

OU #09-067

Phoenix-Goodyear Airport Area/Western Avenue Plume Community Advisory Group (CAG) Meeting

Thursday, November 6, 2008 at 6:30 p.m.
Goodyear Water Resource Administration Building
(1st floor training room) 4980 S. 157th Avenue
Goodyear, Arizona

FINAL MINUTES

CAG Members in Attendance:

Susan Kagan
Diane Krone
Frank Scott
Brenda Holland

ADEQ Staff in Attendance:

Nicole Coranado, PGA-South Project Manager
Cathy O'Connell, PGA-North Project Manager
Andre Chiaradia, Western Avenue Project Manager
Felicia Calderon, Community Involvement Coordinator
Julie Riemenschneider, Remedial Projects Section
Manager
Harry Hendler, Federal Projects Manager
Bob Peeples, Hydrologist

EPA Staff in Attendance:

Mary Aycock, PGA-North Project Manager
Dawn Richmond, Section Chief

Others in Attendance:

Harry Brenton, ARCADIS
Ron Clark, Goodyear Tire & Rubber Co.
Win Colbert, Goodyear Tire & Rubber Co.
David Iwanski, City of Goodyear
Nancy Nesky, ITSI
James Moyer, Park Shadows Country Homes
Gene Mammini, Clear Creek
Barney Helmick
Dr. Ailiang Gu., Burgess and Niple
Chad Baker, Squire Sanders & Dempsey L.L.P

1. Call to Order / Introductions – Diane Krone

Ms. Krone, CAG Co-chair, facilitated the meeting. CAG members and all meeting attendees introduced themselves.

2. Discussion of Western Avenue WQARF Site, Remedial Investigation (RI), and Solicitation of public comments on proposed Remedial Objectives (RO)

Mr. Chiaradia introduced himself and initiated his presentation to the CAG with a remediation review of the Western Avenue WQARF Site. Mr. Chiaradia continued his presentation with the particulars of the RI and solicitation of public comments on proposed RO.

See slide presentation below

Ms. Krone requested further details regarding the activity of two wells in Avondale that were in the project area. In response Mr. Chiaradia stated that neither of these two wells were actively being pumped. Mr. Chiaradia confirmed for Ms. Krone that the only public water source well in the project area was COG-1, and that it would continue to be monitored on a monthly basis. Mr. Chiaradia added that results from continued sampling of the COG-1 were necessary toward the determination of a remediation method. In addition, he stated that active communication regarding COG-1 has and would be conducted between ADEQ and the City of Goodyear. Mr. Iwanski advised Ms. Krone that the City of Goodyear would immediately shut down any well that exceeded a maximum contaminant level.

Ms. Riemenschneider clarified to the CAG that the comment period for RO opened on October 14, 2008 and closed on November 17, 2008. In addition Ms. Riemenschneider added that a final RO Report would be released and that another comment period on this final report would be available for the public at that time. The CAG expressed interest in having another meeting once the finalized RO Report was completed.

3. Update of PGA-North activities – Harry Brenton, ARCADIS

Mr. Brenton reviewed with the CAG ongoing and future plans for the PGA-North Site that included the following topics: building demolition project; groundwater and soil treatment systems; ongoing groundwater investigation and abandonment; additional on-site sampling; and on-site treatment of contaminants.

See slide presentation below

Ms. Krone questioned the completion timeline of the building demolition project. In response Mr. Brenton stated that the project should take a total of fifteen to sixteen weeks to complete.

Ms. Kagan inquired as to the large increase of the total volume of groundwater treated from September 2008 compared to the months of July 2008 and August 2008. Mr. Brenton attributed the decline of treatment activity within these two months to mostly vandalism of the wells that had occurred.

Ms. Kagan requested additional information on how wells were abandoned. Mr. Brenton detailed the process that included: a video log of the well to inspect its initial condition; to be followed by the brushing of the well; and then a mills knife is lowered to tear holes in the casing from the top to the bottom of the well. In addition another video log of the well is performed to ensure the desired condition was achieved, and lastly cement is pumped down the well with the objective of getting a good seal between the well casing and the formation.

Ms. Krone questioned the containment of the plume. Mr. Brenton responded that there was movement of the plume towards the Northeast area, and that soil vapor extraction (SVE) system on the Unidynamics site was working effectively, but that more aggressive remediation efforts were required, especially in the northeast area of the plume. Ms. Aycock commented that there was an immediate need for additional extraction well capability around the EA-06 treatment system to aid in the prevention of any advancement of contamination towards the wells in the Northeast area.

Ms. Aycock also advised the CAG that the annual tour of PGA-North would be conducted in April of 2009.

4. Update of PGA- South activities – Ron Clark, Goodyear Tire & Rubber Company

Mr. Clark greeted the CAG and proceeded to review current, ongoing and projected remedial activities for PGA-South.

See slide presentation below

No questions were asked.

5. City of Goodyear (City) Report- David Iwanski, COG Water Department

Mr. Iwanski reported that the City Council and Mayor had recently accepted their Brownfields Redevelopment Project. Additionally, Mr. Iwanski noted that the development of the criterion

for the Citizens' Advisory Committee had been completed. Mr. Iwanski expressed to the CAG that the City of Goodyear was very concerned with the maximum contaminate levels of COG-1 and COG-3 wells, as well as the wells in the Western part of the central planning area. Mr. Iwanski stressed that continued communication and aggressive monitoring efforts on the part of EPA, ADEQ, consultants and the municipalities were vital and very much appreciated by the City of Goodyear.

6. Update regarding appearance of the Unidynamics property

Ms. O'Connell and Ms. Aycock advised the CAG that their expressed concerns over the physical appearance at the old Unidynamics property had been addressed to Crane Co.. In addition, Ms. Aycock reported that a landscaping crew had already been dispatched and that more of a cleanup effort would be initiated after the buildings came down. Mr. Iwanski also advised the CAG that the new City Manager also wrote a letter to Crane Co. regarding the existing appearance of the property and requested the design of a budget to get this site demolished in a timely manner.

The CAG took a 10-minute break.

7. Call to the Public

A member of the public expressed to the CAG that there was tremendous interest in expediting remediation action - specifically the conduit wells owned by SunCor.

8. Acceptance and/or changes to minutes of August 7, 2008

A quorum was not present at the meeting, so this agenda item was held until the next meeting.

9. Distribution and review of WQARF 2008 Annual Registry Report

Ms. Calderon explained that each year ADEQ is required by statute to publish an annual registry report for all WQARF sites in Arizona that gives a brief description and status report for each site. This report is published in the Arizona Administrative Register with the Secretary of State and is presented at all community advisory board meetings. The PGA/WA CAG received the report because the Western Avenue Site that is part of their area is a WQARF site. Ms. Calderon encouraged all present to pick up one of the reports to review at their leisure.

10. CAB membership discussion and voting regarding absent members

A quorum was not present at the meeting so this agenda item was held until the next meeting.

11. Future meeting and agenda items discussion

The next meeting was scheduled for Thursday, February 5, 2009 at the Goodyear City Hall, room 117, 190 N. Litchfield, Goodyear, AZ. Suggested agenda topics for the next CAG meeting included: update of PGA-North activities; update of PGA-South activities; Perchlorate presentation; and CAG membership discussion and voting.

12. Adjournment

Ms. Calderon adjourned the meeting.

Phoenix-Goodyear Airport-South Project Site Status Report

Community Advisory Group
Meeting November 6, 2008



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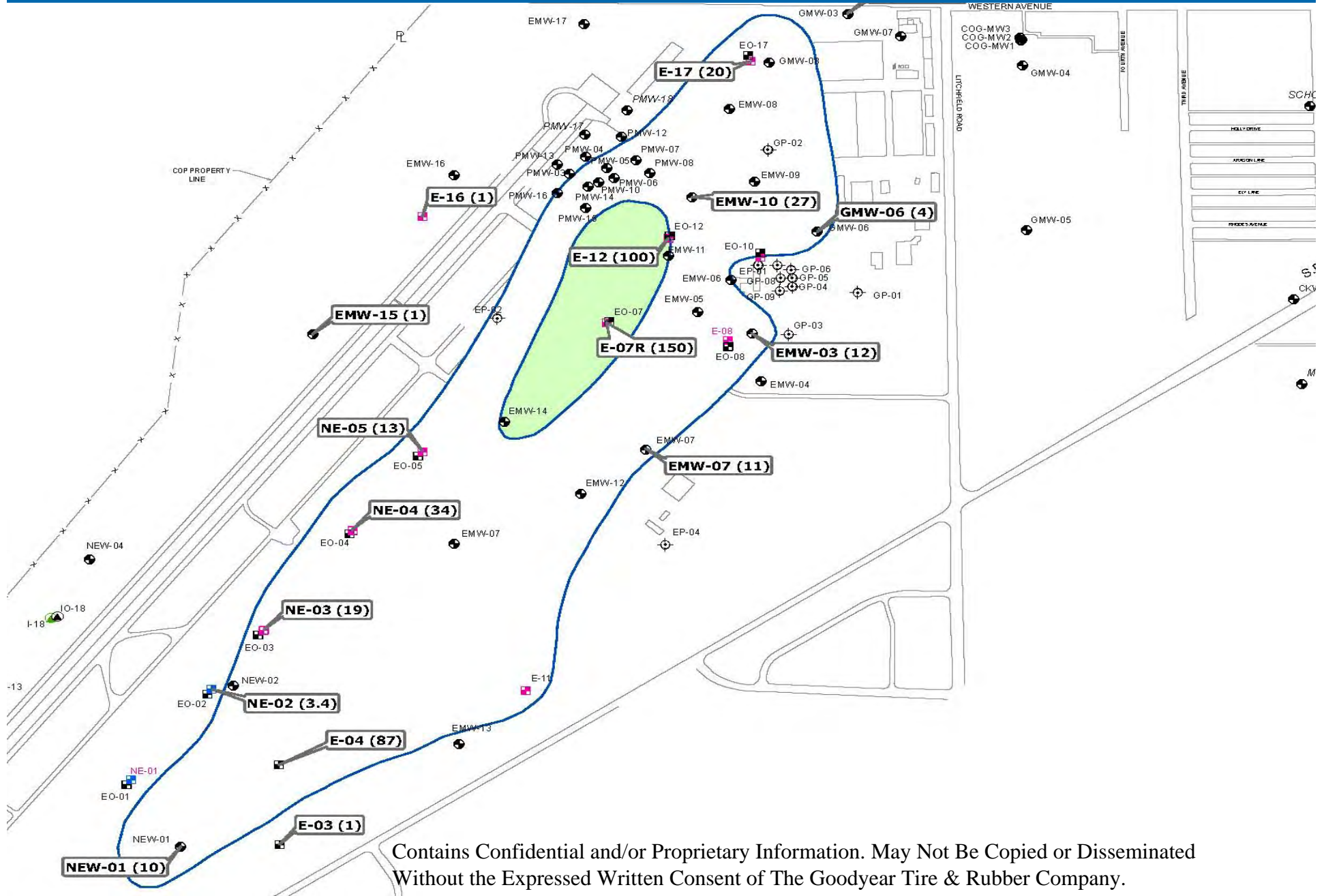
Agenda

- Review current activities
- Update status of ongoing cleanup
- Upcoming activities

Review of Current Activities

- Continue pumping GAC-#4 for further evaluation
- Finalize Groundwater Monitoring Plan and QAPP
- RTCs on Chromium Drying Beds Study
- Finalize Vapor Intrusion Study Work Plan

