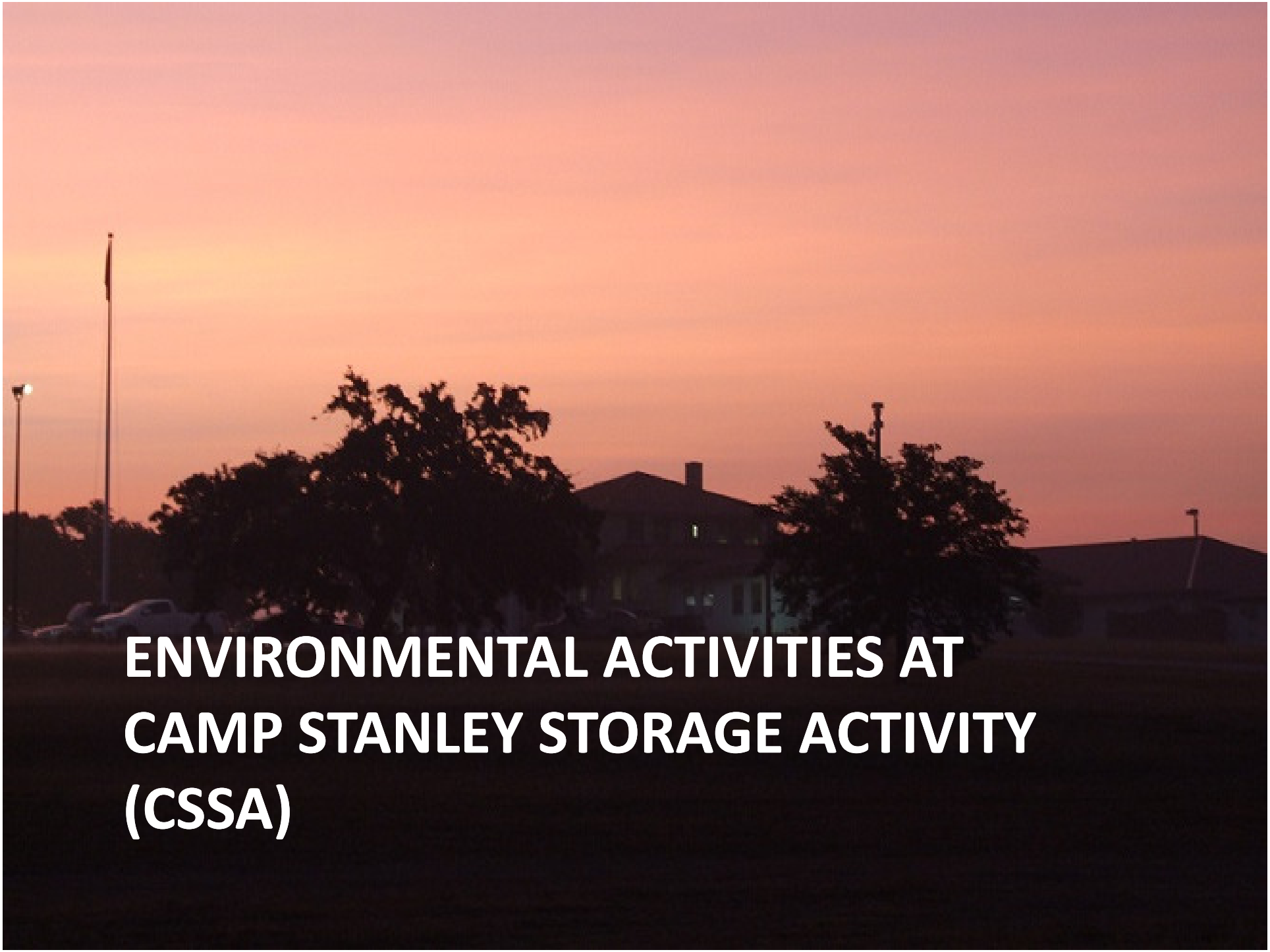


ENVIRONMENTAL ACTIVITIES AT CAMP STANLEY STORAGE ACTIVITY (CSSA)

THE PAST

CSSA MISSION SUPPORT ACTIVITIES

Mission support activities have continued up to the present day.

Some of the past activities resulted in environmental contamination.

CSSA ENVIRONMENTAL PROGRAM

Routine testing by the Texas Department of Health of the CSSA water supply wells in August 1991 indicated the presence of contamination in Well 16.

This marked the beginning of CSSA's Environmental Program.

EPA Order

- In May 1999, EPA issued an Administrative Order of Consent under Title 3008(h) of the Resource Conservation and Recovery Act (RCRA)
- The Order requires:
  - Perform Interim/Stabilization Measurements to prevent further migration of contaminants
  - Perform an RCRA Facilities Investigation (RFI) to determine the extend of any release
  - Perform a Corrective Measurement Study to identify and evaluate corrective actions
  - Implement the Corrective Measurements

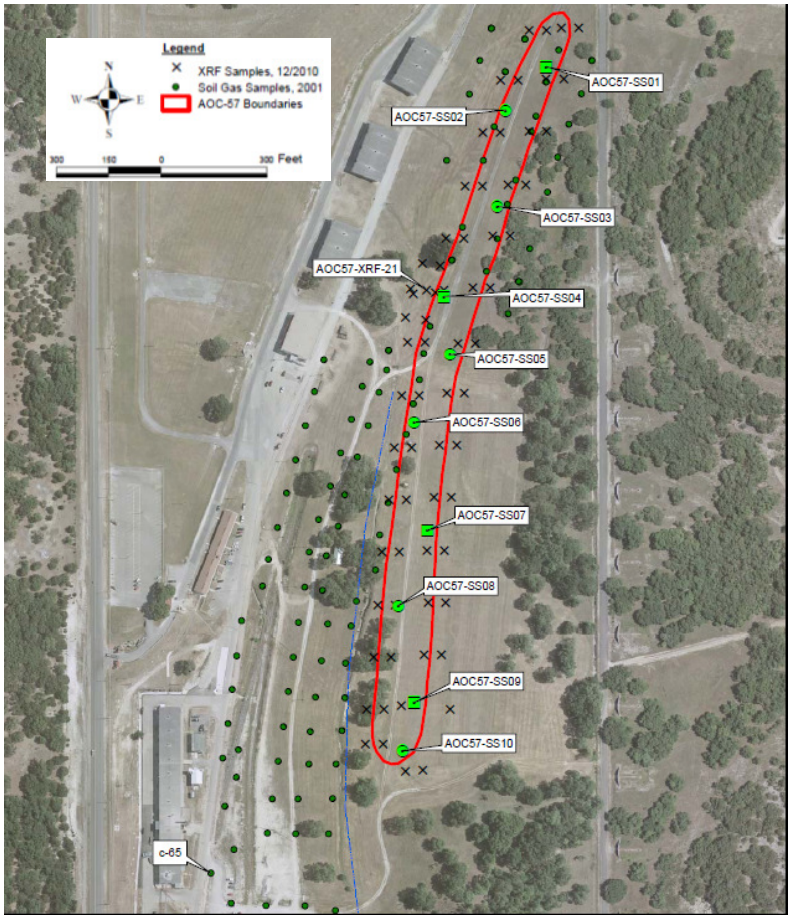
Procedures Used

- The procedures implemented were:
  - Site Identification and Closure
  - Groundwater monitoring on- and off-post to identify the extend of the plumes
  - Apply all existing and emergent technologies to reduce, contain, and mitigate ground and groundwater contamination

SITE CLOSURE PROCESS

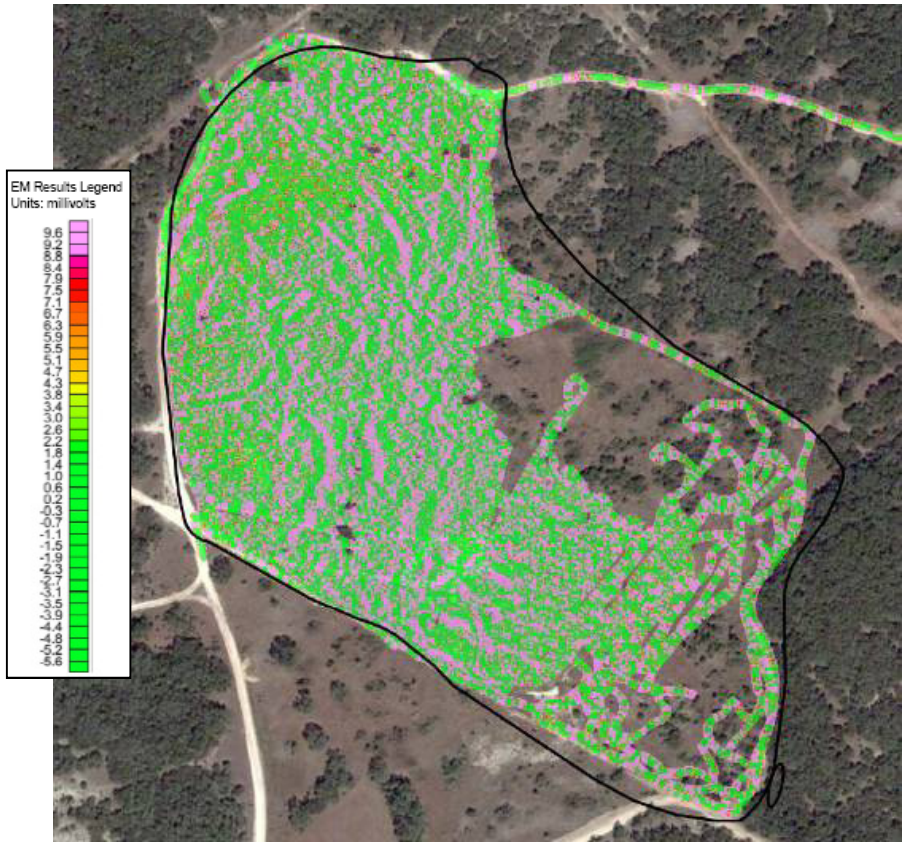
Initial Investigation → Site Remediation/ Restoration → Site Closure

Soil samples were collected to test for contamination and to help delineate the site boundaries.



SITE CLOSURE PROCESS

Initial Investigation → Site Remediation/ Restoration → Site Closure



When a site was suspected to contain buried waste, a geophysical survey was performed.

The survey measured the magnetic field below the ground surface and was used to locate buried metallic objects.

SITE CLOSURE PROCESS

Initial Investigation → Site Remediation/ Restoration → Site Closure

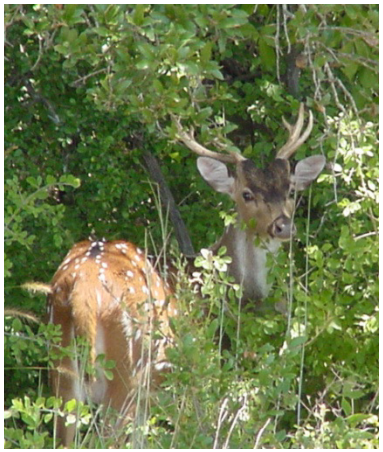
Once the extent of contamination was determined, contaminated soil and any associated debris were removed from the area.

SITE CLOSURE PROCESS

Initial Investigation → Site Remediation/ Restoration → Site Closure

Sites were then repurposed or restored to their original condition.

Some were reworked as wildlife protection and management areas.



SITE CLOSURE PROCESS

The TCEQ's Texas Risk Reduction Program (TRRP) is a risk based corrective action process that regulates the site closure process.

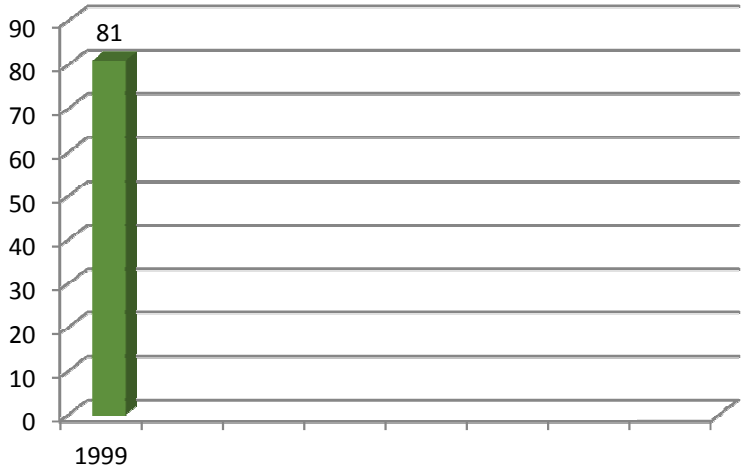
Once each site was remediated, closure documents were submitted to the TCEQ requesting final closure.

