

**MINUTES FOR REGULATORY MEETING
CAMP STANLEY STORAGE ACTIVITY
CONTRACT NO. W912G-07-D-0028, DO11
Parsons Project Nos. 746545 (FFP) and 746546 (T&M)**

Date: May 27, 2009
 Time: 9:30 A.M. – 3:00 P.M.
 Place: CSSA – San Antonio, Texas
 Subject: Environmental Project Status Meeting
 Attendees:

Attendee	Organization	Phone
Wayne Elliott	U.S. Army Corps of Engineers, Fort Worth District	871-886-1666
Glare Sanchez	Camp Stanley	321-662-3718
Greg Lyssy	United States Environmental Protection Agency	214-665-8317
Sonny Rayos	Texas Commission on Environmental Quality	512-239-2371
Jorge Salazar	Texas Commission on Environmental Quality	210-403-4059
Chris Beal	Portage	210-336-1171
Julie Burdey	Parsons	512-719-6062
Ken Rice	Parsons	512-719-6050
Samantha Elliott	Parsons	210-347-6012
Kimberly Vaughn	Parsons	512-719-6816
Bob Edwards	Noblis	210-408-5552
Mike Chapa	Weston Solutions, Inc.	210-248-2428
Jeff Wormser	Weston Solutions, Inc.	

**Minutes prepared by Kimberly Vaughn, Parsons.*

The sign-in sheet from the meeting is shown in Attachment 1. The presentations given at the meeting are in Attachment 2.

INTRODUCTION

Ms. Burdey welcomed everyone to the meeting and provided an introduction and the agenda.

Mike Chapa provided an update on the Weston sites being investigated. Mr. Chapa asked Sonny Rayos about the question that he asked by email on the comments to the APAR for AOC63 and the responses to comments submitted in May 2009. This question was concerning the laboratory RLs and MDLs adjusted for moisture content. Mr. Chapa notes that the SQLs were used as PCLs for those substances. Mr. Chapa discussed the

the data usability study was incorrect in reporting explosives analysis conducted after the holding time. Mr. Chapa discussed that these are our understanding of the comments, does TCEQ agree? Mr. Rayos stated send an email “as is” and they will review (TCEQ chemist needs to see).

Mr. Chapa then reviewed B-71 summary slides. Jorge Salazar and Greg Lyssy indicated they would like a copy of the slides from today.

Mr. Chapa reviewed the Tier 2 calculations on AOC64 (for B71 for lead) and confirmation sampling results and asked if there were questions from the regulators? Mr. Salazar asked to confirm where B-71 is located. Greg Lyssy asked how arsenic would be considered to be a laboratory contaminant. Mr. Lyssy and Mr. Rayos indicated they are good with the approach. There was a discussion of the pH used in the Tier 2 calculations, reviewed the 7.9 vs 8.4 pH shown on Tier 2 calculations slide.

Glare Sanchez confirmed to Mr. Rayos that clean fill has been emplaced at B-71. The site is no longer an open excavation. Mr. Chapa then discussed Anomaly Area B and the floor sample was unable to get vertical delineation to background.

Mr. Chapa discussed the AOC64 Burn Pit Excavation, mercury delineation and vertical extent of sampling. Copper is also an issue. Bob Edwards asked if mercury was present due to leaching from rock or is it from primers, etc. Mr. Chapa noted that he had not thought of mercury as naturally occurring before now.

Mr. Rayos asked, metals only appear on slide for delineation, did you sample for other things? Mr. Chapa confirmed that all floor confirmation samples were delineated for VOCs, SVOCs and explosives.

Mr. Lyssy asked, going back to the barium exceedance, what is the plan? Also on lead – how will we close the loop? Mr. Lyssy stated that he would expect soil borings for vertical delineation to be done in a couple of locations. Mr. Lyssy is concerned that sampling stopped at a concentration that was increasing.

Mr. Rayos stated that the Tier 1/Tier 2 numbers look good; it’s just that background is of concern. Mr. Lyssy agrees that background makes it a slight issue.

Mr. Lyssy and Mr. Chapa discussed the depth of sample at location F4 and the depth at the burn pit, and whether one at depth location can be used for vertical delineation at a separate point.

Mr. Rayos asked whether this was residential or commercial/industrial closure? Mr. Chapa confirmed this is a residential site closure, so no deed recordation.

Mr. Rayos asked where are the closest groundwater sampling points? Ken Rice and Mr. Chapa confirmed that approximately 800 feet southwest is the closest, CS-MW2-LGR.

Mr. Lyssy pointed out that 800 feet away is not monitoring groundwater under this SWMU. Mr. Chapa noted that barium was detected at CS-MW2-LGR. Mr. Rice noted that B-28 and B-8 also had barium in soil. Mr. Rayos asked what is the depth to water? Mr. Rice stated it ranges from 80 feet (only immediately after heavy rain) to 220 feet.

Mr. Rayos asked, with the barium detected in the well, there is no assurance whether barium is even coming from AOC64. Mr. Chapa agrees, this site is clean, Mr. Rayos agreed that it appears source removal has been done.

Mr. Chapa indicated that the sampling done at site F4 was a topographic low point and would have been impacted, even from the adjacent burn pit. Also, there is no indication of shallow groundwater here.

Mr. Lyssy stated that he would like vertical delineation at the two points but he realizes it's not strictly necessary. Ms. Sanchez noted that the nearby SWMUs will also be evaluated separately. Mr. Lyssy stated that he is concerned for closure at this site. Mr. Rayos indicated that he would like vertical delineation at those points. Mr. Lyssy stated also, that he would like confirmation samples at the F4 location and at F5, in the burn pit.

Mr Chapa asked Mr. Rayos, do you want a RACR, an APAR, or both? Mr. Rayos would like to see this submitted as a combination RACR/APAR report submittal.

11:00 –BREAK

Ms. Burdey reviewed the agenda for the remainder of the day and provided site summaries:

The I-1 report is approved.

AOC73 – RIR submitted September 2008.

AOC67/68 – bluing and wheelabrator building sampling is complete. For AOC67 the results are below background. Mr. Salazar asked if this was the site where brown staining was along the ditch? Ms. Burdey and Mr. Rice answered yes and all has been removed. Mr. Rice summarized the building 90 history. Mr. Rice summarized site AOC69.

GROUNDWATER MONITORING

Samantha Elliott provided a summary of the groundwater monitoring program. She described getting access agreements for the wells. Ms. Sanchez points out that at I10-4, we requested help to get access from owner and we since found the owner and got access to that location. His name is Clyde Smith and there was a discussion about his well status, his lot is for sale, and his responsibilities to provide notification to a new buyer for

the land. Ms. Elliott described that the well owner gets notification each quarter of results from their well. Ms. Elliott summarized the new GAC structures installed this quarter and the new water supply well CS-12. Ms. Elliott reviewed the lead results the last 4 quarters have been below the AL.

Mr. Lyssy indicated he would like to discuss the new well. Mr. Salazar asked if there were any plans to refurbish the well, Ms. Sanchez stated that CSSA is currently not sure how to handle the CS-12 well. The exact location of the well was discussed.

A new location for a delineation well to the west – southwest was discussed. Mr. Lyssy agrees that an additional well survey is probably due. Mr. Lyssy also requested that a map or summary of the off-post monitoring results be sent with copies of well owner letters. Mr. Lyssy would like to see a map similar to what Chris Beal just handed him along with the letters to help him review the letters.

LUNCH

NORTH PASTURE SITE INVESTIGATIONS

Ms. Burdey began with a summary of the North Pasture site status. She summarized slides 16, 17, and 18. Ms. Burdey explained B-2 is probably going to be combined with B-8.

Additional aerials were ordered for review and 1966 seems to be the time period when the area was used. There were rumors of a popping furnace at B-8. Mr. Rice discussed the lead and Ba in soil and the results were inconclusive. Mr. Lyssy asked if grid lead samples (XRF) could be done, he stated that the tests have improved greatly in five years. Ms. Burdey showed the proposed grid sampling – Slide 22. MD has been found on B-2 and B-8, but no MEC; therefore further characterization for lead is recommended.

Ms. Burdey summarized B20/21, with a summary of soil results and geophysical surveys. The green shows where material was sifted – there are many, many anomalies. Ms. Burdey noted that in a review of options – we would never be able to do clean closure here – and this should be some type of institutional controls.

Ms. Burdey described the MEC hazard assessment methodology. Mr. Lyssy concurred that HA is the way to go and Mr. Rayos concurs. Ms. Sanchez asked about the guidance document that tells you how deep to go with the cleanup? Mr. Rice noted that this this is an OB/OD area and that would not apply.

Ms. Burdey described the hand sorting of mixed rock and debris pile that has been done. Three drums of lead shot and one partial drum of live items was generated. One roll off with 5 cy of brass was generated, this all took 8-10 days. Ms. Burdey described that the piles with mixed rock and debris were created in 1997 during sifting operations for removal of UXO.

TREATABILITY STUDIES

Ken Rice and Bob Edwards began a summary of the treatability study at B-3. Mr. Edwards noted that the delahocoides populations are increasing manganese, from a biotic degradation reaction. Mr. Edwards distributed a poster that he provided and reviewed a chart showing isotope forensic investigation showing separate sources of water – see poster. Mr. Beal and Mr. Edwards discussed the 1973 aerial that shows a possible trench #7 to the east.

Mr. Rice reviewed the status of the new B3 extraction well surface completion. The well is making 11 gpm, the initial results show contamination similar to well 16, more toluene and some benzene. There is a potential new well at O-1 in future scope of work.

Mr. Lyssy asked about the manganese concentrations increasing and whether that is from abiotic degradation. Mr. Edwards noted that John Wilson believes that this is very common, probably more widespread than anyone realizes.

Mr. Rice reviewed the slide on Recommendation 2 – more monitoring wells. There are 6-8 MWs recommended, most to be completed in the UGR and LGR01 intervals. Mr. Lyssy asked whether these were to be 2-inch or 4-inch? Mr. Rice explained this would be 1 borehole with 2 piezometers, using a separate casing. Vinyl chloride has been detected in UGR and LGR01 in the south westbay wells.

Mr. Rice reviewed the slide on Recommendation 3 to use water pressure monitored in the WBs by piping in MW12 water into the trench #6 and fill all trenches. This is planned for summer 2009 with Mosdax strings to be used for data logging.

Mr. Rice began a summary of the AOC65 – Plume2 treatability study. Mr. Rice indicated the connection demonstrated between VEW-28A, VMP-2, and VMP-5 and the Building 90 sub slab VEWs. The recommendation is to install a larger diameter extraction well at VMP-2. Mr. Rice described the recommendation to thermally enhance (with steam) the SVE system. A new extraction well would be used to prevent VOCs from mobilizing and being transported. This steam treatment is planned for FY 2010. Additionally, the white paper summarizing air monitoring is on its way to the regulators.

Mr. Lyssy indicated that he wants the edge of the plume delineated to west/southwest. There was a discussion of FY 2011 off-post delineation along I-10.

PUBLIC MEETINGS 2009

Kimberly Vaughn provided a summary of planning for the public meetings. The additional neighborhoods and counts of the landowners/residents based on recent subdivision construction. A schedule for planning the public meeting activities will be provided to CSSA. Tentative dates for the meetings are November 3rd and 5th, 2009. Ms. Vaughn will confirm the date of elections and reserve the two elementary school

cafeterias. Mr. Lyssy indicated that he would like to review the portion of the public meeting presentations that will cover the long term monitoring optimization explanation to the public. The content of the posters describing LTMO will be provided to the EPA and TCEQ for review in July 2009.

OTHER ACTIVITIES

Ms. Burdey reviewed the other activities currently ongoing at CSSA, including bird surveys, waste water treatment plant, TPDES permit update, and the new water supply well CS-12.

