



# Highway 260 and Main Street Water Quality Assurance Revolving Fund (WQARF) Site Presentations

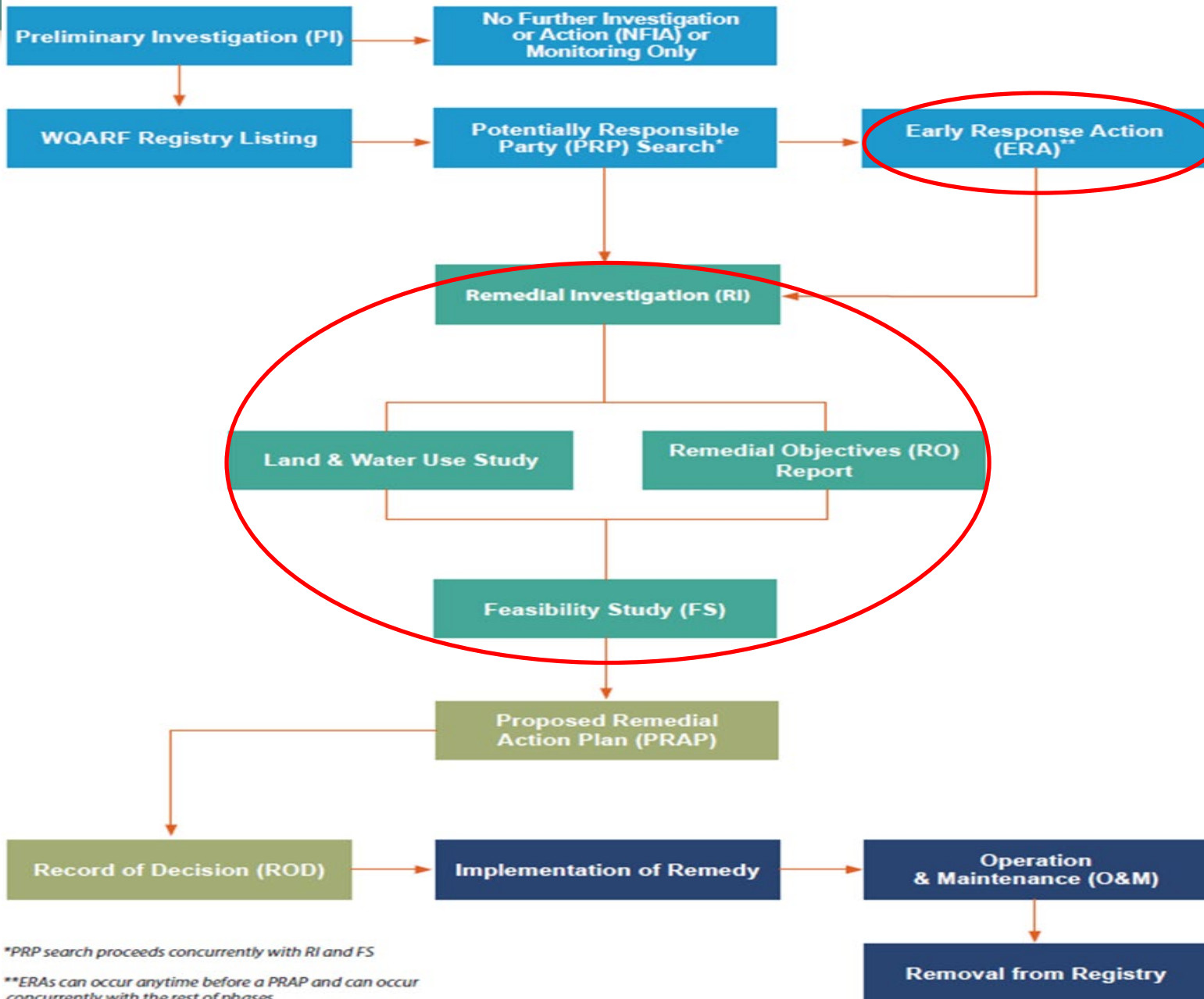
2/25/2021

Community Advisory Board (CAB) Meeting

Gianna Trujillo, Project Manager

Matthew Narter, Hydrogeologist

# WQARF PHASES



\*PRP search proceeds concurrently with RI and FS

\*\*ERAs can occur anytime before a PRAP and can occur concurrently with the rest of phases



# Draft Remedial Investigation (RI) Report

# Site Summary

- Listed on the WQARF Registry:
  - December 12, 2016
- Contaminants of concern:
  - Tetrachloroethene (PCE)
  - Trichloroethene (TCE)





# Facilities of Interest

## ■ North Source Area:

- Cottonwood Cleaning and Bridal Boutique (CCBB)

## ■ South Source Area:

- Cottonwood Quality Dry Cleaning (CQDC)

## ■ Other Nearby Facilities:

- Woody's Fuel Stop
- Reese's Tire and Automotive Tire Pros
- Spotmasters Dry Cleaning
- Super Clean Laundry