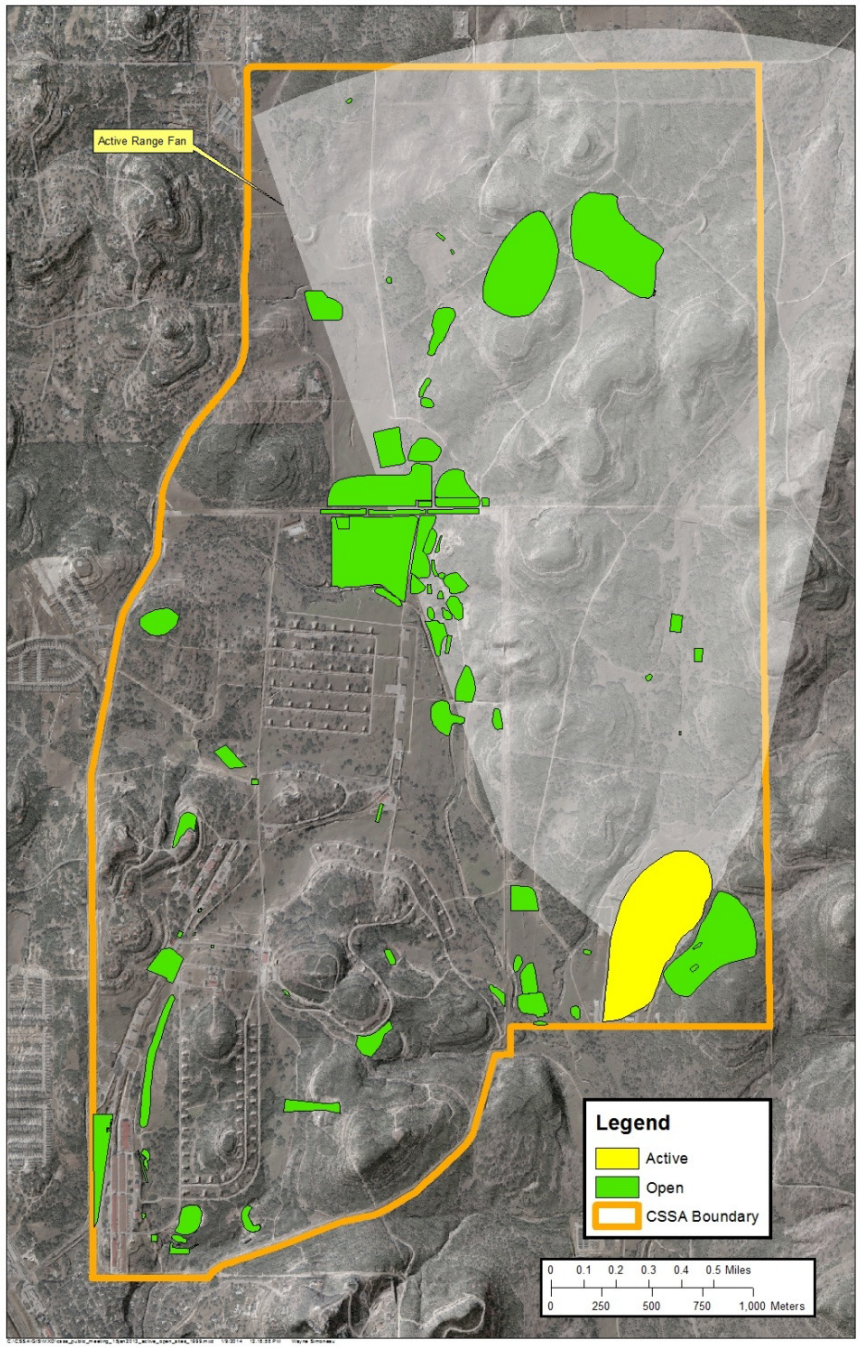
CSSA has closed as many sites as is possible to residential land use standards with a request for 'No Further Action.'

