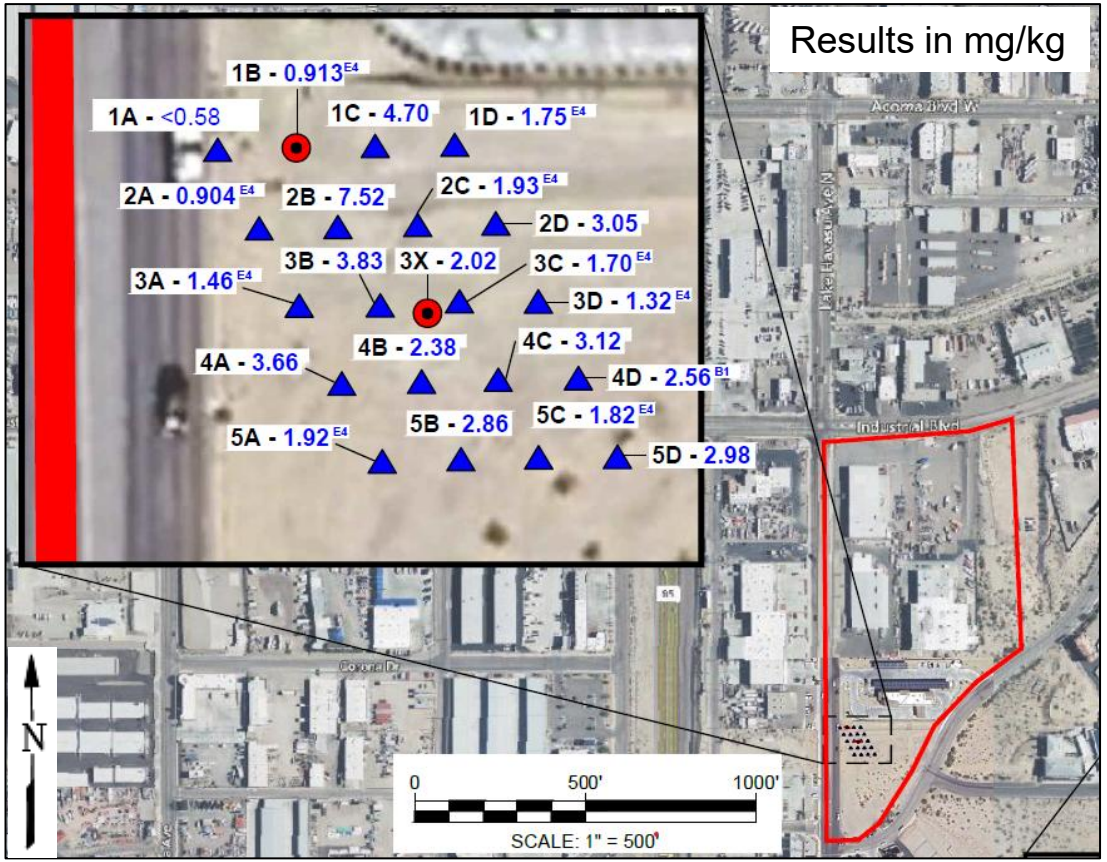
- Historically three locations over SRLs
- Two locations capped
- One location removed



Soil Contamination – Confirmation Sampling

Arsenic

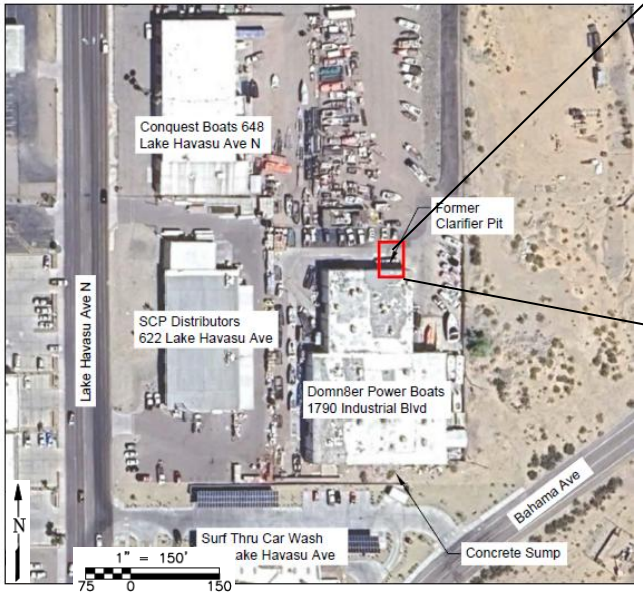
- Collected Nov 2023
- Highest concentration 7.52 mg/kg
  - Soil Remediation Level = 10 mg/kg



