WILLIAMS AFB
ARIZONA

ADMINISTRATIVE RECORD
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AR File Number 1617

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER

JUL 18 2013

MEMORANDUM FOR SEE DISTRIBUTION

FROM: AFCEC/CIBW
706 Brooks Road
Rome NY 13441

SUBJECT: Restoration Advisory Board Meeting Minutes, 19 February 2013

1. Attached please find the final minutes from the 19 February 2013 Williams Restoration Advisory Board (RAB) meeting held at the Arizona State University Polytechnic Campus as approved by the RAB members at the 14 May 2013 meeting.

2. If you have any questions or comments, please contact Ms. Linda Geissinger at (916) 643-6420 x109.

CATHERINE GERRARD, PE
BRAC Environmental Coordinator

Attachment:
Final RAB Meeting Minutes, 19 February 2013

DISTRIBUTION LIST
Final 19 February 2013 Williams RAB Meeting Minutes

Electronic Copy

Col. Len Fuchs, RAB Community Co-Chair
Catherine Jerrard, RAB Co-Chair, AFCEC
Dale Anderson, RAB, Gila River Indian Community
Scott Bouchie, RAB, City of Mesa
Don Atkinson, RAB, ADEQ
Matt Fesko, RAB, ASU graduate student
Lonnie Frost, RAB, Gilbert Public Works
Carolyn d'Almeida, RAB, USEPA
Lisa Marie Gerdel, RAB, Gilbert resident
James Holt, RAB, Queen Creek resident
Tom Zuppan, RAB, Gilbert resident
Alan Ruffalo, RAB, Power Ranch resident
Dennis Orr, RAB, Gateway Airport
Pat Tennant, RAB, ASU
Teresa Harris, RAB, Gilbert resident
Doug Ashline, Citizen
Dominic Hernandez, Citizen
Dana Koziel, Citizen
Don Lyon, Citizen
Ben Shunk, Gilbert resident
Leo Pessin, Gilbert resident
Beverly Selvage, Mesa resident
Thom Schuett, Queen Creek resident
Don Smallbeck, AMEC
Everett Wessner, AMEC
Julie Hamilton, AMEC
Emily Corkery, AMEC
Chris Courtney, AMEC
Linda Geissinger, AFCEC/CIBW
Brian Sytsma, Napkin Communications
Scott Johnston, Napkin Communications
Mary Hall, AFCEC Public Affairs contractor
Geoff Watkin, Cherokee Nation Gov. Services
Calvin Cox, Cherokee Nation Gov. Services
Patrick Banger, Town of Gilbert - City Manager
Sharalyn Barnby, ASU
Angela Creedon, ASU
Latonja West, ASU
Steve Nielson, ASU
Joshua Hoyt, ASU
Steve Hunter, ASU
Richard Malloy, ASU
Theodore Betkie, ASU student
Thomas Butler, USEPA
Eva Davis, USEPA
Collin DeWitt, Gilbert Fire Dept.
Lawrence Dough, Able Engineering
Victor Gamez-Grijalva, CH2MHILL
Colleen Gilbert, Congressional Military Affairs
Mark Holmes, City of Mesa
Jim Husbands, Booz Allen Hamilton
Angie Kannada, Tierra Dynamics
Dan Kelley, Terra Dynamics
Adam Mahamed, ADEQ
Wayne Miller, ADEQ
Delfina Olivares, ADEQ
Travis Barnum, ADEQ
Felicia Calderon, ADEQ
Laura McNamara, HGL
Kimberly Vaughn, HGL
Roger A. Fitzpatrick, HGL
John Pekala, Environmental Corporation
Kathy Rall, Town of Gilbert
Martin Sepulveda, Sepulveda Group
Brian Sexton, Gateway Airport
Brian Snowden, Arizona Green Magazine
Glenn Stark, Gila River Indian Community
Glen Stephens, Ch. 11 Mesa public access
Art Thomason, Arizona Republic
Phil Whitmore, CH2MHILL
Janet Workman, URS
Jay Harbin, URS
Elspeth Sharp, URS
Devan Phelan, Terra Therm
John Meter, City of Mesa
Dianna Saenz, AFCEC
Steve Willis, UXO Pro, ADEQ contractor
Bill Mabey, Tech Law

Former Williams Air Force Base (AFB)
Restoration Advisory Board (RAB)
Meeting Minutes

February 19, 2013, 7:15 p.m.
Arizona State University Polytechnic Campus
Peralta Hall #132
7171 E. Sonoran Arroyo Mall
Mesa, AZ

Attendees:

Name	*Organization*
Ms. Cathy Jerrard	Air Force Civil Engineer Center (AFCEC) /Base Realignment and Closure (BRAC) Environmental Coordinator (BEC)/Air Force Co-chair
Mr. Len Fuchs	RAB Community Co-chair/Gilbert resident
Mr. Scott Johnston	AFCEC Public Affairs/ Napkin Communications
Ms. Mary Hall	AFCEC Public Affairs/Napkin Communications
Mr. Dennis Orr	Phoenix-Mesa Gateway Airport
Mr. Don Atkinson	Arizona Department of Environmental Quality (ADEQ), Project Manager
Mr. Geoff Watkin	Cherokee Nation Government Solutions, AFCEC technical support contractor
Mr. Jim Holt	RAB Member/Queen Creek resident
Mr. Everett Wessner	AMEC, AFCEC remediation contractor
Mr. Don Smallbeck	AMEC, AFCEC remediation contractor
Mr. Leo Pessin	Gilbert resident
Mr. Scott Bouchie	City of Mesa
Mr. Victor Gamez-Grijalva	CH2MHILL
Mr. Matt Fesko	Arizona State University (ASU) student/RAB member
Ms. Pat Tennant	Arizona State University (ASU)
Mr. Steve Willis	UXO Pro, ADEQ technical support contractor
Carolyn d'Almeida	U.S. Environmental Protection Agency (USEPA), Region 9, Project Manager
Bill Mabey	TechLaw, USEPA technical support contractor
Beverly Selvage	Mesa resident
Delfina Olivarez	Arizona Department of Environmental Quality (ADEQ), Public Affairs
Eva Davis	U.S. Environmental Protection Agency

Mr. Len Fuchs called the meeting to order at 7:15 p.m. and asked the attendees to introduce themselves. The RAB approved the November 2012 meeting minutes without changes. Ms. Cathy Jerrard provided a brief introduction and turned the presentation over to Mr. Everett Wessner.

Status Updates for ST035, ST012, FT002, SS017, and LF004

Mr. Wessner presented updates for each site, see attached slides for more information. RAB and community discussions for each site are presented below.

ST035, Former Base Gasoline Station Building 760

Mr. Wessner summarized the slides presenting the site background, contaminants, and cleanup methods in place. Soil vapor extraction (SVE) continues to remove fuel contaminants from the soil; groundwater

monitoring is ongoing. The goal is to achieve site closure under the state Leaking Underground Storage Tank (LUST) regulations.

Since the last briefing, a remediation well has been installed near the former source area and four new downgradient monitoring wells were also installed. The remediation well is screened in two distinct zones. If there is a need to remediate groundwater, the well will have two zones it can target.

Groundwater flow continues to trend to the east with a slight northeast trajectory.

Benzene in groundwater near the source area has degraded significantly and no longer exceeds standards. Toluene, xylenes, methyl tertiary butyl ether (MTBE) and 1,2-dibromoethane (EDB) are all below the standard except for MTBE and 1,2 DCA in MW09 and in two of the new downgradient wells (MW19S and MW20D). MW09 is located next to the new remediation well (RW1). There is a possibility that when RW1 was installed and developed it might have caused some temporary contamination to get into MW09. After the next quarterly sampling event is conducted later in February 2013, an evaluation will be performed to determine future actions. The additional data and the plan forward for groundwater will be available at the May RAB meeting.

The SVE system has done a nice job removing total petroleum hydrocarbons (TPH) and the extraction rate is starting to decrease and flatten out, which is what typically happens as an SVE system cleans up a contaminant source. The system achieved 91.7% operational uptime, with the downtime due to weather and shutting the system off while the remediation well was installed. A total of 3,231 pounds or 524 gallons of TPH were removed during the fourth quarter of 2012 and17,000 gallons of TPH have been removed to date. The next performance sampling event is taking place later in February 2013.

Questions asked during ST035 presentation:

Mr. Holt asked why nothing shows up between the two 1,2-dichloroethane (1,2-DCA) plumes on slide 18. Mr. Wessner responded that previously five wells had 1,2-DCA. Two of the wells that had 1,2-DCA before do not have it now. There has been a decoupling where there is no 1,2-DCA above standard so it would appear to be two distinct plumes.

Mr. Holt asked if that would suggest a different source. Mr. Wessner responded that would be doubtful, but instead the 1,2-DCA may just be barely below the standard, and therefore, not showing up in the depiction of the plume areas. Mr. Smallbeck added that the distinction is likely due to decoupling and changes in the direction of groundwater flow that has occurred over time. Some of the concentrations have decreased in wells or the flow direction has changed so there is not a continuous plume.

Mr. Holt asked if that means parts of the plume have been cleaned up, but the contamination is still there in other places. Mr. Smallbeck responded that is correct.

Mr. Holt asked if soil vapor extraction is being used. Mr. Smallbeck responded the soil vapor extraction is concentrated near the source area for the vadose zone, and not throughout the groundwater plume area. Mr. Holt asked if there are groundwater collection points. Mr. Smallbeck responded that there are not but the soil cleanup keeps contaminants from further impacting groundwater.

Mr. Holt noted the slides show a slight change in gradient February through November and asked if that is due to the amount of water flow. Mr. Smallbeck responded that is the direction the water flows. Mr. Holt said the numbers were 0.003 ft/ft and now they are 0.0023 ft/ft. Mr. Smallbeck responded they change a little bit, but those are very small numbers. It is a thousandth of a foot. Mr. Wessner added it is a really flat gradient. Mr. Holt asked what made the change. Mr. Wessner stated it could be seasonal. The gradient is the rate at which the water is flowing through the site. It could be affected by a rain event or any number of things.

Regarding the SVE operation, Ms. Tennant said that when it was originally installed the expectation was it would run for about five years. She asked what the prediction is now. Mr. Wessner responded the cleanup is flattening off. Mr. Smallbeck added that AMEC has installed modifications to the system to increase the rate of extraction from some of the wells that have the highest remaining TPH mass. After six

months of operation with the modified system, AMEC will evaluate the results. By the end of 2013 AMEC plans to conduct vapor sampling to see what residuals remain in the subsurface. If the remaining residuals are low, AMEC would take soil samples to confirm that the SVE system has met the cleanup goals. The system started running in 2010 and shutting down the system may be possible in 2014. There haven't been any detections of benzene in a few quarters and it is looking very good. Mr. Wessner added that the system is removing 500-plus gallons of petroleum every three months. It is still doing some good and there is still some mass to be taken out, but it is good news that the rate is flattening out because that means most of contamination has been removed.

ST012, Former Liquid Fuels Storage Operation

Mr. Wessner summarized the slides presenting the site background, contaminants, cleanup methods in place, and the path forward. The primary soil contaminants for the site are petroleum hydrocarbons which includes benzene.

The 1992 OU-2 Record of Decision (ROD) pump-and-treat remedy was ineffective in cleaning the groundwater. A pilot test for steam enhanced extraction technology was conducted and lead to a Focused Feasibility Study (final FSS November 2012). The deep vadose zone, which is defined as greater than 25 feet below ground surface (bgs), is currently being treated with an SVE system.

The water table is approximately 143 to 155 feet bgs, up 67 feet from1989. Mr. Wessner stated that the rising groundwater is part of the problem. After the petroleum hydrocarbons were released, groundwater levels have risen, resulting in a portion of the material being submerged beneath the groundwater and trapped within the soil pore spaces.

The November 2012 flow direction in the Upper Water Bearing Zone (UWBZ)/Cobble Zone (CZ) is northeast. The flow in the Lower Saturated Zone (LSZ) is also northeast. During the November 2012 sampling event, 27 wells were sampled. All concentrations of chemicals of concern (COC) are similar to historical data (2009-2011). The latest results showed an increase in some of the COC concentrations (such as benzene) in the UWBZ/CZ and a decrease in the LSZ.

The SVE system for the deep soil operated at 99.5% uptime from October through December 2012 with 26,801 pounds (or 4,079 gallons) of TPH removed. Nine of the 27 wells are operating with an upward trend of product being removed from the deep soils. To date, 262,000 gallons of TPH have been removed and the next scheduled SVE performance monitoring is later in February 2013. Those results will be available by the next RAB meeting.

The groundwater containment system uses existing wells and equipment configured to allow operation of a modified pump-and-treat system. Until a ROD amendment is signed to establish a new groundwater remedy, the extraction system continues to operate to provide treatment and to reduce the potential for contaminant migration in groundwater. The system began operating in January 2012, was shutdown in August for a retrofit, and was restarted in September 2012. Groundwater extraction is focused on the lower saturated zone. Extraction activities have removed and treated 9.5 million gallons of groundwater and 181 pounds of benzene from January through December of 2012. The components remaining from the treatability study are now being used to contain the flow of groundwater until the final remedy can be put in place.

A draft Amended Proposed Plan was submitted January 2013 for regulatory review. A public meeting is tentatively planned for April 18. Steam enhanced extraction and enhanced bioremediation is the Air Force's preferred treatment alternative. A Record of Decision is planned for summer 2013, Remedial Design by fall 2013, and remedy construction in 2014. Annual groundwater monitoring will take place in November 2013.

Questions asked during ST012 presentation:

Mr. Holt asked if the figures show gradient intervals that are only five feet apart. Mr. Smallbeck responded that the potentiometric surfaces are based on 1/2 foot (0.5 ft) contours.

Mr. Holt stated he meant from the Upper Zone to the Lower Zone. He said the number at the end of the line, in the upper zone show 1187 feet and in the Lower Zone show 1183 feet. So they are only four feet apart?

Mr. Watkin responded that those are the static water levels based on wells screened in two different zones. The lower zone is deeper than the upper zone with a well screen in each zone. The water enters the screen and then seeks its own level within the well and that's what is measured. It's called the static water level. The well screen is actually deeper, but the water level rises to its own level and it is the water pressure that is being measured.

Mr. Holt asked if the water pressure in the lower zone is bringing the lower level water up to within five feet of the level in the upper zone.

Mr. Watkin indicated it was and added that measuring the levels in all the different wells is a way to determine the gradient. The goal is to figure out how groundwater flows in the lower zone because the zones are geologically separated.

Mr. Holt stated it was thought that there was a non-permeable layer between the two. Mr. Smallbeck responded it is not totally non-permeable. Water does move in between the layers but it is a definite separation from a hydrogeologic and pressure perspective.

Mr. Watkin stated that the well screens are at different depths. There are several wells in the upper zone and several in the lower zone. The wells are separate so it can be determined out how water is moving between the two different zones. By taking measurements in all the wells in the upper zone it can be determined where the water rises from those well screens, and the direction and how fast the water is flowing.

Mr. Holt stated the numbers are not really the level of the upper and lower zone. They are the result of pressure in those zones inside the wells. Mr. Watkin responded they are the level that the water equilibrates at from each of those zones. It's not a measurement of the actual water in the zone; it's a measurement of how the water behaves in the zone.

Mr. Holt stated one concern about the mixing of the upper and lower zones is it seems like the upper zone is where the contamination is. Mr. Smallbeck responded it is actually the opposite; most of the contamination is in the lower zone. Mr. Wessner referenced slide 30 as an example of the one well that has groundwater contamination above action levels in the upper zone. Mr. Wessner referenced slide 31 as an example of multiple wells where groundwater contamination is above action levels in the lower zone.

Mr. Pessin asked why the ST012 SVE unit had 99.5% operational uptime when ST035 system operated at 91.7%. Mr. Smallbeck responded that ST012 is a much bigger system and it was able to operate during a period when there was cold weather and rain that caused the system to shut down ST035. (Post-meeting note: The ST035 system also had a planned shutdown during installation of a groundwater remediation well in the source area.)

Mr. Fesko asked if the RAB members would be notified of the location and time of the Proposed Plan Public meeting. The RAB members will receive a fact sheet notifying them of the Proposed Plan location and time.

FT002 Former Fire Training Area No. 2

Mr. Wessner stated soil contamination is the problem at this site and the COCs are benzene, chloroform, and 1,4-dichlorobenzene. There is no evidence that the site has impacted groundwater. A ROD was put in place in 1996. It had a bioventing remedy for the soil but the soil cleanup goals were not achieved with that remedy and the system was shut down. There is currently a Declaration of Environmental Use Restriction (DEUR) to prohibit residential use on the site because the goals were not met. The DEUR also requires applicable soil management procedures for excavations below 5 feet.

On November 28, 2012, AMEC completed a Soil and Soil Vapor Sampling Work Plan with regulatory concurrence for sampling to determine if contaminant levels had decreased to the ROD cleanup goals over the past 15 years.

A soil gas survey was performed December 4, 2012 and 10 soil gas samples were collected at the former Eastern Burn Pit. A soil investigation was performed January 7-18, 2013. During the investigation, 11 soil borings were drilled and sampled to 100 feet bgs at the former burn pits. ADEQ also collected samples to verify results and to evaluate the site for additional contaminants. Data will be evaluated and if ROD cleanup goals are achieved, then a closure report for unrestricted closure of the site will be prepared for regulatory review in April 2013.

Questions asked during FT002 presentation:

There were none.

SS017, Former Pesticide/Paint Shop

Mr. Wessner provided background and a status update for SS017. SS017 is the old pesticide/paint shop and the chemical of concern is dieldrin in both the soil and groundwater. There was a removal action in 2000 when soil contaminated with dieldrin was excavated. AMEC continues to monitor the groundwater to evaluate the presence of dieldrin. There are levels of dieldrin in some wells that intermittently exceed screening levels but there is no regulatory standard for dieldrin. The annual sampling is done in August. The Draft OU-6 ROD was completed in March 2012. The Air Force is preparing an updated risk evaluation for regulatory review.

Questions asked during SS017 presentation:

There were none.

LF004, Former Solid Waste Landfill

Mr. Wessner said that the OU-1 ROD dealt with soil contaminants at LF004, including dieldrin and beryllium in surface soil, and the remedy, a permeable cap, was successfully implemented. The groundwater has started to rise and as a result, groundwater impacts are being seen. There are ongoing semiannual groundwater sampling events. The COCs for groundwater and subsurface soil are perchloroethylene (PCE) and trichloroethylene (TCE). The impacts to groundwater are bounded by the groundwater monitoring network and a solution is being evaluated in the LF004 Focused Feasibility Study.

The semi-annual groundwater sampling event was conducted at 54 wells in November 2012 and the report will be submitted in early 2013. TCE and PCE plumes are stable and adequately defined. Groundwater results indicate historically decreasing concentrations of TCE and PCE in hot spot areas; however, PCE in LF01-W19 increased in the November 2012 event. The next groundwater sampling event will be May 2013.

The Draft Final Focused Feasibility Study is under regulatory review and a Proposed Plan public meeting is planned for May 18, 2013. A Record of Decision is planned for summer 2013, Remedial Design by fall 2013, and remedy construction in 2014. Semi-annual groundwater monitoring will take place in May 2013 and landfill maintenance is ongoing.

Questions asked during LF004 presentation:

Mr. Bouchie asked if the PCE and TCE concentrations shown are from the upper or middle zones or are just the highest number. Mr. Wessner responded that the figures are shown by zone and the highest concentrations wells (17 and 19) for PCE and TCE at the site are in the middle zone.

Contracting Update

Ms. Jerrard provided an update on contracting issues. The Army Corps of Engineers in Huntsville, Alabama is scheduled to award the contract for Munitions Response Site XU403 (located in Parcel N

Debris Area) in February 2013. Once the contractor is chosen there will be more information on what the schedule is. The anticipated schedule is that all of the work plans will be submitted in the March to June timeframe.

There will be several different work plans submitted. One will be for the munitions removal, another one will be for some chemical sampling. There will also be an archeological work plan to handle the archeological areas of the site and there will be a special chemicals safety submission that has to go through several organizations for approval. Field work is anticipated to start in July 2013 and take two months to complete. It will include munitions removal, environmental sampling and debris removal. Following the completion of the field work there will be several different completion reports: one pertaining to environmental results and one pertaining to munitions results. The chemical safety submission also has to be closed out. In addition, 34 acres of the site were previously cleared for munitions. A No Further Action document for those 34 acres must be prepared as well.