Subunit A TCE Map Jan/Feb 2008



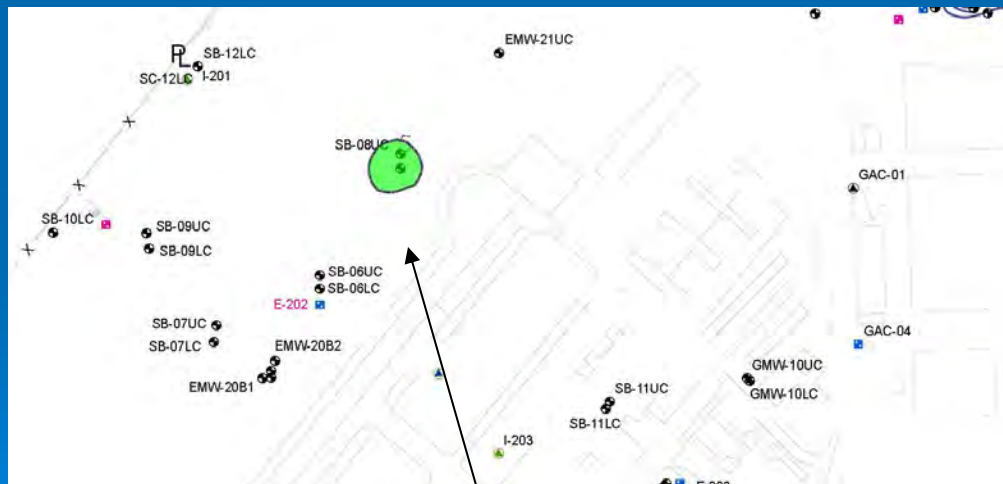
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1994 TCE



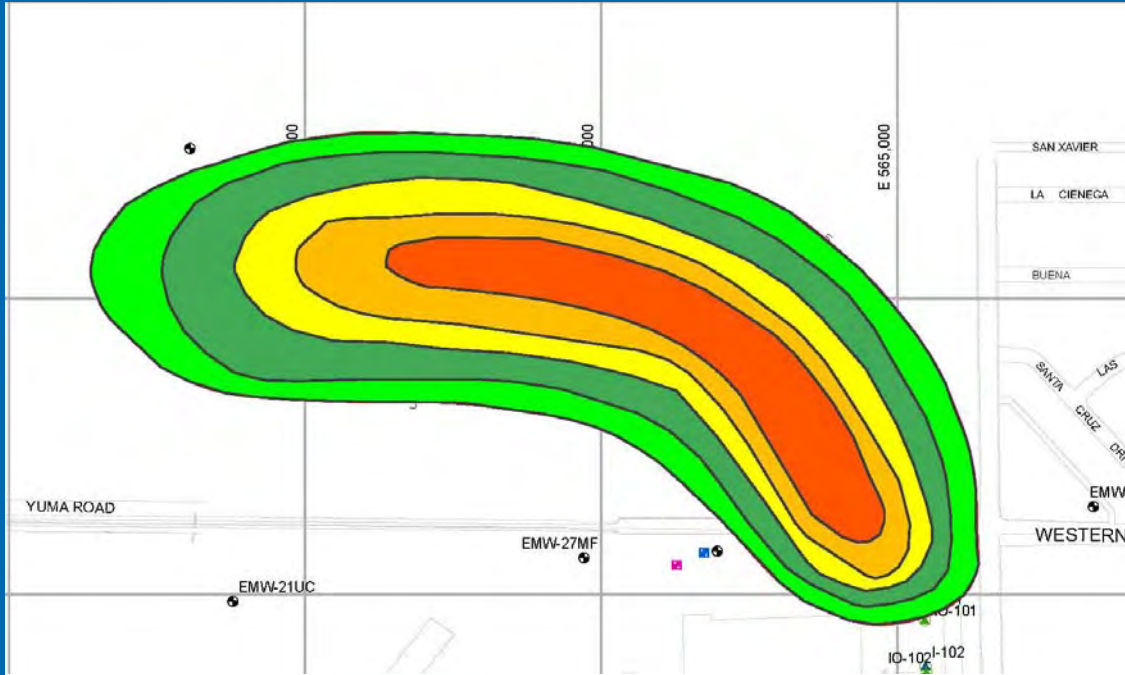
SOUTHERN PLUME

2008 TCE



Well SB-08LC contained TCE at 3.8 ug/L 8/08

1999 TCE



2008 TCE



NORTHERN PLUME



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TCE Concentrations

	<u>Max TCE 1990</u>	<u>Current Max TCE</u>
Subunit A	2600 µg/L	160 µg/L
Southern Subunit C	150 µg/L	3.8 µg/L
Northern Subunit C	180 µg/L	99 µg/L

Chromium Concentrations

	<u>Historical Max Cr</u>	<u>Current Max Cr</u>
Subunit A	2400 µg/L	110 µg/L
Southern Subunit C	70 µg/L	15 µg/L
Northern Subunit C	965 µg/L	480 µg/L

Upcoming Plans and Reports

- Installation of 3 Additional North Plume Monitoring Wells
- Finalization of Feasibility Study
 - Evaluate Chromium Treatment Technologies

Goodyear's Zero Waste-To-Landfill Policy

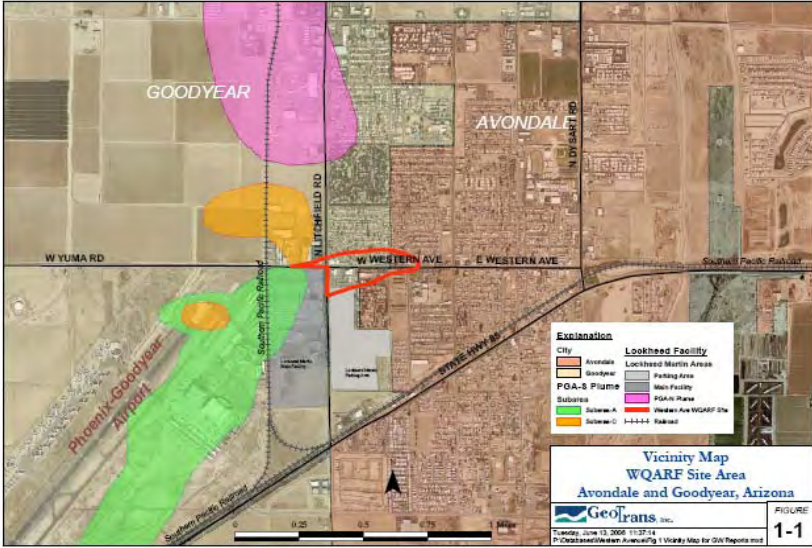


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WESTERN AVENUE Water Quality Assurance Revolving Fund (WQARF) Site

November 6th, 2008





Western Avenue WQARF Site

The Western Avenue Plume Site (Site) is bounded approximately by the groundwater contamination plume which extends from Hill Drive (north of Western Avenue) to the north, Third Street to the east, approximately 1000 feet north of State Route 85 to the south and the Phoenix-Goodyear Airport to the west





Western Avenue WQARF Site

- **1993:** PCE was detected upgradient of the National Priority List (NPL) PGA-South Site
- **1994:** ADEQ conducted soil vapor sampling at the City of Goodyear Public Works facility and Western Dry Cleaners. (The soil vapor sampling did not detect any significant concentrations of PCE)
- **1995:** Two monitor wells were installed
- **1998:** The Site was placed on the WQARF Registry in December 1998 with a score of 51 out of a possible 120



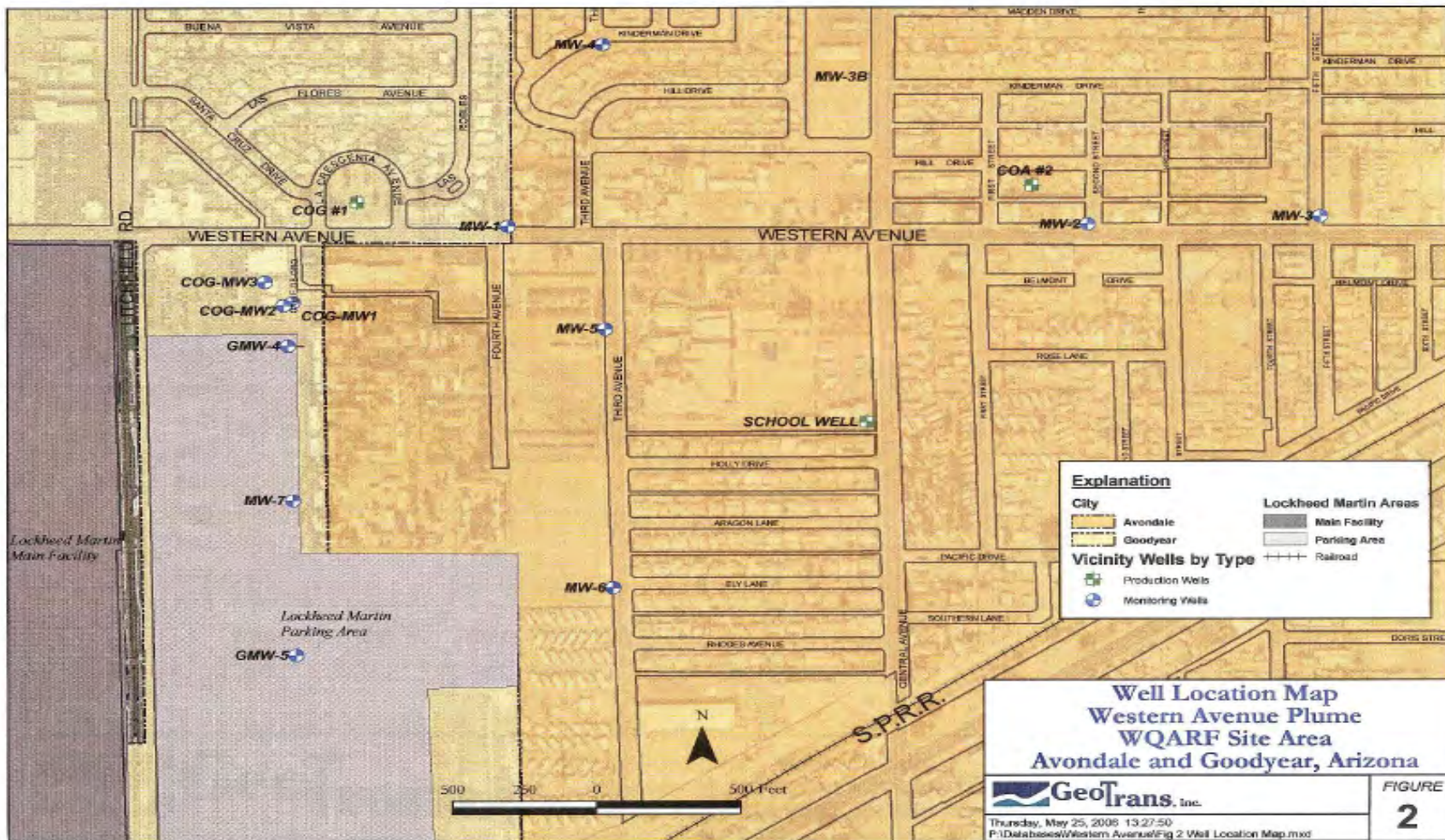
Western Avenue WQARF Site

- **2000:** Five monitoring wells are installed as part of an early response action (ERA) evaluation
- **2001:** ADEQ conducts a soil gas survey at the former Aladdin Dry Cleaners Results indicate minor PCE concentrations, RI is initiated
- **2002:** A Draft Industrial Survey Report was completed
- **2006:** The Draft RI Report, including the Land and Water Use Report, went out to public comment
- **2007:** The highest concentration of PCE in groundwater was 12 $\mu\text{g}/\text{L}$, prior to this sampling event the last exceedence of 5.0 $\mu\text{g}/\text{L}$ occurred in April 1999 (10 sampling events were at or below 5.0 $\mu\text{g}/\text{L}$ PCE)

PCE Concentrations ($\mu\text{g/l}$)

