

# Air Force Real Property Agency

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*I n t e g r i t y - S e r v i c e - E x c e l l e n c e*

## Kelly Restoration Advisory Board

October 11, 2011



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Port San Antonio  
Main Board Room  
907 Billy Mitchell Blvd.  
San Antonio, TX 78226  
6:30 - 8:30 p.m.



# *Welcome and Overview*

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- **6:30 – 6:35**      **Welcome and Overview**
- **6:35 – 6:45**      **RAB Membership**
- **6:45 – 6:50**      **Administrative Items**
- **6:50 – 7:05**      **Federal Facilities Cleanup Conference**
- **7:05 – 7:10**      **Environmental Update Introduction**
- **7:10 – 8:00**      **Performance-Based Remediation Contract**
- **8:10 – 8:20**      **Public Comment Period**
- **8:20 – 8:25**      **Suggested Agenda Items for next RAB**
- **8:25 – 8:30**      **B171 Announcement**
- **8:30**              **Adjournment**



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# **Kelly RAB Membership**

**Ms. Beverly Abbott  
Community Co-Chair**



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# *Kelly RAB Membership*

- **Introduce New Member: Ivan Jaime**
- **RAB Member Roll Call**



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# **Administrative Items**

**Mr. Jose Martinez**  
**Facilitator**



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# ***Administrative Items***

- **Review previous action items and status**
- **5/10/11 transcript approval**



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# **Federal Facilities Cleanup Conference**

**Ms. Beverly Abbott  
Community Co-Chair**



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# ***Administrative Items***

- **Perspectives on Long Term Protectiveness and Remedy Implementation**
- **5 Year Review information**





- **Suggestions for Sharing Information and community Engagement**
  - **Training for communities**
  - **Websites**
  - **Goals Memo**
  - **Internet communications**
  - **Annual RAB review**
  - **Compliance Report**
  - **Virtual Tours on website**
  - **Record of decision**
  - **Live web meetings**



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# **Environmental Update Introduction**

**Mr. Paul Carroll  
BRAC Environmental Coordinator**



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# **Performance Based Remediation Contractor**

**Mr. Praveen Srivastav  
Susan Watson, Shaw E&I  
Shaw Group**



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# **Leon Creek Sampling and USGS Study Summary**

**Mr. Praveen Srivastav  
Susan Watson, Shaw E&I  
Shaw Group**



# Summary of Leon Creek Studies

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Several studies and sampling events have occurred over the past few years that include Leon Creek.

This presentation will summarize findings and information from the following reports:

- USGS Report – Wilson, J.T., 2011, *Assessment of selected contaminants in streambed- and suspended-sediment samples collected in Bexar County, Texas, 2007-2009*, U.S. Geological Survey Scientific Investigations Report, 2011-5097. <http://pubs.usgs.gov/sir/2011/5097/>
- USGS Fact Sheet – Wilson, J.T., 2011, *Occurrence, distribution, and concentrations of selected contaminants in streambed- and suspended-sediment samples collected in Bexar County, Texas, 2007–09*: U.S. Geological Survey Fact Sheet 2011–3090. <http://pubs.usgs.gov/sir/2011/5097/>
- Bhate, 2011, *Final Semiannual Compliance Plan Report January through June 2011, Former Kelly Air Force Base San Antonio, Texas*, July.
- CH2M Hill, 2007, *Final Leon Creek Environmental Perspectives Brochure*



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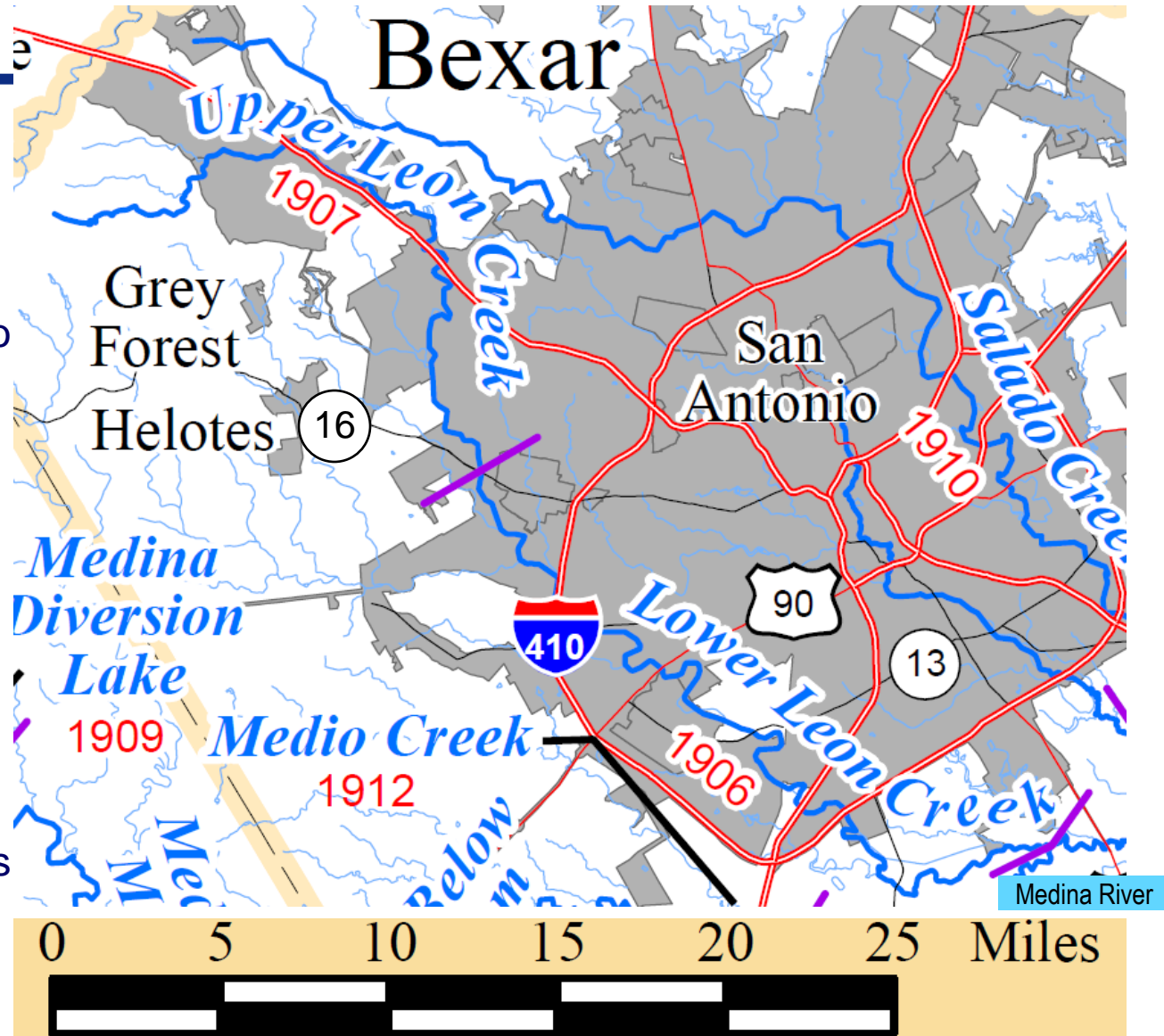
# Where is Leon Creek?

Leon Creek is 45 miles long and flows from north to south.

Leon Creek is divided into 2 segments by the State  
1907 – Upper Leon Creek  
1906 – Lower Leon Creek

State designated uses:

- Contact recreation
- Aquatic life, and
- Public water supply (except for 1906 from confluence of Medina River to a point 3 miles upstream )

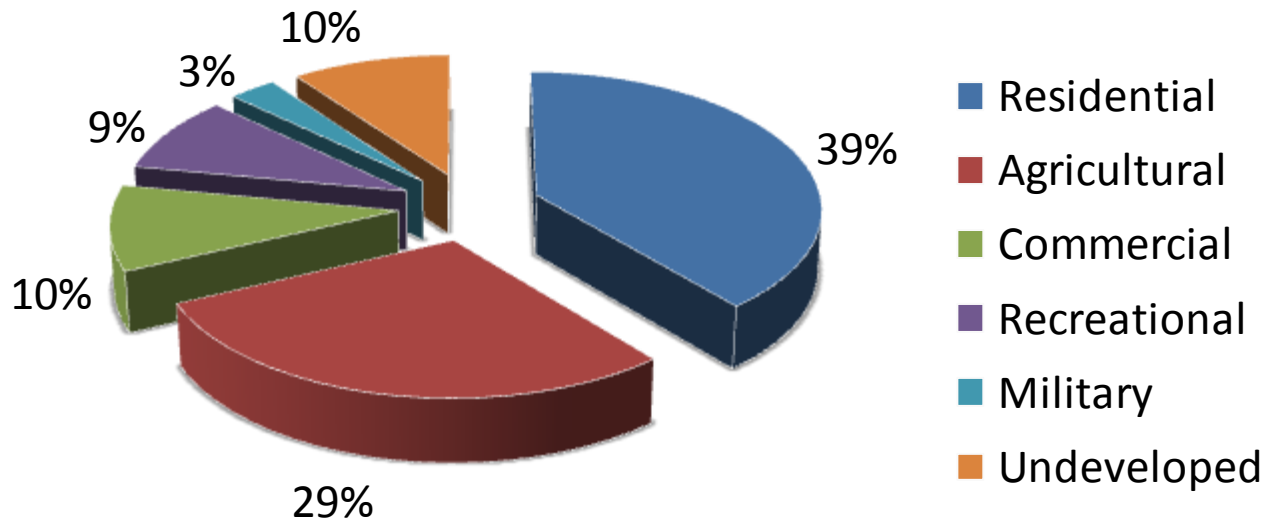




# Leon Creek Watershed

## What is a watershed?

It is the area of land that catches rain and channels it towards the creek bed. This runoff is also called a nonpoint source.