Questions asked during Contracting update:

There were none.

Meeting Wrap-up

That concluded the information portion of the evening. There were no action items identified as a result of the meeting. Agenda items for the May 2013 RAB included:

- One item proposed is to have the munitions response contractor and the Corps of Engineers attend the next meeting to present the project.
- It was also suggested that the LF004 Proposed Plan public meeting be held at the May 14 RAB meeting. An abbreviated RAB meeting would be held to discuss the sites that have the most activity. Followed by an update from the Corps of Engineers and the LF004 Proposed Plan public meeting. Mr. Fesko stated that it would be nice to get at least a quick update on each of the sites. Ms. Jerrard agreed.

The next meeting on the schedule is a Proposed Plan public meeting for ST012 which will be held tentatively on April 18, 2013.

Mr. Fuchs adjourned the meeting at 8:15 p.m.

The next Williams RAB meeting is scheduled for Tuesday, May 14, 2013 at 7:15 p.m. at the Arizona State University Polytechnic Campus.

Attachments:

February 19, 2013 RAB meeting slide presentation

Date: 14 May, 2013

Please sign in. If your information has changed since you last attended, please place an asterisk (*) next to your name.

	NAME/ORGANIZATION	ADDRESS	PHONE	E-MAIL
1.	Bob Shank			
2.	Stuart Pearson			
3.	Paul d'Almeida			
4.	BRUCE MABEY			
5.	Don Smallback			
6.	GORM HERON			
7.	Ellen Carroll			
8.	EMILY CORKERY			
9.	GEOFF WATKIN			
10.	CATHY JERRARD			
11.	Steve Willis			
12.				
13.				
14.				
15.				

Headquarters U.S. Air Force

Integrity - Service - Excellence

Former Williams AFB Restoration Advisory Board (RAB)

February 19, 2013

Arizona State Polytechnic Campus
Peralta Hall Room 132
7171 E. Sonoran Arroyo Mall Rd.
Mesa, AZ

Headquarters U.S. Air Force

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Welcome & Introductions

Presented by:
Mr. Len Fuchs / Ms. Catherine Jerrard,
RAB Community Co-Chairs
and Scott Johnston

Welcome & Introductions

- Mr. Len Fuchs, RAB Community Co-Chair
- Ms. Catherine Jerrard, Air Force Civil Engineer Center (AFCEC), PM/BEC and RAB Co-Chair
- Ms. Carolyn d'Almeida, Project Manager, U.S. Environmental Protection Agency (EPA), Region 9
- Mr. Donald Atkinson, Project Manager, Arizona Department of Environmental Quality (ADEQ)

Agenda

Time	Topic	Presenter
7:15 PM	**RAB Meeting Convenes** • Welcome and introductions • Community co-chair remarks • Review Nov 2012 meeting minutes and action items	**Mr. Len Fuchs** **Ms. Catherine Jerrard** **Mr. Scott Johnston**
7:30-8:30 PM	**Program Updates** **ST035 Update** • Nov 2012 Groundwater (GW) results • Oct-Dec 2012 Soil Vapor Extraction (SVE) Performance Results • Path Forward **ST012 Status Update** • Nov 2012 GW Results • Oct-Dec 2012 SVE Performance Results • GW Containment Study Results • ST012 FFS, Proposed Plan and Preferred Alternative • Path Forward	**Ms. Catherine Jerrard** **Mr. Everett Wessner**

Agenda Continued

Time	Topic	Presenter
7:30-8:30 PM	**Program Updates *continued***	**Mr. Everett Wessner**

FT002 Status Update
- Summary of Field Activities (Dec 12- Jan 13)
- Path Forward

SS017 Status Update
- OU6 Record of Decision (ROD) status
- Path Forward

LF004 Status
- Nov 2012 GW results
- FFS Remedial Alternatives
- Path Forward

8:30 PM	**Meeting wrap-up**	**Ms. Catherine Jerrard**

- Other Active Projects
- Review action items for next meeting
- Call for agenda items for next meeting
- Propose next RAB meeting – May 14, 2013

9:00 PM	**Adjourn**	**Mr. Len Fuchs**

Headquarters U.S. Air Force

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Program Updates

Sites ST035, ST012, FT002, SS017, and LF004

Presented by:
Ms. Catherine Jerrard, AFCEC
Mr. Everett Wessner, AMEC

Headquarters U.S. Air Force

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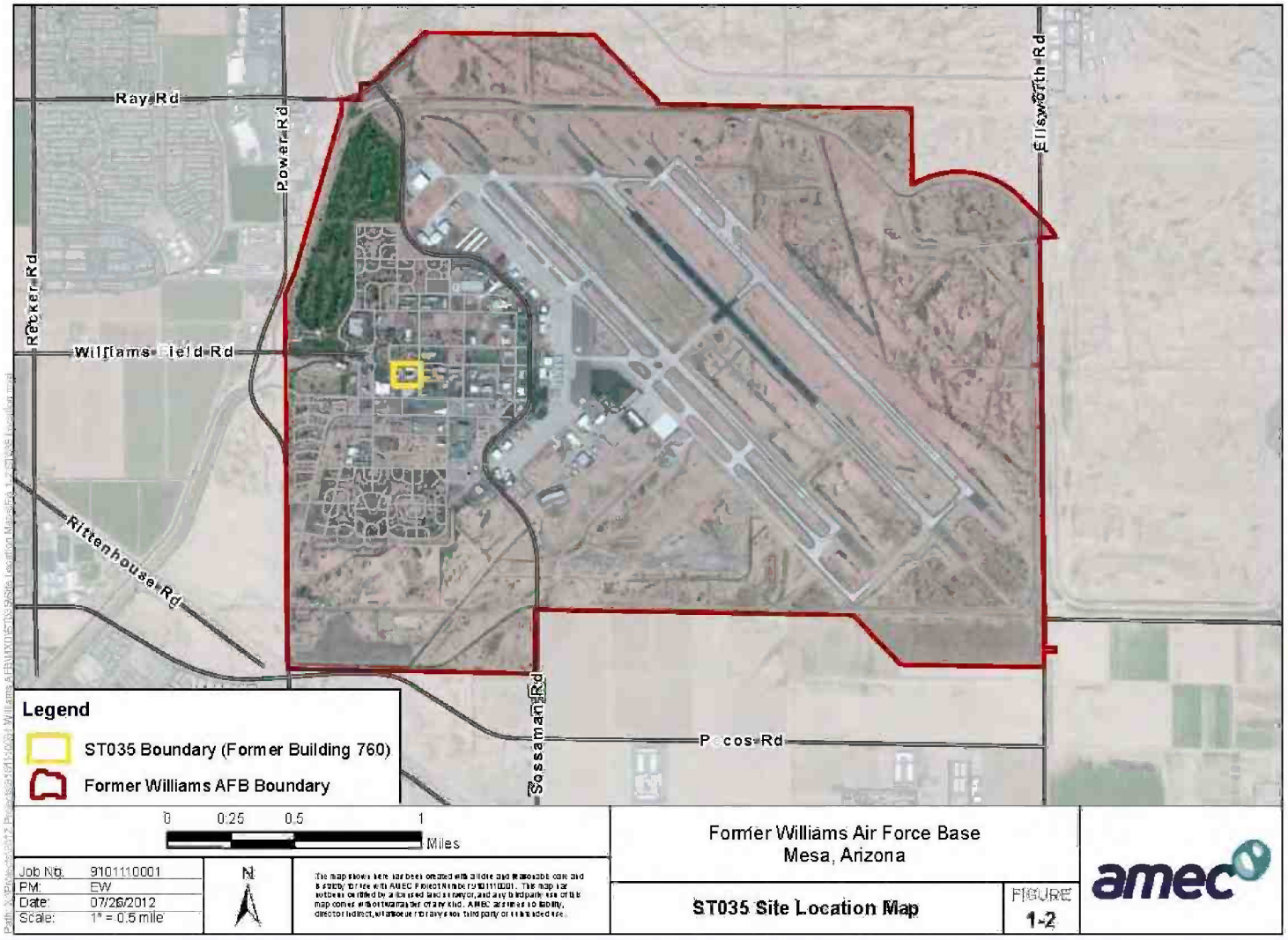
Site ST035, Former Building 760 USTs

Site ST035 Location Map



Site ST035 Site Background

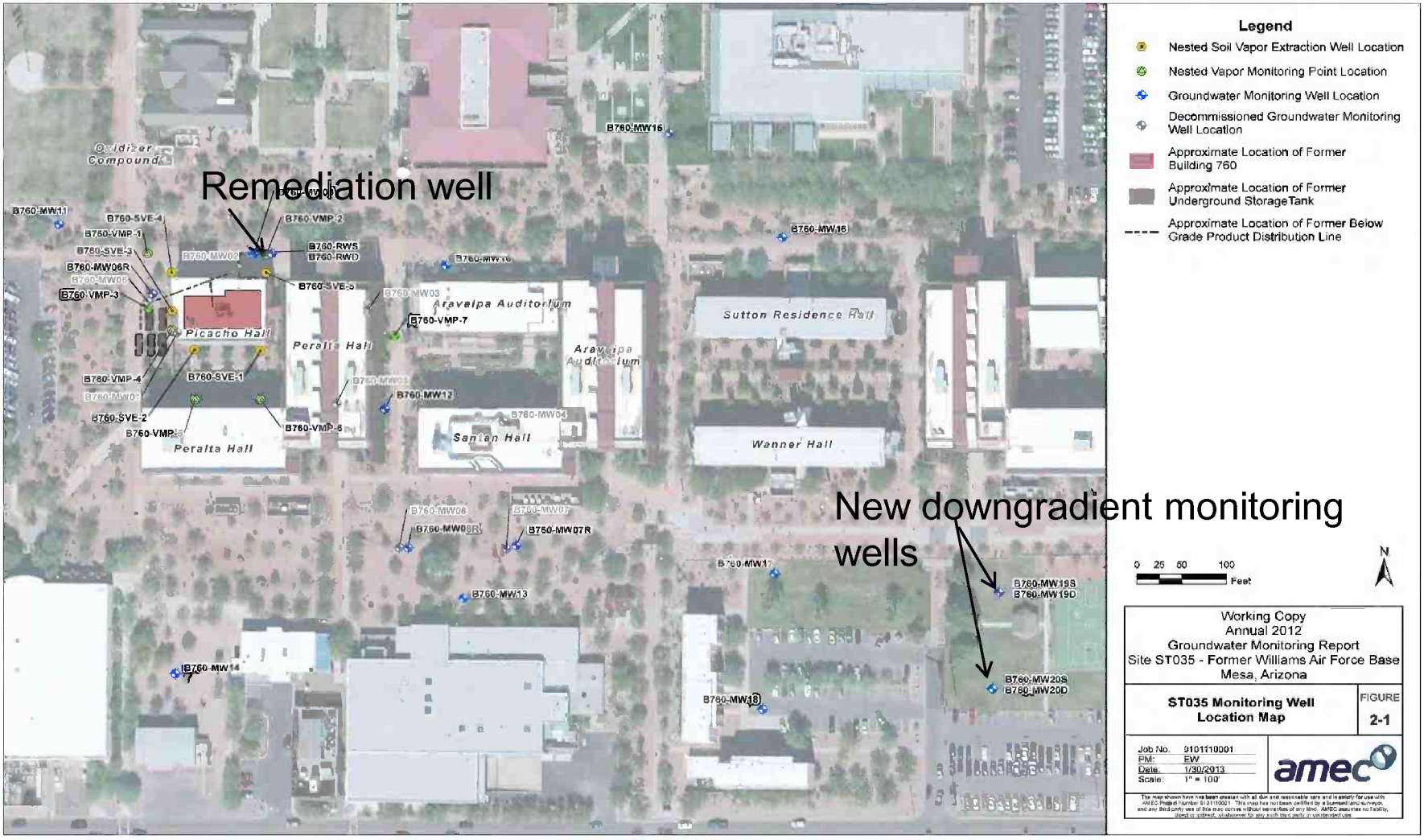
- Building 760 gas station and oil/water separator
  - Gas dispensing until 1986
  - Tank and dispensing equipment removed in 1993-1994
  - Oil/water separator removed in 1996
- Vadose zone soil chemicals of concern (COCs)
  - Benzene
- Groundwater COCs
  - Benzene, toluene, ethylbenzene, xylenes (BTEX)
  - 1,2-Dibromoethane (EDB)
  - Methyl tertiary butyl ether (MTBE)
  - 1,2-Dichloroethane (DCA)
- Soil Vapor Extraction (SVE) system to treat COCs in vadose zone soil in operation
- Site cleanup regulated by ADEQ under Leaking Underground Storage Tank (LUST) regulation (R18-12-263)
- Ongoing quarterly groundwater monitoring

Site ST035 Groundwater Monitoring Update Oct-Nov 2012 New Well Installation

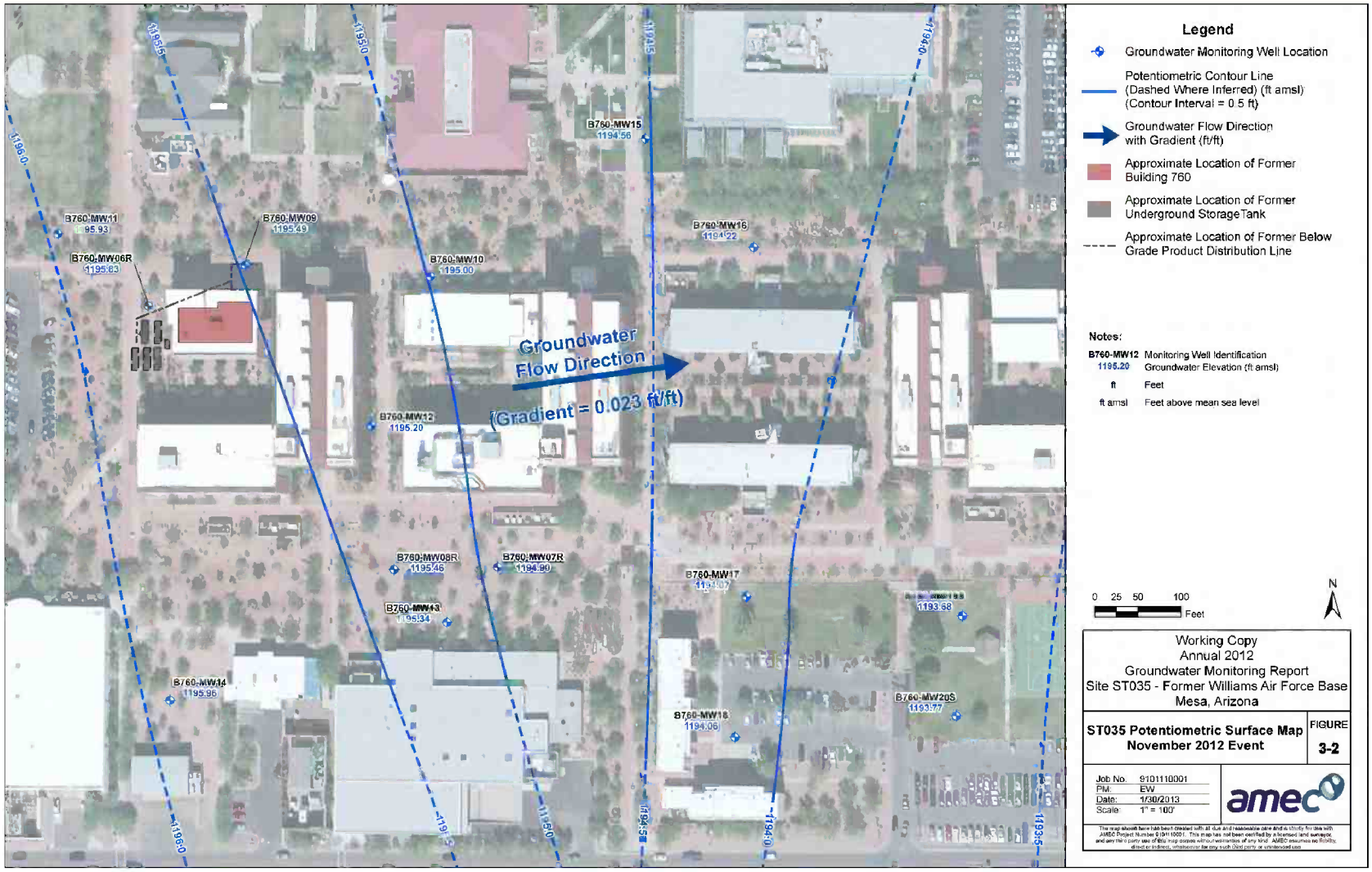
- 1 new remediation well (RW1) installed near former source area
  - 2 discreet screen intervals to monitor and/or remediate the Cobble Zone (CZ) and Upper Water Bearing Zone (UWBZ)

- 4 new monitoring wells (MW19S, MW19D, MW20S, and MW20D)
  - installed downgradient of wells MW17 and MW18 for further plume definition
  - 2 discreet screen intervals per well to monitor downgradient COC concentrations in the CZ and UWBZ
  - Sampled during Nov 2012 Quarterly Event

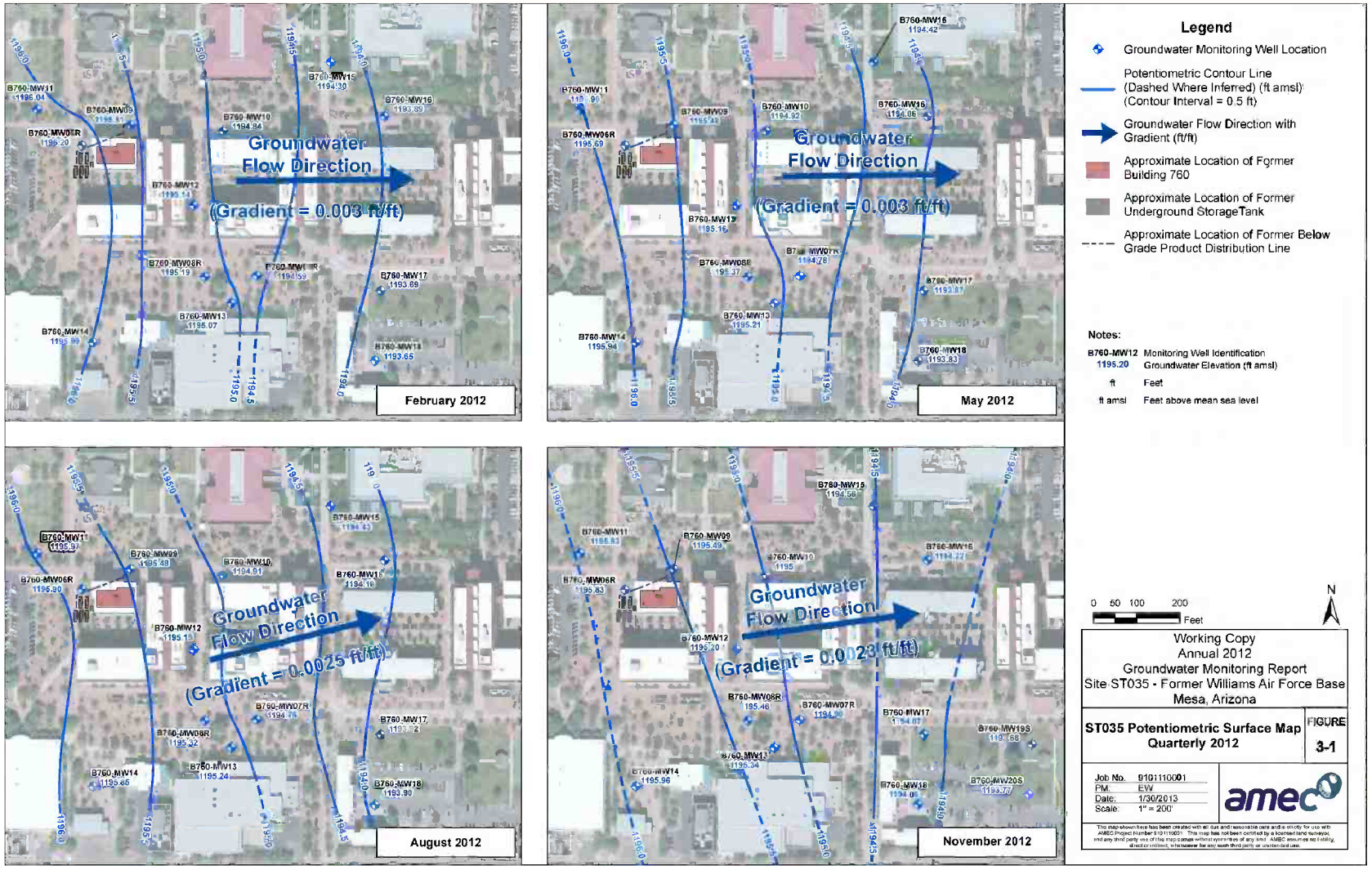
Site ST035 Groundwater Monitoring Update
Oct-Nov 2012 New Well Installation