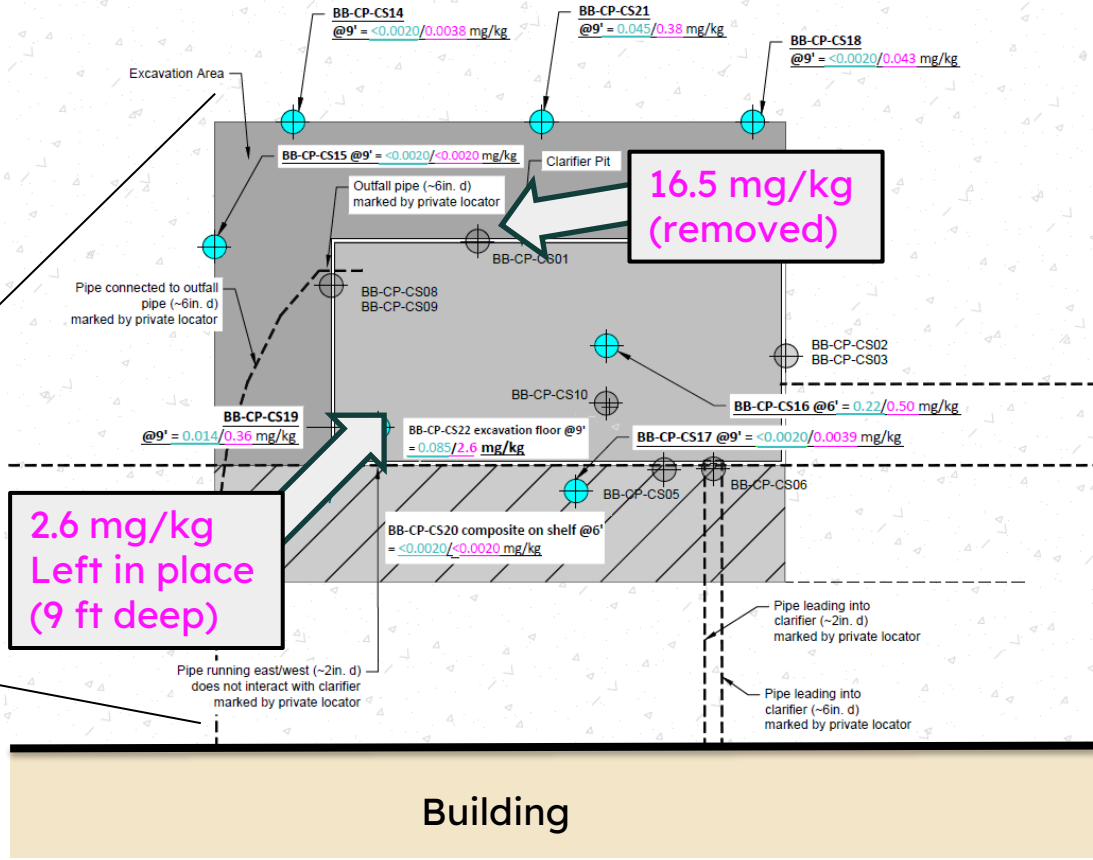
Soil Contamination

PCE

- PCE Soil Remediation Levels:
  - Residential 0.51 mg/kg
  - Non-residential = 13 mg/kg