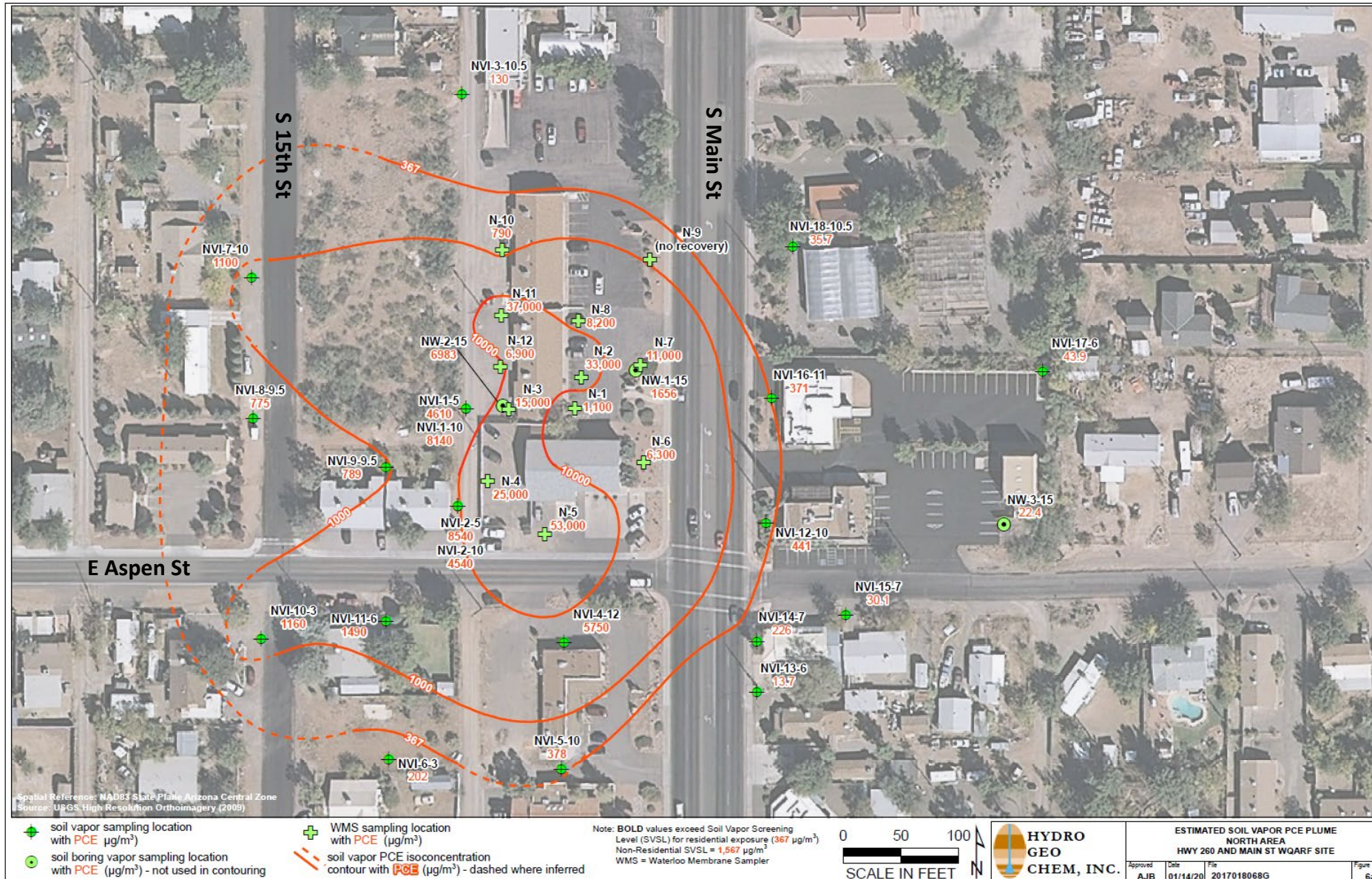




# NORTH AREA

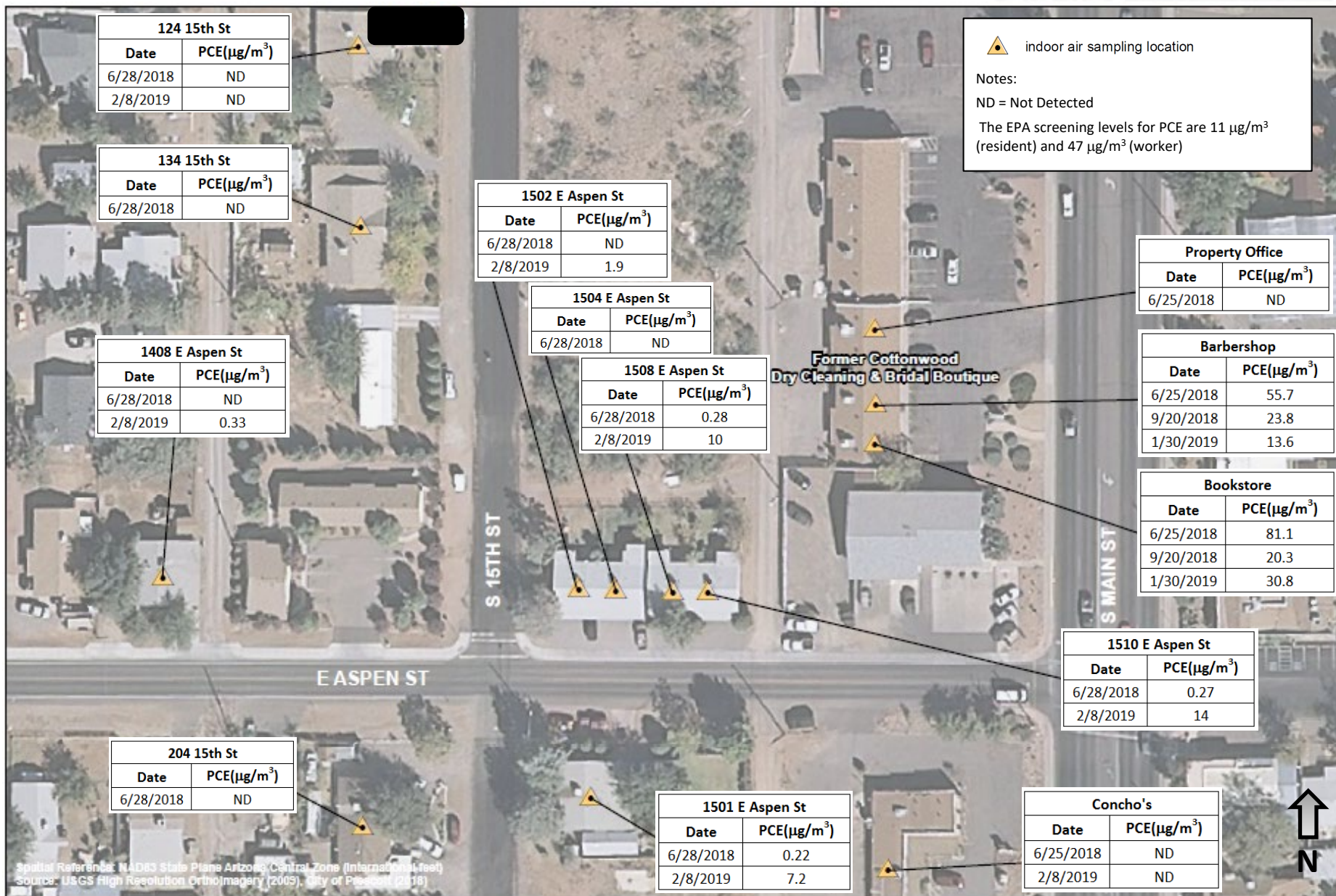


# North Area: PCE Soil Vapor Plume



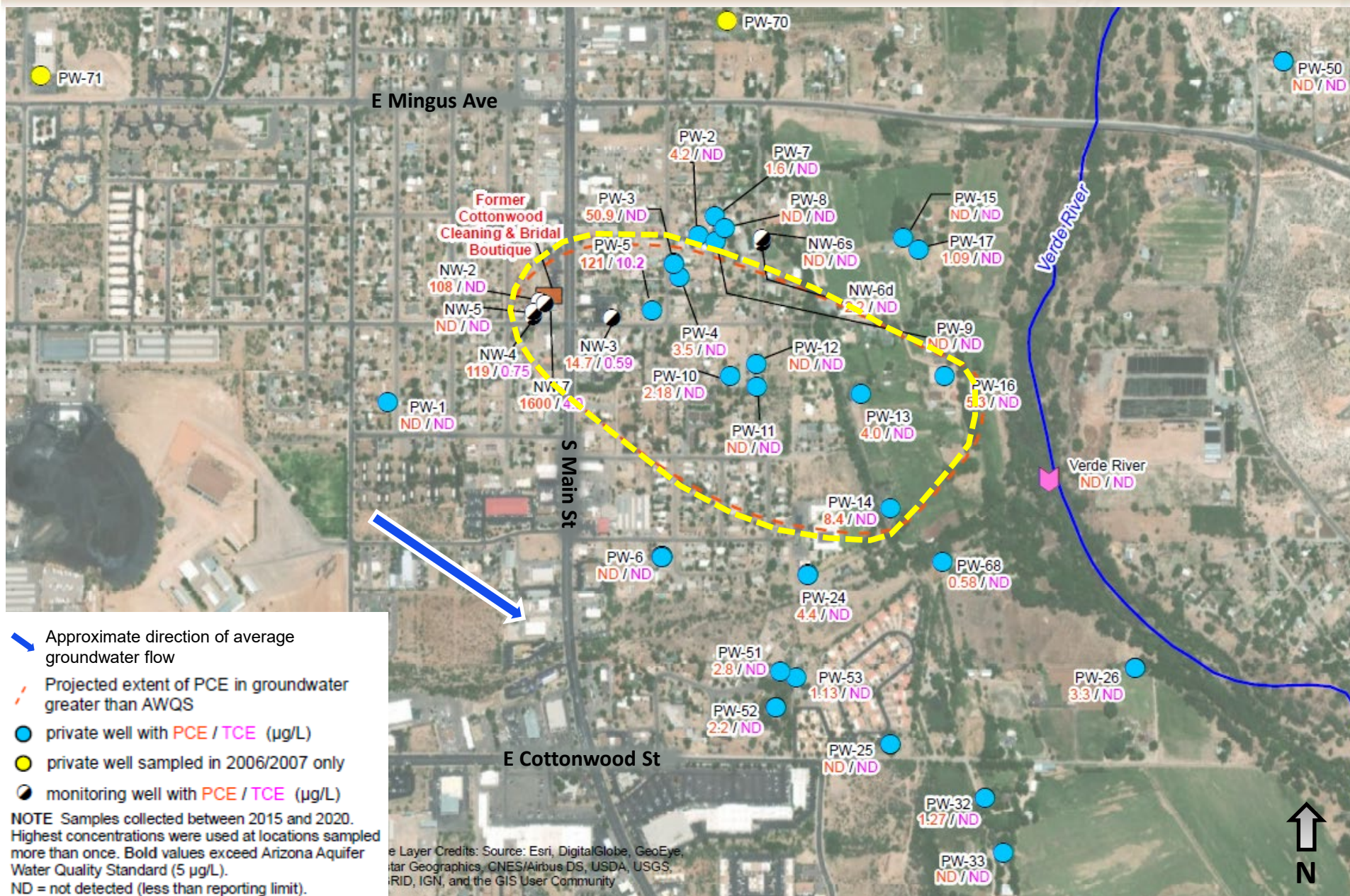


# North Area: Indoor Air

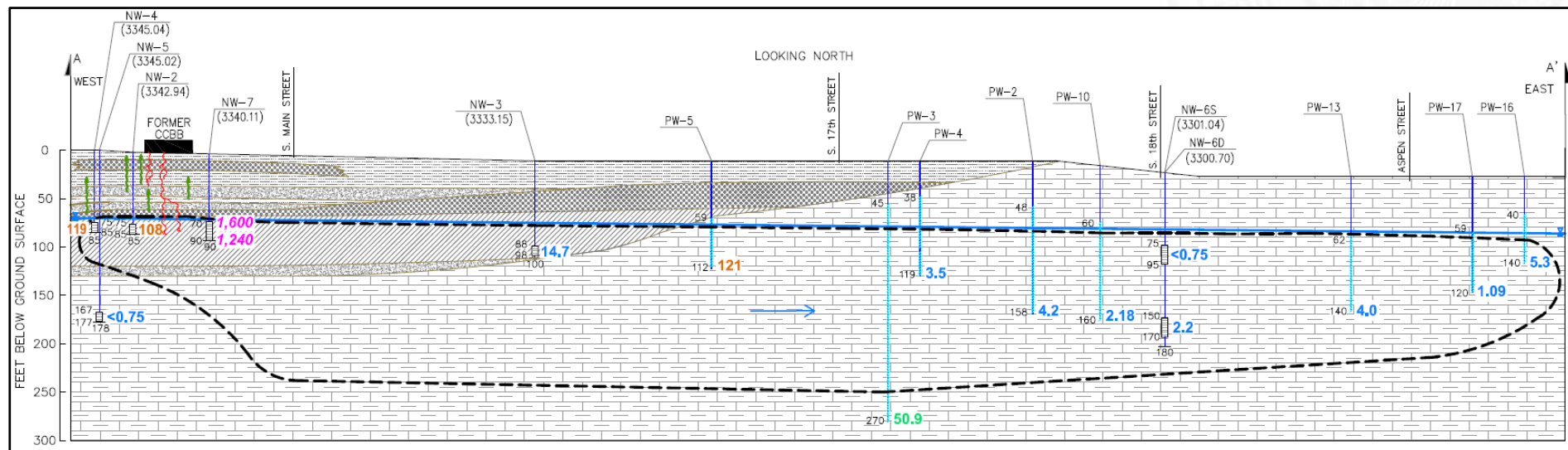




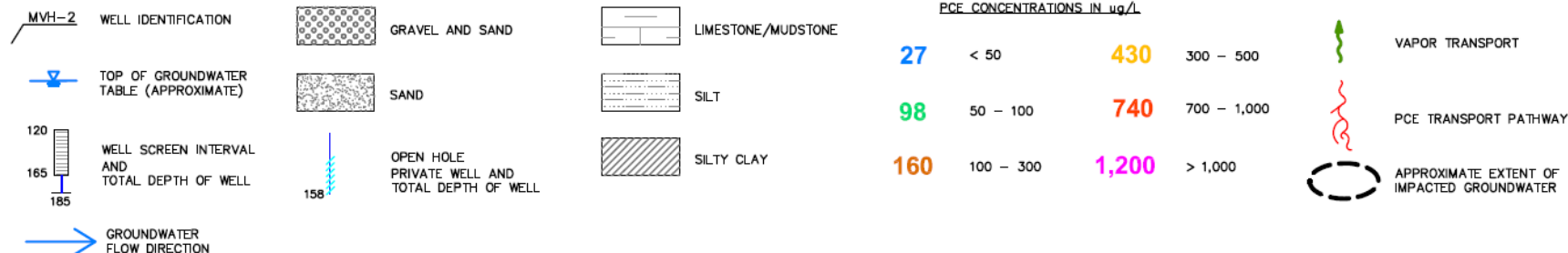
# North Area: Maximum PCE / TCE Concentrations in Groundwater



# North Area: Conceptual Site Model Projection



## LEGEND





# SOUTH AREA







# South Area: PCE Soil Vapor Plume



Spatial Reference: NAD83 State Plane Arizona Central Zone  
Source: USGS High Resolution Orthoimagery (2009)

soil vapor sampling location  
with PCE (µg/m³)

soil vapor PCE isoconcentration contour with  
PCE in µg/m³ (dashed where inferred)

WMS sampling location  
with PCE (µg/m³)

Note: BOLD values exceed Soil Vapor Screening  
Level (SVSL) for residential exposure (367 µg/m³)  
Non-Residential SVSL = 1,567 µg/m³  
WMS = Waterloo Membrane Sampler  
ND = not detected (value less than lab reporting limit)