Site ST035 Groundwater Monitoring Update
Nov 2012 Flow Direction



Site ST035 Groundwater Monitoring Update
2012 Quarterly Flow Directions



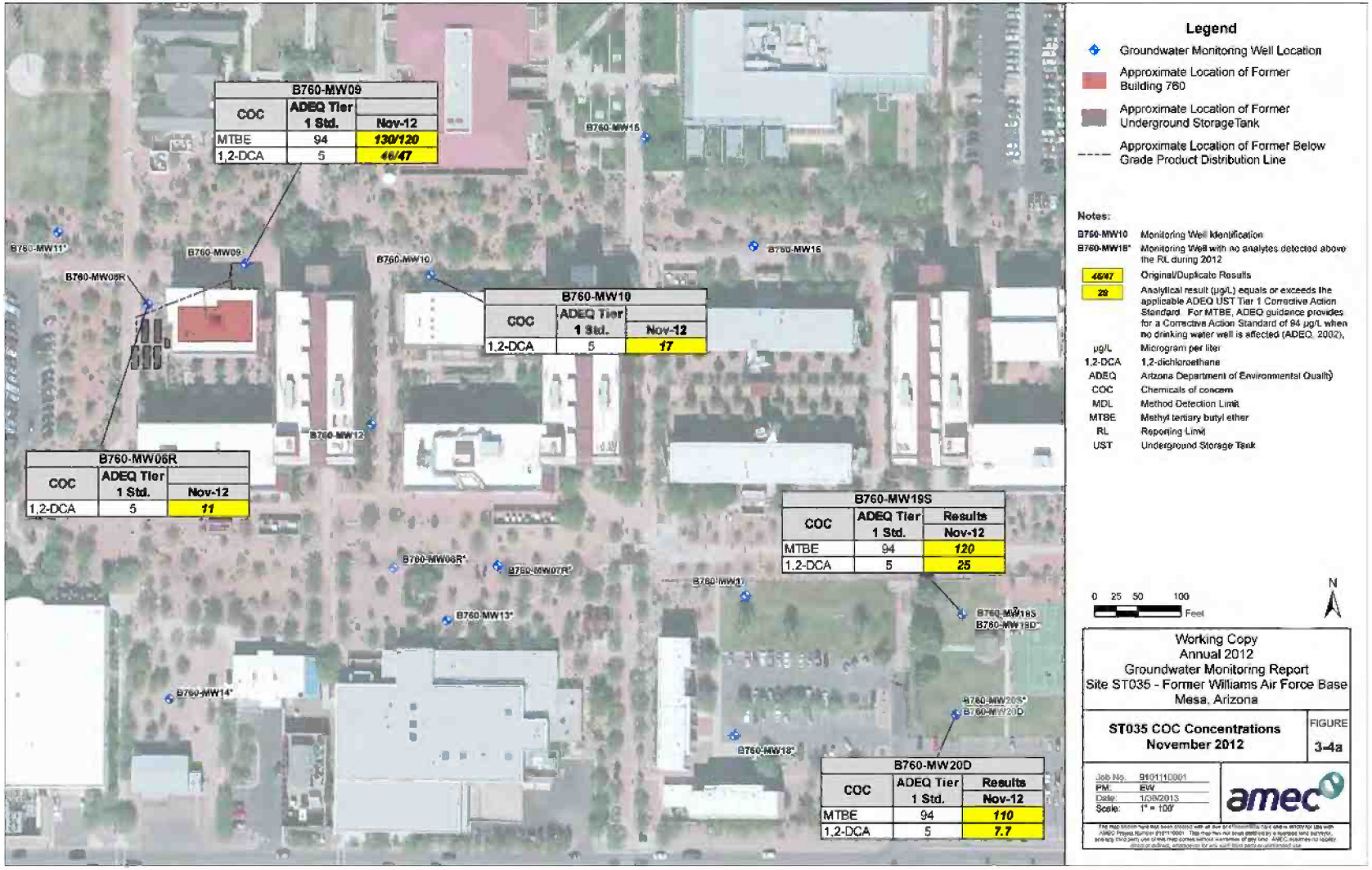
Site ST035 Groundwater Monitoring Update Nov 2012 Sampling Event

- 17 wells sampled (4 new monitoring wells included)
- Groundwater flowing west to east
- Benzene detected in 7 wells (8 wells in Aug 2012):
  - Tier 1 Standard = 5 micrograms per liter (µg/L)
  - 7 wells < 5 µg/L (7 wells in Aug 2012)
  - 0 wells > 5 µg/L (0 wells in Aug 2012)
- 1,2-DCA detected in 7 wells (6 wells in Aug 2012)
  - Tier 1 Standard = 5 µg/L
  - 2 wells < 5 µg/L – (1 well in Aug 2012)
  - 5 wells > 5 µg/L – (5 wells in Aug 2012); includes MW19S and MW20D (new downgradient wells)

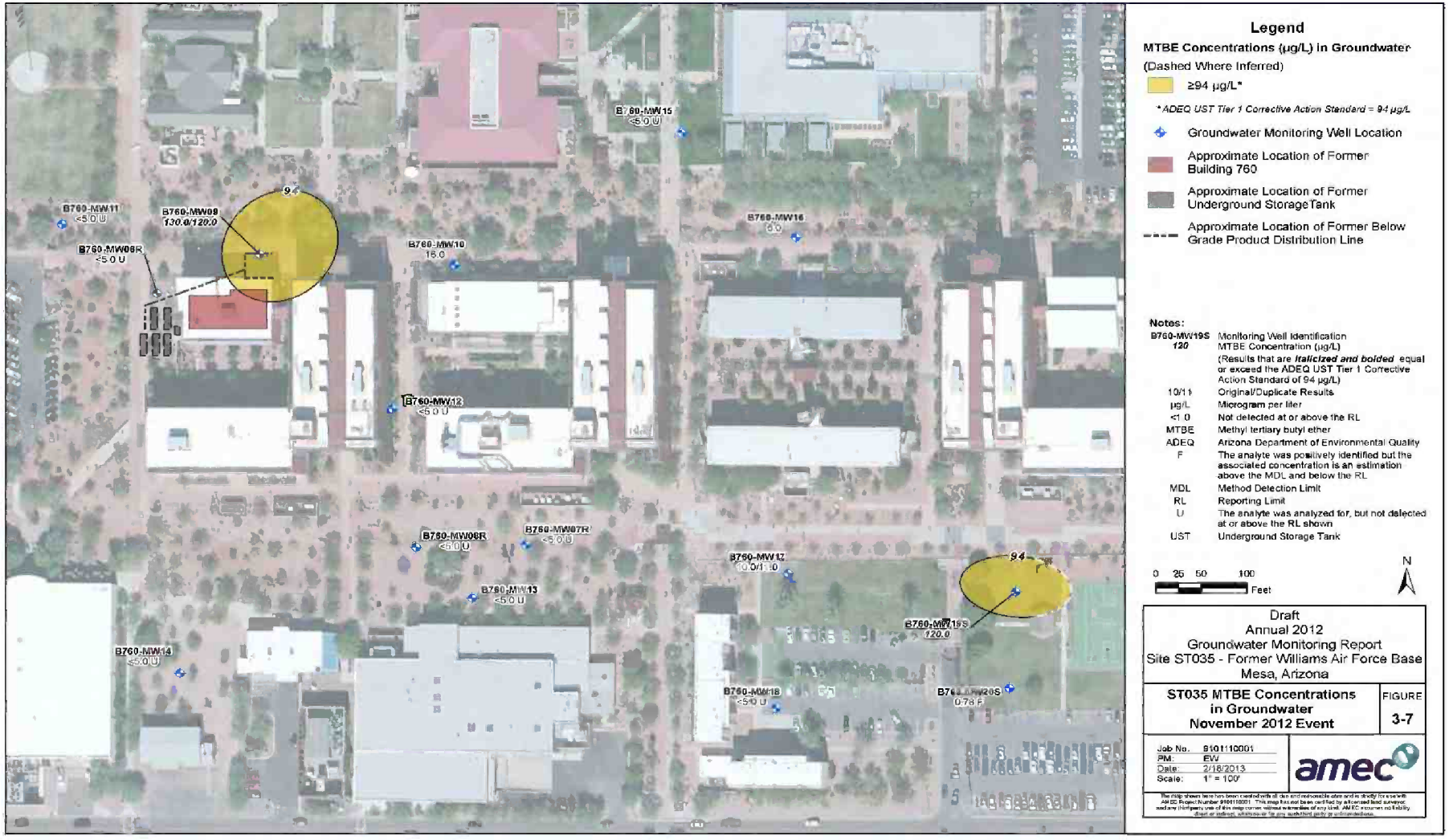
Site ST035 Groundwater Monitoring Update Nov 2012 Sampling Event

- MTBE detected in 7 wells (3 wells in Aug 2012)
  - Tier 1 Standard = 94 µg/L
  - 4 wells < 94 µg/L – (3 wells in Aug 2012)
  - 3 wells > 94 µg/L – (0 wells in Aug 2012)
    - MW09 (existing well next to new RW1)
    - MW19S and MW20D (new downgradient wells)

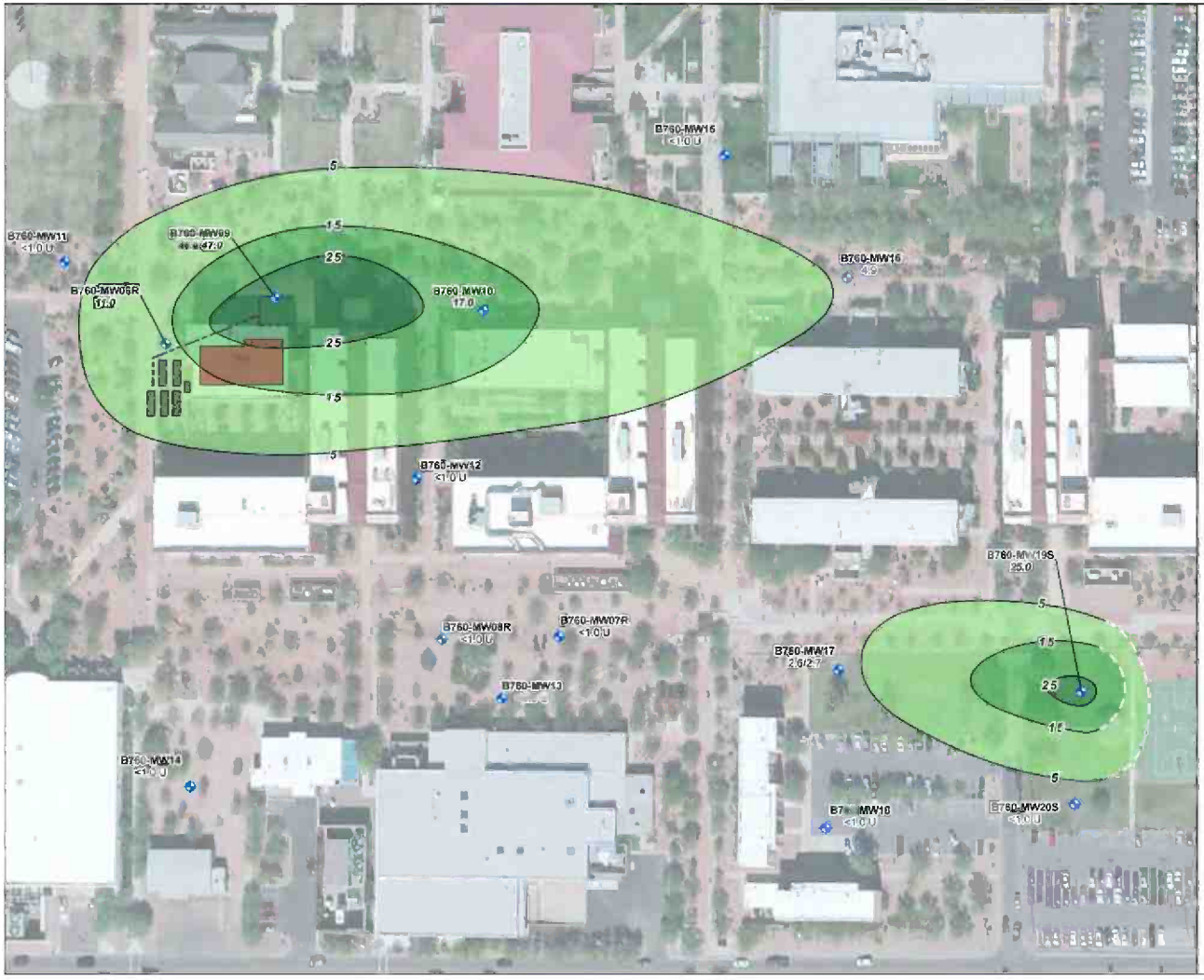
Site ST035 Groundwater Monitoring Update
Nov 2012 Results > Tier 1 Standards



Site ST035 Groundwater Monitoring Update
Nov 2012 MTBE Isoconcentration Map



Site ST035 Groundwater Monitoring Update
Nov 2012 1,2-DCA Isoconcentration Map



Legend

1,2-DCA Concentrations (µg/L) in Groundwater
(Dashed Where Inferred)

5-14 | 15-24 | ≥ 25

*ADEQ UST Tier 1 Corrective Action Standard = 5 µg/L

- Groundwater Monitoring Well Location
- Approximate Location of Former Building 760
- Approximate Location of Former Underground Storage Tank
- Approximate Location of Former Below Grade Product Distribution Line

Notes:

B760-MW10	Monitoring Well Identification
17	1,2-DCA Concentration (µg/L) (Results that are *italicized and bolded* equal or exceed the ADEQ UST Tier 1 Corrective Action Standard of 5 µg/L)
2.6/2.7	Original/Duplicate Results
µg/L	Microgram per liter
<1.0	Not detected at or above the RL
1,2-DCA	1,2-Dichloroethane
ADEQ	Arizona Department of Environmental Quality
F	The analyte was positively identified but the associated concentration is an estimation above the MDL and below the RL
M	The analyte was positively identified; estimated due to matrix effect
MDL	Method Detection Limit
RL	Reporting Limit
U	The analyte was analyzed for, but not detected at or above the RL shown
UST	Underground Storage Tank

0 25 50 100 Feet

N

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Site ST035 - Former Williams Air Force Base
Mesa, Arizona

ST035 1,2-DCA Concentrations in Groundwater November 2012 Event | FIGURE 3-6

Job No. 9101110001
PM: EW
Date: 2/4/2013
Scale: 1" = 100'

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Site ST035
2012 Annual Groundwater Summary

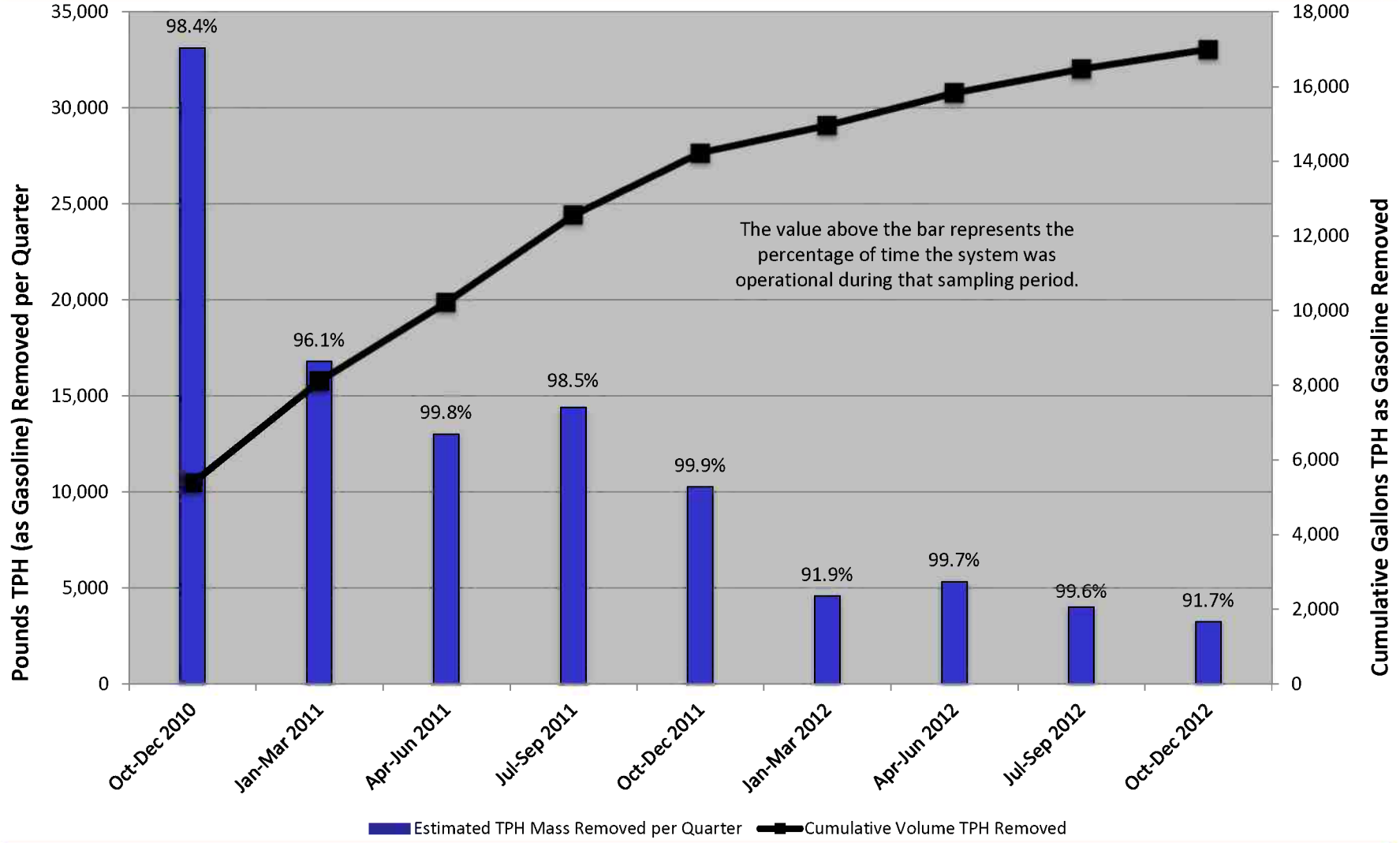
- Concentrations of benzene in the source area have significantly decreased since SVE startup in 2010
- Toluene, Xylenes, MTBE, and EDB were below the Tier 1 Standards, except for the Nov 2012 MTBE results at MW09 (next to new RW1) and MW19S & MW20D (new downgradient wells)
- Concentrations of MTBE and 1,2-DCA have increased at the former source area and immediately downgradient
- 1,2-DCA and MTBE were detected above the Tier 1 Standard at new downgradient wells MW19S and MW19D, respectively
- Ongoing quarterly groundwater sampling – Next event Feb 2013

Site ST035 SVE System Update

Oct - Dec 2012

- 91.7% operational uptime
- Total Petroleum Hydrocarbons (TPH) removed – 3,231 pounds or 524 gallons
  (646 gallons removed from July-Sept 2012)
- 11 of 15 SVE wells operating (same as July-Sept 2012)