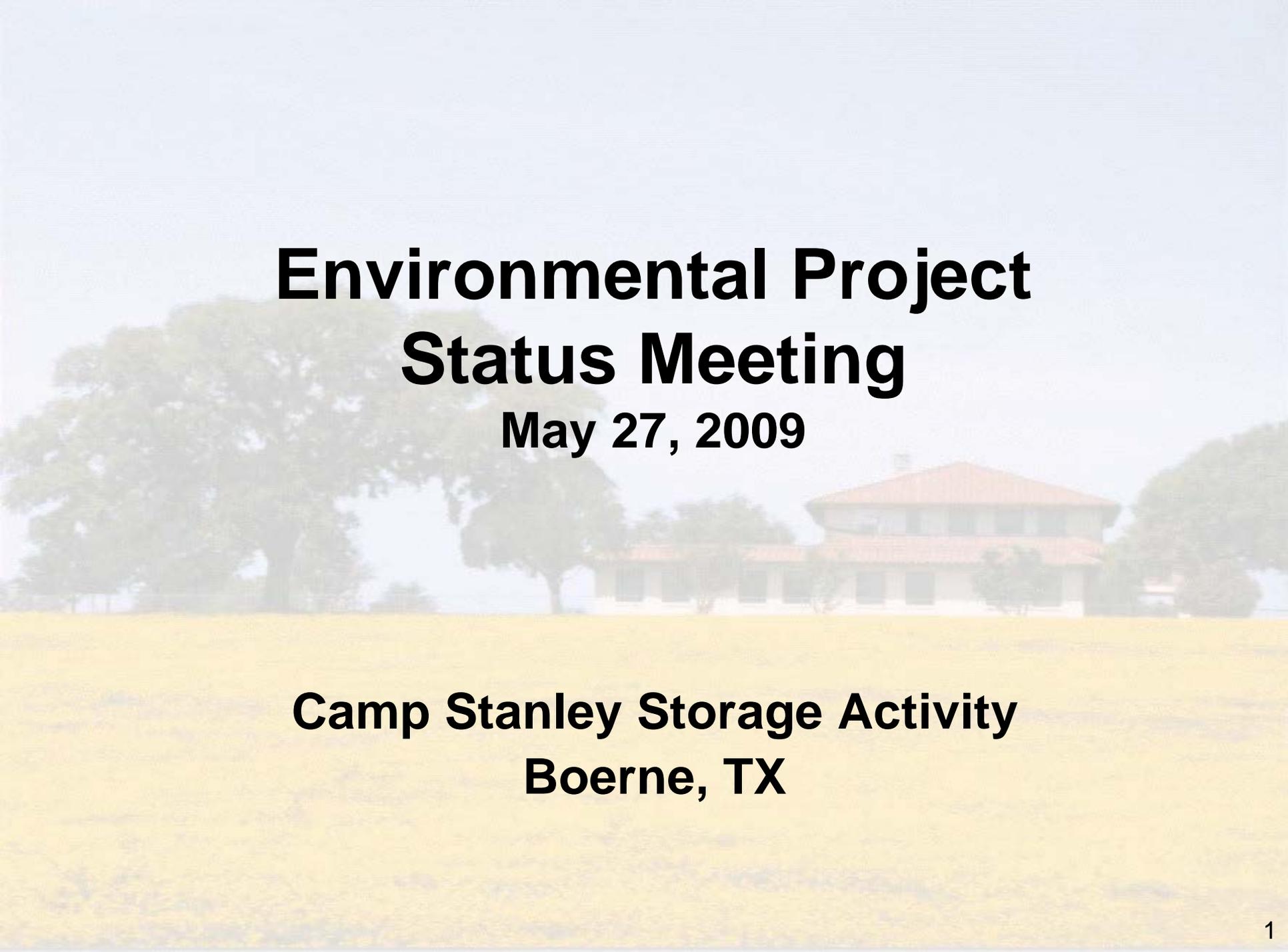
There was a general discussion on the CS-12 water supply well, samples were performed on test hole and after completion there were total coliform detections. Acid treatment/chlorination/additional samples/another chlorination have all been performed.

Mr. Lyssy suggested that total coliform field blanks be collected. There was a suggestion that chlorination can cause coliform to get worse, by some kind of rebound effect among populations. There is a meeting with TCEQ scheduled on the well.

Camp Stanley Regulatory Status Meeting
 May 27, 2009, 9:30 am.
 Camp Stanley, Boerne, Texas

Name	Organization	Email	Telephone
Julie Burdey	Parsons	julie.burdey@parsons.com	512-719-6062
Kelly Gambill	TCEQ San Antonio		
Jorge Salazar	TCEQ San Antonio	JSalazar@trec.state.tx.us	210-403-4059
GREG LYSSY	USEPA	LYSSY.GREGORY@EPA.GOV	214-665-8317
Wayne Elliott	USACE	wayne.elliott@us.army.mil	817-886 1666
Chris Beal	CSSA/PORTAGE	bealc@envirodept.net	210-336-1171
JEFF WORMSER	WESTON	Jeff.Wormser@westonsolutions.com	713.985.6726
MIKE CHAPA	WESTON	MIKE.CHAPA@WESTONSOLUTIONS.COM	210.380.2570
Bob Edwards	Noblis	robert.edwards@noblis.org	210.408.5552

Name	Organization	Email	Telephone
Samantha Elliott	Parsons	samantha.elliott@parsons.com	210-347-6012
Kimberly Vaughn	Parsons	kimberly.vaughn@parsons.com	512-719-6816
Glare Sandoz	CSSA	sarclogg@envirodept.net	
Sonny Rayos	TCEQ	SRAYOS@TCEQ, STATE, TX, US	512.239.2371
Ken Rice	Parsons	ken.v.rice@Parsons.com	512-719-6056

The background of the slide features a large, two-story house with a prominent red-tiled roof and a covered porch. The house is situated behind a vast, flat field of yellow flowers, likely a field of wildflowers or a similar agricultural crop. The sky is a pale, clear blue. The overall scene is bright and open.

Environmental Project Status Meeting

May 27, 2009

**Camp Stanley Storage Activity
Boerne, TX**

Agenda

Status of Site Investigations

Weston Status: AOC-63, AOC-64, B-71

Parsons Status: I-1, AOC-73, AOC-67/68, AOC-69

Groundwater Monitoring Update

North Pasture sites

SWMU B-3 Status

AOC-65 SVE/Vapor Intrusion

Planning for Public Meeting

Other Upcoming Activities

Status of Site Investigations

Reports submitted:

I-1: RIR submitted July 9, 2008. Approved by TCEQ
November 30, 2008.

AOC-73: RIR submitted Sept. 30, 2008.

Status of Site Investigations

AOC-67: Bluing tank removed
in 1997

AOC-68: Wheelabrator

Sites are next to each other,
and adjacent to Building 90



Status of Site Investigations

AOC-67/68

- Additional contaminated soils removed in May.
- Awaiting analytical results for confirmation sample.
- Bldg 90 will be addressed when it is closed.
- Intend to submit RIR for combined AOC-67/68 this summer.



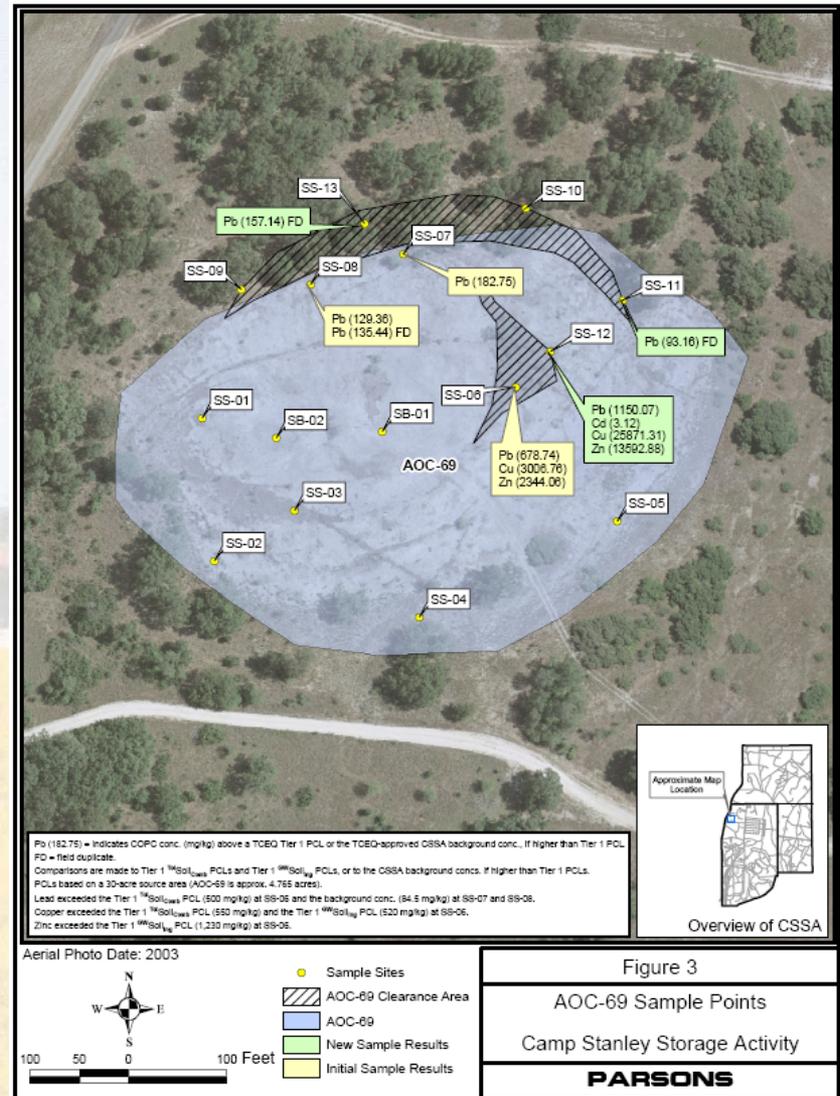
Figure 2
AOC-67 and 68
Site Map and Soil Sampling
Results (Dec 2007 & Apr 2008)

PARSONS

Status of Site Investigations

AOC-69

- Analytical results of confirmation samples indicate no remaining contaminants.
- Draft RIR under review by CSSA, anticipate submittal in June 2009.





GROUNDWATER MONITORING UPDATE

Groundwater Monitoring Program

Overview

- Quarterly Monitoring Program:
 - On-post since December 1999: 38 events
 - Off-post since September 2001: 31 events
- Wells included:
 - 43 On-post monitoring wells
 - 2 On-post drinking water supply wells
 - 2 On-post former drinking water wells
 - 4 Westbay[®]-equipped wells
 - 45 Off-post private and public supply wells
- 5 off-post wells have GAC units due to past exceedances

Groundwater Monitoring Program

Recent Changes

- New GAC enclosures were installed the week of May 18, 2009 in off-post GACed wells.
- One new drinking water supply well (CS-12) installed in 2009. Engineering Report was submitted to the TCEQ November 20, 2008. CS-12 will remain off-line until coliform issue is resolved.
- Off-post well I10-4 sampling results: PCE > MCL in December 2008 & March 2009. The pump has been removed from this well and it is NOT currently in use.