0 25 50  
SCALE IN FEET

**HYDRO  
GEO  
CHEM, INC.**

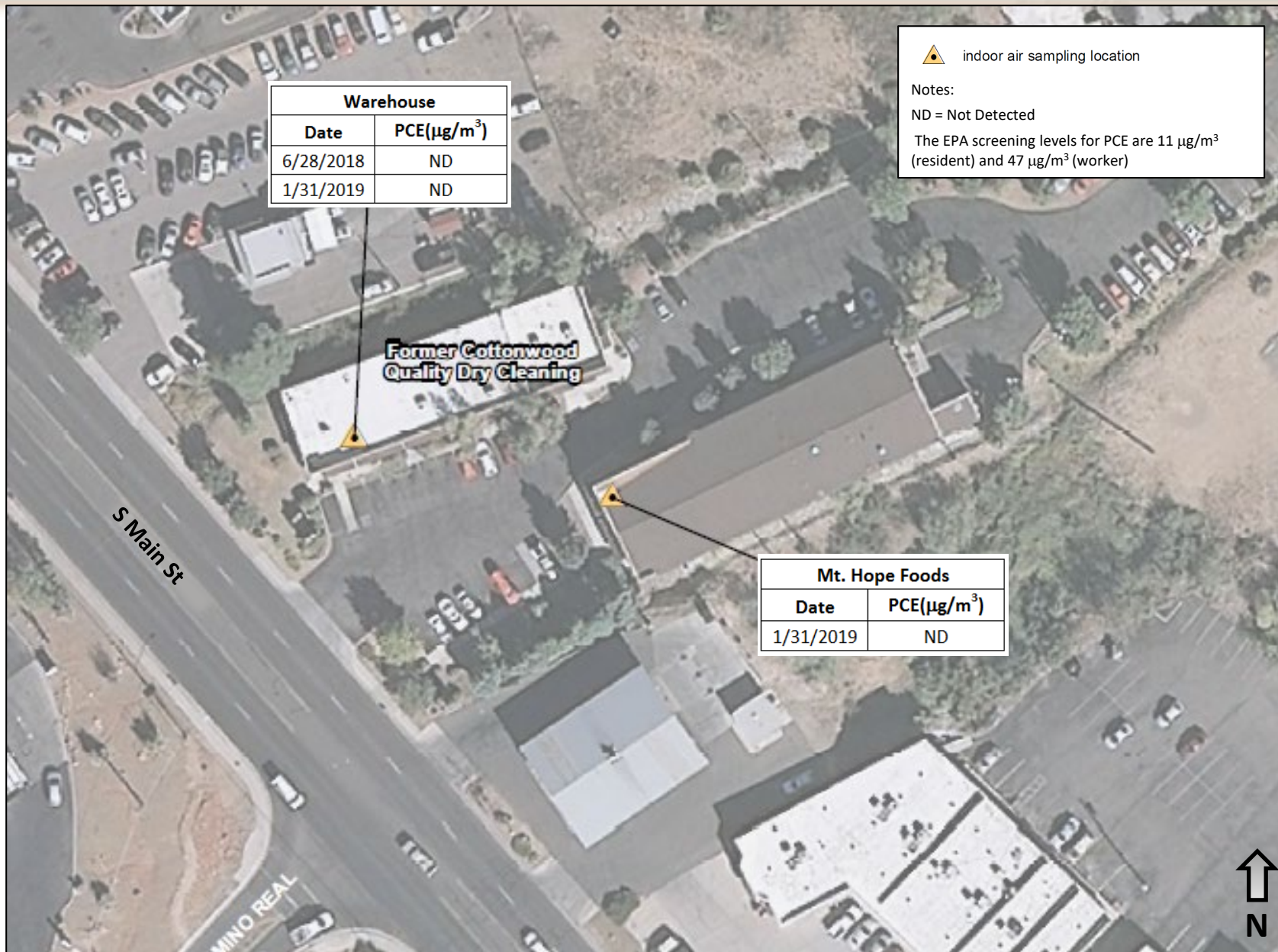
ESTIMATED SOIL VAPOR PCE PLUME  
SOUTH AREA  
HWY 260 AND MAIN ST WQARF SITE

Approved: **AJB** Date: 01/15/20 File: 2017018070G

Figure  
6b



# South Area: Indoor Air



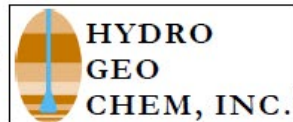
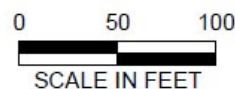


# Spotmasters and Super Clean Soil Vapor Sampling



- WMS location with ID and **PCE / TCE** (µg/m³)
- approximate property boundary

Notes: WMS = Waterloo Membrane Sampler  
SVSL = Soil Vapor Screening Level  
Bold values exceed non-residential SVSL for PCE (1,567 µg/m³)  
NA = not analyzed for TCE  
ND = not detected (value less than lab reporting limit)



## WATERLOO MEMBRANE SAMPLER RESULTS SPOTMASTERS/SUPER CLEAN LAUNDRY VICINITY HWY 260 AND MAIN ST WQARF SITE

Approved	Date	Author	Date	File Name	Figure
AJB	01/15/20	GEM	5/3/19	2017018061G	4c



# Reese's Tire and Auto Soil Vapor Sampling



WMS location with ID and **PCE / TCE** ( $\mu\text{g}/\text{m}^3$ )  
 approximate property boundary  
 Notes: WMS = Waterloo Membrane Sampler  
 SVSL = Soil Vapor Screening Level  
 Bold values exceed non-residential SVSL for PCE (1,567  $\mu\text{g}/\text{m}^3$ )  
 ND = not detected (value less than lab reporting limit)

