

OU #10-071

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

**Thursday, February 4, 2010 at 6:30 p.m.
Goodyear City Hall, Room 117
190 N. Litchfield Rd., Goodyear, AZ 85338**

FINAL MINUTES

CAG Members in Attendance:

Diane Krone
Frank Scott
Brenda Holland
Thomas Jones

ADEQ Staff in Attendance:

Julie Riemenschneider, Remedial Projects Section
Manager
Harry Hendler, Federal Projects Unit Manager
André Chiaradia, PGA South and Western Avenue
Project Manager
Nicole Coronado, PGA North Project Manager
Felicia Calderon, Community Involvement Coordinator

EPA Staff in Attendance:

Sheryl Bilbrey, Private Sites Section Chief
Catherine Brown, PGA North Project Manager
Viola Cooper, Community Involvement Coordinator

Others in Attendance:

Kirk Craig, AMEC Geomatrix
David Iwanski, City of Goodyear (COG)
Greg Wallace, Errol L. Montgomery & Associates,
Inc.
Leanne Austrins, CH2M Hill
Mary Moore, Lindon Park Neighborhood Association
Jeff Sussman, Goodyear Tire
Dennis Maslonkowski, TRC
Phil Witmore, CH2M Hill
Jeff Littell, Brown and Caldwell
Dave Ellis, Litchfield Park
Jennie Conger, Tierra Dynamic Co.
Shannon Lloyd, LATA
Tom Suriano, Clear Creek Associates
Lisa Amos, Avondale

1. Call to Order / Introductions – Diane Krone

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

2. Update of PGA North activities –C. Kirk Craig, P.E. Senior Engineer, AMEC Geomatrix

Mr. Craig initiated his presentation to the CAG with a remediation review of the PGA North Site. Mr. Craig's presentation proceeded with site details that included updates on the groundwater plume and investigation, performance results for existing treatment systems, on-site revegetation, plan for regional treatment of groundwater in the northeast, and review of the in-situ groundwater treatment system.

See slide presentation below

Ms. Holland questioned cooperation from Liberty Water in Avondale, AZ in respect to installation of proposed extraction and injection wells in the northeast area. Mr. Craig replied that they have received full cooperation from Liberty Water and that they might share some of

their power supply during their installation project. Ms. Krone discussed with Mr. Craig the location of Avondale and Liberty Water wells in proximity to their proposed installation of extraction and injection wells. Ms. Krone inquired of Mr. Craig if they were still proceeding with conduit wells. Mr. Craig confirmed that irrigation wells 34B and 27C are the two known conduit wells currently within the trichloroethylene (TCE) plume. However, neither of these wells was still active.

3. Update of PGA South activities – Jeff Sussman, Goodyear Tire & Rubber Company

Mr. Sussman offered a review of 2009 accomplishments, current activities, status on ongoing cleanup, and upcoming activities.

See slide presentation below

Ms. Krone commented that she was impressed with the Goodyear Tire and Rubber Company's dedication and enthusiasm towards remediation of PGA South.

4. Discussion of groundwater plume issues from PGA North - Leanne Austrins, CH2M Hill

Ms. Brown indicated to the CAG that Ms. Austrins presentation would provide some historic background on the development of PGA North and PGA South, and would then lead into a more in-depth explanation on the remediation of PGA North. Ms. Brown also announced the availability of a draft fact sheet for PGA North and PGA South. Ms. Austrins initiated her presentation to the CAG.

See slide presentation below

Ms. Krone discussed with Ms. Austrins the location of the abandoned conduit well City of Goodyear (COG) Well #4. Ms. Krone expressed her desire that remediation parties, particularly Crane Co., cooperate to expedite the cleanup at PGA North. Ms. Bilbrey reminded the CAG that EPA works in conjunction with ADEQ on remediation for this site and that all questions related to the site can be directed toward both agencies. Ms. Krone also commented that she was impressed on how clear Ms. Austrins presentation was to the CAG. Ms. Brown asked Ms. Krone if she would like to hear a presentation from the Crane Co. itself at a future CAG meeting, and Ms. Krone and other members of the CAG expressed an interest. Ms. Holland also requested from EPA and ADEQ monthly electronic updates regarding remediation at the site to be sent to them in between CAG meetings. Ms. Riemenschneider added that Ms. Holland's suggestion would be taken as an action item for ADEQ. Ms. Calderon commented that all ADEQ generated emails to the CAG would include an AZ Open Meeting Law notation with restrictions on forwarding or replying to emails to CAG members and other public bodies.

5. Announcement of the opening of the Five-Year Review for PGA North and PGA South - Viola Cooper, EPA Community Involvement Coordinator (CIC)

Ms. Cooper announced that the purpose of a five-year review was to evaluate whether the remedies at PGA North and PGA South are protective of human health and the environment and to assess if any factors suggest that the remedies may not continue to be protective in the future. Ms. Brown commented that one five-year report will be completed for both PGA North and PGA South. Ms. Cooper also stated that as part of the review process, interviews with community members and other interested parties are conducted to obtain views regarding current site conditions, problems, or concerns with the sites. Ms. Calderon advised the CAG that EPA and ADEQ would like to invite them to participate in the interview process. Ms. Cooper also announced that the five-year review community interviews would be done in conjunction with the Community Involvement Plan (CIP) update interview questions. Ms. Calderon announced

that the findings of the five-year review will be available to the public at the information repository in Avondale. Ms. Holland and Mr. Jones stated that more outreach was needed to better inform the community regarding site activities. Ms. Calderon advised the CAG that community outreach approaches can be included on the agenda for the next CAG meeting in May.

6. Update on Western Avenue (WA) WQARF Site activities– André Chiaradia, ADEQ Project Manager

Mr. Chiaradia reported that there has been a solicitation of contractor bids to reinitiate quarterly well sampling at the Western Avenue Site. Mr. Chiaradia is hopeful he will have updated sampling data to report at the next CAG meeting in May.

7. City of Goodyear report – David Iwanski, COG Water Department

Mr. Iwanski introduced Jeff Littell from Brown and Caldwell as the new technical consultant for the COG's WQARF and Superfund related activities. Mr. Iwanski advised the CAG that COG continues to work closely with the potentially responsible parties (PRPs), EPA, ADEQ, and contributing cities towards remediation of the sites. Mr. Iwanski announced that he has proposed posting on the COG's Web site weekly or monthly updates on Superfund related activities. Also Mr. Iwanski stated that COG has expanded their community outreach for PGA North and PGA South to include homeowner's associations and business managers both commercial and retail that could be impacted by monitoring and extraction well drillings. Mr. Iwanski commented that due to the I-10 freeway widening project, the Arizona Department of Transportation has historically required that the jurisdictions the freeway runs through be responsible for landscaping irrigation. Mr. Iwanski advised the CAG that current discussions with regulating agencies are underway to use reclaimed groundwater from EA-05 for this task.

Mr. Iwanski reported that there were 13 Brownsfields sites that were approved by the town council. Lastly, Mr. Iwanski stated his appreciation to Ms. Amos from the City of Avondale and Mr. Ellis from Litchfield Park on their interest in serving on the CAG. Ms. Holland inquired where the 13 approved Brownsfields sites were located. Mr. Iwanski responded that all 13 were situated in the incorporated city limits of Goodyear. Mr. Iwanski expressed his enthusiasm with sharing COG's Brownsfields blueprint with the City of Avondale.

8. Call to the Public

Ms. Moore asked EPA how it would effect current Superfund sites if the proposed decrease of the TCE standard was approved. Ms. Brown stated that record of decision (ROD), where the cleanup standards are set for established Superfund sites, would have to be revisited. Mr. Ellis inquired of the nature of the TCE contamination hit at the irrigation well, Suncor 26A. Ms. Brown stated that the 6.8 parts per billion (ppb) was over the standard of 5 maximum contaminant level (MCL). Ms. Brown added that they are still investigating the cause of this elevated number. Ms. Brown advised Ms. Amos that the Suncor 26A well was not active at this time.

The CAG took a 10-minute break.

9. CAG business - Felicia Calderon, ADEQ Community Involvement Coordinator

Ms. Cooper advised the CAG that she added an additional repository for the site in COG with electronic copies in attempts to consolidate and update the existing repository in Avondale. Ms. Calderon added that a final decision of this secondary repository would be made once the updated

CIP was finalized. Ms. Calderon added that within this updated CIP a public questionnaire would contain a question regarding permanently adding this secondary repository in COG.

Ms. Calderon announced that CAG member Robert “Bob” Smith had officially resigned from the CAG and gave CAG members the opportunity to express their appreciation along with EPA and ADEQ on his recognition certificate to be mailed to him. Ms. Calderon introduced both Lisa Amos from the City of Avondale and Dave Ellis from Litchfield Park as CAG candidates. Ms. Amos and Mr. Ellis discussed with the CAG their professional backgrounds and expressed their interests in serving on the CAG. Mr. Jones requested a motion to vote Mr. Ellis onto the CAG. Mr. Scott made a motion and it was seconded by Ms. Holland. Mr. Ellis was voted on unanimously by the CAG onto the Group. Mr. Foltz requested a motion to vote Ms. Amos onto the CAG. Ms. Holland made a motion and it was seconded by Mr. Jones. Ms. Amos was voted on unanimously by the CAG onto the Group.

10. Acceptance and/or changes to minutes of November 5, 2009

Mr. Jones made a motion to accept the minutes as drafted. It was seconded by Mr. Scott. The minutes were approved unanimously by the CAG.

11. Operation and management of Technical Assistance Grant (TAG) for the Motorola 52nd Street Superfund Site – Mary Moore, Lindon Park Neighborhood Association

Ms. Moore presented to the CAG information on her TAG program sponsored by EPA, and offered her services as a resource for initiating a TAG program for their site.

See slide presentation below

It was determined that further discussions were required among the CAG in regards to adopting a TAG for this site. Ms. Holland added that she was satisfied working directly with both agencies’ project managers for answers and updates. Ms. Calderon stated that this topic would be added to the next CAG agenda for a discussion and vote.

12. Discussion and comments from the PGA South site tour at the Phoenix-Goodyear Airport facilities

The CAG expressed their appreciation to Goodyear Tire and ADEQ for the tour.

13. Future meeting and agenda items discussion

The next meeting was scheduled for Thursday, May 6, 2010 at the Avondale City Hall, 11465 W. Civic Center Drive, Avondale, AZ. Suggested agenda topics for the next CAG meeting included: updates on PGA North, PGA South, and Western Avenue activities; Crane Co. presentation; monthly site updates from ADEQ and EPA; site outreach approaches by CAG; TAG discussion and vote; and CAG co-chair discussion and vote.

14. Adjournment

Ms. Krone adjourned the meeting.

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

Kirk Craig, P.E.