Not to scale



TCE/PCE
Results shown in mg/kg

Early Response Action– Waste Clarifier Removal

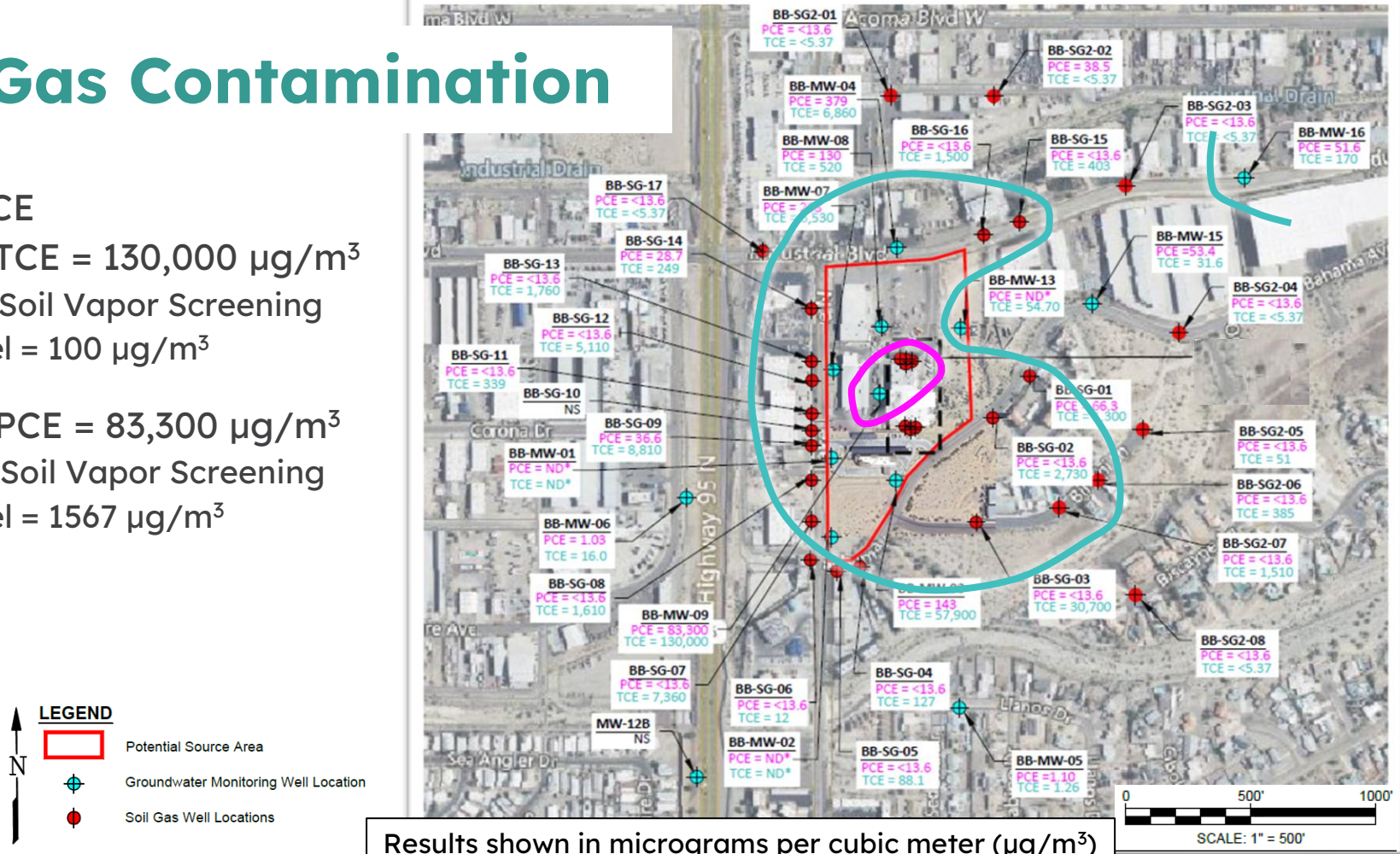
Removed

- ~1,300 gallons residual liquids
- 50+ tons of contaminated soil

Soil-Gas Contamination

TCE and PCE

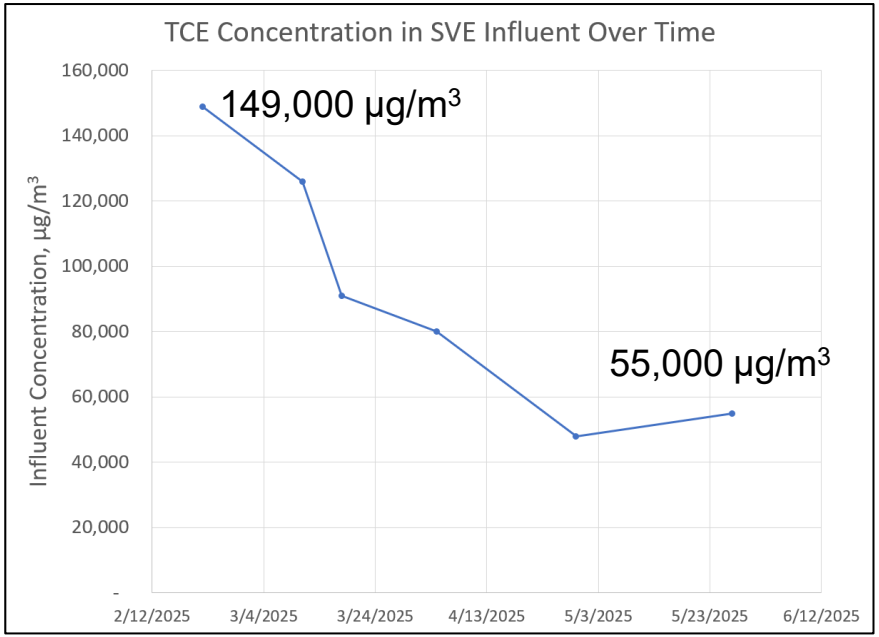
- Highest TCE = 130,000 µg/m³
  - TCE Soil Vapor Screening Level = 100 µg/m³