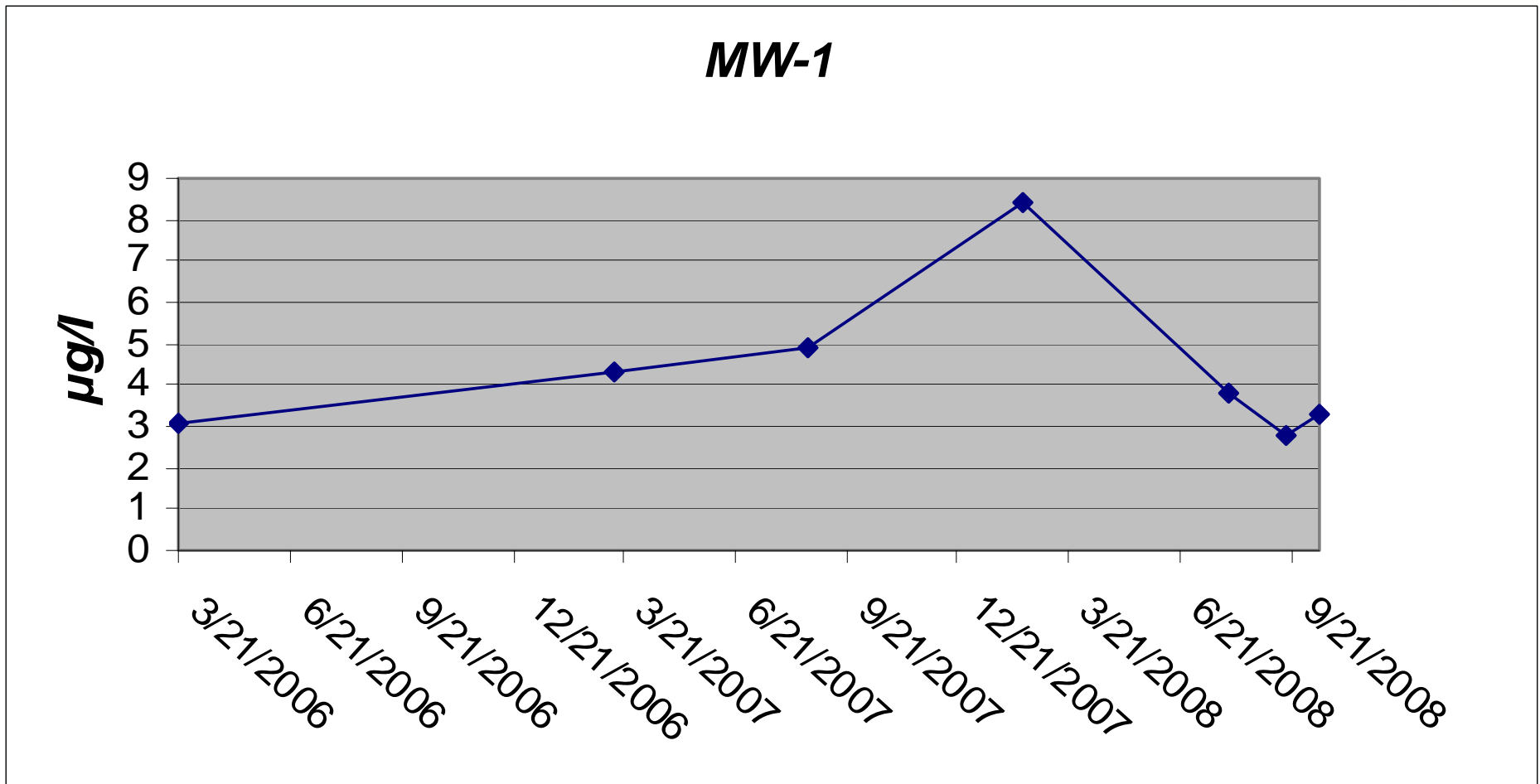
Well/Date	3/21/2006	3/13/2007	8/21/2007	2/13/2008	8/1/2008	9/16/2008	10/13/2008
MW-1	3.1	4.3	4.9	8.4	3.8	2.8	3.3
MW-2	<0.5	3.0	12.0	2.5	3.5	4.3	5.5
MW-3	<0.5	<1.0	<0.5	--	--	--	--
MW-4	2.2	2.7	1.7	2.0	--	1.3	--
MW-5	1.1	<1.0	0.8	0.7	0.6	<0.5	<0.5
COG-1	--	--	0.78	0.72	<0.5	<0.5	2.5

