

**Shannon Road/El Camino del Cerro  
Water Quality Assurance Revolving Fund (WQARF) site  
Community Advisory Board (CAB) Meeting**

**May 12, 2015, 6 - 7:30 p.m.**

**Ellie Towne Flowing Wells Community Center  
1660 W. Ruthrauff Rd., Tucson, AZ 85701**

## **FINAL MINUTES**

**CAB Members Present:** Randall (Randy) Abbey, Robert (Keith) Adkins, Bob Ornelas, Gary Burchard, Martin (Marty) Drozdoff, Terri Hutts and Kerry Xhaferi

**CAB Members Absent:**

**ADEQ Staff Present:** William Ellett, ADEQ Manager; Scott Green, ADEQ Manager; Hazel Cox, ADEQ Hydrologist; Matt Narter, ADEQ Hydrologist; Wendy Flood, Community Involvement Coordinator; Don Atkinson, Project Manager; and Tina Le Page, ADEQ manager

**Members of Public Present:** Mike Block, Metro Water District; Harlan Agnew, Pima County Attorney; Jim Faas, Pima County; Ellen Wheeler, Pima County; and Dave Eaker, Pima County

The meeting began at 6:00 p.m.

### **1. Call to Order**

Mr. Randall Abby started the meeting and introductions were held.

### **2. Acceptance and/or change to 2/03/09 and 11/21/2013 meeting minutes**

Ms. Wendy Flood explained to the group the reasoning behind having two sets of minutes due to lack of quorum. Mr. Abby moved to accept the minutes. Mr. Gary Burchard stated he did not think it appropriate to vote on minutes from six years ago, as well as over a year ago. Discussion was held on the topic. The CAB wanted to note:

There is concern with approving minutes from such while back when the topics can not be verified if discussed. The CAB approved the minutes, with that note; two opposed.

### **3. Discussion and vote regarding May 8, 2014 CAB Meeting**

There was no recording found for the minutes of the May 8<sup>th</sup> meeting. Ms. Flood presented a minimal draft of the minutes and the CAB discussed what others topics were discussed. Ms. Terri Hutts stated they should stay as a

draft summary and moved as such. It was seconded and passed to have the reviewed summary of the May 8 meeting approved as draft.

#### **4. CAB Charter discussion and vote**

Mr. Burchard asked for clarification on the highlighted areas of the charter, as well as the strike through portions. He also questioned the reference for membership being within the community involvement area; this needs to be defined in the charter. The CAB feels it might be too restrictive and an area around the landfill will not reflect who's affected by the site.

Ms. Flood stated certain aspects of the charter have to be changed like the quorum designation and repository location. Ms. Hutts motioned to table the charter till next meeting and to have the most recent charter available for comparison. It was seconded and passed.

#### **5. Final Remedial Investigation presentation and review (See presentations attached)**

##### **Conceptual Site Model**

- Mr. Matthew Narter covered the conceptual site model, historical information and remedial investigation findings. There was a question regarding the wells in the area and Mr. Narter described them in more detail.

Mr. Burchard asked if the plume is shrinking and getting smaller. Mr. Narter answered that the contaminated groundwater is being captured by the South Shannon production well. As it moves downgradient it actually is getting wider but it is being funneled into the production well, which is treated. It will be covered more in the following presentation.

There was a question regarding surface contamination from sources like RoundUp and pesticides and is there affect over time from these sources. Ms. Flood stated if there was contamination like that it should be more evident in the shallow depths, which is not seen at this site. It may be more of a runoff concern.

##### **Data gap study/groundwater sampling update**

-The presentation by Mr. Chris Gale covered areas of the site that need further investigation that would influence the selection of remedial alternatives for the site as well as next steps proposed.

The data gap on the west does exist and Mr. Burchard was pleased to see it researched since there have been some contaminants showing up.

-A CAB member asked if groundwater rise affects the plume or the pollution. Mr. Gale stated more information will be needed to determine but it most likely won't increase the contamination.

-It was noted the method used in the lab to detect for 1,4 dioxane only sees half of the actual concentrations. Mr. Burchard recommended using a different method. Mr. Gale said that they are in that process right now.

-Mr. Burchard commented that optimization of the pump and treat system is important to get a handle on the site. In addition, effects of the increased recharge in the area should be investigated and researched.

#### **6. Community Involvement Plan Review, discussion and vote**

Ms. Flood handed out the plan and thanked those that provided information for the update. The CAB was requested to review and submit comments and suggestions otherwise the plan stands as is and can be further discussed at the next meeting.

## **7. CAB Duties and call to action (see attached presentation) –**

Mr. Scott Green covered the WQARF programs, the accomplishments of the last year, the budget concerns for the upcoming year, the CAB role and what can be done to help achieve full WQARF funding from the legislature.

Mr. Burchard asked about the meetings of the WQARF Board since it is required and they have not met; what is the director doing about the board. Mr. Green stated the WQARF Board has not been reinstated but the Waste Programs Director is reviewing what that entails.

Ms. Flood stated the CAB can meet to draft a letter in response to Mr. Green's presentation. The members decided to draft a letter for the CAB; Mr. Marty Drozdoff offered to do the first draft letter. Ms. Flood will schedule the next meeting once received.

## **8. CAB Outreach – Tabled due to time**

### **9.\*Call to the Public**

Jim Faas, Pima County, asked if the budget for next year is the same this year and when might the FS be completed. Mr. Green stated he could unfortunately not answer due to WQARF funding issues, however a variety of factors are looked at regarding what sites will be worked on.

Ms. Tina Le Page stated the site work will include some data gaps investigation but ADEQ won't stop the work, however ADEQ cannot confirm a date of FS completion.

## **10. Next Meeting Date/Agenda Discussion**

The next meeting will be focused on CAB business and the draft letter. The CAB recommended trying for an August time frame, August 18<sup>th</sup> at the same location.

## **11. Adjournment**

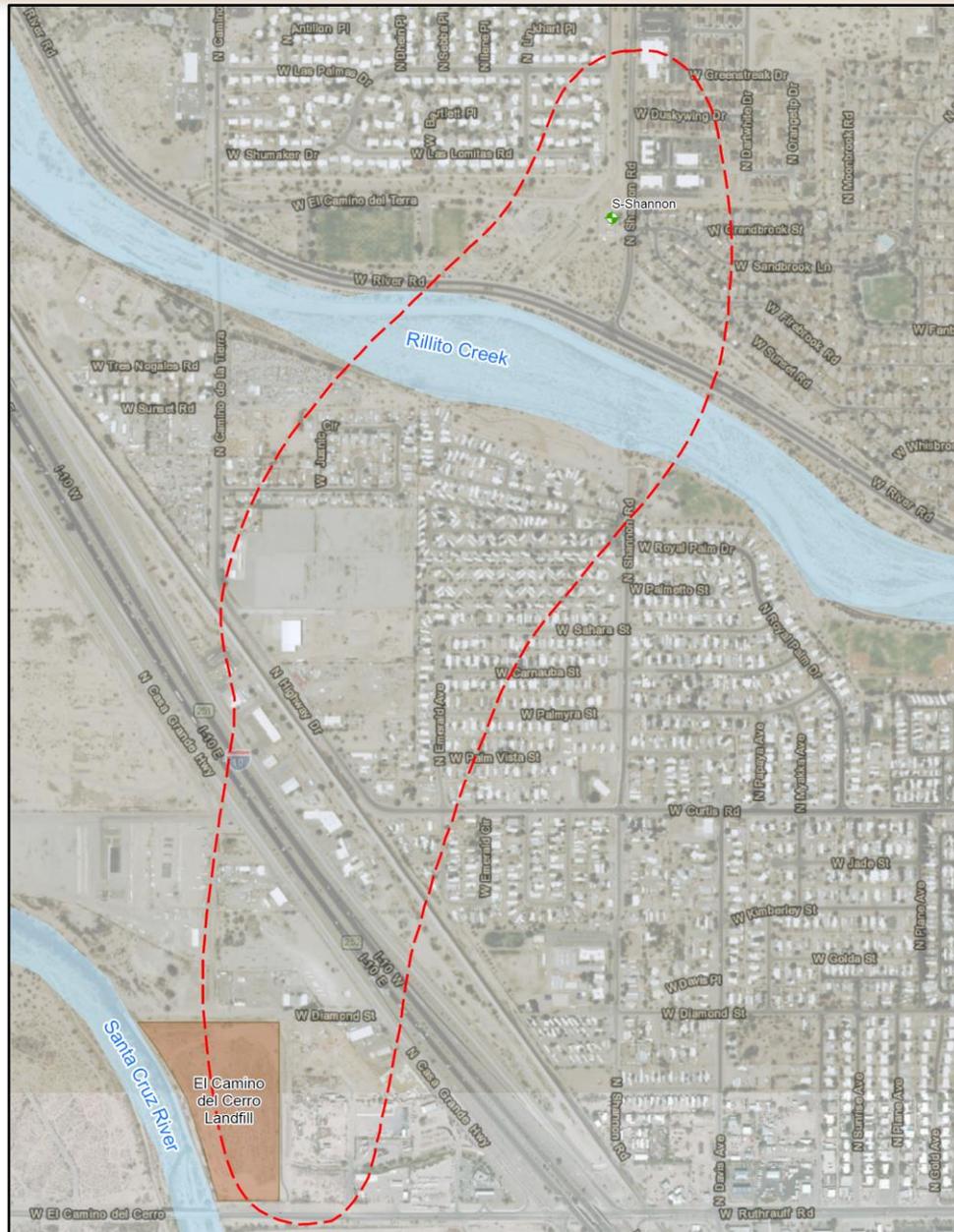
Mr. Burchard motioned to adjourn. It was seconded, meeting adjourned at 7:45 p.m.