AMEC Geomatrix, Inc., Scottsdale, AZ



Update for PGA-North



- The Groundwater Plume
- Groundwater Investigation
- Existing Treatment Systems
- On-Site Revegetation
- Northeast Regional Treatment of Groundwater
- Groundwater Model
- Innovative In-Situ Groundwater Treatment



Year One Wells



Year One of the
Groundwater Investigation
(Feb. 06 – Oct. 07)

15 Monitor Wells installed

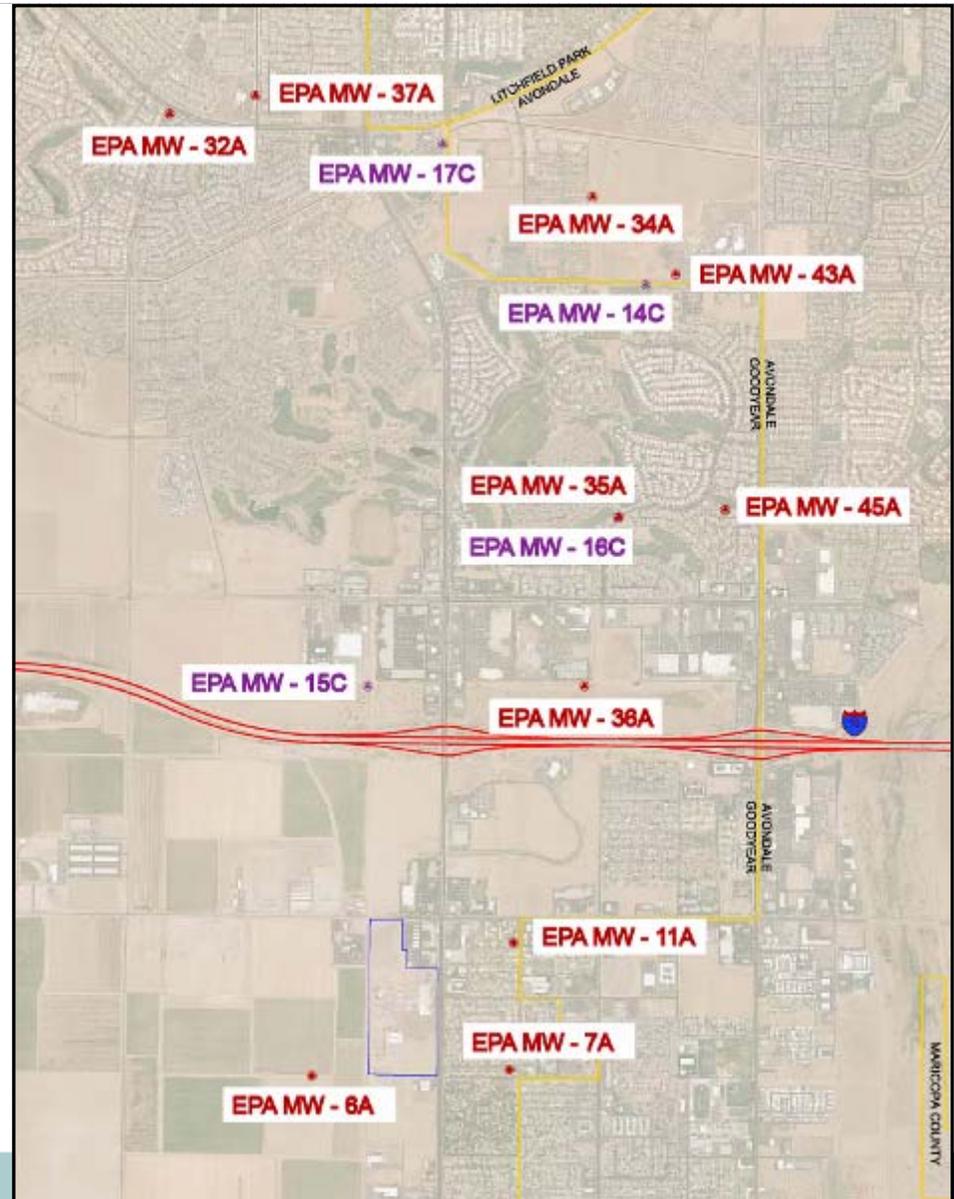


Year Two Wells



Year Two of the
Groundwater Investigation
(Oct. 07 - April 09)

11 Monitor Wells installed



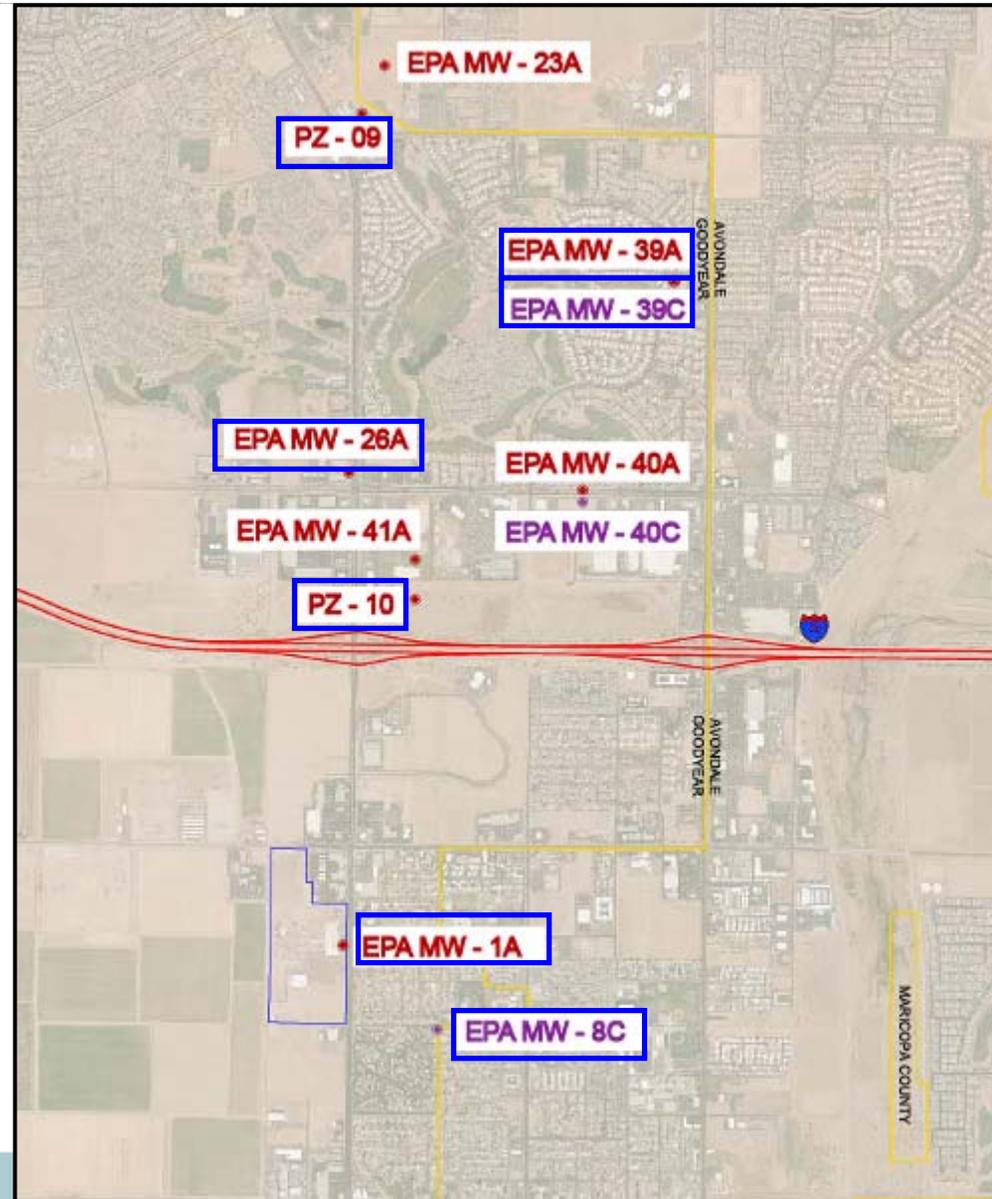
Year Three Wells



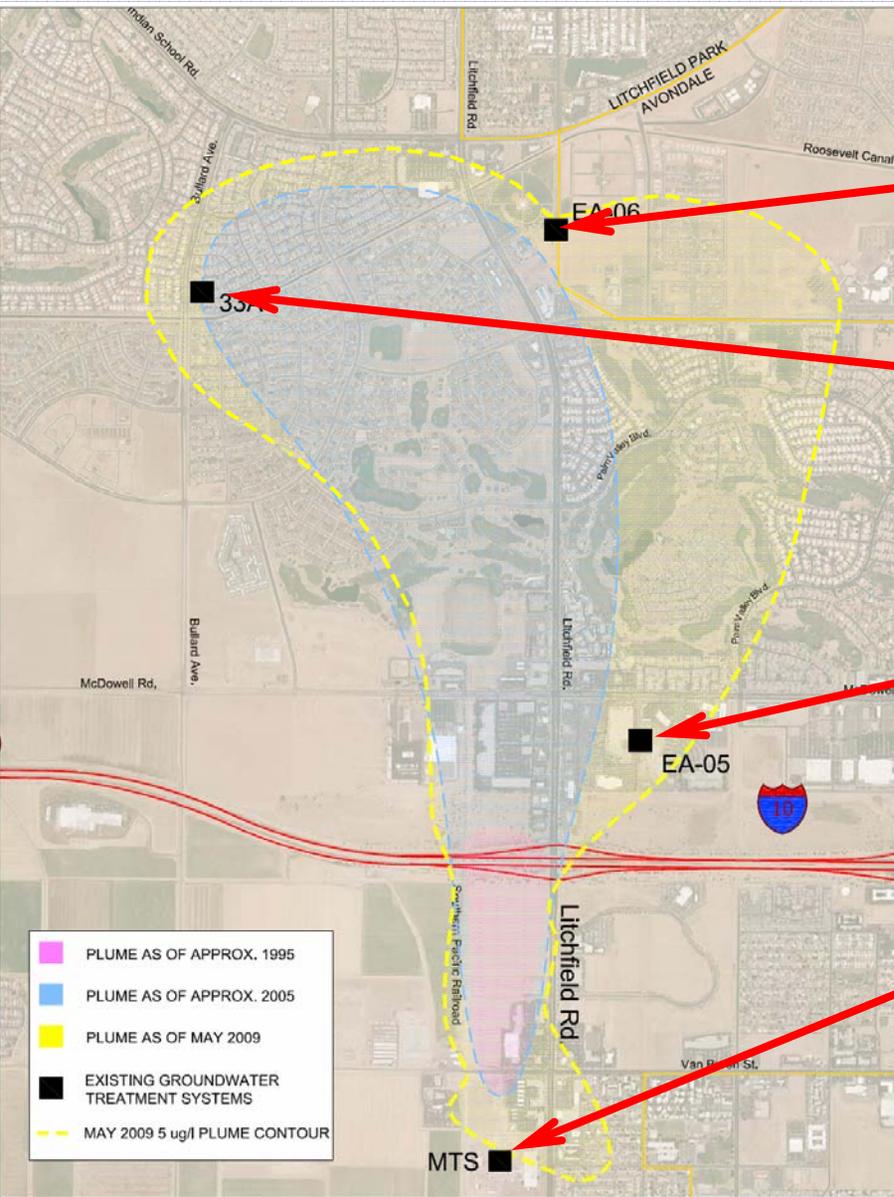
Year Three of the
Groundwater Investigation

11 Monitor Wells Anticipated

 - Well completed



Existing Treatment Systems



EA-06 Groundwater Treatment System

33A Groundwater Treatment System

EA-05 Groundwater Treatment System

Main Groundwater Treatment System

2009 Treatment System Accomplishments



2009 Groundwater Volume Treated

- 1,055,000,000 gallons

2009 Mass Removal

- 987 Pounds TCE

2009 Treatment Aggregate System Uptime

- 87.3% (30,618 total system hours)

2009 Accomplishments



How much is
1,000,000,000+
gallons of water ?

Enough to Fill Tempe
Town Lake!



2009 Accomplishments



How much was 987
pounds of TCE when
released ?

Almost 79 Gallons!





