

# Miller Valley Road and Hillside Avenue Water Quality Assurance Revolving Fund (WQARF) Site Public Meeting Presentation

November 9, 2022

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# What is WQARF?

- WQARF =  
Water Quality Assurance Revolving Fund
- Also called State Superfund program
  - Assessing and resolving the threat of contaminated soil and groundwater sites in the state
  - WQARF uses state funds to conduct cleanups and oversee privately funded efforts

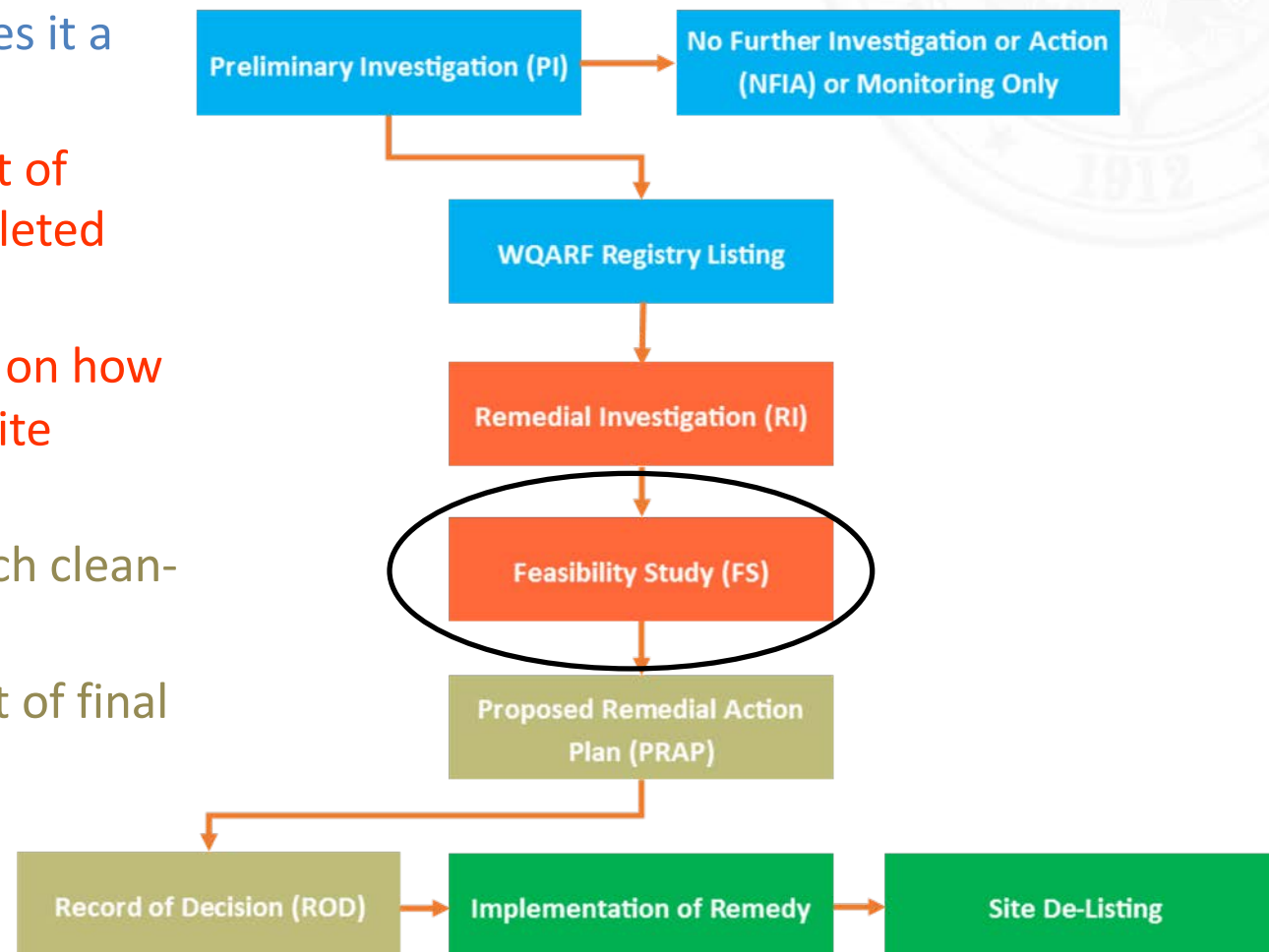
# Miller Valley Rd and Hillside Ave Site