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SITE REMEDIATION PROGRESS

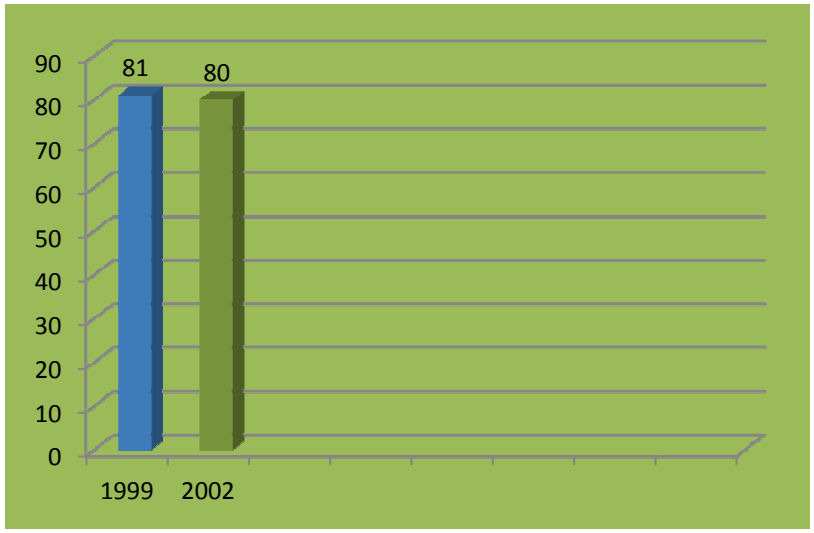
1999: 81 Open Sites

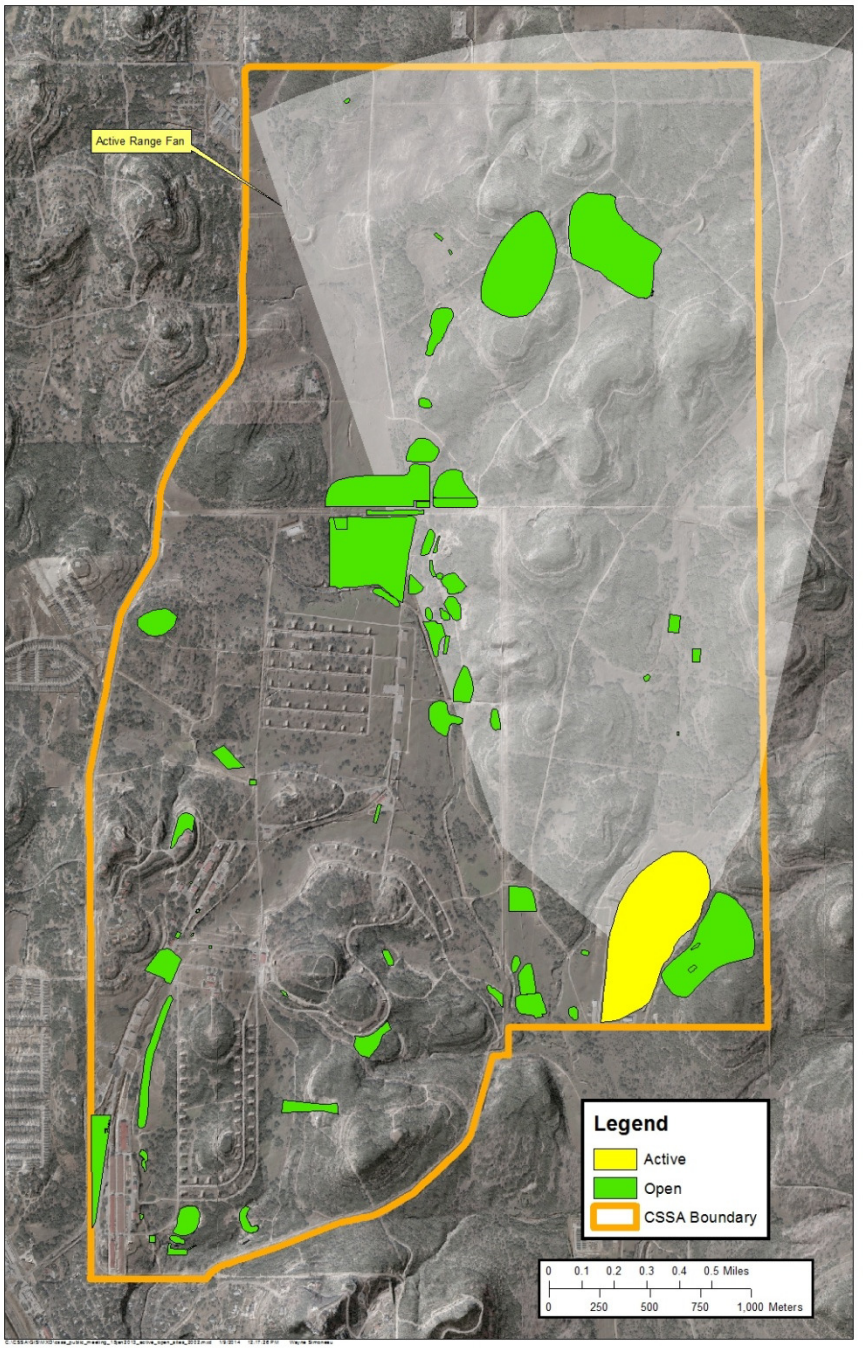




SITE REMEDIATION PROGRESS

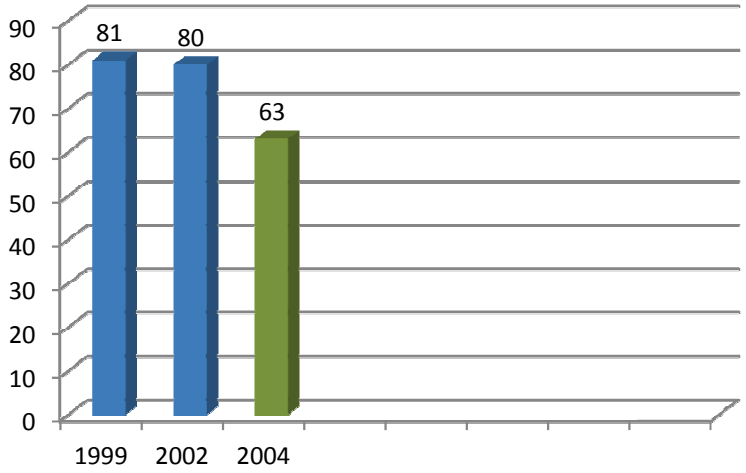
2002: 80 Open Sites

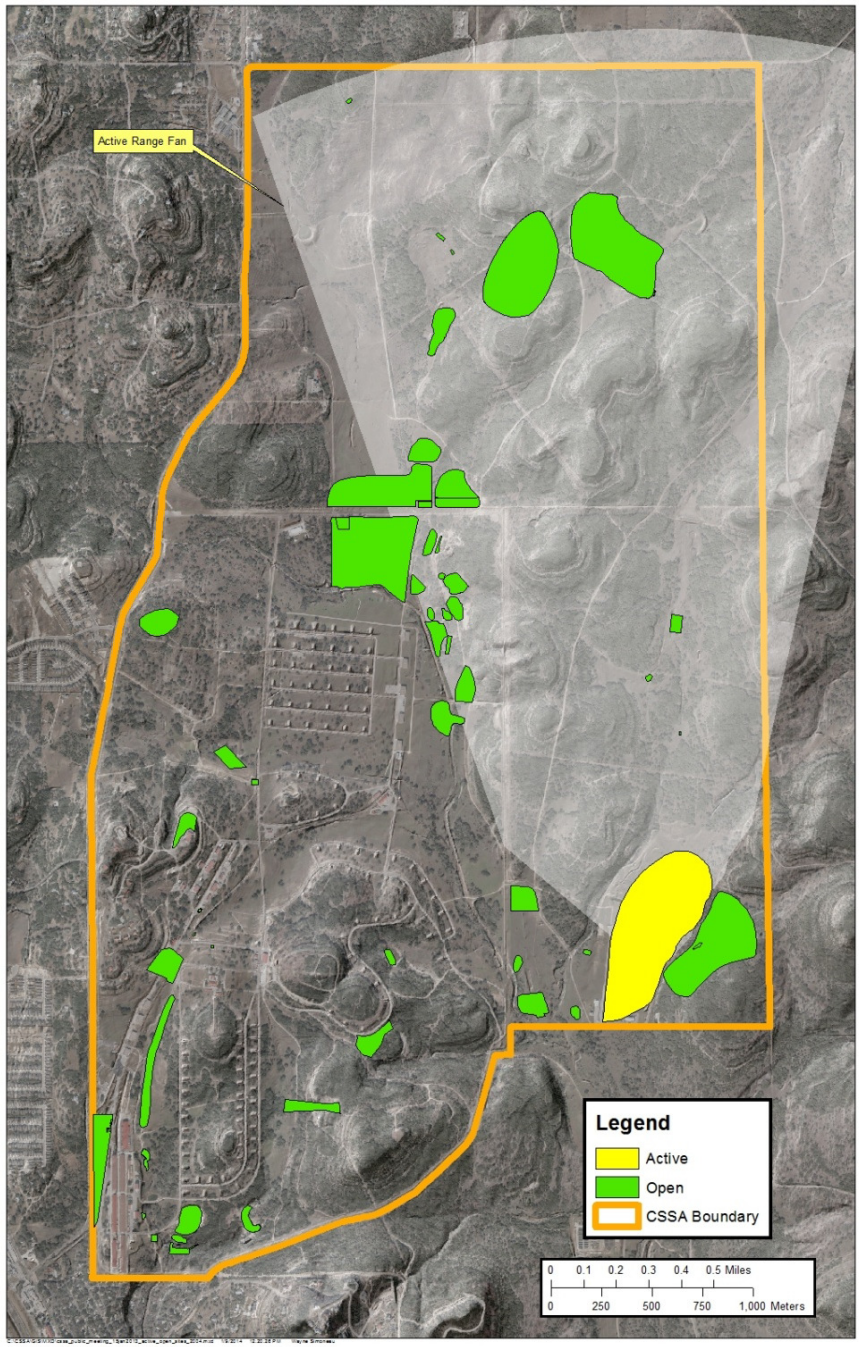




SITE REMEDIATION PROGRESS

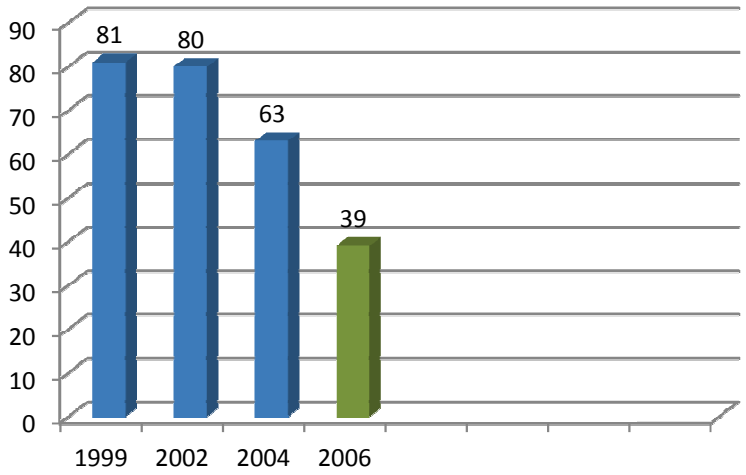
2004: 63 Open Sites

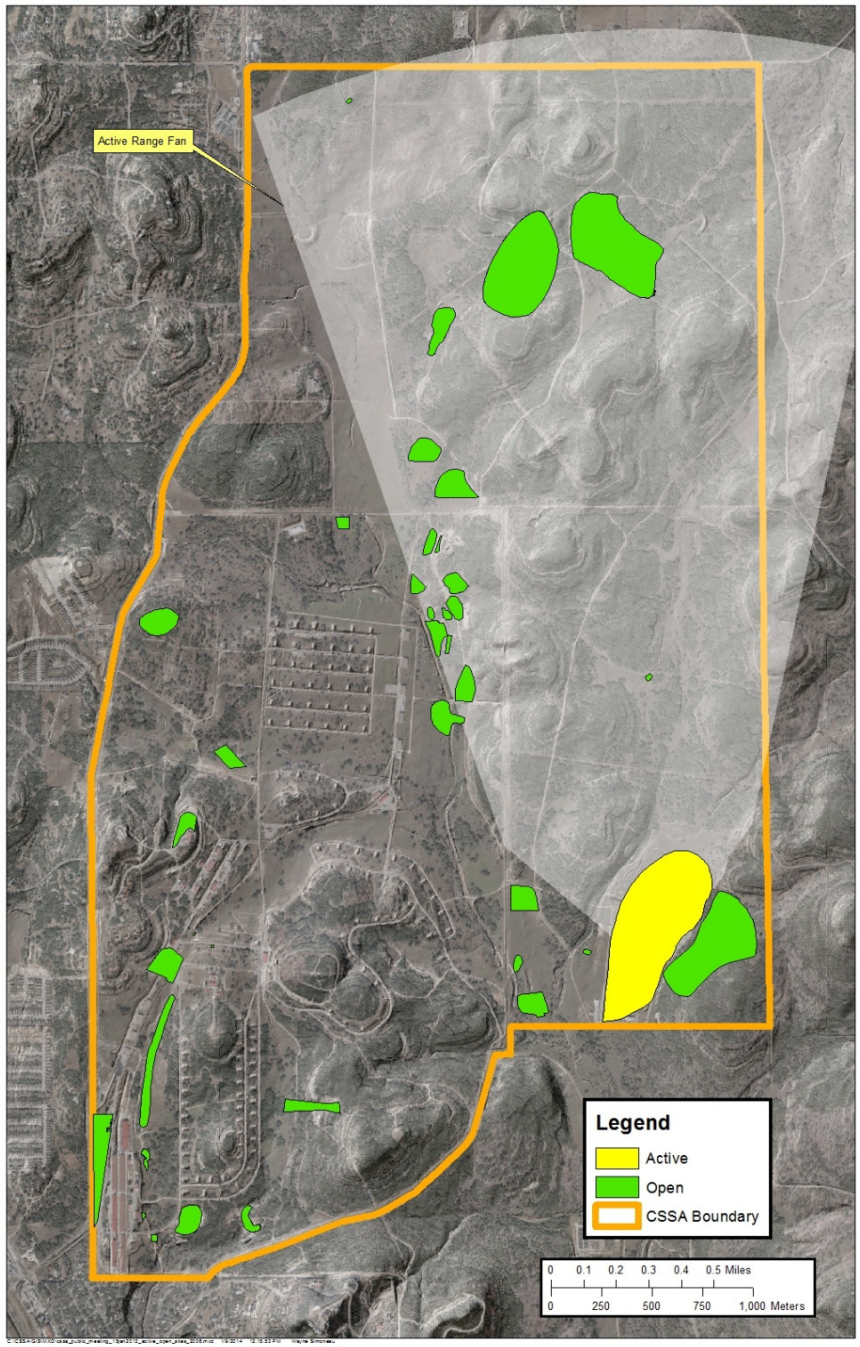




SITE REMEDIATION PROGRESS

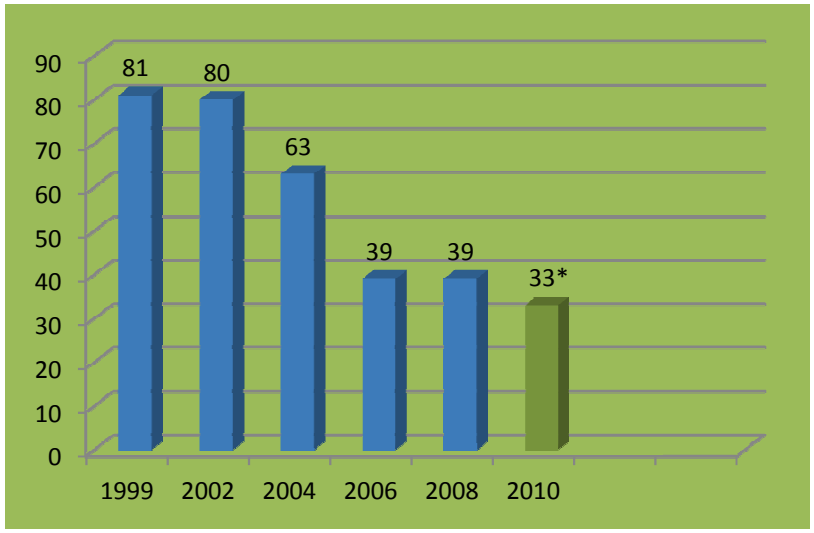
2006: 39 Open Sites



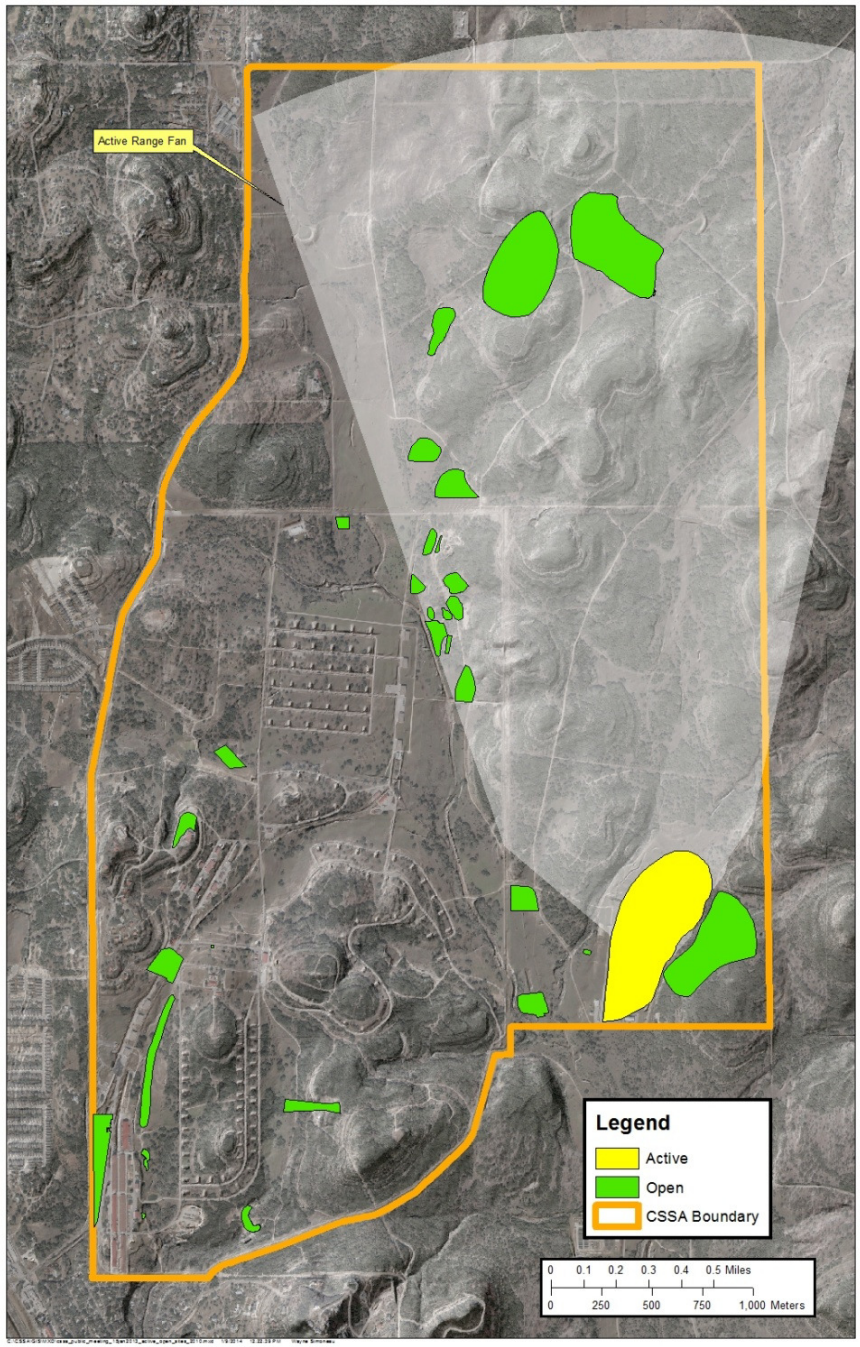


SITE REMEDIATION PROGRESS

2010: 33 Open Sites

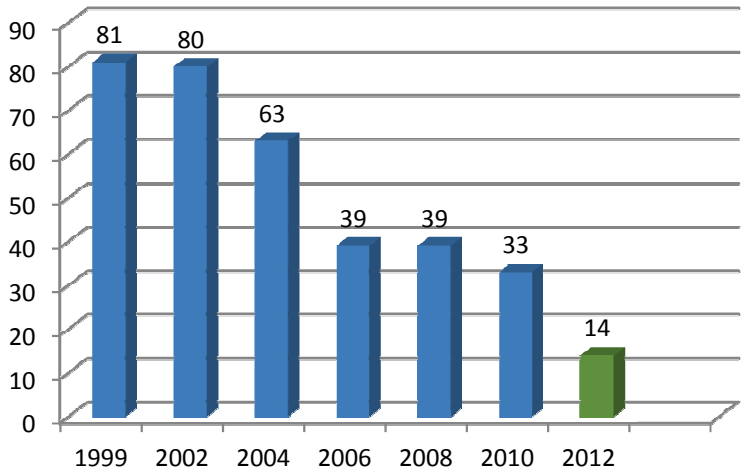


*AOC-74 and AOC-75 were added in 2010.

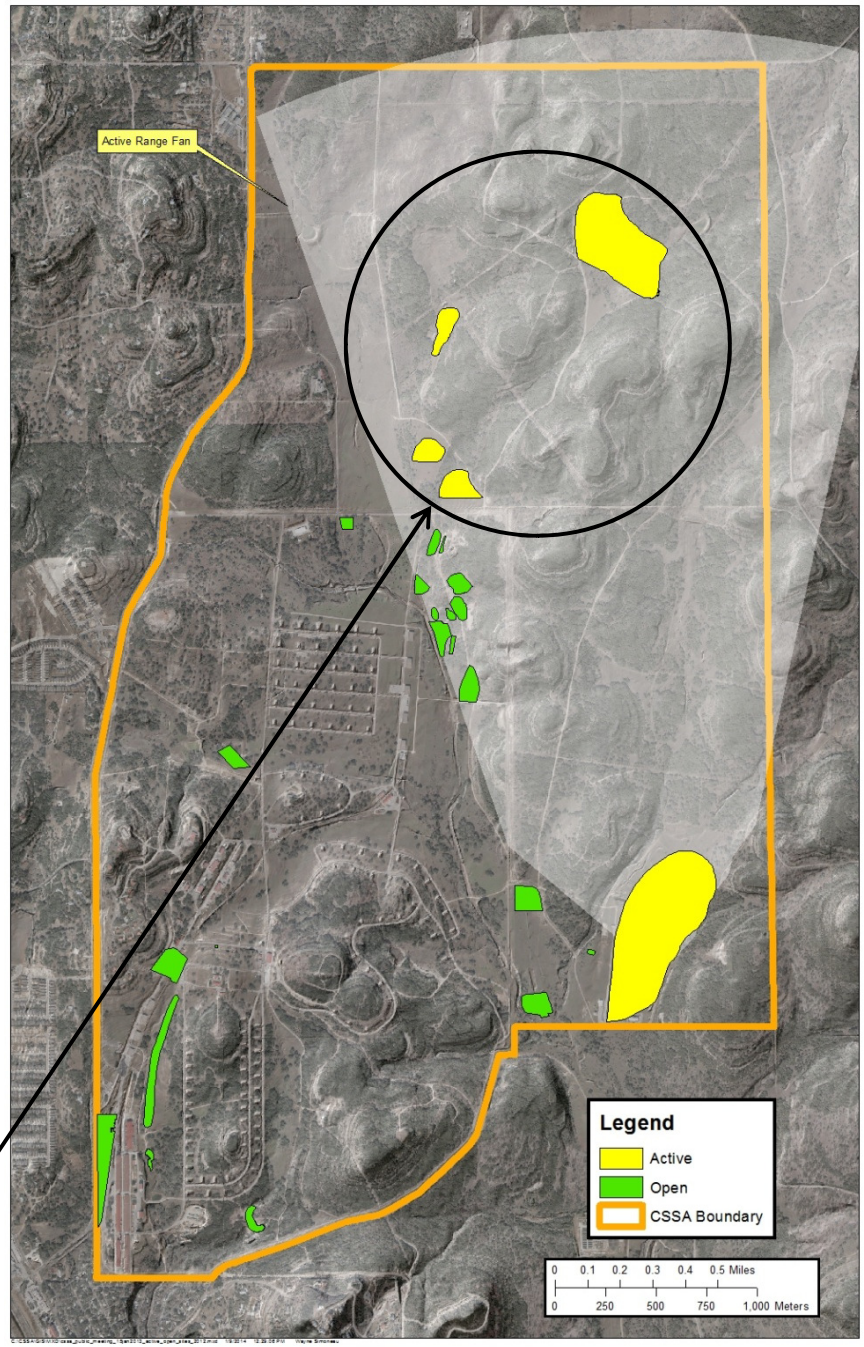


SITE REMEDIATION PROGRESS

2012: 18 Open Sites Including the Active Range*

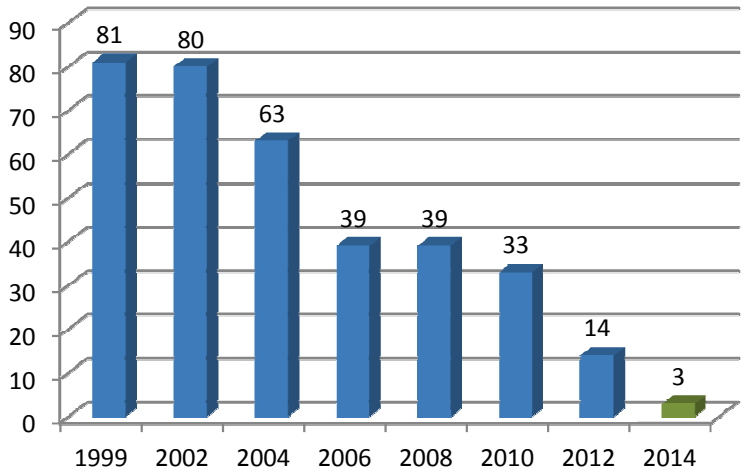


*Per agreement with the USEPA, the four remaining sites located within the Active Range fan were consolidated into one site.