Leon Creek Watershed Areas

Source: *Final Leon Creek Environmental Perspectives Brochure*, CH2M Hill, 2007



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# *What are other water sources for the creek?*

Other sources besides runoff from rainfall include:

- Lawn watering
- Fire hydrants
- Groundwater seeps
- Outfalls

An outfall is point where a drain pipe enters the creek (it is also called a point source).

Point source examples are a storm water outfall or a discharge point from a treatment plant. Any of these point sources may carry small amounts of pollutants.

In Leon Creek there are:

- Four municipal outfalls
- Seven industrial outfalls





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## ***What effect does flow have in the creek?***

During *low flow*, water may get stagnant and sediments suspended in the water will settle out.

During *high flow* (or flooding), the stagnant water will flow downstream along with sediment.

### ***Flow in Leon Creek***

- The upper portion of Leon Creek (north of Highway 90) only flows after heavy rains.
- The lower portion of Leon Creek flows at a rate of about 3.6 million gallons per day (based on an average flow from 1995 through 2006).
- The lower portion of Leon Creek includes the outfall from the groundwater treatment plant, which discharges approximately 300,000 gallons per day of treated groundwater.
- This outfall is permitted by TCEQ and must comply with permit effluent criteria.



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# ***US Geological Study 2007-2009 Bexar County Streambed- and Suspended -Sediment Sampling***

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Study was conducted in 2007 - 2009 by US Geological Survey in cooperation with the San Antonio River Authority and the San Antonio Metropolitan Health District Public Center for Environmental Health

**Purpose:** Assess concentration of hydrophobic contaminants in streambed-sediment and suspended-sediment samples from 20 sites in 8 streams in Bexar county. A hydrophobic contaminant does not dissolve in water and will accumulate in the sediment during low flow.

For this study contaminants evaluated include:

- Trace elements (metals – cadmium, chromium, and lead)
- Halogenated organic compounds (pesticides, polychlorinated biphenyls [PCBs], and brominated flame retardant)
- Polycyclic aromatic hydrocarbons (PAHs)



# USGS Leon Creek Sampling

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For Leon Creek, the study included:

- Sample collection from 7 sites for trace elements (metals), halogenated organic compounds (pesticides, PCBs, and brominated flame retardant), and polycyclic aromatic hydrocarbons (PAHs)
- Stream bed sediment sample collection from creek bottom
- Suspended sediment sample collection from the stream water during storm events
- Data comparison to historic data collected by the Air Force - sites with "LC"

10 Assessment of Selected Contaminants in Streambed- and Suspended-Sediment Samples Collected in Bexar County, Texas

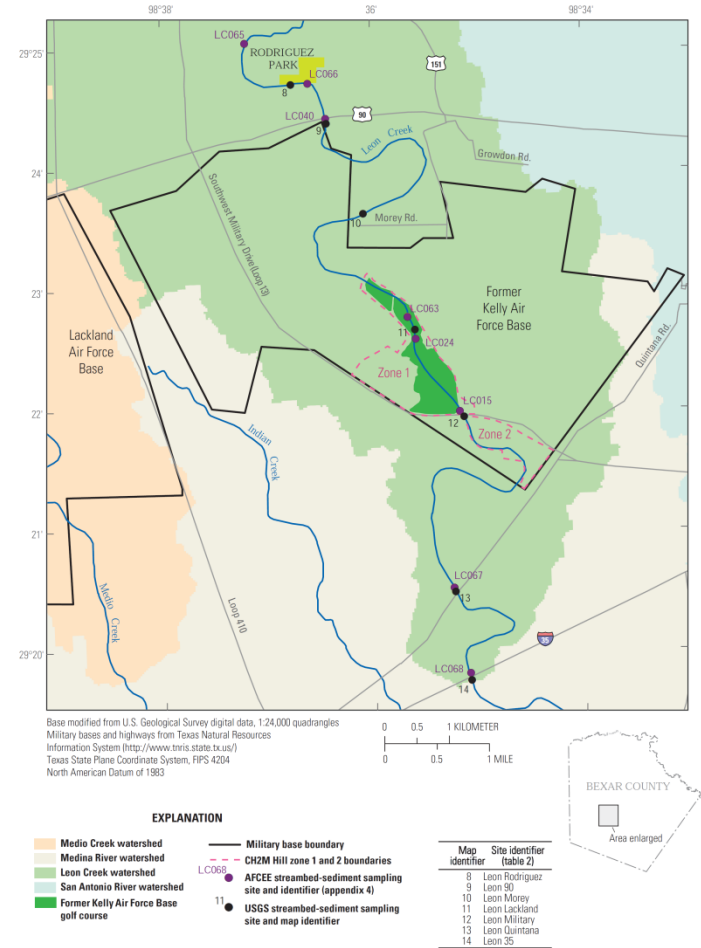


Figure 4. Location of U.S. Air Force Center for Engineering and the Environment (AFCEE) and U.S. Geological Survey (USGS) streambed-sediment sampling sites on Leon Creek, Bexar County, Texas.



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# ***USGS Sediment Sampling***

## ***Why sample sediment?***

Many naturally occurring elements and man made organic contaminants bind to the sediments.

## ***How are sediment sample results evaluated?***

All sediment samples in the USGS Report were compared to a Sediment Quality Guideline (SQG) to determine the degree of contamination. These are guidelines and not regulatory limits. The Air Force uses sediment screening levels published by TCEQ which are similar to the SQGs used in the USGS study.



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# ***Results of USGS Study***

Contaminants were found in the sediment from 20 locations in eight streams and include:

- Naturally occurring trace elements (i.e. cadmium, chromium, lead and mercury) - mean concentrations of trace elements from this trace study are similar to Austin and Fort Worth, TX concentrations (other urban areas)
  
- Man made chemicals -
  - Halogenated volatile organic compounds ( i.e. Pesticides and PCBs) – generally low compared to the screening levels. Mean concentration of halogenated volatile organic compounds from this trace study are similar to Austin and Fort Worth, TX concentrations.
  
  - Polycyclic aromatic hydrocarbons (PAHs) – identified as primarily coming from parking lot coal-tar sealcoat dust



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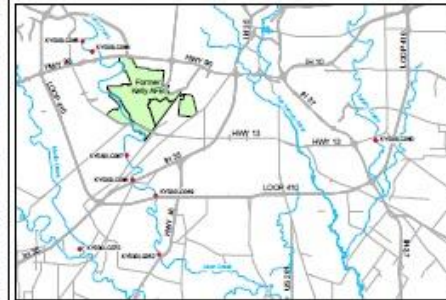
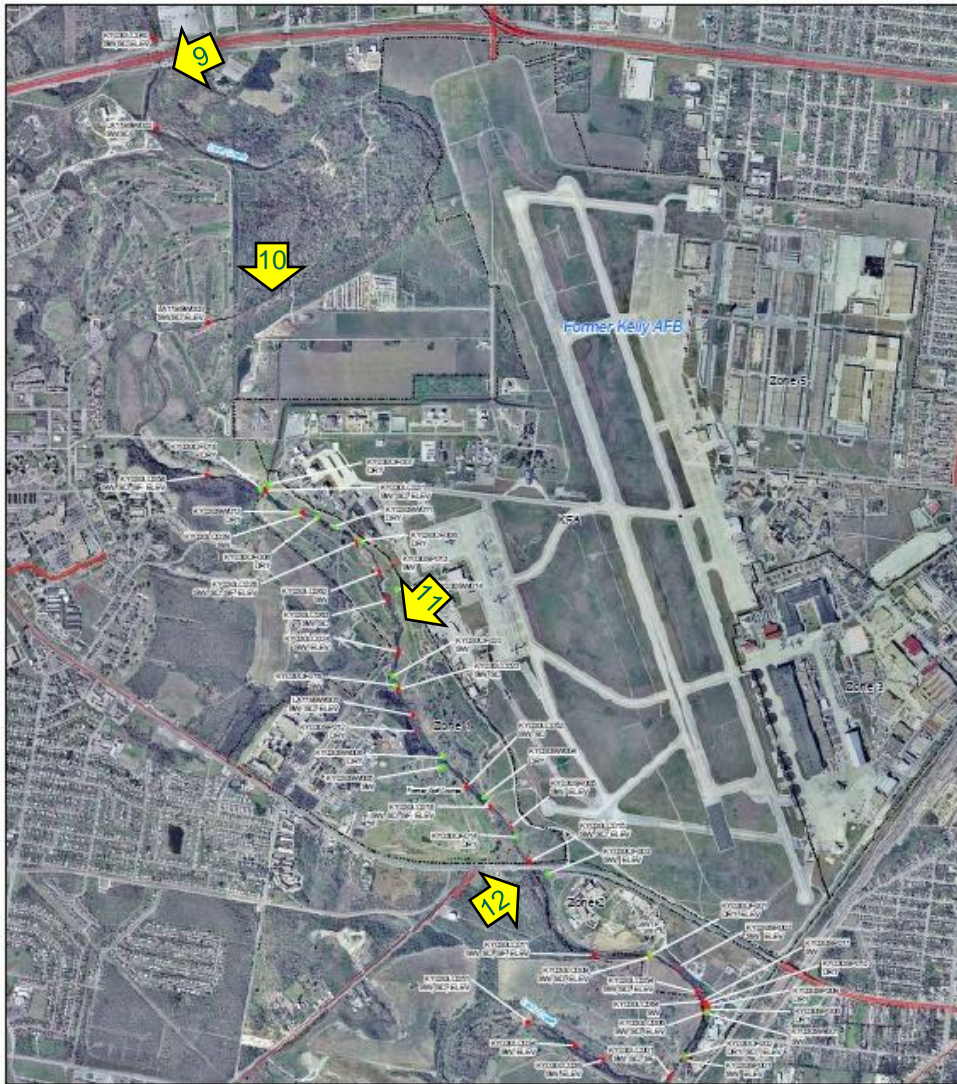
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# ***Air Force Monitoring of Leon Creek***