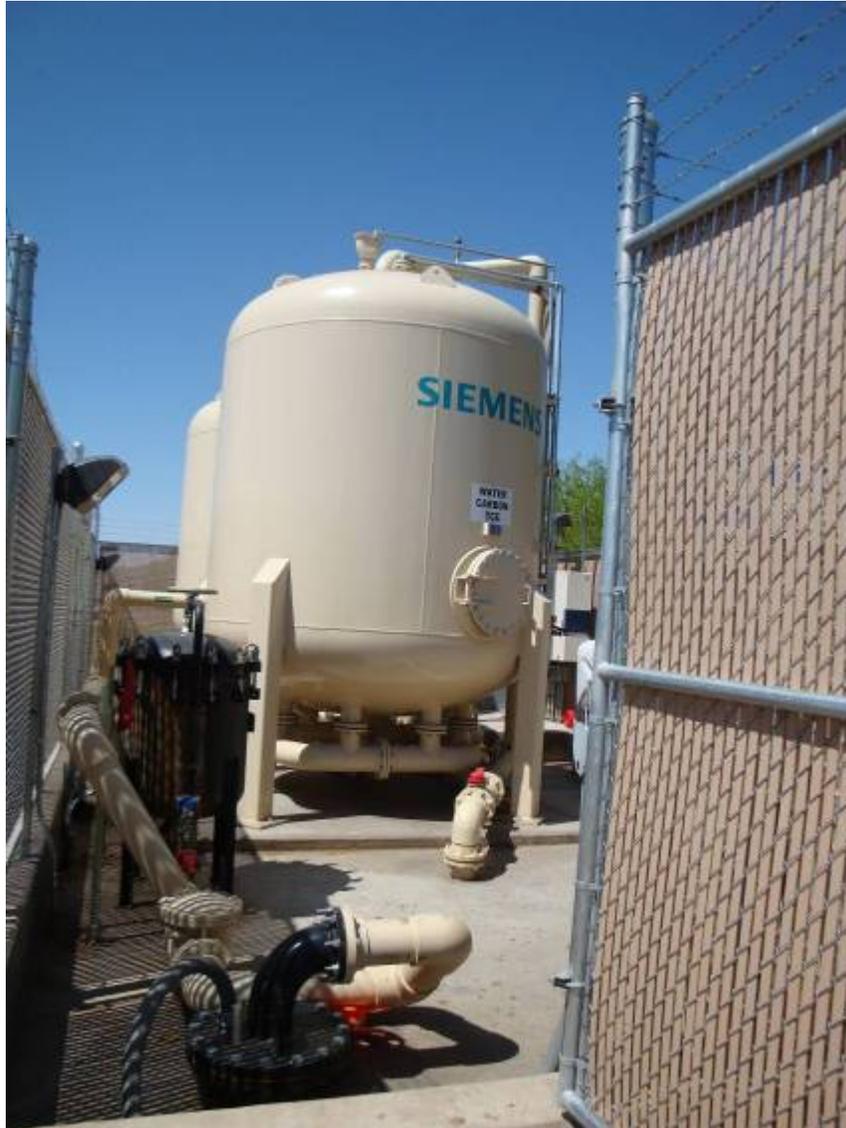
Main Treatment System

- Built in 1994
- 7 Ext. Wells, 6 Inj. Wells
- Prior ~350 GPM
- Increase to ~500 GPM 12/09
- Mass Contaminant removed
 - ~ 28,773 pounds

33A

- Operating Since 1997
- 1 Ext Well, clean water to RID Canal
- ~ 650 GPM
- Mass Contaminant removed
 - ~ 7,861 pounds





EA-05

- Operating Since March 2008
- 1 Ext. Well, 1 Inj. Well
- ~550 GPM
- Mass Contaminant removed
 - ~192 pounds



EA-06

- Operating Since March 2007
- 1 Ext. Well, clean water to RID Canal
- ~550 GPM
- Mass Contaminant removed
 - ~ 441 pounds

Beneficial Reuse/Recycling

MTS Water Diverted

- Dust Control On-Site ~ 2,000,000 gallons
- Revegetation Demonstration - 659,000 gallons

33A Water Used for Irrigation

- 2,158,460 gallons

Drum Reuse – 55 gallon poly drums for anti-scalant

- 32 drums used for demo project waste disposal
- 55 reused by local vendor



Groundwater Treatment Systems

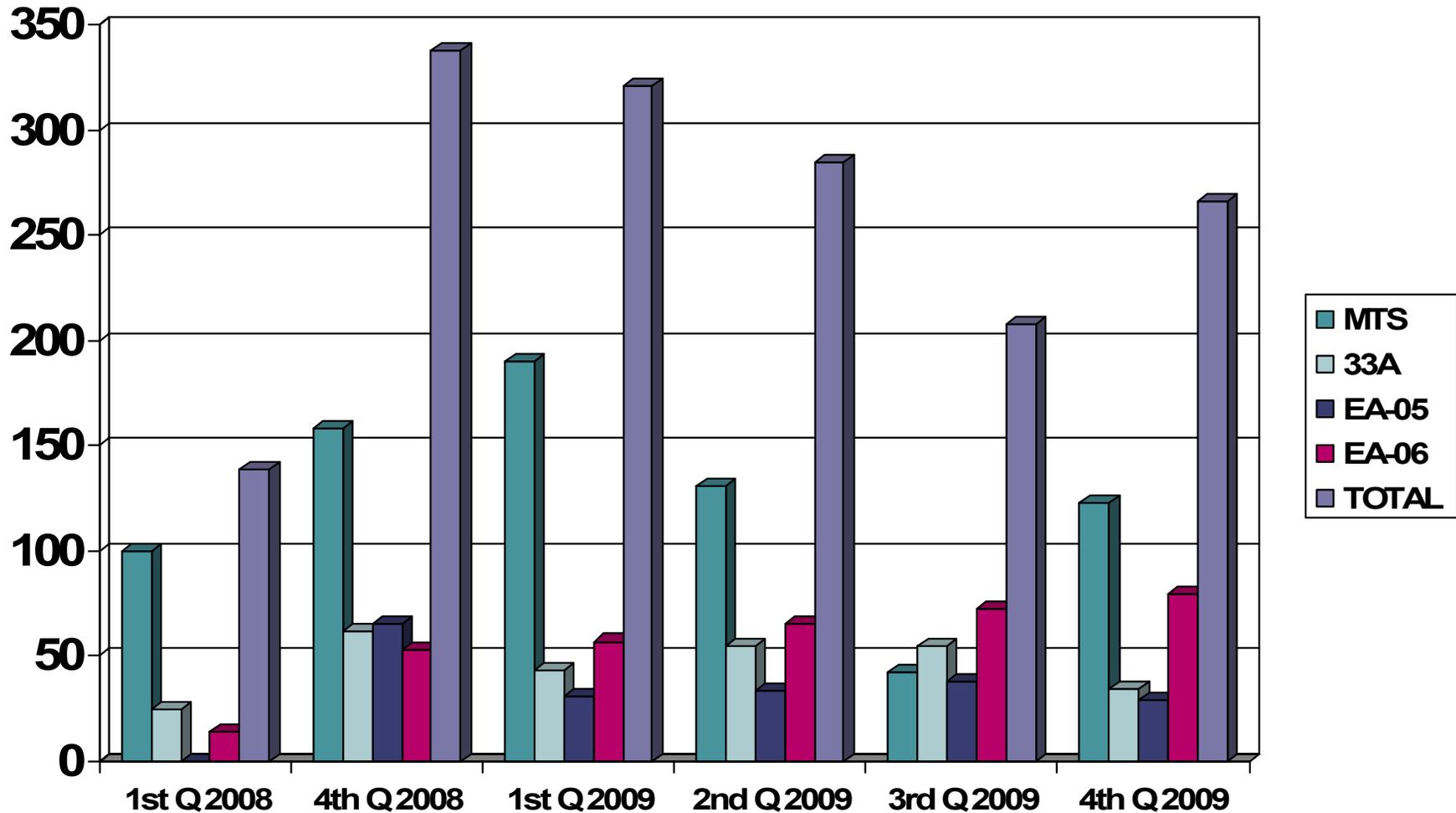


Future/Ongoing Activities

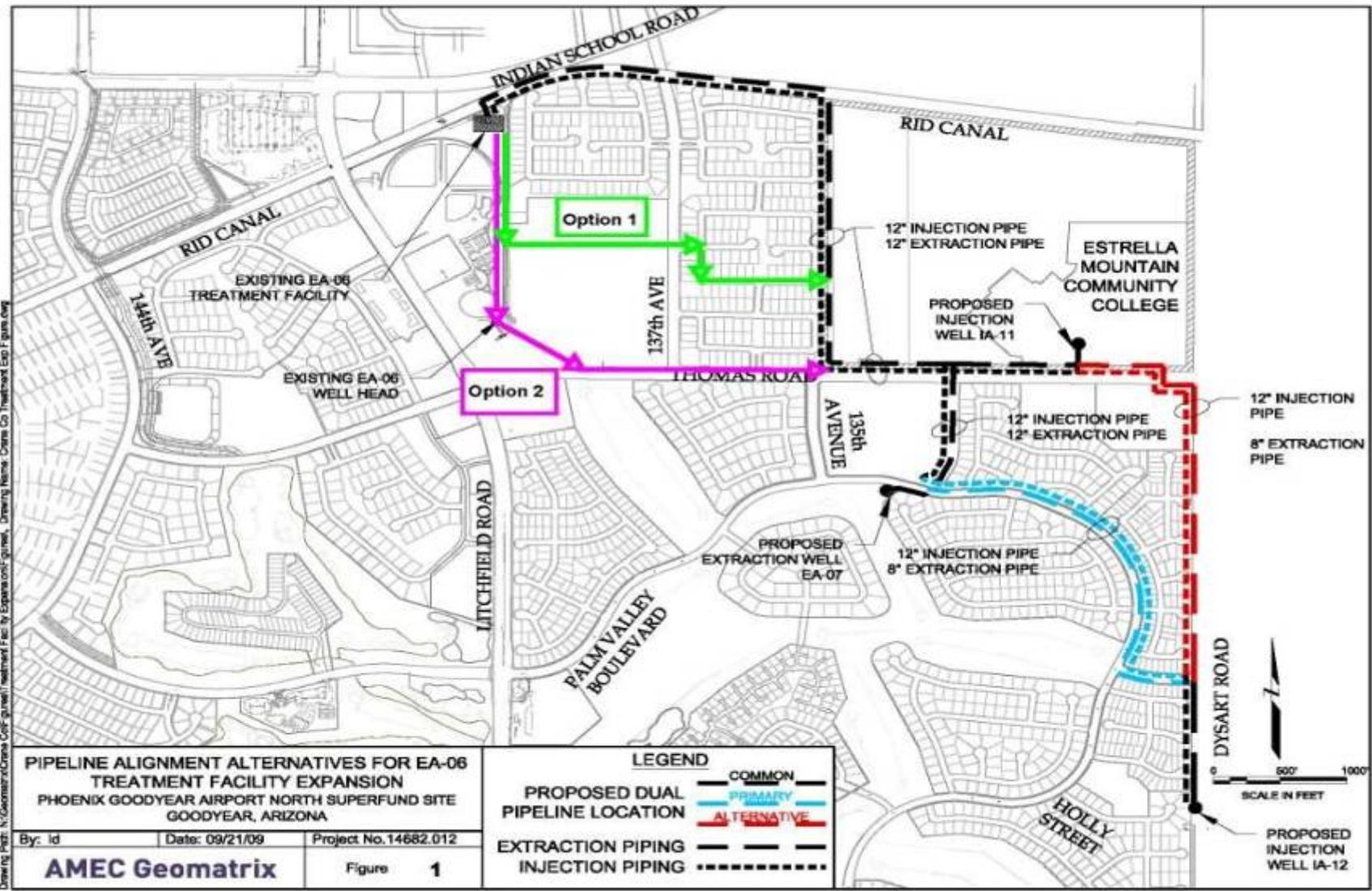
- MTS Expansion ~25% increased capacity
- Installed All Weather Road to MTS
- Evaluation of Increased Flow – EA-05 (~10%)



2008 vs. 2009 Mass Removal Comparison



Initial Proposed Locations for Proposed Extraction Well EA-07 and Injection Wells IA-11 and IA-12



