

Former Athens Tank Farm Environmental Investigation & Cleanup

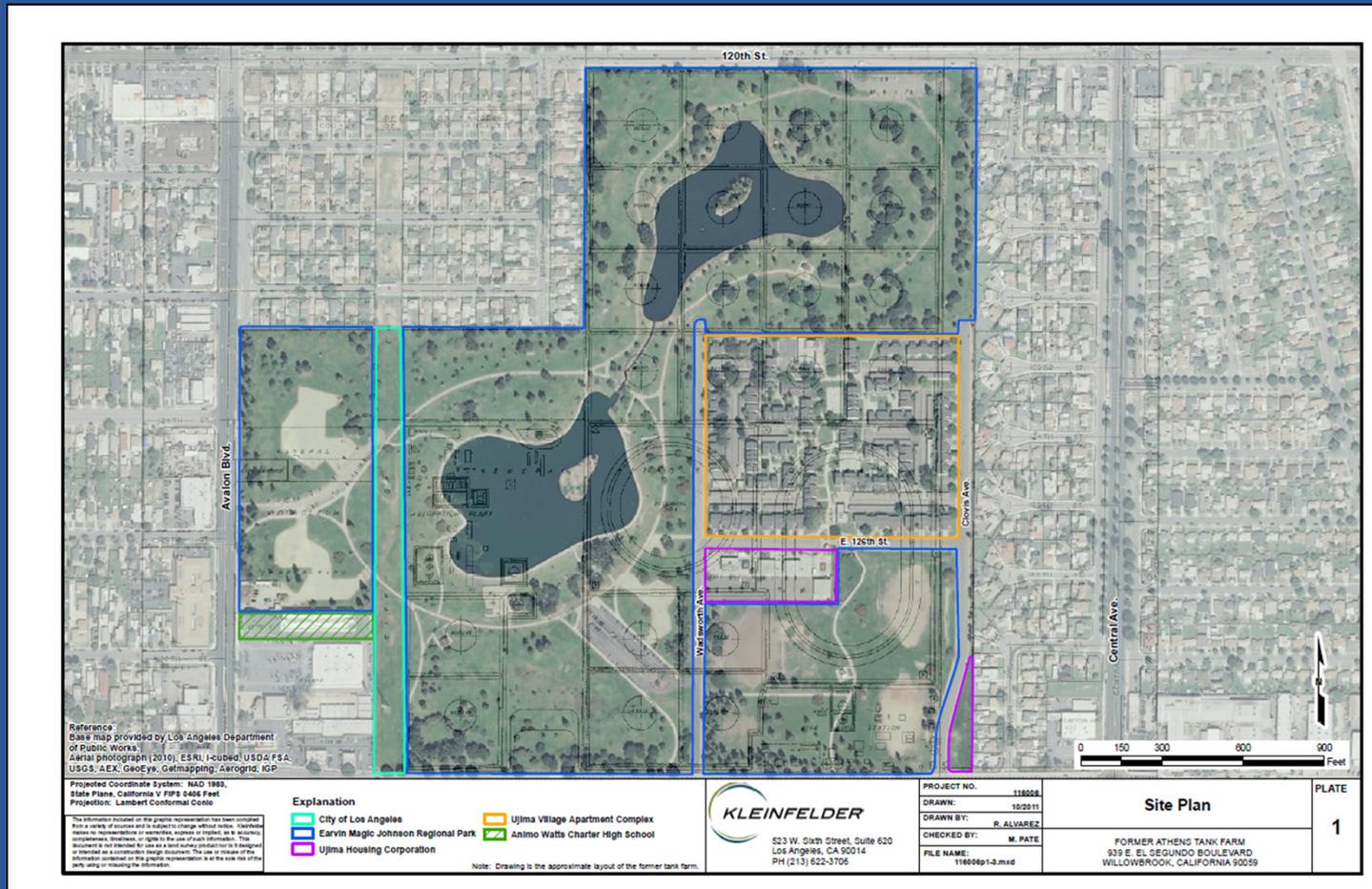
Los Angeles Regional Water Quality Control Board
November 30, 2011

Sam Unger, PE
Executive Officer

Who is the LA Regional Board?