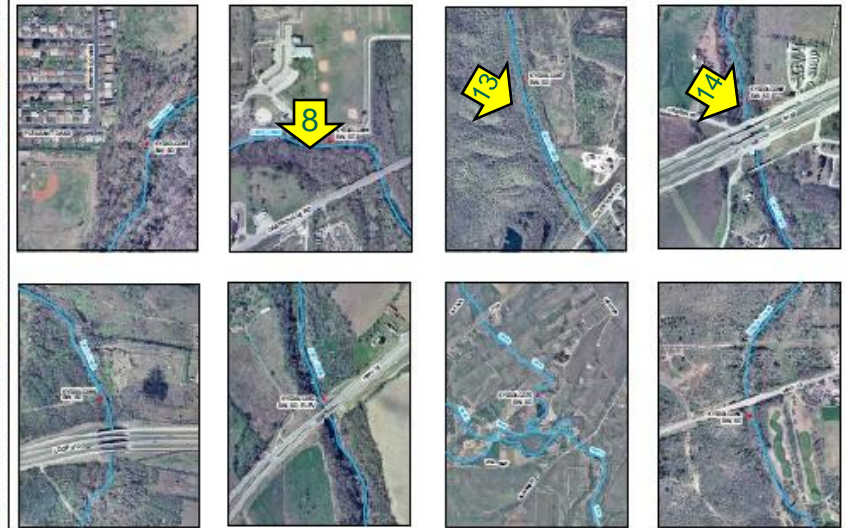
- In 1994, Air Force began monitoring at 31 locations that were upstream, along, and downstream of the Air Force Base property.
- Currently the Air Force monitors 59 locations.
- Monitor twice per year for surface water and sediment at in-stream, seep, and outfall locations for the following:
  - Metals
  - Cyanide
  - Semivolatile organic compounds (PAHs)
  - PCBs
  - Volatile organic compounds
  - Flow and water level measurements for hydrologic budget determination
- Also evaluate annually:
  - Toxicity to aquatic life (bioassay)
  - Fish tissue



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FROM: KYR023A.C0071 is approximately 500' of a mile west from the west Leon Creek County Line.



Off Base In-Stream Sampling Locations - Not to Scale

**LEGEND**

- Zone Boundary
- In-Stream Sampling Station
- Outfall Sampling Station
- Seep Sampling Station
- GWTP = Groundwater Treatment Plant



- GLOSSARY TERMS:**
- SD = Sediment Sample
  - SW = Surface Water Sample
  - SF = Stream Flow Cross-Section
  - ELEV = Stream Elevation

**8** USGS Site



**FIGURE 4-1**  
Leon Creek Sampling Stations  
Former Kelly AFB, San Antonio, Texas

**CH2MHILL**



# *Air Force Monitoring Results included in USGS Study*

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*USGS Study compared the Air Force 2006-2007 semiannual Leon Creek sample results to their data.*

- Differences in analytical methods
- USGS concentrations were typically in the range of the Air Force results for trace elements, select pesticides, and the PAHs
- Mean concentrations of lead, mercury, dieldrin, DDE, PCBs, and PAHs are higher in the Air Force samples than in the USGS samples.
- Concluded that the Air Force's more frequent semiannual compliance sampling captures a wider range of contaminant concentrations.

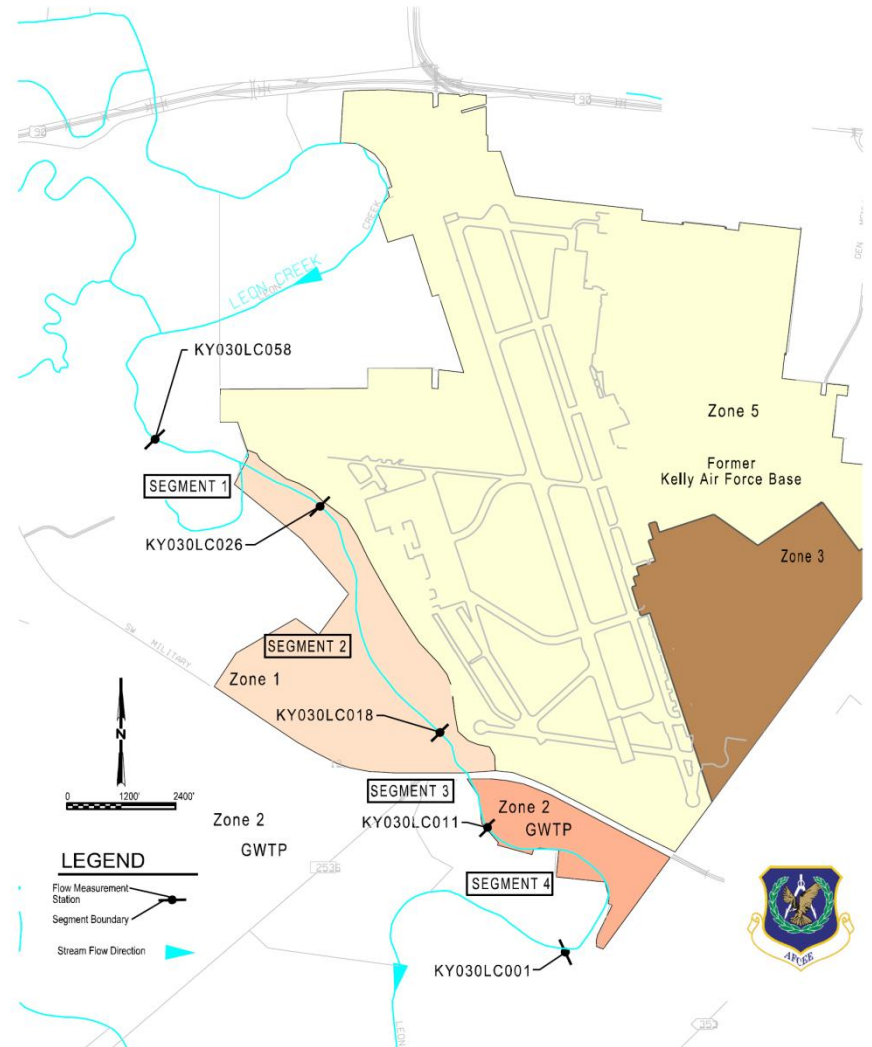




# Air Force Leon Creek Monitoring January 2011 Surface Water Elevation/Flow

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- Surface water elevations were measured at 23 stations (including 3 seeps and 3 outfalls)
- Hydrologic budget for January 2011 indicates:
  - Three of four segments (1, 2, and 4) showed net water gains beyond measured contributions from seeps and outfalls, presumed to be from groundwater inflow to the creek
  - One segment (Segment 3) showed net water loss assumed to be due to infiltration





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# ***Air Force Leon Creek Monitoring January 2011 Surface Water Sampling***

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## ***Sampling***

- Surface water samples were collected from 44 stations, including 30 in-stream locations, five seeps, six outfalls, and three reference stations.

## ***Results***

Surface water results were compared against Texas Water Quality Standards acute and chronic aquatic life criteria and human health criteria.

- Surface water met compliance standards (Texas Surface Water Quality Standards) for all parameters



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# ***Air Force Leon Creek Monitoring January 2011 Surface Water Sampling***

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## ***Results (Contd.)***

- Tetrachloroethene exceeded the human health criteria of 5 µg/L at two seep locations (KY030SP003 and KY030SP011) located near the Zone 2 GWTP. These locations had concentrations that exceeded the human health criteria in July/August 2010; however, there was a slight increase in January 2011.
- Trichloroethene exceeded the human health criteria of 5 µg/L at one seep location (KY030SP11) where tetrachloroethene was also detected. This seep location had concentrations that exceeded the human health criteria in July/August 2010; however, there was a slight increase in January 2011.



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# *Air Force Leon Creek Monitoring January 2011 Sediment Sampling*

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## *Sampling*

- Sediment samples were collected from 28 stations: 24 Leon Creek in-stream stations, outfall KY030OF002, and the 3 in-stream reference stations.

## *Results*

- Texas Surface Water Quality Standard sediment screening benchmarks were exceeded at 14 in-stream locations for 18 sediment contaminants including SVOCs, pesticides, metals, and PCB. Not all contaminants were detected at each location. In July/August 2010, 12 locations had exceedances.
- At the reference station in Medio Creek, arsenic exceeded the corresponding sediment screening benchmark.



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# *Air Force Leon Creek Monitoring January 2011 Sediment Sampling*

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## *Results (Contd.)*

- At outfall KY030OF002, 14 sediment contaminants exceeded the corresponding sediment screening benchmarks including several PAHs.
- PAHs were also detected at concentration exceeding the screening levels at KY030CL018.
- Overall, there was an increase in the number of stations where contaminants in sediment were detected as well as an increase in PAHs being detected.



# ***Air Force Leon Creek Monitoring January 2011 Finding and Conclusions***

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- The renewed Compliance Plan issued in April 2009 states:  
*“If the Leon Creek monitoring program indicates an increase in contaminant concentrations in surface water samples, stream sediment samples, or bioassessment samples, the Permittee shall investigate the source and impact of the increase and, if necessary, propose additional corrective action measures.”*
  
- Storm water runs into Leon Creek
- Runoff from streets/paved areas from rainfall in late December and early January may explain the increase in PAHs in sediment (coal-tar sealant on parking lots)
- Even though there was not an increase in surface water concentrations, there was a slight increase of VOCs at two seep locations.