# Shannon Rd/El Camino del Cerro WQARF Site Conceptual Site Model

Matt Narter  
Hydrologist  
May 12, 2015



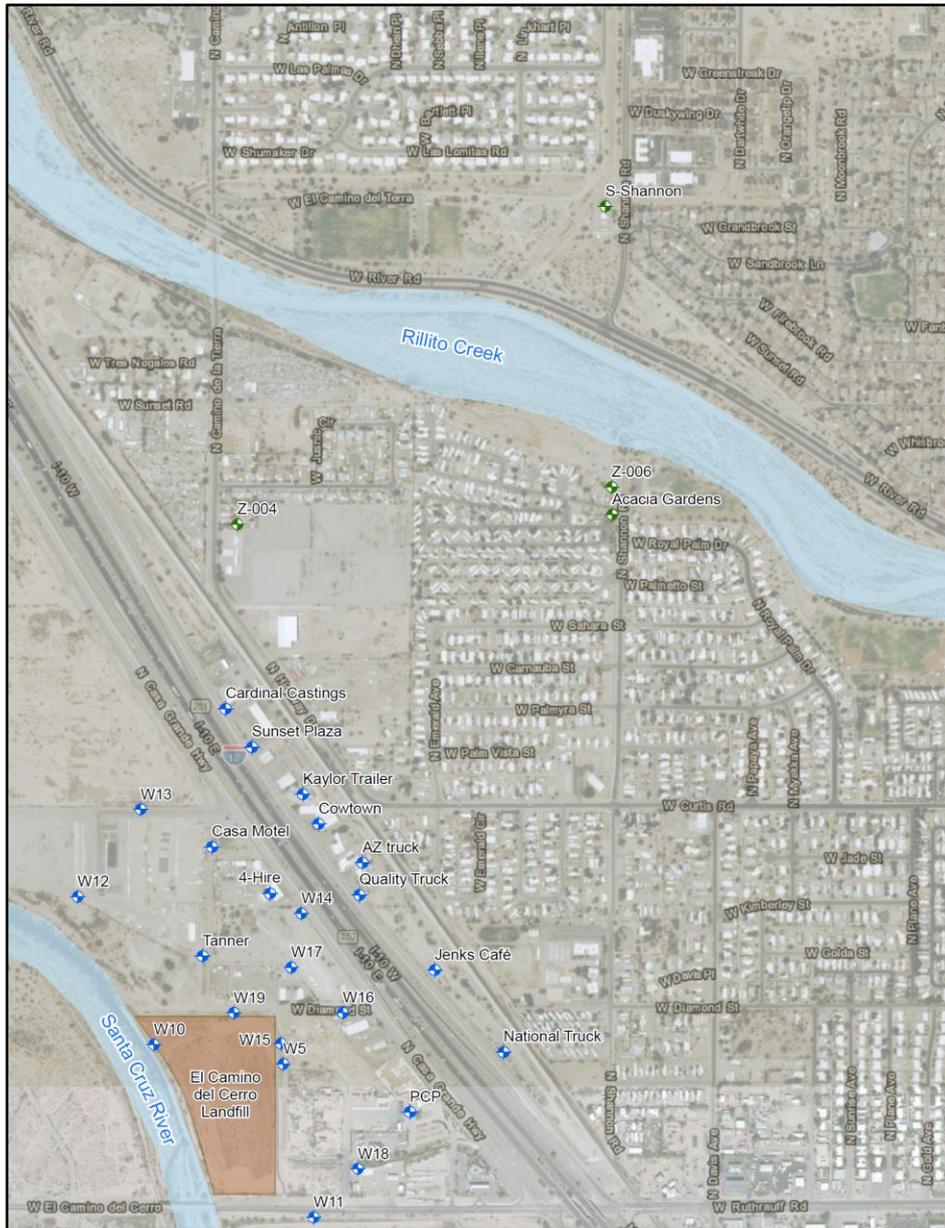


- The historical plume extends from the El Camino del Cerro (ECDC) Landfill area to approximately the Metro Water South Shannon Well
- Contaminants of Concern include the Volatile Organic Compounds (VOCs):
  - Tetrachloroethene (PCE)
  - Trichloroethene (TCE)
  - Dichloroethene (DCE)
  - Vinyl Chloride

- The direction of the groundwater gradient can vary from northwest to northeast across the site
- Depth to groundwater at the site is ~160 ft bgs, declining at approximately 1.5 ft/yr
- Boring logs indicate the geology is relatively homogeneous, sandy/silty gravel
- Complex geologic features caused by the confluence of two rivers may complicate this geology



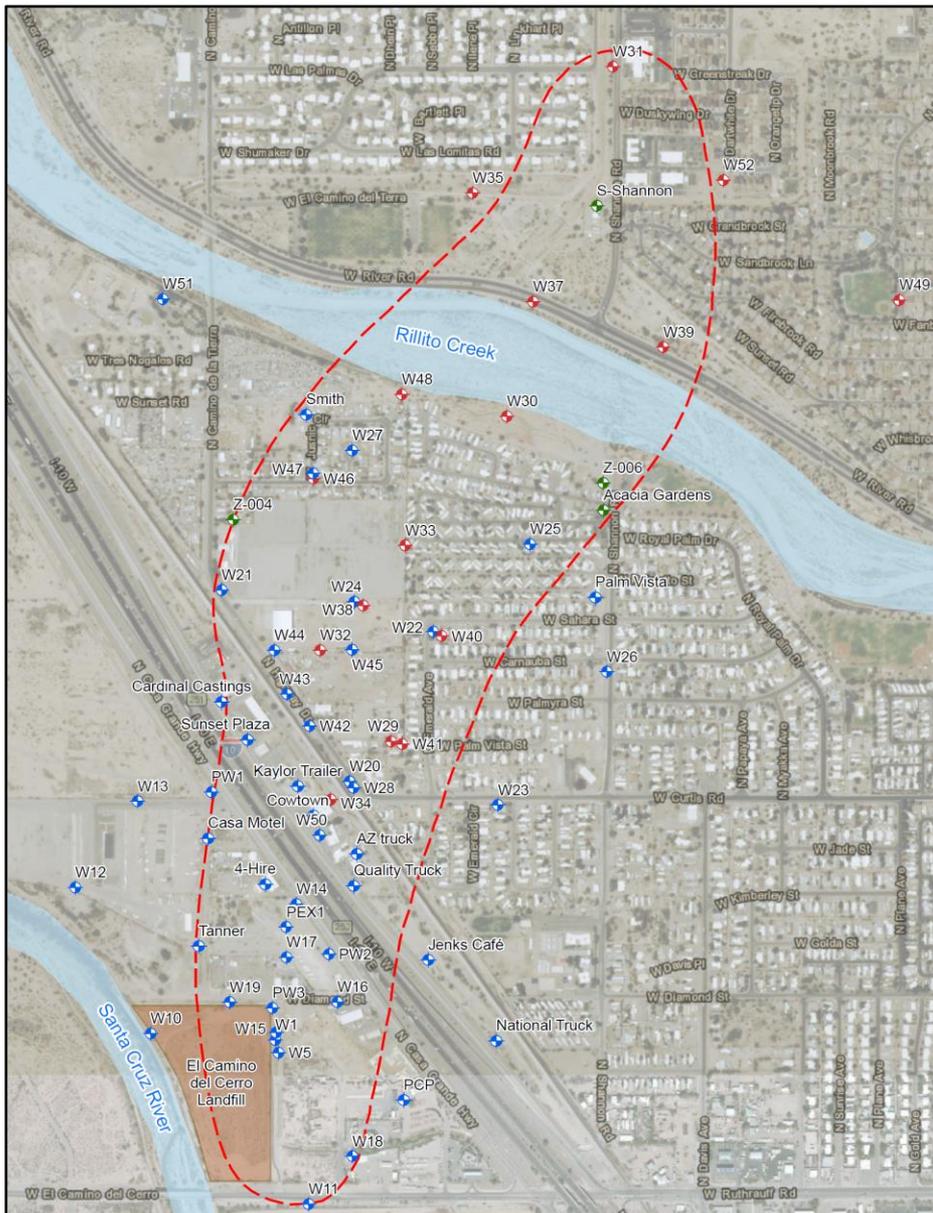
# Groundwater Monitoring 1987-1994



- Landfill Studies Program (1983) identified chlorinated solvent contamination near the ECDC landfill
- Several wells were installed in the landfill area
- Several contaminated private wells in the I-10 corridor were converted to monitor wells
- In the early 1990's, PCE was detected in potable production wells northeast of the landfill area



