

# 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

14 April 2009



Port San Antonio  
907 Billy Mitchell Blvd.  
San Antonio, TX 78226  
6:30 - 8:20 p.m.

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# *Welcome and Overview*

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- **6:30 – 6:37**      **Welcome and Overview**
- **6:37 – 6:40**      **RAB Administrative Items**
- **6:40 – 6:50**      **TCEQ Permit/Compliance Plan Renewal**
- **6:50 – 7:10**      **Updates: Building 360 and Former Building 301**
- **7:10 – 7:30**      **Site MP Update: Former Metal Plating Shop,  
Building 171 Parking Lot**
- **7:30 – 8:00**      **EPA Soil Vapor Intrusion Study Results**
- **8:00 – 8:15**      **Public Comment Period**
- **8:15 – 8:20**      **Suggested Agenda Items for next RAB**
- **8:20**              **Meeting Adjournment**



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# ***Environmental Cleanup/Property Transfer Highlights***

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- **The Air Force Successfully transferred 1,017 acres in FY08 to Port San Antonio for beneficial reuse.**
- **The Air Force has spent more than \$280 million on the clean up. To date, 81.9% of the environmental sites have been closed in accordance with federal and state regulatory standards.**
- **There were originally 52 IRP sites identified at former Kelly AFB (17 were realigned to LAFB during closure in 2001). Of the remaining 35 IRP sites at Kelly, 24 have been closed and 11 are still open.**
- **The Air Force is currently working with EPA and TCEQ to demonstrate Operating Properly and Successfully (OPS) to transfer the remaining 440 acres of property in FY09 and FY10.**
  - **Zone 2 (approximately 77 acres) is scheduled to transfer August 2009**
  - **Zone 3 (approximately 363 acres and includes most of the industrial area) is scheduled to transfer in August 2010.**



# ***RAB Administrative Items***

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**6:37 – 6:40 p.m.**

- **Upcoming RAB Tour/Training:  
April 23, 2009**
- **RAB Member Appreciation:  
Mr. Gary Miller**
- **RAB Membership Drive Update**



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# ***TCEQ Permit/Compliance Plan Renewal***

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**6:40 – 6:50 p.m.**

- **TCEQ Permit/Compliance Plan Renewal**
- **Questions from RAB**

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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*

## **AFRPA / Kelly RCRA Permit and Compliance Plan Renewal 14 April 2009**



**Paul Carroll  
BRAC Environmental Coordinator**

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# *RCRA Permit and Compliance Plan Renewal*

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- **The Air Force received approval of the Class III Modification for Zones 2 and 3 at former Kelly AFB from the Texas Commission on Environmental Quality (TCEQ) in February 2009.**
- **The Draft Semiannual Compliance Plan Report was submitted to TCEQ in January 2009 and is currently under review. This report documents the results of the semi-annual sampling of Leon Creek and base wide groundwater sampling.**
- **The Final Draft RCRA Permit and Compliance Plan renewal for former Kelly AFB completed the public comment period in March 2009. No comments were received and it is anticipated that the permit will be signed by the end of April 2009\*.**



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# Questions

## ■ Questions from RAB





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# *Updates: Building 360 & Former Building 301*

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**6:50 – 7:10 p.m.**

- **Updates: Building 360 & Former Building 301**
- **Questions from RAB**

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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*

## **AFRPA / Kelly Building 360 Update 14 April 2009**



**Paul Carroll  
BRAC Environmental Coordinator**

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# ***SVE Operations***

- **Building 360 SVE system is continuing to operate properly and remove contaminants as intended.**
- **Will continue to operate SVE system and make adjustments to meet technical and regulatory goals.**
- **Noise Reduction Actions have been completed except for the final acoustic enclosure for the blower motor.**
- **This work is anticipated to be completed May 2009.**





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# ***Soil Vapor Intrusion (SVI) Investigation Status***

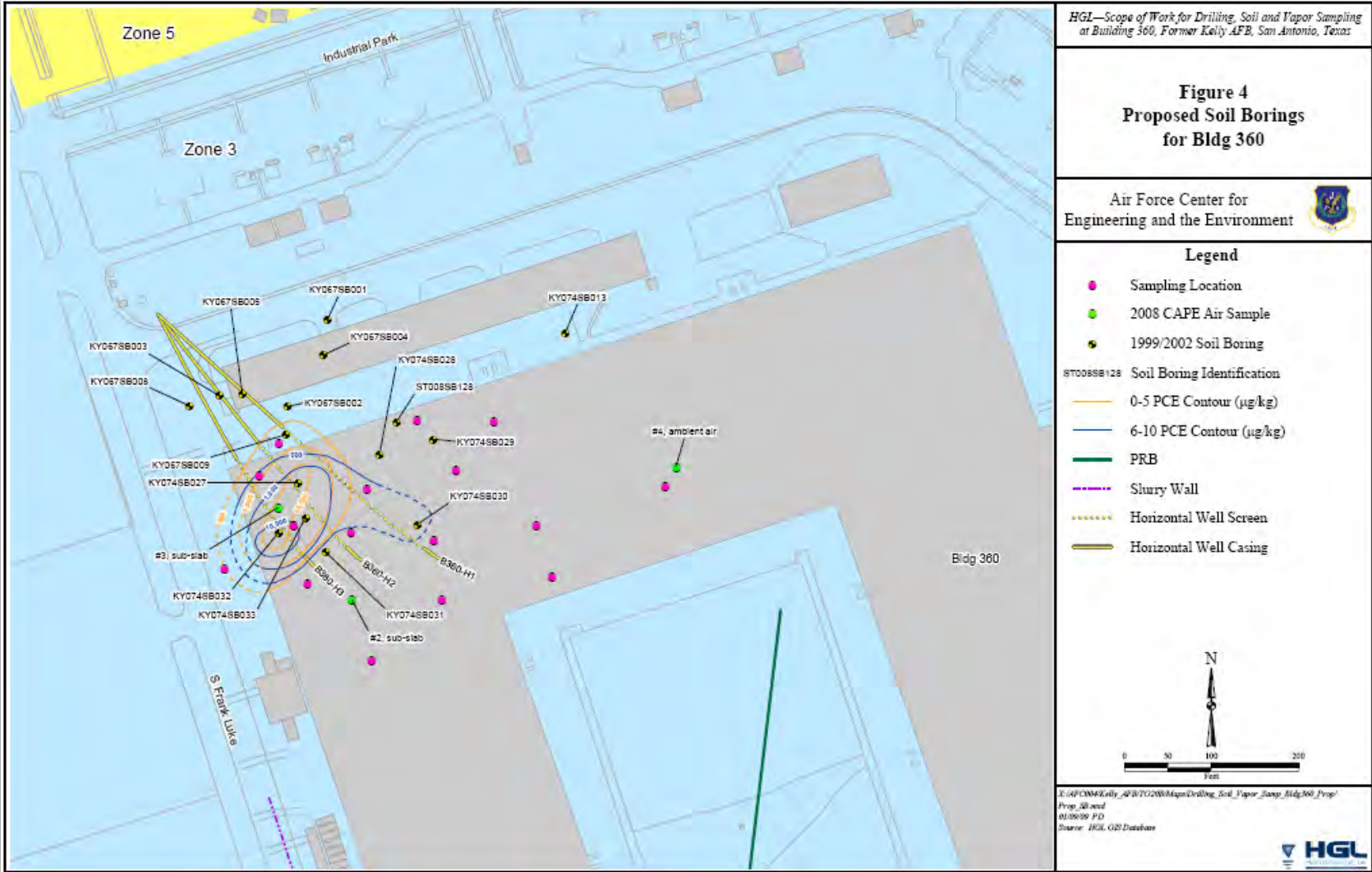
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- **AFRPA determined in 2008 that subslab sampling needs to occur at Building 360 to verify extent of contamination being addressed by the Soil Vapor Extraction (SVE) System.**
- **AFRPA contractor HGL began drilling operations in Building 360 in early April 2009.**
- **At this time 7 of the proposed 15 borings have been completed.**
- **The remaining borings are anticipated to be completed in the next few weeks.**
- **Once sampling results are available the SVE system radius of influence will be calculated in order to determine if the SVE system is adequately addressing the known source of contamination.**
- **This data will also be used for determining pace to closure evaluation.**