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# *Air Force Leon Creek Monitoring Continuation of Sampling*

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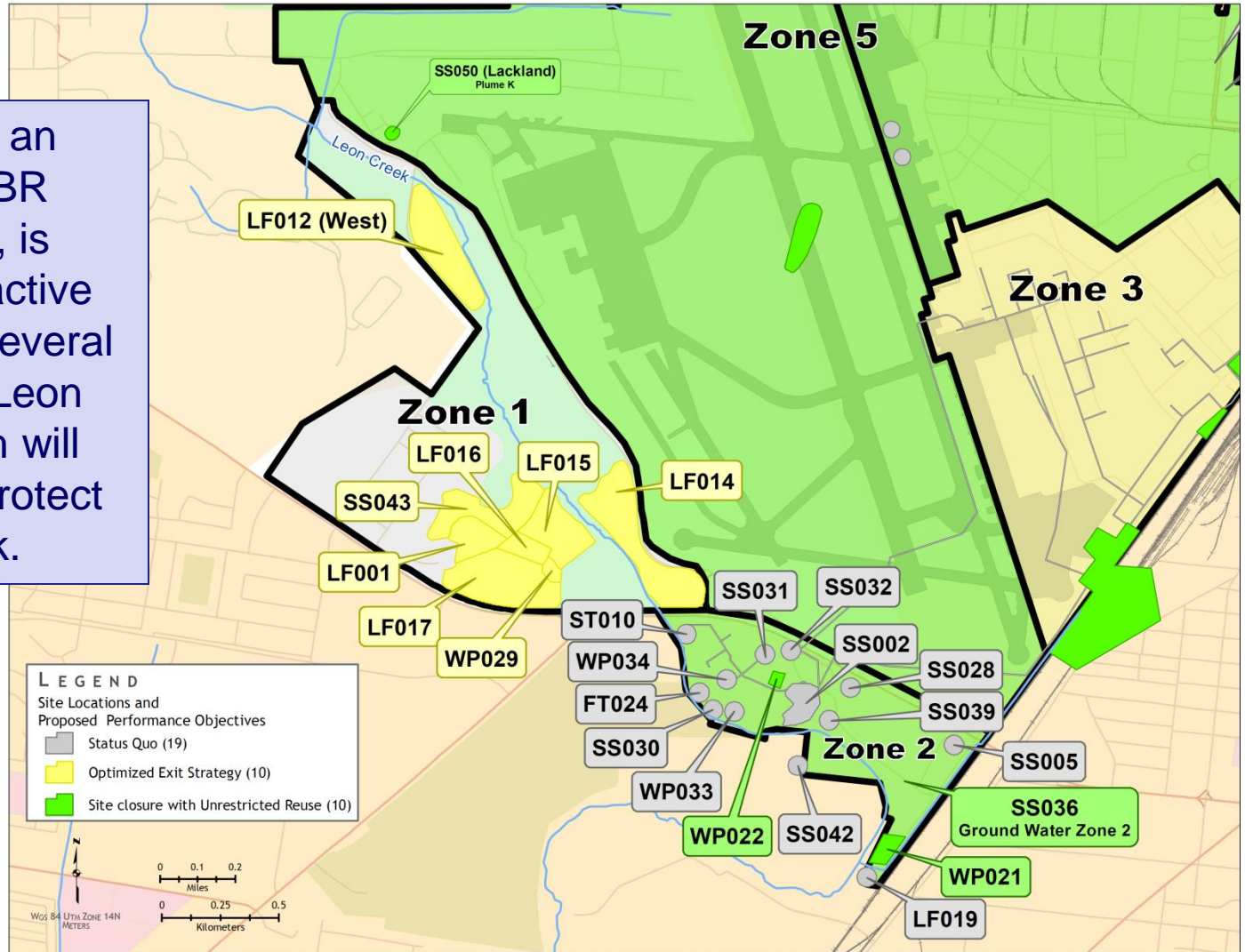
- The analytes showing an increase will continue to be investigated for potential source(s), including the storm water outfalls.
- Sampling will continue at Leon Creek as required by the RCRA Permit/Compliance Plan
  - Creek sampling is conducted twice per year
  - Fish tissue and bioassay sampling conducted once per year
- Air Force will continue to report results to TCEQ and present the results in the RAB meetings
- The compliance monitoring provides data that is used to evaluate the effectiveness of the remedies including those that are designed to protect Leon Creek from contaminated groundwater.



# Leon Creek Monitoring

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Shaw E&I, an AFRPA PBR contractor, is conducting active remedies at several sites along Leon Creek which will continue to protect the creek.







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# **Performance Based Remediation Contract for former Kelly AFB and Lackland AFB**

**Mr. Praveen Srivastav  
Susan Watson, Shaw E&I  
Shaw Group**



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# *What is Performance Based Remediation Contract?*

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- Fixed Price or Incentive contract
- Government specifies the end results
- Contractor determines steps to meet performance objectives (e.g., Site Closure)
- Contractors are liable to meet performance objectives
- Government maintains oversight responsibility for signing decision documents
- Promotes open communication between contractor and regulators, with government's approval



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# ***PBR Benefits***

- Provides required funding
- Expedites cleanup completion
- Can be aligned to exit strategies or used to optimize systems
- Promotes innovative approaches and cleanup technologies
- Lowers overall taxpayer liability



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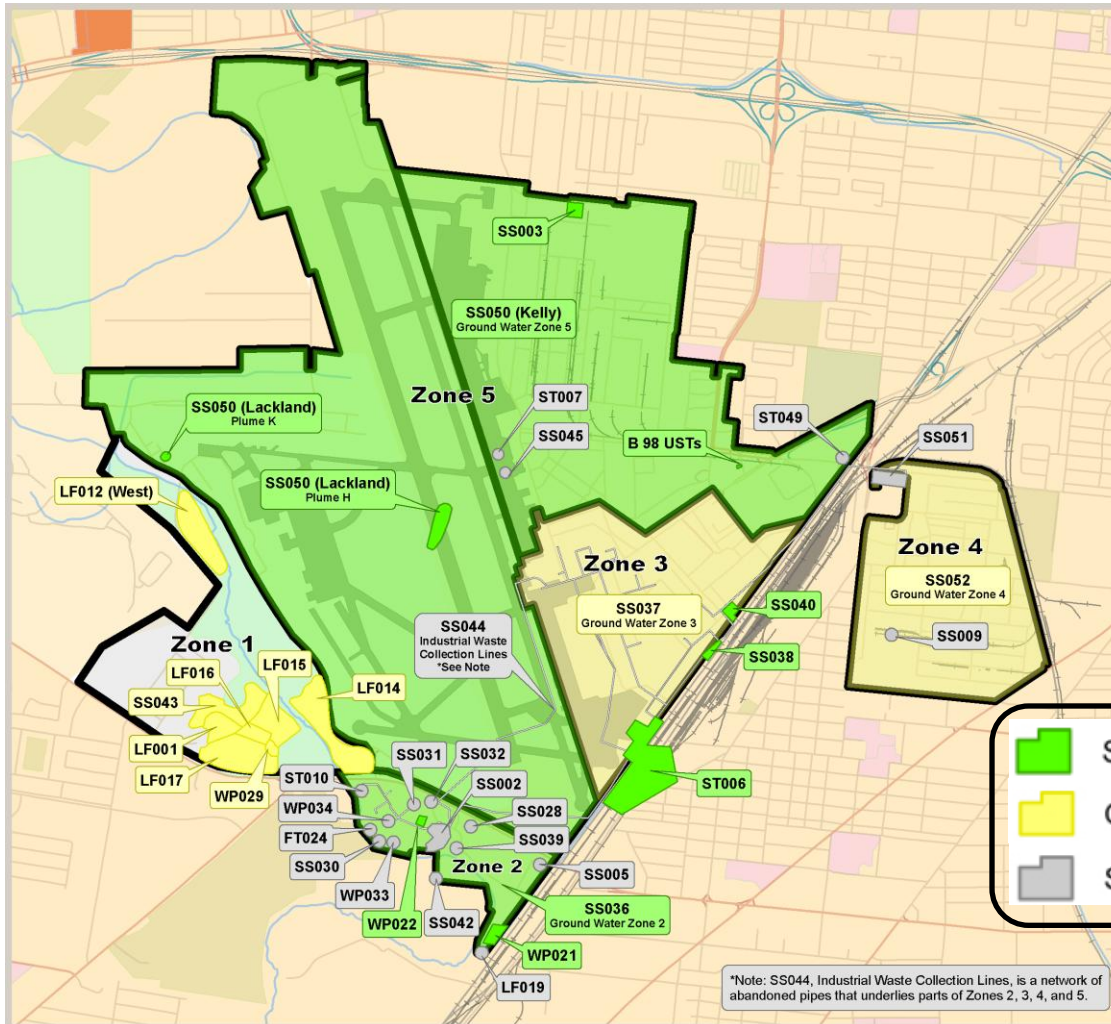
# ***Project Description***

- Sites
  - Former Kelly AFB: BRAC site, transferred to Port Authority of San Antonio as of 9/30/2010
  - Lackland AFB: Active base
- Total 39 sites
- 11 sites at Former Kelly AFB
- 9 sites at Lackland AFB
- 19 sites with Land Use Controls and 5-year reviews



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# Site Map with Performance Objectives





# *General Activities*

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- Groundwater Treatment Plant operations and Texas Pollution Discharge Elimination System (TPDES) sampling at 3 plants: Zone 2, Zone 4, Zone 5
- Compliance monitoring of groundwater, surface water, sediments, and fish tissue
- In situ enhanced bioremediation (ISEB) injections
- Soil excavation/treatment
- Monitoring well installation/abandonment
- Utility clearance for remediation systems installation
- Waste disposal
- Site closeout, decommissioning of systems
- RAB meeting support



# ***Objectives and Technical Approach***

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## **Objectives**

- Site closure with unrestricted reuse (SC/UR): 10 sites
- Optimized exit strategy (OES): 10 sites
- Status Quo (SQ) at 19 sites

## **Technical Approach**

- Investigation at limited number of sites
- Bioremediation (ISEB)/optimization for groundwater
- Soil remediation
- Performance monitoring
- Install more effective in situ treatment systems and discontinue operation of Zone 4 and Zone 5 GWTPs



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# *Objectives and Technical Approach*

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## **Technical Approach (continued)**

- 3 years of groundwater monitoring as required by the Compliance Plan
- Site closures for SC/UR sites
- Site decommissioning of systems
- Continue operations at OES sites
- Five-Year Reviews at SQ sites





## **Investigations proposed at:**

- WP021 Evaporation Pit E-1, Zone 2 –  
Investigation around well WP021MW345
- Building 98, Zone 5 –  
Delineation of fuel contaminated groundwater
- SS003 Spill Site S-1, Zone 5 –  
Follow-up investigation to recent remediation activities to evaluate chlorobenzene, benzene, and dichlorobenzene in soil and groundwater



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# *Remediation /Optimization: Zones 2 and 3*

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- SS036 Groundwater Zone 2
- SS037 Groundwater Zone 3
- WP021 Evaporation Pit E-1, Zone 2
- WP022 Evaporation Pit E-3, Zone 2

Groundwater remedies at these sites will be optimized by treatment using ISEB. Soil issues will be handled separately.