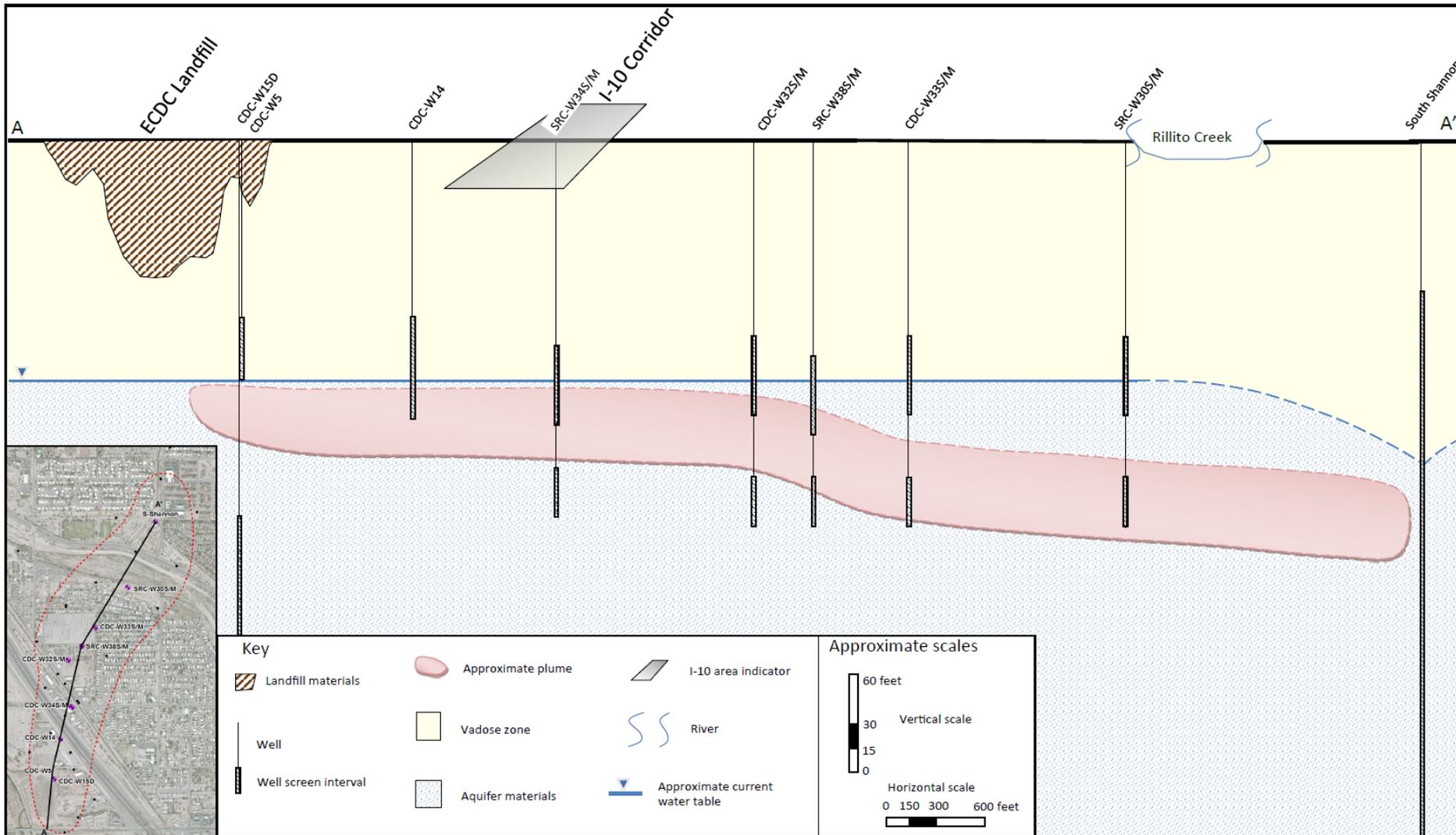




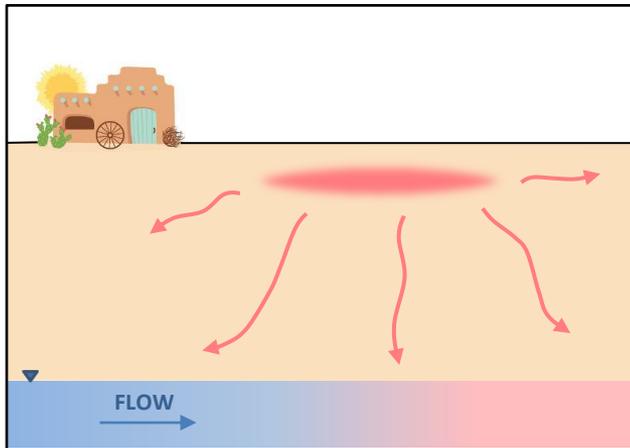
- After 2002, numerous wells were installed with screens deeper in the aquifer
- Sampling results indicated the presence of a single plume, which moves deeper in the aquifer.
- The SRRC and ECDC WQARF sites were administratively combined in 2004.

# Conceptualized Plume Cross Section

DITAT DEUS







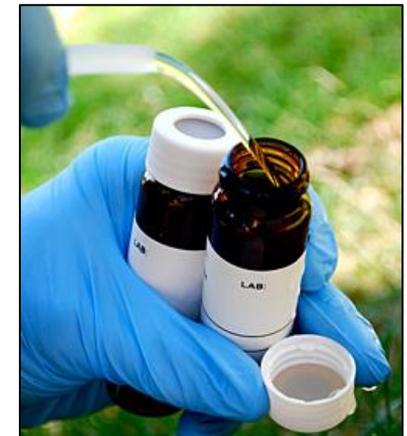
- Given the arid environment and deep water table, contaminants migrate to groundwater primarily through vapor diffusion
- Vapor transport can be enhanced due to pressure gradients caused by landfill gas production
- Significant rainfall/flooding events may also contribute by leaching contaminants or temporarily submerging contaminated soils

- Results of investigations have confirmed the landfill area as a source of VOCs to Groundwater
- Conditions near the landfill have allowed for biodegradation of contaminants (PCE → TCE → DCE → VC → ethene gas)
- Pima County has conducted numerous investigations and activities southwest of I-10, near the ECDC Landfill, including:
  - Groundwater Monitoring
  - Soil-Gas Investigations
  - Soil Vapor Extraction (SVE)
  - Groundwater Extraction and Treatment
- Activities have resulted in a reduction of plume concentrations and have begun to shrink the plume area

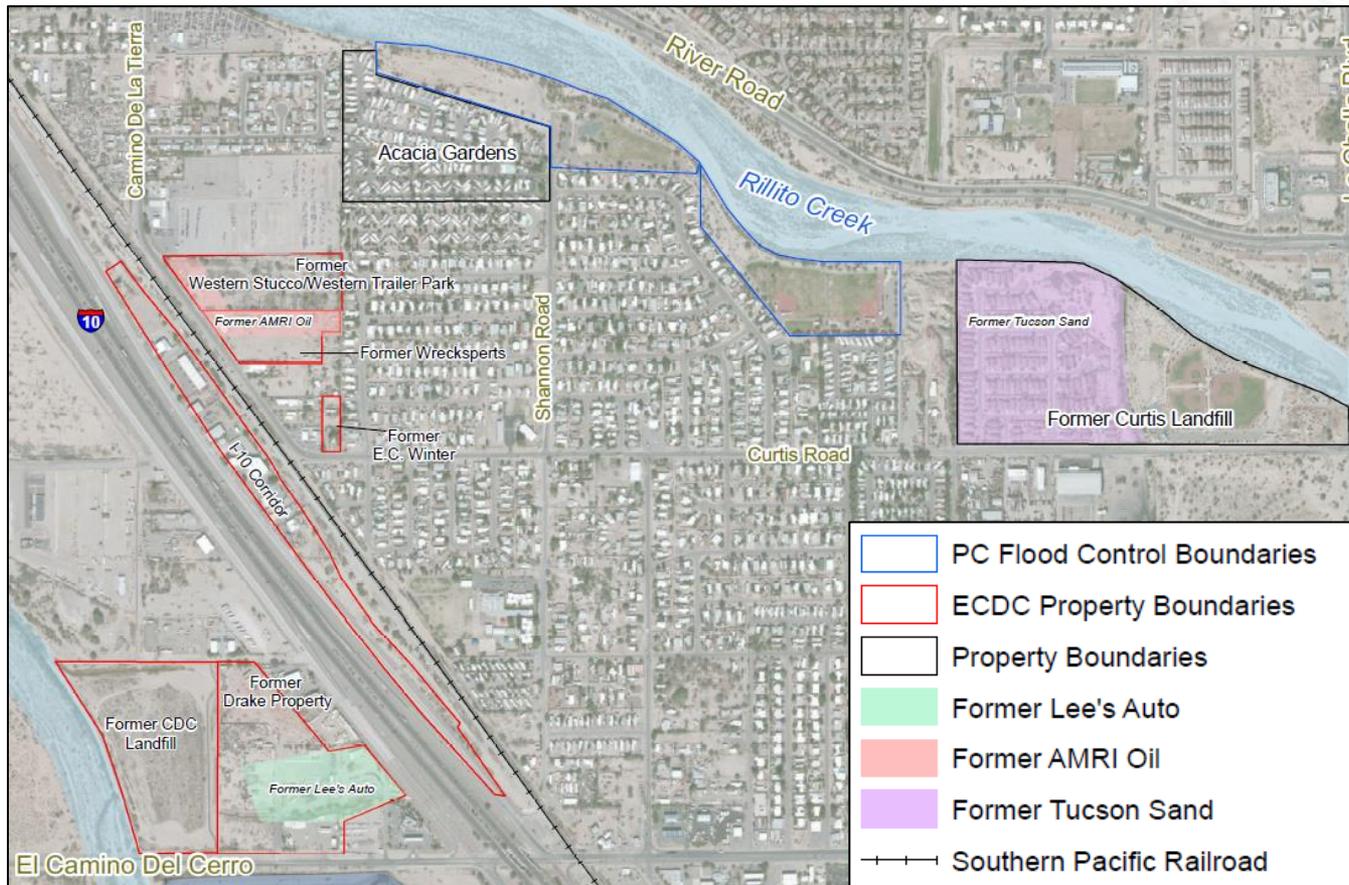


Aerial view of the El Camino del Cerro Landfill

- Groundwater quality data was used to look for evidence of additional sources:
  - Time-Series Information
  - PCE/TCE Ratios
  - Additional Contaminant Distribution (e.g. 1,4-dioxane, Freons)
  