0 50 100  
SCALE IN FEET



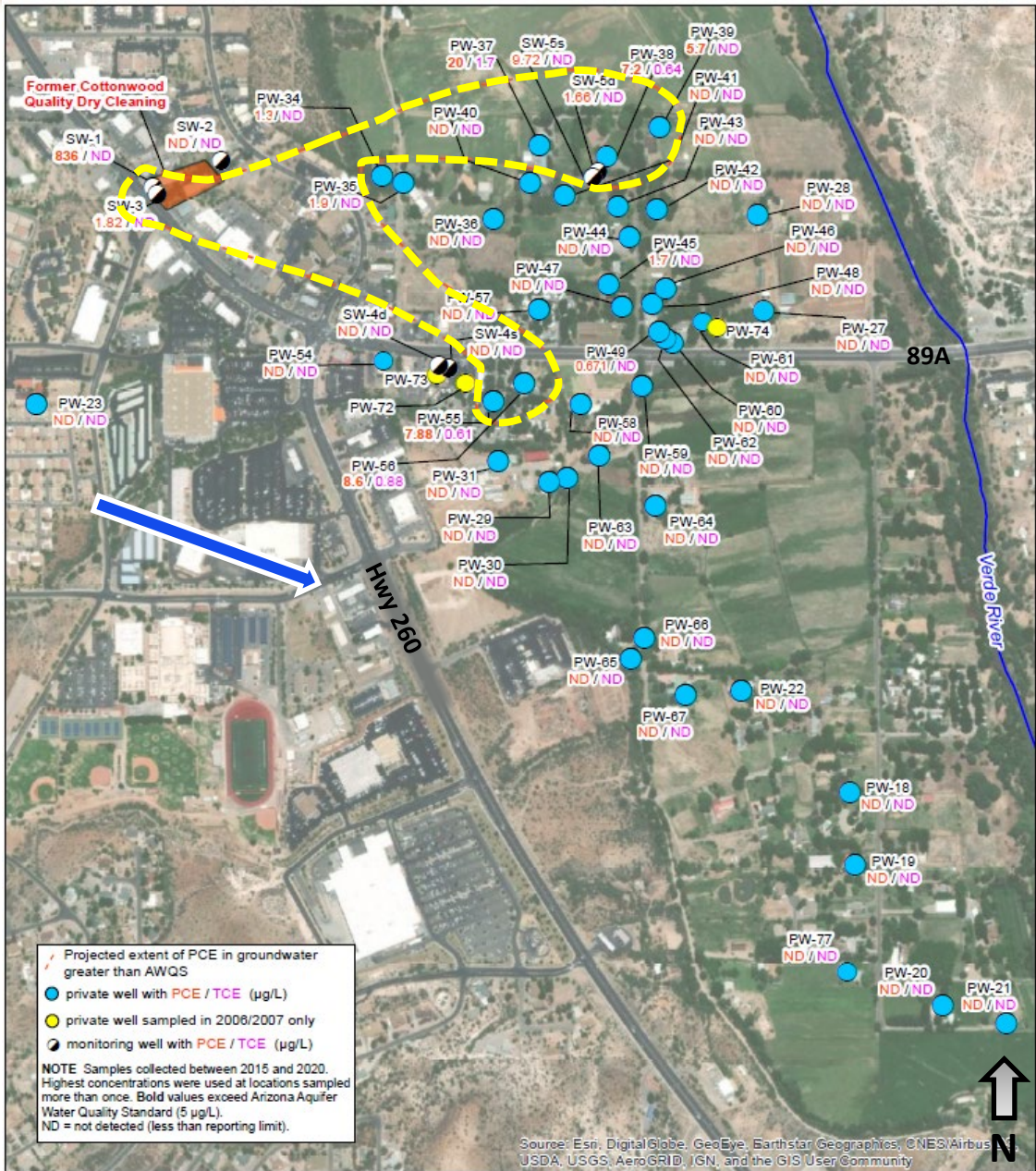
**HYDRO  
GEO  
CHEM, INC.**

## WATERLOO MEMBRANE SAMPLER RESULTS REESE'S TIRE & AUTOMOTIVE VICINITY HWY 260 AND MAIN ST WQARF SITE

Approved	Date	Author	Date	File Name	Figure
AJB	01/15/20	GEM	5/3/19	2017018062G	4d



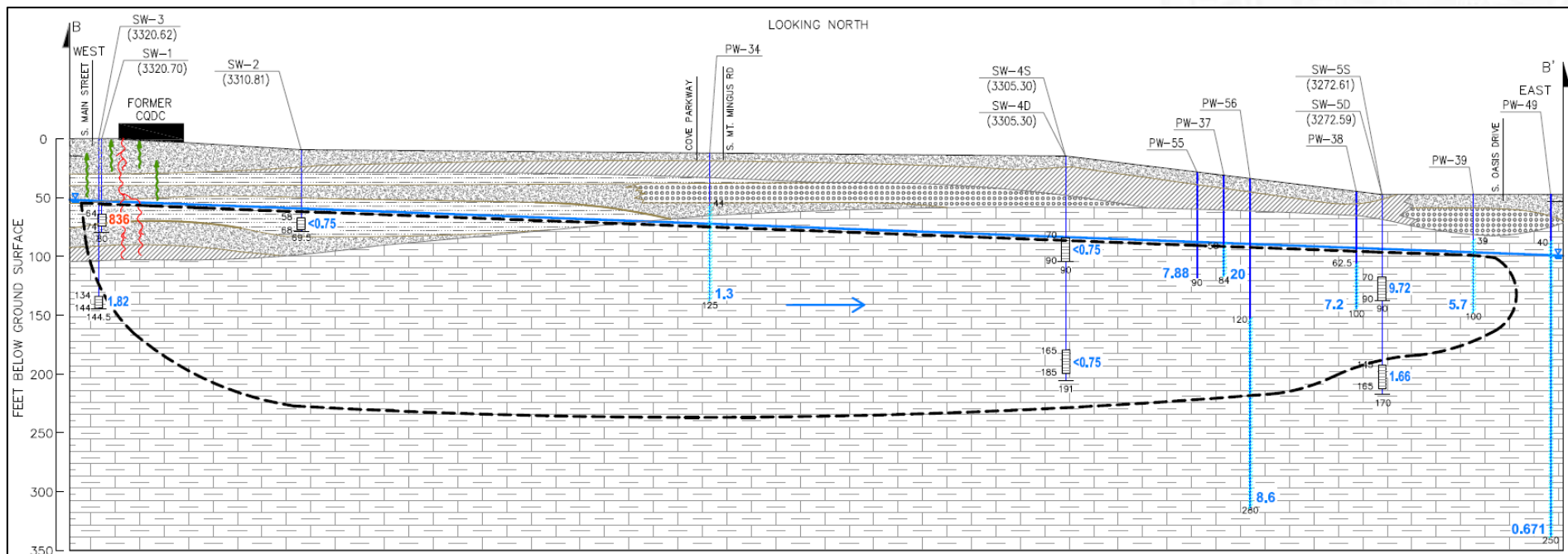
# South Area: Maximum PCE / TCE Concentrations in Groundwater



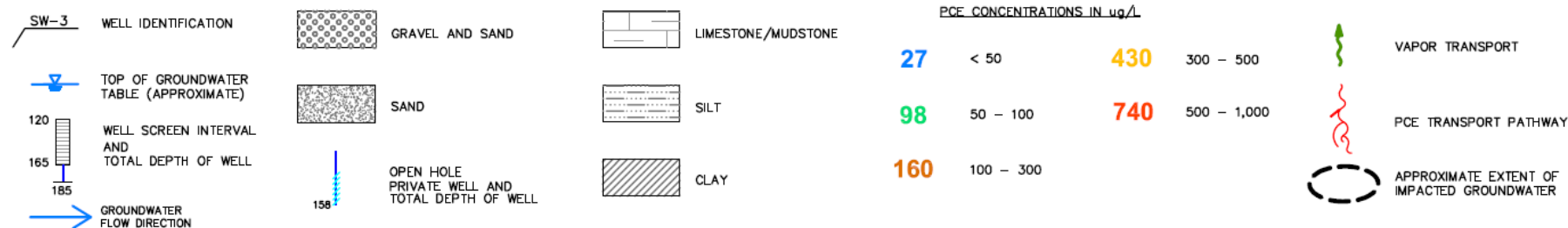
Approximate direction of average groundwater flow