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# Soil Borings



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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*

**AFRPA / Kelly**  
**Former Building 301 ERH Site**  
**14 April 2009**



**Paul Carroll**  
**BRAC Environmental Coordinator**

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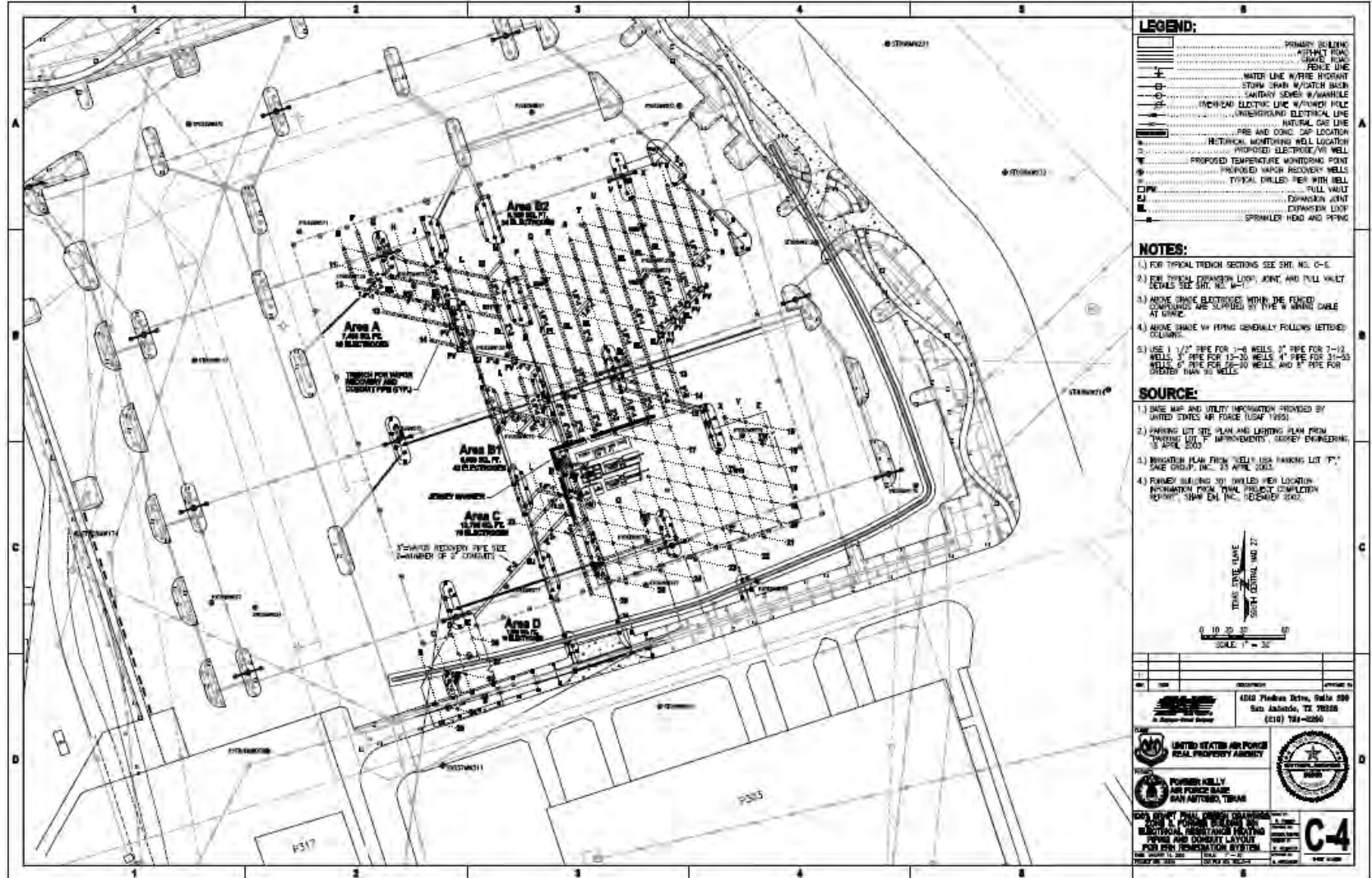
# ***ERH Operations***

- **Electrical-Resistive Heating (ERH) / Soil Vapor Extraction (SVE) system has been in operation since July 2008.**
- **Routine operation and maintenance (O&M) of ERH/SVE system is conducted and weekly, bi-monthly, and monthly sampling of vapor phase and condensate are performed in order to maintain operational efficiency.**
- **Average subsurface temperatures at start up were 27° C (81° F).**
- **Average subsurface temperatures for Areas A & B as of March 31, 2009 were 94.8° C (202.6° F), which is slightly above the designed target temperature of 92° C (198° F).**
- **Average subsurface temperatures for Area C as of March 31, 2009 were 94.6° C (202.3° F).**
- **Average subsurface temperatures for Area D as of March 31, 2009 was approximately 46° C (114.8° F).**



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# ERH Zone Map



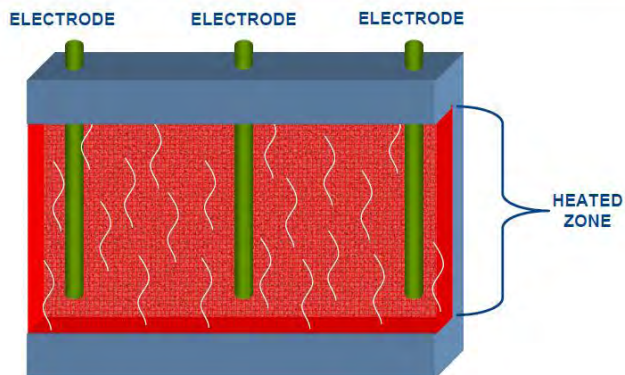




# ERH Graphical Representation

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## Steam Generation in Treatment Zone

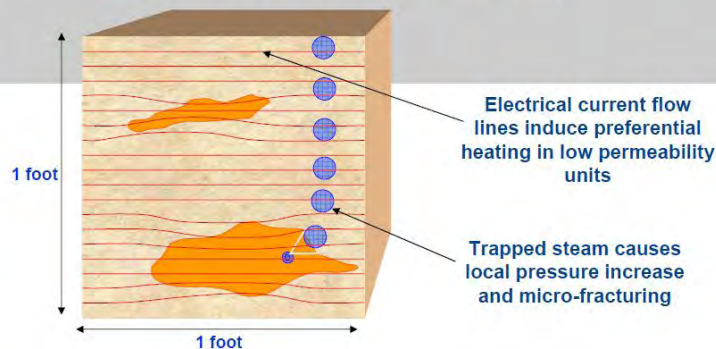


1. Soil grains act as individual resistors
2. Steam generation is uniform through the heated zone

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## Pore Level Cleaning through Steam Generation



In one minute of ERH, the total volume of steam bubbles generated in a cubic foot is about equal to the volume of a ping-pong ball.