- Data do not definitively indicate another significant source downgradient of the ECDC Landfill



- Several potential source areas have been investigated as part of the SR/ECDC RI



- Field investigations have included:
  - Passive Soil-Gas Surveys
  - Active, Multi-Depth Soil-Gas Sampling
  - Soil Sampling and Excavation
  - Groundwater Sampling

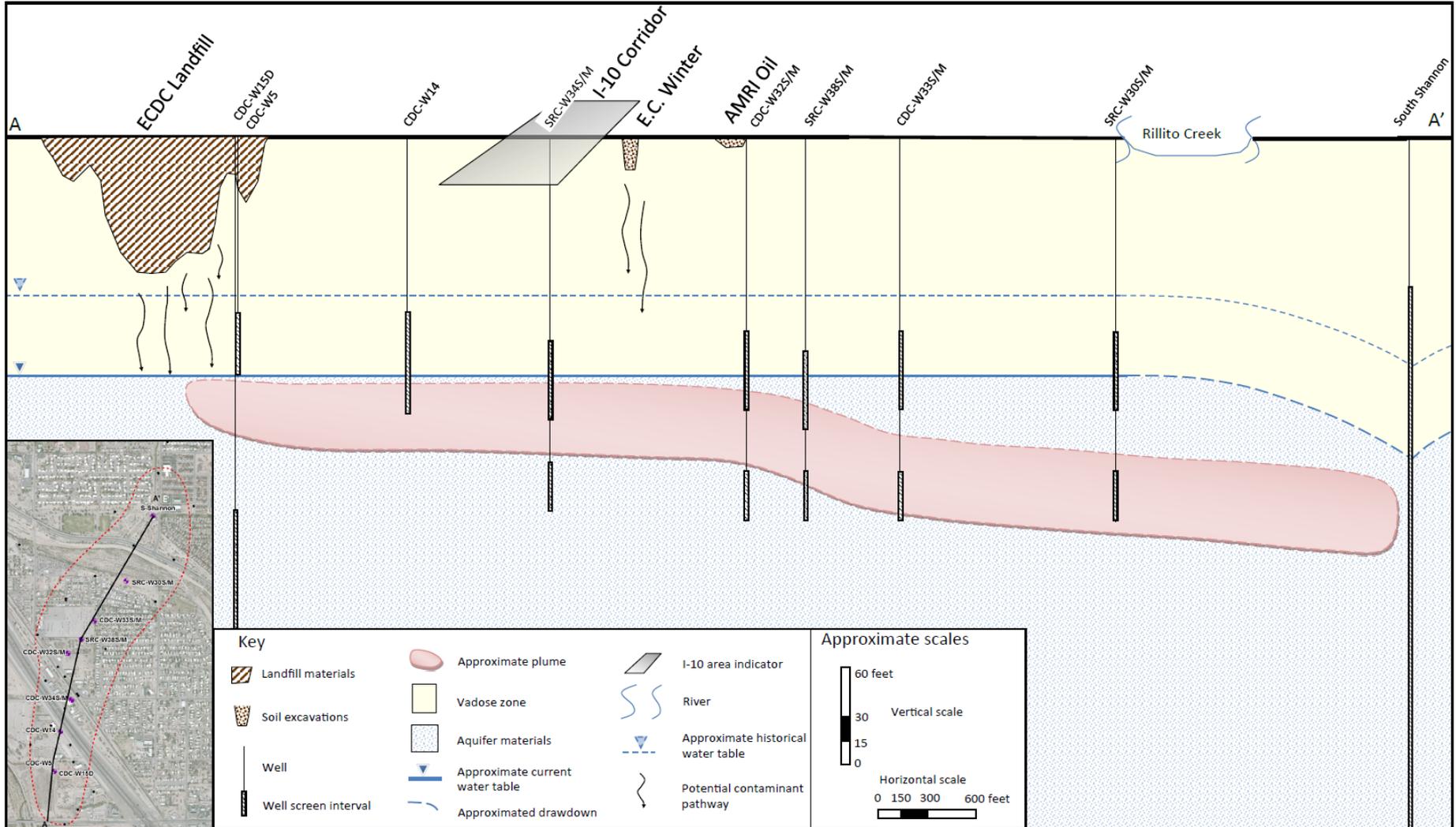


Excavation at the former E.C. Winter Facility

- No evidence of significant impact to groundwater with the exception of TCE contamination at the former E.C. Winter facility
- Remedial actions (soil excavation, SVE) have likely eliminated any ongoing threat to groundwater or human health at the former E.C. Winter facility

# Conceptual Site Model Figure

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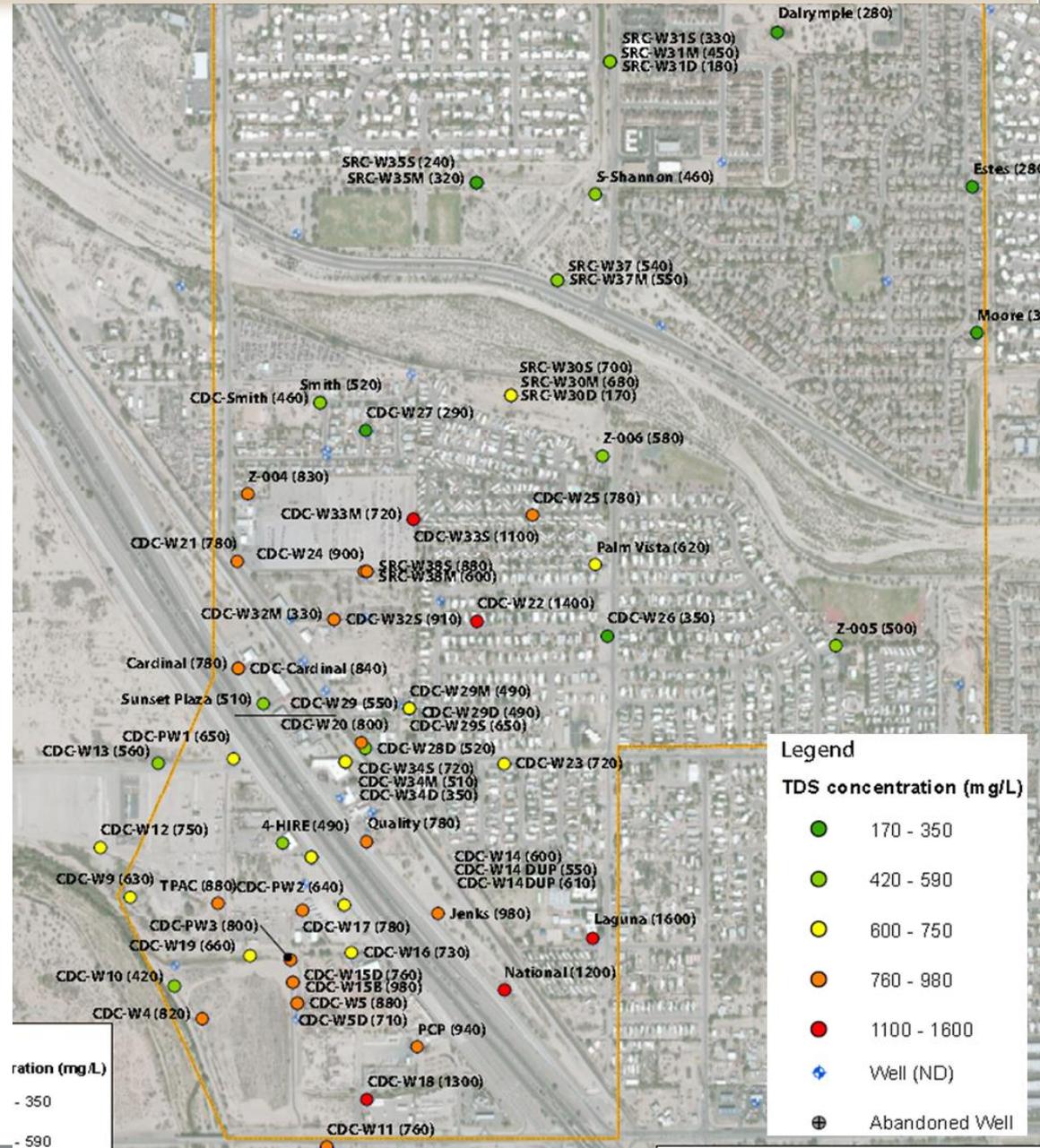


- Conducted Data Gap Evaluation:
  - Reviewed historical data and numerous previous reports
  - Evaluation focused on identifying data gaps that could affect identification/evaluation of potential remedial alternatives
  - Evaluated potential additional sources
    - ECDC landfill is only active remaining source
    - Other potential source area (EC Winter) has been remediated and no longer presents an active potential source
  
- Conducted 2 Rounds of Groundwater Sampling in 2015
  - January/February 2015
  - April 2015 – Vertical Profiling in 12 Wells