- Highest PCE = 83,300 µg/m³
  - PCE Soil Vapor Screening Level = 1567 µg/m³



Results shown in micrograms per cubic meter (µg/m³)

Early Response Action – Soil Vapor Extraction

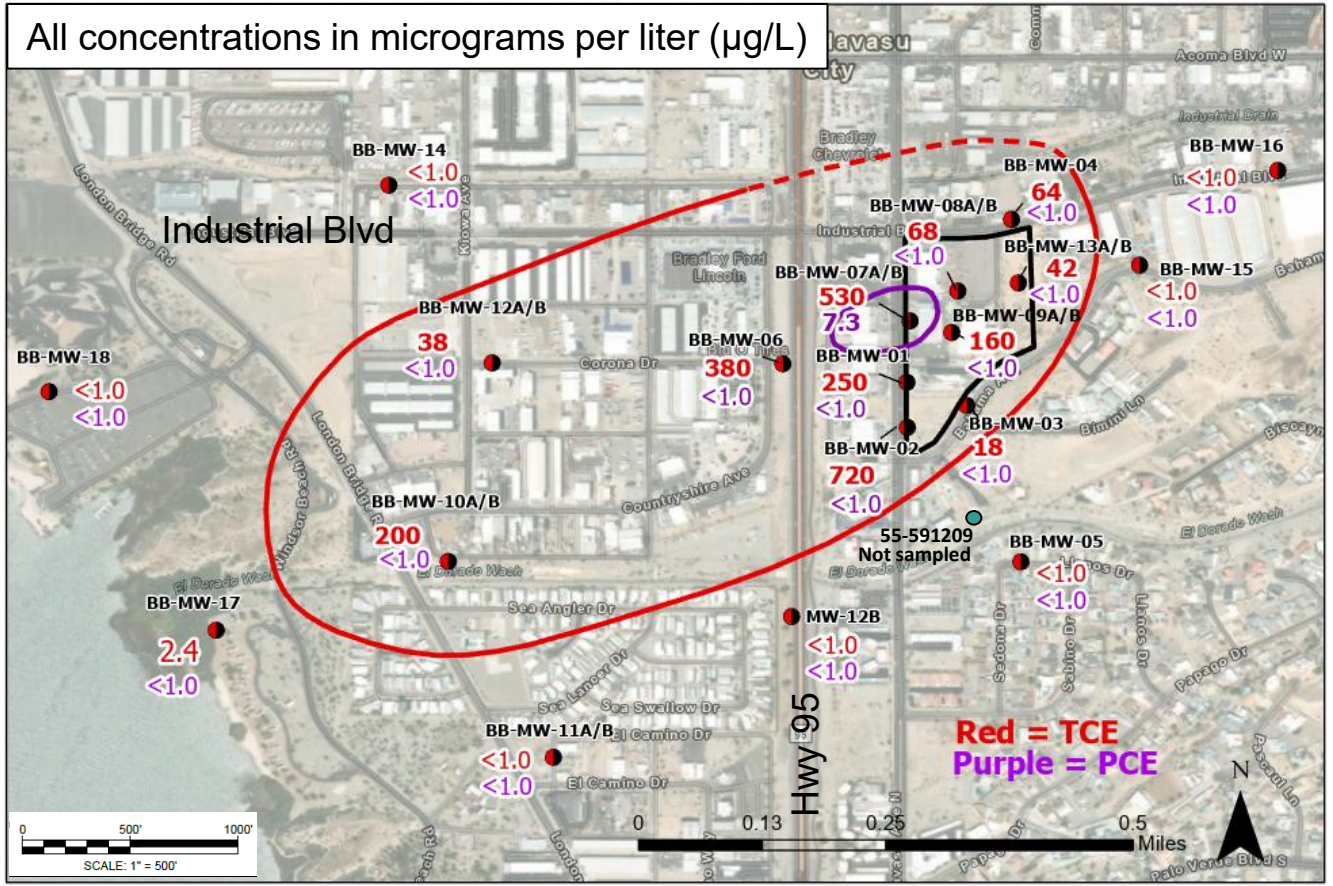
- Soil Vapor Extraction
  - Pilot test removed 2.77 pounds of TCE
  - Full scale removed 115 pounds of TCE and 1.7 pounds of PCE