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# ***Remediation /Optimization: Zones 2 and 3***

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## **SS036 Groundwater, WP021 (E-1), and WP022 (E-3), Zone 2**

- Objective: SC/UR, closure date: Q2/2019
- Remediation: Excavate soil at Building 522; treat hotspots in groundwater with ISEB.

## **SS037 Groundwater Zone 3**

- Objective: OES
- Compliance Plan mod: Administratively consolidate GW in footprints of SS040, ST006, and SS038 into SS037.
- Treat hotspots with ISEB. Control migration to SS036 using biowalls.



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# ***Remediation /Optimization: Zones 2 and 3***

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- Main contaminants: Tetrachloroethene (PCE) and trichloroethene (TCE)
- Injection of amendments using Direct Push Technology (DPT) rig or permanent injection wells
- Amendments: food grade safe vegetable oil, lactate, sodium bicarbonate, and SDC-9
- Complete degradation to ethene
- Pattern (grid application vs. linear application) and amendment mix is site/plume specific



## ■ **Active vs. Passive Distribution**

- Active: Series of injection/extraction wells “Pull” or recirculate carbon, nutrients and bioaugmentation cultures through treatment zone
- Passive: Multiple injection point - Distribution of carbon source and bioaugmentation achieved by ambient groundwater flow

## ■ **Treatment zone distribution of carbon/microorganisms**

- Utilize existing extraction wells, where possible
- Reduce field time associated with injection
- Reduce potential for follow-up injections



# ***Biostimulation vs. Bioaugmentation***

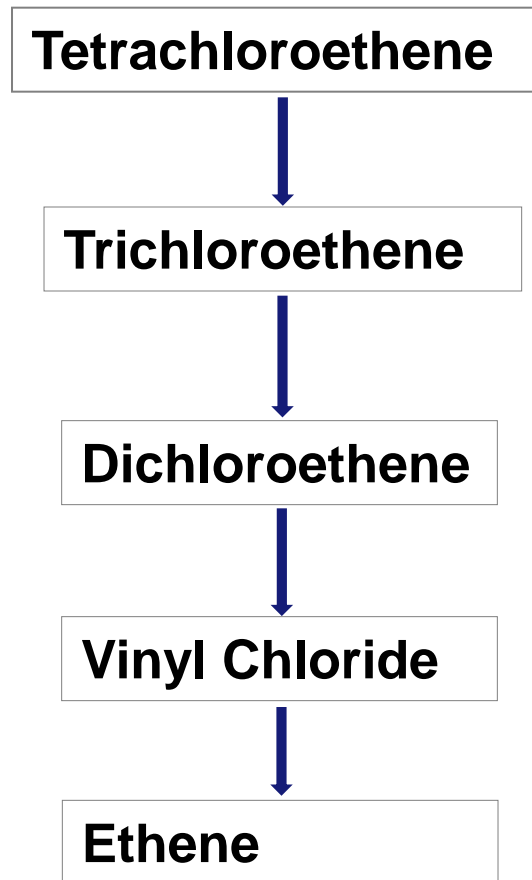
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- **Biostimulation** – Process whereby conditions are enhanced to encourage organisms to degrade contaminants.
  - Substrate addition (lactate, vegetable oil, molasses)
  - Electron acceptor addition (oxygen, sulfate)
  - pH adjustment
  - Essential nutrient addition (nitrogen, phosphorus)
  
- **Bioaugmentation** – The process of adding non-native organisms or extraction, enhancement and reintroduction of native organisms to the subsurface to promote biodegradation.
  - Anaerobic culture examples: SDC-9, BAV1, KB-1, BAC-9
  - Aerobic culture: ENV-477



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# *Biodegradation Pathways for Chlorinated Solvents*





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# Examples of ISEB Injection Systems



Active treatment system Moody AFB, 2003



Active treatment system batch injection - Camp Bullis, 2008

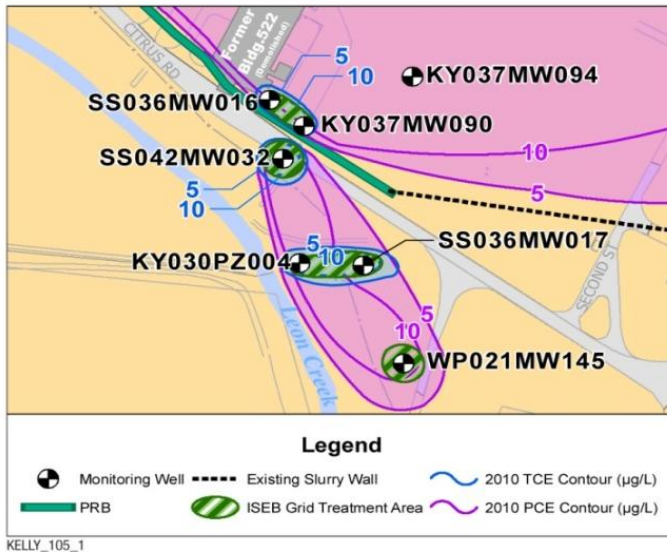




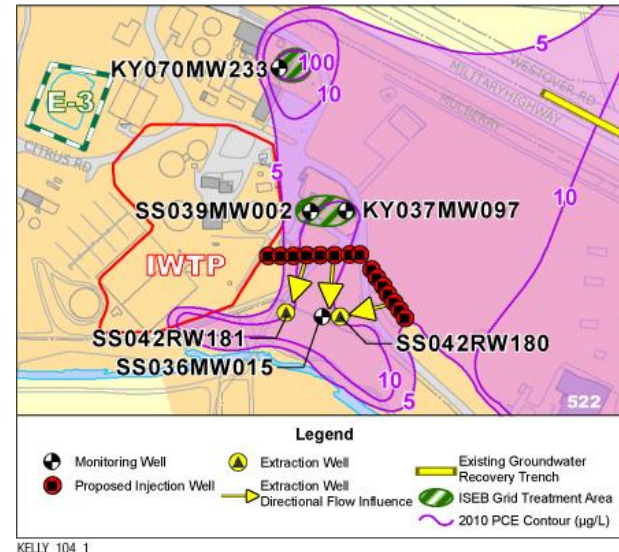


# ISEB, Zones 2 and 3

## Zone 2, SS036 – SC/UR



SS036, 300 Area – ISEB treatment of hot spots



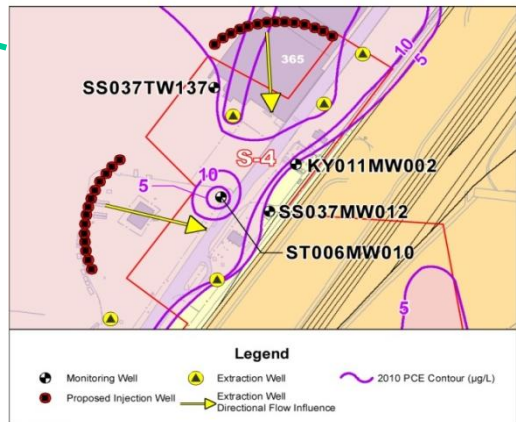
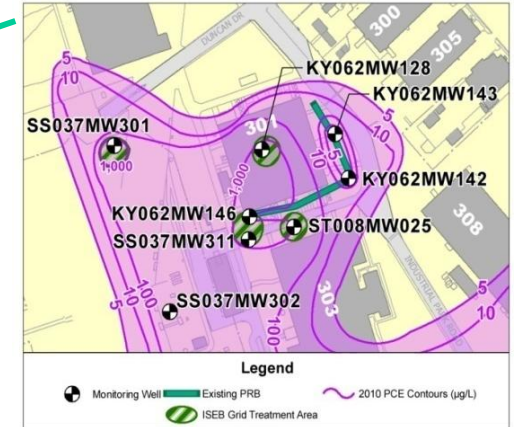
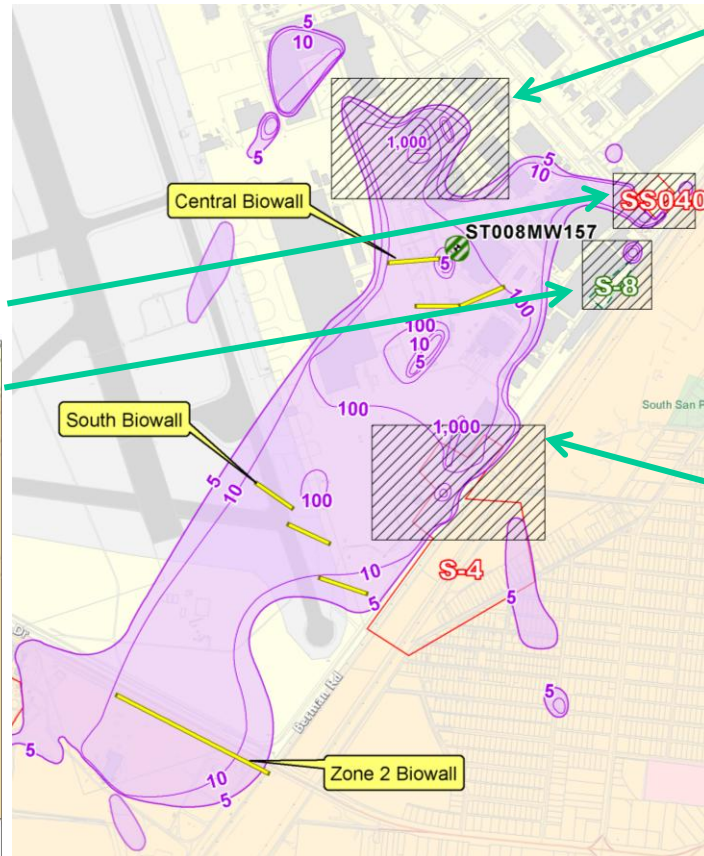
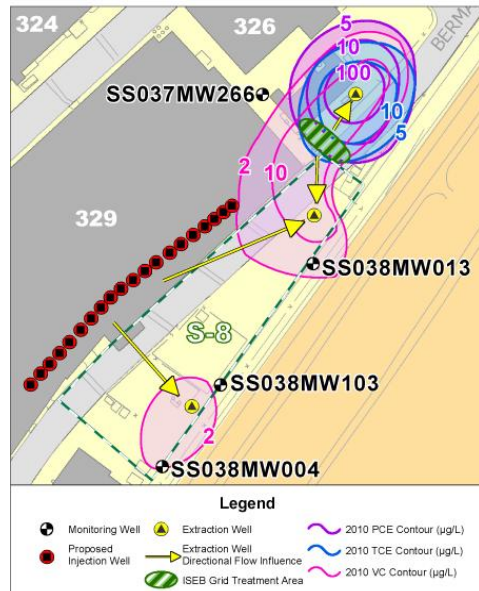
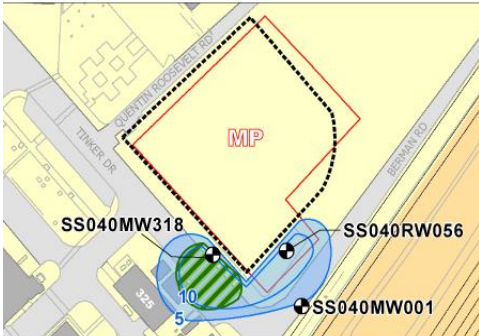
SS036, 600 Area – ISEB with circulation of amendments using existing extraction wells, and ISEB of hotspots