# Data Gap Evaluation

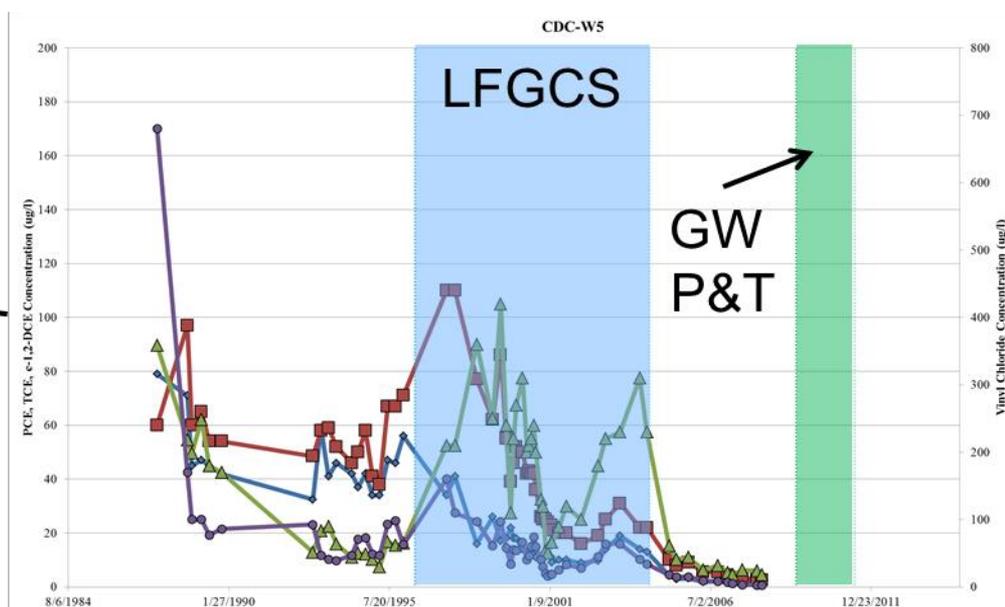
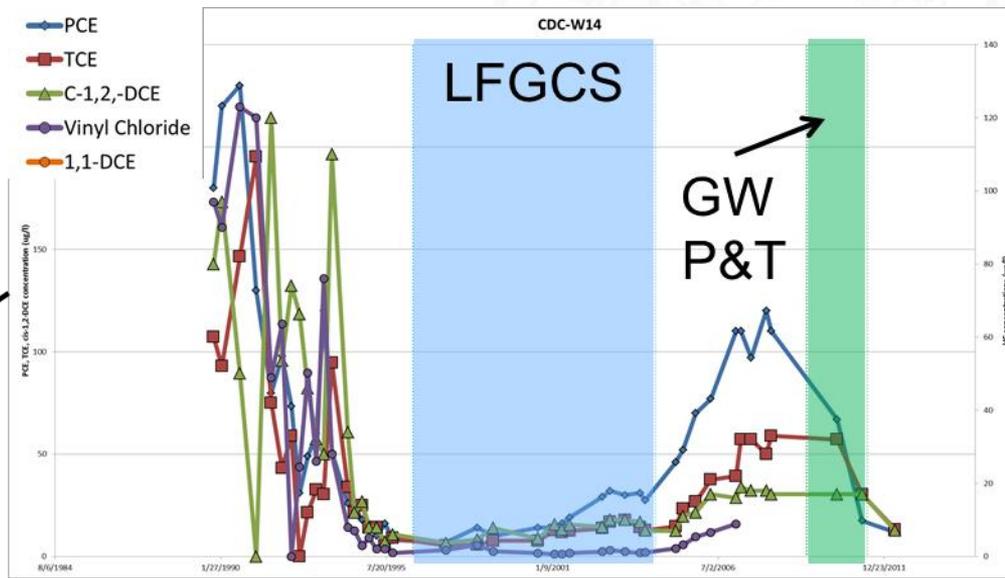
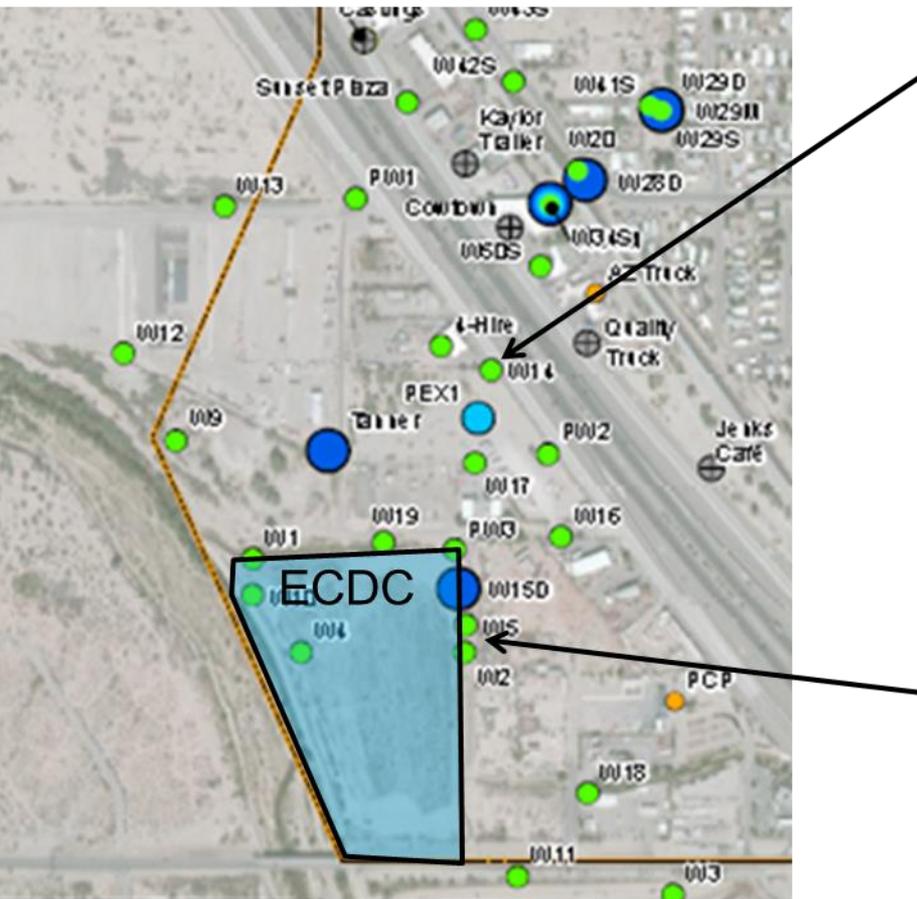
- Impacts from LF may be due to leachate, LFG, or a combination thereof
- Indicators of leachate:
  - Elevated concentrations of high solubility compounds and general chemistry parameters:
    - Chloride
    - Total Dissolved Solids
    - Nitrate
- Leachate does not appear to be major contributor to groundwater impacts