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# ***60% Confirmation Sampling***

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- **The 60% confirmation sampling, consisting of six soil borings, occurred in February 2009.**
- **The sampling results indicated that contaminant levels have been significantly reduced in many areas to non detect levels.**
- **As a result of the data a total of 81 electrodes were disconnected on 10 March 2009 in order to allow more power for target areas in the electrode field.**



# 60% Confirmation Sampling

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## 60% Confirmation Soil Results

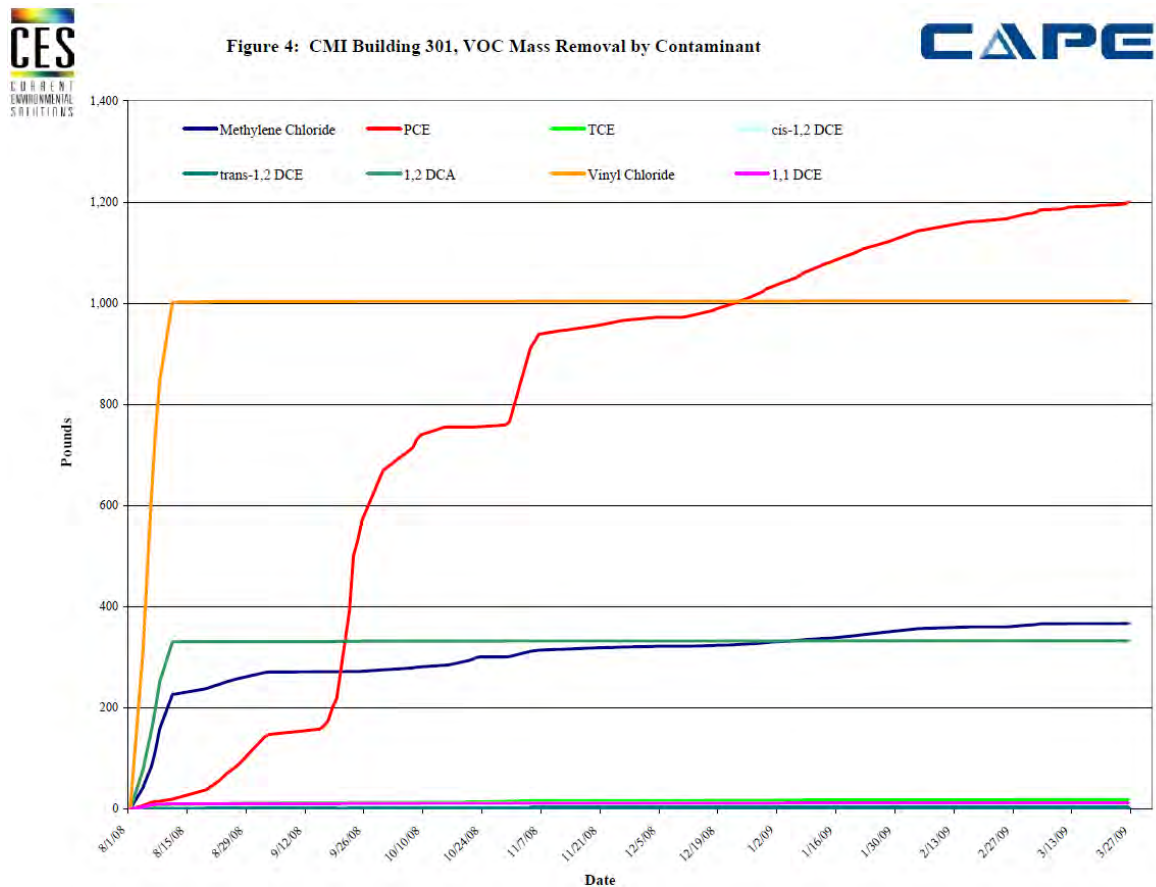
Sample Date	Sample ID	Sample Location	Depth	1,2 DCE (ppm)	cis-1,2 DCE (ppm)	Vinyl Chloride (ppm)	TCE (ppm)	PCE (ppm)	Carbon disulfide (ppm)	Acetone (ppm)	4-methyl-2-pentanone (ppm)	2-Butanone (ppm)
02-Feb-09	T75022902	W18	12' - 14'	0.000468 U	0.000248 U	0.000191 U	0.000356 U	0.000170 U	0.000252 U	<b>0.096</b>	<b>0.00592</b>	<b>0.016</b>
	T75022903		20' - 22'	0.000431 U	0.000229 U	0.000176 U	0.000328 U	0.000156 U	0.000232 U	<b>0.00950 J</b>	<b>0.00160 J</b>	0.000567 U
	T75022904	V21	6' - 8'	0.000460 U	0.000244 U	0.000188 U	0.000349 U	0.000167 U	0.000248 U	0.000531 U	0.000432 U	0.000605 U
	T75022905		16' - 18'	0.000442 U	0.000235 U	0.000181 U	0.000336 U	0.000160 U	0.000238 U	<b>0.030</b>	0.000416 U	<b>0.00716</b>
	T75022908	C33	6' - 8'	<b>0.434</b>	<b>0.434</b>	0.00972 U	<b>0.079 J</b>	<b>3.88</b>	0.013 U	0.027 U	0.022 U	0.031 U
	T75022909		4' - 6'	<b>4.95</b>	<b>4.95</b>	<b>0.067 J</b>	<b>1.68</b>	<b>35.2</b>	0.013 U	0.029 U	0.023 U	0.033 U
03-Feb-09	T7502302	W05	8' - 10'	0.000484 U	0.000256 U	0.000198 U	<b>0.00215 J</b>	<b>0.129</b>	0.000261 U	<b>0.062</b>	0.000455 U	<b>0.013</b>
	T7502303		10' - 12'	0.000471 U	0.000250 U	0.000192 U	0.000358 U	<b>0.015</b>	<b>0.00156 J</b>	<b>0.121</b>	0.000443 U	<b>0.029</b>
	T7502304	Q9	10' - 12'	0.000453 U	0.000240 U	0.000185 U	0.000345 U	<b>0.036</b>	0.000244 U	<b>0.129</b>	0.000426 U	<b>0.024</b>
	T7502305		26' - 28'	0.000444 U	0.000236 U	0.000181 U	0.000338 U	0.000161 U	0.000239 U	0.000513 U	0.000418 U	0.000584 U
	T7502306	G12	10' - 12'	0.000498 U	0.000264 U	0.000203 U	<b>0.00348 J</b>	<b>0.198</b>	0.000268 U	<b>0.429</b>	0.000468 U	<b>0.086</b>
	T7502307		28' - 30'	0.000445 U	0.000236 U	0.000182 U	0.000338 U	<b>0.148</b>	0.000240 U	<b>0.00972 J</b>	0.000418 U	<b>0.00424 J</b>
TCEQ Risk Reduction Standard Number 2				1,2 DCE (ppm)	cis-1,2 DCE (ppm)	Vinyl Chloride (ppm)	TCE (ppm)	PCE (ppm)	Carbon disulfide (ppm)	Acetone (ppm)	4-methyl-2-pentanone (ppm)	2-Butanone (ppm)
				7.00	7.00	0.200	0.500	0.500	1,020	1,020	511	511



# ERH Contaminant Removal

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- Calculations based on volume of air and VOCs extracted and analytical results by individual contaminant, indicate that approximately 1,200 lbs of PCE has been removed as of March 31, 2009.