Groundwater Contamination – TCE and PCE

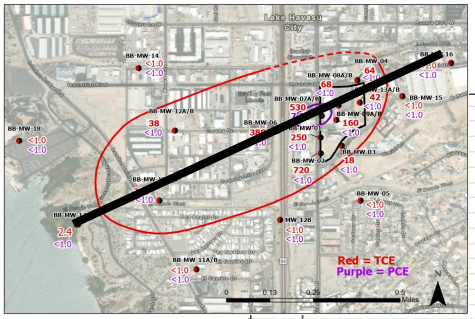
- Max TCE
  720 µg/L
- Max PCE
  7.3 µg/L

AWQS = 5 µg/L



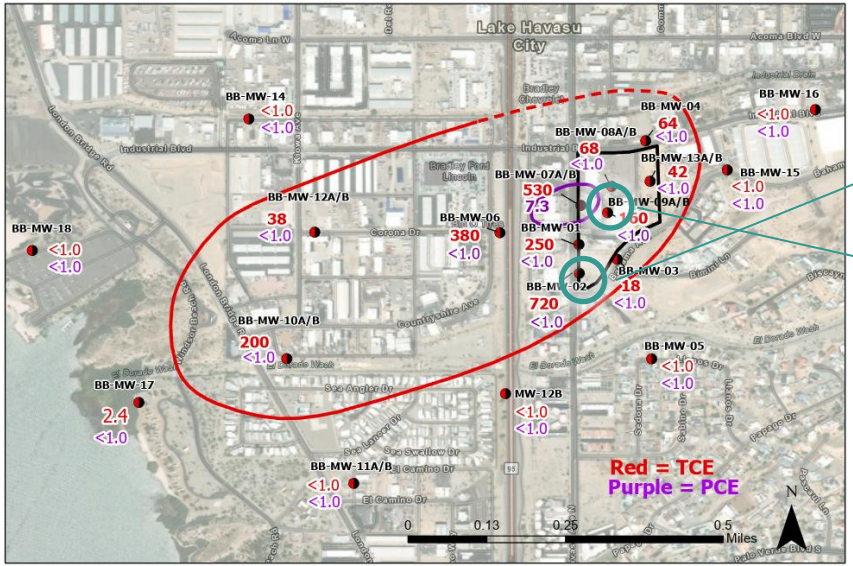
Groundwater Contamination - Depth

Cross sectional view



Groundwater Contamination – Thallium

- Contaminant of Potential Concern
- AWQS = 2.0 µg/L



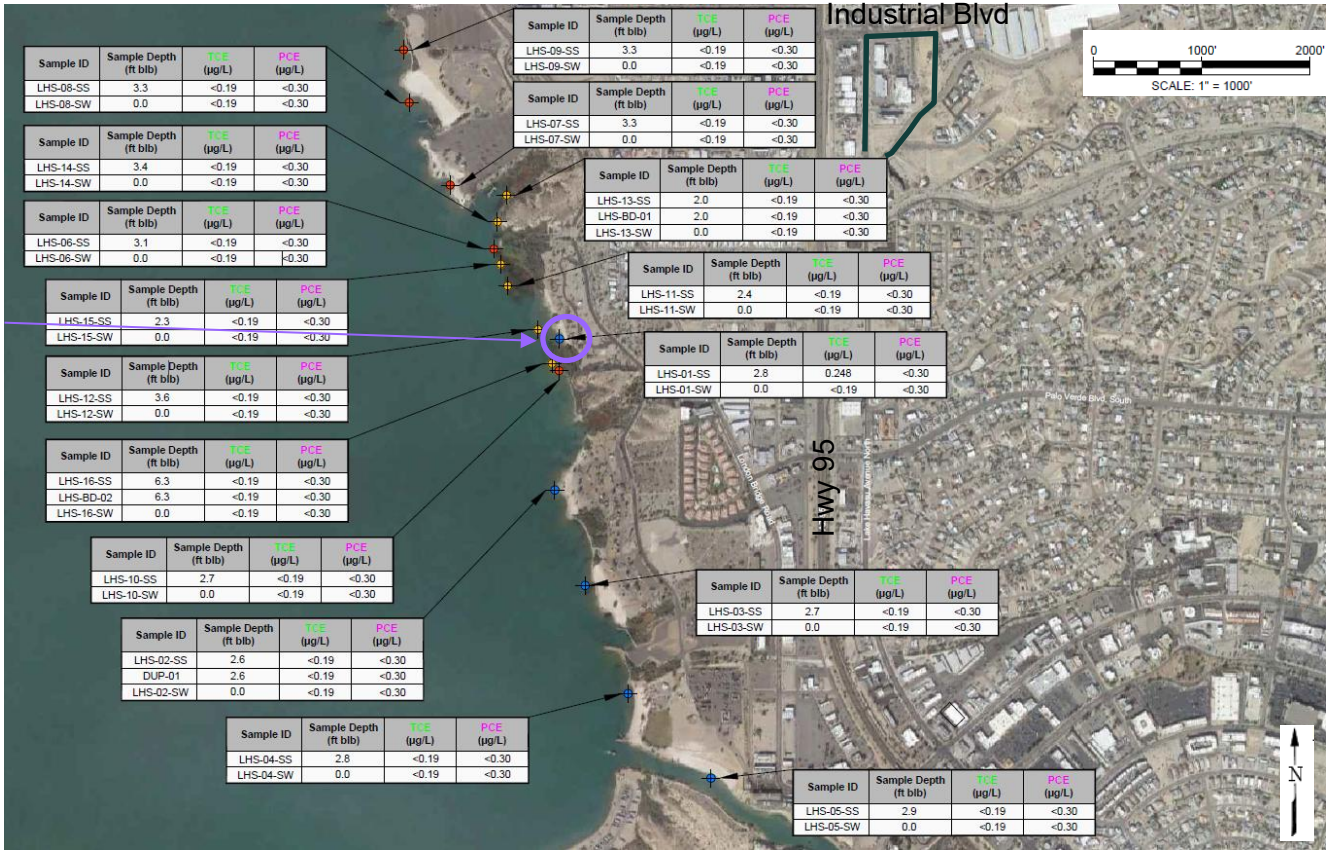
All concentrations in µg/L

	Depth	10/27/2020	2/15/2022	6/8/2023	3/26/2025
BB-MW-01	118	<10	<0.121	~	~
	135	<10	<0.121	~	<0.79
	155	<10	<0.121	~	~
BB-MW-02	105	<10	<0.121	~	~
	130	<10	<0.121	~	~
	155	<10	<0.121	~	<0.79
BB-MW-03	106	5.08 J	<0.121	~	~
	135	<10	<0.121	~	<0.79
	160	<10	<0.121	~	~
BB-MW-04	145	~	<0.121	~	~
	170	~	<0.121	~	~
	190	~	<0.121	~	~
BB-MW-05	110	~	<0.121	~	~
	135	~	<0.121	~	~
	160	~	<0.121	~	~
BB-MW-06	120	~	~	~	<0.79
	135	~	<0.121	~	~
BB-MW-07A	125	~	<0.121	~	~
BB-MW-07B	230	~	<0.121	~	~
BB-MW-08A	130	~	<0.121	~	~
BB-MW-08B	235	~	<0.121	~	~
BB-MW-09A	125	~	0.132 J	6.70 J	<0.79
BB-MW-09B	225	~	<0.121	~	~
BB-MW-12A	185	~	~	<2.3	~
BB-MW-15A	150	~	~	<2.3	~
MW-12A	87.5	~	<0.121	~	~
MW-12B	94	<10	<0.121	~	~

J = laboratory estimated result

Surface Water – No Contamination

- Only one sample above laboratory detection limit
  - TCE = 0.248 µg/L
- Strictest surface water quality standard = 5 µg/L



Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-08-SS	3.3	<0.19	<0.30
LHS-08-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-14-SS	3.4	<0.19	<0.30
LHS-14-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-06-SS	3.1	<0.19	<0.30
LHS-06-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-15-SS	2.3	<0.19	<0.30
LHS-15-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-12-SS	3.6	<0.19	<0.30