- Site location



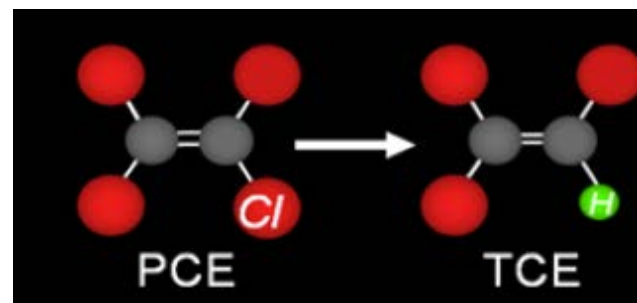
# Steps in WQARF

- PI - confirms the release and determines (completed 2015)
- Registry Listing - makes it a WQARF site (2016)
- RI –determines extent of contamination (completed 2020)
- FS – provides options on how best to clean up the site (current)
- PRAP – proposes which clean-up option is the best
- ROD – announcement of final remedy for the site



## Reminder: Site contaminants

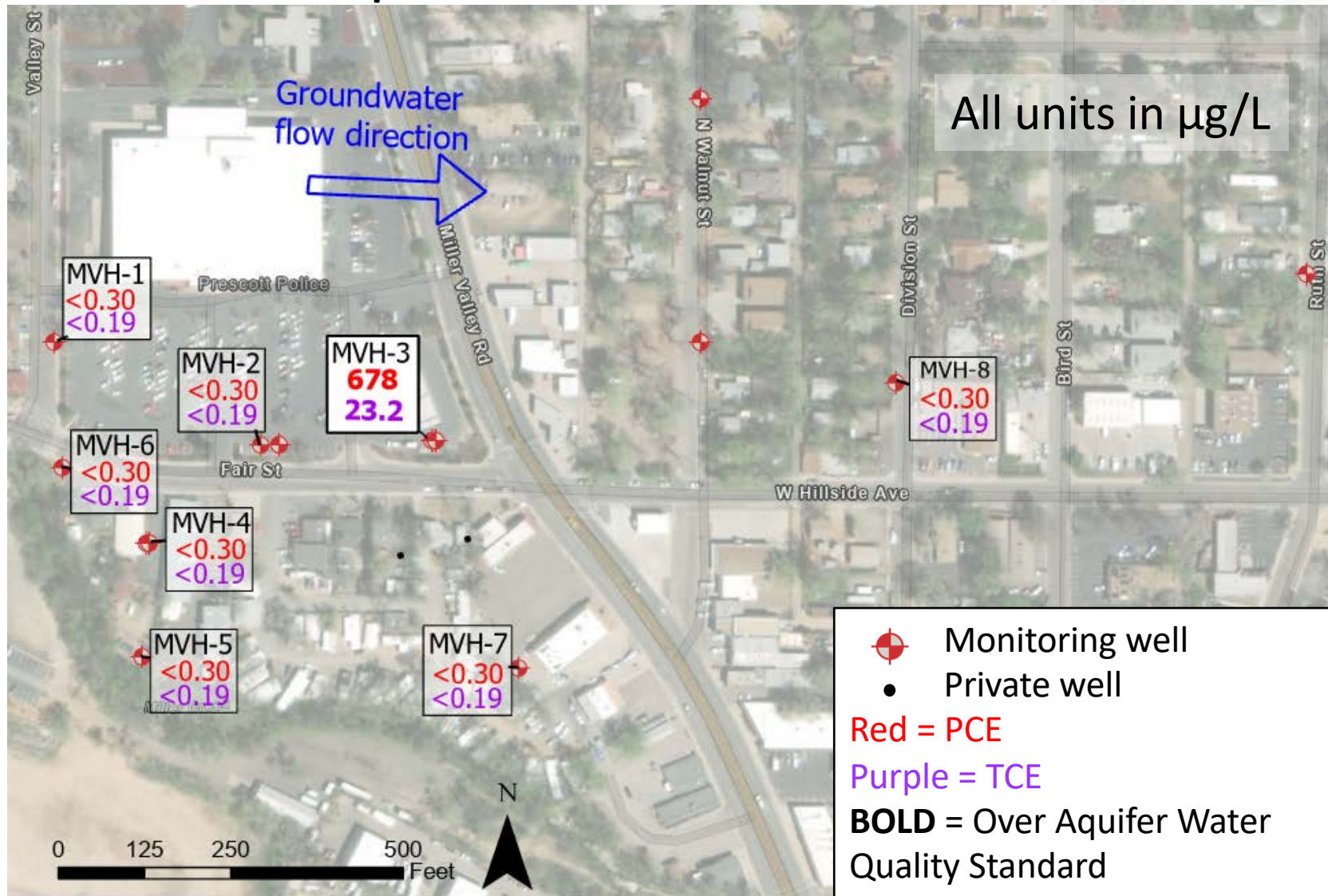
- Tetrachloroethene (PCE) and trichloroethene (TCE)
  - PCE commonly used dry-cleaning solvent, TCE commonly used as de-greaser
- Aquifer Water Quality Standard (AWQS) for PCE and TCE = 5 micrograms per liter ( $\mu\text{g/L}$ )
- PCE can degrade into TCE