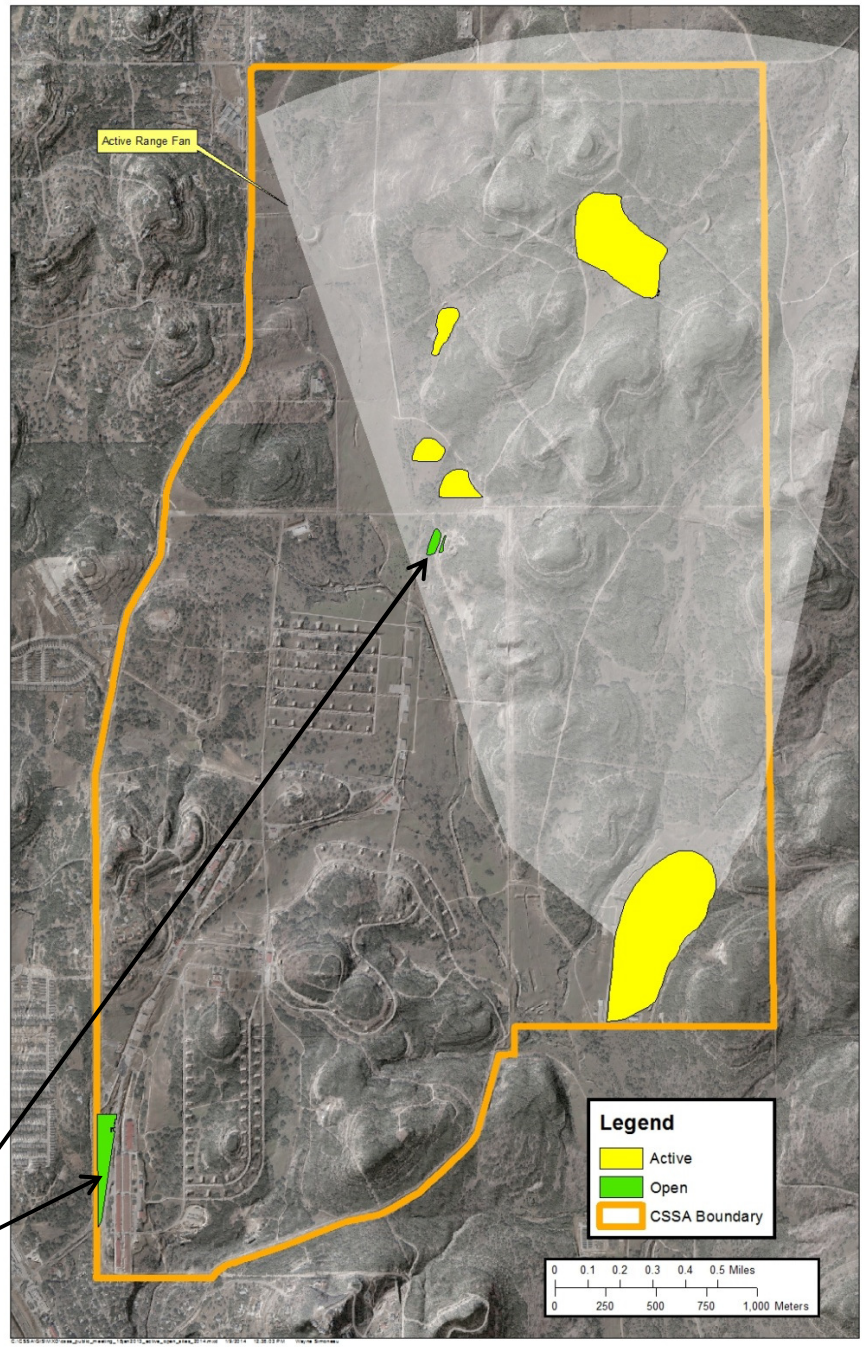


SITE REMEDIATION PROGRESS

2014: 3 Open Sites Including the Active Range

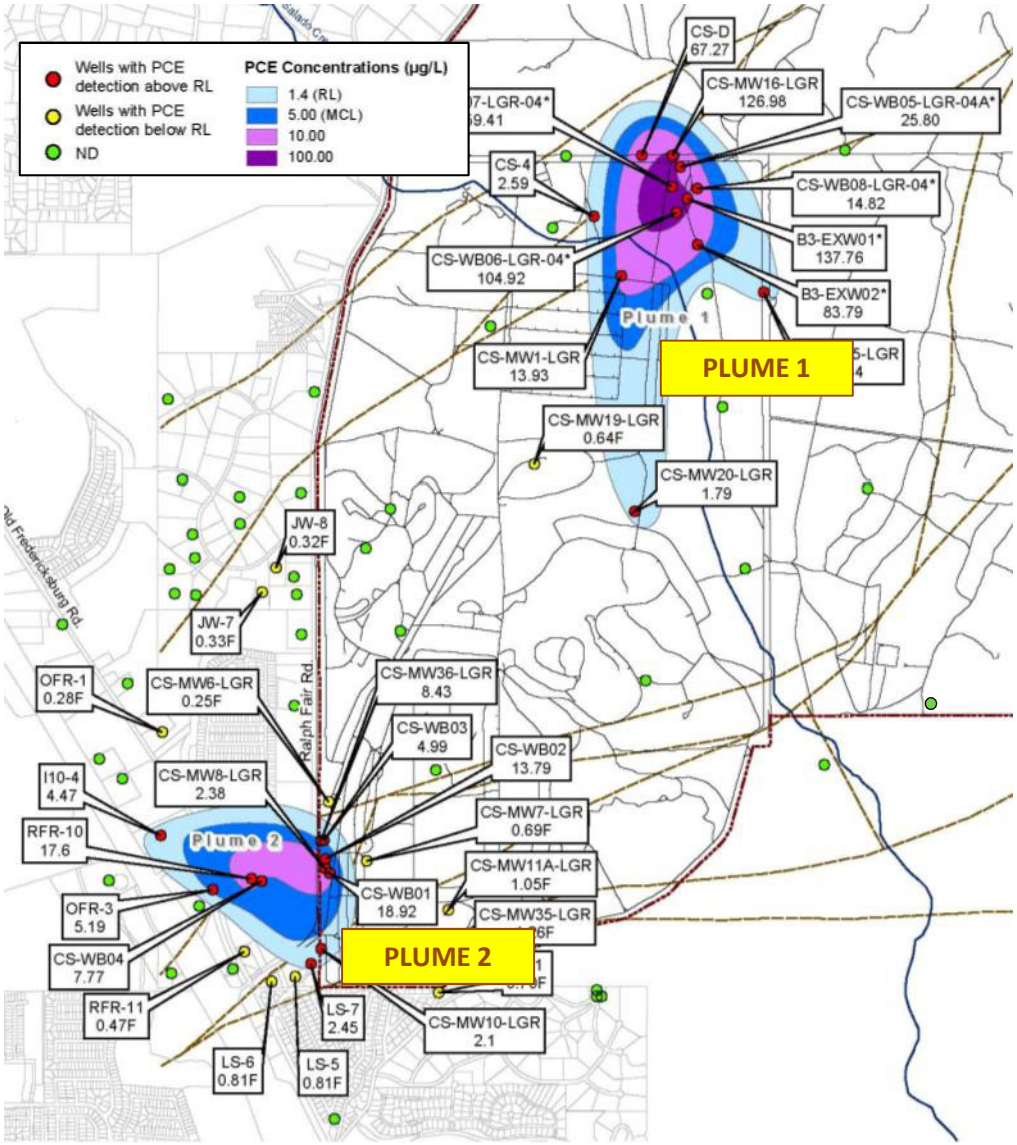


Two remaining open sites are part of the long-term groundwater monitoring program.

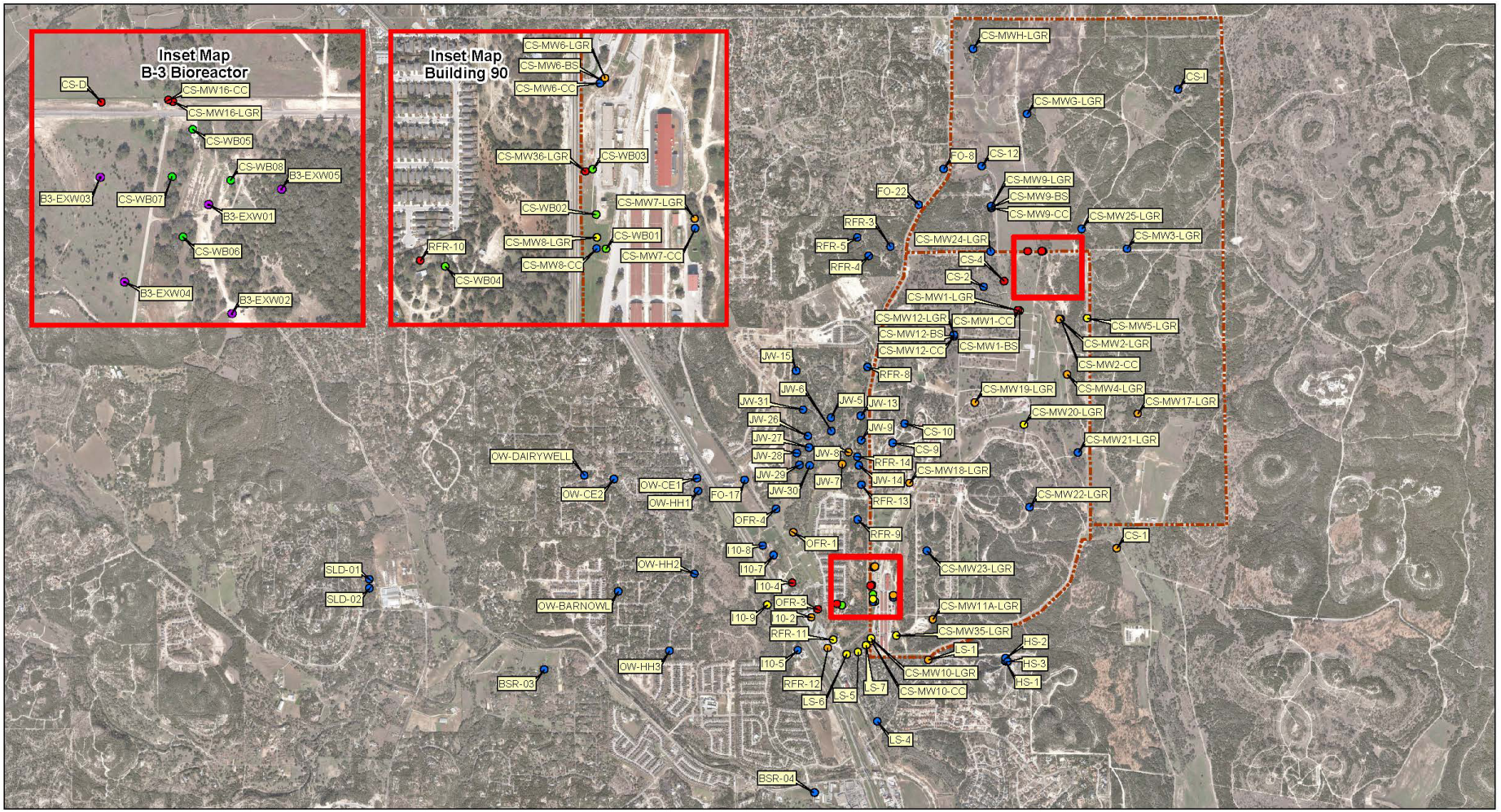


Groundwater Monitoring Program
General Facts

- **Plume 1** originates from SWMUs B-3 and O-1 in the Inner Cantonment.
- **Plume 2** originates from AOC-65 in the SW corner of CSSA.
- Concern about increasing trend at I10-4 west of CSSA (Plume 2) prompted additional sampling locations west of IH-10 (13 new wells since March 2011).
- The new DQOs and LTMO program (approved in 2010) went into effect in June 2011.
- A **"snapshot"** event (all LGR and off-post wells sampled) occurs every 9 months.
- December 2012 is the most recent **snapshot** event. September 2013 will be the next **snapshot** event.



GROUNDWATER SAMPLING LOCATIONS



Aerial Photo Date: 2012

N
W E
S

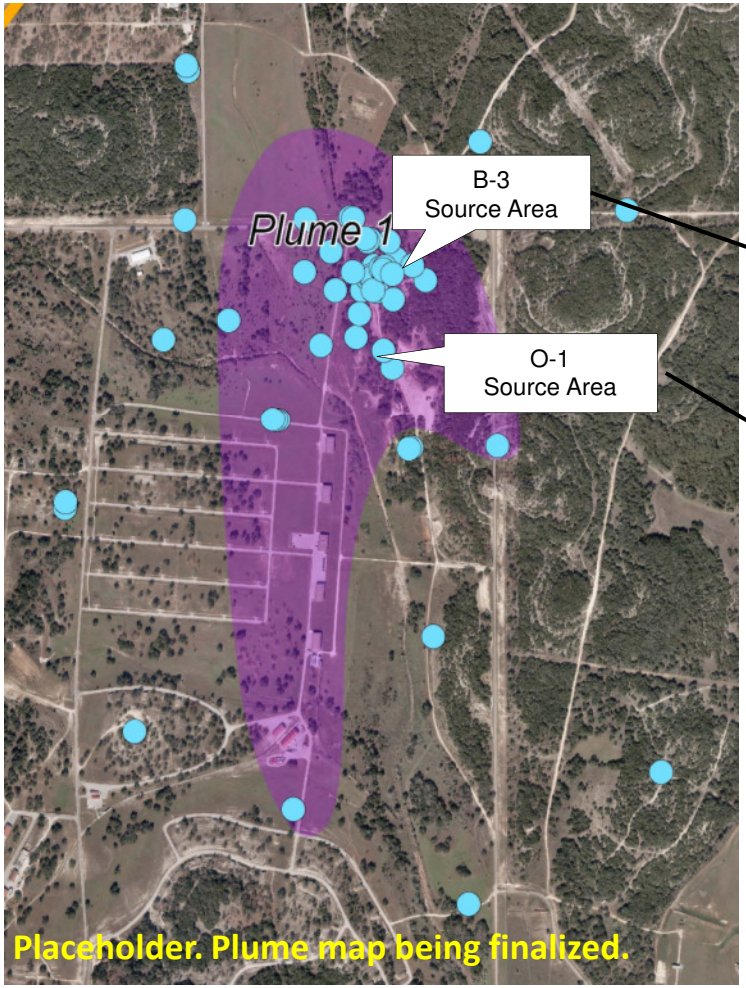
0 0.5 1 2 Miles

- Wells with VOC concentrations > MCL
- Wells with VOC concentrations between RL and MCL
- Wells with VOC concentrations < RL
- Non-detect
- Mulit-port Westbay Wells
- Other Wells
- Fence Line