Groundwater Monitoring Program

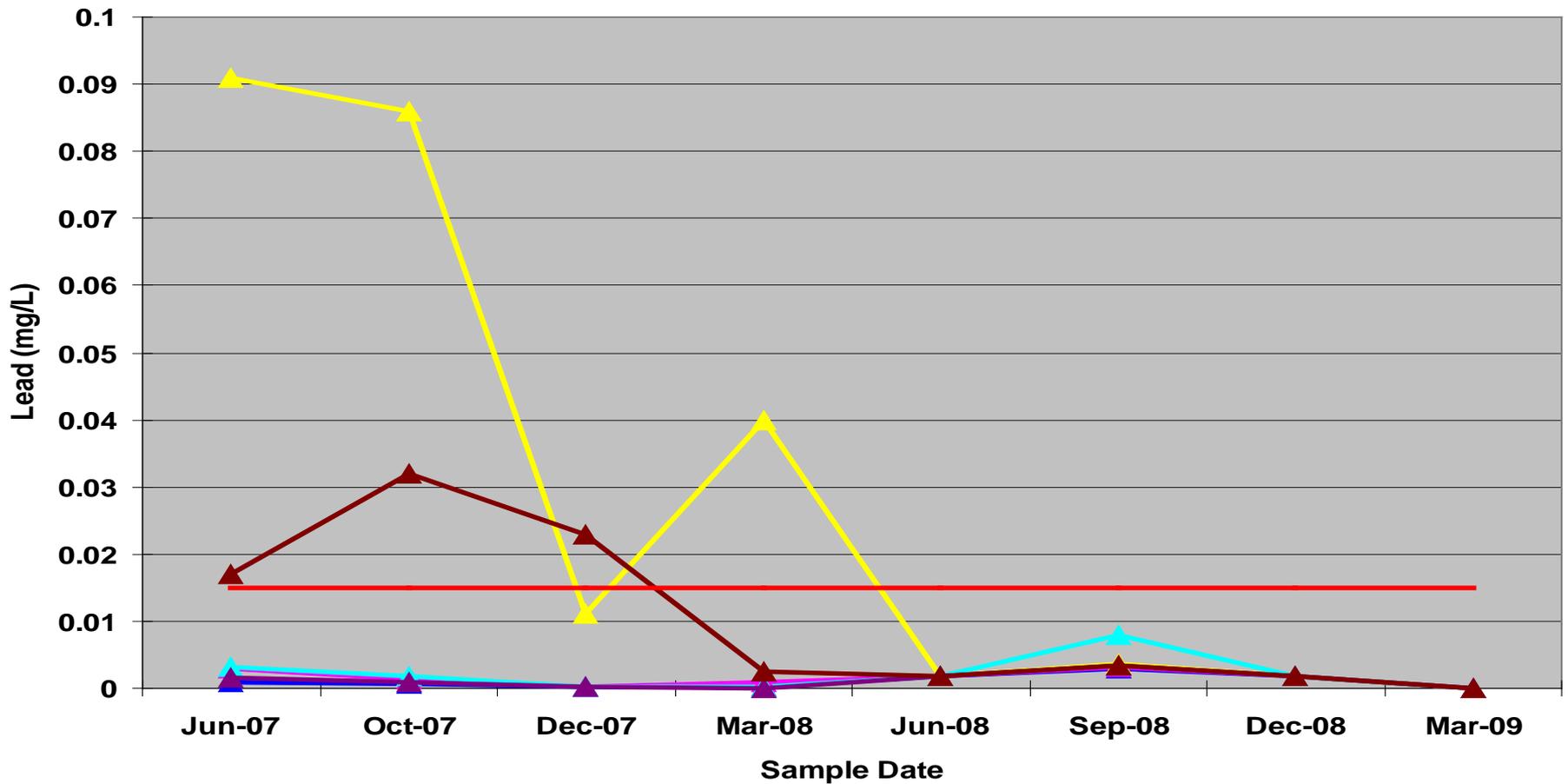
Recent Results

- No significant changes in VOC levels (drought conditions).
- New wells CS-MW22-LGR & CS-MW25-LGR initially reported lead above the AL, the last 4 quarters have dropped back below the AL.
- Other metals exceeding the AL for lead in 2008 were in former CSSA drinking water wells CS-11 and CS-9. Mercury was also above the MCL in well CS-9 in Sept. and Dec. 2008.

Groundwater Monitoring Program

Lead Above the Action Level

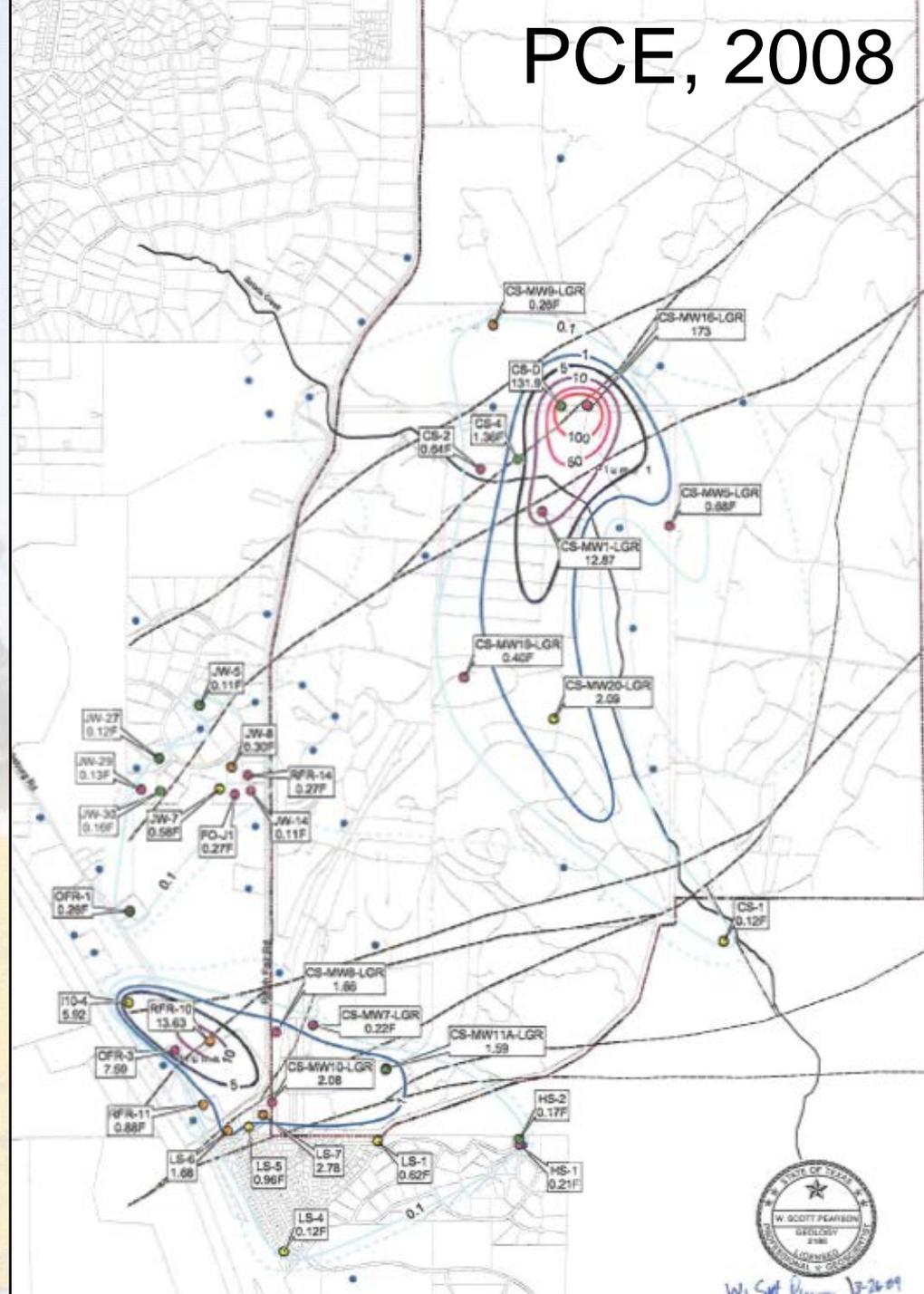
New Monitoring Wells



Groundwater Monitoring Program Summary

- 8 yrs of quarterly off-post monitoring.
- ~11 yrs of quarterly on-post monitoring.
- New subdivisions supplied by SAWS.
- LTMO update planned following Nov. 2009 public meeting.

PCE, 2008



W. Scott Pearson 12-26-09

Groundwater Monitoring Program

Upcoming Work

- Additional wells, including at least one off-post to west-southwest
- Continued quarterly monitoring
- New well survey

North Pasture

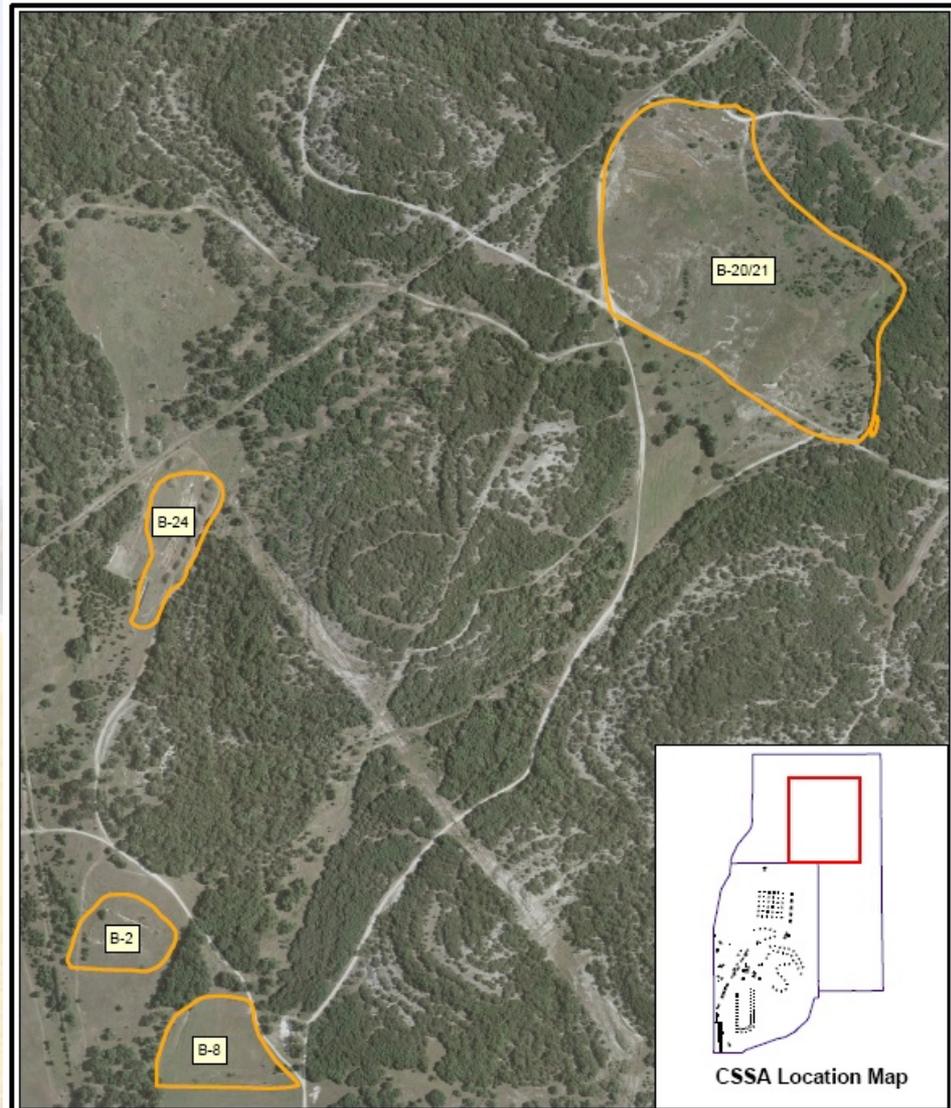
(SWMUs B-2, B-8, B-20/21, and B-24)

SWMUs B-2 and B-8:

- Disposal trenches at B-2
- Lead at B-2 (>bkgd, <Tier 2)
- Lead at B-8 (awaiting results)

SWMUs B-20/21 and B-24:

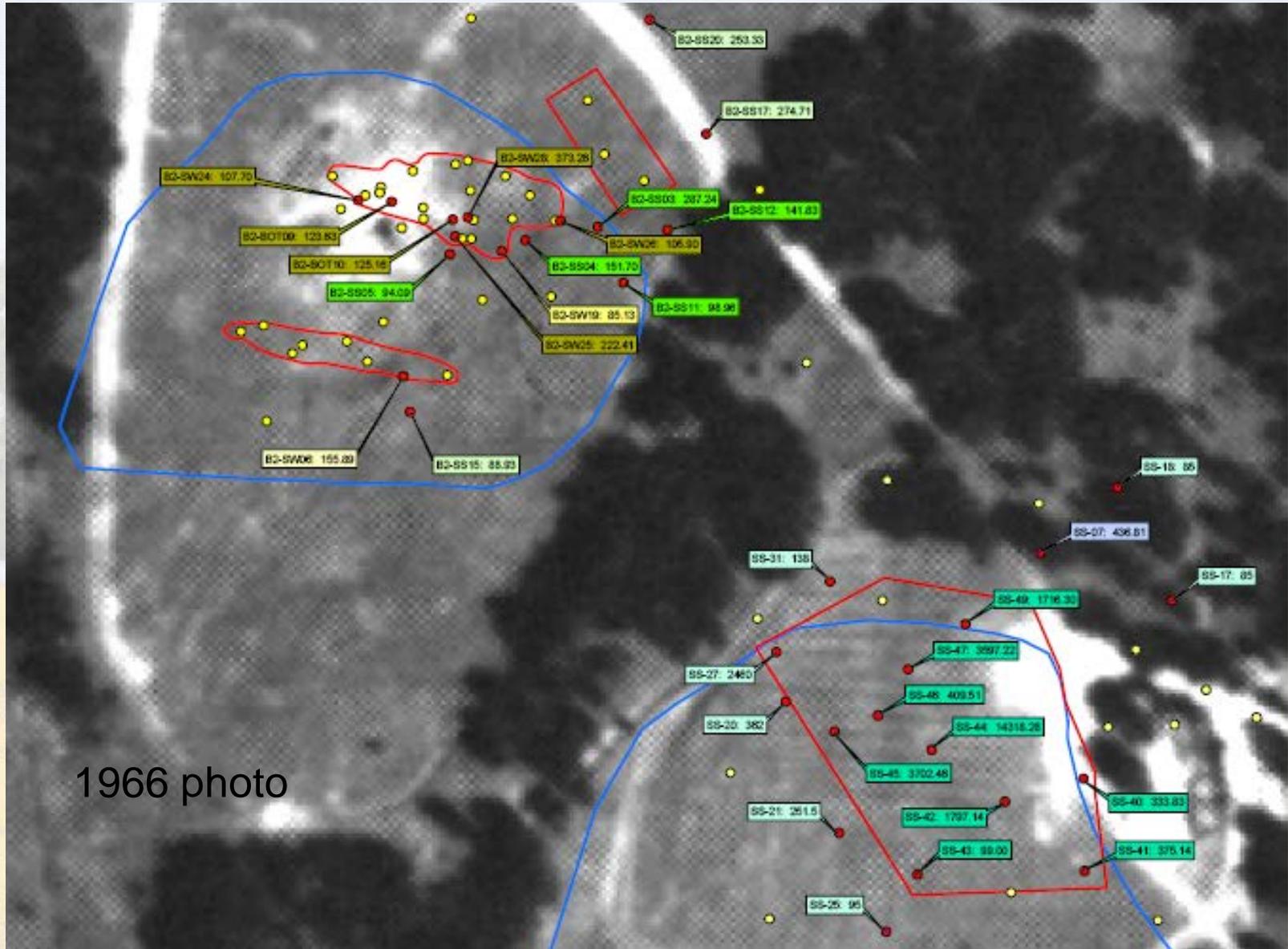
- OB/OD
- Possible MEC
- MC generally below Tier 2 PCLs