Monitoring Well Placement



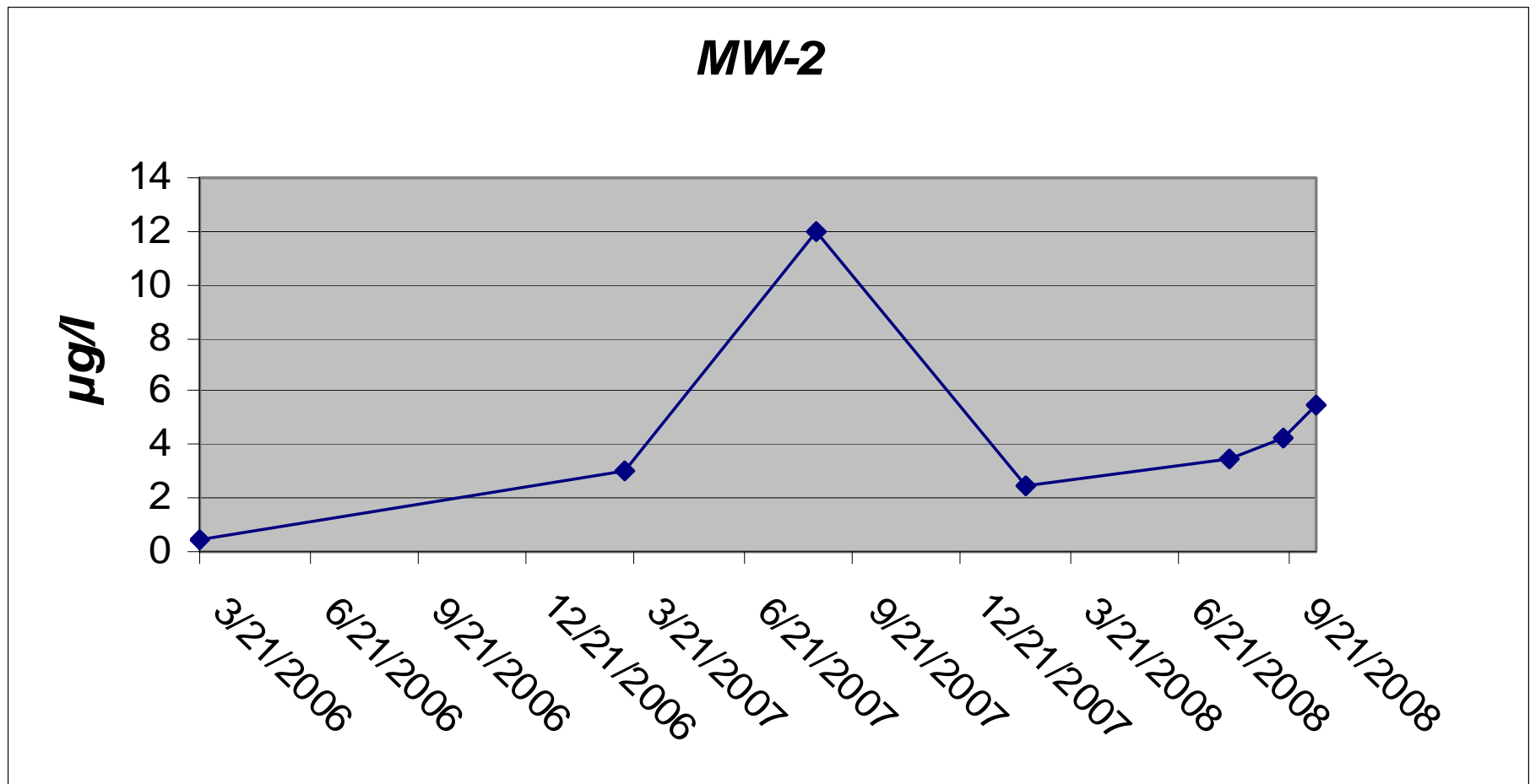


PCE Concentration MW-1

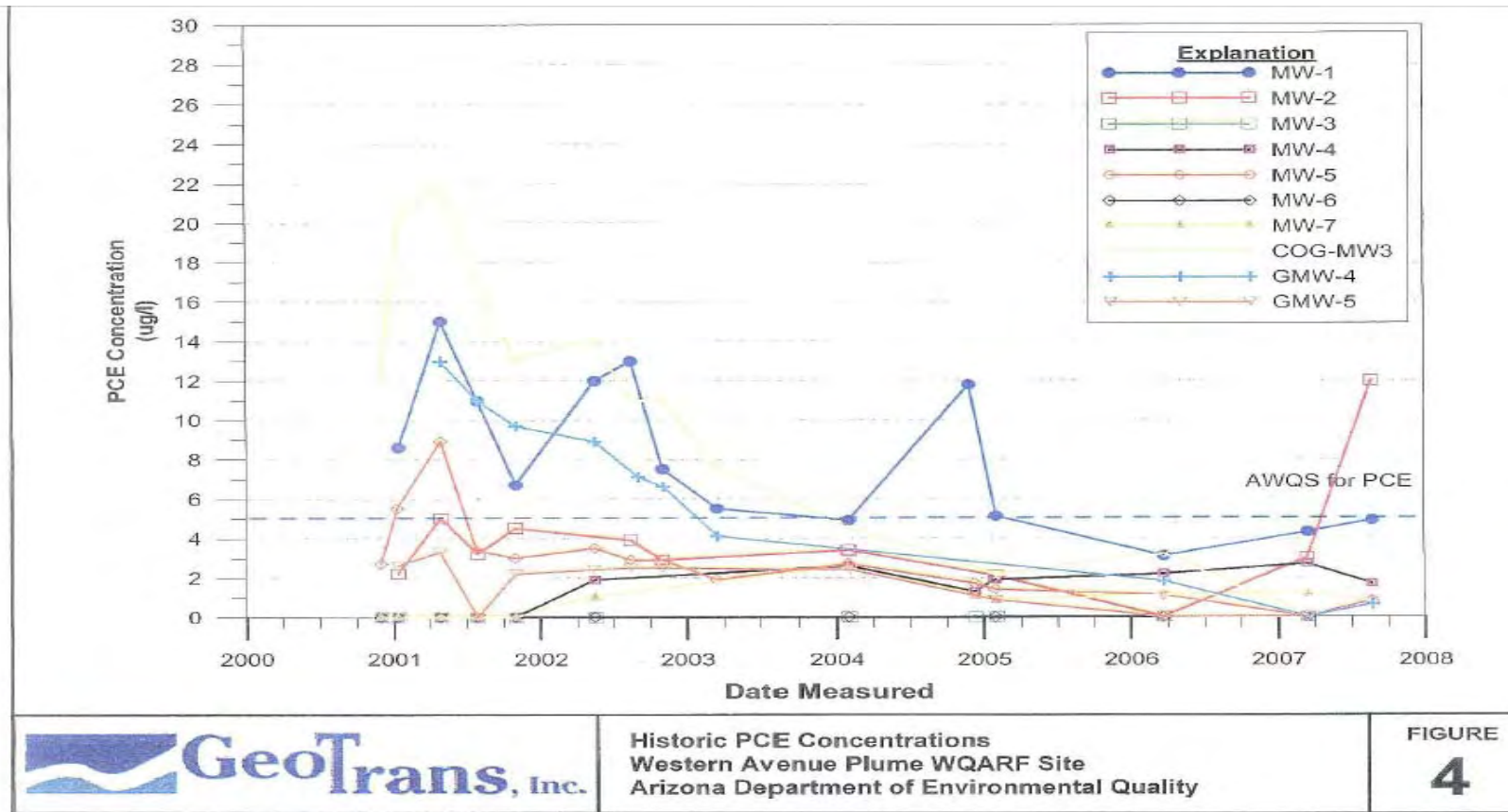




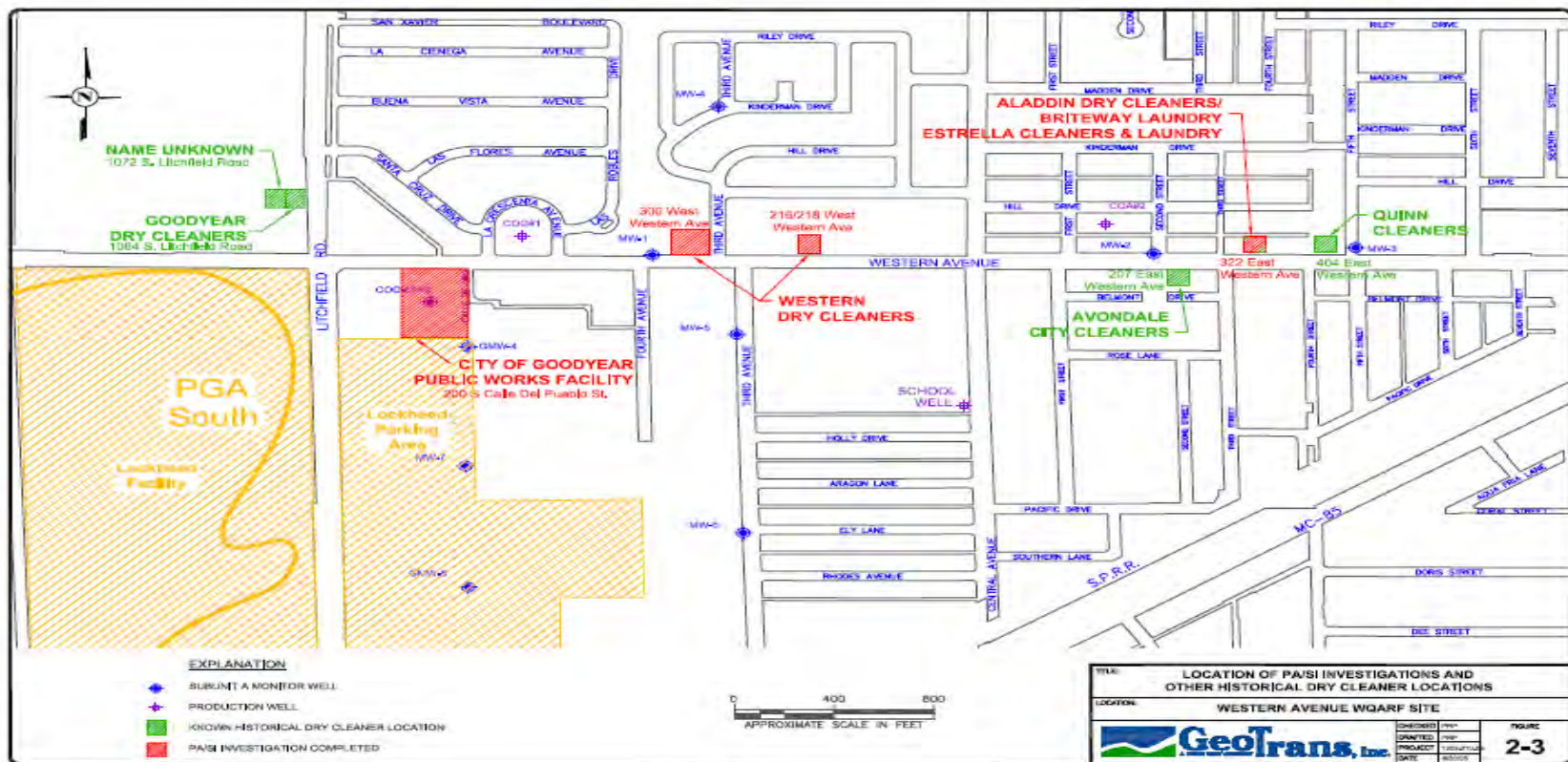
PCE Concentration MW-2



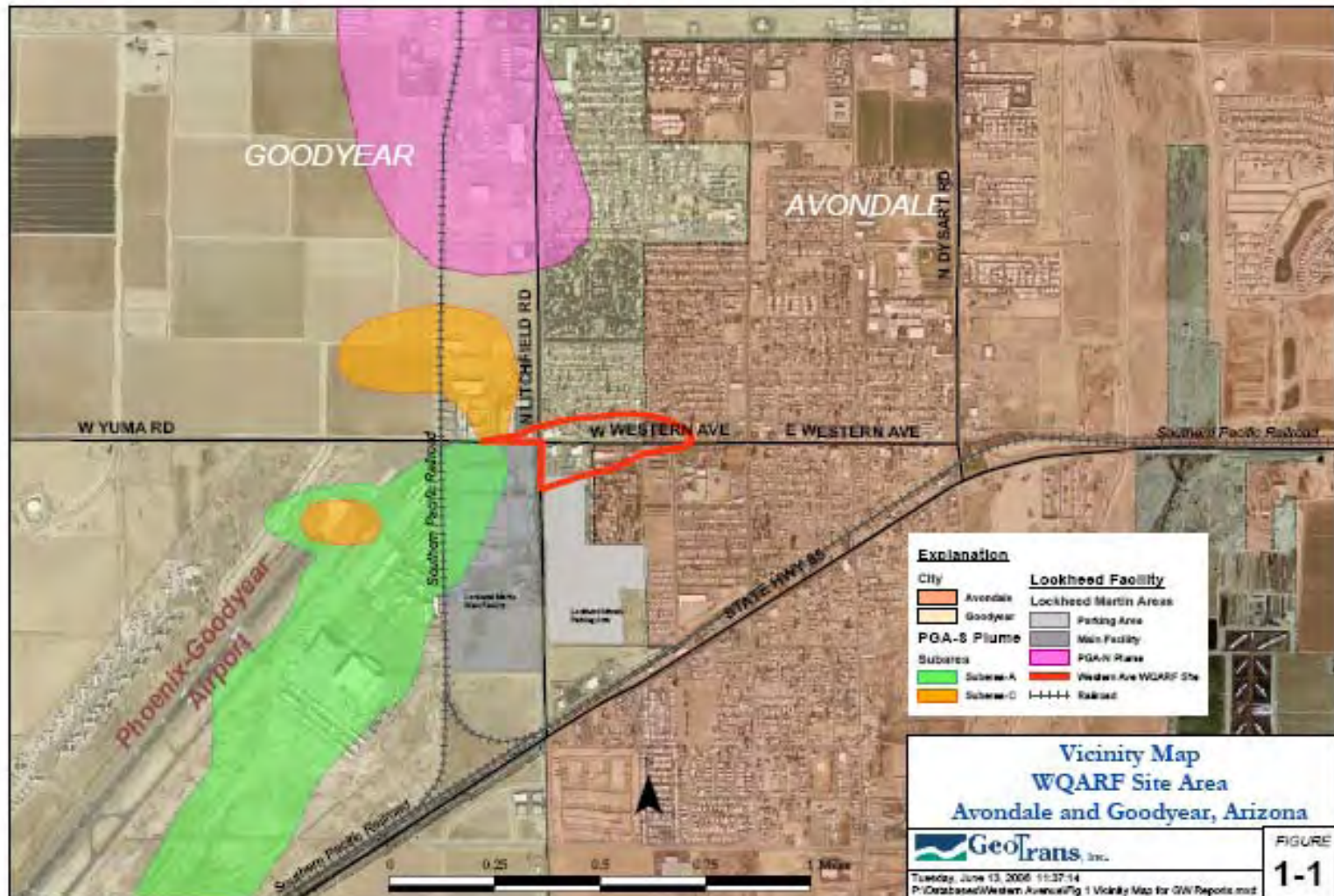
Historic PCE Concentrations



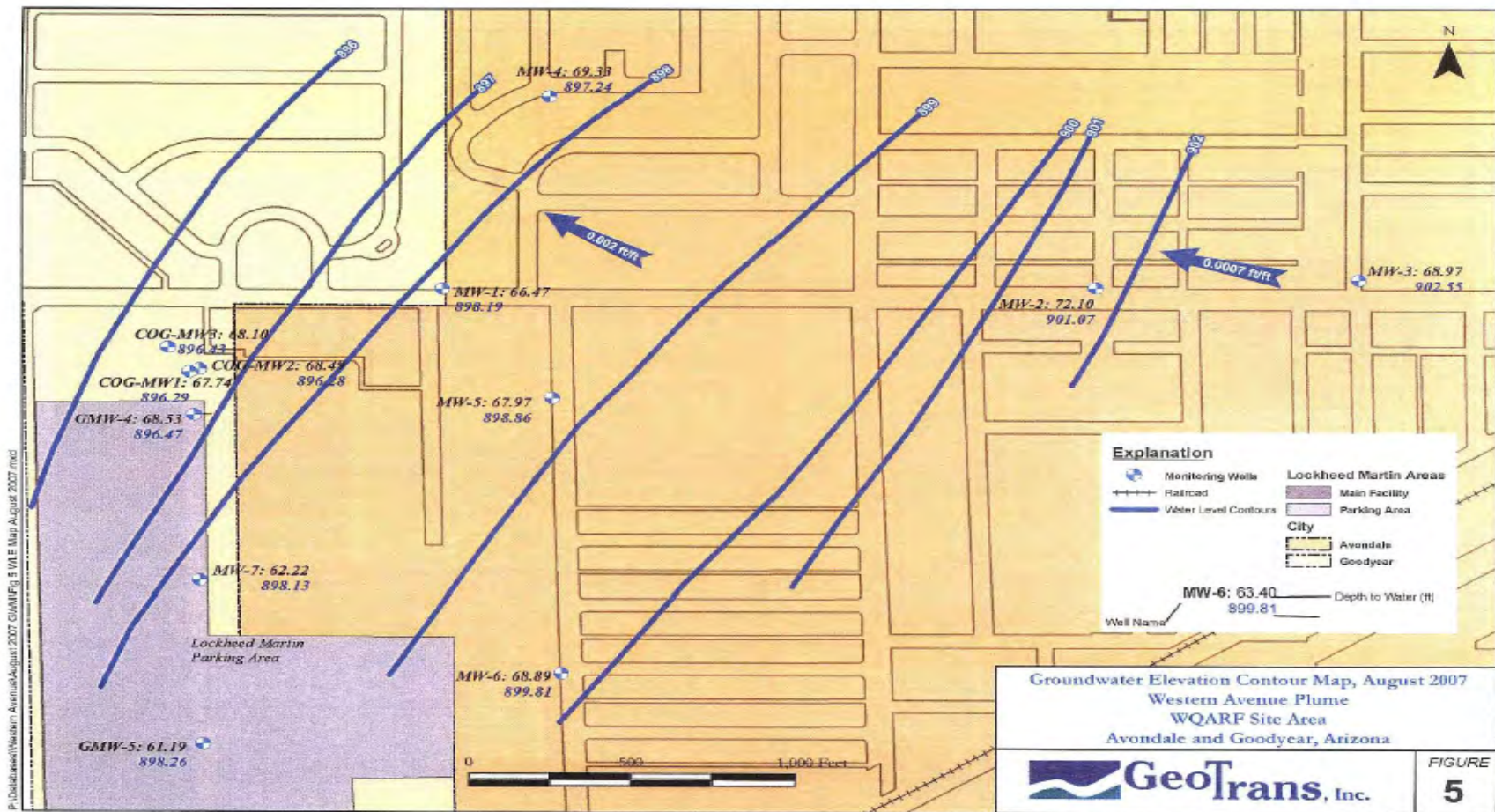
Suspected Source Locations



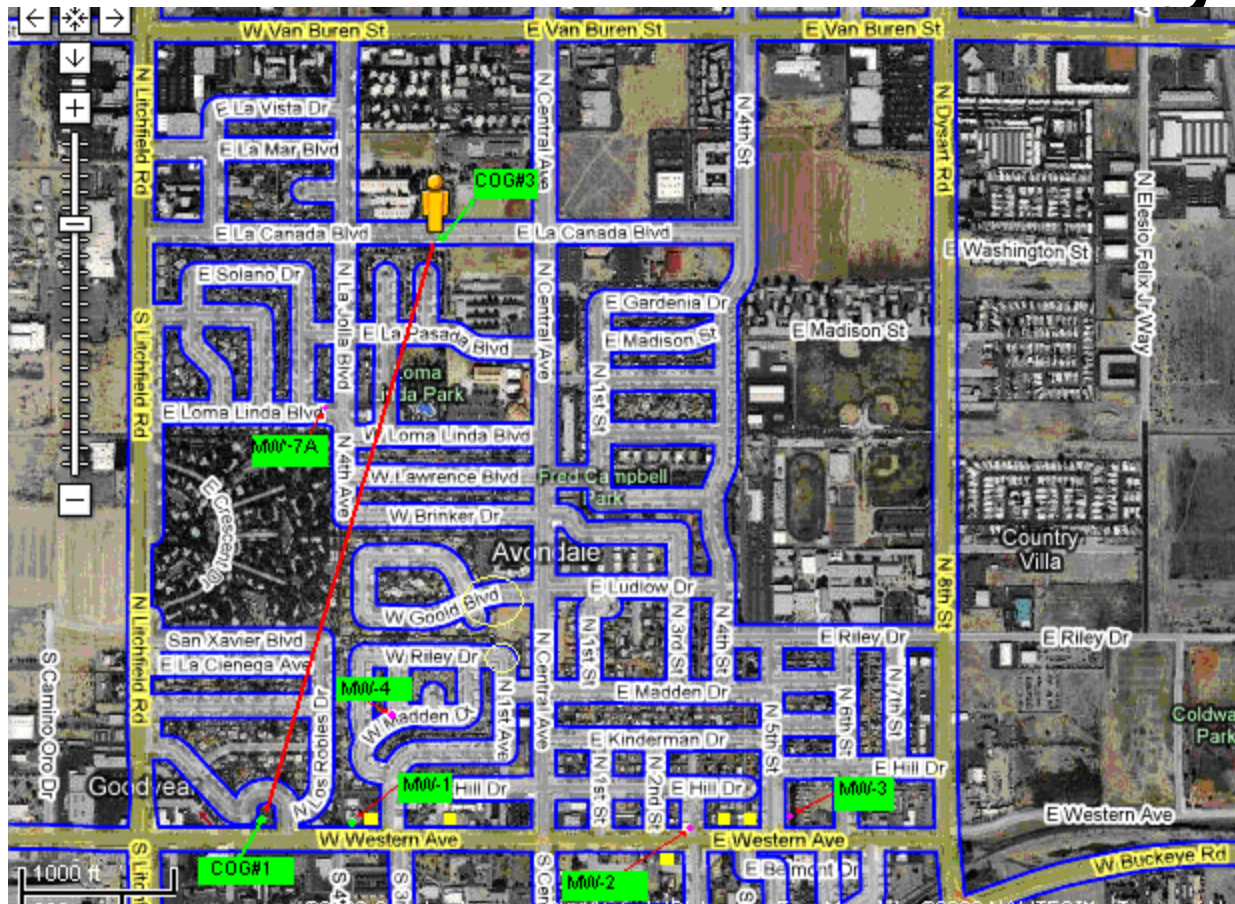
Western Avenue WQARF Site



Groundwater Elevations



Scheduled Activities Placement of New Monitoring Well





Western Avenue WQARF Site



COG #1



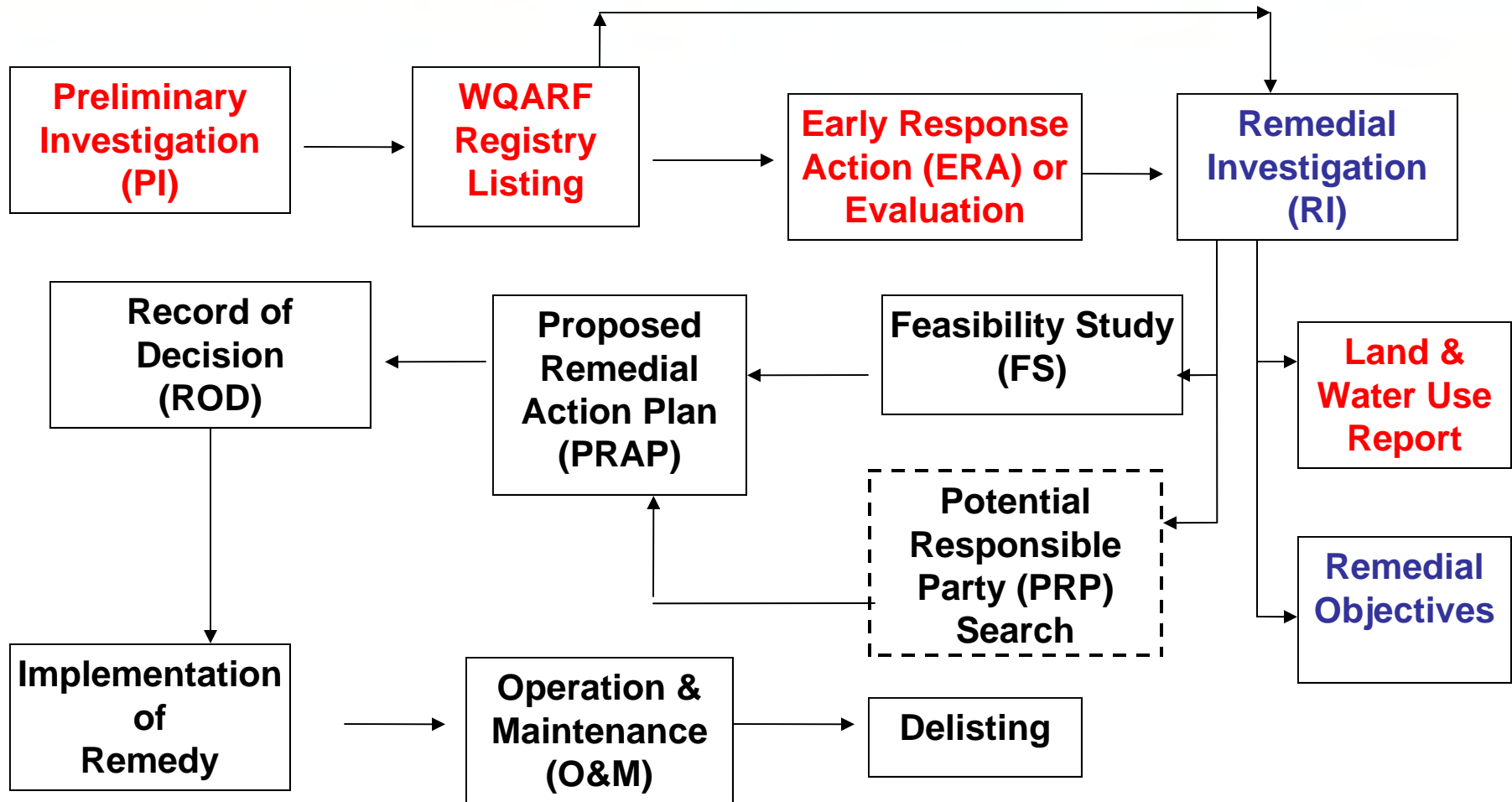


Western Avenue WQARF Site



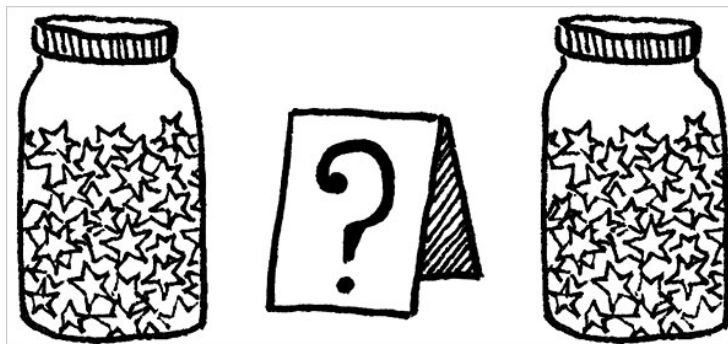
COA #2

WQARF Phases





Questions?





PUBLIC COMMENT PERIOD

**ARIZONA DEPARTMENT OF ENVIRONMENTAL
QUALITY**

**PUBLIC NOTIFICATION AND OPPORTUNITIES
FOR PUBLIC COMMENT**

**TO SOLICIT AND CONSIDER PROPOSED
REMEDIAL OBJECTIVES FOR
THE WESTERN AVENUE WQARF REGISTRY SITE**

PUBLIC COMMENT PERIOD

• Remedial Objectives (ROs) R18-16-406(I)(4), are established for the current and reasonably foreseeable uses of land and beneficial uses of waters of the state.

• Pursuant to R18-16-406(D), it is specified that reasonably foreseeable uses of land are those likely to occur at the site. Reasonably foreseeable uses of water are those likely to occur within one hundred years.

PUBLIC COMMENT PERIOD

- The ROs chosen for the site will be evaluated in the feasibility study (FS) phase of the WQARF process. R18-16-407(A)
- The FS will evaluate specific remedial measures and strategies required to meet the ROs and propose a reference remedy and at least two alternative remedies.

Remedial Objectives for Land Use

The land use at the project site in both the City of Avondale and Goodyear, as indicated in the Beneficial Land & Water Report, is one of mixed commercial and residential. There are no foreseeable changes in the area zoning pattern

Proposed Remedial Objective for land use are:

Protect against possible exposure to hazardous substances from the release that could occur during typical industrial and residential use.