Site ST035 SVE System Performance



Site ST035 SVE System Summary

- Average mass removal of TPH is declining as expected
- 17,000 gallons of TPH removed to date
- SVE system continues operation within permit emission requirements
- Decreased operational time due to weather related shutdowns
- Next performance sampling Feb 2013

Site ST035 Path Forward

- Complete groundwater characterization and perform remediation as needed
- Continue SVE operation
- Ongoing quarterly groundwater sampling – Next event Feb 2013
- Updated site strategy to be developed after February 2013 groundwater sampling event
- Achieve site closure under LUST regulation (R18-12-263.04)

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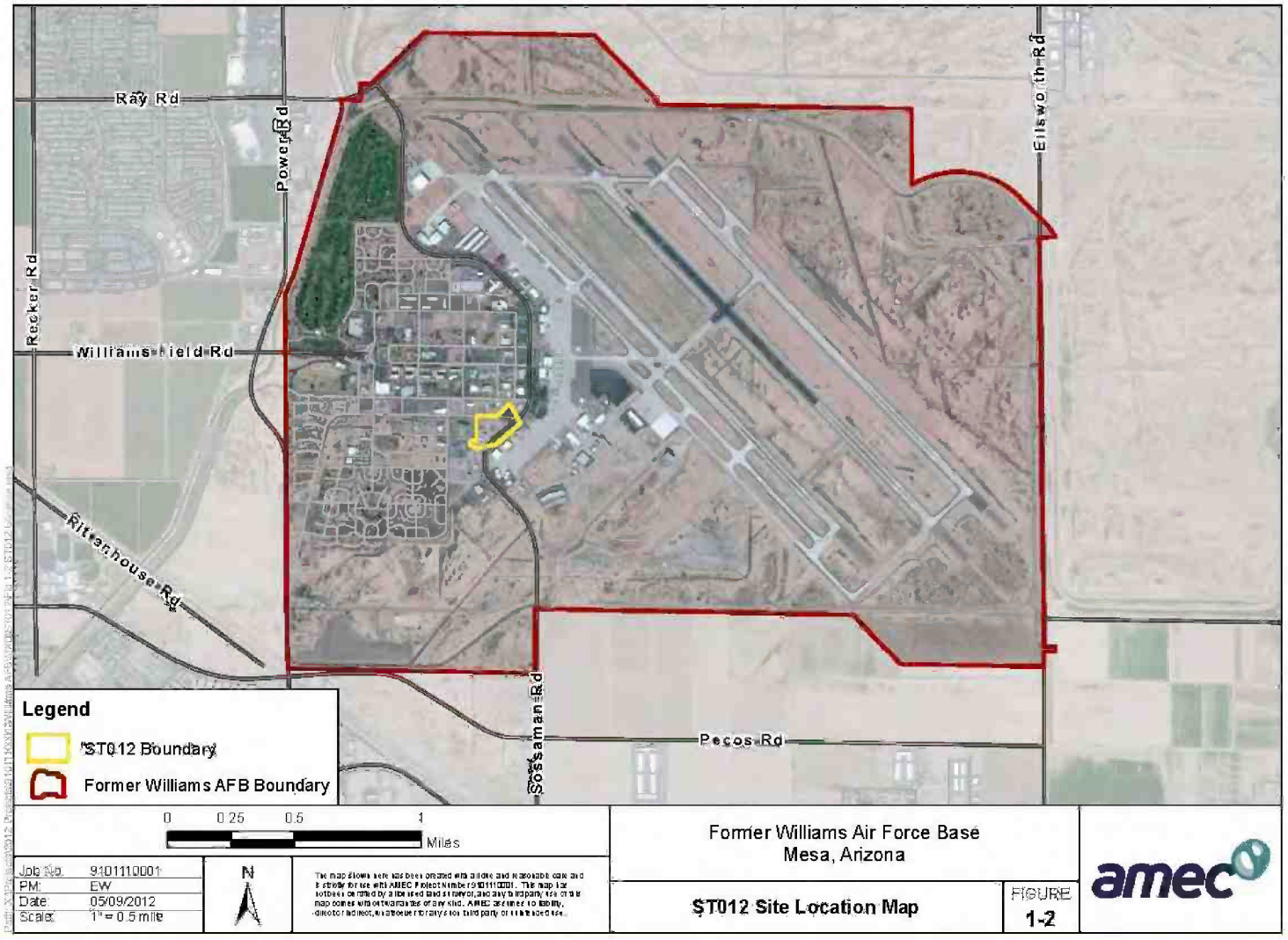
Site ST012, Former Liquid Fuels Storage Area

Site ST012 Location Map



Site ST012 Site Background

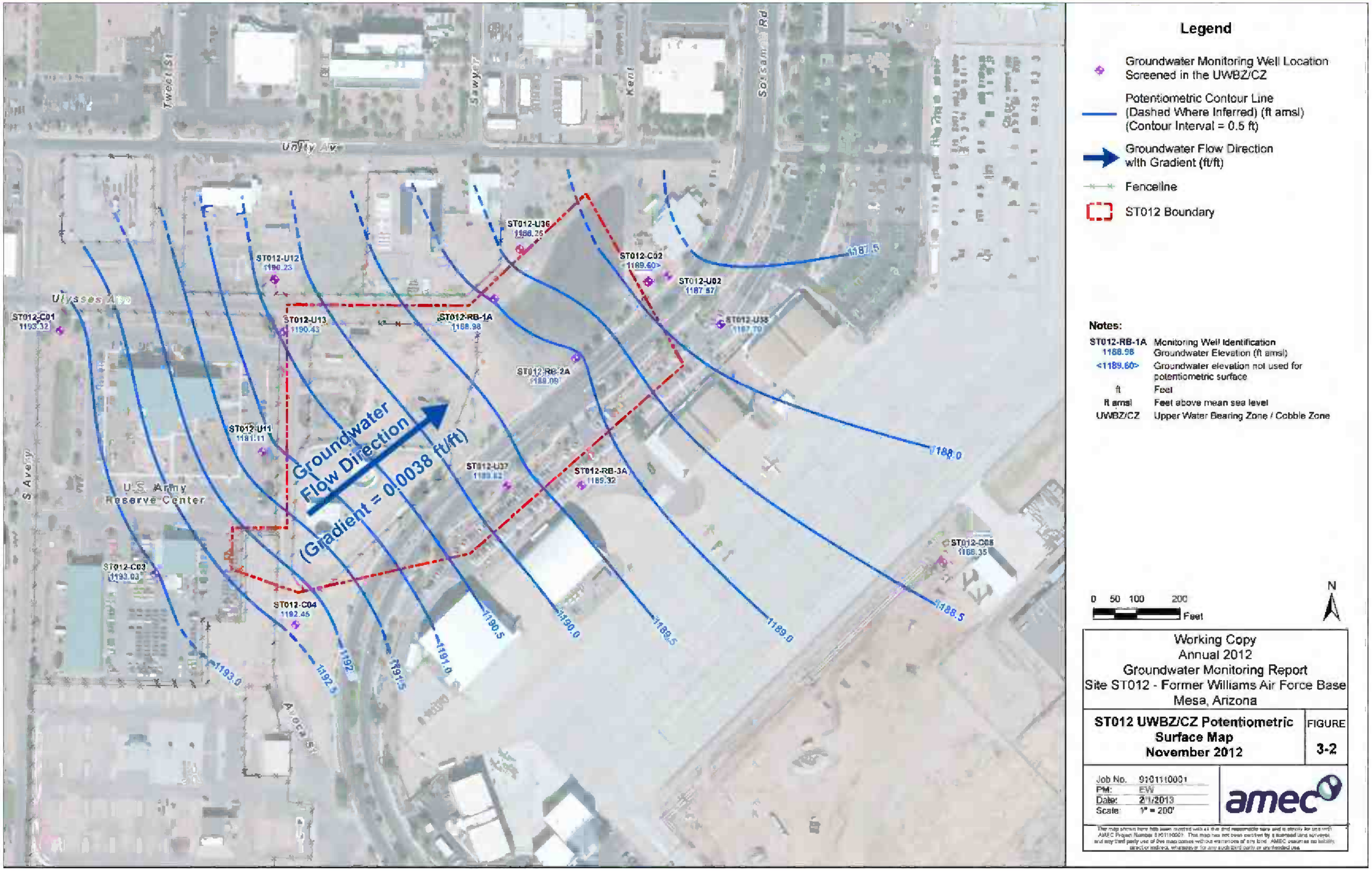
- Former liquid fuels storage operation
- 19 underground storage tanks (USTs) and piping removed in 1990
- COCs in soil and groundwater are TPH and benzene
- Shallow soil (< 25 feet deep) cleanup achieved (1996): OU-2 ROD 1992
- Deep vadose zone soil (> 25 feet deep) currently treated by SVE: OU-2 RODA 1996
- Water table (~143 to 155 feet below ground surface [bgs]) has risen ~67 feet since 1989
- OU-2 ROD groundwater pump and treat remedy ineffective-
  - Alternative remedies evaluated in a Focused Feasibility Study (FFS), Nov 2012
- Ongoing annual groundwater monitoring (Nov)

Site ST012 Groundwater COCs

COC	OU-2 ROD Action Level (µg/L)
Volatile Organic Compounds (VOCs)	
Benzene	5
1,2-DCA	5
Ethylbenzene	700
Methylene Chloride	5
Naphthalene	28
PCE	5
Toluene	1,000
TCFME	2,100
Total Xylenes	10,000
Semi-volatile Organic Compounds (SVOCs)	
bis(2-Ethylhexyl)phthalate	6
2-Methylnaphthalene	NE
2-Methylphenol	870
4-Methylphenol	870
Phenol	4,200
Metals	
Antimony	6
Chromium (Total)	100
Copper	1,300
Lead	15
Nickel	100
Silver	50
Zinc	1,400

Site ST012 Groundwater Monitoring Update

Nov 2012 Flow Directions – Upper Water Bearing Zone/Cobble Zone (UWBZ/CZ)



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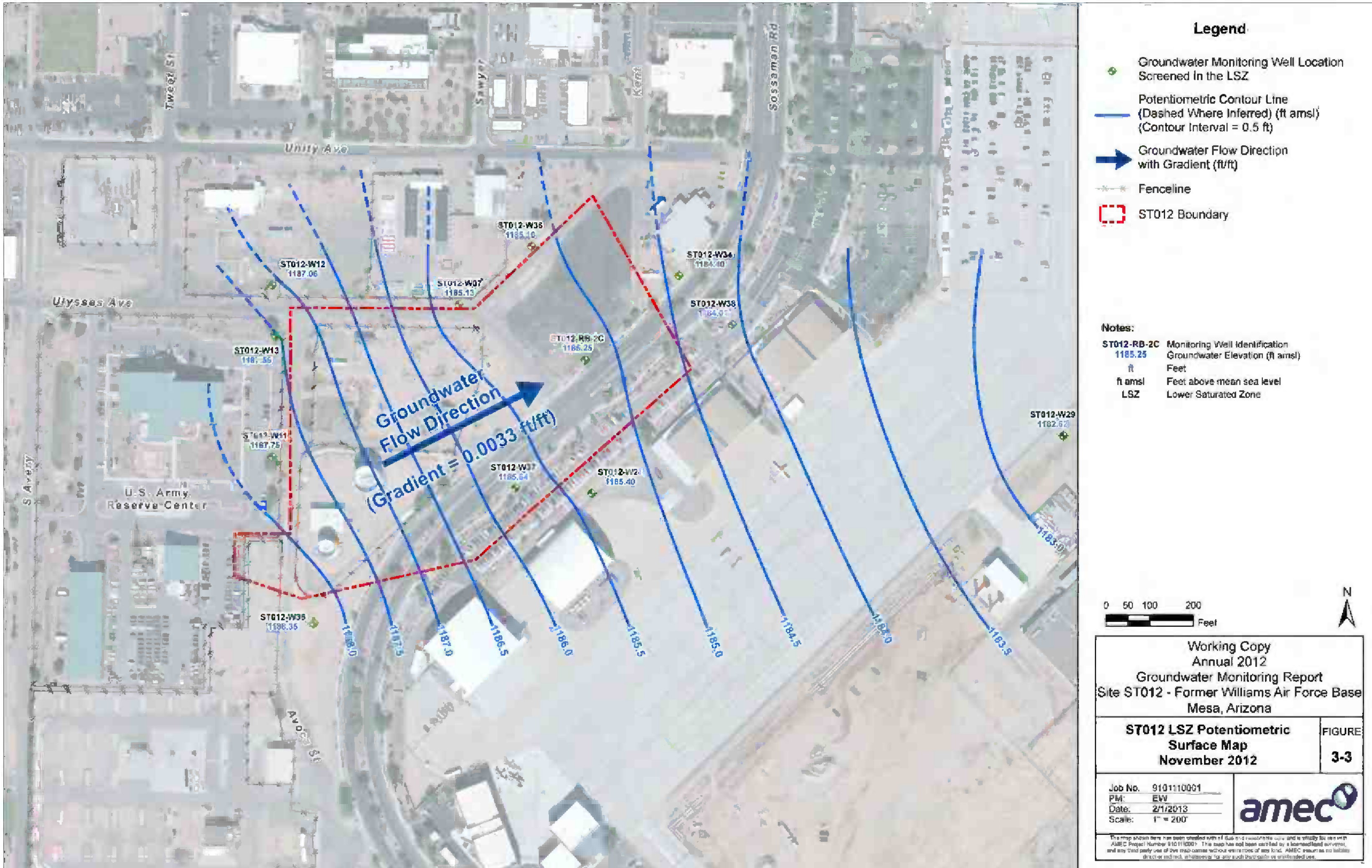
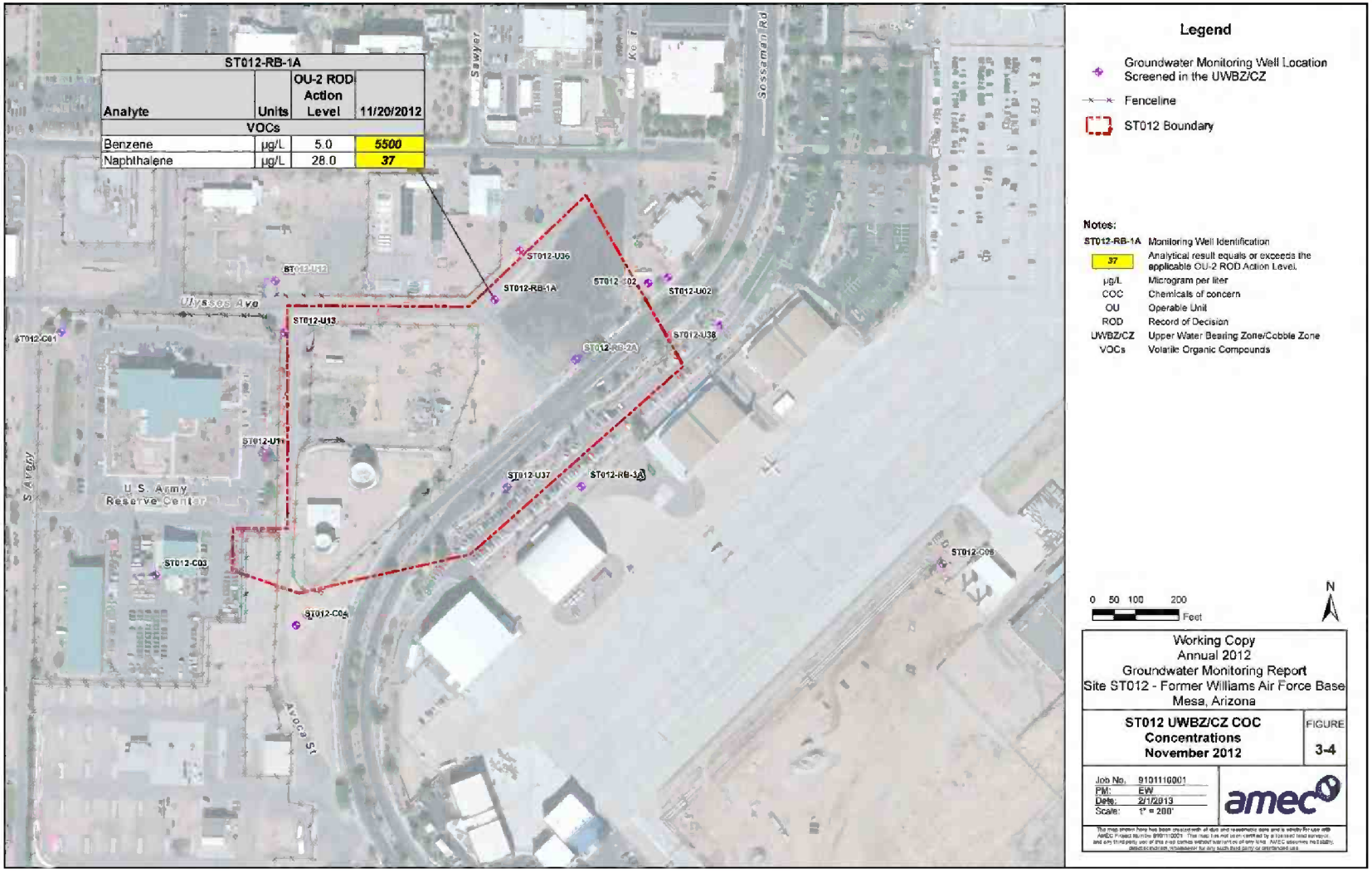
Site ST012 Groundwater Monitoring Update

Nov 2012 Flow Directions – Lower Saturated Zone (LSZ)



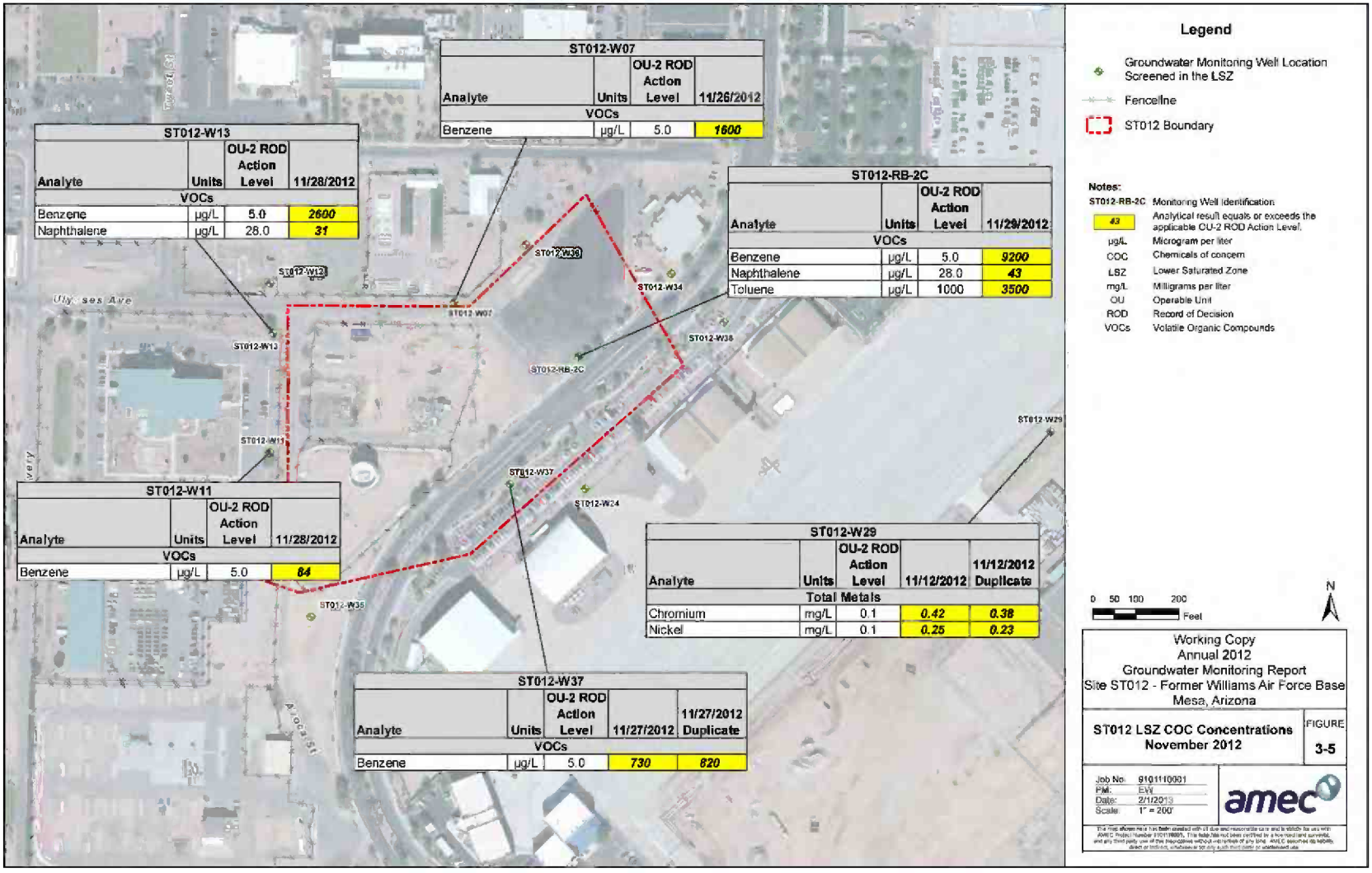
Site ST012 Groundwater Monitoring Update