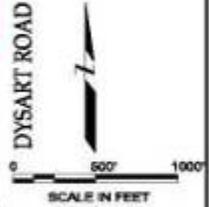
PIPELINE ALIGNMENT ALTERNATIVES FOR EA-06 TREATMENT FACILITY EXPANSION
 PHOENIX GOODYEAR AIRPORT NORTH SUPERFUND SITE
 GOODYEAR, ARIZONA

By: Id Date: 09/21/09 Project No. 14682.012

AMEC Geomatrix

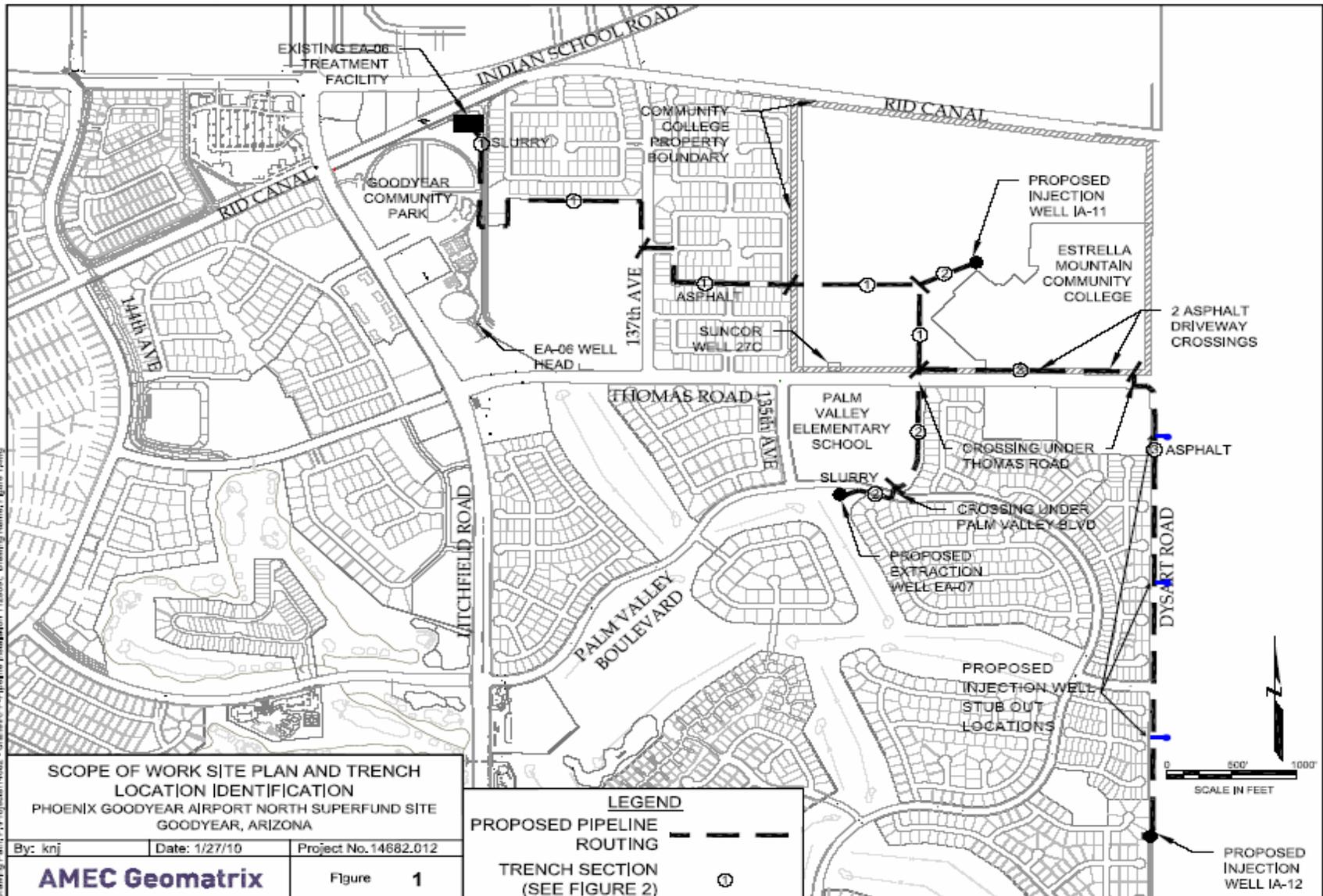
Figure **1**

LEGEND	
PROPOSED DUAL PIPELINE LOCATION	COMMON PRIMARY ALTERNATIVE
EXTRACTION PIPING	---
INJECTION PIPING	----



Plot Date: 10/01/09 - 8:17am, Plotted by: LindDesign
 Drawing Path: N:\Common\CD\Projects\14682\14682.dwg
 Drawing Name: Chms Co Treatment Exp Figures.dwg

Anticipated Final Locations for Proposed Extraction Well EA-07 and Injection Wells IA-11 and IA-12



Phased Regional Approach to Northeast Subunit A Plume

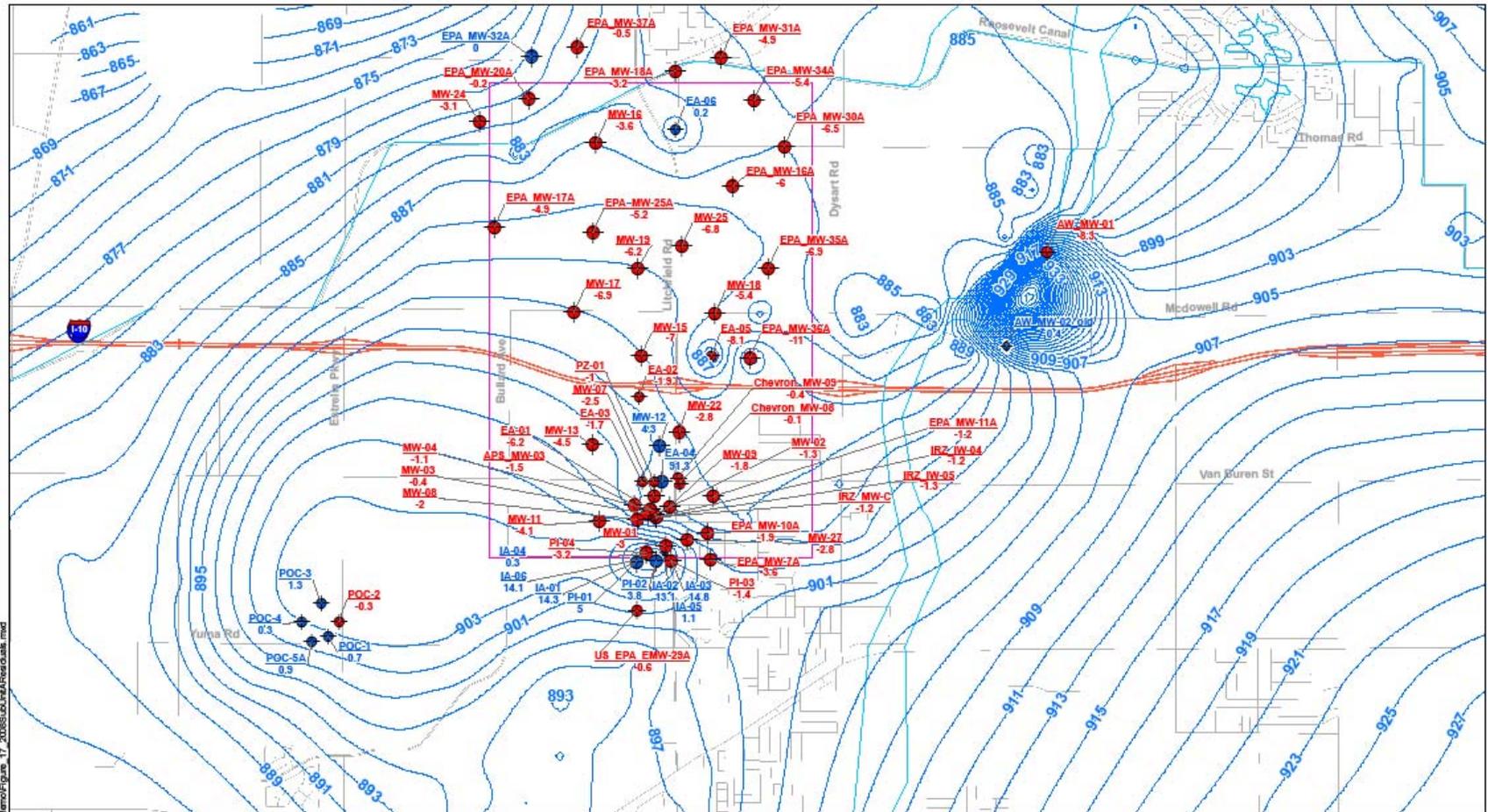


Anticipated Schedule

- Nov. 23 to Dec.11, 2009 – Complete design of Dysart Rd piping
- **Feb. 15 to April 30, 2010** – Complete piping installation in Dysart
- March 1 to April 2, 2010 – Installation of IA-11
- **March 1 to June 9, 2010** – Complete piping installation (excluding Dysart)
- April 5, 2010 to May 7, 2010 – Installation of IA-12
- May 7 to June 11, 2010 – Installation of EA-07
- **May 6 / June 1, 2010** – Tie-in IA-11 / Startup IA-11
- **June 10 / 21, 2010** – Tie-in IA-12 / Startup IA-12
- **June 14 / 28, 2010** – Tie-in EA-07 / Startup EA-07.

- PGA-North groundwater flow model has been continually updated every six months, since the initial model of ARCADIS (2005)
- Revised groundwater flow model completed January 15, 2010
 - Incorporates data through 2008
- The updated model can be used to test various containment and remediation scenarios and to guide remediation decisions at PGA-North

Groundwater Model



W:\11655_CremetModel_Update_Memo\Figure_17_2008SubunitAResiduals.mxd

POC-3
1.3

Explanation
Well with residual
blue - positive residual
red - negative residual

Target weight:

- 0.1
- 0.2 - 0.25
- 0.5
- 1

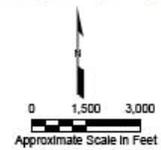
-905 - December 2008 simulated groundwater elevation in feet above mean sea level

— Surface water

□ PGAN site area

Notes:

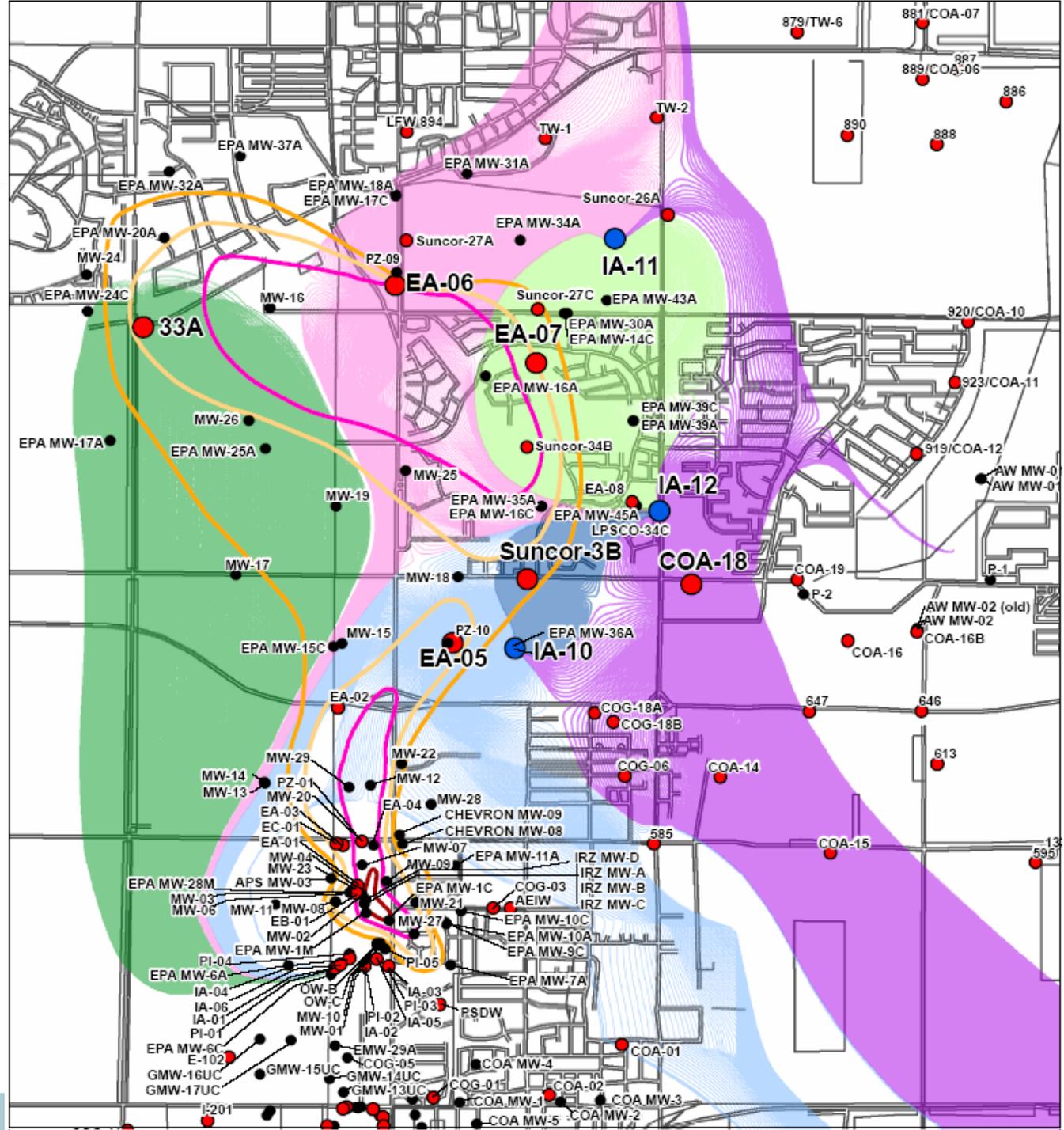
- Residual is Observed minus Simulated Water Level (feet above mean sea level).
- Negative residual means simulated water levels are high.



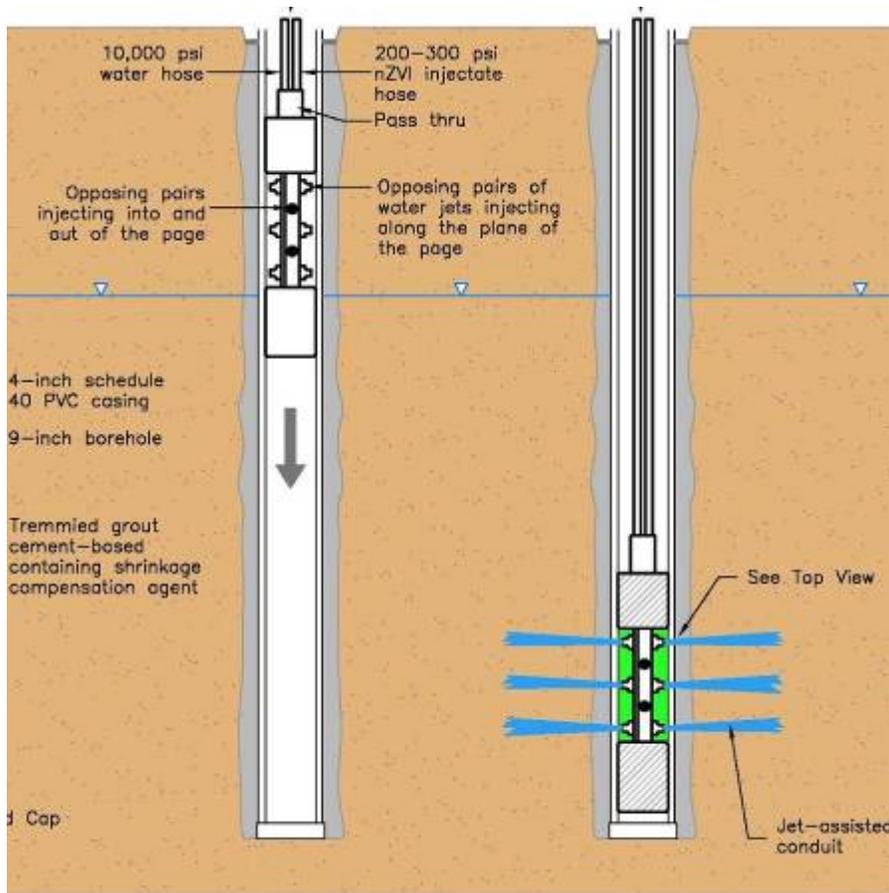
SIMULATED WATER LEVEL CONTOURS AND WEIGHTED RESIDUALS IN SUBUNIT A AT THE END OF THE TRANSIENT SIMULATION FOR DECEMBER 2008 CONDITIONS
Phoenix-Goodyear Airport - North Superfund Site
Goodyear, Arizona

By: GS	Date: 1/8/2010	Project No. 14682
AMEC Geomatrix		Figure 17

Groundwater Model



Innovative In-Situ Groundwater Treatment – Nano Scale Zero Valent Iron (nZVI)



Nano-scale zero valent iron chemically reduces contaminants to non-harmful compounds



Innovative In-Situ Groundwater Treatment – Nano Scale Zero Valent Iron (nZVI)



NZVI Schedule

- Injection well drilling and nZVI deliveries January 11-15, 2010
- Baseline Sampling was completed January 18–20, 2010
- nZVI Injections February 1–5, 2010
- Post-Injection Monitoring - 1 week, 2 weeks, 1, 3, and 6 months after injection
 - First week – February 10 - 13, 2010
 - Second week – February 17 - 19, 2010
 - First month – March 3 - 5, 2010
 - Third month – May 5 - 8, 2010
 - Sixth month – August 4 - 6, 2010

Questions?



Phoenix Goodyear Airport-South Project Site Status Report

Community Advisory Group
Meeting February 4, 2010



Agenda

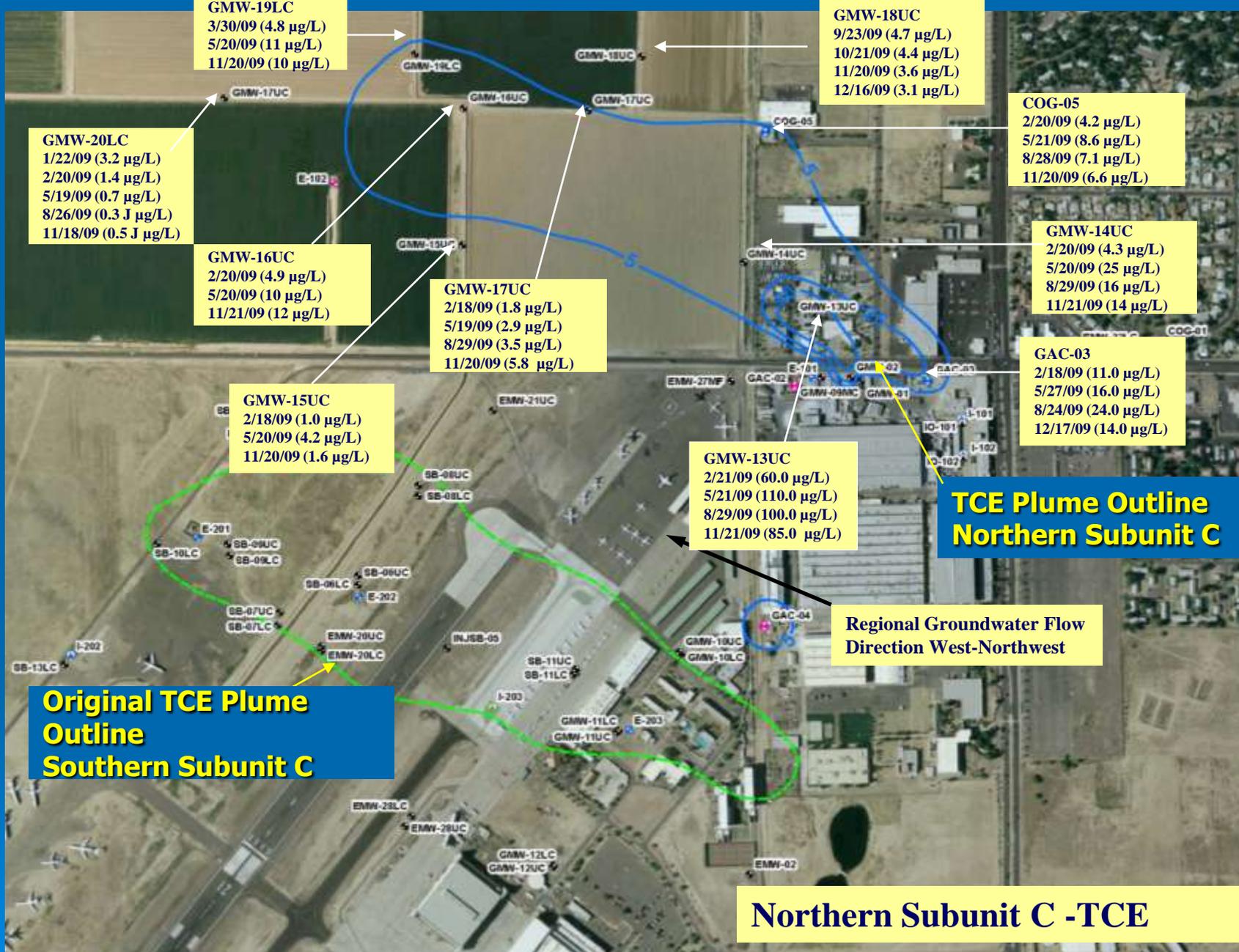
- **Summary of 2009 Accomplishments**
- **Review Current Activities**
- **Update Status of Ongoing Cleanup**
- **Upcoming Activities**

2009 Accomplishments

- Installed 3 Northern Subunit C Monitoring Wells
- Vapor Intrusion Study Completed and Approved
- Feasibility Study Completed and Approved
- Shut Off Extraction/Treatment System for Southern Subunit C Plume
- 280 Million Gallons Extracted from Subunit A
- 247 Million Gallons Extracted from Subunit C
- 98% Uptime on Subunit A Treatment System
- 97% Uptime on Subunit C Treatment System

Review of Current Activities

- Northern Subunit C Plume Delineation Well Results
- Northern Subunit C Vertical Profiling Study
- Southern Subunit C Monitoring
- GAC – 04 Sampling and Investigation Status



GMW-19LC
 3/30/09 (4.8 µg/L)
 5/20/09 (11 µg/L)
 11/20/09 (10 µg/L)

GMW-18UC
 9/23/09 (4.7 µg/L)
 10/21/09 (4.4 µg/L)
 11/20/09 (3.6 µg/L)
 12/16/09 (3.1 µg/L)

GMW-20LC
 1/22/09 (3.2 µg/L)
 2/20/09 (1.4 µg/L)
 5/19/09 (0.7 µg/L)
 8/26/09 (0.3 J µg/L)
 11/18/09 (0.5 J µg/L)

COG-05
 2/20/09 (4.2 µg/L)
 5/21/09 (8.6 µg/L)
 8/28/09 (7.1 µg/L)
 11/20/09 (6.6 µg/L)

GMW-16UC
 2/20/09 (4.9 µg/L)
 5/20/09 (10 µg/L)
 11/21/09 (12 µg/L)

GMW-17UC
 2/18/09 (1.8 µg/L)
 5/19/09 (2.9 µg/L)
 8/29/09 (3.5 µg/L)
 11/20/09 (5.8 µg/L)