SWMU B-2

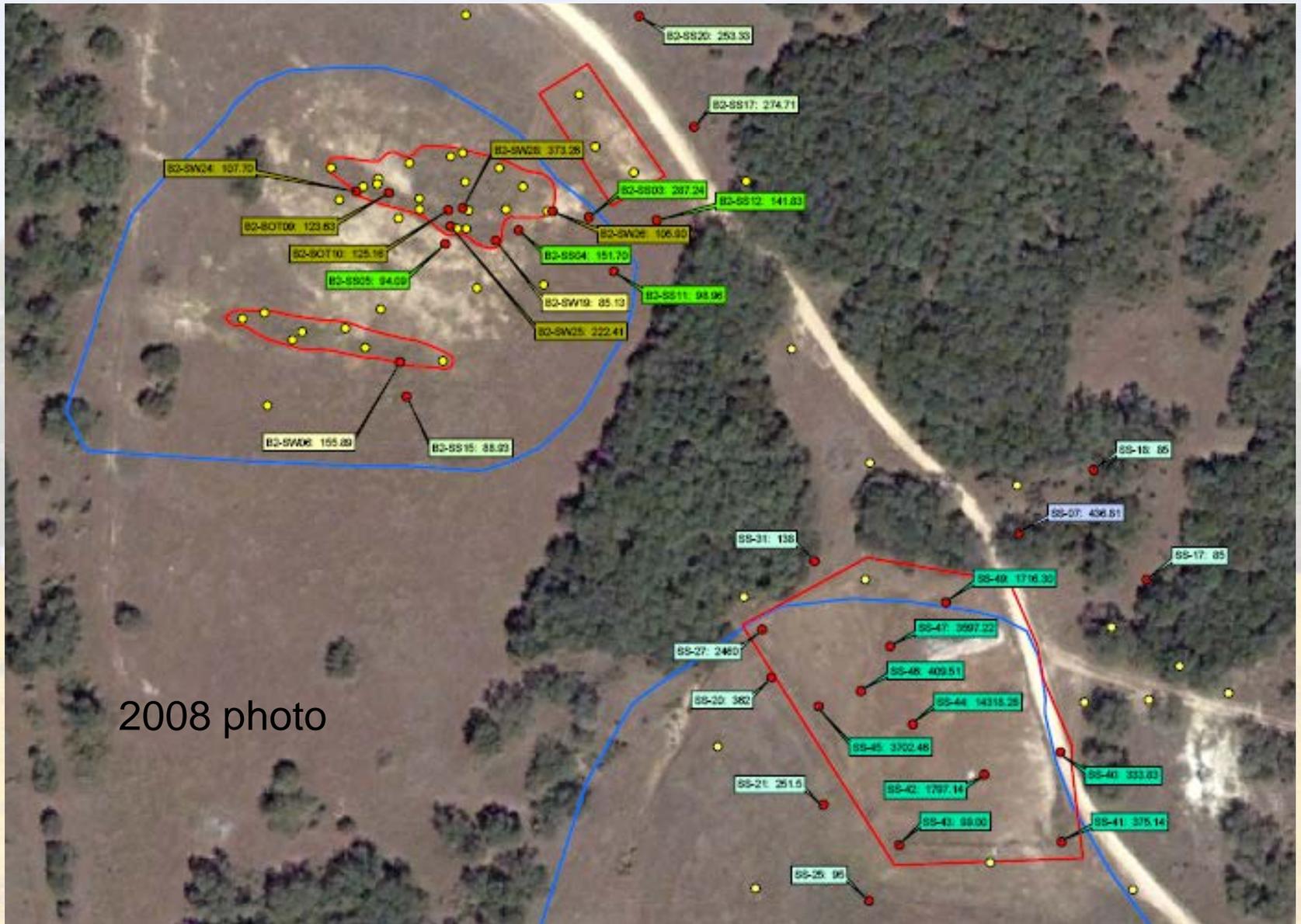
- All waste and surrounding soil excavated and disposed.
- Additional sampling in area shows lead remains above background in surface soil.
- Concentrations are below Tier 2 criteria.
- Additional aerial photo analysis to help determine possible extent.

SWMU B-2/B-8



1966 photo

SWMU B-2/B-8



SWMU B-8

- Recently removed additional 1,200 CY of metals contaminated soil (treated with PIMS) to East Pasture range berm
- Awaiting analytical results to determine extent of remaining contamination

SWMUs B-2 and B-8

Recommendations

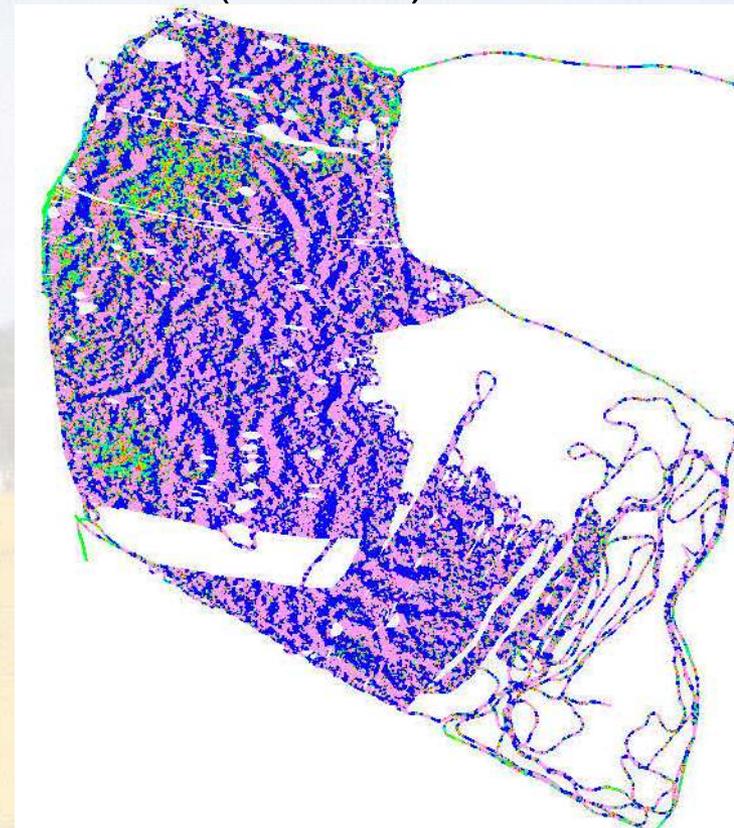
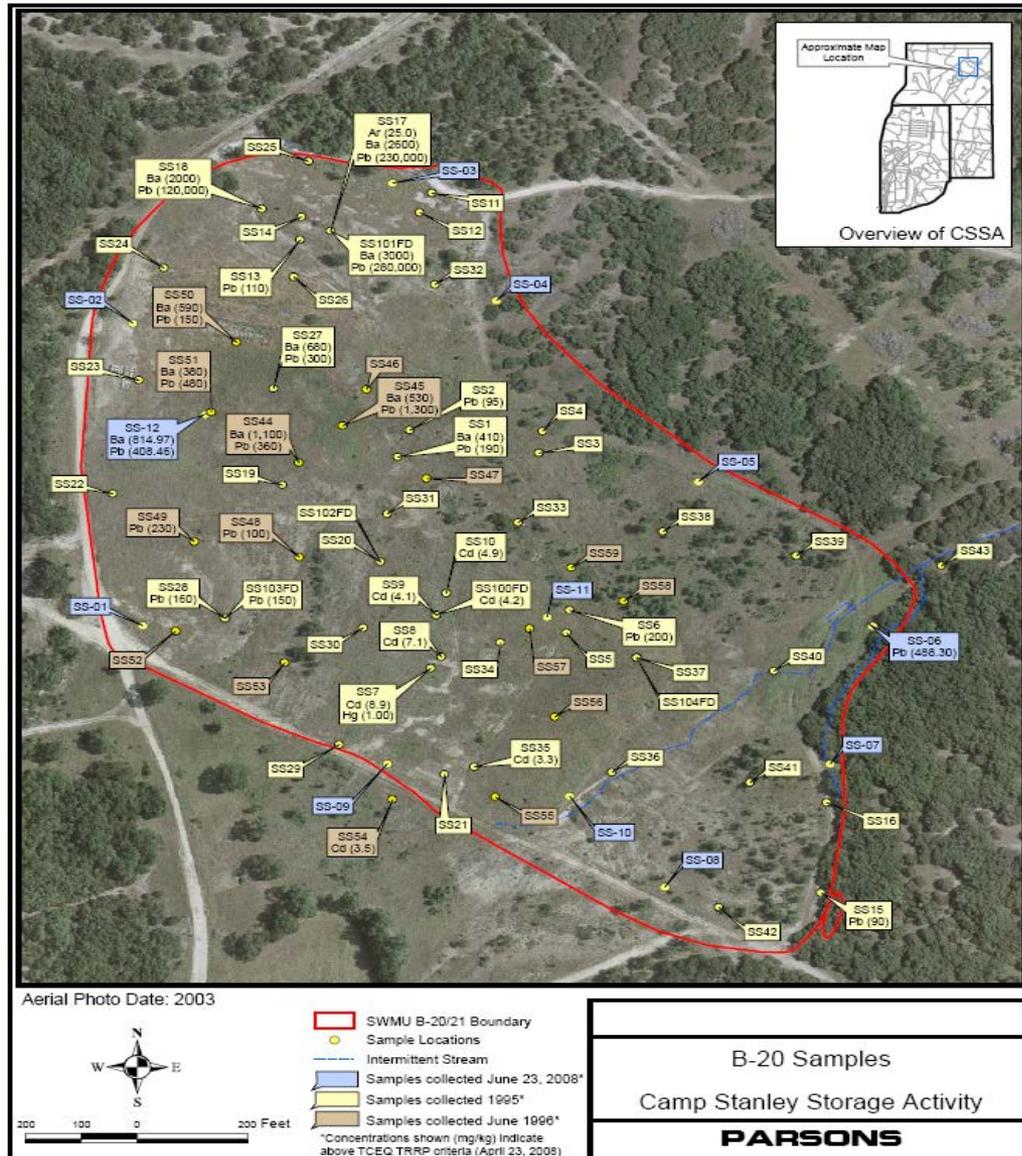
- Grid sampling to determine extent of remaining lead-contaminated soils throughout area
- Combine sites for future work/closure due to proximity and similarity of contaminants
- Possible outcomes:
 - Additional removal and Tier 1 closure (with RIR)
 - Additional removal followed by No Further Action APAR using Tier 2 criteria
 - No Further Action APAR with Tier 2 criteria