# South Area: Conceptual Site Model Projection



## LEGEND



Additional data needs were identified that are necessary for the evaluation of potential remedies, including:

- Deep soil vapor near the source areas
- Additional groundwater data near former dry cleaners

## ■ **Land:**

- Low to medium density residential and commercial
- Growth Areas expected to transition from lower to medium density residential and commercial through infill development

## ■ **Groundwater:**

- Potable
- Non-Potable
- Irrigation

## ■ **Surface Water:**

- Agricultural
- Recreational
- Aquatic Wildlife Habitat



- To submit comments on Draft RI Report to ADEQ:
  - Tonight: Verbally or type in chat box
  - By Email: [Trujillo.Gianna@azdeq.gov](mailto:Trujillo.Gianna@azdeq.gov)  
Subject Line “Highway 260 and Main Street WQARF Draft RI Report Comments”
  - By Mail:  
Arizona Department of Environmental Quality  
Attn: Gianna Trujillo  
400 W. Congress Street Suite 433  
Tucson, AZ 85701

**Comment Period Ends March 11, 2021**



## Example Remedial Objectives (ROs)

- A Remedial Objective is the goal, established through the Remedial Investigation, to be achieved by the selected remed(ies).
- ROs must be consistent with local land and water plans and specific to each identified water / land use
- Required Components:
  - Protecting against the loss or impairment of identified uses of land and waters of the State
  - Restoring, replacing, or otherwise providing for identified uses of land and waters of the State
  - Time-frames when the action is needed to protect against or provide for the impairment or loss of the use
  - The projected duration of the action needed to protect or provide for the use



- The Proposed Groundwater RO for potable use is:

To restore, replace, or otherwise provide **potable water**, lost or impaired by contamination associated with the Highway 260 and Main Street WQARF Site. This action 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.

- The Proposed Groundwater RO for non-potable use is:

To restore, replace, or otherwise provide **non-potable water**, lost or impaired by contamination associated with the Highway 260 and Main Street WQARF Site. This action 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.

- The Proposed Groundwater RO for irrigation use is:

To restore, replace, or otherwise provide **irrigation water**, lost or impaired by contamination associated with the Highway 260 and Main Street WQARF Site. This action 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.

- The Proposed RO Report will be prepared by ADEQ based upon solicitation by the public for ROs
- 30-Day Public Comment Period
- The Final RO Report will include a response to comments made on the Draft RO Report and be appended into the Final RI Report





## Solicitation for Remedial Objectives (ROs)

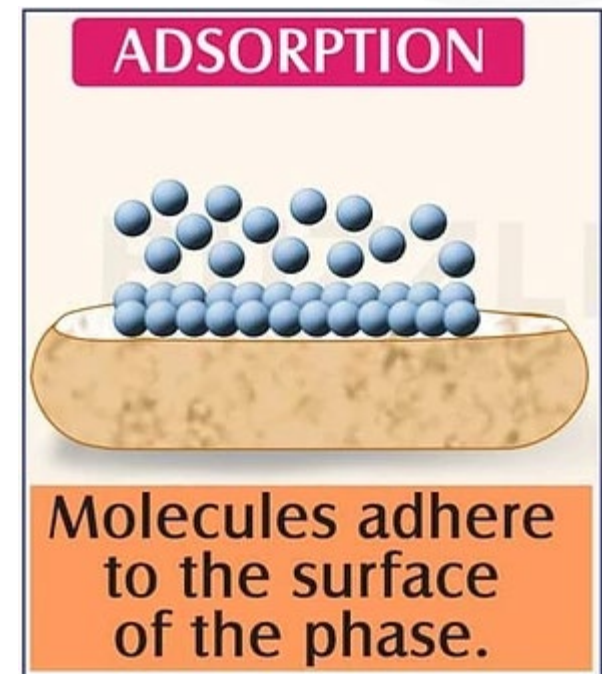
- For Verbal solicitations, please state your Name, Organization, and Proposed RO
  - Example: *“Jane Doe, Resident. I would like groundwater to be cleaned up so it can be used for drinking water at the Site”*
- You may also enter comments into the chat box.