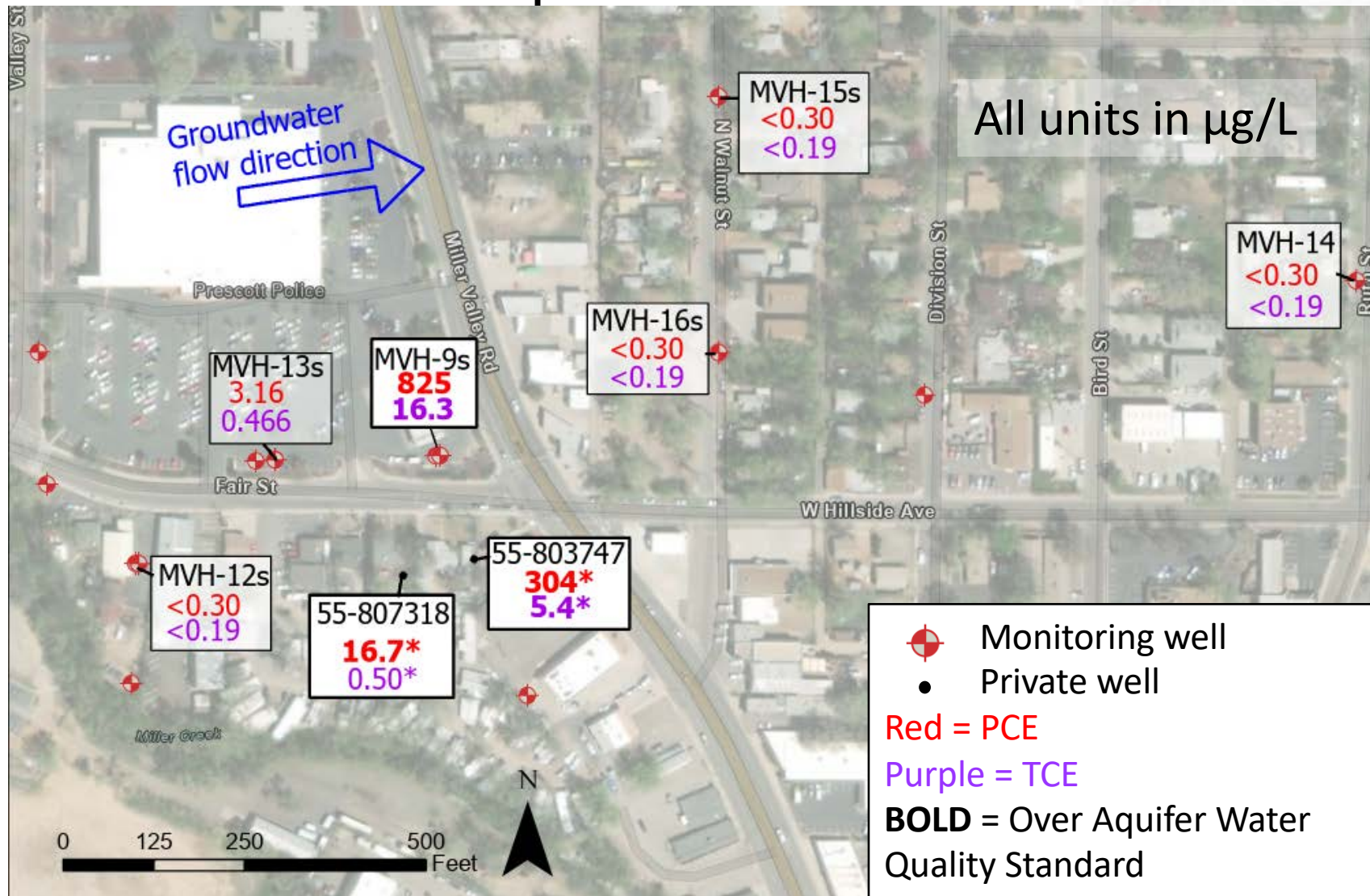
# Miller Valley Rd and Hillside Ave Site