SWMU B-20/21

- Extensive sampling shows MC above background, but generally below Tier 2 criteria
- Numerous MEC items found, wide variety of types and sizes
- Soil in approximately 5 of 35 acres has been sifted.
- Geophysical survey recently completed, numerous anomalies located throughout ~35 acre site
- Munitions debris (kickout) located outside the site boundary, could potentially include MEC

SWMU B-20/21

Geophysical Survey Results (DRAFT)



B-20 Samples
Camp Stanley Storage Activity
PARSONS

SWMU B-24

- Soil sampling shows MC above background, but generally below Tier 2 criteria – a few hot spots
- Numerous MEC items found, wide variety of types and sizes, lots of small arms
- Geophysical survey recently completed, numerous anomalies located throughout site

SWMUs B-20 and B-24

Recommendations

- Complete evaluation of geophysical survey results, potentially investigate anomalies in test grids
- Consider land use controls, such as fencing, surface use only
- Conduct soil removal to Tier 2 PCLs and ecological PCLs (MEC clearance would be required)
- Surface sweep (vacuum) for small arms/MD at B-20
- Removal of small arms/MD in sifted piles at B-24
- UXO removal through sifting soil in 2-foot lifts (costly, time consuming, and disruptive – bird habitat)
- Combine B-20/B-24 actions/reporting due to proximity and similarity
- Possible long-term goal: Tier 2 APAR with land use controls

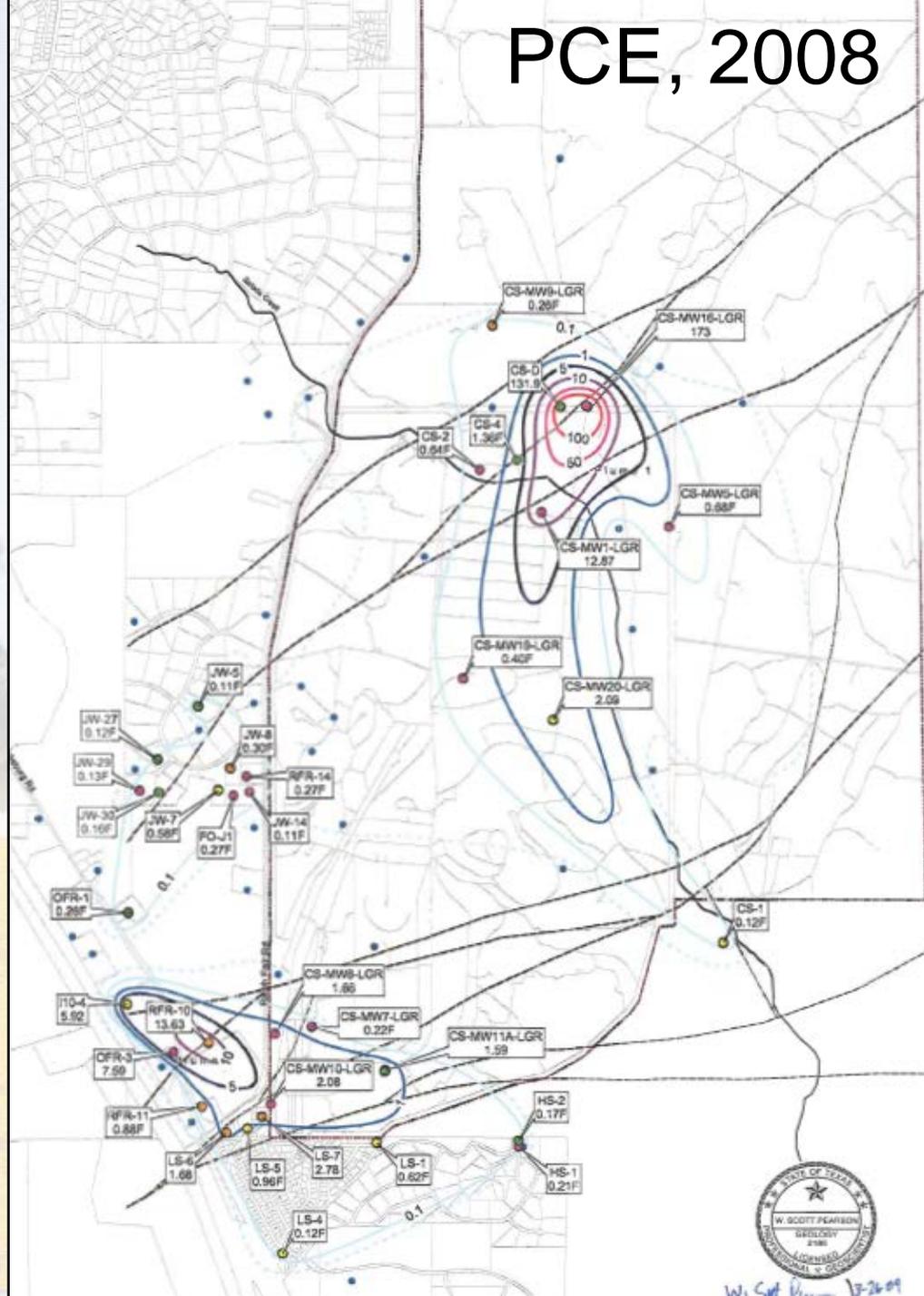


TREATABILITY STUDIES (B-3 AND AOC 65)

CSSA Pilot Studies Description

- 1. SWMU B-3 Bioreactor Pilot Study:**
Enhanced anaerobic bioremediation of chlorinated hydrocarbons in underlying fractured limestone at Plume 1.
- 2. AOC-65 Soil Vapor Extraction Pilot Study:**
Removal of chlorinated hydrocarbons in underlying fractured limestone at Plume 2.

PCE, 2008



W. Scott Pearson 12-26-09

B-3 Bioreactor Pilot Study Objectives

Review

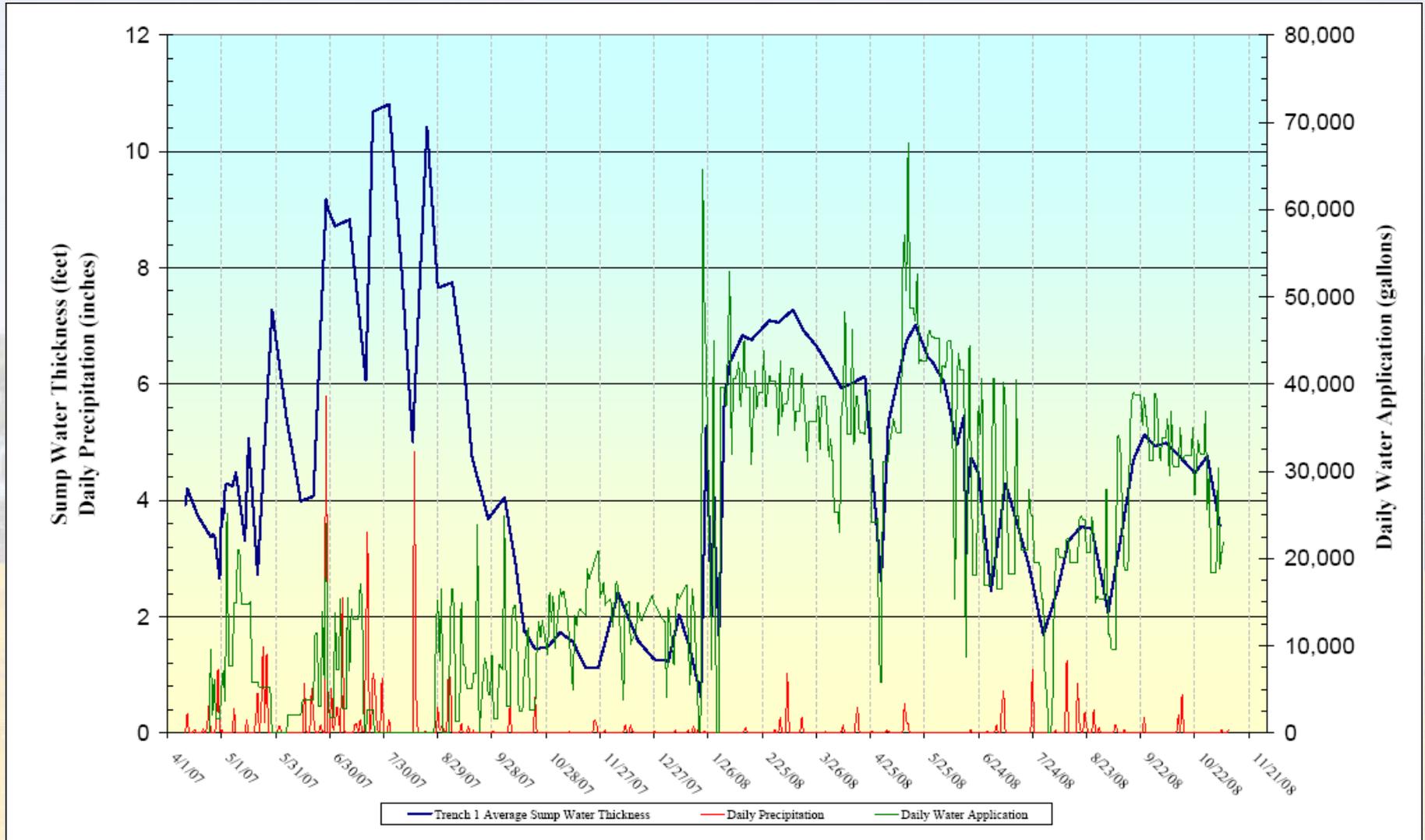
- Determine if the bioreactor is an effective approach for treatment of groundwater at SWMU B-3 (Plume 1).
- Evaluate the extent of bioreactor influence on the effectiveness of treatment in the surrounding fractured media.
- Evaluate the migration of contaminants through the underlying formations and into the underlying aquifer.

B-3 Bioreactor Pilot Study

General Observations

- Bioreactor is effectively treating injected contaminated groundwater, but having trouble keeping bioreactor saturated.
- Significant contaminant concentrations likely remain in the fractured bedrock formation. Data indicates underlying CVOCs are being flushed. Biotic and abiotic degradation is occurring.
- Isotope data suggest water surrounding bioreactor comes from several different sources.

B-3 Bioreactor Trench 1 Water Thickness



- Bioreactor is effectively treating injected contaminated groundwater, but having trouble keeping bioreactor saturated.

B-3 Bioreactor Pilot Study Data

Recommendation 1: More Water

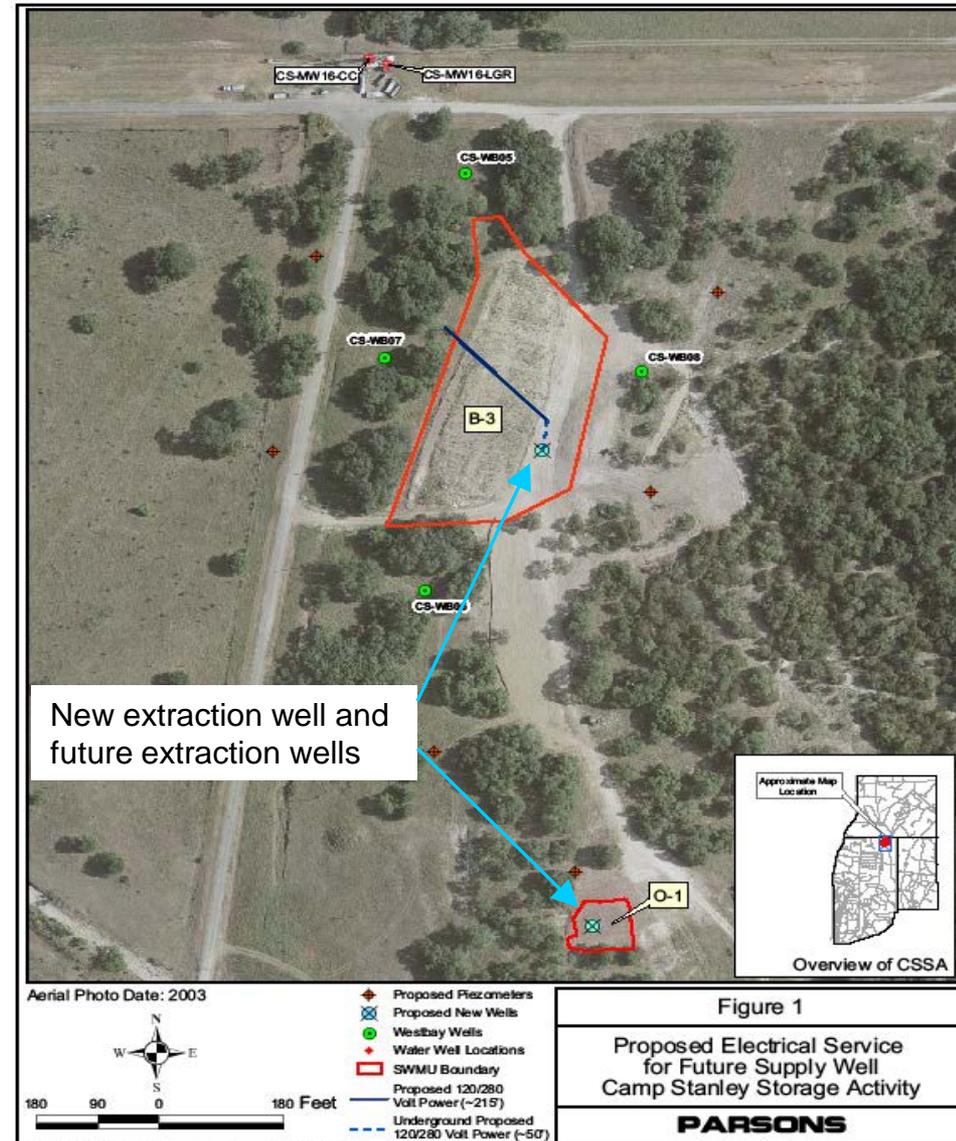
Objective - Determine if bioreactor is effective approach for treatment of Plume 1 groundwater. Due to drought conditions only one trench is currently operational. Aquifer water is optimum source of water to increase volume of injection into trench.