LHS-12-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-16-SS	6.3	<0.19	<0.30
LHS-BD-02	6.3	<0.19	<0.30
LHS-16-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-10-SS	2.7	<0.19	<0.30
LHS-10-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-02-SS	2.6	<0.19	<0.30
DUP-01	2.6	<0.19	<0.30
LHS-02-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-04-SS	2.8	<0.19	<0.30
LHS-04-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-09-SS	3.3	<0.19	<0.30
LHS-09-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-07-SS	3.3	<0.19	<0.30
LHS-07-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-13-SS	2.0	<0.19	<0.30
LHS-BD-01	2.0	<0.19	<0.30
LHS-13-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-11-SS	2.4	<0.19	<0.30
LHS-11-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-01-SS	2.8	0.248	<0.30
LHS-01-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-03-SS	2.7	<0.19	<0.30
LHS-03-SW	0.0	<0.19	<0.30

Sample ID	Sample Depth (ft blb)	TCE (µg/L)	PCE (µg/L)
LHS-05-SS	2.9	<0.19	<0.30
LHS-05-SW	0.0	<0.19	<0.30

Risk Evaluation - Current

- No current exposure to soil contamination
  - Arsenic-impacted soils capped or removed
  - PCE contaminated soil at 9-foot depth, capped
- No current known exposure to soil-gas
  - Surrounding buildings did not agree to indoor air testing
- No one currently known to be exposed to groundwater contamination
  - City wells not in the area
  - One private well did not allow testing
- Surface water not currently impacted

Risk Evaluation - Future

- Soil contamination
  - Potential future risk if the specific areas of properties are redeveloped
- Soil-gas contamination
  - Future risk will decrease as the remediation removes the contamination in the soil gas