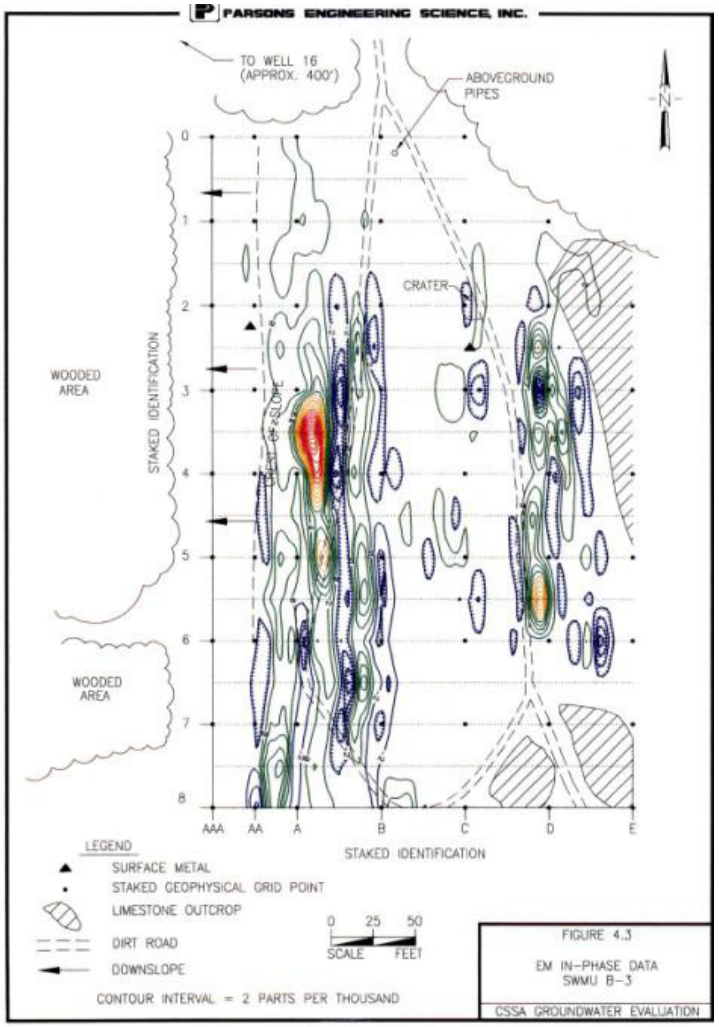
MCL= maximum contaminant level
RL= laboratory analytical reporting limit