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# Questions

## ■ Questions from RAB



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## *Site MP Update: Former Metal Plating Shop, Building 171 Parking Lot*

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**7:10 – 7:30 p.m.**

- **Site MP Update: Former Metal Plating Shop, Building 171 Parking Lot**
- **Questions from RAB**

# Restoration Advisory Board Presentation for Remediation of Source Contamination at IRP Site SS040, Former Kelly AFB, Texas

April 14, 2009



TETRA TECH

 EarthTech

PREMIER *Hydro*

 **HGL**  
HydroGeoLogic, Inc.

# Agenda

Remediation of Source Contamination at IRP Site SS040

- **Introductions**
- **Work Completed to Date**
- **Air Monitoring during Site Activities**
- **Remaining Work to be Completed**
- **Schedule**
- **Conclusion**



# Introductions

Remediation of Source Contamination at IRP Site SS040

## ■ Tetra Tech Project Team

- Project Manager - Bill Norton
- Contracts - Keith Bradley
- Technical Leads - Brian Howard and Larry Tyner

## ■ Air Force Personnel

- Mark Davis, AFCEE COR
- Paul Carroll, AFRPA (BRAC Environmental Coordinator for Former Kelly AFB)
- Luis Medina, AFRPA Environmental Project Manager

# Work Completed to Date

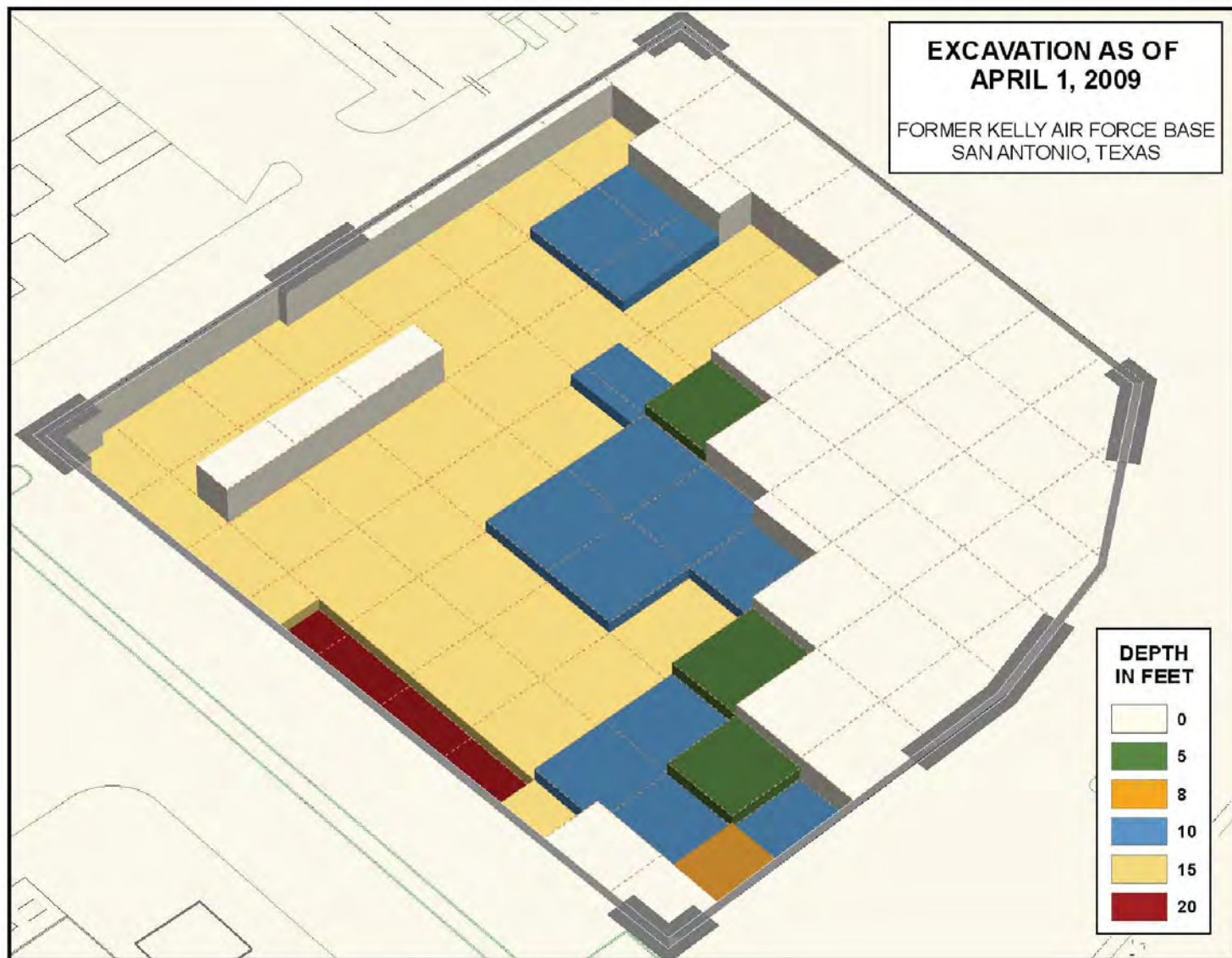
Remediation of Source Contamination at IRP Site SS040

## Completed Site Activities

- Mobilization and set up of temporary field office
- Site survey to establish exact location of existing slurry wall
- Installation of temporary fencing around site perimeter
- Submitted the Project Quality Program Plan – Remediation Work Plan
- Geophysical survey
- Site characterization activities
- Constructed the site lay down area
- Utility abandonment
- Submitted the Excavation Plan
- Baseline groundwater sampling event
- Removal of approximately 1,390 cubic yards of asphalt – recycled.
- Removal and disposal of 1,320 cubic yards of concrete.
- Removal and disposal of 35,040 cubic yards of Class II soils.
- Removal and disposal of 300 cubic yards of hazardous soils.
- Installed shoring from 0 to 25 feet bgs.