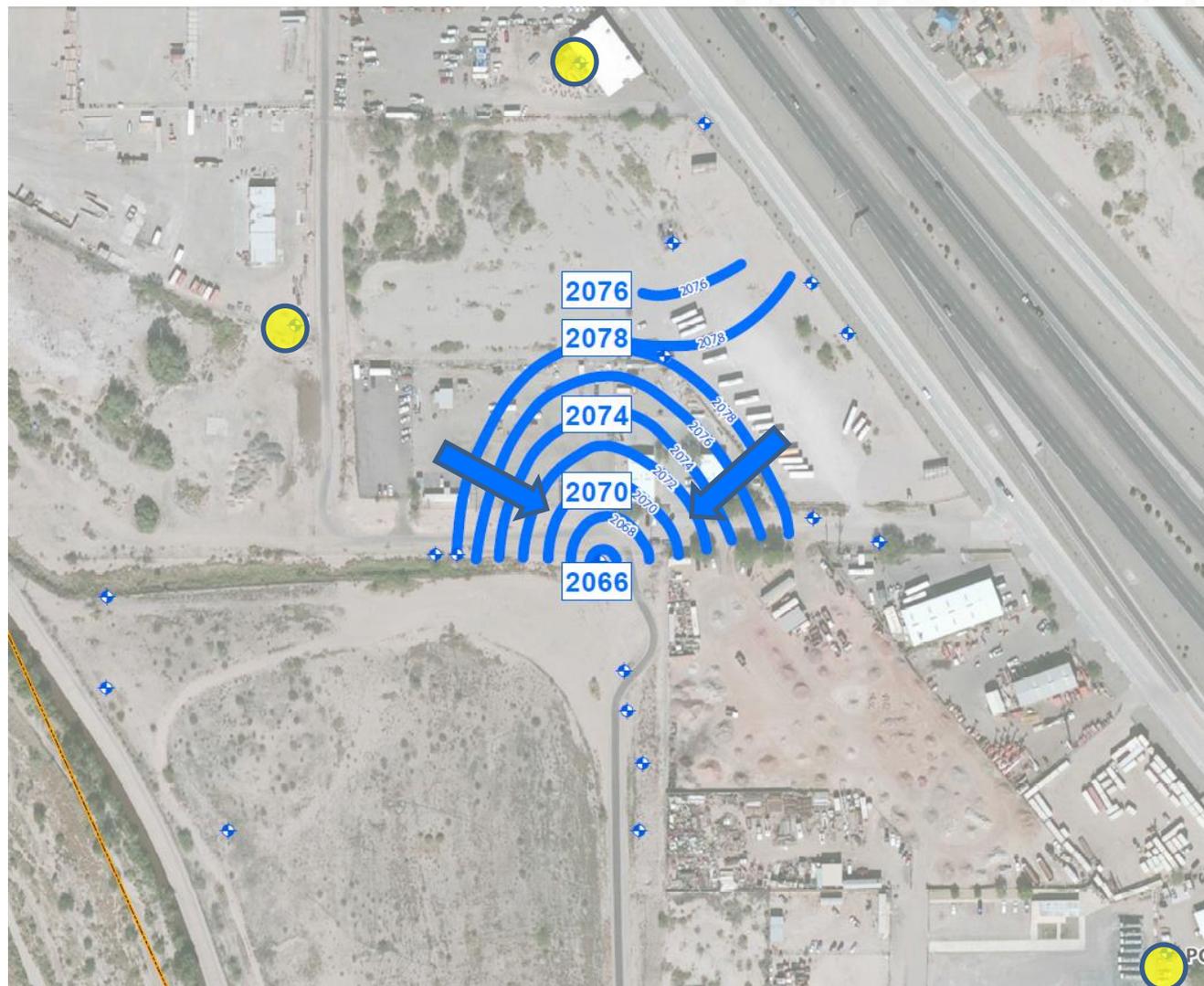


# Early Response Actions

## Results of ECDC Early Response Actions

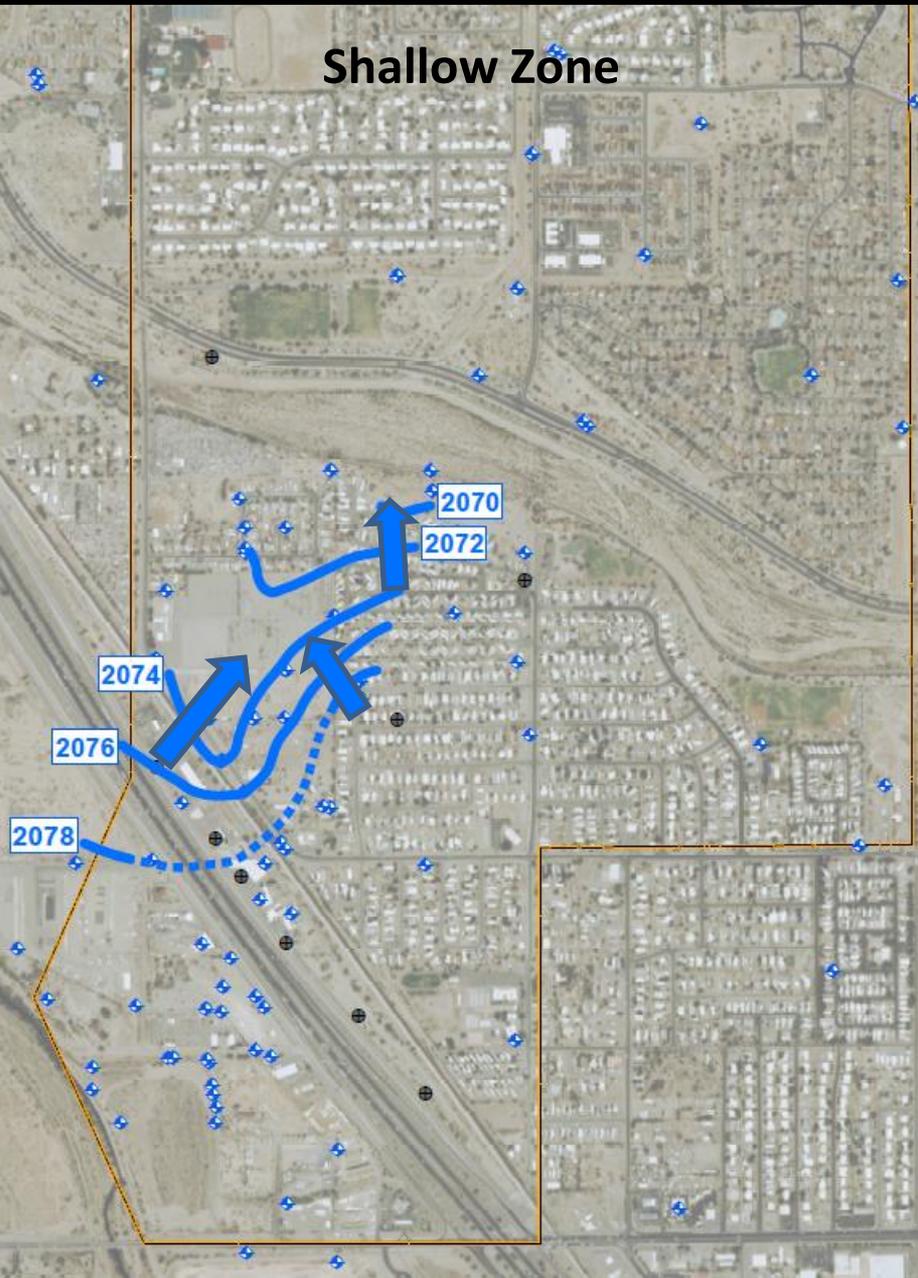


- Groundwater extraction at ECDC Landfill:
- Groundwater extraction appears to contain groundwater impacts from landfill