## Shallow Aquifer



# Miller Valley Rd and Hillside Ave Site

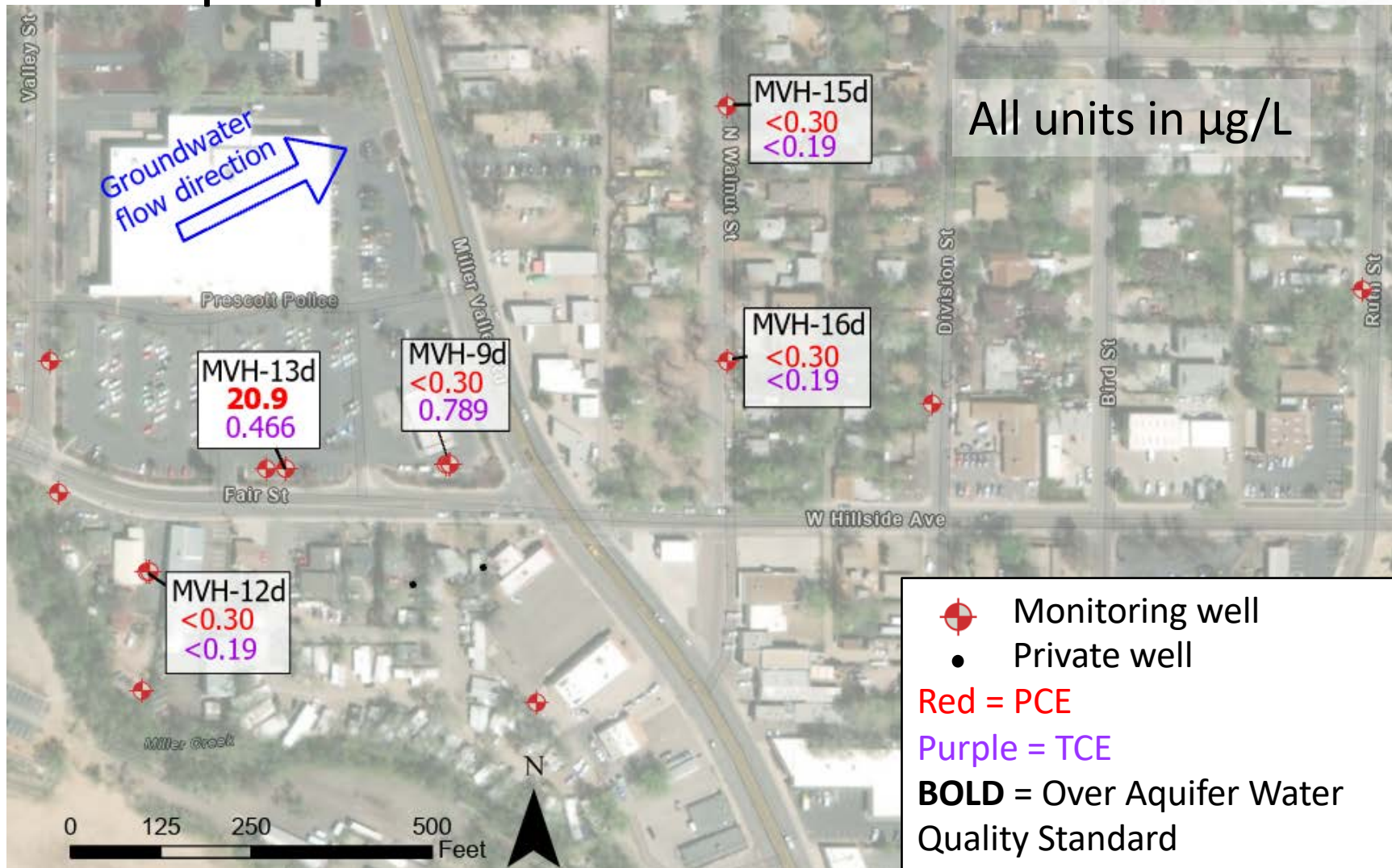
## Intermediate Aquifer





# Miller Valley Rd and Hillside Ave Site

## Deep Aquifer





# Miller Valley Rd and Hillside Ave Site

## Recent Activities

- Groundwater Extraction and Treatment Pilot Test