# Figure 1 – Soil Excavation Diagram

Remediation of Source Contamination at IRP Site SS040



# Figure 2 – Shoring Installation

Remediation of Source Contamination at IRP Site SS040



# Figure 3 – Site Photo

Remediation of Source Contamination at IRP Site SS040



# Air Monitoring During Site Activities

Remediation of Source Contamination at IRP Site SS040

## Air Monitoring Results

- Real time monitoring for vapors and exposure to the field personnel to ensure compliance with the site specific Health and Safety Plan
- Air sampling conducted during work activities monitors the site perimeter, the exclusion zone, and the worker's breathing zone
- 128 individual sampling evolutions
- 640 samples have been recorded
- Chemical screening for site Contaminants of Concern (COCs)
- All chemical screening air sampling results have been Non-Detect (ND) for all potential COCs

# Remaining Work to be Completed

Remediation of Source Contamination at IRP Site SS040

- **Continue soil excavation, transportation, and disposal from 15 to 45 feet below the ground surface**
- **Placement of Carbon Source in pit floor**
- **Site and parking lot restoration**
- **Installation of replacement monitoring wells**
- **Groundwater monitoring events**
- **Reporting**

# Schedule

Remediation of Source Contamination at IRP Site SS040

## Schedule of Remaining Field Activities

- Soil Excavation (April 2009 – July 2009)
- Parking Lot Restoration (August 2009)
- Installation of Replacement Monitoring Wells (August 2009)
- Annual Groundwater Monitoring Event (September 2009)



# Conclusion

Remediation of Source Contamination at IRP Site SS040

## Questions from RAB





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# ***EPA Soil Vapor Intrusion Study Results***

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**7:30 – 8:00 p.m.**

- **EPA Soil Vapor Intrusion Study Results**
- **Questions from RAB**

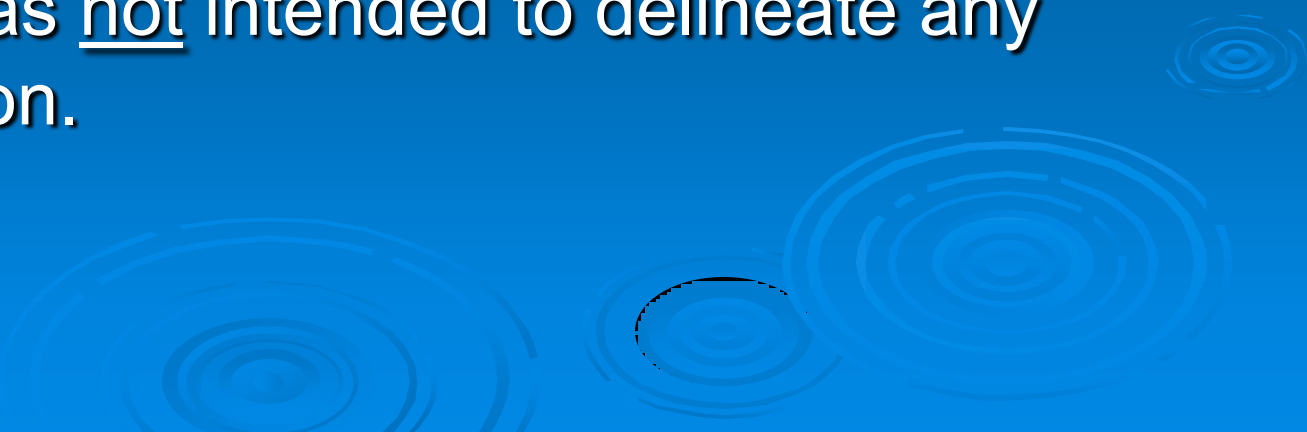
# Vapor Intrusion Study Update

Gary W. Miller  
EPA Region 6

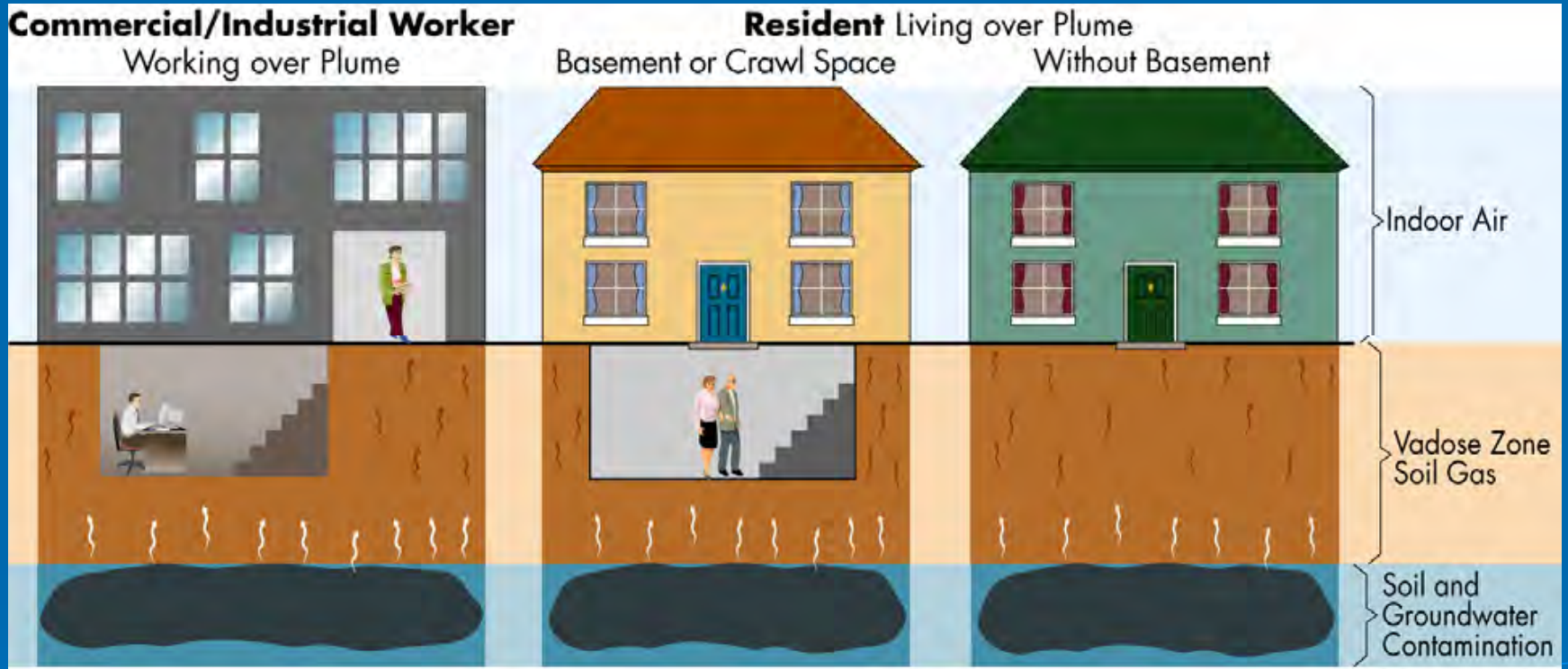
April 2009




# Vapor Intrusion Sampling

- Sampling was conducted in areas with the highest off base groundwater contamination.
  - Sampling was intended to determine if there is a completed pathway from subslab to indoor air.
  - Sampling was not intended to delineate any contamination.
- 
- The background of the slide features a blue gradient with several sets of white, concentric circular ripples that resemble water droplets hitting a surface. These ripples are scattered across the lower half of the slide, with a larger set on the right and several smaller ones on the left and bottom.

# What You Should Know About Vapor Intrusion



# Questions for Vapor Intrusion Impacts

- If Subsurface Gas does exist, is it entering the residence?
  - If Subsurface Gas contamination exists in the residence, is it from the Subsurface or elsewhere (i.e., Lifestyle or Ambient)?
  - If Gas contamination exists in the residence and it is not from the Subsurface, have other sources been identified?
- 
- The bottom of the slide features a decorative graphic of several concentric, light blue circles resembling ripples on water, set against the dark blue background.