GMW-14UC
 2/20/09 (4.3 µg/L)
 5/20/09 (25 µg/L)
 8/29/09 (16 µg/L)
 11/21/09 (14 µg/L)

GMW-15UC
 2/18/09 (1.0 µg/L)
 5/20/09 (4.2 µg/L)
 11/20/09 (1.6 µg/L)

GAC-03
 2/18/09 (11.0 µg/L)
 5/27/09 (16.0 µg/L)
 8/24/09 (24.0 µg/L)
 12/17/09 (14.0 µg/L)

GMW-13UC
 2/21/09 (60.0 µg/L)
 5/21/09 (110.0 µg/L)
 8/29/09 (100.0 µg/L)
 11/21/09 (85.0 µg/L)

**TCE Plume Outline
 Northern Subunit C**

**Regional Groundwater Flow
 Direction West-Northwest**

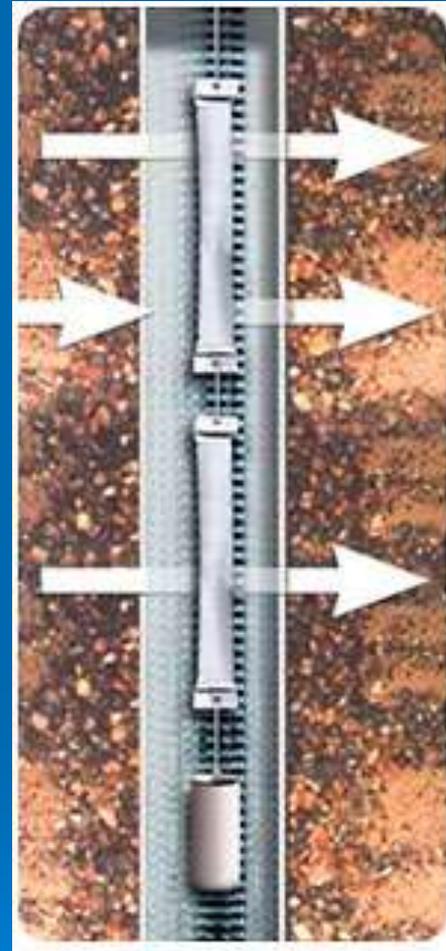
**Original TCE Plume
 Outline
 Southern Subunit C**

Northern Subunit C -TCE

Northern Subunit C Vertical Profiling Study

- Passive Diffusion Bags (PDBs) installed in 4 Subunit C monitoring wells in January
- Purpose of PDB sampling is to measure vertical variability of TCE concentrations
- PDB sample results will be compared to conventional low-flow purging sample results

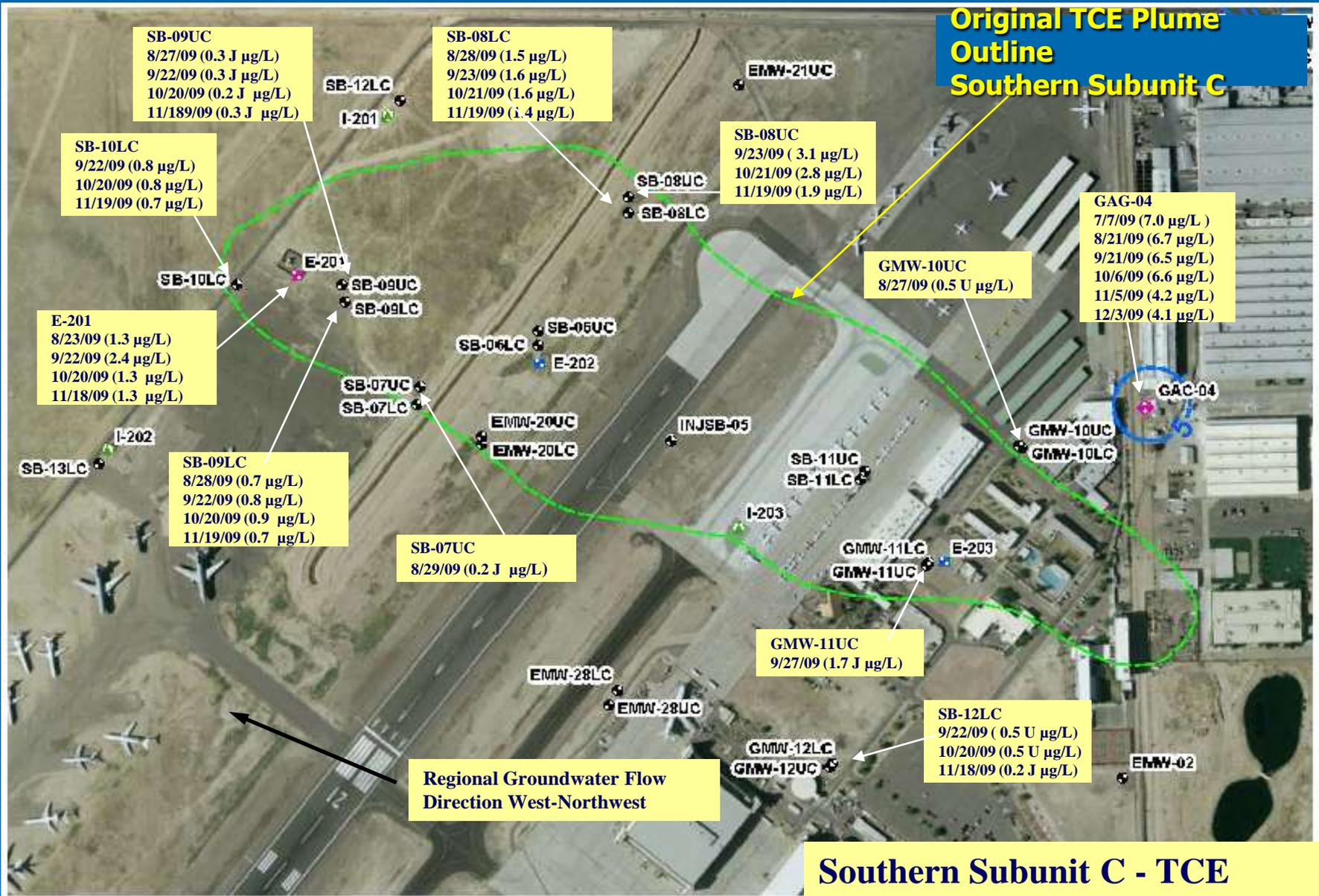
Passive Diffusion Bag



Southern Subunit C Pulse Pumping Update

- Southern Subunit C TCE plume originally covered 60 acres
- ADEQ/EPA approved shutdown of the last active extraction well (E-201) in Sept 2009
- Monitoring wells are being sampled for one year to evaluate potential rebound in TCE concentrations

Original TCE Plume Outline Southern Subunit C



Southern Subunit C - TCE

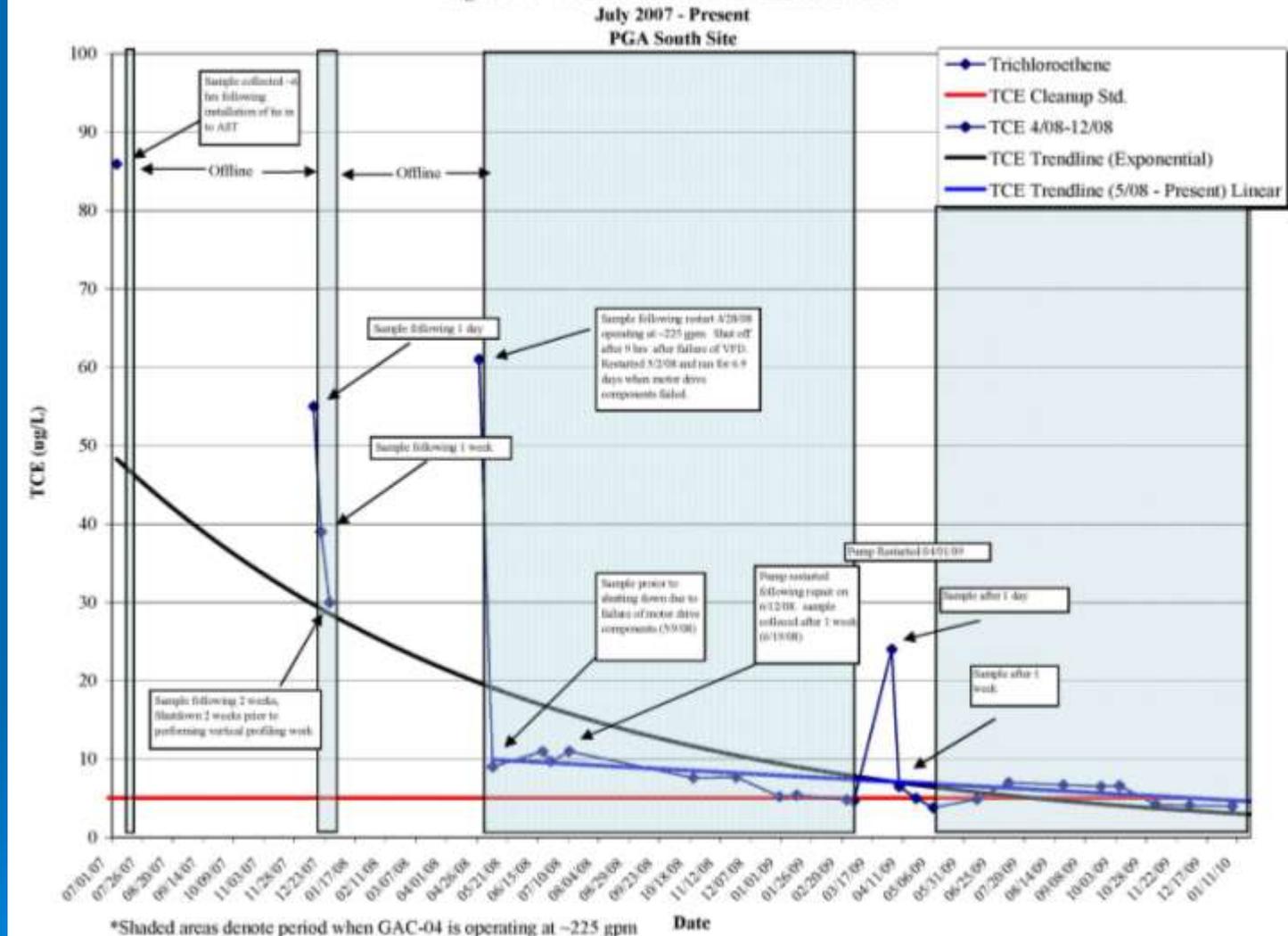
GAC-04 Update



GAC-04 Sampling Results and Investigation

- Continued operation of GAC-04 and monthly sampling (last 3 samples < 5 ug/L)
- Monitoring well installation tentatively planned for early March 2010