PUBLIC COMMENT PERIOD

Proposed Remedial Objectives for Irrigation and Municipal Uses

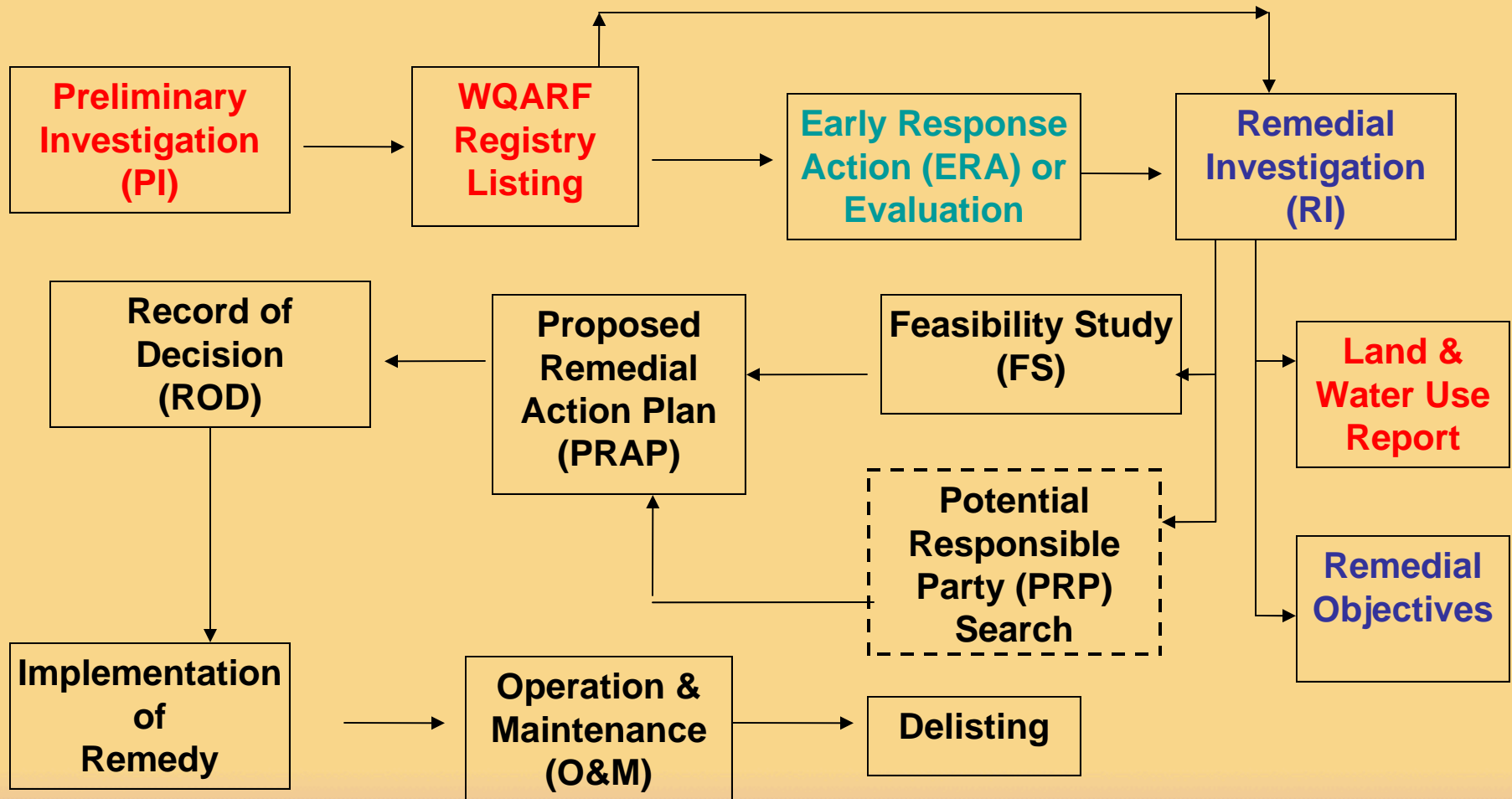
Remedial Objectives for the current and future use of groundwater supply for irrigation and municipal use are:

To protect the supply of groundwater for municipal and irrigation use and for the associated recharge capacity that is threatened by contamination emanating from the Western Avenue WQARF Site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the Western Avenue WQARF Site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the Western Avenue WQARF Site prohibits or limits groundwater use.

PUBLIC COMMENT PERIOD

Following a 30-day public comment period for the proposed ROs, ADEQ will determine the ROs with consideration of the comments it has received. The finalized ROs will become part of the final RI Report.

PUBLIC COMMENT PERIOD

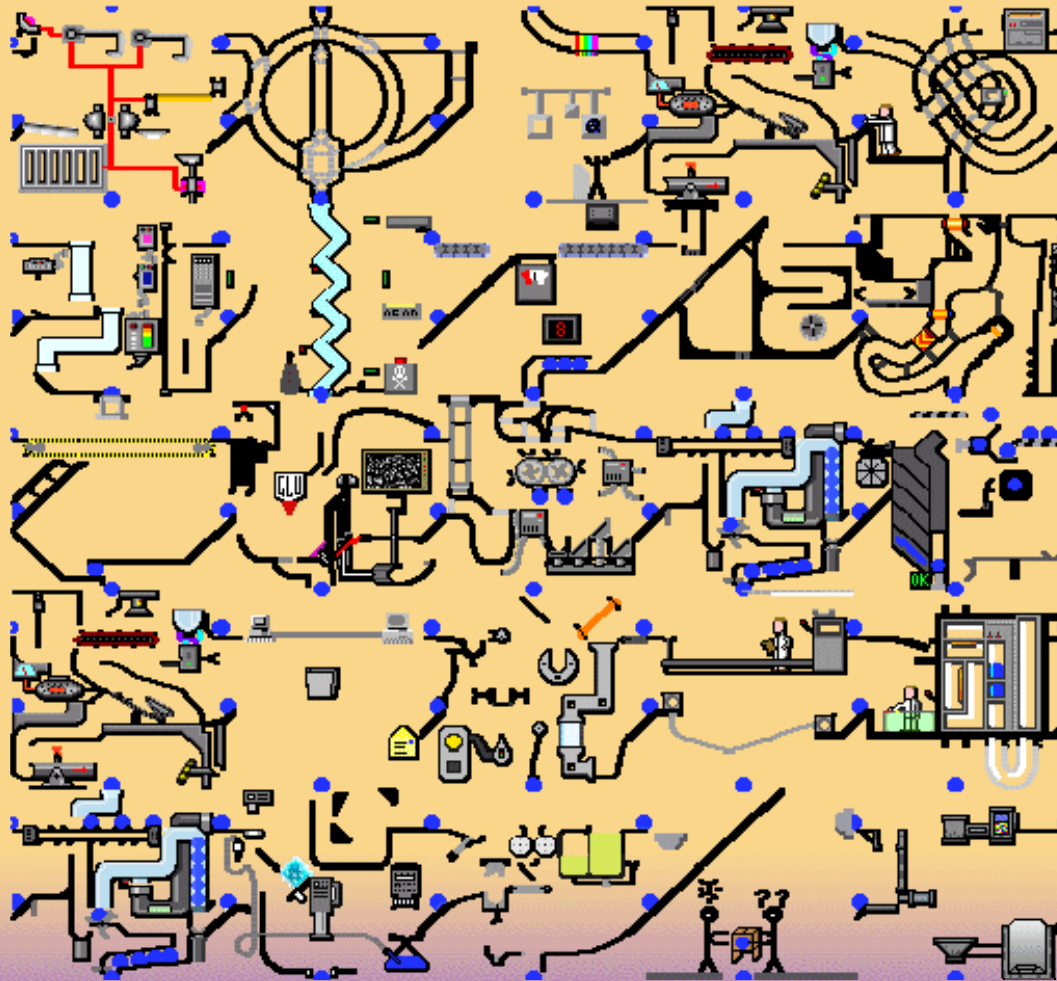




Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

PUBLIC COMMENT PERIOD

Comments?



Phoenix-Goodyear Airport-North (PGA-North) Superfund Site

Update of Current and On-going Site Investigation, Remediation Activities, & Building Demolition

PGA-North Community Advisory Group Meeting

November 6, 2008



Outline

- Building Demolition Project
- Treatment Systems (GW and Soil)
- Ongoing Groundwater Investigation
- Conduit Well Investigation and Abandonment
- Additional On-Site Sampling
- On-Site Treatment of Contaminants

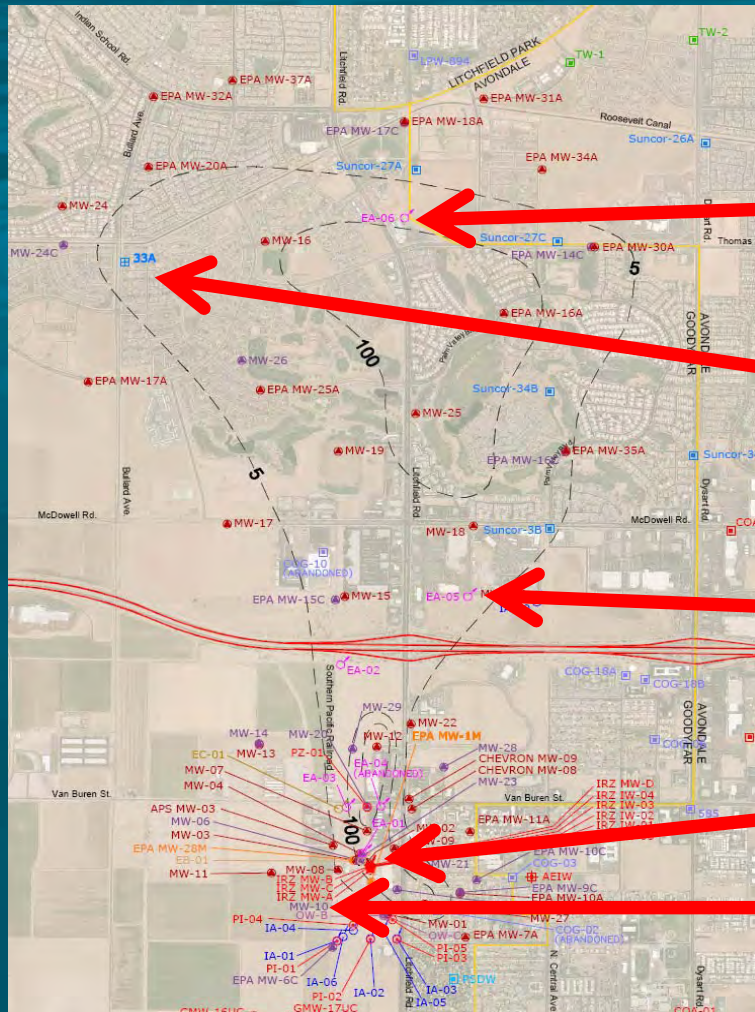


Building Demolition

- Crane Co. has selected a Demolition Contractor
- Work Plan was submitted to US EPA on October 29, 2008
- Start building Demolition in December 2008 or 1Q 2009 (Pending Approval of WP from EPA)
 - Removal of All Above Grade Structures
 - Removal of Concrete Slabs
 - Removal of Structures Below Slabs
 - Proper Recycling, Disposal, or Beneficial Reuse of All Residual Materials
- Assurance that all Remediation Components Remain in Place



Treatment Systems (GW and Soil)



PGA- N Treatment Systems

EA-06 GTS

33A GTS

EA-05 GTS

SVE System

Main GTS



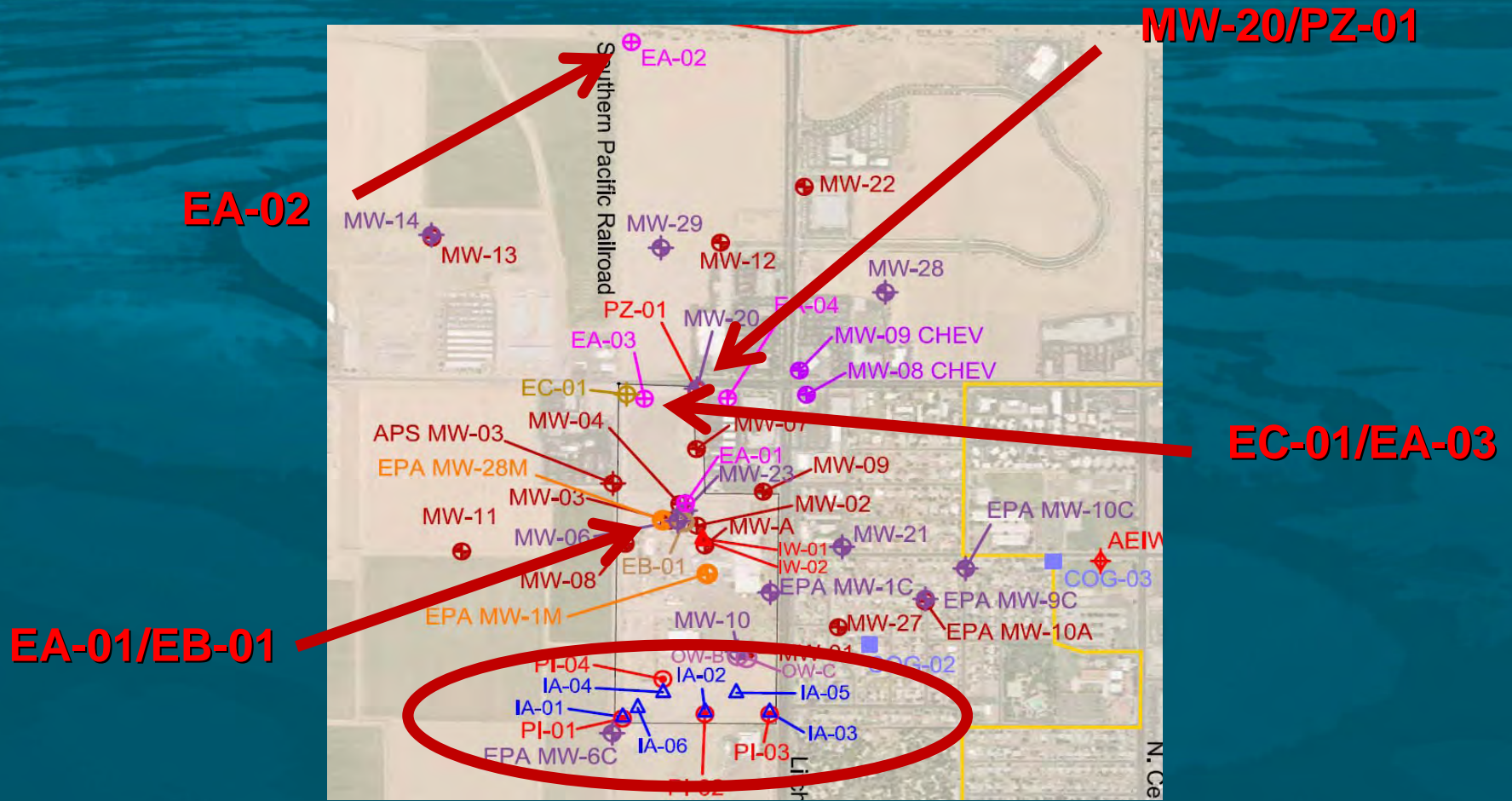
Treatment Systems (GW and Soil)