# ISEB, Zones 2 and 3

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## Zone 3, SS037 – OES; ISEB and biowalls



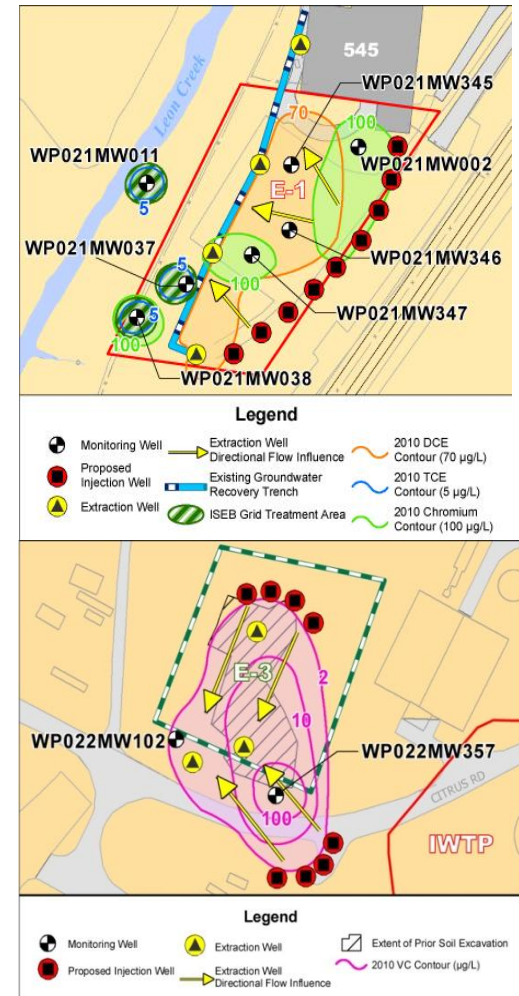


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# Remediation/Optimization: Zones 2 and 3

## WP021 and WP022

- Objective: SC/UR, closure date: Q2/2019
- GW: Treat with two rounds of injections, first for anaerobic ISEB, then for aerobic ISEB. Circulate amendments using existing recovery trench/ extraction wells. Decommission GW extraction as concentration reductions allow.
- LNAPL: Bail LNAPL at WP021, SS038, and SS037 if necessary.
- Zone 2 GWTP: Optimize to fit reduced throughput.





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# *Remediation/Optimization: Zones 4 and 5*

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Groundwater at these sites will be treated using ISEB.

- SS052 Groundwater Zone 4
- SS050 (Kelly) Groundwater Zone 5



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# ***Remediation/Optimization: Zones 4 and 5***

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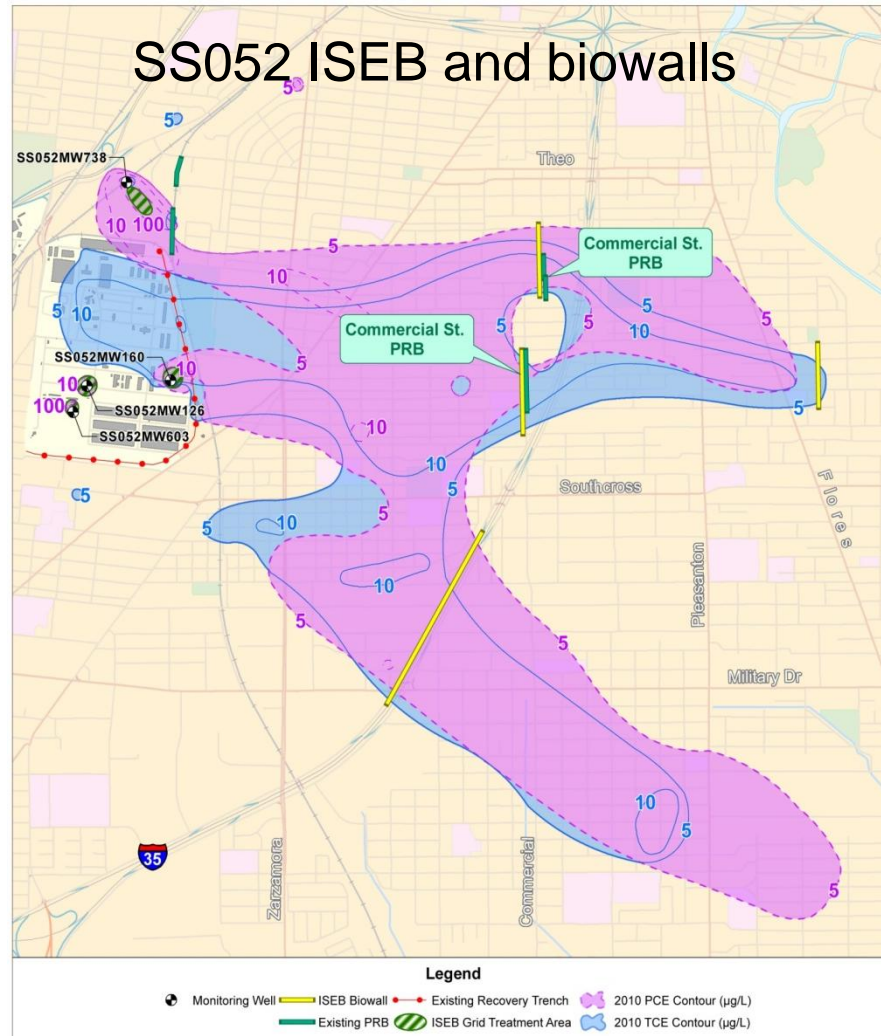
## **SS052 Groundwater Zone 4**

- Objective: OES
- GW: Treat hotspots with ISEB and control migration with biowalls
- Zone 4 GWTP: Decommission during Year 4/5
- Compliance Plan modification: Administrative change from old RRS2 rules to TRRP rules; no deed restrictions required after achieving cleanup goals



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# Remediation/Optimization: Zones 4 and 5



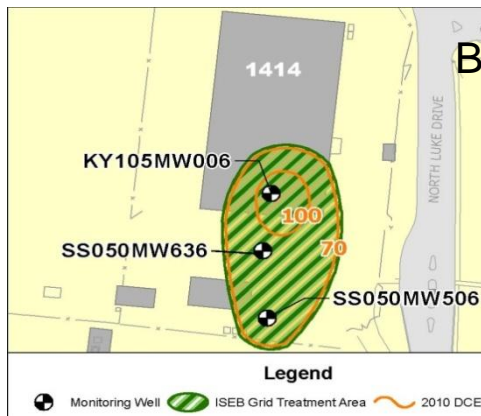
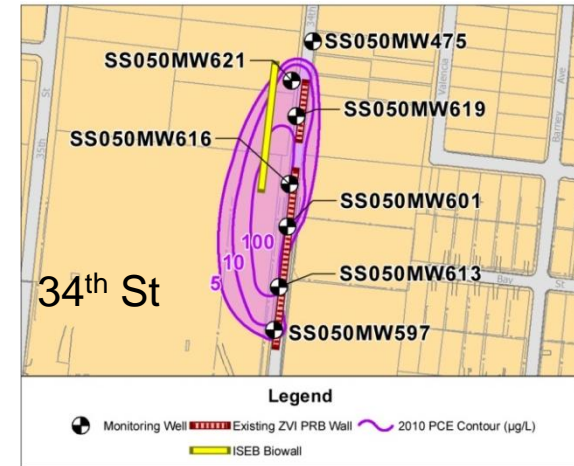