GAC-04 TCE vs. Time July 2007 – January 2010



Status of Ongoing Cleanup

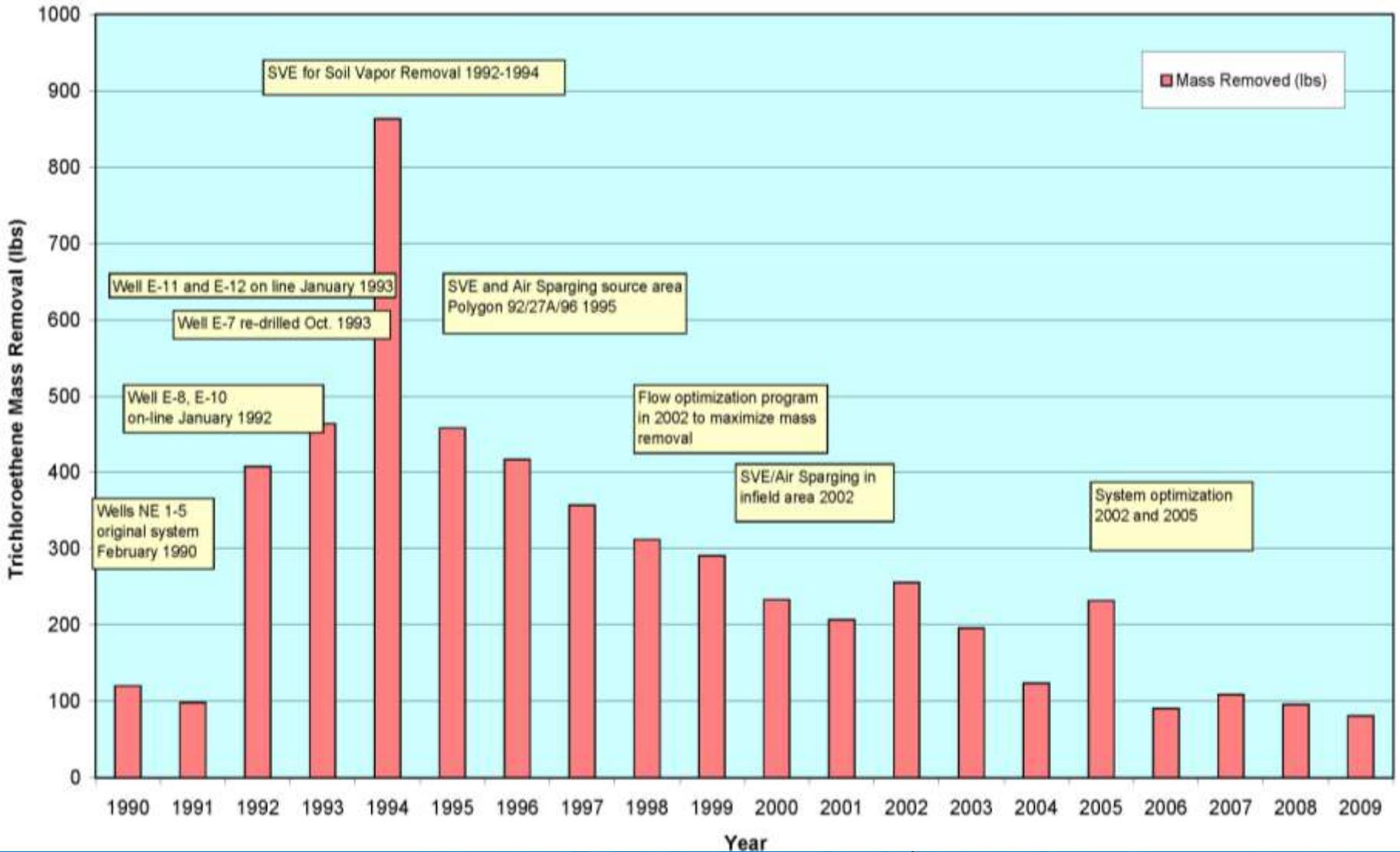
- Peak TCE concentrations in Subunit A monitoring wells have declined from 2,600 ug/L in 1990 to 110 ug/L in most recent sampling event (Dec 2009)
- Currently, all monitoring wells in the Southern Subunit C plume are <2 ug/L for TCE
- Subunit C System shut off in Sept 2009 and will be monitored for 1 year

Groundwater TCE Cleanup Progress

Subunit	Max TCE (µg/L) 1990	Max TCE (µg/L) 12/2009	Volume Pumped (Mgal)	TCE removed (Lbs)
Subunit A	2,600	110 (E-12)	5,083	5,414
Southern Subunit C	150	1.9 (SB-08UC)	1,826	171
Northern Subunit C	180	85 (GMW-13UC)	2,036	58

Subunit A TCE Mass Removal vs. Time

Subunit A Trichloroethene Mass Removal vs. Time Including History of Major Removal Efforts



Upcoming Activities

- Annual Groundwater Sampling Event Began Feb 1st
- PDB Sampling and Study
- GAC-4 Monitoring Well Installation



Phoenix Goodyear Airport Superfund Site Overview and Update

Presented to the Community Advisory Group (CAG):

February 4, 2010

Goodyear, AZ



Current Status of North and South Areas

North

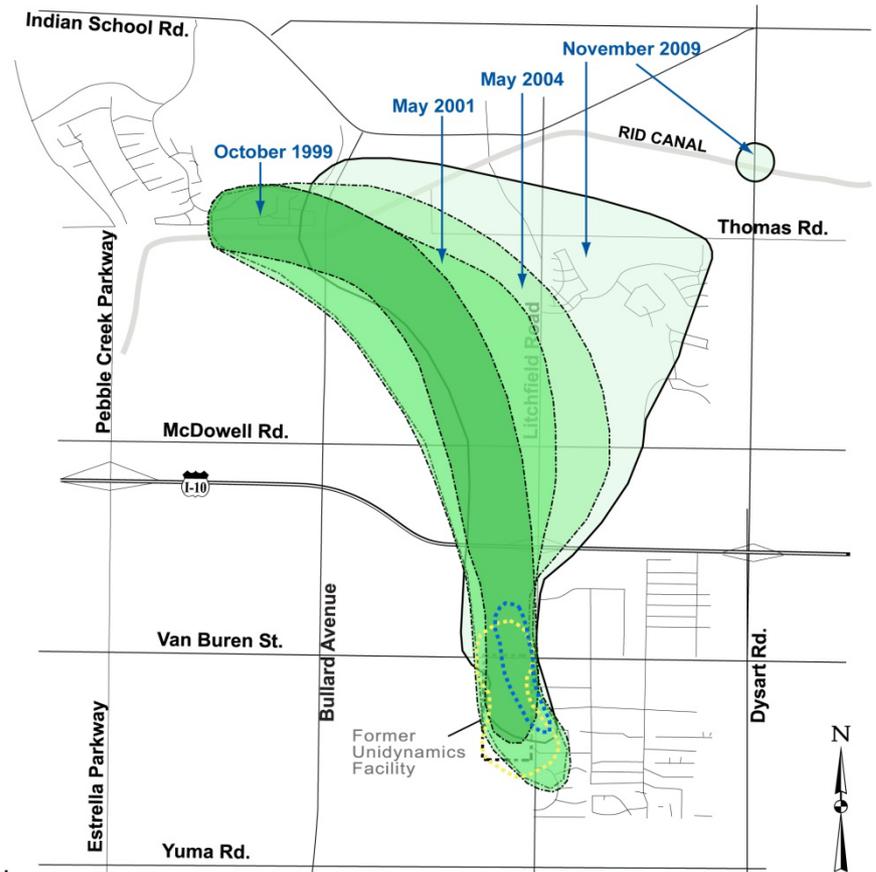
- Different PRPs
- SubUnit A, B, C and MAU
- TCE and perchlorate
- Plume more than 6000 ft from site
- Not fully delineated
- Hydraulic control systems still being installed
- Changing groundwater stresses over time

South

- Different PRPs
- Primarily SubUnit A
- TCE and Chromium
- Delineated
- Plume under hydraulic control
- Plume reducing in magnitude over time
- Groundwater stresses remain consistent over time

Changes in Subunit A Plumes between 1999 until Present

TCE AND PERCHLORATE PLUMES IN SUBUNIT A



Legend

- Approximate TCE Plume Distribution - October 1999 (b)
- Approximate TCE Plume Distribution - May 2001 (a)
- Approximate TCE Plume Distribution - May 2004 (a)
- Approximate TCE Plume Distribution - November 2009 (d)
- Approximate Perchlorate Plume Distribution ($\geq 14 \mu\text{g/L}$) - May 2004 (c)
- Approximate Perchlorate Plume Distribution - November 2009 (d)

EPA does not consider surface areas above the contaminated groundwater that are outside of the source area and that are not used for remediation activities as part of the Superfund site.

- (a) Estimated by USEPA
- (b) Reported by Malcolm Pirnie Inc. in Plume Capture Demonstration Report, dated October 7, 1999
- (c) Reported by Geomatrix Consultants, Inc. in Groundwater Monitoring Report - Second Quarter 2004
- (d) Reported by Matrix New World Engineering, Inc. in Groundwater Monitoring Report - Fourth Quarter 2009 and 2009 Annual Report

Changes in Subunit C Plumes between 2002 and the Present

TCE AND PERCHLORATE PLUMES IN SUBUNIT C



- Legend**
- Approximate TCE Plume Distribution - 2002
 - Approximate TCE Plume Distribution - May 2004 (a)
 - Approximate TCE Plume Distribution - November 2009 (a)
 - Approximate Perchlorate Plume Distribution ($\geq 14 \mu\text{g/L}$) - November 2009 (b)



EPA does not consider surface areas above the contaminated groundwater that are outside of the source area and that are not used for remediation activities as part of the Superfund site.

(a) Estimated by USEPA

(b) Reported by Matrix New World Engineering, Inc. in Groundwater Monitoring Report - Fourth Quarter 2009 and 2009 Annual Report

Challenges of PGA-N

- Extent of the plume
- Influence into many aquifers
- Geology is challenging due to degree of heterogeneity
- Land use in areas affected by the groundwater plume has and continues to change
- Plume movement is controlled by pumping and recharge on the system that are difficult to predict and quantify



What is currently being done at PGA-N to control the extent of the plume?

- Groundwater Extraction

- SubUnit A

- MTS
- EA-05 and EA-06 independent treatment systems
- 33A and independent treatment system
- additional proposed extraction well(s) EA-7, EA-08 to be treated at the EA-06 treatment system

- SubUnit C

- EC-01, MW-20, treated at the MTS, MW-29 to be added to SubUnit C extraction
- SubUnit C contamination identified at MW-29, SunCor 34B, and SunCor 27C



What is currently being done at PGA-N to control the extent of the plume?

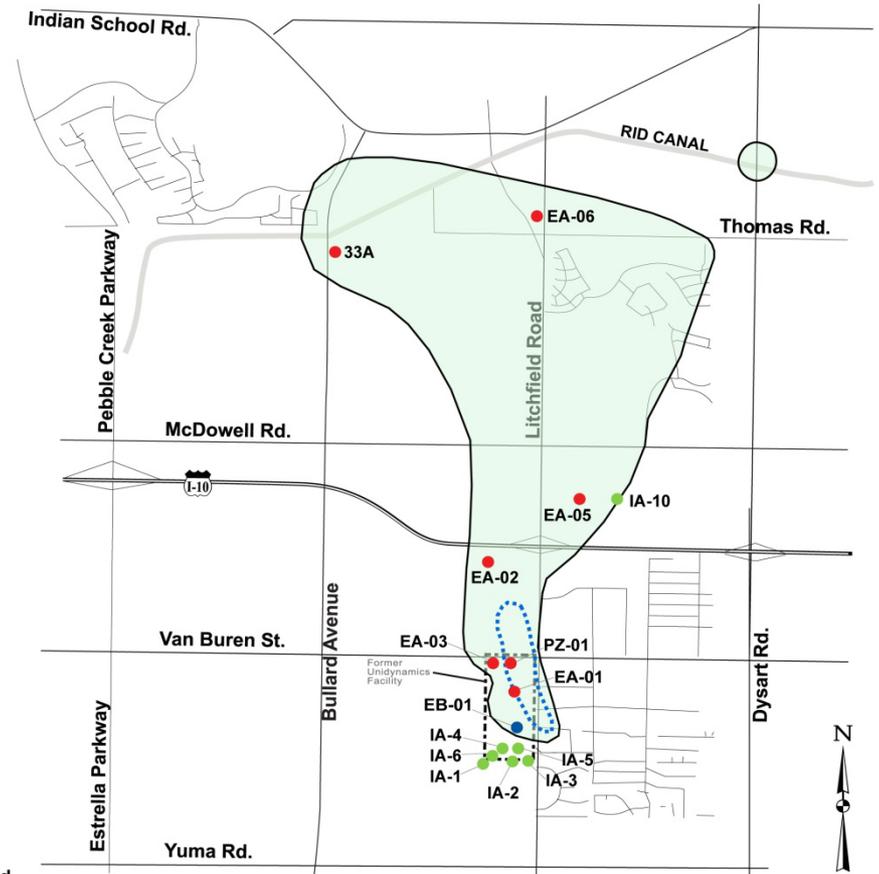
- Groundwater Injection

- injection replaces water to the aquifer (pressure equalization and resource replacement), and can if properly placed, provide hydraulic control to prevent movement of contamination
- currently treated water from 33A and EA-06 discharged to the RID canal
 - onsite injection wells IA-1 through IA-6
 - off site injection wells IA-10
 - proposed offsite injection wells IA-11 and IA-12
 - suggested offsite injection wells IA-13 through IA-15