Main Groundwater Treatment System

- 4- Subunit A Extraction Wells (EA-01, EA-02, EA-03, PZ-01)
- 3 - Subunit C Extraction Wells (EC-01, MW-20, EB-01)
- Six Injection Wells (IA-01 thru IA-06)
- ~ 545 gpm
- Operating Since 1994
- Treatment for VOCs and ClO_4^-



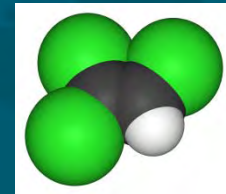
Treatment Systems (GW and Soil) MGTS Extraction and Injection Wells



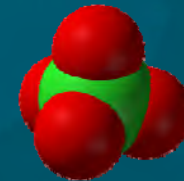
Treatment Systems (GW and Soil)

MGTS	July 2008	Aug 2008	Sept 2008
Volume Treated (Mgal)	8.5	10.8	22.0
Mass TCE Removed (lbs)	16.7	17.0	44.8
Mass Perchlorate Removed (lbs)	0.6	0.9	1.5

Total TCE Removed to Date² = 28,016 lbs



Total Perchlorate Removed to Date² = 92.5 lbs



2. (As of September 2008)



Treatment Systems (GW and Soil)

33A GTS

- One Extraction Well
- ~ 750 GPM
- Treatment for VOCs
- Operating Since 1997
- Discharge to RID Canal



Treatment Systems (GW and Soil)

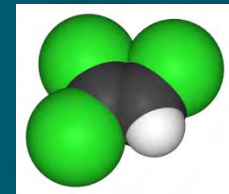
33A GTS Volume Extracted/Mass Removed

33A GTS	July 2008	Aug 2008	Sept 2008
Volume Extracted (Mgal)	40.3	28.8	39.0
Mass TCE Removed (lbs)	24.2	17.5	21.2

Total Volume of Groundwater Treated = ~ 4.3 Billion Gallons

Total TCE Removed to Date² = 7,652 lbs

2. (As of September 2008)



Treatment Systems (GW and Soil)

EA-06 GTS

- One Extraction Well
- ~ 550 GPM
- Operating Since Jan 2008
- Treatment of VOCs
- Treated discharge to RID Canal



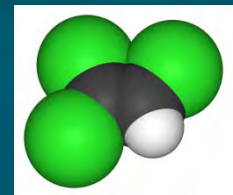
Treatment Systems (GW and Soil)

EA-06 GTS (Activated 12/12/2007)	July 2008	Aug 2008	Sept 2008
Volume Extracted (Mgal)	28.1	18.0	25.2
Mass TCE Removed (lbs)	21.1	12.9	23.2

Total Groundwater Treated to Date = 151 Mgal

Total TCE Removed to Date² = 114.3 lbs

2. (As of September 2008)



Treatment Systems (GW and Soil)

EA-05 GTS

- One Extraction Well
- One Injection Well
- Up to 500 GPM
- Operating Since March 31, 2008
- Treatment for VOCs
- ReInjection of treated water



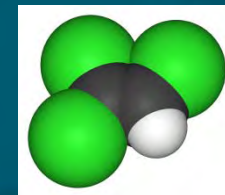
Treatment Systems (GW and Soil)

EA-05 GTS (Activated 3/28/2008)	July 2008	Aug 2008	Sept 2008
Volume Extracted (Mgal)	25.4	16.4	25.7
Mass TCE Removed (lbs)	7.2	6.7	12

Total Groundwater Treated to Date = 117 Mgal

Total TCE Removed to Date² = 30.3 lbs

2. (As of September 2008)



Treatment Systems (GW and Soil)

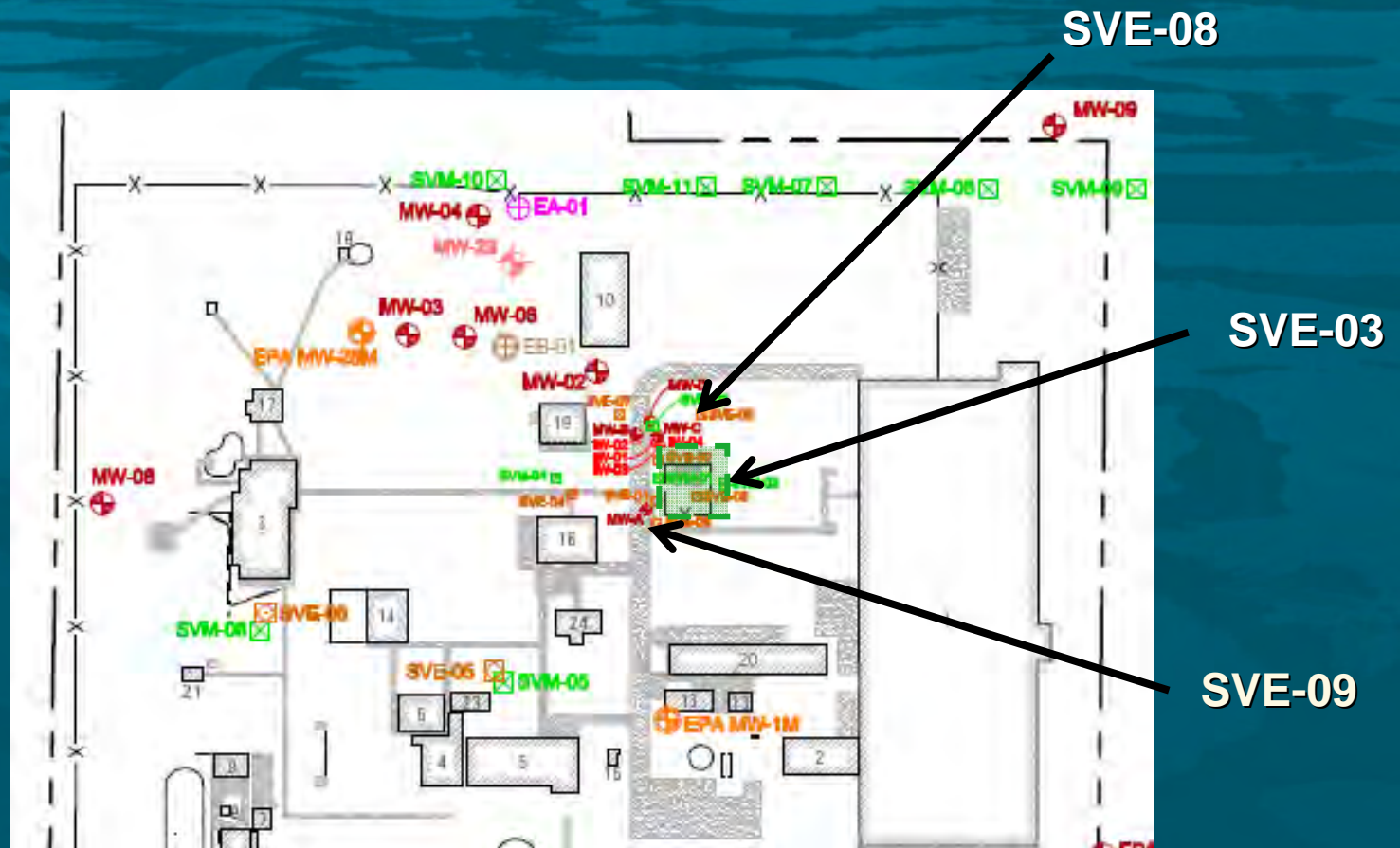
SVE System

- Treatment of VOCs in Soil
- Protects Groundwater
- Installed in 1996
- Restarted in 2004
- Carbon Filters for Off-Gas
- 9 - Vapor Extraction wells
- 15 - Vapor Monitor wells



Treatment Systems (GW and Soil)

SVE Operations – 3Q 2008

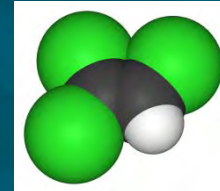


Treatment Systems (GW and Soil)

SVE 3Q 2008 - Mass Removed

SVE System	July 2008	Aug 2008	Sept 2008
Extraction Wells	SVE-03/-09	SVE-03/ -08/-09	SVE-03/ -08/-09
Mass TCE Removed (lbs)	30.8	19.3	17.1
Mass Total VOCs Removed (lbs)	30.8	19.3	17.1

Total TCE Removed to Date² = 1,470 lbs



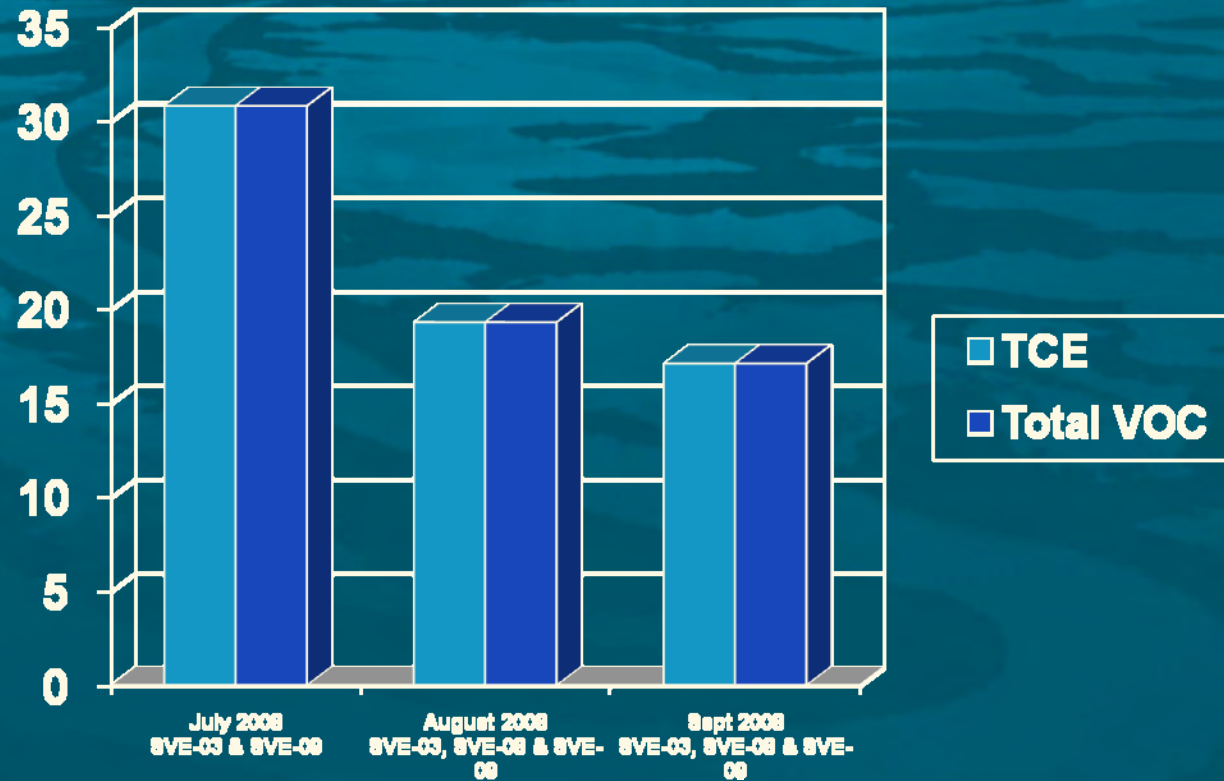
Total VOCs Removed to Date² = 2,435 lbs

2. (From restart in May 2004 through September 2008)