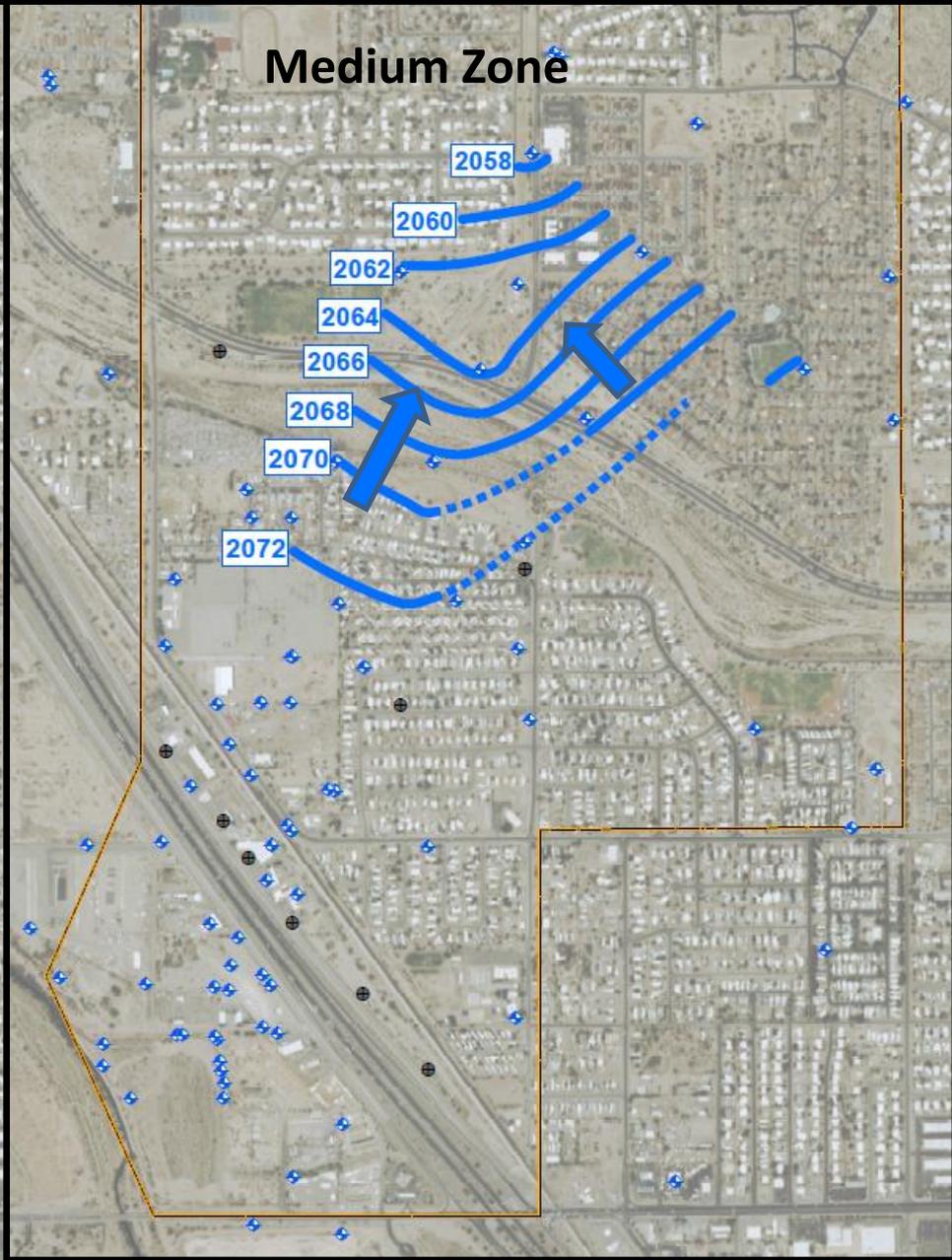


# 2015 Groundwater Elevations and Flow

## Shallow Zone



## Medium Zone

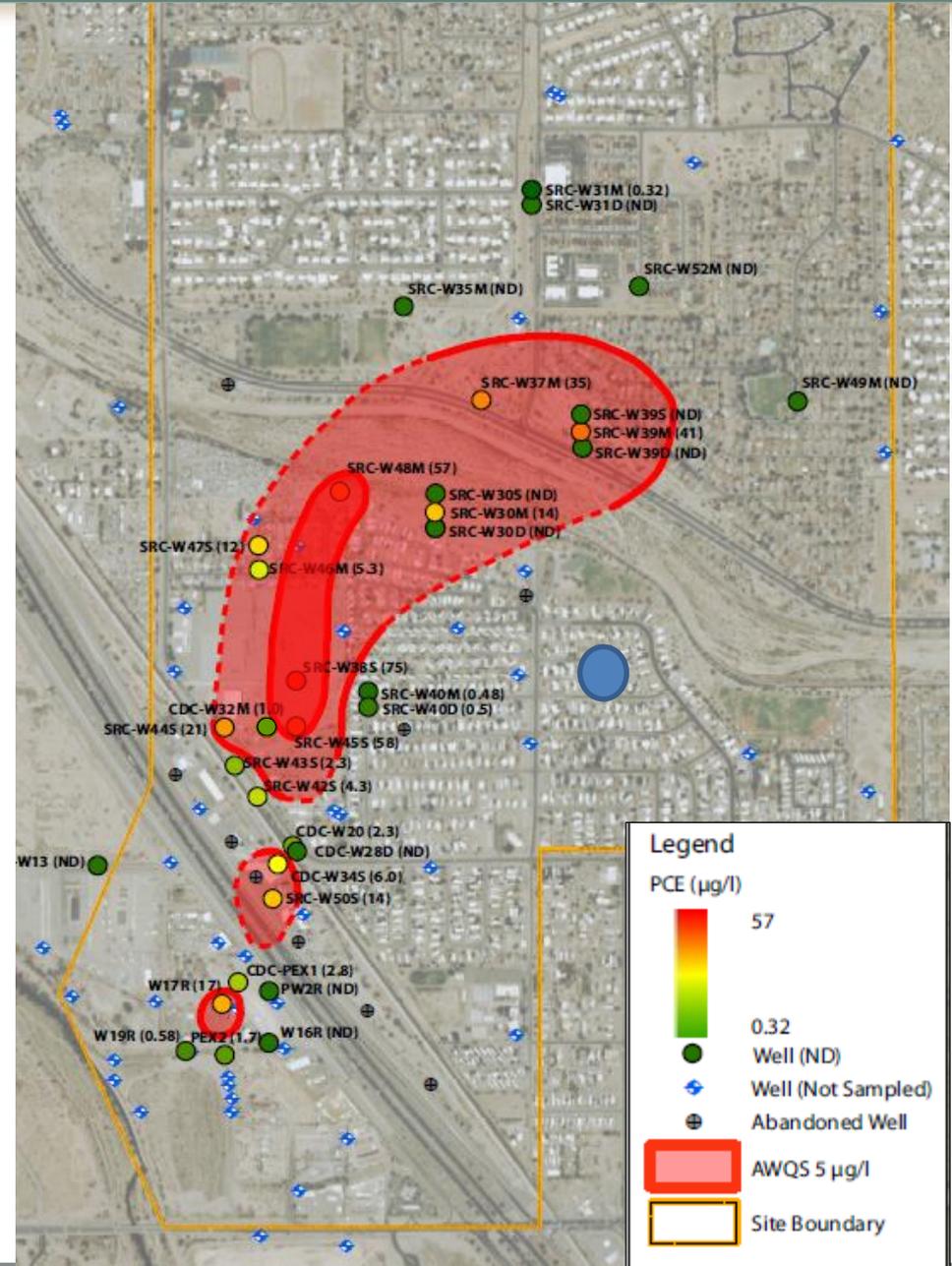


- Conducted 2 Groundwater Monitoring Events:
  - January/February
    - Select wells (31) along plume
    - VOCs
    - General Chemistry ions
    - Metals
    - TPH
  - April
    - Vertical profiling along length of plume and across plume
    - VOCs

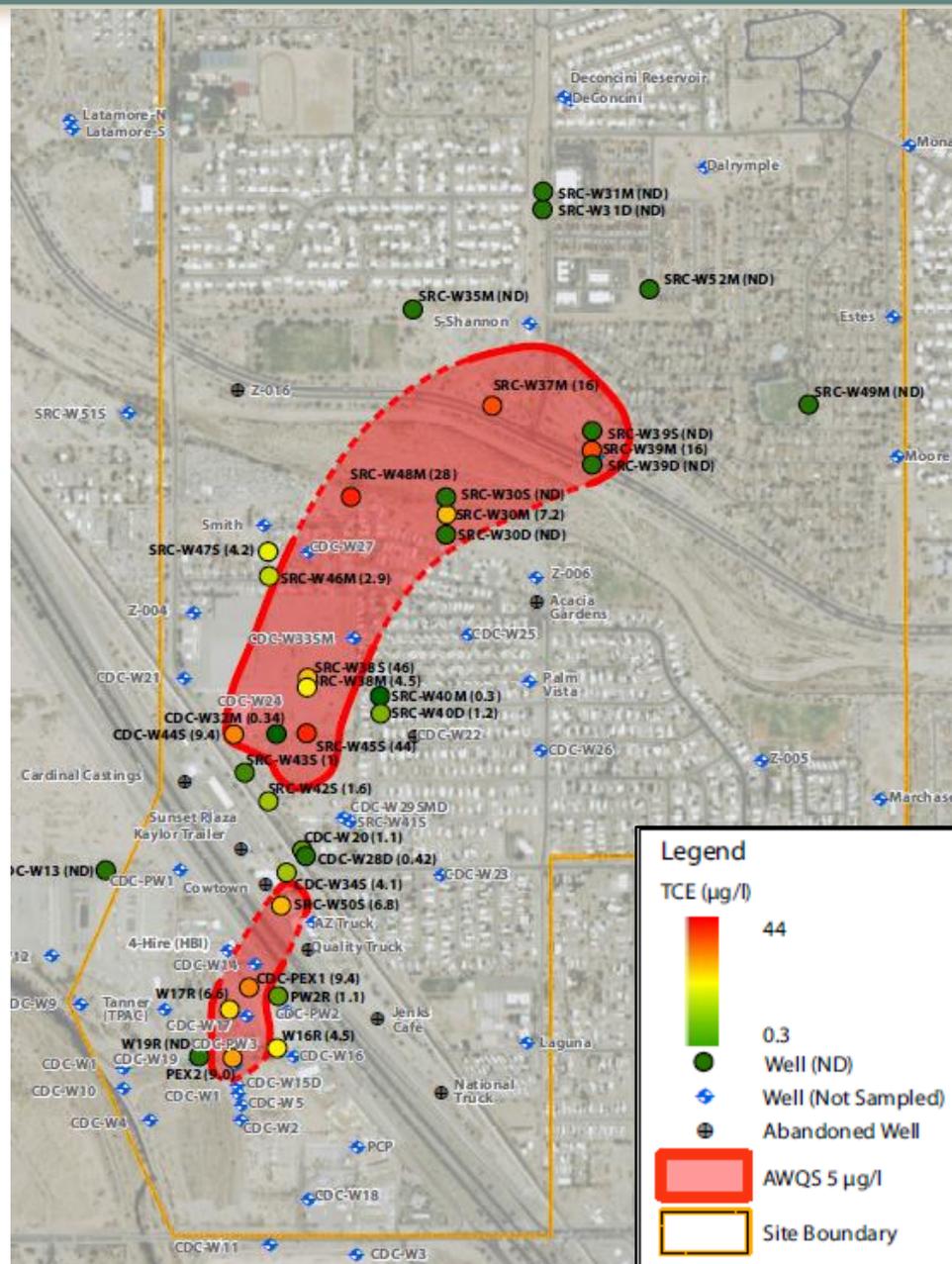


# 2015 PCE

- Plume generally consistent with historic limits
- Groundwater extraction @ ECDC Landfill appears to have effectively reduced concentrations in immediate vicinity of the landfill

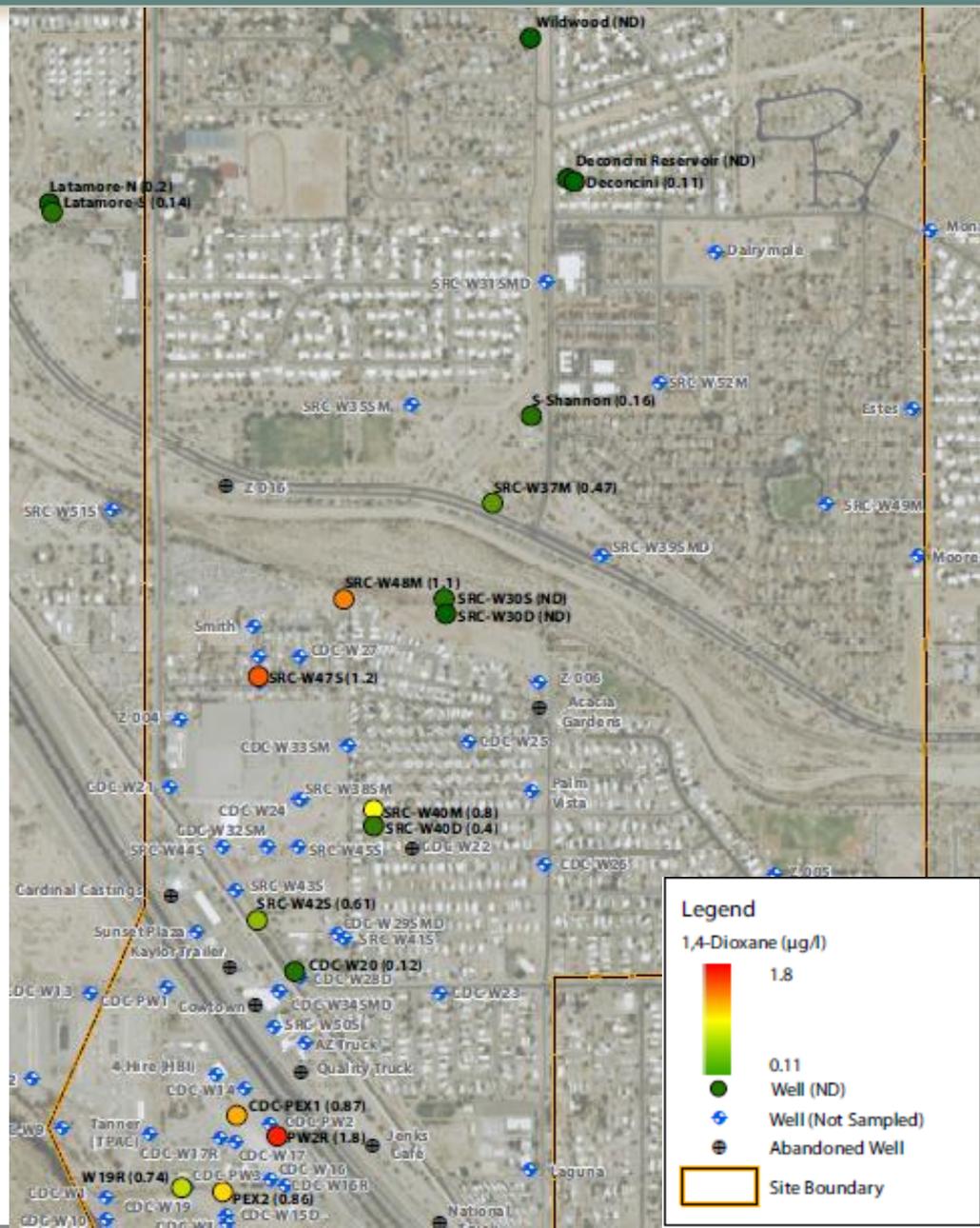


- TCE plume generally consistent with historic limits
- Generally slightly smaller lateral extent than PCE
- Groundwater extraction @ ECDC Landfill appears to reduce concentrations in immediate vicinity of the landfill