Remediation System – Groundwater Extraction and Injection Wells and Current Subunit A Plumes

TCE AND PERCHLORATE PLUMES IN SUBUNIT A



Legend

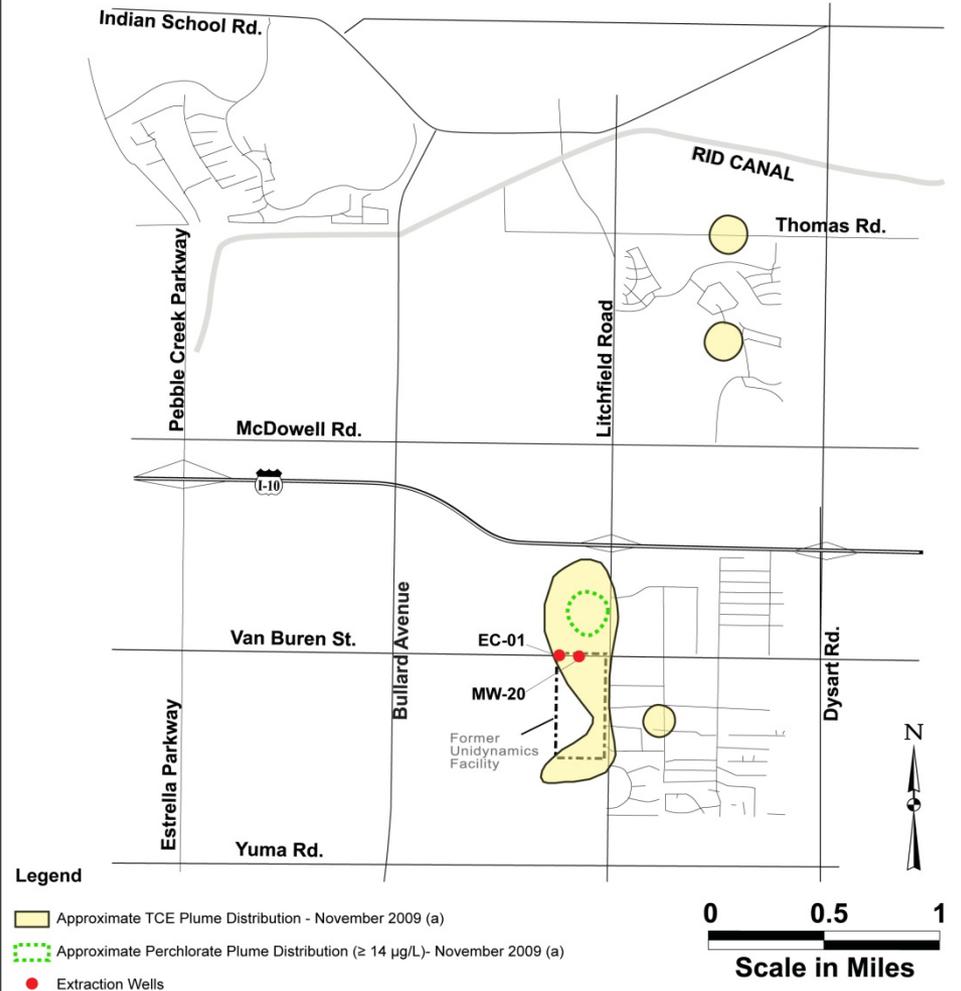
- Approximate TCE Plume Distribution - November 2009 (a)
- Approximate Perchlorate Plume Distribution - November 2009 (a)
- Extraction Wells
- Injection Wells
- Subunit B Extraction Well

EPA does not consider surface areas above the contaminated groundwater that are outside of the source area and that are not used for remediation activities as part of the Superfund site.

(a) Reported by Matrix New World Engineering, Inc. in Groundwater Monitoring Report - Fourth Quarter 2009 and 2009 Annual Report

Remediation System – Groundwater Extraction and Injection Wells and Current Subunit C Plumes

TCE AND PERCHLORATE PLUMES IN SUBUNIT C



EPA does not consider surface areas above the contaminated groundwater that are outside of the source area and that are not used for remediation activities as part of the Superfund site.

(a) Reported by Matrix New World Engineering, Inc. in Groundwater Monitoring Report - Fourth Quarter 2009 and 2009 Annual Report

What is currently being done at the PGA-N Source Area to control the extent of the plume?

Soil Vapor Extraction

- just completed investigation for optimization and possible expansion of system, data to be available late February 2010

NZVI Pilot Test

- 3 trial attempts to inject nano-scale zero valent iron (nZVI)
- additional nZVI injection completed February 1-4, 2010
- if successful, work plan for full scale implementation is due by May 2010



What is currently being done at PGAN to limit the extent of the plume?

Source Area Treatment

What Else Could Be Done?

- a) injection of chemical oxidant (permanganate)
- b) extraction well in source area
- c) create anaerobic conditions and inject components for enhanced biological degradation

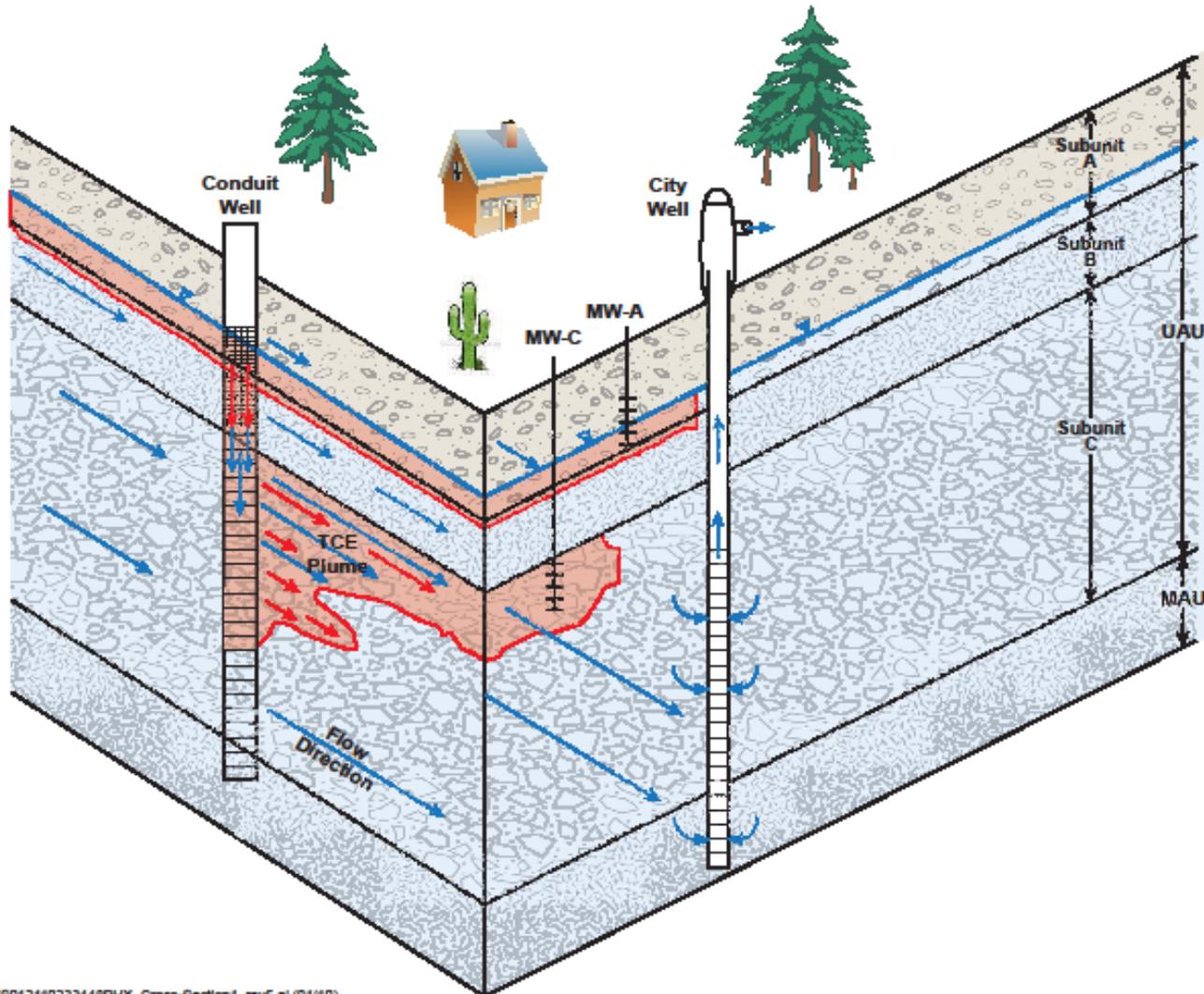


Conduit Wells

- What is a conduit well?
 - a well that is screened through multiple and distinct water-producing zones
 - allows for the possibility of contamination to pass from an upper zone to a lower zone
- What is done about conduit wells?
 - generally conduit wells are abandoned through an approved process, the results is that the well can no longer be used
 - to try and preserve wells, a packer has been placed to limit the contact between the different aquifers, thereby reducing the conduit potential
 - packers do not guarantee elimination of the conduit like abandonment
 - this method is currently being tested at SunCor 27C



Conduit Well Figure



Contributions Provided by Cities

- Review & comment on technical documents
- Input on critical issues (EE/CA, extraction well placement)
- Valuable technical expertise (provided by City consultants)
- Facilitation of construction projects (use of City lands)
- Expediting permits
- Assistance with traffic control (for well installation)



Community Involvement and Outreach

- Maintain open communication about the site investigation and clean up
- Ensuring questions are answered and concerns are addressed as they occur
- Provide citizens with opportunities to comment on and be involved in cleanup decisions that will have long term effects on the community
- Open invitation for local citizens to become CAG members
- Participation in quarterly CAG meetings



What to Expect for PGA-N

Goals

- Plume delineation (SubUnit A and SubUnit C)
- Hydraulic control of SubUnit A and SubUnit C
- Active source area treatment
- Expansion of MTS and EA-06
- Expansion of injection well gallery



For More Information

- EPA
- Catherine Brown - RPM
- Viola Cooper - Community Involvement Coordinator



Motorola 52nd Superfund Site

**Lindon Park Neighborhood Association
U.S. EPA Technical Assistance Grant Recipient
Technical Assistance Grant
Phoenix, AZ**

February 4, 2010

Sitio Superfondo Motorola Calle 52

Technical Assistance Grant (TAG)

- ◆ Provides funding for activities that help your community participate in decision making at your Superfund Site
- ◆ Up to \$50,000 initial grant available to contract with independent technical advisors

Technical Assistance Grants (TAGs)

- ◆ Technical Advisors interpret data, maps and reports, and help the community understand technical information about the Superfund Site.

Technical Assistance Grants (TAGs)

- ◆ Applying for a Technical Assistance Grant
- ◆ Start Up/Implementation of a TAG
- ◆ Management of a TAG
- ◆ Benefits of a TAG

Contact Information

Información de contacto

Lindon Park Neighborhood Association

TAG Information Line:

623-218-6160

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- ◆ Mary Moore
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