Nov 2012 Results > Action Levels – UWBZ/CZ



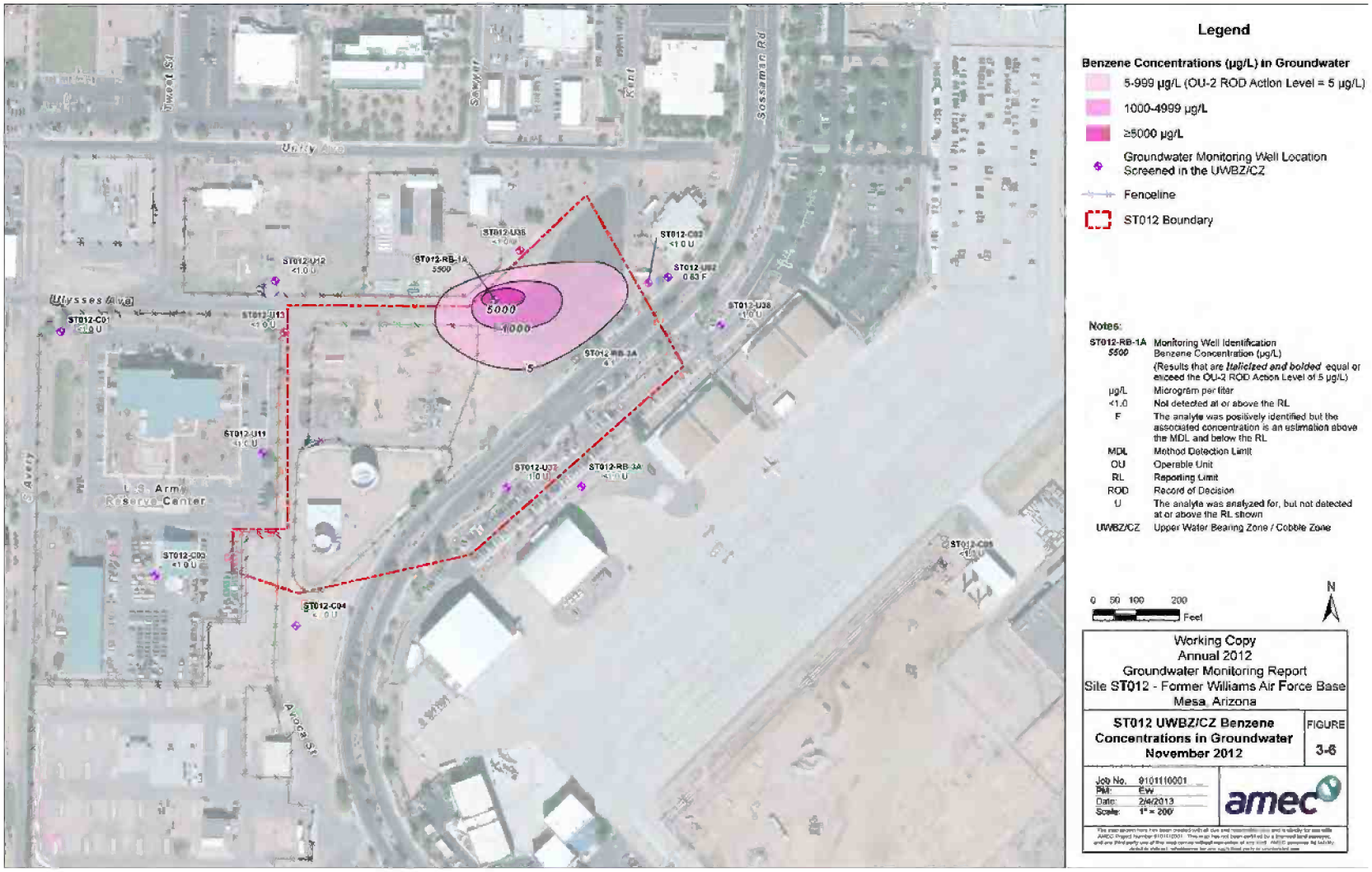
Site ST012 Groundwater Monitoring Update

Nov 2012 Results > Action Levels – LSZ



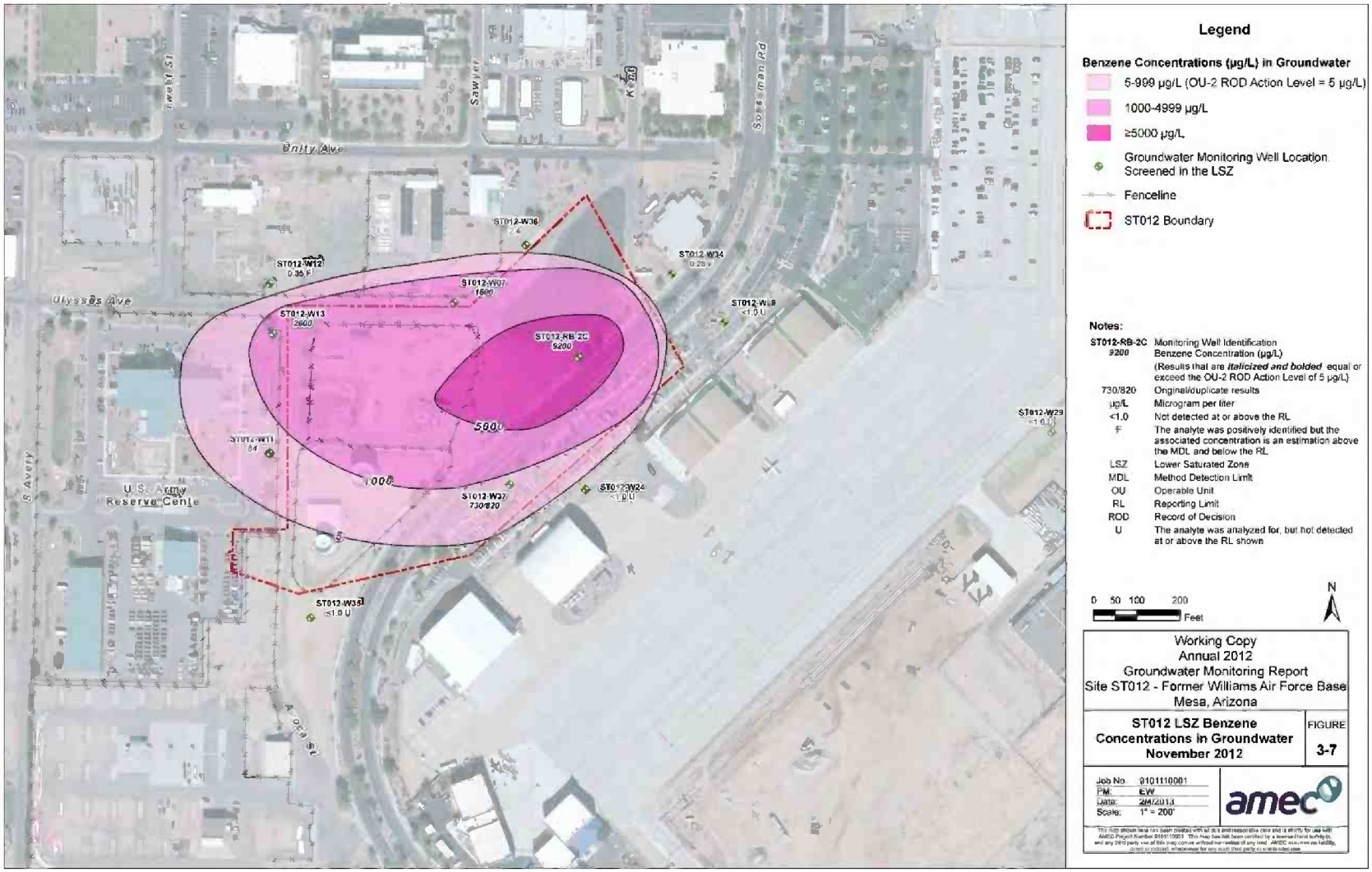
Site ST012 Groundwater Monitoring Update

Nov 2012 Benzene Results > Action Level – UWBZ/CZ



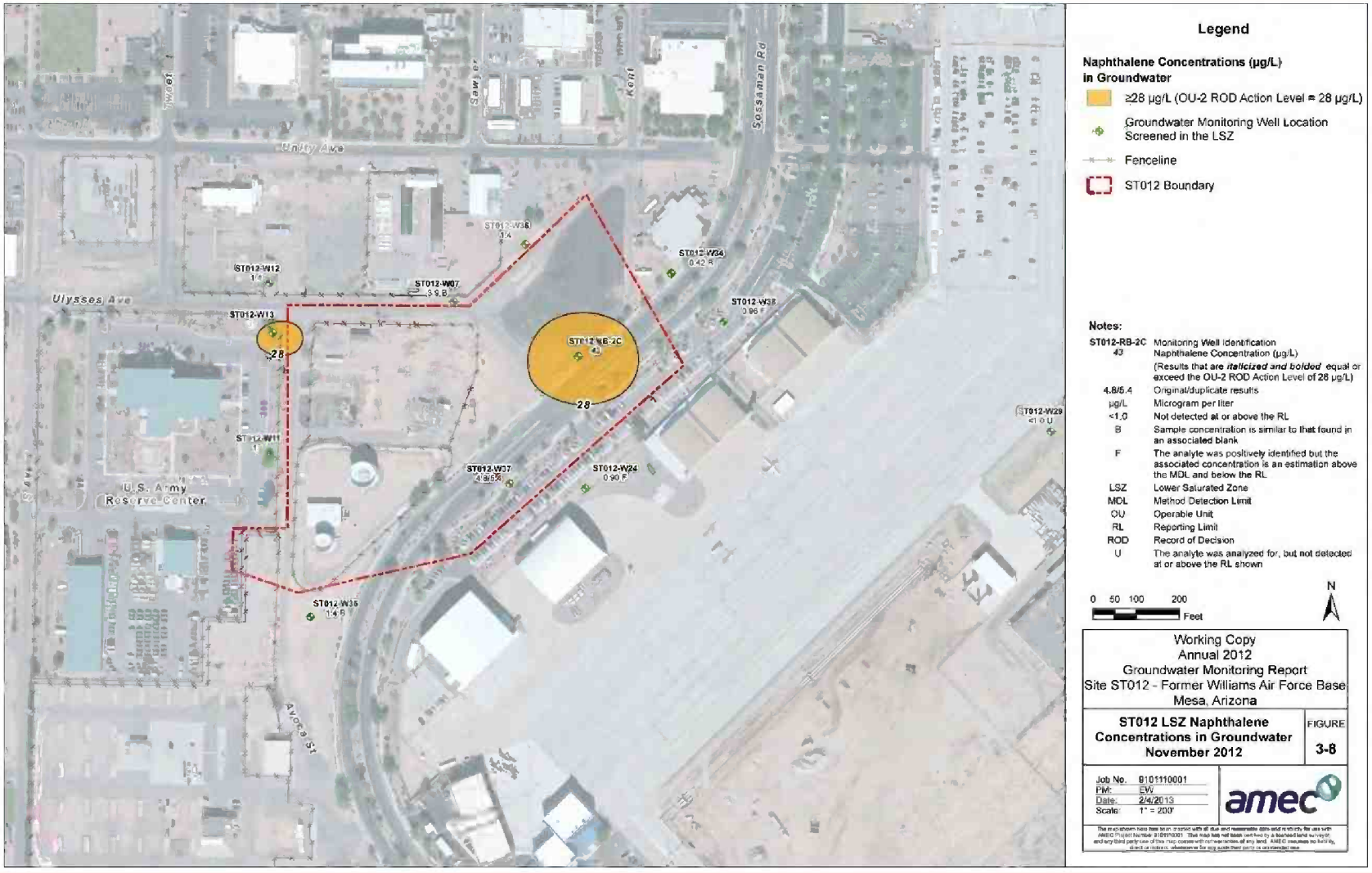
Site ST012 Groundwater Monitoring Update

Nov 2012 Benzene Results > Action Level – LSZ



Site ST012 Groundwater Monitoring Update

Nov 2012 Naphthalene Results > Action Level – LSZ



Site ST012 Groundwater Monitoring Update

Nov 2012 Sampling Event Summary

- 27 wells sampled
- Groundwater flows southwest to northeast
- All COC concentrations are similar to historical (2009-2011) data, latest results increased in UWBZ/CZ and decreased in LSZ

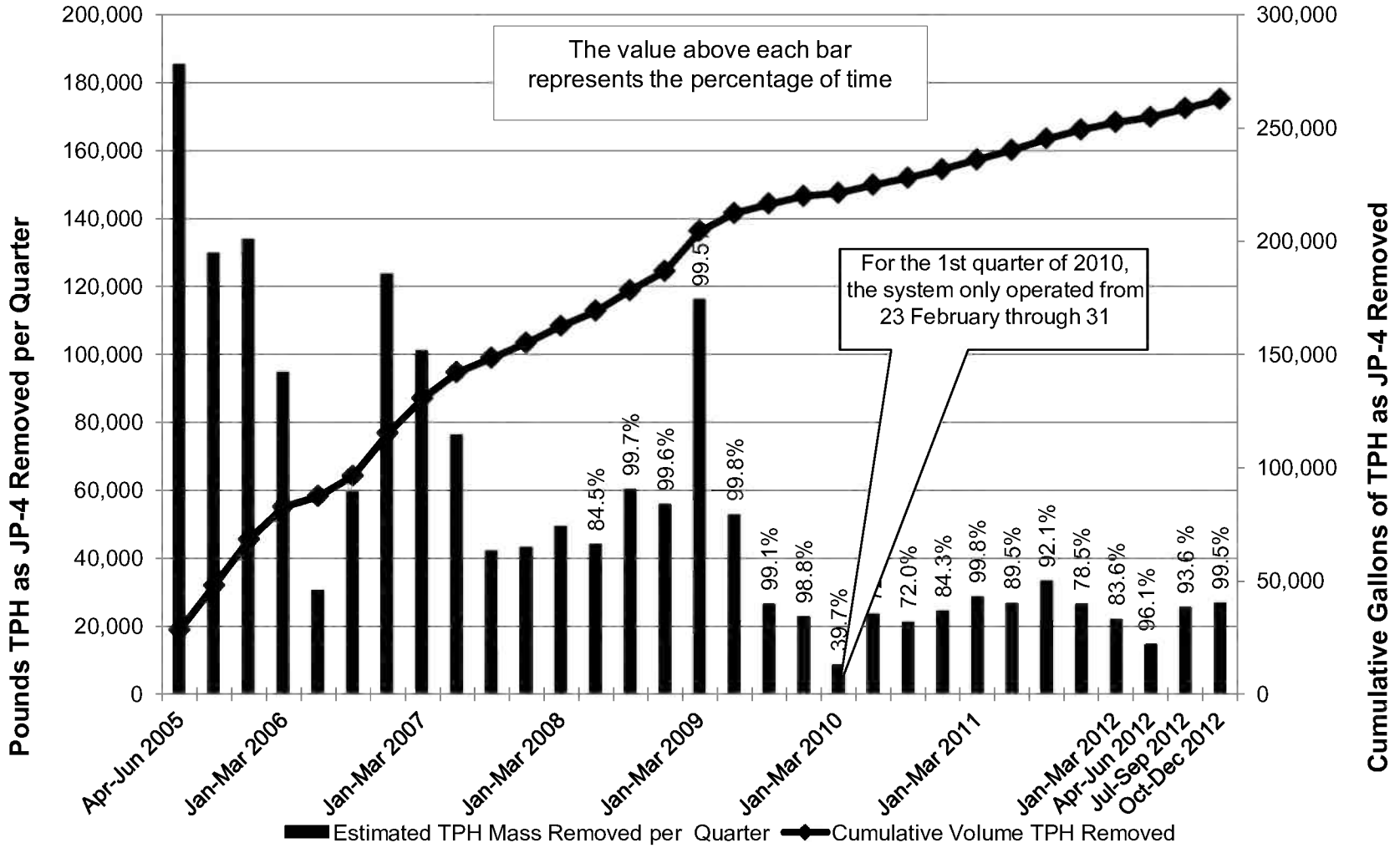
Analyte	No. Wells Above Action Level – Nov 2012	No. Wells Above Action Level – Nov 2011
Benzene	6	7
Naphthalene	3	5
Toluene	1	2

Site ST012 SVE System Update

Oct – Dec 2012

- 99.5% operational uptime
- TPH removed – 26,801 pounds or 4,079 gallons- (3,870 gallons in Jul-Sept 2012)
- 9 of 27 SVE wells operating (same as July-Sept 2012)

Site ST012 SVE System Performance



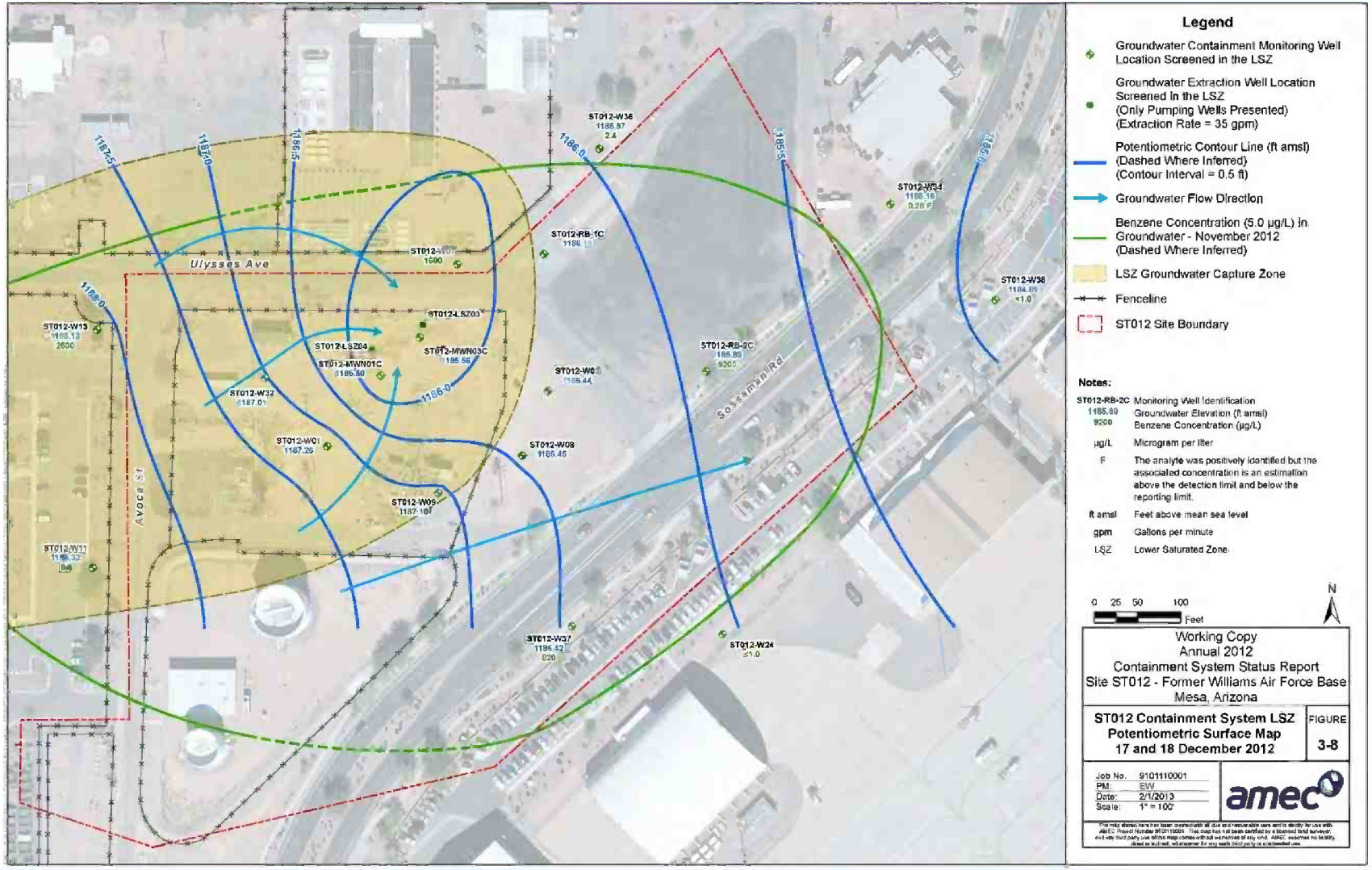
Site ST012 SVE System Summary

- Average TPH mass removal rate continued to increase Oct thru Dec 2012 as a result of SVE system improvements
- TPH removed to date – 262,200 gallons
- Next SVE performance monitoring Feb 2013

Site ST012 Groundwater Containment System

- Existing extraction wells and equipment configured to allow operation of a modified pump-and-treat system
- LSZ extraction wells targeted for pumping
- Extraction operations began Jan 2012
- Operations temporarily suspended Aug 2012 for retrofit; restarted Sept 2012.