Bioremediation Study

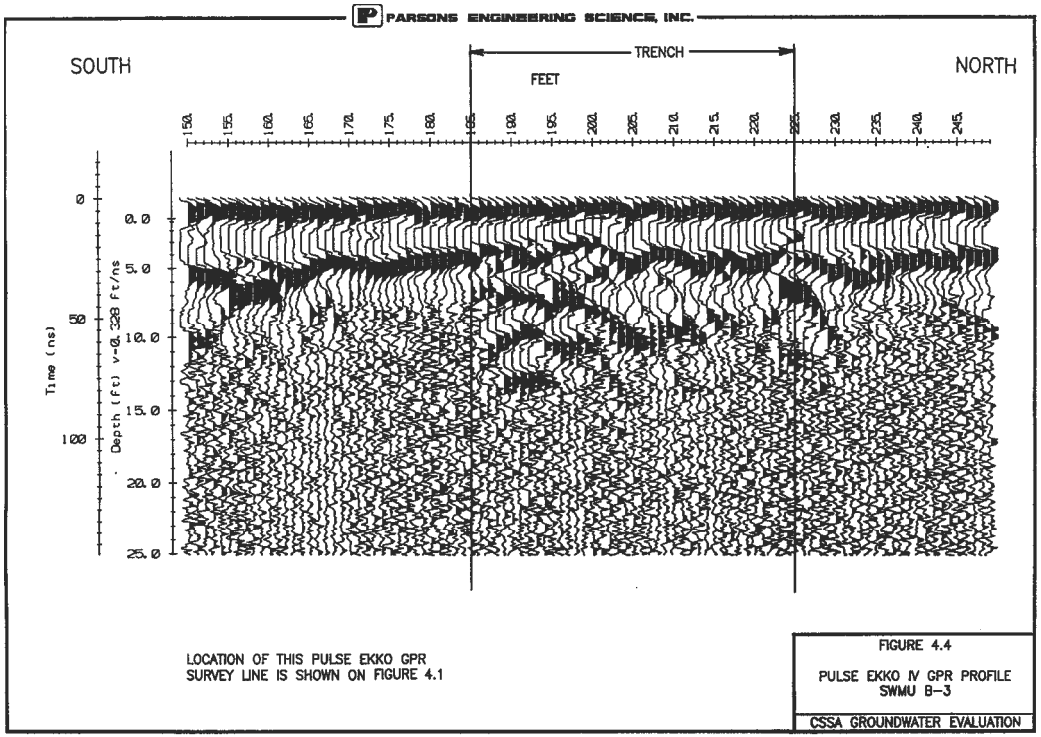
Source Areas for Groundwater Plume 1



Site Identification: Geophysical Investigation

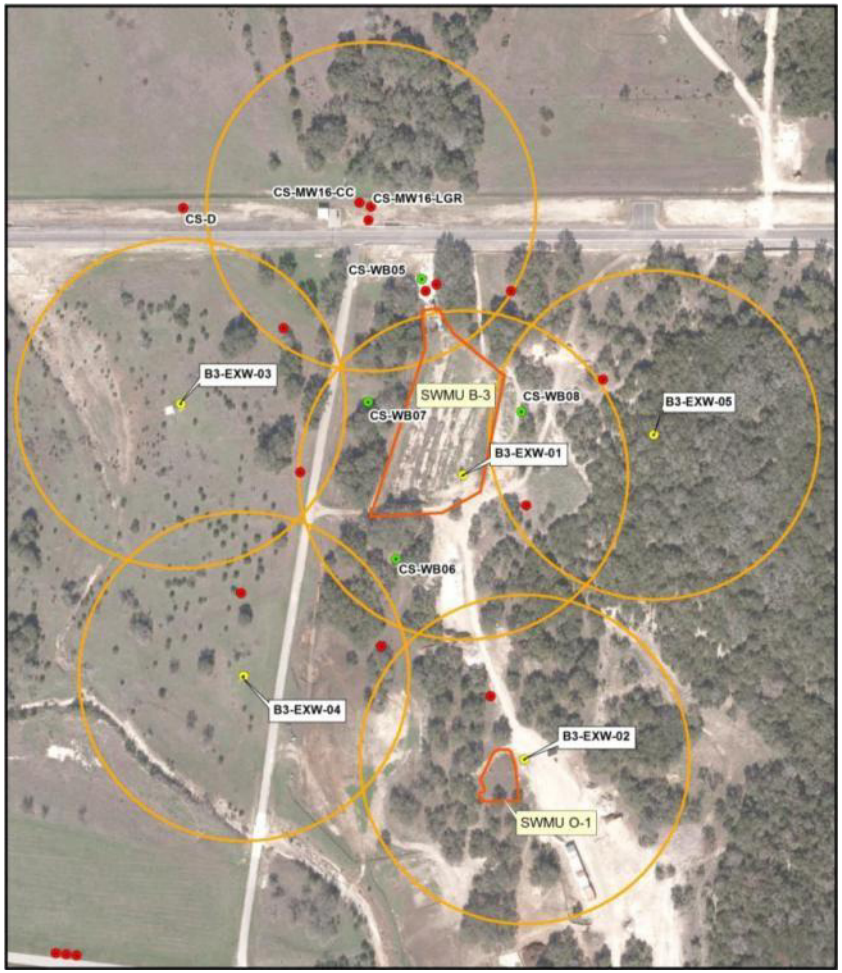


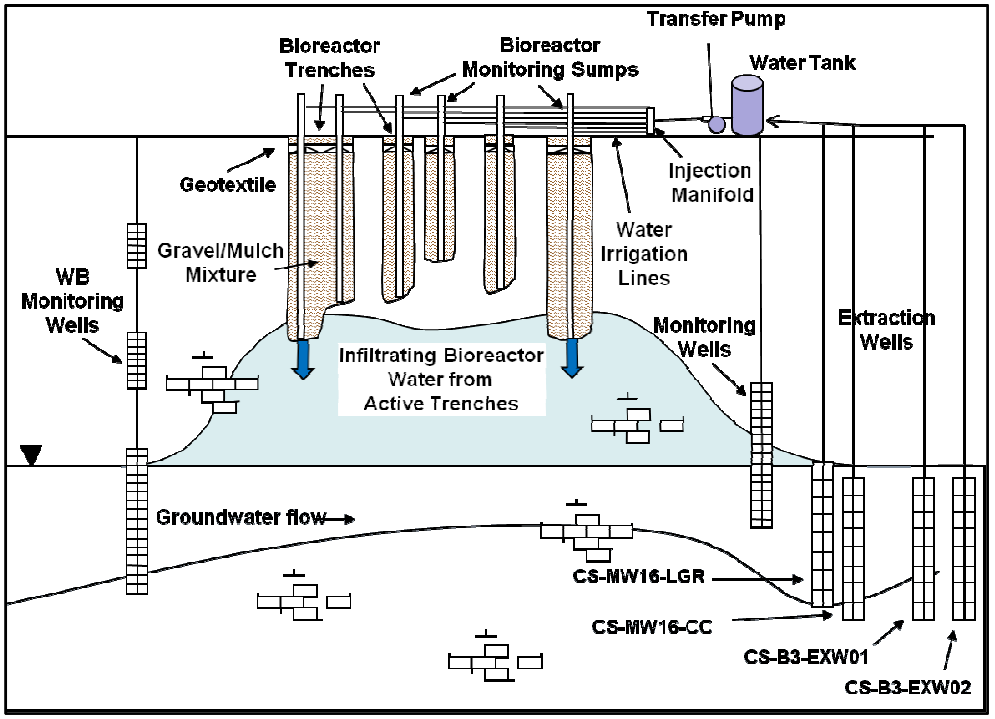
Electromagnetic Survey



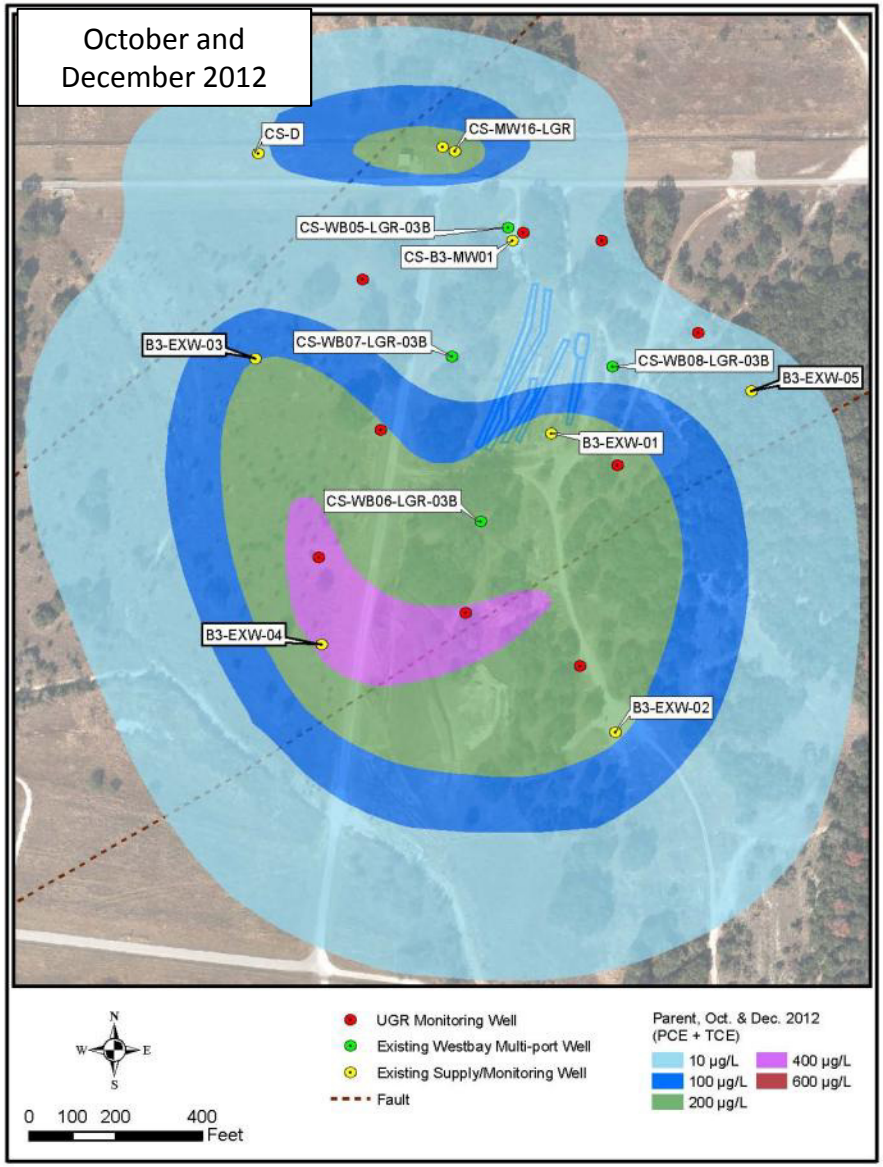
Ground Penetrating Radar

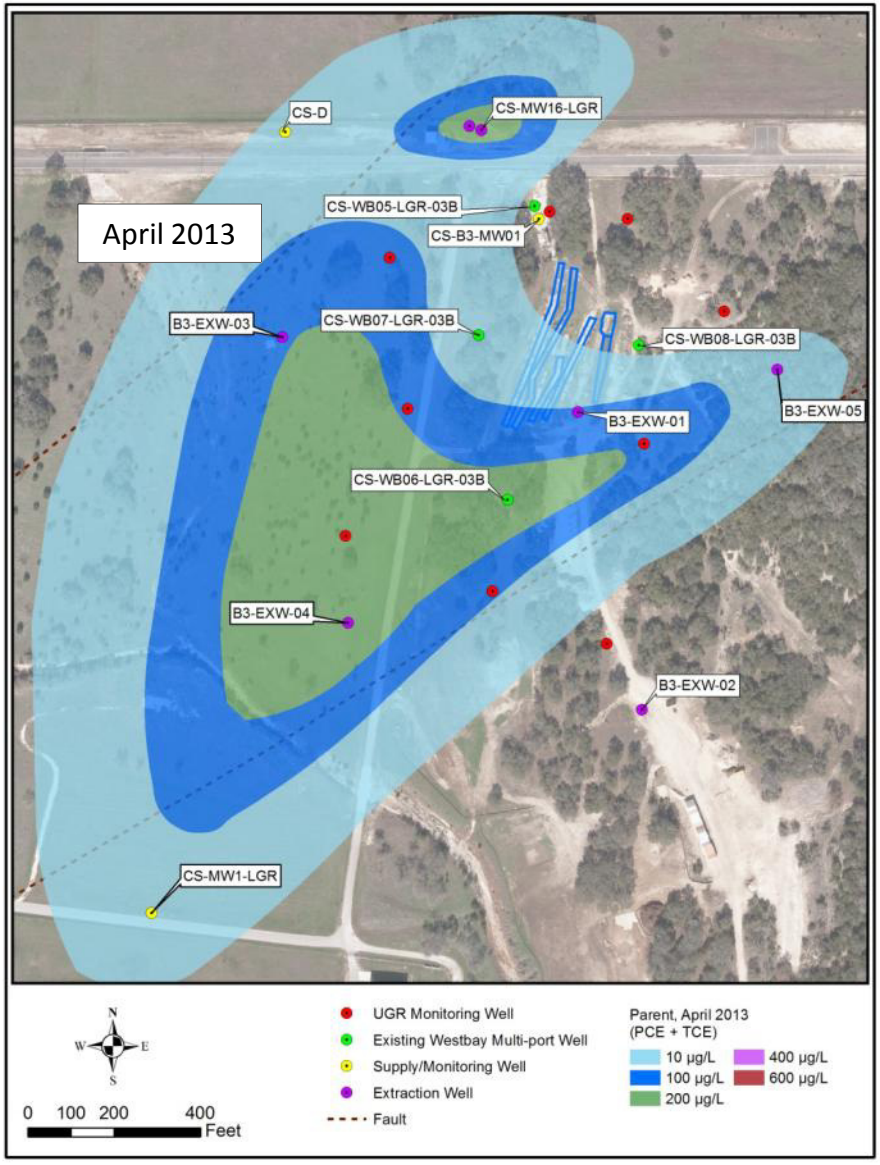
Bioremediation: Bioreactor





Contaminated groundwater is pumped out of the ground and placed in bioreactor trench for treatment.



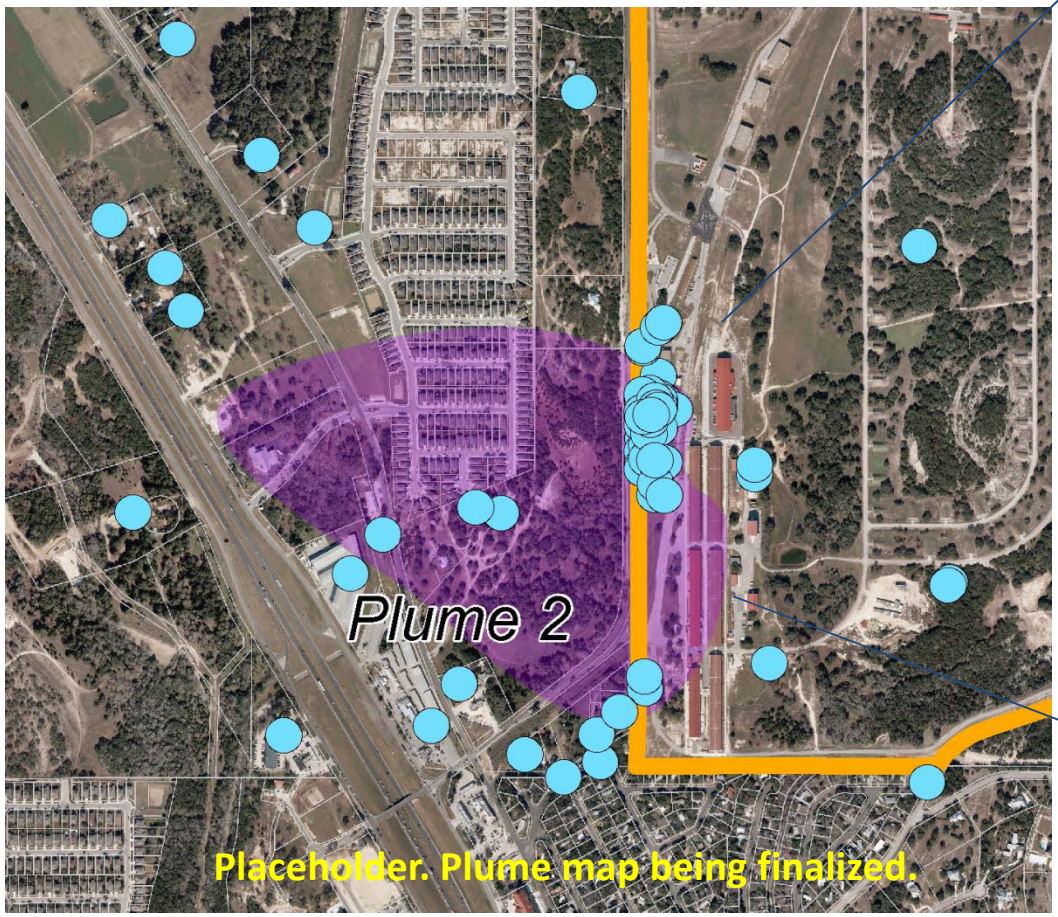


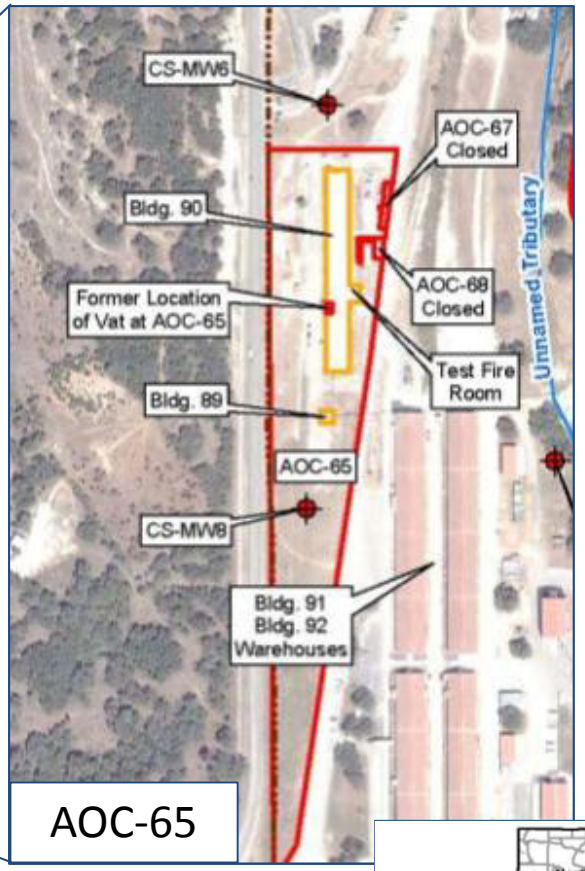
Groundwater plume contamination is being reduced in size and concentration.

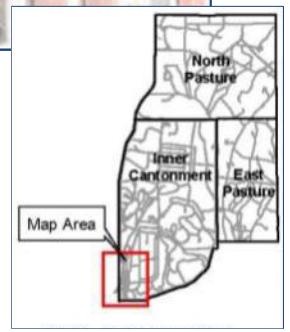
Recent Bioreactor Activities

- A full-scale bioreactor control building is operational.
- Groundwater is being extracted from 7 wells and injected into the trenches.

Introduction to Plume 2 and AOC-65







Site Identification

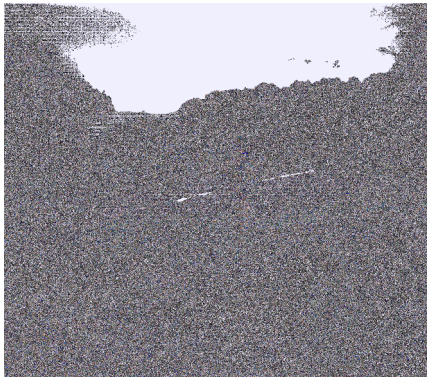
Off-post Groundwater Sampling

Soil gas samples collected inside and around Building 90

Soil Gas Survey

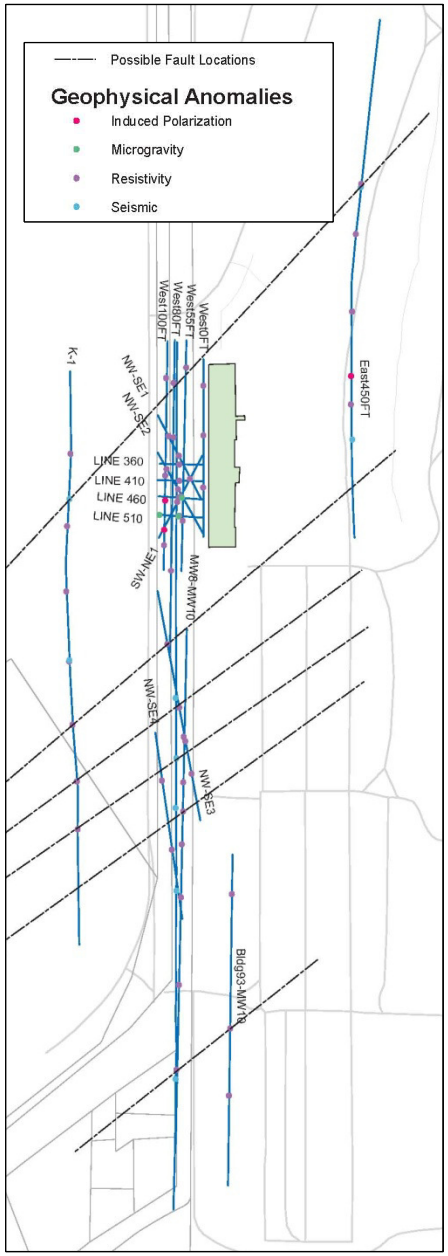
Preliminary Soil Sampling

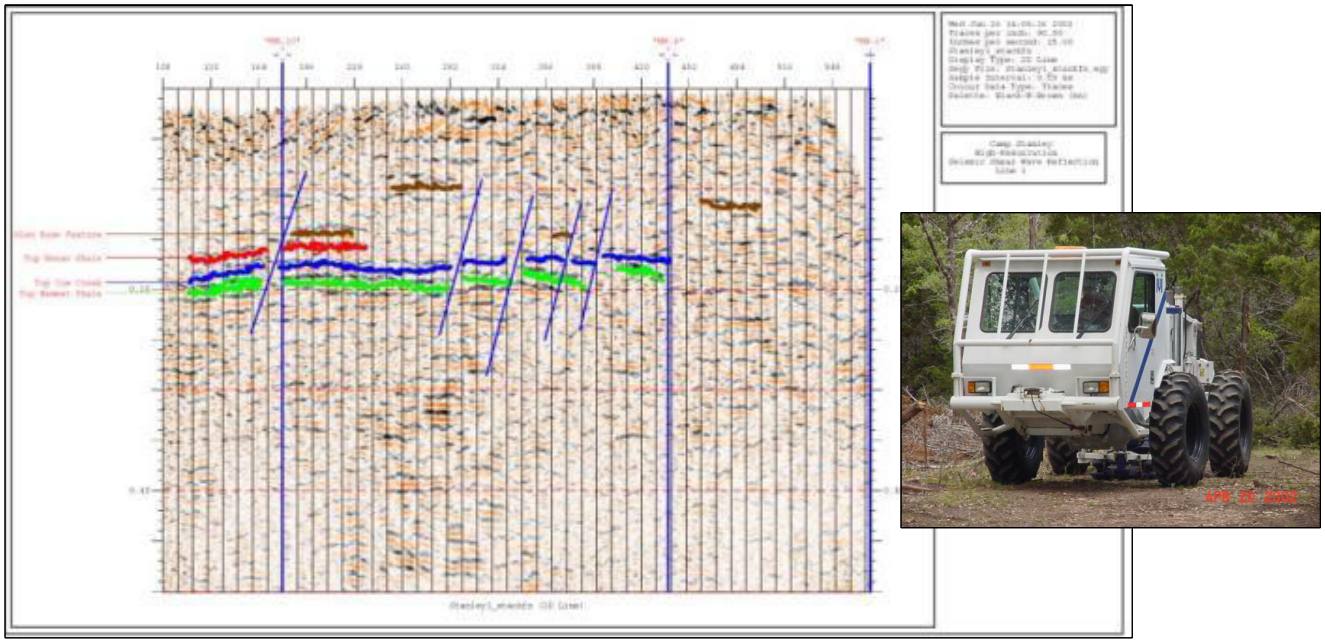
- Resistivity
- Seismic Reflection
- Induced Polarization
- Microgravity
- Spontaneous Potential
- Very Low Frequency Electromagnetics