Data Gap - Need additional injection water to allow a greater bioreactor influence on vadose zone intervals.

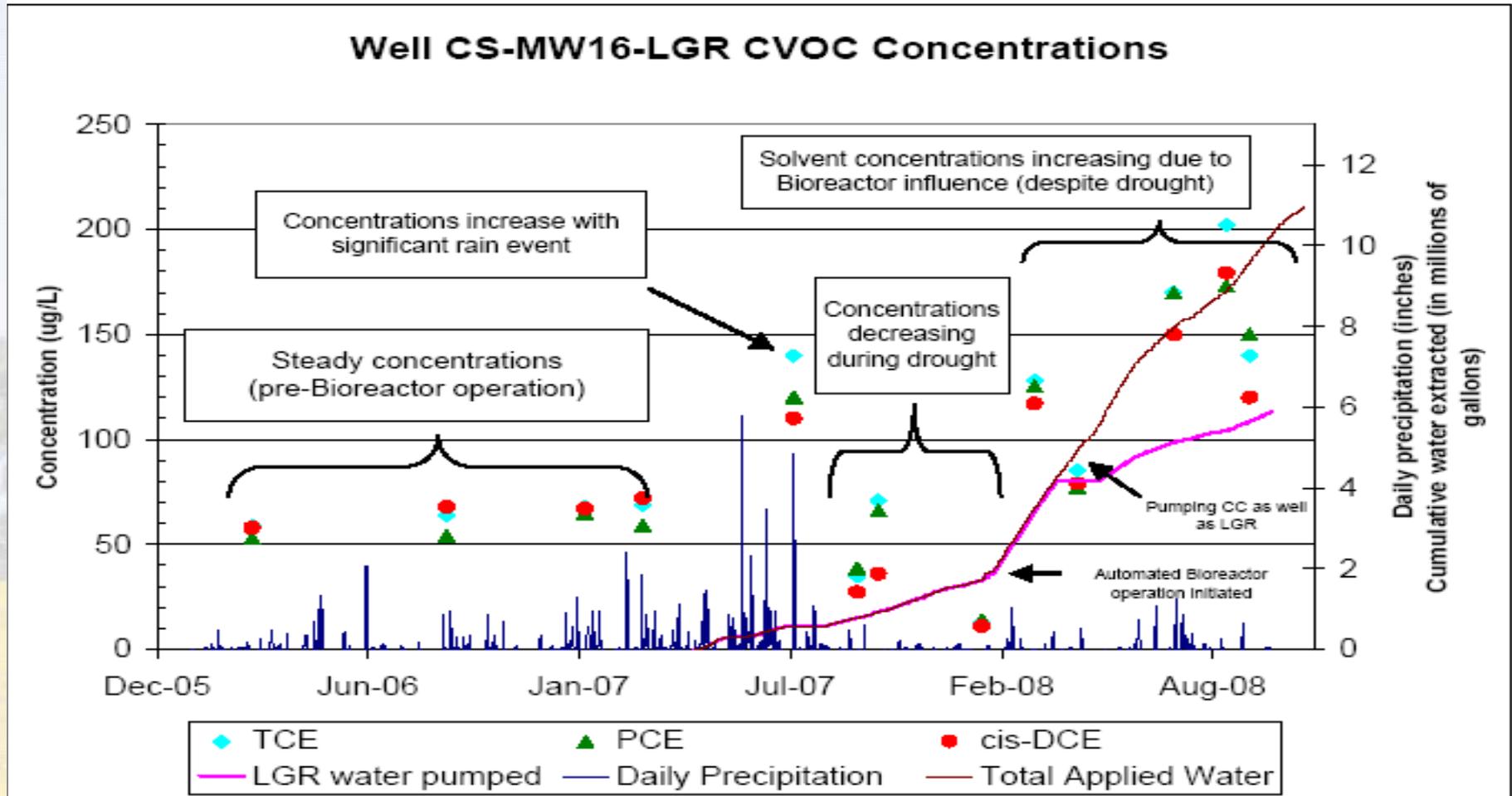
Recommendation (12/09) - Add additional extraction wells for bioreactor injection.

Accomplished – Added SWMU B-3 extraction well to supply aquifer water to bioreactor.

Future Actions - Additional well(s) anticipated in future delivery order.



Well 16 CVOOC Concentrations



- Significant contaminant concentrations likely remain in the fractured bedrock formation. Data indicates underlying CVOCs are being flushed.

B-3 Bioreactor Pilot Study

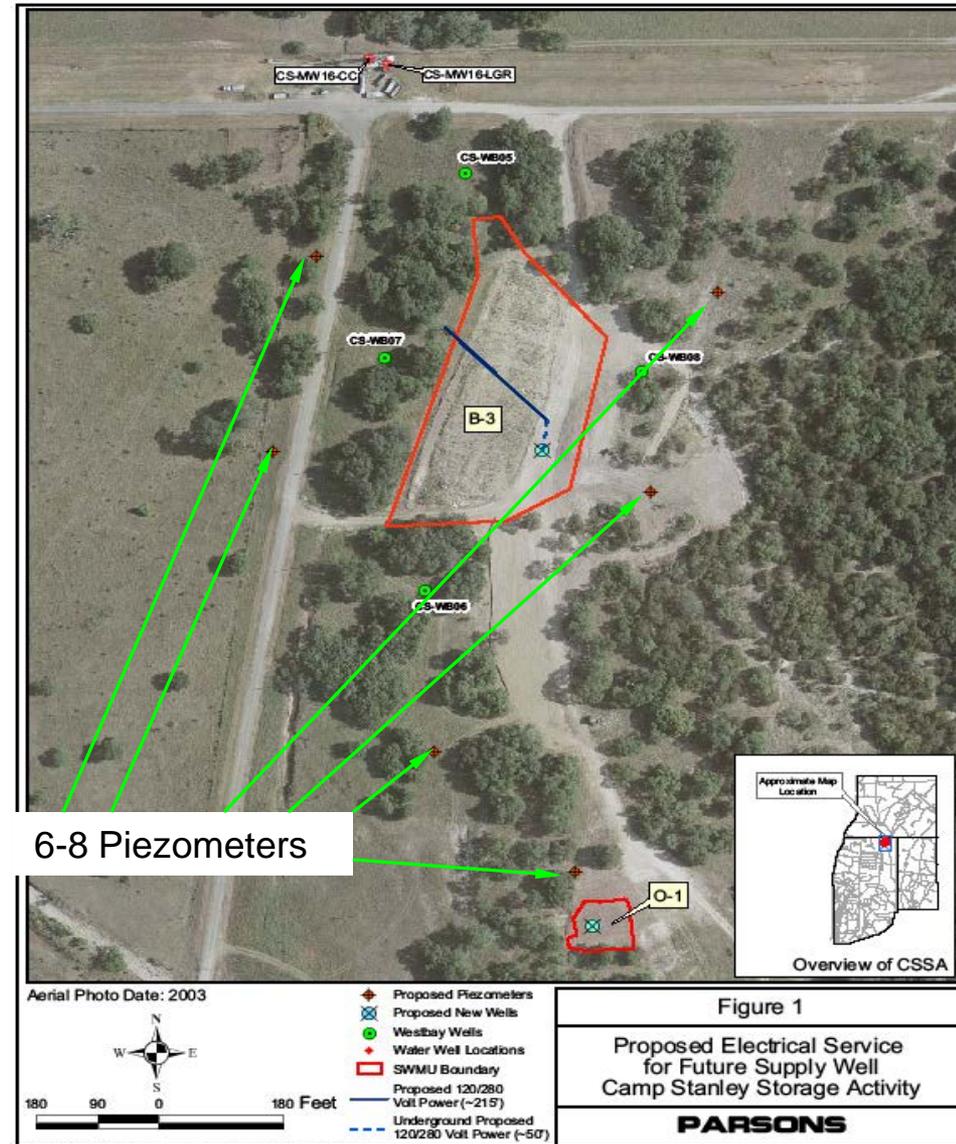
Recommendation 2: More MWs

Objective - Evaluate extent of bioreactor influence on effectiveness of treatment in vadose intervals.

Data Gap - Additional monitoring data needed to determine if Plume 1 is reducing in toxicity, mobility and volume. Current data indicates the extent of migrating intermediate contaminants such as vinyl chloride and manganese from the bioreactor are unknown. Need additional data in the upper formations underlying the bioreactor to determine extent of bioreactor influence.

Recommendation - Add six or eight additional shallow monitoring wells (complete to a depth of approximately 100 ft bgs) near former SWMU B-3 to monitor possible contaminants emanating from the bioreactor.

Future Actions –Shallow monitoring wells are included of the new SOW for FY2010 work order.



B-3 Bioreactor Pilot Study

Recommendation 3: Tracer Study

Objective - Evaluate the migration of contaminants through the underlying formations and into the underlying aquifer.

Data Gap – (A) Need additional monitoring data for determining migration of contaminants through the bioreactor's underlying formation and aquifer.

(B) Need tracer study to determine the potential migration pathways of contaminants from bioreactor.

Recommendation – (A) Continue monitoring of bioreactor for another one year and re-evaluate. **(B)** Perform water tracer study within bioreactor trench 6

Future Actions – Plan to utilize CSSA CS-12 water for tracer study in Summer 2009. Also, continued monitoring at least through November 2009.

B-3 Bioreactor Pilot Study Objectives

Review and Summary

- Determine if the bioreactor is an effective approach for treatment of groundwater at SWMU B-3 (Plume 1).
 - Biodegradation occurring, but need more water.
 - Recently installed one extraction well at B-3
 - Planning another at O-1
- Evaluate the extent of bioreactor influence on the effectiveness of treatment in the surrounding fractured media.
 - Local extent currently unknown
 - Planning 6-8 piezometers
- Evaluate the migration of contaminants through the underlying formations and into the underlying aquifer.
 - Local migration pathways not fully understood
 - Continued monitoring at least through November 2009
 - Tracer study using CS-12 groundwater

AOC-65 SVE Pilot Study

Objectives

- Determine if SVE is an effective approach for removal of CVOC from the underlying limestone formation.
- Determine the effectiveness of SVE removal on groundwater concentrations within AOC-65 monitoring well network.
- Determine whether an indoor inhalation exposure potential exists.