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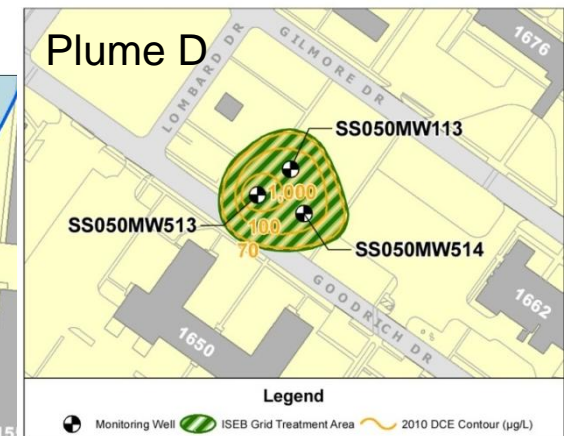
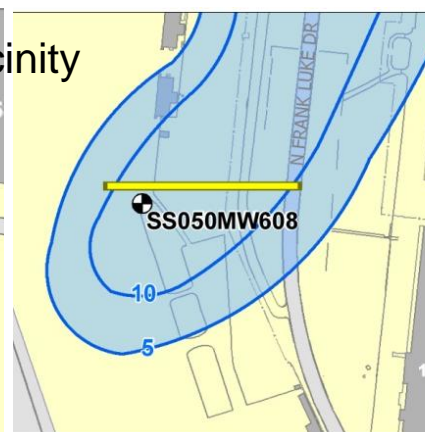
# Remediation/Optimization: Zones 4 and 5

## SS050 (Kelly) Groundwater Zone 5

- Objective: SC/UR, closure date: Q2/2019
- Includes: 1) 34<sup>th</sup> St PRB, 2) Plume D, 3) Building 1414 PRB, 4) 1533 PRB
- GW: Treat with ISEB and control migration with biowalls



Building 1414 and vicinity





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# *Approaches for Soil: Zones 2 and 3*

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- SS036 Groundwater Zone 2
- SS040 Plating Shop OT-2 (aka Site MP), Zone 3
- ST006 UST/Spill Site S-4, Zone 3
- WP021 Evaporation Pit E-1, Zone 2
- WP022 Evaporation Pit E-3, Zone 2
- SS037 Building 360, Zone 3
- SS038 UST/Spill Site S-8, Zone 3

Objective is SC/UR for these sites except SS037. Objective is OES for SS037.



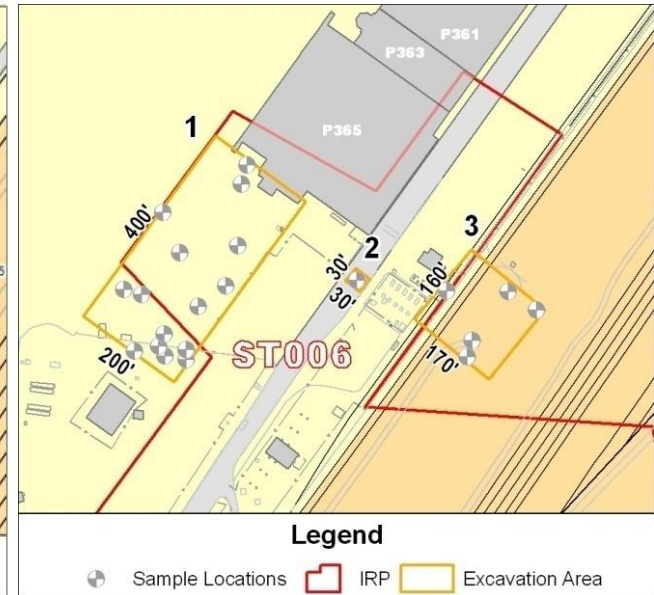
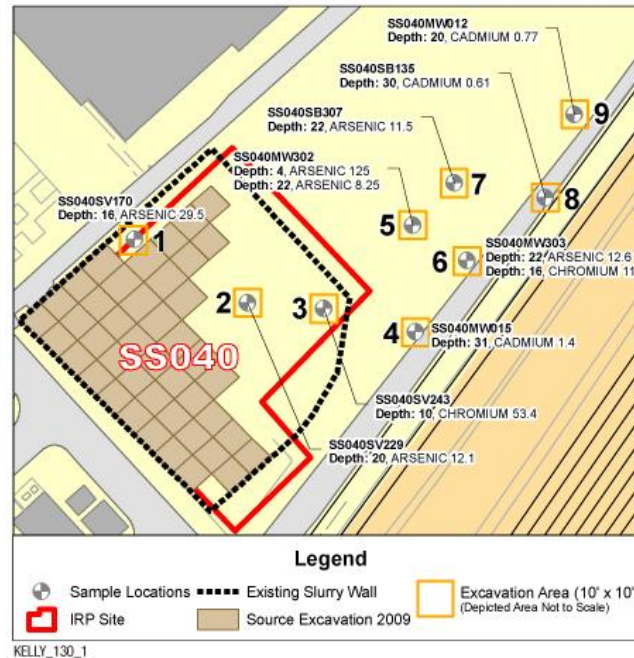
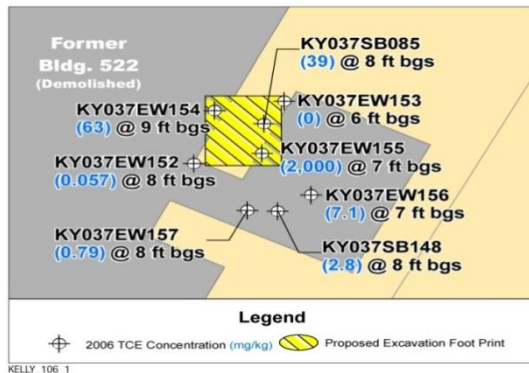


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# Approaches for Soil: Zones 2 and 3

Soil remediation strategies:

- SS036, SS040, and ST006  
Evaluate soil data against residential levels. If needed, excavate soil to meet residential levels





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# *Approaches for Soil: Zones 2 and 3*

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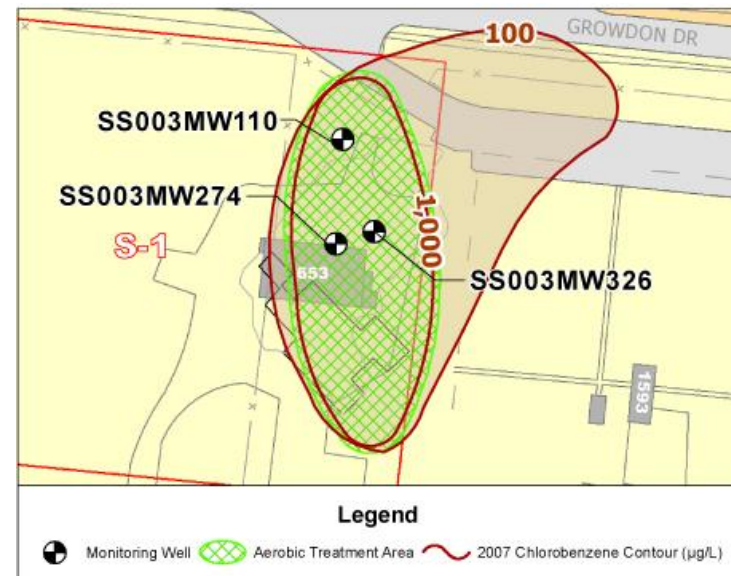
Soil remediation strategies (continued):

- WP021 and WP022  
Administratively close soil to residential levels; excavate if necessary
- SS037 (Building 360)  
Optimize SVE system until soil samples meet residential levels
- SS038  
Optimize bioventing system until soil samples meet residential levels



# SS003, Zone 5

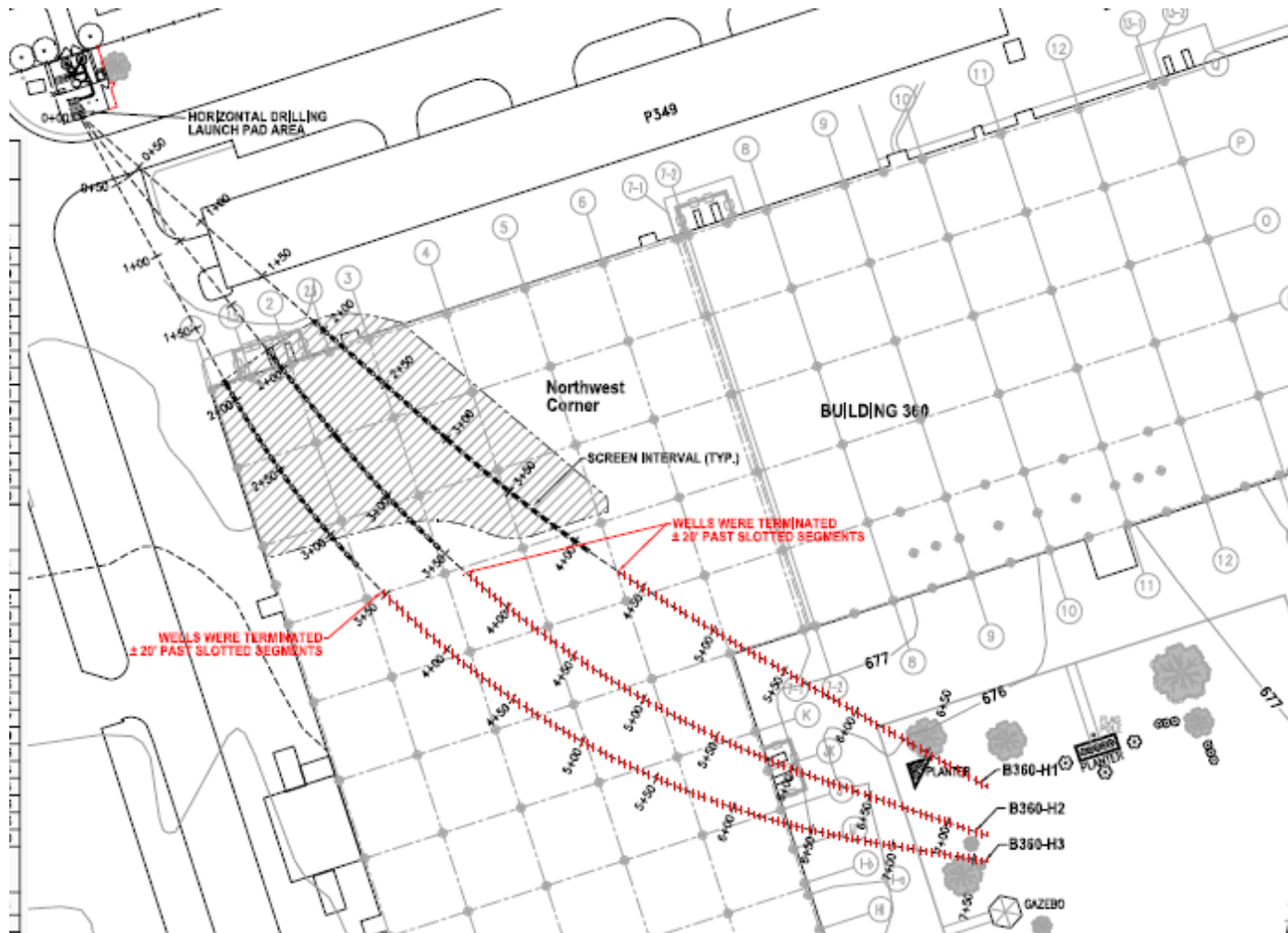
- Objective: SC/UR, closure date: Q2/2019
- Perform follow-up investigation to recent ERH/SVE activities to delineate COCs (primarily chlorobenzene and 1,2-dichlorobenzene) in soil and groundwater.
- Design plan to remediate soil and groundwater to residential levels. Potential technology: aerobic ISEB.
- Decommission GW extraction.
- Zone 5 GWTP: Decommission during in Year 4/5.
- Plans for SS003 are anticipated to be developed independently from other sites (not part of a group).