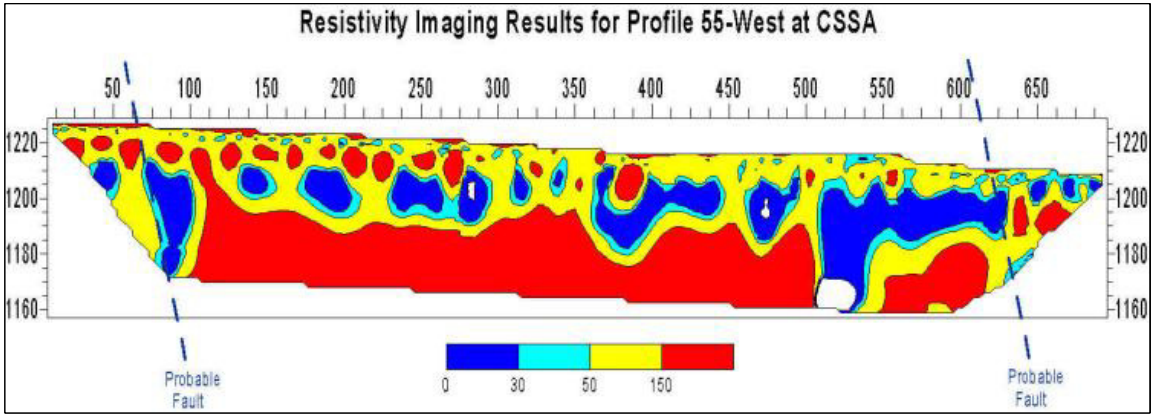
Geophysical Investigation

Site Identification: Geophysical Investigation





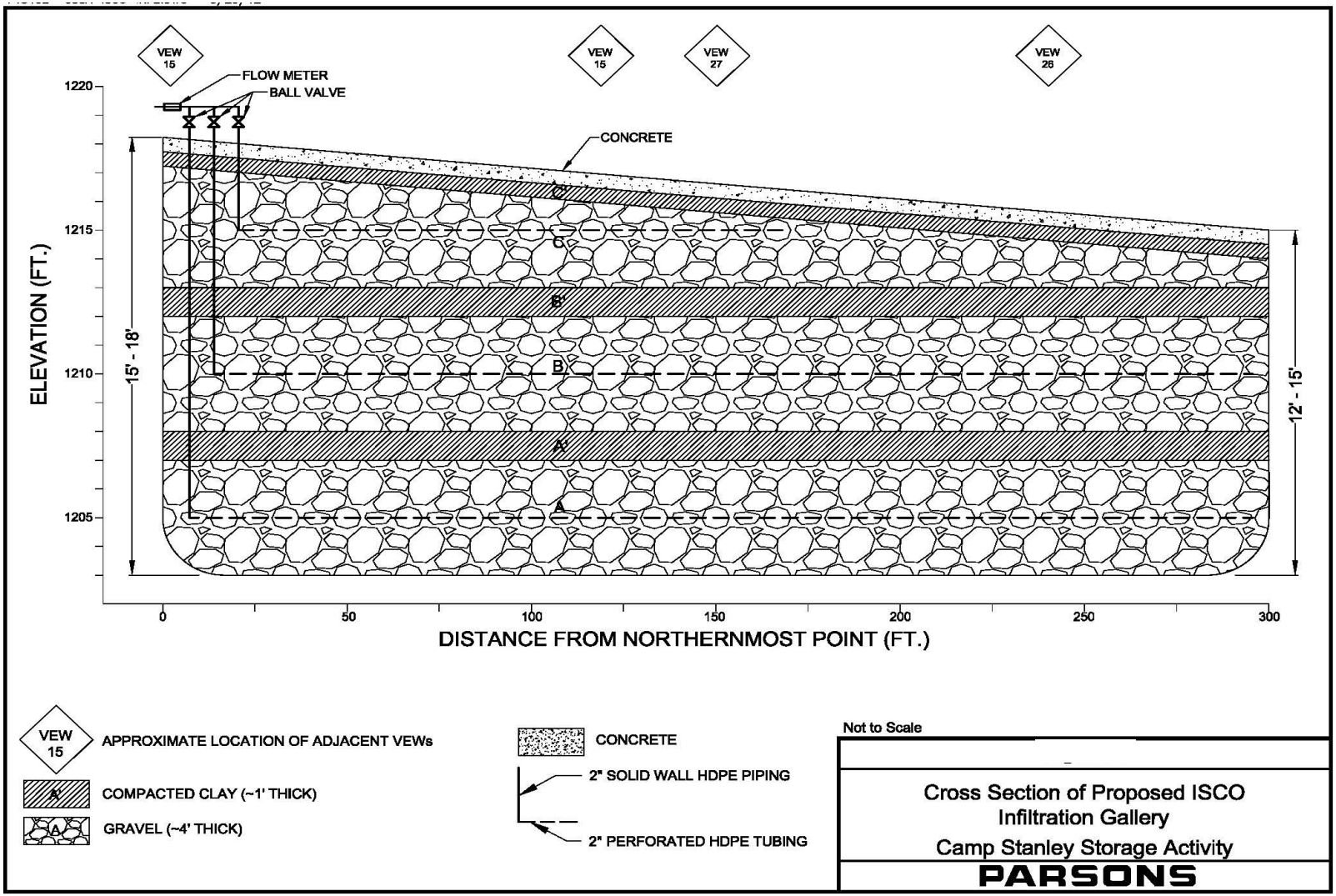
Seismic Survey



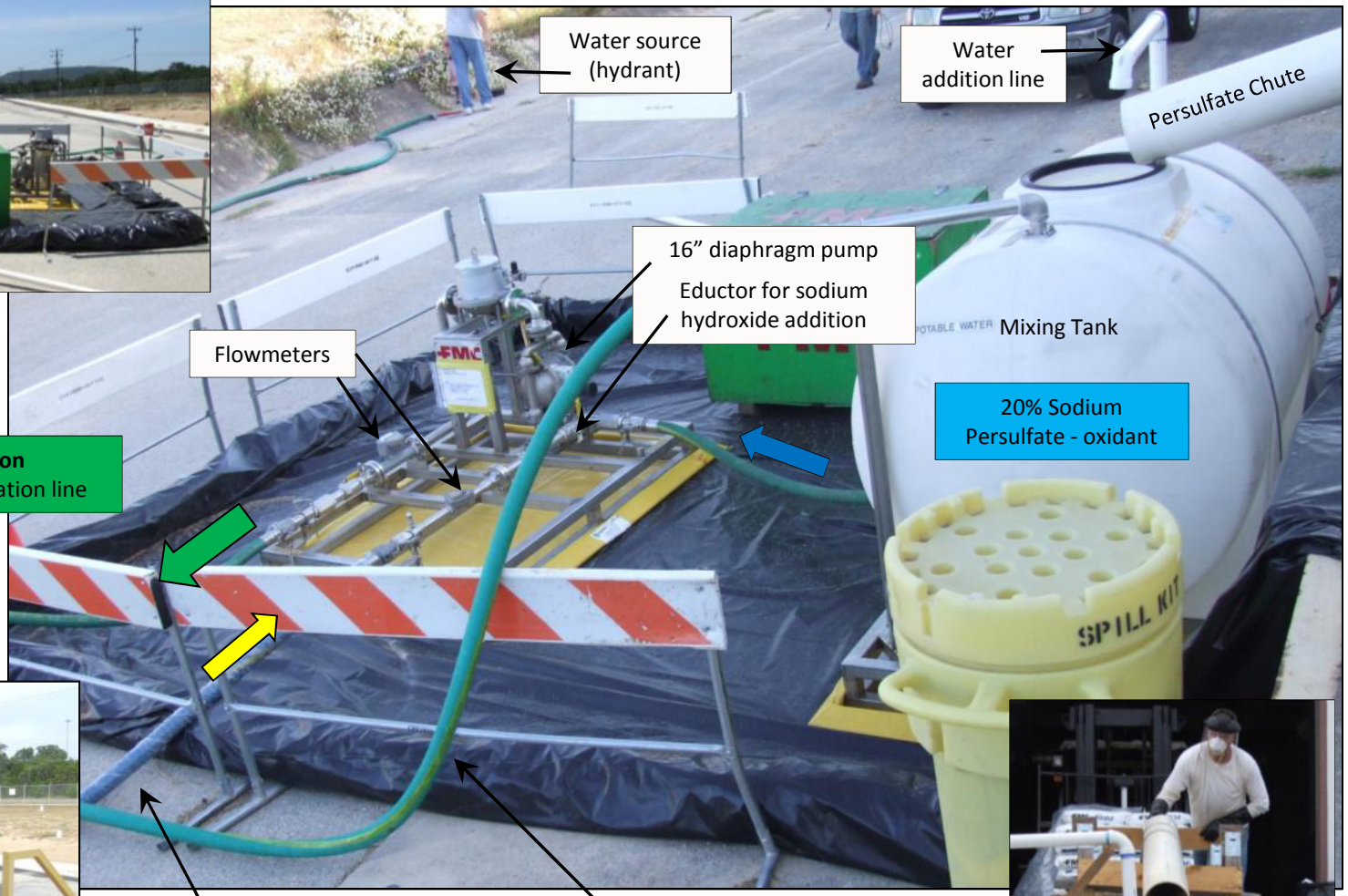
Resistivity Survey

2012 Interim Removal Action

In-Situ Chemical Oxidation (ISCO): Design



ISCO Treatability Study Injections



Mixing Persulfate (500 gal batches)


THE PRESENT

Sustainable Initiatives

- Greening Activities
  - Water Conservation
  - Energy Conservation
  - HAZMAT/HAZWASTE Reduction
  - Recycling
  - Metering of all facilities

CSSA GREENING ACTIVITIES

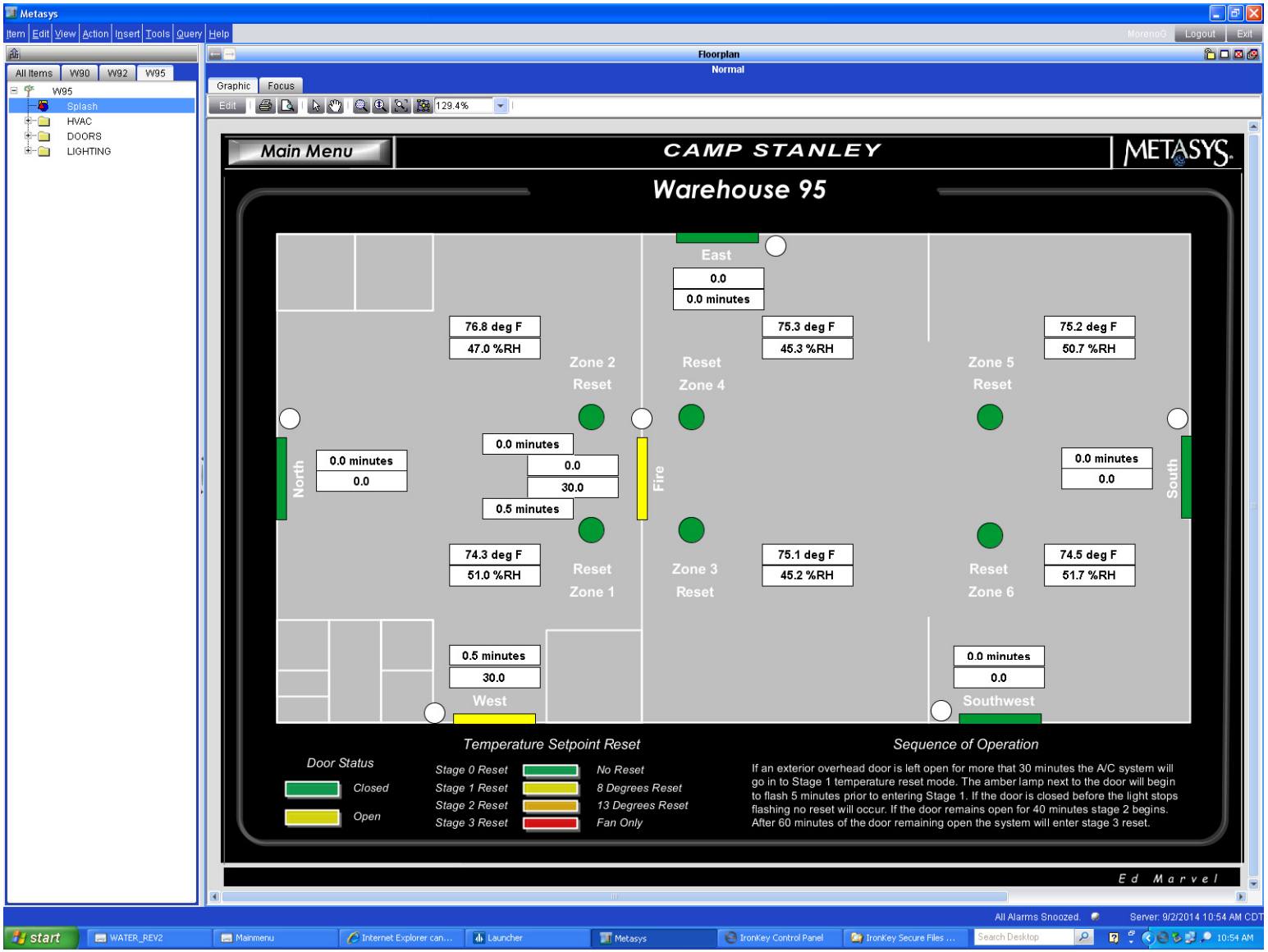
Electric vehicles are used within a number of the warehouses and by the public works department.

CSSA has a fleet of electric forklifts, Segways, Polaris Rangers, and other vehicles.

CSSA Greening Activities

Installation of a 28.2 kW Sundial© Military Transportable Solar Power System is expected to be completed by late-2014.

Pilot Program for Smart Buildings



CSSA GREENING ACTIVITIES

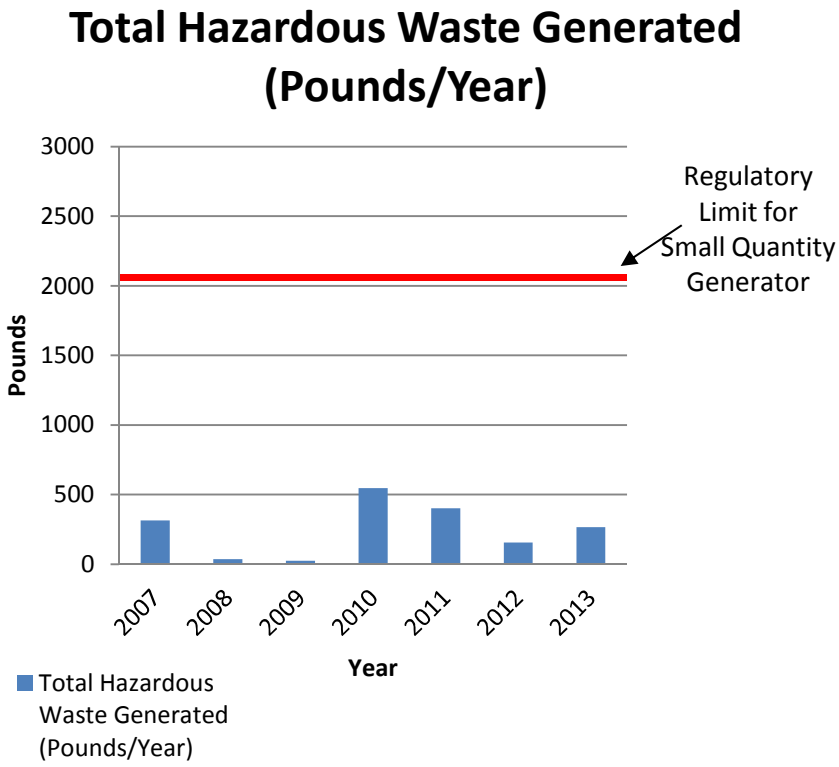
Rainwater harvesting is part of CSSA's Water Management Plan.