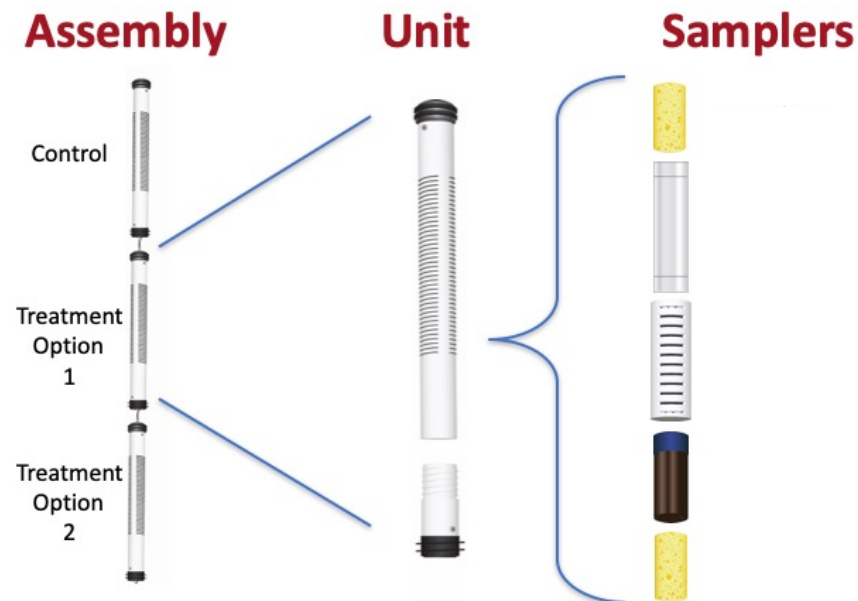


## Recent Activities

- **Groundwater Extraction and Treatment Pilot Test Results**
  - Confirmed the low hydraulic conductivity at the site (0.012 - 0.48 ft/day)
  - The aquifer is acting like a typical sand/silt/clay aquifer, not like fractured bedrock
  - All three levels of aquifers are connected