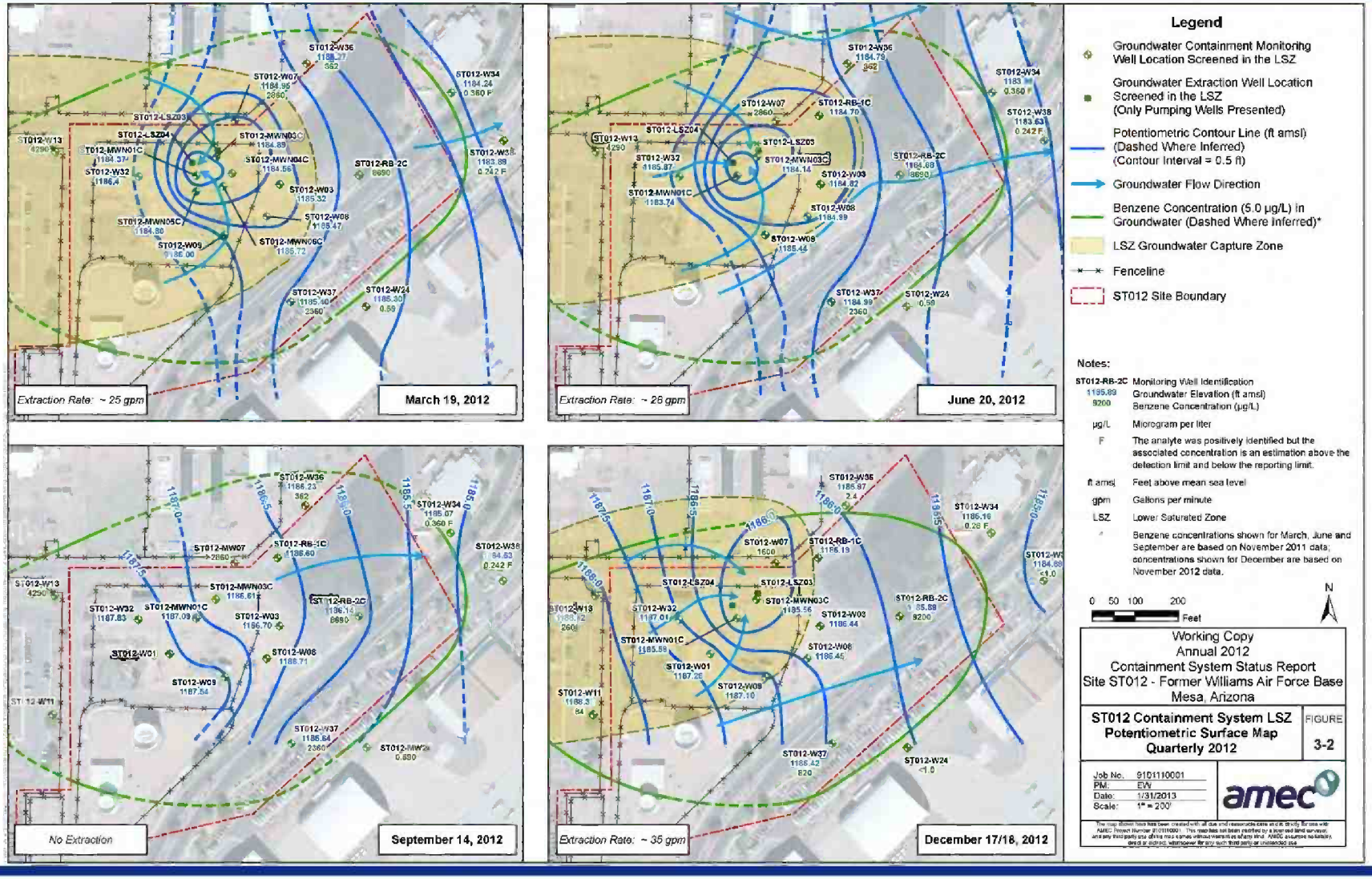
LSZ Potentiometric Surface Map
Dec 2012 – 35 gpm Extraction



Site ST012 Groundwater Containment System

LSZ Potentiometric Surface Maps

2012 Annual Summary



Site ST012 Groundwater Containment System

- Extraction activities influence potentiometric surface in LSZ
- 9.5 million gallons of groundwater extracted and treated from Jan through Dec 2012
- 181 pounds of benzene removed through Dec 2012

Site ST012 Proposed Plan

- Draft Amended Proposed Plan submitted Jan 2013 for regulatory review
- Public Meeting – Spring 2013
- Steam enhanced extraction and enhanced bioremediation is the Air Force's preferred treatment alternative

Site ST012 Path Forward

- Pre-Design Investigation – Feb-Mar 2013
- Proposed Plan public meeting – Planned Date April 18 2013
- Record of Decision – Summer 2013
- Remedial Design/Remedial Action Work Plan – Fall 2013
- Ongoing annual groundwater sampling – Next event Nov 2013
- Ongoing SVE performance monitoring and operation of containment system

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Site FT002, Fire Training Area Number 2

Site FT002 Location Map

Site FT002 Site Background

- Fire protection training activities (1958-1991)
- Soil COC: benzene, chloroform, 1,4-dichlorobenzene
- No evidence of groundwater impact
- OU- 3 ROD 1996; Soil Remedy (bioventing) implemented in 1996-97
- Final soil cleanup goals for unrestricted use not achieved
- Declaration of Environmental Use Restriction (DEUR) to prohibit residential use and require soil management below 5 feet

Site FT002 Site Update

- Final Soil and Soil Vapor Sampling Work Plan submitted Nov 28, 2012
- Soil gas survey performed Dec 4, 2012
  - 10 soil gas samples collected at former Eastern Burn Pit
- Soil investigation performed Jan 7-18, 2013
  - 11 soil borings drilled and sampled to 100 feet bgs at former burn pits

Site FT002 Path Forward

- Evaluate soil gas and soil sampling data
- If ROD cleanup goals achieved, prepare site closure documentation for regulatory review Apr 2013
- The goal is achieving regulatory approval for unrestricted site closure by July 2013

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Site SS017, Old Pesticide/Paint Shop

Site SS017 Site Location Map

Site SS017 Background

- Old pesticide / paint shop
- Soil and groundwater COC: Dieldrin
- Removal action for soil completed in 2000
- Ongoing annual groundwater monitoring (Aug)
- Draft OU-6 ROD Mar 2012

Site SS017 Path Forward

- Air Force to submit updated soil and groundwater risk evaluation for regulatory review
- Next steps will be based on outcome of soil and groundwater risk evaluation
- Ongoing annual groundwater monitoring event – Next event Aug 2013

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Site LF004, Landfill

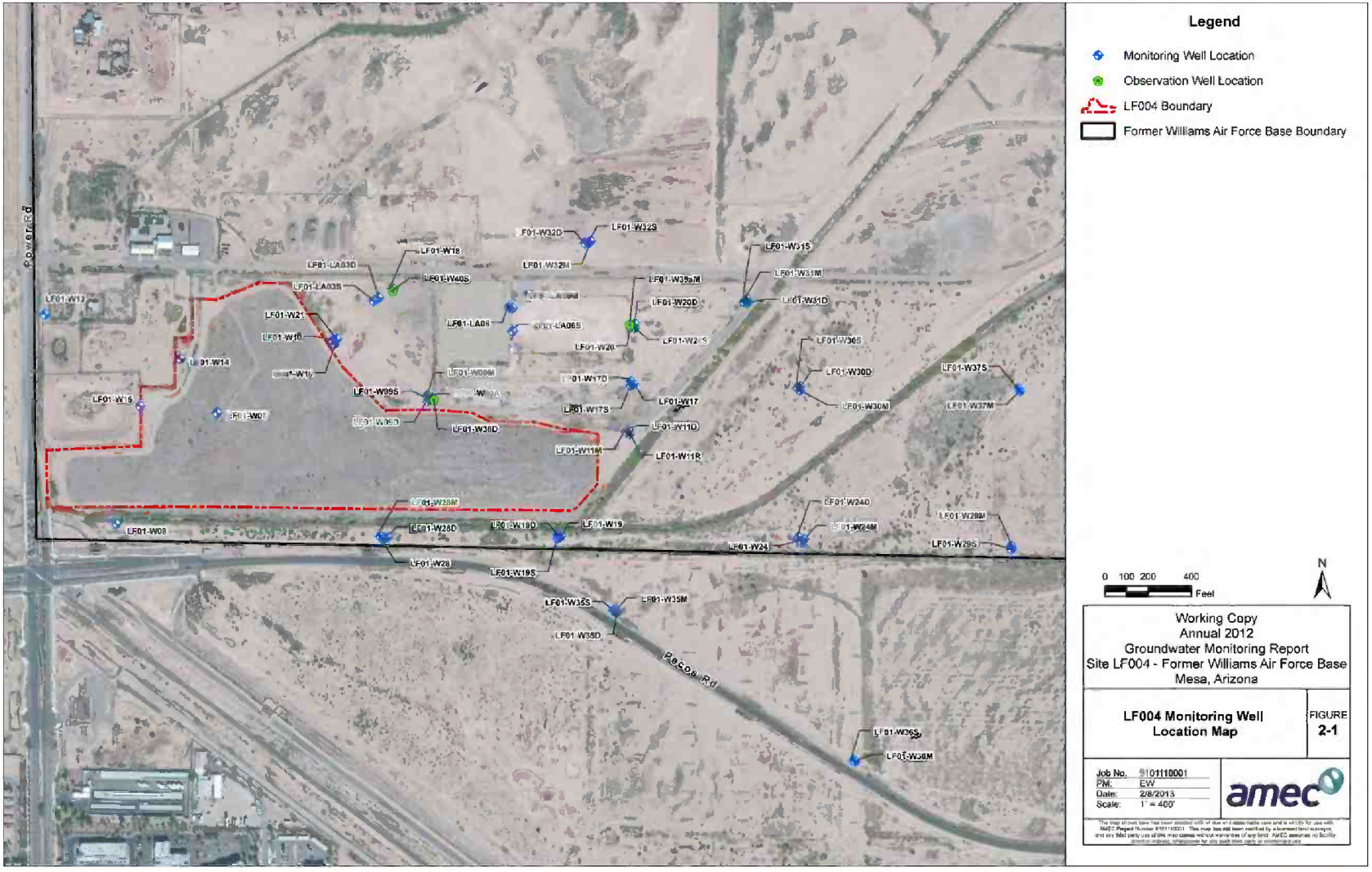
Site LF004 Site Location Map

Site LF004 Site Background

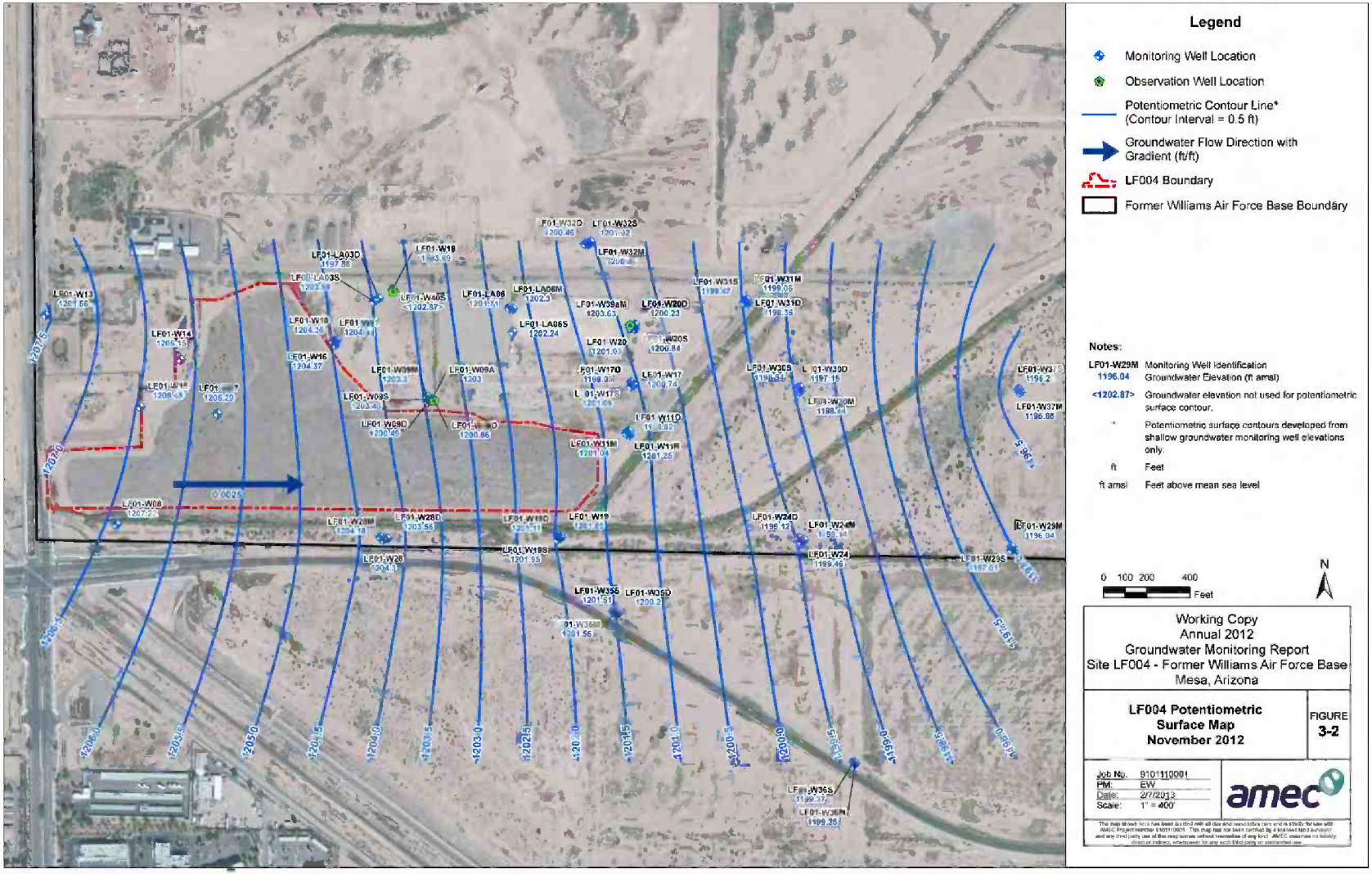
- Landfill
  - Former solid waste landfill
  - Operated from 1941 to 1976
  - Closed in 1995 with a permeable soil cap (OU-1 ROD 1994)
  - Rising groundwater table
  - Ongoing semiannual groundwater monitoring

- COCs
  - Dieldrin and beryllium in surface soil
  - Perchloroethylene (PCE)
  - Trichloroethylene (TCE)

Site LF004 Groundwater Monitoring Update
Well Locations



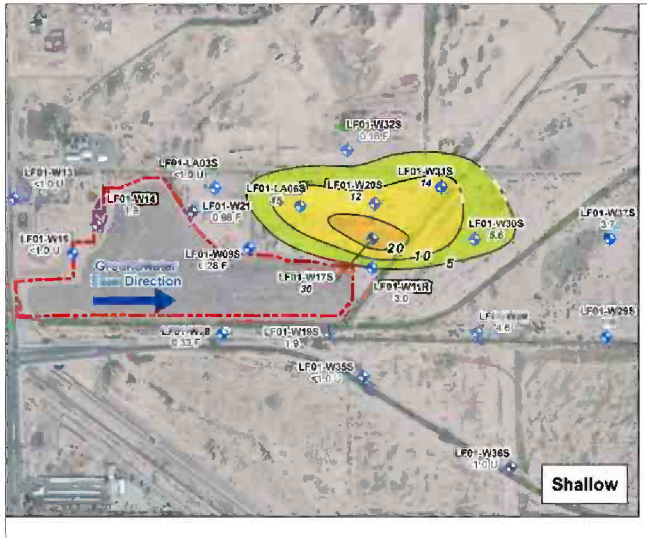
Site LF004 Groundwater Monitoring Update
Nov 2012 Flow Direction

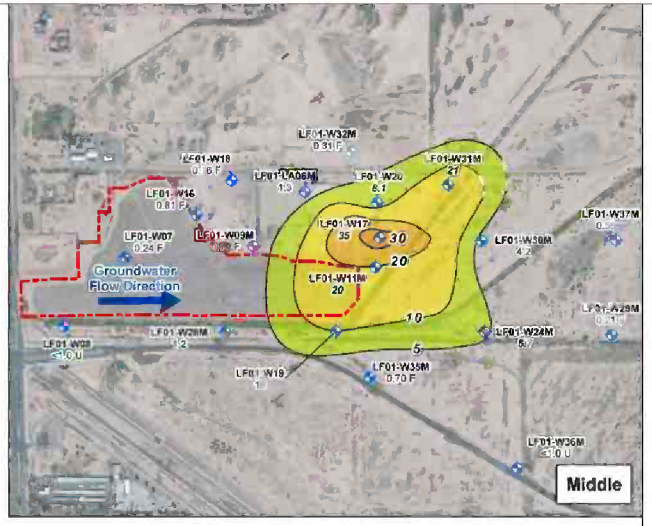


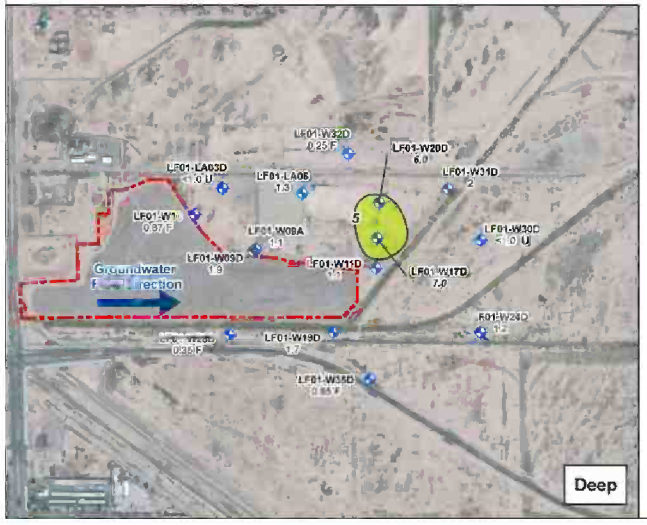
Site LF004 Groundwater Monitoring Update Nov 2012 Sampling Event

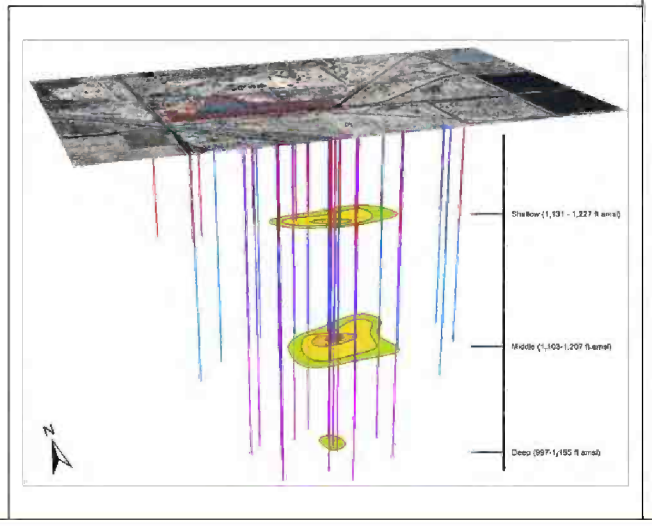
- 54 wells sampled
- Results
  - PCE and TCE only contaminants above EPA Maximum Contaminant Levels (MCLs) and Arizona Aquifer Water Quality Standards (AWQS) = 5 µg/L
  - PCE in LF01-W19 increased in the Nov 2012
  - PCE concentrations exceeded the standards in 17 wells; highest concentration 86 µg/L in LF01-W19 (up from 53 µg/L in May 2012).
  - TCE concentrations exceeded the standards in 13 wells; highest concentration 35 µg/L in LF01-W17 (down from 41 µg/L in May 2012).