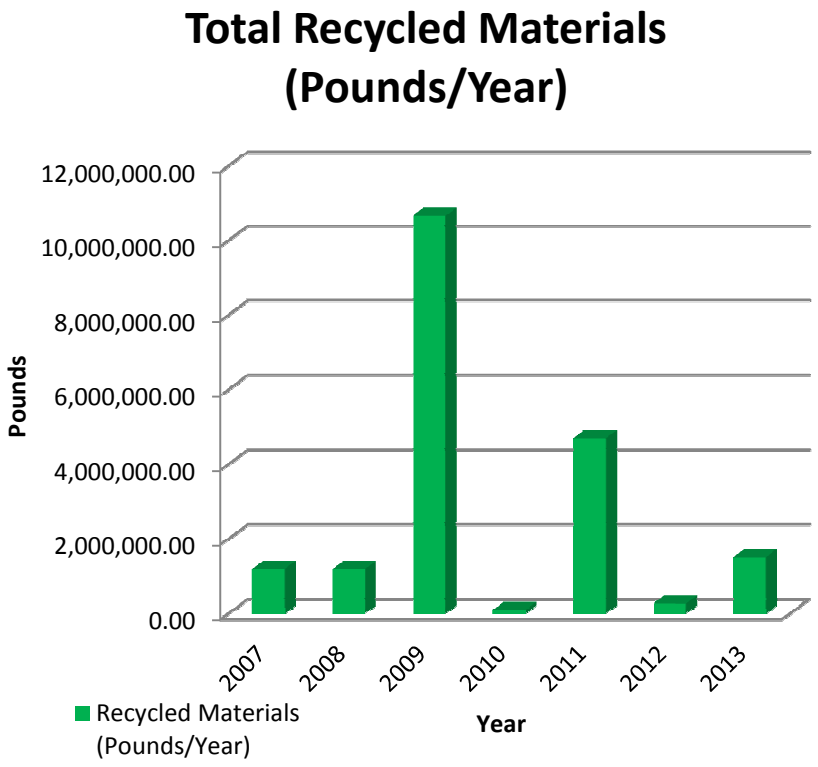
CSSA GREENING ACTIVITIES

Reduction of hazardous material use is accomplished through recycling, product substitution, issue control, redesign, and innovation.

CSSA GREENING ACTIVITIES

Comparison Between Waste Generated and Waste Recycled since 2007





Metal Scrap Recycling Effort

18 Conex Boxes + Large Debris Pile

CSSA GREENING ACTIVITIES

Metal and construction debris removed during environmental remediation work was recycled. 560 Tons of guns recycled from 8 restoration sites.

Photograph taken at Monterey Iron & Metal, San Antonio


M325D
CAT

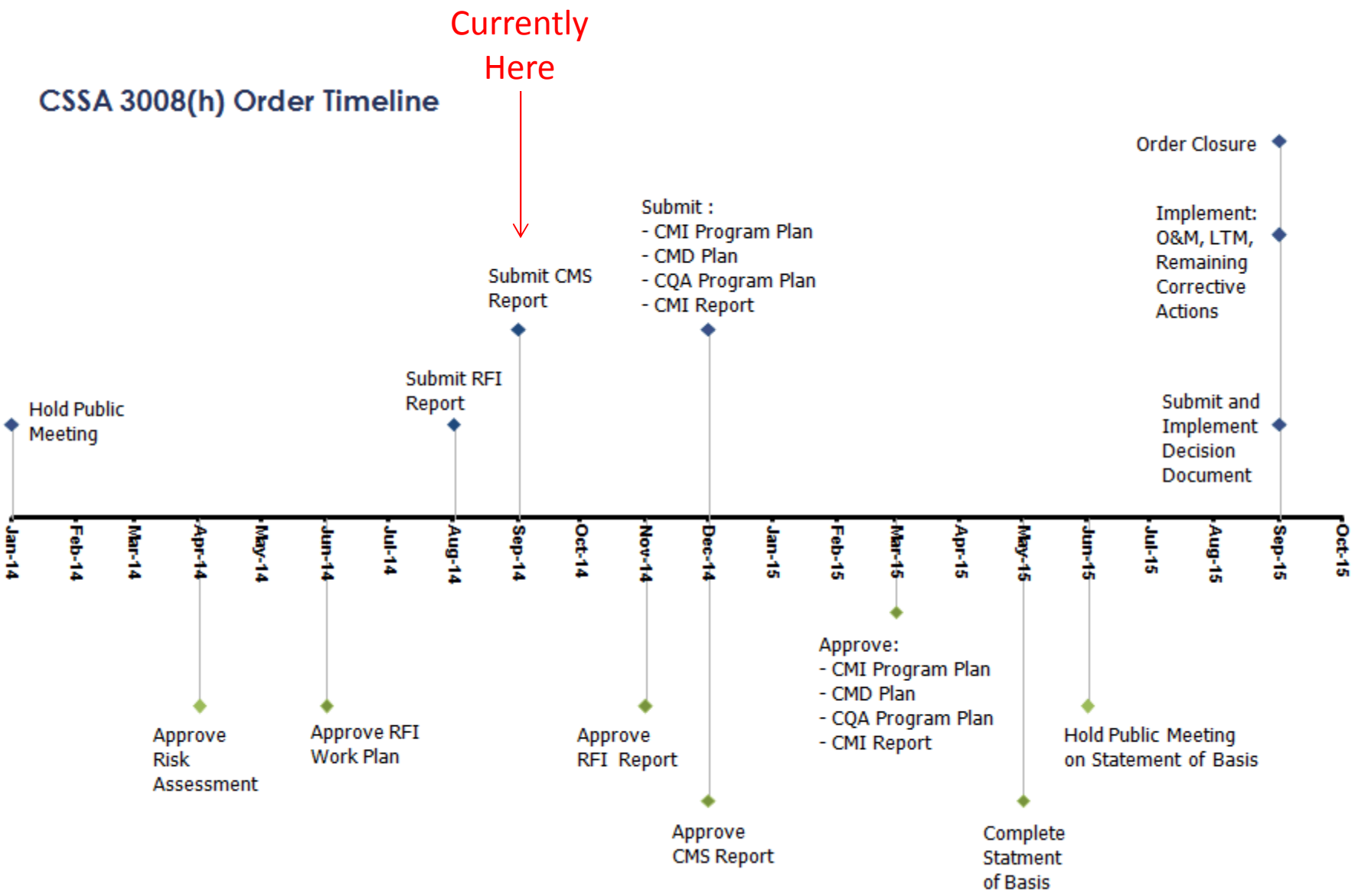

RIFKIN
M325D
CAT


RIFKIN


RIFKIN

Metering ⇨ BIM

- SCADA monitoring started mainly as compliance with environmental regulatory requirement in 2001
- In 2010, it was expanded to meet EO requirements (additionally a O&M program for the system was initiated
- In 2012, we brought a full time SCADA Engineer on-board to evolve the program
- In FY2015, we are adding a full time SCADA technician to transition the program into a more robust BIM system


Currently Here
CSSA 3008(h) Order Timeline
Order Closure
Implement: O&M, LTM, Remaining Corrective Actions
Submit : - CMI Program Plan - CMD Plan - CQA Program Plan - CMI Report
Submit CMS Report
Submit RFI Report
Hold Public Meeting
Submit and Implement Decision Document
Jan-14
Feb-14
Mar-14
Apr-14
May-14
Jun-14
Jul-14
Aug-14
Sep-14
Oct-14
Nov-14
Dec-14
Jan-15
Feb-15
Mar-15
Apr-15
May-15
Jun-15
Jul-15
Aug-15
Sep-15
Oct-15
Approve: - CMI Program Plan - CMD Plan - CQA Program Plan - CMI Report
Approve Risk Assessment
Approve RFI Work Plan
Approve RFI Report
Approve CMS Report
Complete Statment of Basis
Hold Public Meeting on Statement of Basis

QUESTIONS?

MEETING MINUTES

OVERVIEW			
CLIENT	Camp Stanley Storage Activity		
PROJECT	Contract G012		
MEETING DESCRIPTION			
SUBJECT	TO8 Kick-off Meeting	**LOCATION**	CSSA
MEETING DATE	09/22/2014	**REPORT AUTHOR**	Shannon Schoepflin
MEETING TIME	10:00 am Central	**REPORT DATE**	09/25/2014

ATTENDEES	
CSSA	**PARSONS**
Gabriel Moreno-Fergusson James Cannizzo	Julie Burdey Laura Arciniaga Scott Pearson Ken Rice Kyle Caskey Brenda Shirley Shannon Schoepflin Adrien Lindley Julie Bouch Samantha Elliott Richard Fincke Wayne Simoneau

TOPICS

New Task Order (TO8)
Only the CLINs related to the environmental portions of TO8 were discussed at this meeting. CLINs related to the engineering portions of TO8 will be discussed in a separate meeting on October 9, 2014.

CLINs 1, 2A, 3, 4, 6, 7
The budget, activities, responsibilities, and task managers were discussed for each of these CLINs. CLIN 1 (FFP) includes project management and administrative duties. CLIN 2A (FFP) covers meetings, data information management, and semi-annual progress reports. CLIN 3 (FFP) includes O&M, compliance, and monitoring. CLIN 4 (FFP) covers groundwater and drinking water monitoring. CLIN 6 is a placeholder in the event more site remediation is needed in the future. CLIN 7 include environmental and treatability studies.

MINUTES DISTRIBUTION

Gabriel Moreno-Fergusson, Julie Burdey, Brenda Shirley

MEETING MINUTES

OVERVIEW			
CLIENT	Camp Stanley Storage Activity		
PROJECT	Contract G012		
MEETING DESCRIPTION			
SUBJECT	Corrective Measures Meeting with USEPA	**LOCATION**	CSSA
MEETING DATE	09/22/2014	**REPORT AUTHOR**	Shannon Schoepflin
MEETING TIME	1:00 pm Central	**REPORT DATE**	09/25/2014

ATTENDEES		
CSSA	**Regulators**	**PARSONS**
Gabriel Moreno-Fergusson James Cannizzo	Greg Lyssy, USEPA	Julie Burdey Laura Arciniaga Scott Pearson Ken Rice Shannon Schoepflin

TOPICS

Administrative Order Closure Documents
The remaining documents in the Administrative Order discussed at the meeting include the: Corrective Measures Implementation Program Plan (CMIPP), Corrective Measures Design (CMD) Report, Construction Quality Assurance Program Plan (CQAPP), and the Corrective Measures Implementation (CMI) Report. CSSA and Parsons presented Mr. Lyssy with a list of existing documents that correspond with the required components of each of these documents. Mr. Lyssy agreed that these existing documents, with some modifications and sufficient citation, could be used to fulfill the remaining documentation requirements of the Order.

Administrative Order Timeline
The timeline for closure of the Administrative Order was discussed and revised with input from Mr. Lyssy. Mr. Lyssy indicated that he is OK with CSSA submitting the CMIPP, CMD Report, CQAPP, and CMI Report concurrently. Also discussed was what mechanism will be put in place to ensure funding for the selected corrective measures once the Order is closed. Mr. Lyssy said that either a Memorandum of Agreement or extension of the current Order would likely be used since a State RCRA permit does not exist at CSSA.

MINUTES DISTRIBUTION

Gabriel Moreno-Fergusson, Julie Burdey, Brenda Shirley

MEETING MINUTES

OVERVIEW			
CLIENT	Camp Stanley Storage Activity		
PROJECT	Contract G012		
MEETING DESCRIPTION			
SUBJECT	Regulatory Meeting	**LOCATION**	CSSA
MEETING DATE	09/23/2014	**REPORT AUTHOR**	Shannon Schoepflin
MEETING TIME	9:00 am Central	**REPORT DATE**	09/25/2014

ATTENDEES		
CSSA	**Regulators**	**PARSONS**
Gabriel Moreno-Fergusson James Cannizzo	Greg Lyssy, USEPA Jorge Salazar, TCEQ Amanda Pirani, TCEQ Michael Kuitu, TCEQ	Julie Burdey Laura Arciniaga Scott Pearson Ken Rice Shannon Schoepflin

TOPICS

Overview of CSSA Environmental Program
Following the introduction of Ms. Pirani and Mr. Kuitu of TCEQ to both the CSSA and Parsons staff, Mr. Moreno-Fergusson presented an overview of the CSSA environmental program. The presentation included historical information, past site remediation activities, site closures under TCEQ residential standards, and current groundwater monitoring, treatability studies (SWMU B-3 bioreactor and AOC-65 ISCO), and sustainable practices at CSSA. Also discussed was the current status of the Administrative Order, the next steps toward closing the Order, and Mr. Lyssy's comments on the Draft Corrective Measures Study.

Site Visits
Site visits were made to the SWMU B-3 bioreactor, East Pasture, Building 93, Building 90, AOC-65, and several other former remediation sites.

USGS Groundwater Model
Mr. Pearson presented the 3-D groundwater model of CSSA created by USGS. DVD copies of the model were presented to Mr. Lyssy, Mr. Salazar, Ms. Pirani, and Mr. Kuitu.

MINUTES DISTRIBUTION

Gabriel Moreno-Fergusson, Julie Burdey, Brenda Shirley

9/23/14

Name	Organization
Julie Burdey	Parsons
Jorge Salazar	TCEQ - R13 (San Antonio)
GREG LYSSY	USEPA
Amanda Pirani	TCEQ
Michael Kuith	TCEQ
Shannon Schoepflin	Parsons
Scott Pearson	PARSONS
Ken Rice	Parsons
Laura Arciniaga	Parsons
Jim Cannizzo	USArmy Camp Stanley