# Trace Atmospheric Gas Analyzer (TAGA) Mobile Laboratory

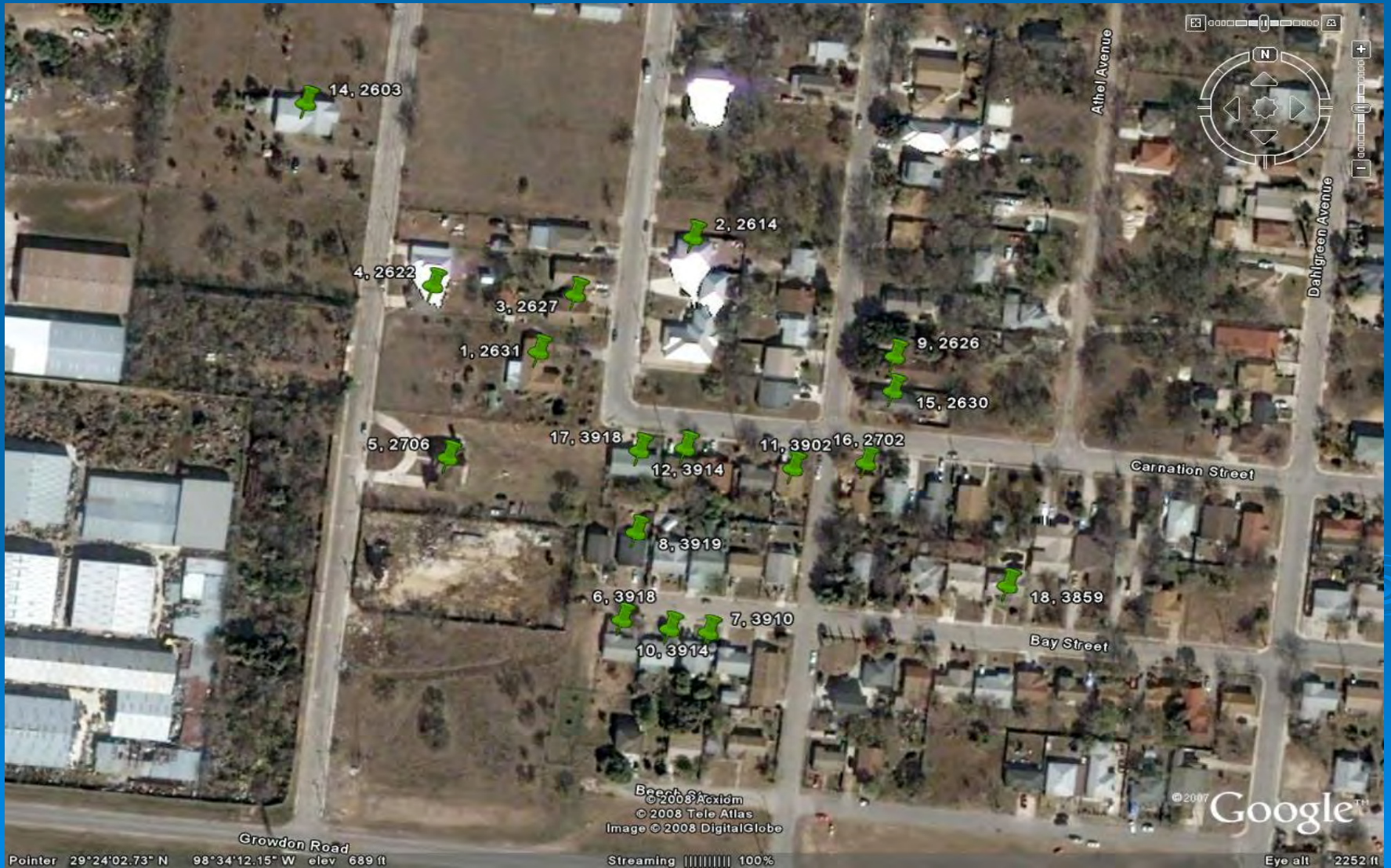


# May 2008 Vapor Intrusion Sampling

- 20 residential structures were sampled.
  - 17 of these were in the 34<sup>th</sup> Street area
  - 3 were located northeast of East Kelly
- We collected 16 subslab soil gas samples and 4 crawl space samples.
- Based upon the results from the subslab and crawl space sampling, indoor air was sampled at 5 residential structures



# May 2008 34<sup>th</sup> Street Area Sampling Locations



# May 2008 East Kelly Sampling Locations



# May 2008 Vapor Intrusion Sampling PCE Results

Unit Number	SUMMA Crawl Space ( $\mu\text{g}/\text{m}^3$ )	SUMMA Sub-slab ( $\mu\text{g}/\text{m}^3$ )	TAGA Indoor ( $\mu\text{g}/\text{m}^3$ )	SUMMA Indoor ( $\mu\text{g}/\text{m}^3$ )	Risk level for PCE in the Indoor Air
001	N/A	370/410	< 0.41	0.19/0.20	$4.63 \times 10^{-7}/4.88 \times 10^{-7}$
002	N/A	35	N/A	N/A	N/A
003	N/A	260/290	<0.41	0.11/0.16	$2.68 \times 10^{-7}/3.90 \times 10^{-7}$
004	N/A	230/250	<0.41	0.43/0.38	$1.05 \times 10^{-6}/9.27 \times 10^{-7}$
005	N/A	11	N/A	N/A	N/A
006	N/A	180/170	<0.41	0.13/0.78	$3.17 \times 10^{-7}/1.90 \times 10^{-6}$
007	N/A	14	N/A	N/A	N/A
008	N/A	13	N/A	N/A	N/A
009	N/A	23	N/A	N/A	N/A
010	N/A	86	N/A	N/A	N/A
011	N/A	47	N/A	N/A	N/A
012	N/A	610	N/A	N/A	N/A
013	N/A	3.8	N/A	N/A	N/A
014	0.10	N/A	N/A	N/A	N/A
015	0.079	N/A	N/A	N/A	N/A
016	N/A	370	N/A	N/A	N/A
017	N/A	600/570	<0.41	0.16	$3.90 \times 10^{-7}$
018	N/A	140	N/A	N/A	N/A
019	0.15	N/A	N/A	N/A	N/A
020	0.12	N/A	N/A	N/A	N/A