AOC-65 SVE Pilot Study

Observations

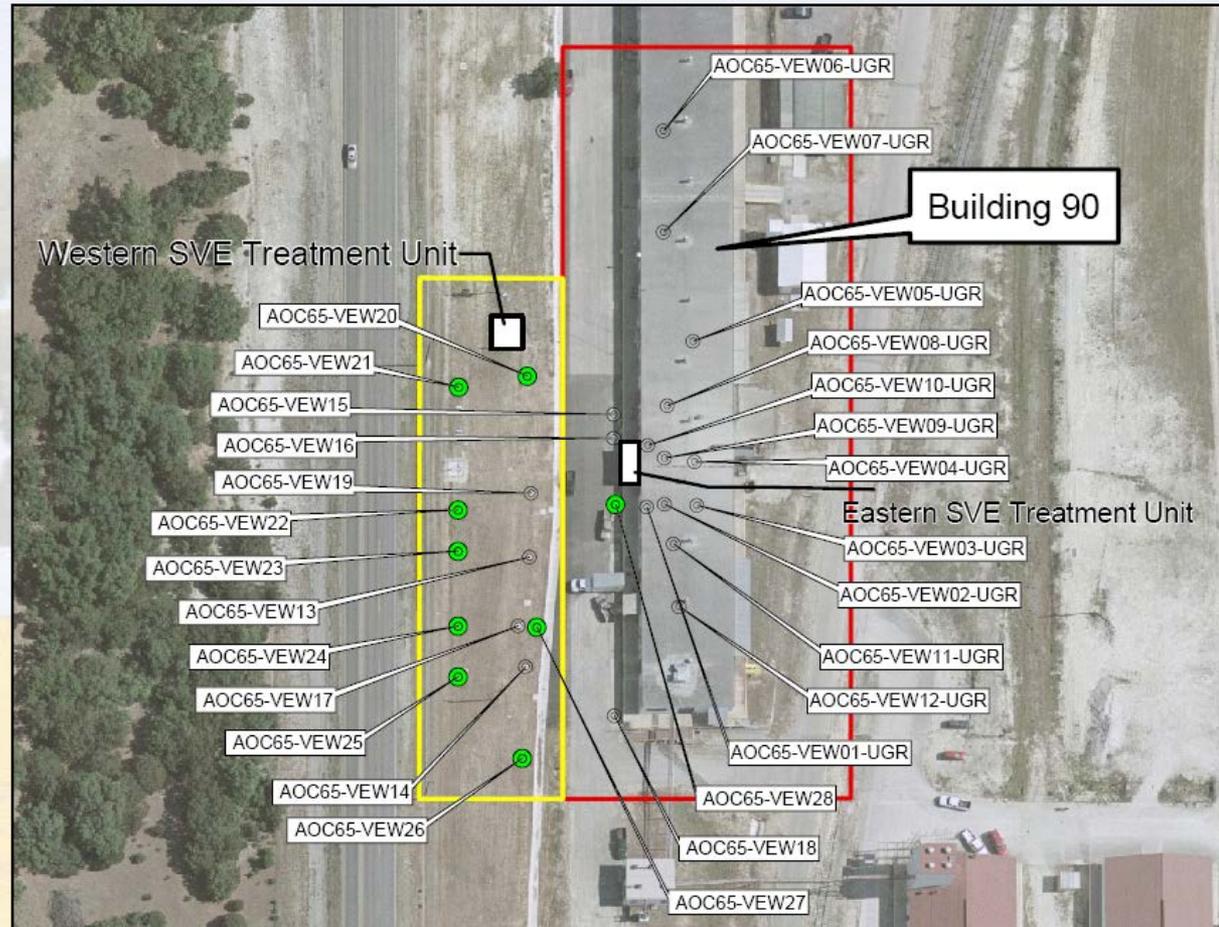
- SVE appears to be removing significant amounts of CVOCs from the underlying limestone. Estimated removal rate of PCE (based on analytical data from average of sampling events) for SVE system is:
 - AOC-65 SVE system = 150 lb/yr¹
- Emissions continue to be within permit by rule (PBR) limits:
 - AOC-65 SVE permitted PCE emission allowance = 0.268 lb/hr
 - Actual AOC-65 SVE PCE emission rate = 0.021 lb/hr¹

Note 1 – Estimated removal rate from 2008-2009 sampling of SVE extraction well emissions.

AOC-65 SVE Pilot Study

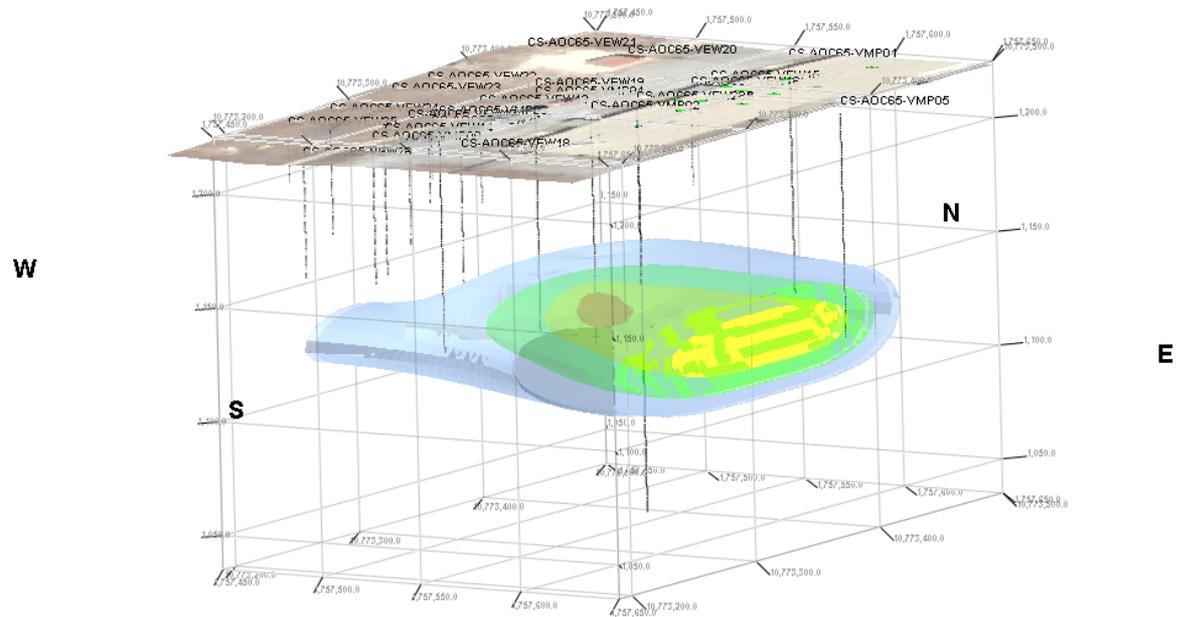
Vapor Pressure Monitoring Results

- SVE system was enhanced in 2007/8
- Two treatment units
- One year of monitoring completed April 2009
- Pressure response data used to define zones which are connected to potential source area (Bldg 90 subslab system)



Modeled Connectivity of VEWs and VMPs to Building 90 Sub Slab System

- Vacuum testing involved recording wellhead pressures from each VEW and VMP zone with only the Building 90 Sub slab blower operating.
- Only the VEW being tested was open at the manifold to enhance vacuum response.
- VEW-28A, VMP-2, and VMP-5 appear to have the most direct connection to the Building 90 Sub Slab VEWs
- The area of greatest connectivity appears to be 80 – 120 ft. bgs.

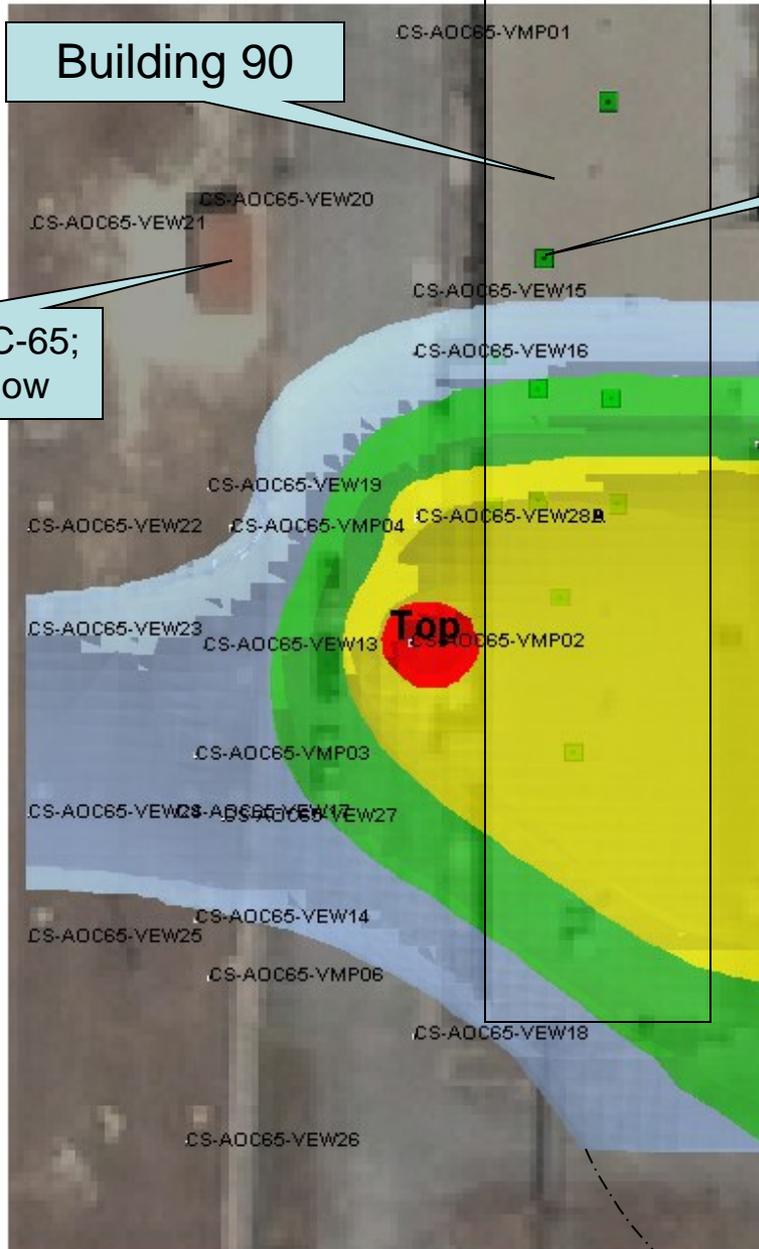


Light blue = -2.5 in. H2O
Green = -5 in. H2O
Yellow = -7.5 in. H2O
Red = -10 in. H2O

Building 90

Building 90 Sub
slab VEWs

Western AOC-65;
Deep/Shallow



Top

Poor Data
Control

AOC-65 SVE Pilot Study

Recommendations

- Determine if SVE is an effective approach for removal of CVOOC from the underlying limestone formation.
 - Determine if thermally enhancing SVE system would increase CVOOC removal rates. Install new larger diameter extraction well at VMP-2 to approximately 180' bgs. Apply steam heat to Bldg. 90 subslab system as thermal source potentially volatilizing adsorbed CVOOCs to underlying limestone.
- Determine the effectiveness of SVE removal on groundwater concentrations within AOC-65 monitoring well network.
 - Continue monitoring surrounding groundwater wells to determine effectiveness of SVE to capture CVOOC during enhanced operations.