- Groundwater contamination
  - Potential future risk of plume eventually reaching City wells to the north
- Surface water not currently impacted
  - If untreated, potential future risk of plume eventually reaching the lake

- The upcoming Feasibility Study will evaluate the best ways to account for these potential future risks

Draft RI Public Comments

Verbal

- Say your name, any affiliation (e.g. LHC, resident, worker in area, concerned citizen), then state your comment on the Draft RI

Written

- Write your name, affiliation, and your comment – can use the forms in the back
- By Email: cox.hazel@azdeq.gov
- By Mail:
  Hazel Cox
  ADEQ
  1110 W Washington St
  Phoenix, AZ 85007

For virtual attendees

- Raise your hand, unmute when called on, and follow steps for "Verbal" above
- Write in Zoom chat following the "Written" instructions above

* Comment period ends September 14 *

Remedial Objectives Solicitation

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Remedial Objectives

- ROs establish the end results of remediation at the site
- Solicitation purpose is so ADEQ knows what people would like to see at the end of the cleanup process
- Proposed ROs are solicited from the public
    - At this public meeting
    - By verbal or written information
- State regulations say how ADEQ shall write them
- Draft ROs then released for public comment

Remedial Objectives – Regulation Requirement

A.A.C. R18-16-406(I)(4):

1. Protecting against the loss or impairment of each listed use that is threatened by the release
2. Restoring, replacing, or otherwise providing for each listed use
3. Time frames when the action is needed
4. The projected duration of the action needed

e.g.