Site LF004 Groundwater Monitoring Update
Nov 2012 TCE Results









Legend

TCE Concentrations (µg/L) in Groundwater (Dashed Where Inferred)

- *5-10 µg/L
- 10-20 µg/L
- 20-30 µg/L
- ≥30 µg/L

* *AWQS/MCL = 5 µg/L*

- Groundwater Flow Direction
- Monitoring Well Location
- LF004 Boundary

Notes:

LF04-W11M *20*	Monitoring Well Identification Maximum TCE Concentration (µg/L) (Results that are ***italicized and bolded*** equal or exceed the AWQS MCL of 5 µg/L)
µg/L	Microgram per liter
<1	Not detected at or above the RL
AWQS	Arizona Aquifer Water Quality Standards
F	The analyte was positively identified but the associated concentration is an estimation above the MDL and below the RL
ft amsl	Feet above mean sea level
MCL	Environmental Protection Agency Maximum Contaminant Levels
MDL	Method Detection Limit
RL	Reporting Limit
TCE	Trichloroethene
U	The analyte was analyzed for, but not detected at or above the RL shown

0 200 400 800 Feet

N

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LF004 Depth-Specific Distribution of Trichloroethene (TCE) Concentrations in Groundwater November 2012

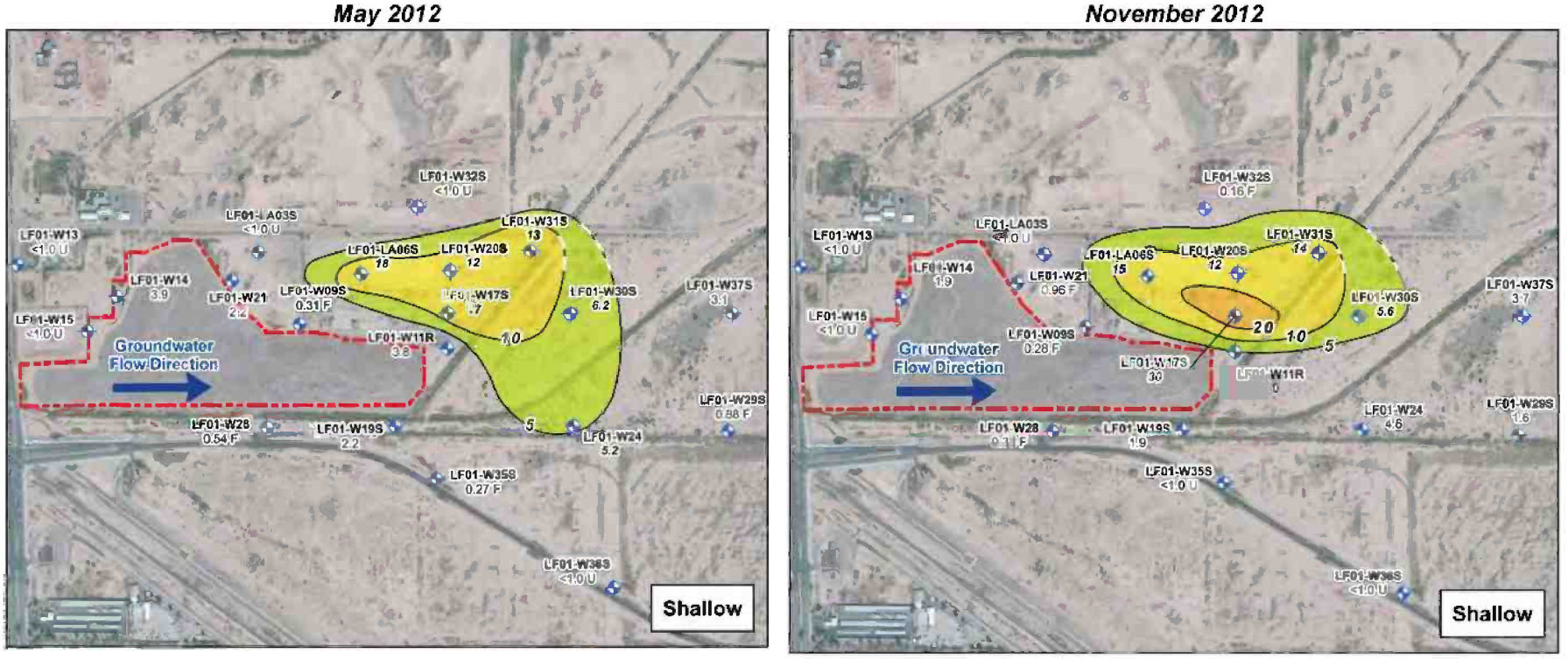
FIGURE 3-4

Job No.	9101110001
PM:	EW
Date:	2/8/2013
Scale:	1" = 800'

amec

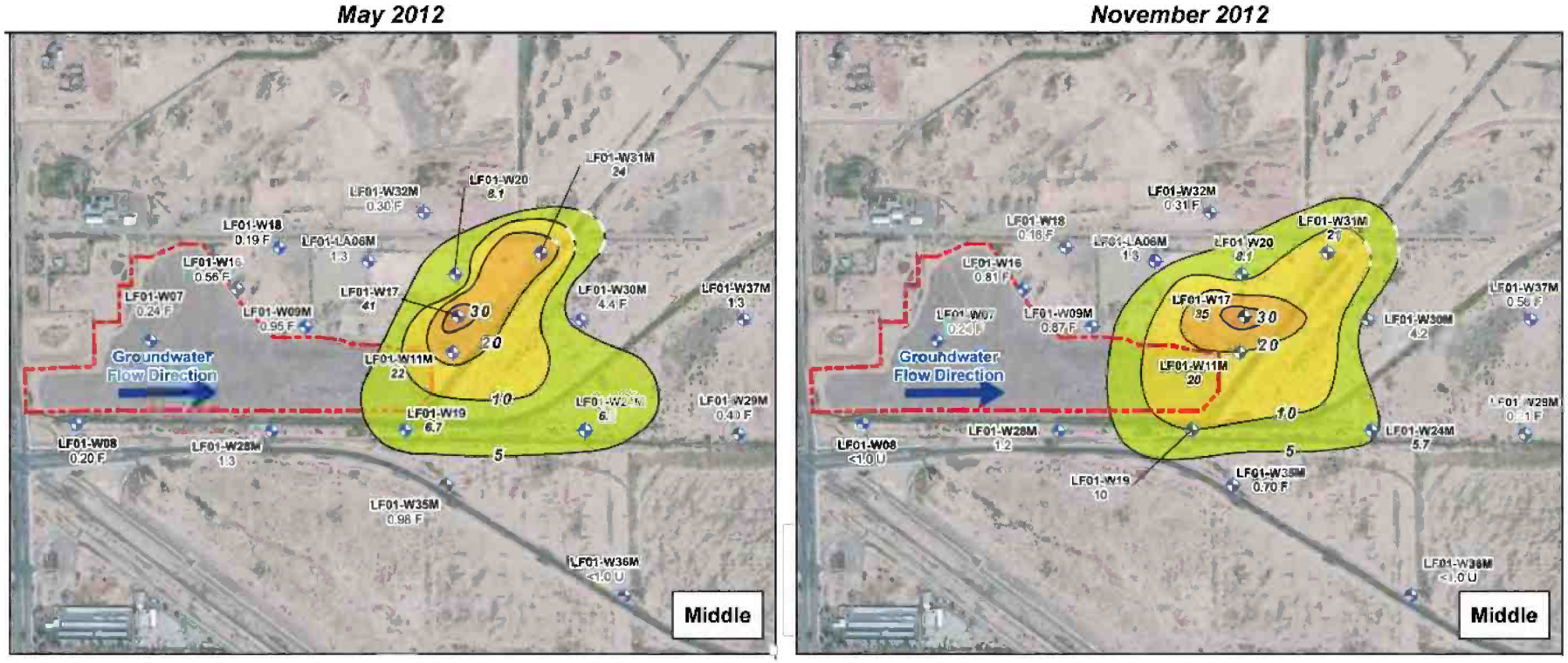
Site LF004 Groundwater Monitoring Update
May & Nov 2012 TCE Results

Shallow Groundwater Zone



Site LF004 Groundwater Monitoring Update
May and Nov 2012 TCE Results

Middle Groundwater Zone



Legend

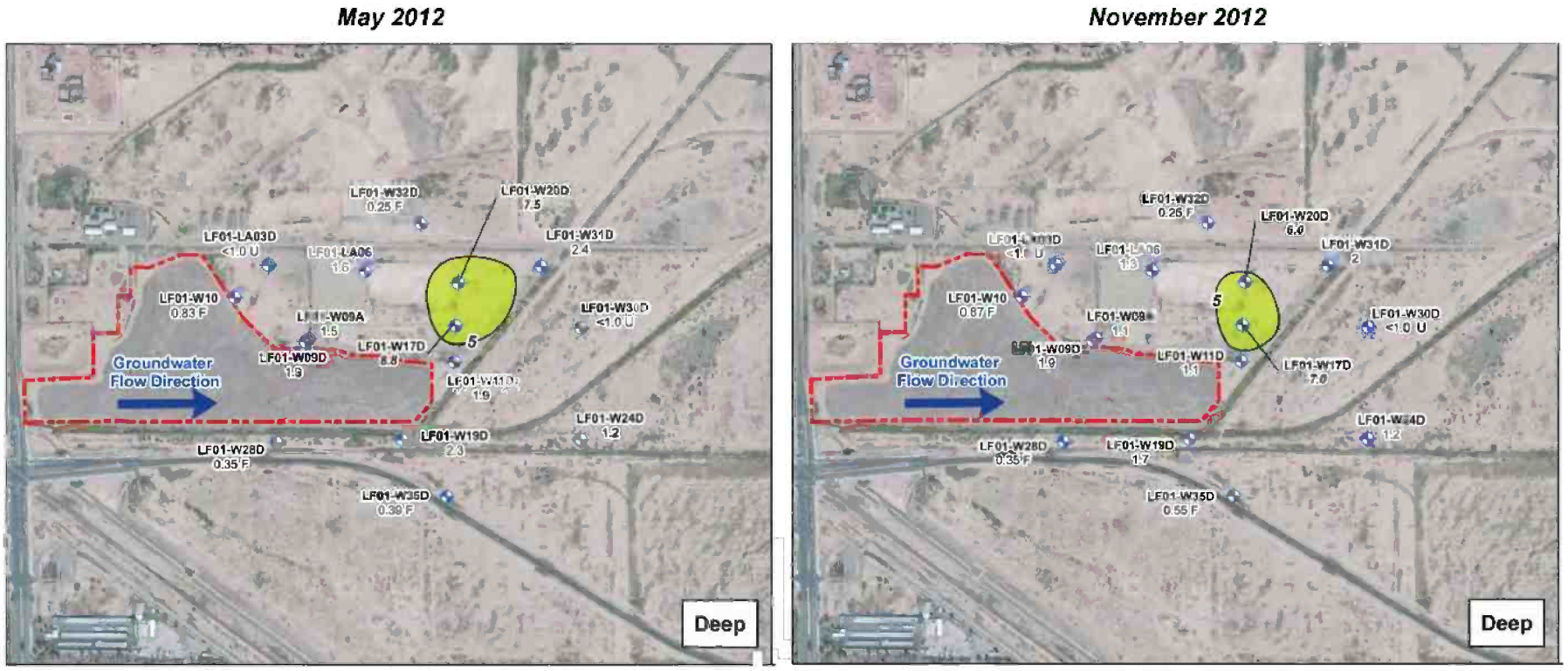
TCE Concentrations (µg/L) in Groundwater
(Dashed Where Inferred) **AWQS/MCL = 5 µg/L*

- *5-10 µg/L
- 10-20 µg/L
- 20-30 µg/L
- ≥30 µg/L

- Groundwater Flow Direction
- Monitoring Well Location
- LF004 Boundary

Site LF004 Groundwater Monitoring Update
May and Nov 2012 TCE Results

Deep Groundwater Zone



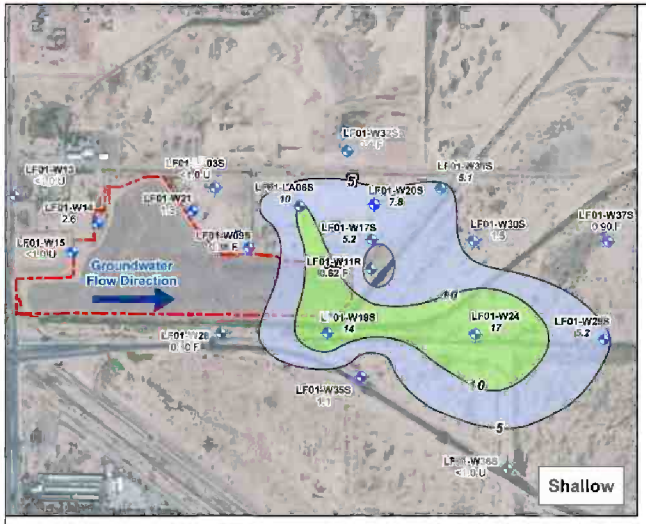
Legend

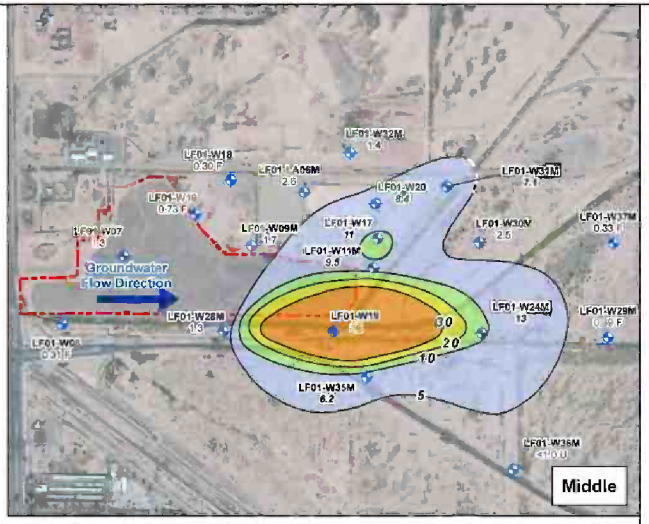
TCE Concentrations (µg/L) in Groundwater (Dashed Where Inferred) * *AWQS/MCL = 5 µg/L*

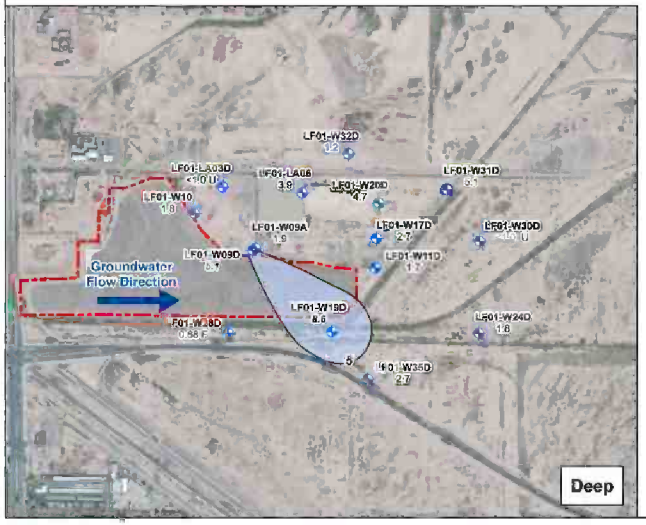
- *5-10 µg/L
- 10-20 µg/L
- 20-30 µg/L
- ≥30 µg/L

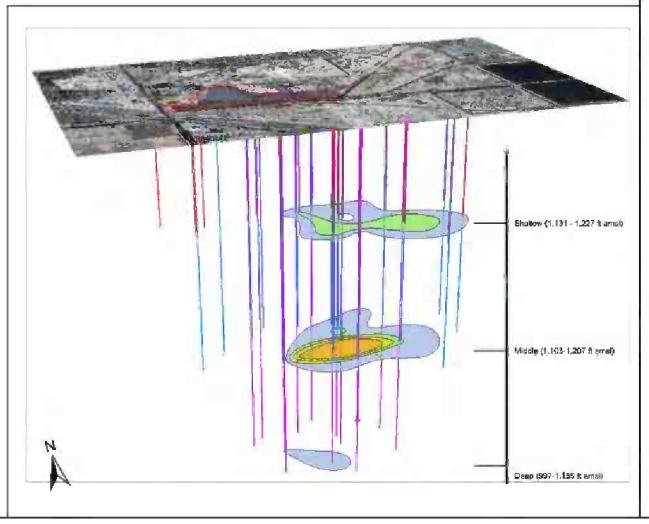
- Groundwater Flow Direction
- Monitoring Well Location
- LF004 Boundary

Site LF004 Groundwater Monitoring Update
Nov 2012 PCE Results









Legend

PCE Concentrations (µg/L) in Groundwater (Dashed Where Inferred)

- *5-10 µg/L
- 10-20 µg/L
- 20-30 µg/L
- ≥30 µg/L

*AWQS/MCL = 5 µg/L

Groundwater Flow Direction

Monitoring Well Location

LF004 Boundary

Notes:

LF04-W11M	Monitoring Well Identification
9.5	Maximum PCE Concentration (µg/L) (Results that are ***italicized and bolded*** equal or exceed the AWQS MCL of 5 µg/L)
µg/L	Microgram per liter
<1	Not detected at or above the RL
AWQS	Arizona Aquifer Water Quality Standards
F	The analyte was positively identified but the associated concentration is an estimation above the MDL and below the RL
ft amsl	Feet above mean sea level
MCL	Environmental Protection Agency Maximum Contaminant Levels
MDL	Method Detection Limit
RL	Reporting Limit
PCE	Perchloroethene
U	The analyte was analyzed for, but not detected at or above the RL shown

0 200 400 800 Feet

N

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Mesa, Arizona

LF004 Depth Specific Distribution of Perchloroethene (PCE) Concentrations in Groundwater November 2012