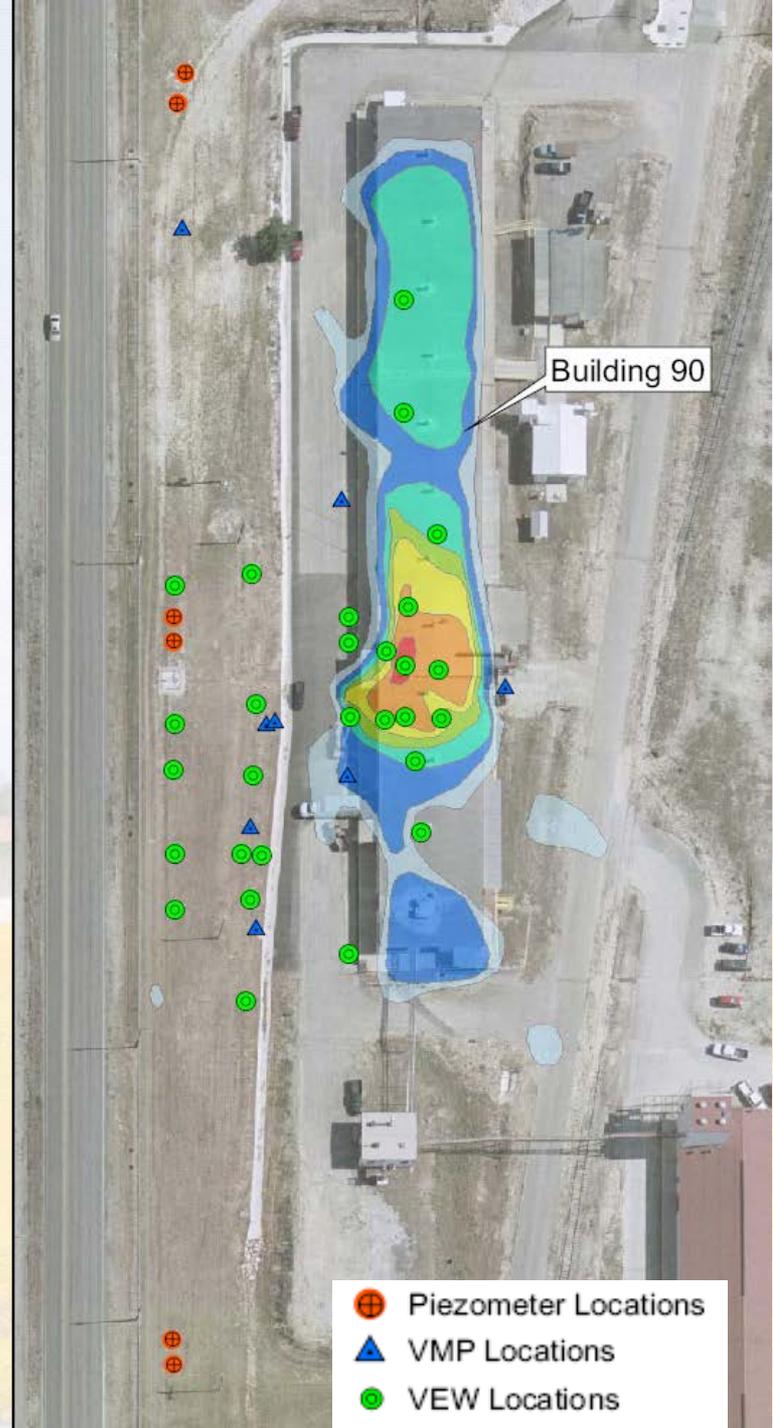
AOC-65 SVE Pilot Study

Soil Vapor Monitoring Results

Soil gas studies in 2002 show extent of PCE/TCE in soil gas is mostly contained within the building 90 footprint.

Indoor air studies (Personal air monitors) from 2002 show no contaminants within building 90 breathing zone air.

Right: Aerial photograph showing the location of VEWs, VMPs, piezometers and monitoring wells, and soil gas vapor concentrations from 2002.



AOC-65 SVE Pilot Study

Recommendations

- Determine if SVE is an effective approach for removal of CVOOC from the underlying limestone formation.
 - Continue monitoring to determine long term effectiveness of SVE
- Determine the effectiveness of SVE removal on groundwater concentrations within AOC-65 monitoring well network.
 - Continue monitoring to determine long term effectiveness of SVE
 - Evaluate other options, including thermally enhancing system
- Determine whether an indoor inhalation exposure potential exists.
 - Submit white paper to address indoor inhalation exposure concerns



**INITIAL PLANNING FOR
PUBLIC MEETING – FALL 2009**

2009 Public Meeting Goals

- Provide timely and accurate information
- Present information to citizens at convenient locations and in non-technical formats
- Respond to community concerns
- Provide opportunity for citizen input

Community Demographics

- Development to the north, west and south of Camp Stanley
 - New neighborhoods
 - Centex development
 - Existing neighborhoods
 - Fair Oaks Ranch, Jackson Woods, Hidden Springs, Dominion, Leon Springs

Neighboring Community

- Recent significant development in area – Centex development and others



Public Meetings

- Public Meetings are part of the Community Relations efforts at CSSA – also includes:
 - Resident interviews
 - Newsletters / Fact Sheets
 - Maintenance of CSSA mailing list
 - Administrative Record (library and online)
 - Community Relations Plan (August 2006)
- Tentative Dates:
 - November 3rd and 5th, 2009



**Camp Stanley Storage Activity
Environmental Program
FACT SHEET**
No. 1 • August 2001

The purpose of this fact sheet is to inform area residents about the mission, history, and environmental program at Camp Stanley Storage Activity (CSSA). Future fact sheets will contain more specific information about the installation's environmental programs and progress. Additional fact sheets will be printed as necessary to keep the community informed.

Background
Camp Stanley Storage Activity (CSSA) is a U.S. Army installation located in Bexar County, approximately 19 miles northwest of downtown San Antonio, Texas. Its higher headquarters is Red River Army Depot in Texarkana, Texas.

Mission
The mission of CSSA is the receipt, storage, and issuance of ordnance materiel as well as quality assurance testing and maintenance of military weapons and ammunition. Because of its ordnance mission, CSSA is a restricted-access facility.

History
The land on which CSSA is located was used for ranching and agriculture until the early 1900s. During 1906 and 1907, six tracts of land were purchased by the U.S. Government and designated the Leon Springs Military Reservation. The installation was renamed CSSA in 1917 and designated an ammunition depot in 1925. Since the early 1950s, federal and private land transfers and acquisitions have increased the installation to 4,000 acres.

Geology and Aquifers
CSSA is located along a large southwest-to-northeast fault trend known as the Balcones Escarpment. Geologic investigations at CSSA have identified two fault zones running roughly southwest to northeast across the installation.

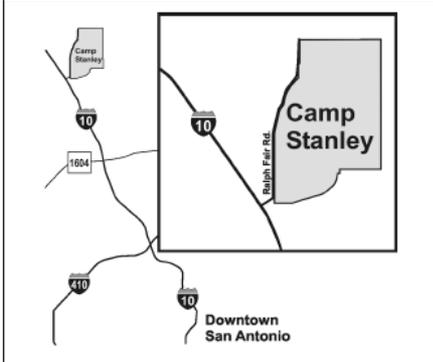
The upper and lower members of the Glen Rose formation underlie the surface of CSSA. The Glen Rose consists of alternating layers of dolomite, limestone, and marl of varying thickness and hardness. In general, soils are very thin and outcrops of the Glen Rose are common.

The Middle Trinity Aquifer supplies drinking water for CSSA and most of the surrounding area. The Middle Trinity includes the Lower

Glen Rose, Bexar Shale, Cow Creek Limestone, and Hammer Shale. Since CSSA has been keeping records, depth of water in the Middle Trinity Aquifer has ranged from 45 to 375 feet below ground surface. The highest reported level occurred after the flood in October 1998 and the lowest level during recent drought periods/conditions. Residential development surrounding CSSA over the last decade has greatly increased the demand for groundwater locally.

There are 13 water wells at CSSA. Currently two (as well as one on nearby Camp Bullis) are used for drinking water supply; the remainder are used for agricultural and monitoring purposes. CSSA is currently installing 15 additional wells to monitor conditions in the Lower Glen Rose, Bexar Shale, and Cow Creek units of the Middle Trinity Aquifer. CSSA plans to install another 24 wells in the fall of 2001.

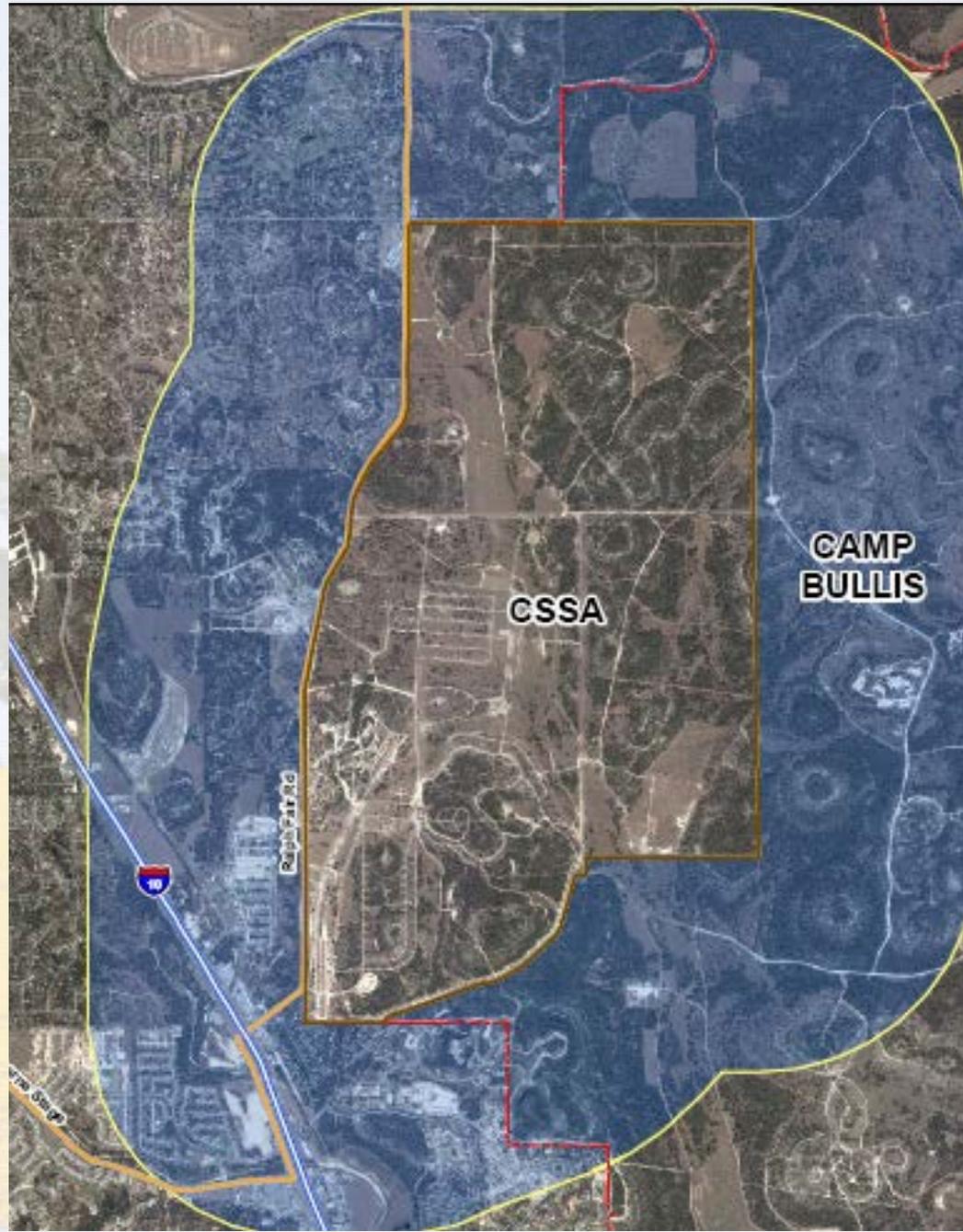
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Public Meeting Logistics

- Poster format similar to previous meetings
- Open forum for citizens to view information and ask questions
- One meeting at Fair Oaks Ranch Elementary and one at Leon Springs Elementary
- One-time mailed invitation to all residents within one mile radius of Camp Stanley
- Publish announcement in newspaper



2009 Topics - Public Meetings

CAMP STANLEY - HISTORY AND MISSION

OFF-POST GROUNDWATER

SWMU B-3 CLEANUP

ON-POST GROUNDWATER

- History and mission of CSSA
- Groundwater monitoring both on and off-post, history and results
- Sampling rationale, well installations, *long term monitoring optimization for off-post program*
- Status of AOC-65 and B-3 investigations, *description of treatability studies and future plans*
- Describe how CSSA identifies sites for cleanup, investigation methods, and site status

Other Upcoming Activities

- Bird Surveys
- Air permit update
- WWTP to be removed – sanitary discharge to SAWS
- TPDES permit being updated due to changes

MEC Hazard Assessment

- Developed by multi-agency team for CERCLA compliance
- Scores MEC hazard at RI phase
- Factors included in assessment:
 - Land use, receptors
 - Ordnance type, density, depth
 - Type of response action completed (institutional controls, surface clearance, etc)
 - Others

SWMUs B-20 and B-24

Recommendations

- Conduct preliminary MEC Hazard Assessment to determine applicability
- Complete evaluation of geophysical survey results, potentially investigate anomalies in test grids
- Conduct soil removal to Tier 2 PCLs and ecological PCLs, if required
- Surface sweep (vacuum) for small arms/MD at B-21
- Removal of small arms/MD in sifted piles at B-24
- Conduct feasibility study
- Possible long-term goal: Tier 2 APAR with land use controls