The Proposed RO for groundwater for potable use is:

1 2 3 & 4 Protect against the loss or impairment of potable water threatened by contaminants of concern at the Site by restoring, replacing, or otherwise providing for potable water that is lost or impaired by contaminants of concern at the Site. The actions will be needed for as long as necessary to ensure that, while the water exists and the resource remains available, the contamination associated with Site does not prohibit or limit the designated use of groundwater.

Remedial Objectives – Solicitation

Verbal

- Say your name, any affiliation (e.g. LHC, resident, worker in area, concerned citizen), then state your proposal or information for an RO

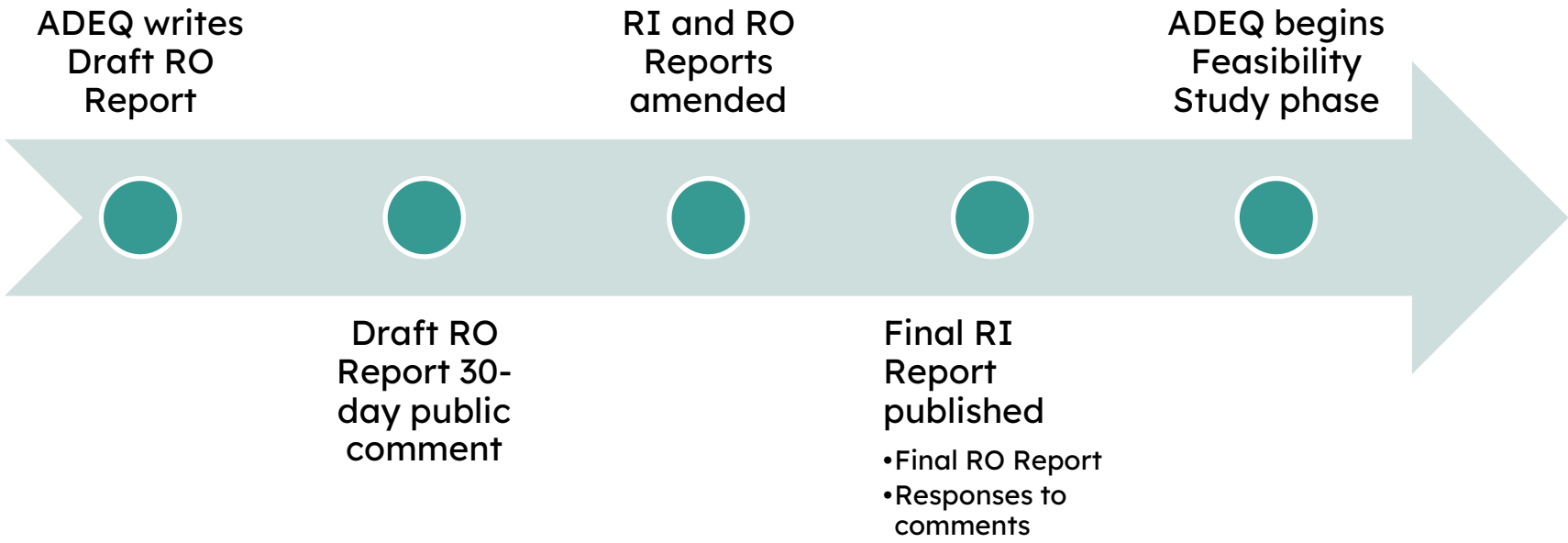
Written

- Write your name, affiliation, and your proposal or information for an RO
    - Forms available by the door, must be handed in tonight

For virtual attendees

- Raise your hand, unmute when called on, and follow steps for “Verbal” above
- Write in Zoom chat following the “Written” instructions above

What happens next



Contact us!

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