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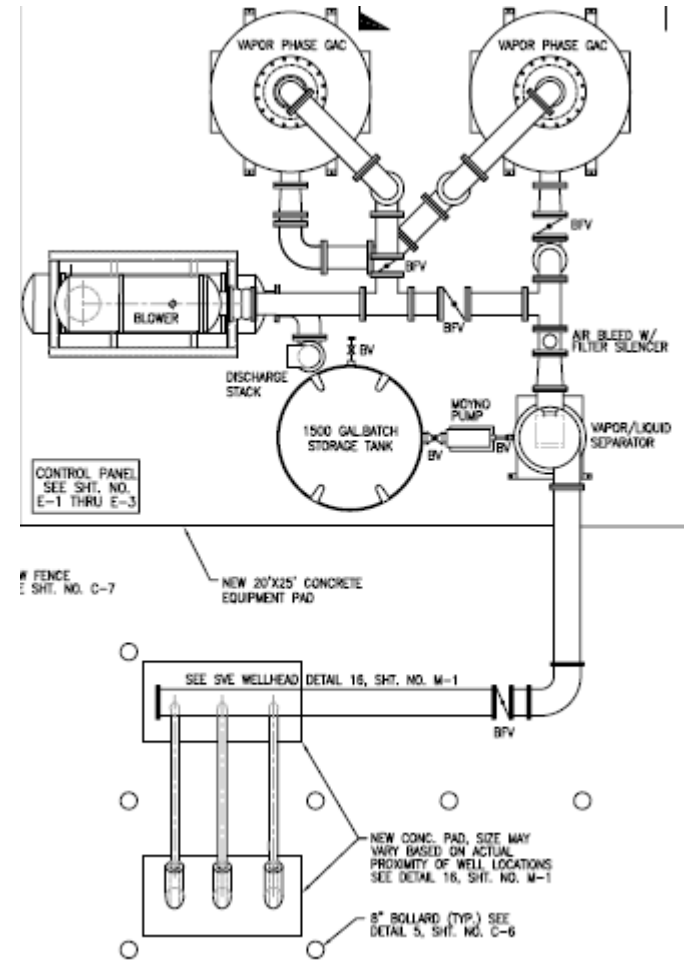
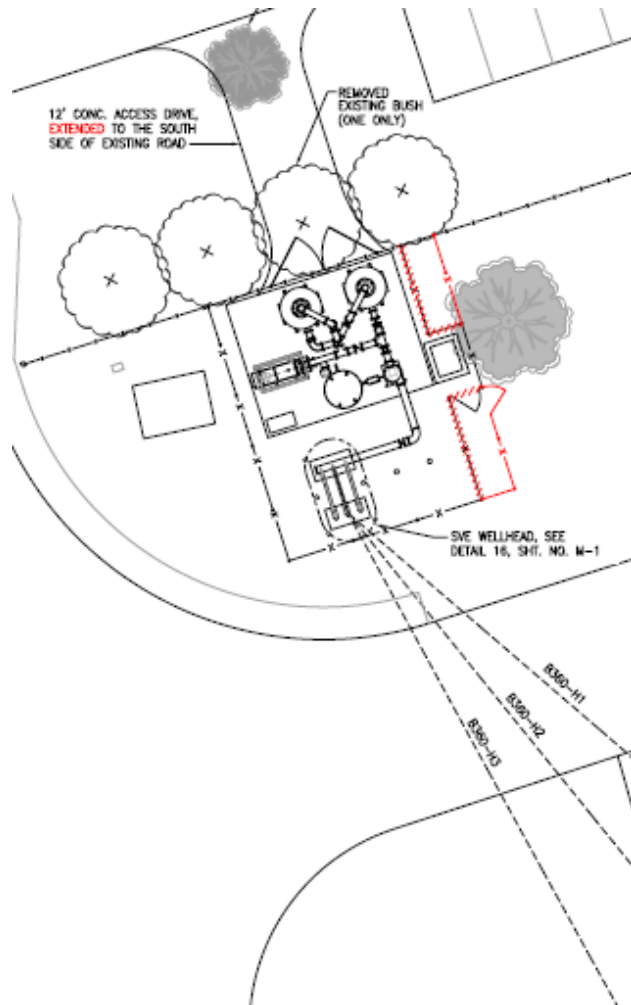
# Building 360 Remediation System Drawing





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# Building 360 Remediation System Details





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# *Building 360 Soil Vapor Extraction System*



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# Building 360 Extraction System and Organic Concentrations in Vapors



B-360 (KY074) FID Reading (Total VOC's, ppm)

Date	EW081	EW082	EW083	AVERAGE
4/14/2011	7.5	6.1	5.3	6.3
4/28/2011	2.8	2.3	2.3	2.5
5/6/2011	1.9	1.5	1.5	1.6
5/9/2011	WATER MAIN BREAK			
5/17/2011	7.5	7.2	7.1	7.3
5/23/2011	2.4	1.7	1.7	1.9
6/10/2011	1.7	1.6	1.6	1.6
7/1/2011	1.4	0.9	0.8	1.0
7/7/2011	0	0	0	0.0
7/15/2011	2.8	2.2	1.5	2.2
7/21/2011	0.9	0.4	1.3	0.9
8/4/2011	0.2	0.1	0	0.1
8/11/2011	0	0.8	0.9	0.6
8/17/2011	0	0	0	0.0
8/25/2011	0	0	0	0.0
9/2/2011	0	0	0	0.0
9/12/2011	1.6	2.2	2.7	2.2
9/21/2011	0	0	0.1	0.0
AVERAGE	1.8	1.6	1.6	1.7
MIN	0	0	0	0.0
MAX	7.5	7.2	7.1	7.3
AVERAGE 2008 (OCT, NOV, DEC)				3.6
AVERAGE 2009				0.8



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# ***Building 360 Remediation System Operation Update***

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- Contaminants at the site are PCE and TCE in the soil below the building
- The soil vapor extraction system is screened below the building and draws air from beneath the building. This maintains a negative pressure so any vapors from the soil do not enter the building.
- The system extracts vapors from the soil and treats them by carbon adsorption before releasing to the atmosphere.
- April, May 2009 Soil boring data showed that chlorinated solvent concentrations were below TCEQ RRS 2 (industrial) values.





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# ***Building 360 Remediation System Operation Update***

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- Weekly monitoring of soil vapors continues; VOCs measurements from April through September fluctuate from a max of 7 ppm to zero. The system is effective in removing contamination. Shaw will continue monitoring the system.
- Water in the extracted vapor is removed prior to vapor treatment. Vapor is discharged to the atmosphere after treatment.
- Water main break occurred May 2011 near B360 which did not affect operations although there appears to be a spike in organic vapor concentrations right after the break. Concentrations returned to previous levels within 2 weeks.



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# ***Work in Progress***

- Quality Program Plan (includes quality assurance plan, health and safety plan, and sampling and analysis plan)
- Site specific technical work plans
- Operation of groundwater treatment plants and other remediation systems



- QPP complete by end of October 2011
- First technical WPs for regulatory review in late October/early November 2011
- Investigation/well abandonment activities start in late January/early February 2012
- First DPT injections in February 2012
- Performance monitoring till 2015
- Groundwater monitoring for three years as required by the Compliance Plan – till 2018
- Site closures 2019
- On going GWTP operations through 2020



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# ***PBR Contracts AFRPA Experience***

## **Questions?**



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# Public Comment Period

**Mr. Jose Martinez**  
**Facilitator**



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# **Suggested Agenda Items for next RAB Meeting**

**Mr. Paul Carroll  
BRAC Environmental Coordinator**



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# **Building 171 Announcement**

**Mr. Jose Martinez**  
**Facilitator**



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## ***For More Information***

- **Contact AFRPA Public Affairs:**
  - **Public Information Line: 210-925-0956**
  - **Fax: 210-395-9527**
  - **Email: [afrpa.pa@us.af.mil](mailto:afrpa.pa@us.af.mil)**
  
- **Documents are available electronically or on hard copy:**
  - **Administrative Record Site:  
<https://afrpaar.lackland.af.mil/ar/docsearch.aspx>**
  
  - **San Antonio Central Library**
  - **Government Documents Section (6<sup>th</sup> Floor)**
  - **600 North Soledad, San Antonio, TX 78205**





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# Meeting Adjournment

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# Backup Slides