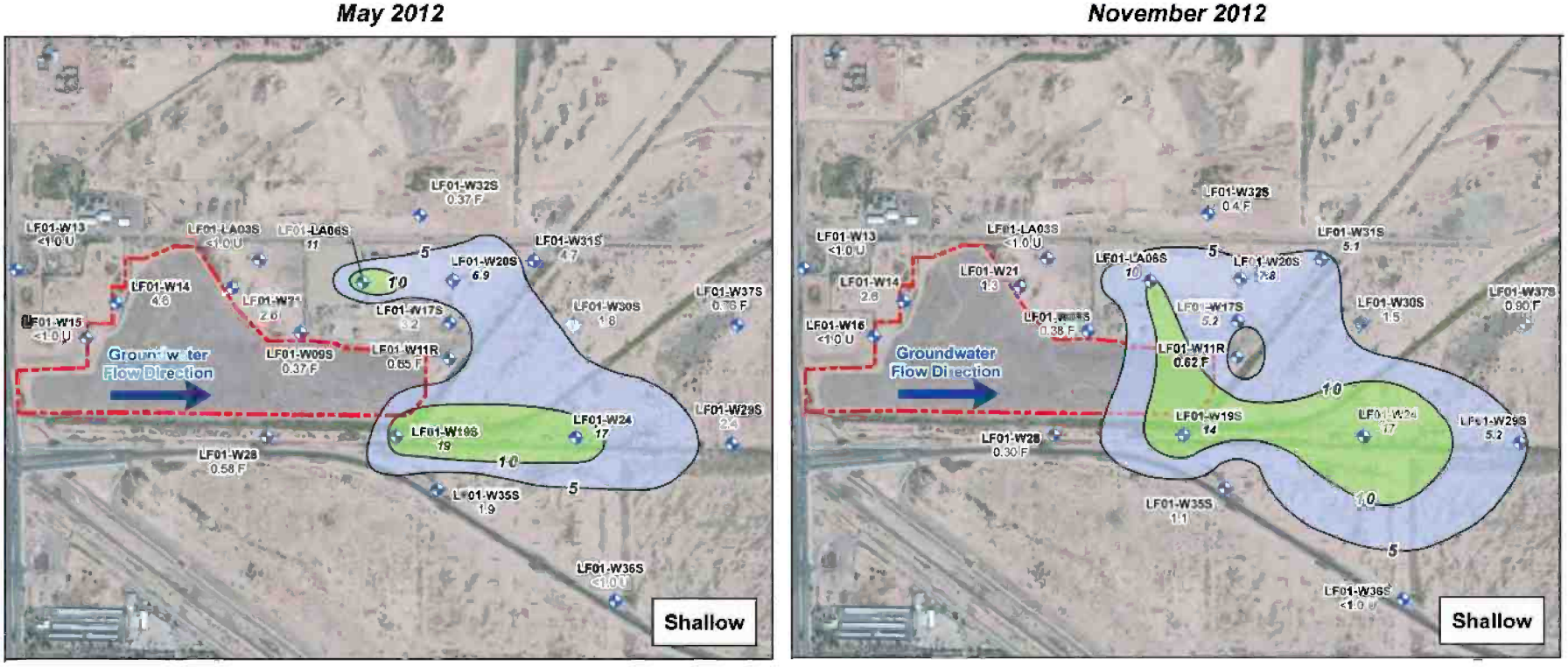
FIGURE 3-8

Job No. 9101110001
PM EW
Date: 2/8/2013
Scale: 1" = 600'

amec

Site LF004 Groundwater Monitoring Update
May and Nov 2012 PCE Results

Shallow Groundwater Zone



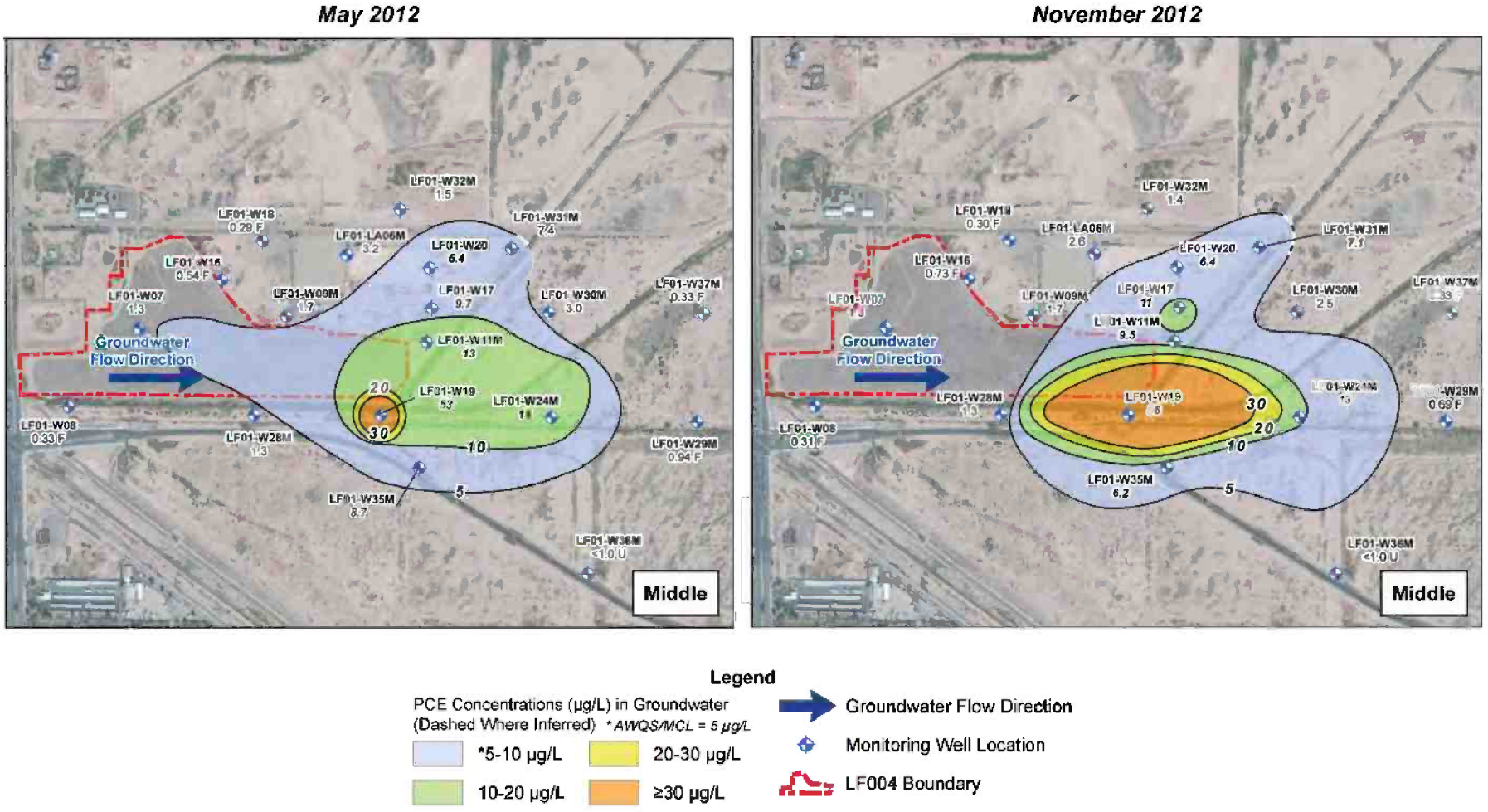
Legend

PCE Concentrations (µg/L) in Groundwater (Dashed Where Inferred) *AWQS/MCL = 5 µg/L

- *5-10 µg/L
- 10-20 µg/L
- 20-30 µg/L
- ≥30 µg/L
- Groundwater Flow Direction
- Monitoring Well Location
- LF004 Boundary

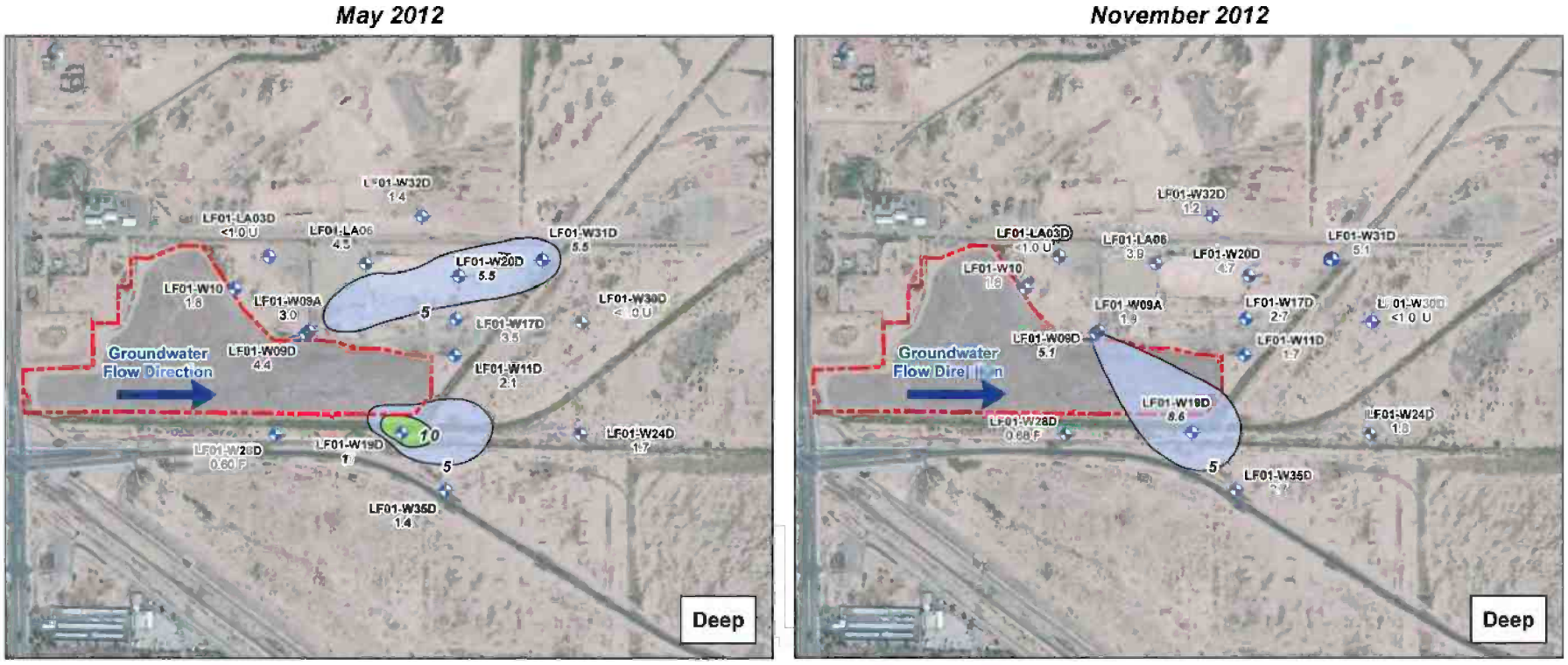
Site LF004 Groundwater Monitoring Update
May and Nov 2012 PCE Results

Middle Groundwater Zone



Site LF004 Groundwater Monitoring Update
May and Nov 2012 PCE Results

Deep Groundwater Zone



Legend

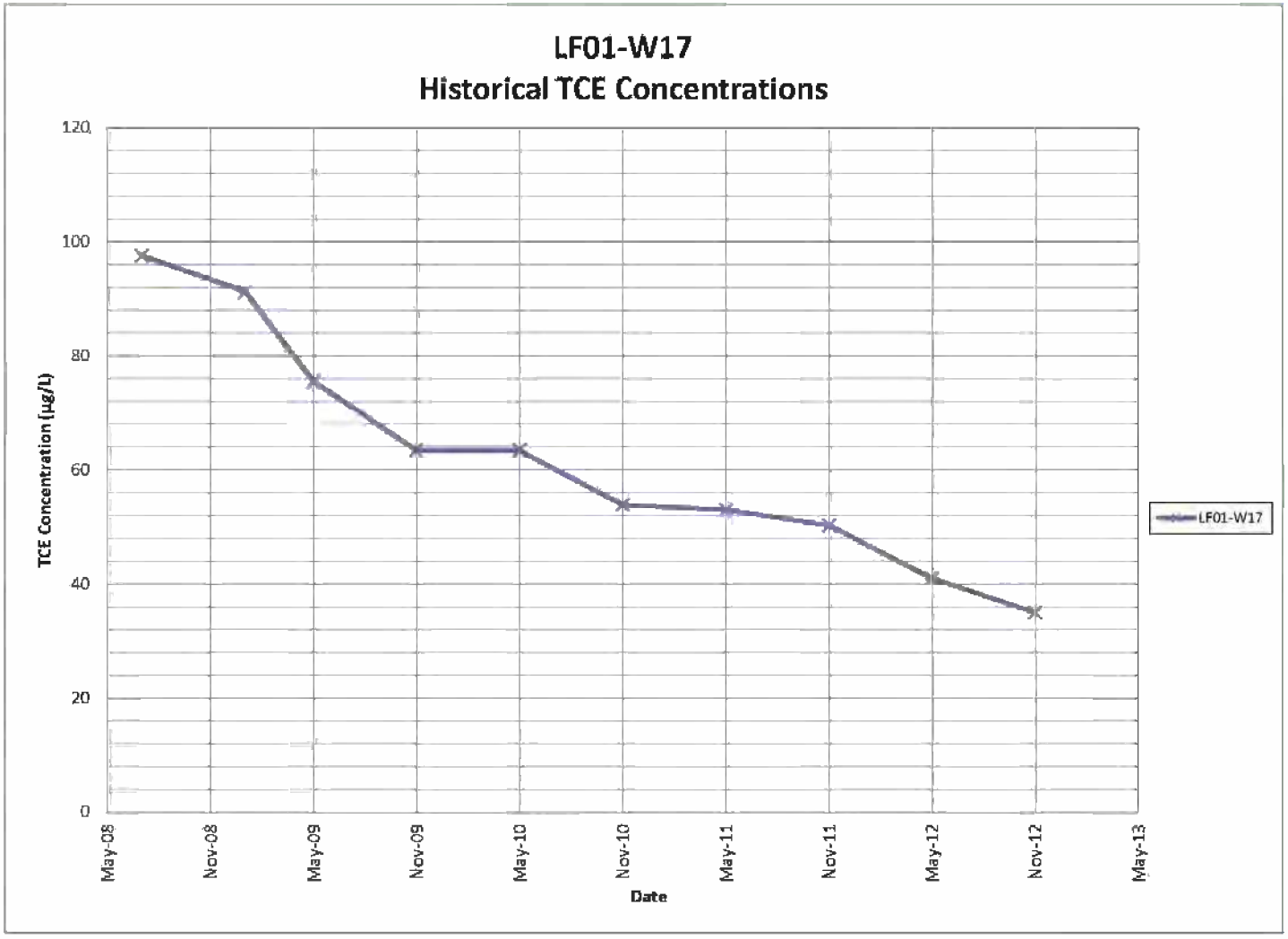
PCE Concentrations (µg/L) in Groundwater (Dashed Where Inferred) *AWQS/MCL = 5 µg/L

- *5-10 µg/L
- 20-30 µg/L
- 10-20 µg/L
- ≥30 µg/L
- Groundwater Flow Direction
- Monitoring Well Location
- LF004 Boundary

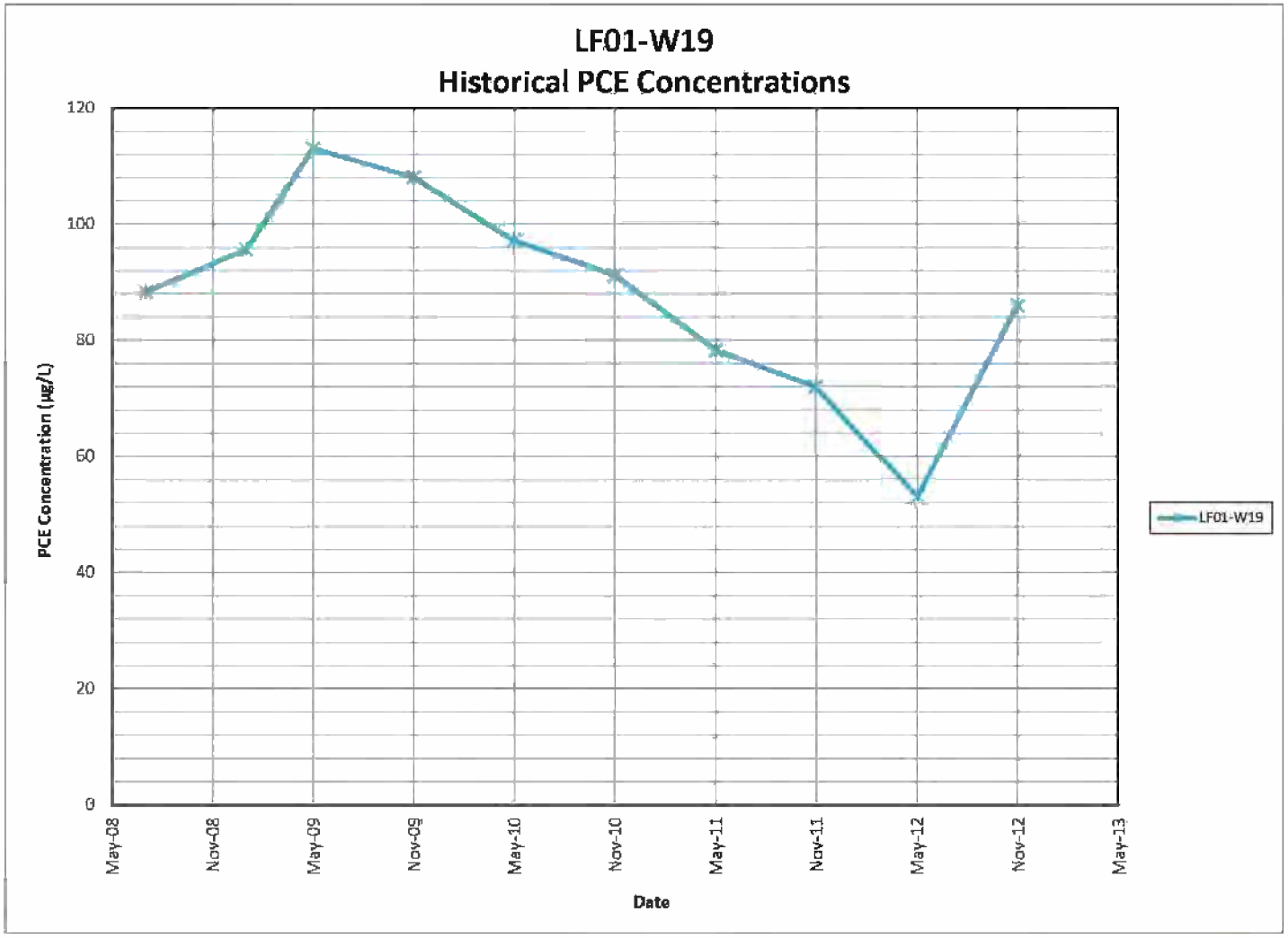
Site LF004 Nov 2012 Summary

- Groundwater results indicate historically decreasing concentrations of TCE and PCE in hot spot areas; however, PCE in LF01-W19 increased in the Nov 2012 event.
- TCE and PCE plumes are stable and adequately defined
- Next groundwater sampling event May 2013

Site LF004 TCE Source Area Concentrations Since 2008



Site LF004 PCE Source Area Concentrations Since 2008



Site LF004 Path Forward

- Draft Final Focused Feasibility Study under regulatory review
- Proposed Plan public meeting – Planned Date May 14, 2013
- Record of Decision- Summer 2013
- Remedial Design / Remedial Action Work Plan- Fall 2013
- Ongoing semi-annual groundwater monitoring – Next event in May 2013
- Continue landfill maintenance

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Contracting Updates

Presented by:
Ms. Catherine Jerrard
AFCEC

Munitions Response Site XU403 Area 1
Final Munitions Response Action

- **Contract Award scheduled for Feb 2013**
- **Work Plan Submittals and Approvals Mar-Jun 2013**
- **Field Work Begins July 2013**
  - **Munitions Removal Action**
  - **Environmental Sampling**
  - **Debris Disposal**
- **Completion Reports 2013-2014**

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Meeting Wrap-Up

Presented by:
Mr. Len Fuchs/ Ms. Catherine Jerrard
RAB Community Co-Chairs
and Scott Johnston

Meeting Wrap-Up

- Review action items
- Call for agenda items for next RAB meeting
- ST012 Proposed Plan public meeting – Planned Date April 18, 2013
- LF004 Proposed Plan public meeting / RAB meeting (Proposed date May 14, 2013)
- Meeting adjourned

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Meeting Adjourned

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