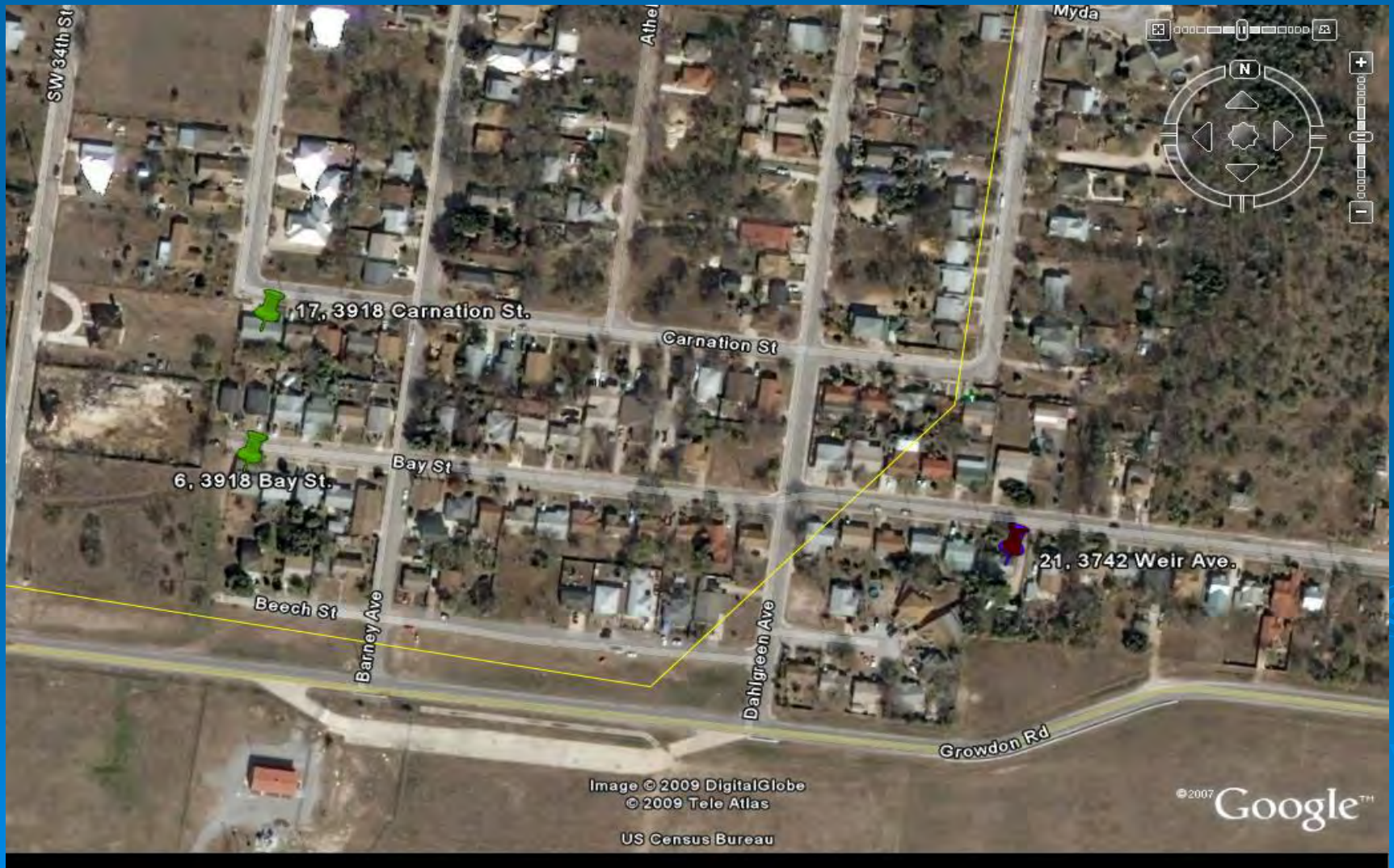
# February 2009 Vapor Intrusion Sampling

- Based upon input received from community groups after the 2008 sampling EPA agreed to sample additional homes in other areas of the plume.
- Original plan was to re-sample the five homes in the 34<sup>th</sup> Street area where indoor air samples were collected in 2008.
- Only 2 of the homeowners agreed to having their homes sampled again.
- We added one additional home in the 34<sup>th</sup> Street area.
- In addition eight homes in the East Kelly area were included.

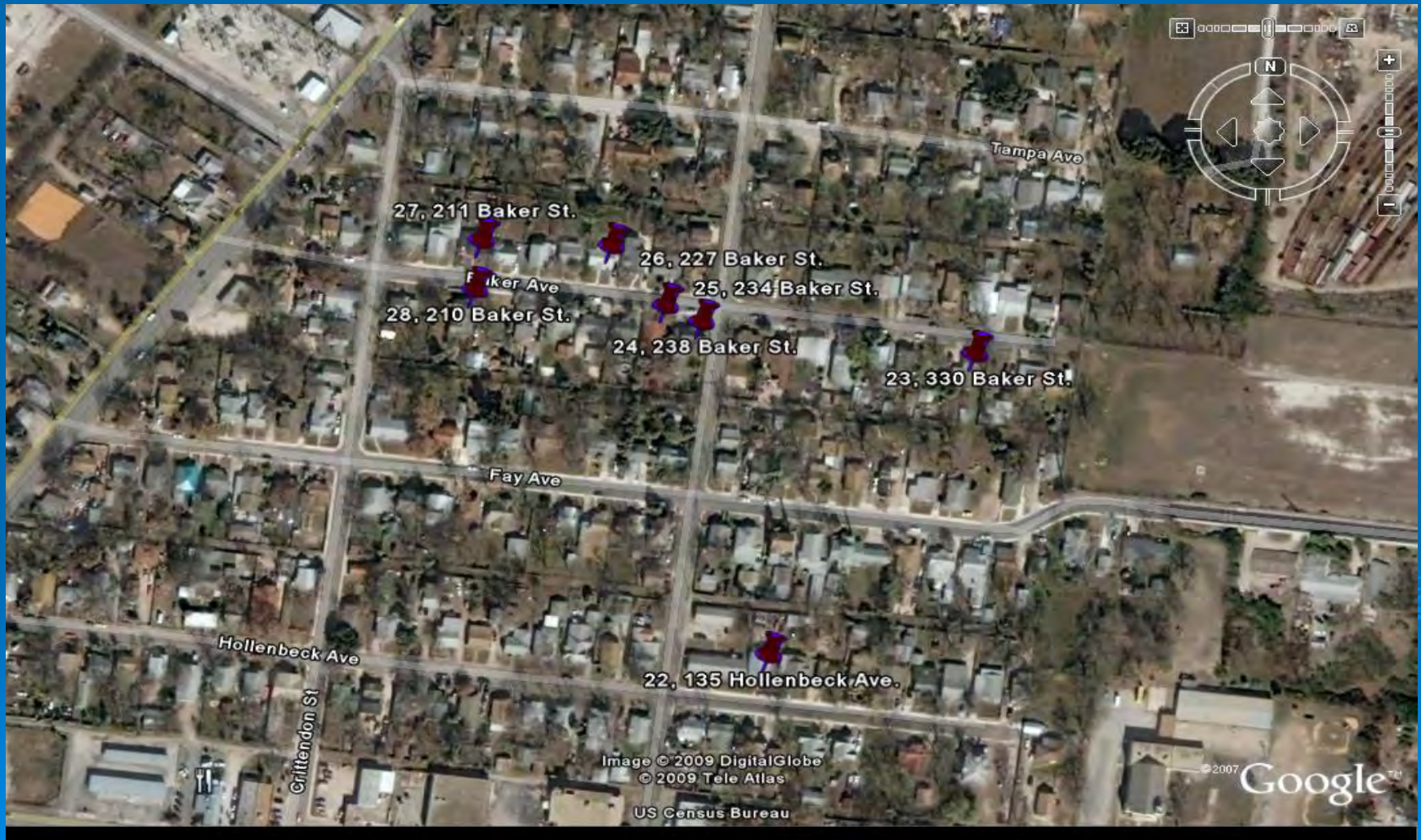
# February 2009 Vapor Intrusion Sampling