## Recent Activities

- *In Situ* Bio Microcosm Pilot Test
  - Puts samplers in monitoring wells that test different microbes, foods, and nutrients to see which best degrades the contaminants under Site conditions

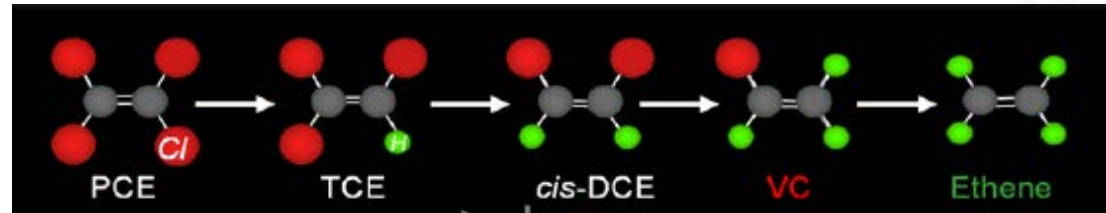




# Miller Valley Rd and Hillside Ave Site

## Recent Activities

- In Situ Bio Microcosm Pilot Test



Well ID	ISM Unit Type
MVH-9s	BioStim: EOS PRO
	BioStim: EOS PRO + BioAug: SDC-9
	BioStim: EOS PRO + BioAug: KB-1
	BioStim: Wilclear Plus + BioAug SDC-9
MVH-3	BioStim: Wilclear Plus
	BioStim: Wilclear Plus + BioAug: SDC-9
	BioStim: Wilclear Plus + BioAug: KB-1

Different bacterial mixes

Different food/nutrient mixes

# Miller Valley Rd and Hillside Ave Site

## Recent Activities

- In Situ Bio Microcosm Pilot Test Results
  - Best result from EOS PRO food mix and SDC-9 bacteria mix
  - PCE reduced from 670 µg/L to 2 µg/L

Well ID	ISM Unit Type	Percent Reduction/Increase in Chemical of Concern			Relative Amount of VC and Ethene Produced (µg/L)	
		PCE	TCE	<i>cis</i> -1,2-DCE	VC	Ethene
MVH-9s	BioStim: EOS PRO	-99.76	-36.84*	+5,504	0.9J	< 1.3
	BioStim: EOS PRO + BioAug: SDC-9	-99.70	-74.74*	+2,962	44.3	12
	BioStim: EOS PRO + BioAug: KB-1	-99.25	-3.16*	+7,067	2.7	< 1.3
	BioStim: Wilclear Plus + BioAug SDC-9	-94.11	+729.47*	+2,932	14.1	6.2
MVH-3	BioStim: Wilclear Plus	-95.09	-85.12	-33.20	< 1.0	< 1.3
	BioStim: Wilclear Plus + BioAug: SDC-9	-73.66	+91.08	+2,926	< 1.0	< 1.3
	BioStim: Wilclear Plus + BioAug: KB-1	-99.99	-93.14	+3,693	7.80	2.4

**Notes:** J- The reported value is an estimate

\* Percent reduction/increase and change in concentration determined using ½ the method detection limit.

## Coming Activities

- FS Report soon - currently under managerial review
- In Situ Bio Injection test
  - Will use the food and nutrients found to work best in pilot
  - Also will install additional monitoring wells to help monitor injections



- State law provides for a Community Advisory Board (CAB) for public oversight of WQARF sites
- Not enough responses yet to form a CAB
- Let us know if you're interested!



Questions?



## Contact us!

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