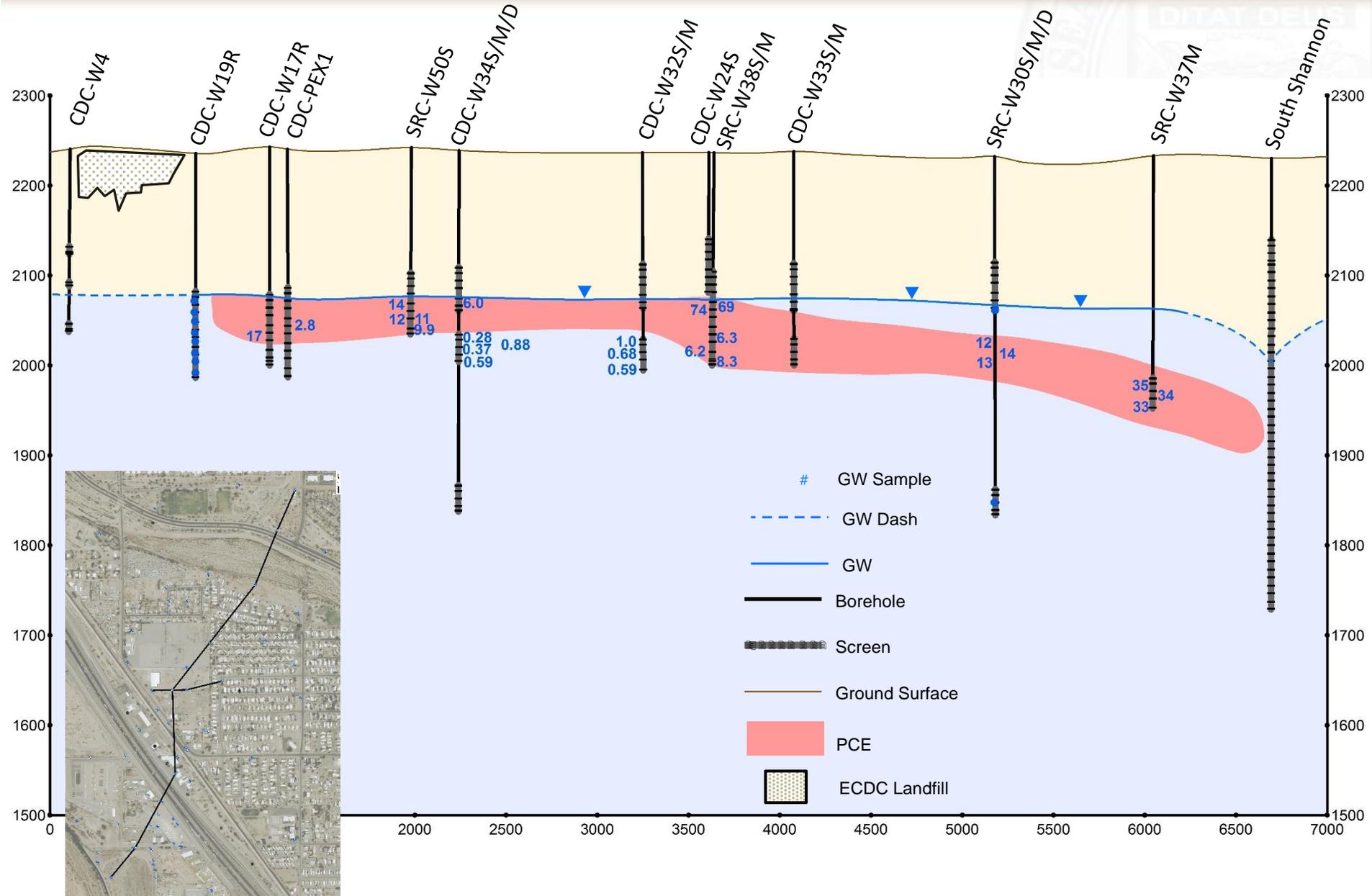


# 2015 1,4-Dioxane

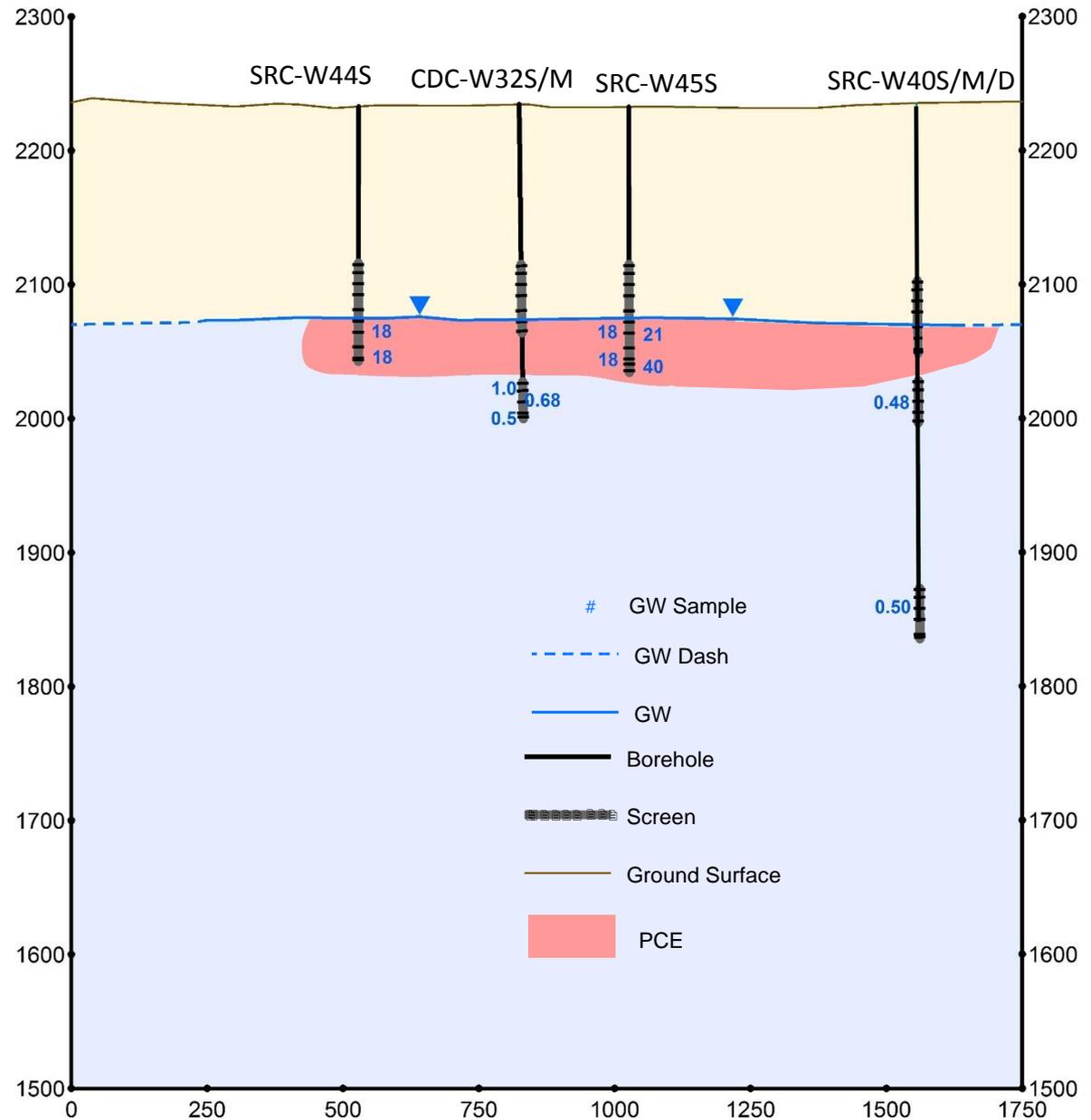
- Concentrations consistent with 2013 sampling
- Insufficient data for trend analyses
- As discussed in RI, Arizona Department of Health Services completed health risk assessment indicating 1,4-dioxane presents a “very low” risk to human health



# Current Conditions – PCE Vertical Distribution



# Current Conditions – PCE Vertical Distribution



# Next Steps – Feasibility Study

- Potential Remedial Actions to be Included in Feasibility Study
  - Source Control @ ECDC Landfill
    - Control LFG
    - Optimize existing groundwater pump and treat
  - Plume Treatment
    - Continued treatment at S. Shannon
    - Additional plume treatment alternatives to reduce overall remediation time frame