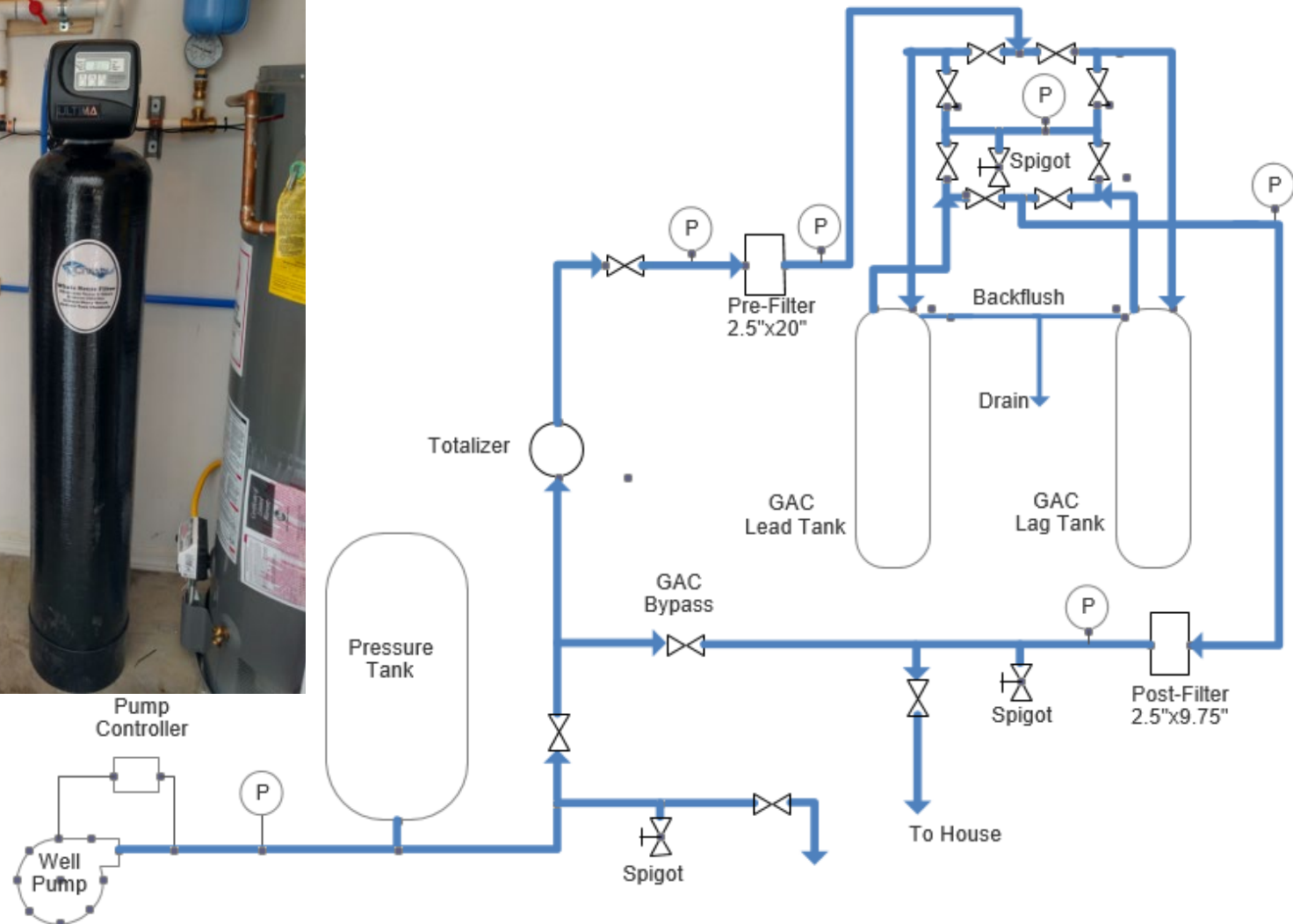
# Early Response Action (ERA) Operation, Maintenance, and Monitoring (OMM) Manual for Wellhead Granular Activated Carbon (GAC) Treatment Systems

- Granular Activated Carbon (GAC) Treatment
  - Passive Adsorption
  - Six Systems Installed (Five additional in progress)
- Operation Procedures
  - Normal Operations
  - Start up / Shut down
  - Diagrams
  - GAC Change-out
  - Monitoring and Maintenance





# GAC Wellhead Treatment Set Up



- Granular Activated Carbon (GAC) Treatment
  - Two GAC vessels in series (lead / lag)
  - Change-out criteria:

**Table 1 – GAC Change-Out Concentrations for Midpoint Sample**

Contaminant of Concern	Aquifer Water Quality Standard (µg/L)	GAC Change-Out Threshold Concentration (µg/L)
Tetrachloroethene (PCE)	5	2.5
Trichloroethene (TCE)	5	2.5
<i>cis</i> -1,2-Dichloroethene ( <i>cis</i> -1,2-DCE)	70	35

**Notes:**

GAC Change-Out Threshold Concentration is 50% of the respective Aquifer Water Quality Standard for each compound.

µg/L – micrograms per liter

- Quarterly Monitoring
  - Three samples (INF, MID, EFF) collected to determine removal efficiency
- Maintenance Activities

- To submit comments on OMM Manual to ADEQ:
  - Tonight: Verbally or type in chat box
  - By Email: [Trujillo.Gianna@azdeq.gov](mailto:Trujillo.Gianna@azdeq.gov)  
Subject Line “Highway 260 and Main Street WQARF OMM Manual Comments”
  - By Mail:  
Arizona Department of Environmental Quality  
Attn: Gianna Trujillo  
400 W. Congress Street Suite 433  
Tucson, AZ 85701

**Comment Period Ends March 19, 2021**





# Groundwater Sampling Results, June – December 2020

# North Area: Private Well Sampling





# South Area: Private Well Sampling





# GAC Treatment Location Sampling

- No detections of PCE or TCE in Effluent Samples.
- One system had *cis*-1,2-DCE detected at estimated concentrations of 0.48 and 0.43 µg/L in Effluent Samples.
- This system was back flushed in Jan 2021 to reset the carbon bed since it has not met the criteria for GAC change-out.
- 5 additional treatment systems are currently being installed at the Site.





## Important Dates and Contact Information

- Quarterly Sampling
  - Private Wells
  - GAC Wellhead Treatment Systems
- Early Response Actions (ERAs)
  - GAC Wellhead Treatment Systems
- Remedial Investigation Data Gaps
- Feasibility Study





- **Feasibility Study Work Plan**
  - Noticed on: **January 17, 2021**
- **Draft Remedial Investigation Report**
  - Comment Period Ends: **March 11, 2021**
- **Operation, Maintenance, and Monitoring Manual**
  - Comment Period Ends: **March 19, 2021**
- **Upcoming Notices**
  - Proposed Remedial Objectives 30-Day Comment
  - Final Remedial Investigation Report
  - Feasibility Study

# Contact Information

Gianna Trujillo

Project Manager

(520) 628-6709

[Trujillo.Gianna@azdeq.gov](mailto:Trujillo.Gianna@azdeq.gov)

Mary McGillicuddy

Community Involvement Coordinator

(602) 771-2336

[McGillicuddy.Mary@azdeq.gov](mailto:McGillicuddy.Mary@azdeq.gov)