Treatment Systems (GW and Soil)

SVE Operations: TCE vs. VOCs Removed



On-Going Groundwater Investigation

- Work Completed To Date (Since 2006)
 - Fifteen Monitor Wells (Year 1)
 - 2 - MAU Wells
 - 5 - Subunit C Wells
 - 8 - Subunit A Wells
 - Ten Monitor Wells (Year 2)
 - 3- Subunit C wells
 - 7 - Subunit A wells
- Remaining Year 2 Work
 - 2 -Subunit A Wells
 - Completed by Dec 2008



On-Going Groundwater Investigation

Year 3 Groundwater Investigation

- Work Plan submitted to EPA in September 2008
- Anticipate EPA approval in January 2009
- 11 Wells are proposed
 - 3 - Subunit C Wells
 - 8 - Subunit A Wells



On Going Groundwater Investigation Proposed Year 3 Well Locations

EPA MW-23A

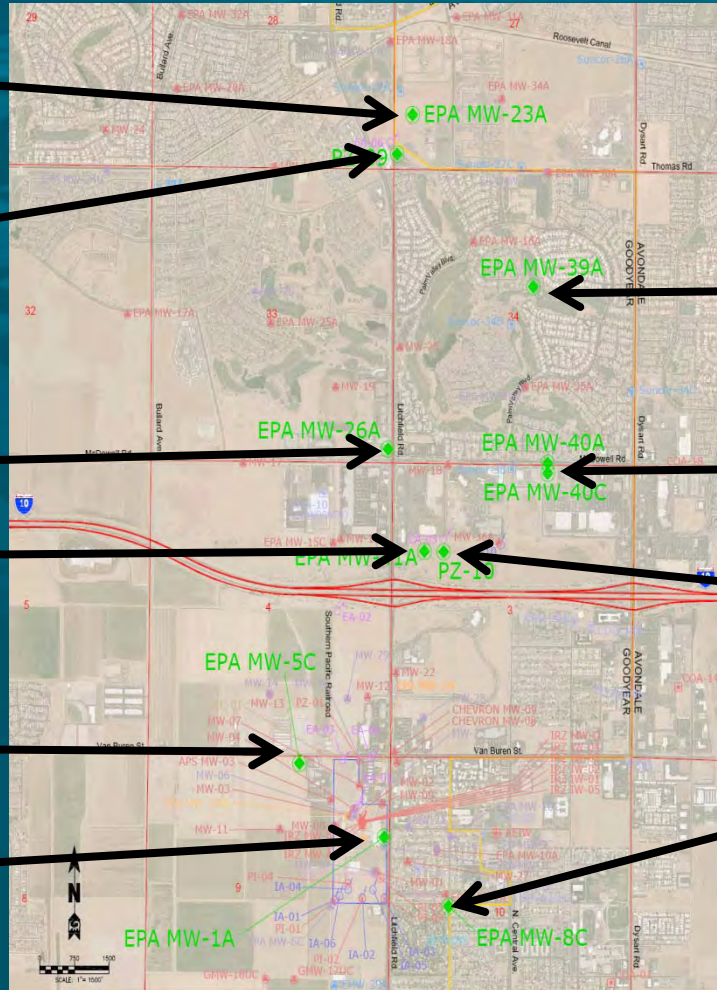
PZ-09

EPA MW-26A

EPA MW-41A

EPA MW-5C

EPA MW-1A



EPA MW-39A

**EPA MW-40A
EPA MW-40C**

PZ-09

EPA MW-8C



Conduit Well Investigation and Abandonment

- Ongoing program to assess older irrigation wells
- Goal:
 - Protect deeper aquifers
 - Hydrophysical Investigations
 - Well Abandonments



Conduit Well Investigation and Abandonment

- Conduit Well Investigation Activities
 - Hydrophysical Investigations
 - SunCor Wells -27A, -27C, and -3B (2006 and 2007)
 - COG-02 (2005)
 - COG-10 (2005)
 - Well Abandonments
 - COG-02 (2006)
 - COG-10 (2006)
 - COG-04 (2008)



Conduit Well Investigation and Abandonment

- Upcoming Conduit Well Investigation Activities in 2009
 - Hydrophysical Investigation
 - SunCor Wells -34B
 - Video Log
 - Spinner log
 - Depth Specific Sampling
 - Well Abandonments
 - SunCor 27C
 - SunCor 34B



Additional On-Site Sampling

.Source Areas, Soils and Facility Structures (SASFS)

Investigation - Phase I

.Goal - to determine if other sources contamination is present

Phase I Work conducted in 2007 :

- Drilled over 100 soil borings
- Collected over 200 soil samples
- Excavation of below grade structures
- No other sources of contamination were discovered

.Building Decontamination: Sep 2007 thru Nov 2007



Additional On-Site Sampling

- Characterize all potential source areas at PGA-North to determine potential for additional sources of groundwater, soil, or soil vapor contamination.
- Collect samples for known or potential COCs related to the operations conducted at each associated building/structure:
 - VOCs
 - SVOCs
 - Metals
 - Pesticides
 - Herbicides
 - Explosives
 - Radionuclides
 - Nitrate
 - Perchlorate
 - PCBs



Additional On-Site Sampling

- SASFS Phase II Investigation
 - Phase II Work to include
 - Additional soil borings and sampling
 - Investigation beneath structures
- Soil Gas Investigation
 - Investigate potential other sources of contamination
 - Field work to start in after the completion of the building demolition



On-Site Treatment of Contaminants

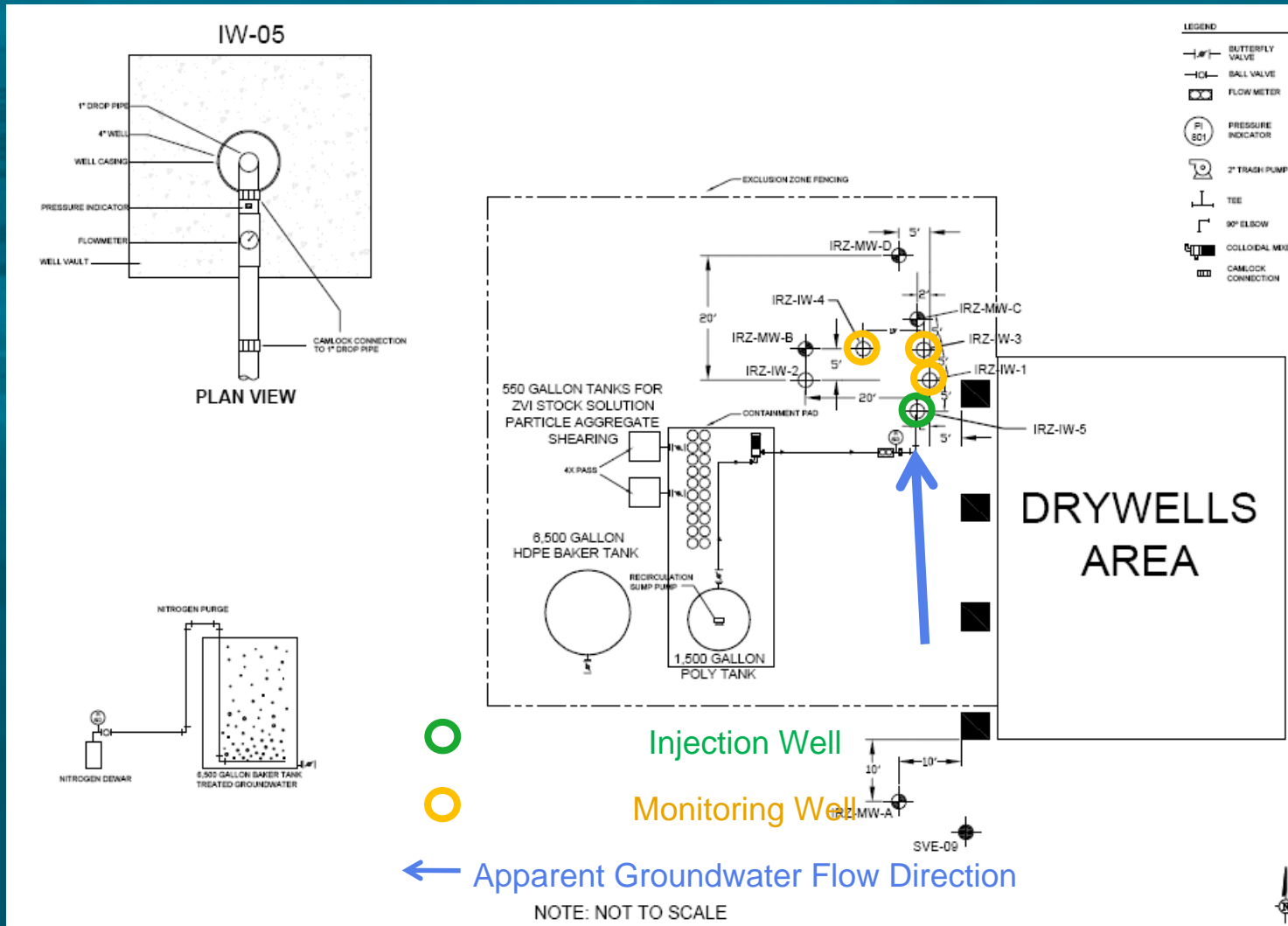


On-Site Treatment of Contaminants

- Crane Co. Continues to evaluate In-Situ Treatment of TCE in Source Zones
- Use of nano-scale Zero Valent Iron (nZVI)
 - Chemically Reduces TCE to Non-Harmful Compounds
 - Selected for Analysis due to Rapid Treatment
- nZVI injections were conducted the week of June 2, 2008 at Main Drywells Source Area.
 - 50 pounds of nZVI was injected into the Subunit A Aquifer



Injection System Layout



On-Site Treatment of Contaminants

Summary of Results

- TCE concentrations decrease in all observation wells
- TCE concentrations remain low in some wells

Well	Distance from Injection Well (Feet)	Baseline TCE In Groundwater ($\mu\text{g/L}$)	Lowest TCE In Groundwater ($\mu\text{g/L}$)	Current * TCE In Groundwater ($\mu\text{g/L}$)
IRZ-IW-5	0	2,850	11	60
IRZ-IW-1	5	11,000	1,400	6,600
IRZ-IW-3	10	7,100	310	590
IRZ-IW-4	14	11,000	2,500	8,500

*Seven weeks after the injection event
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On site Treatment of Contaminants

- nZVI reactivity is strong and rapid
- nZVI field implementation technology is maturing
- Injection into porous media remains a challenge due to site-specific geology and geochemistry
- nZVI remains a viable remedial option for source area treatment of TCE at PGA-North
- Need to evaluate potential feasibility and costs for scale-up and comparison to other available technologies
- Crane Co. & USEPA will be evaluating other proven technologies on a case by case basis in the future



The End