- We collected 2 subslab samples locations and 9 crawl space samples.
- Because of the limited number of homes to sample, we collected indoor air samples in all homes.
- Homes were screened with the TAGA

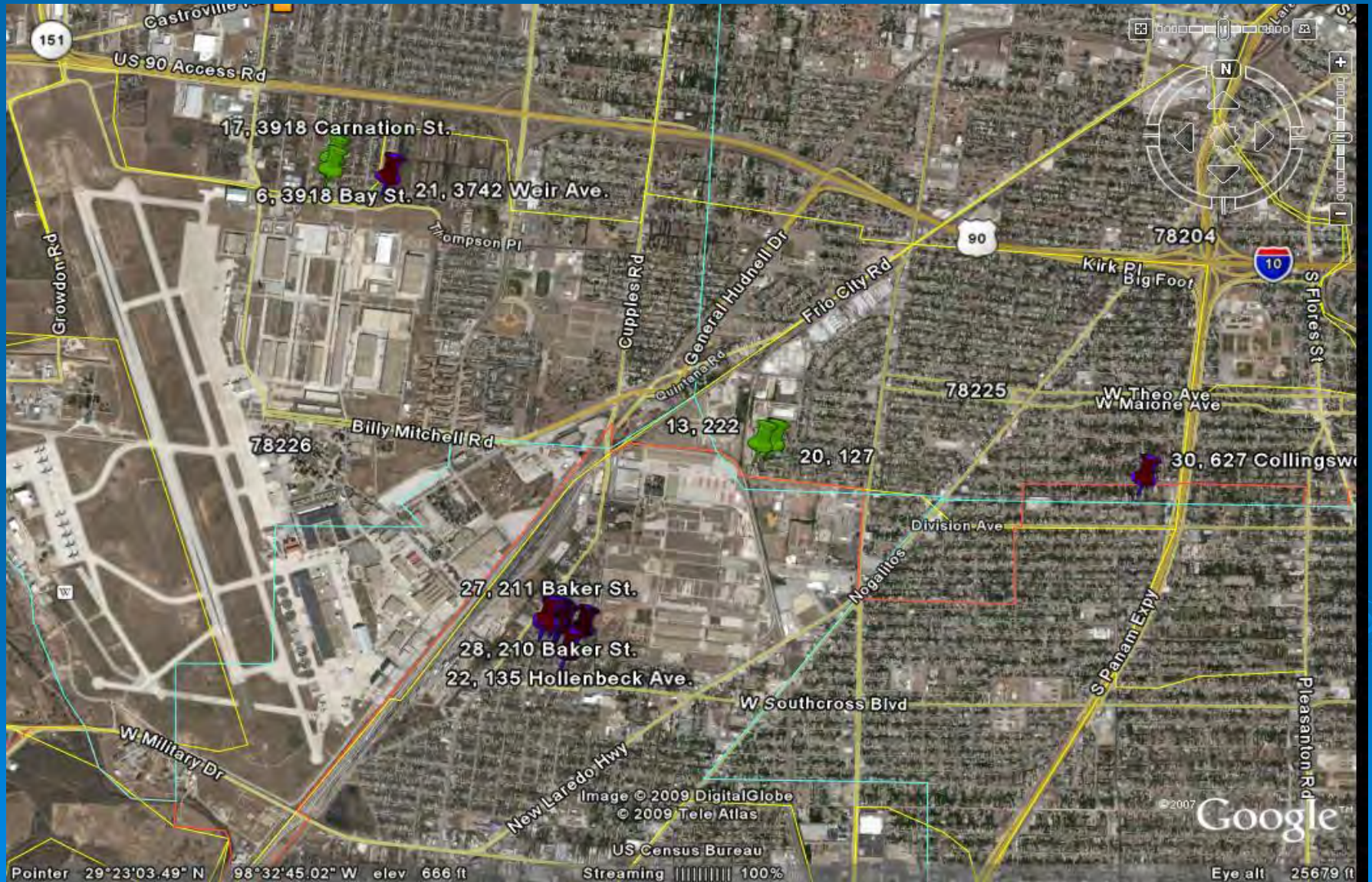
# February 2009 34<sup>th</sup> Street Sampling Locations



# February 2009 East Kelly Sampling Locations



# February 2009 Sampling Locations





# February 2009 Vapor Intrusion Sampling PCE Results

Summa sub-slab ug/m <sup>3</sup>	Summa crawl space ug/m <sup>3</sup>	Summa indoor ug/m <sup>3</sup>	TAGA indoor ug/m <sup>3</sup>	TAGA crawl space ug/m <sup>3</sup>
120	N/A	0.2	0.37	N/A
280	N/A	1.3	1.83	N/A
N/A	0.24	0.24	<0.32	<0.32
N/A	<0.16	<0.15	0.36	<0.32
N/A	0.17	<0.47	<0.41	<0.41
N/A	<0.13	<0.17	<0.41	<0.41
N/A	<0.15	<0.16	<0.41	<0.41
N/A	<0.18	<0.34	<0.41	<0.41
N/A	<0.15	<0.77	0.55	<0.41
N/A	<0.16	<0.16	<0.41	<0.41
N/A	<0.13	<0.17	<0.32	<0.32

# Conclusions

- Sampling indicates there is a potential for a complete pathway to indoor air
- However, only one home had concentrations above our screening level, although well below an action level
- This home is a slab on grade, the groundwater concentrations are continuing to decrease in the area
- Pier and beam homes are generally well ventilated and no soil gas vapors were detected
- Monitoring of the groundwater plume will continue by the Air Force

# Next Steps

- Will meet with each homeowner and discuss the results
- Will present a summary of the results during the April 14<sup>th</sup> Kelly RAB meeting
- Will present a summary of the results during the April 15<sup>th</sup> meeting with the Southwest Workers Union

# Questions from RAB

You can contact me at [miller.gary@epa.gov](mailto:miller.gary@epa.gov) or at 214-665-8306.



# *Public Comment Period*

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**8:00 – 8:15 p.m.**

**■ Public Comment Period**



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# *Suggested Agenda Items for July 14, 2009 RAB*

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**8:15 – 8:20 p.m.**

■ **Suggested Agenda Items for next RAB**



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# *Meeting Adjournment*

**8:20 p.m.**

■ **Meeting Adjournment**



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# *Notes – Upcoming Meetings*

## ■ **Next RAB Meeting:**

- 14 July 2009, 6:30 p.m.
- Port San Antonio Boardroom  
907 Billy Mitchell Blvd., San Antonio, TX 78226

## ■ **Kelly RAB Tour/Training**

- 23 April 2009
- Air Force Real Property Agency, 143 Billy Mitchell Blvd., Suite 1, San Antonio, TX 78226





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## ***For More Information***

- **Contact AFRPA Public Affairs:**
  - Public Information Line: 210-925-0956
  - Fax: 210-925-3636
  - Email: [AFRPA.PA@lackland.af.mil](mailto:AFRPA.PA@lackland.af.mil)
  
- **Documents are available electronically or in hard copy:**
  - **Administrative Record Site:**  
<https://afrpaar.lackland.af.mil/ar/docsearch.aspx>
  
  - **San Antonio Central Library**  
Government Documents Section (2<sup>nd</sup> Floor)  
600 North Soledad, San Antonio, TX 78205