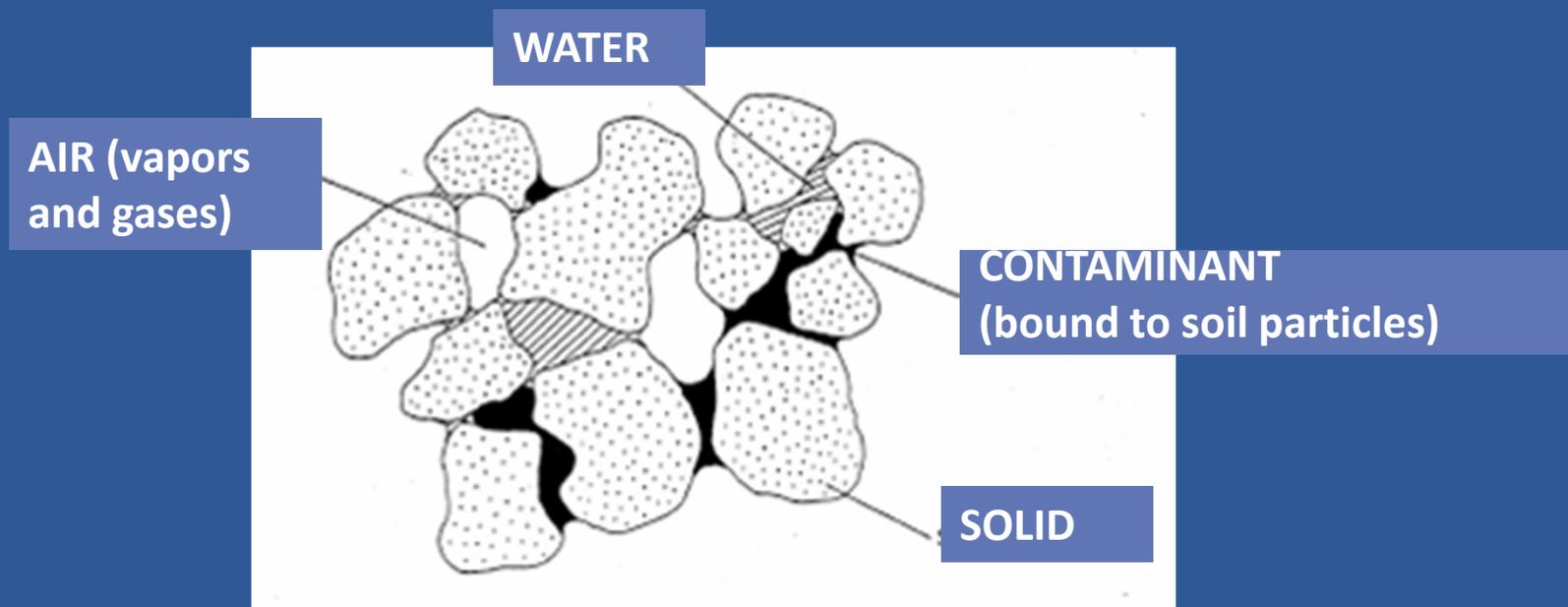
- State agency with mission to preserve and restore California's water resources
- Authority to order investigation & cleanup of contaminated areas to restore groundwater
- Regional Board ordered ExxonMobil and LA County to investigate & cleanup the former Athens Tank Farm

Former Athens Tank Farm Site



- A tank farm is a site for oil storage & distribution
- Athens Tank farm operated mid-1920s to mid-1960s
- 1970s site developed as park and public housing

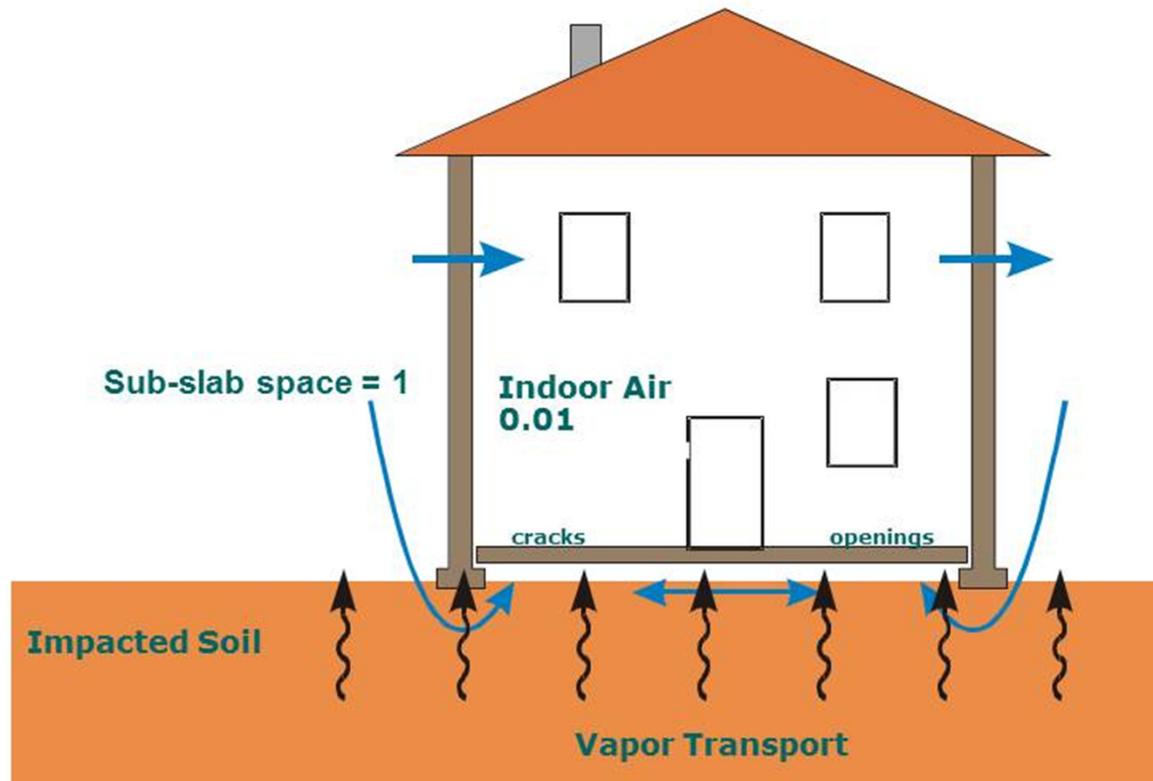
What is Soil Gas?



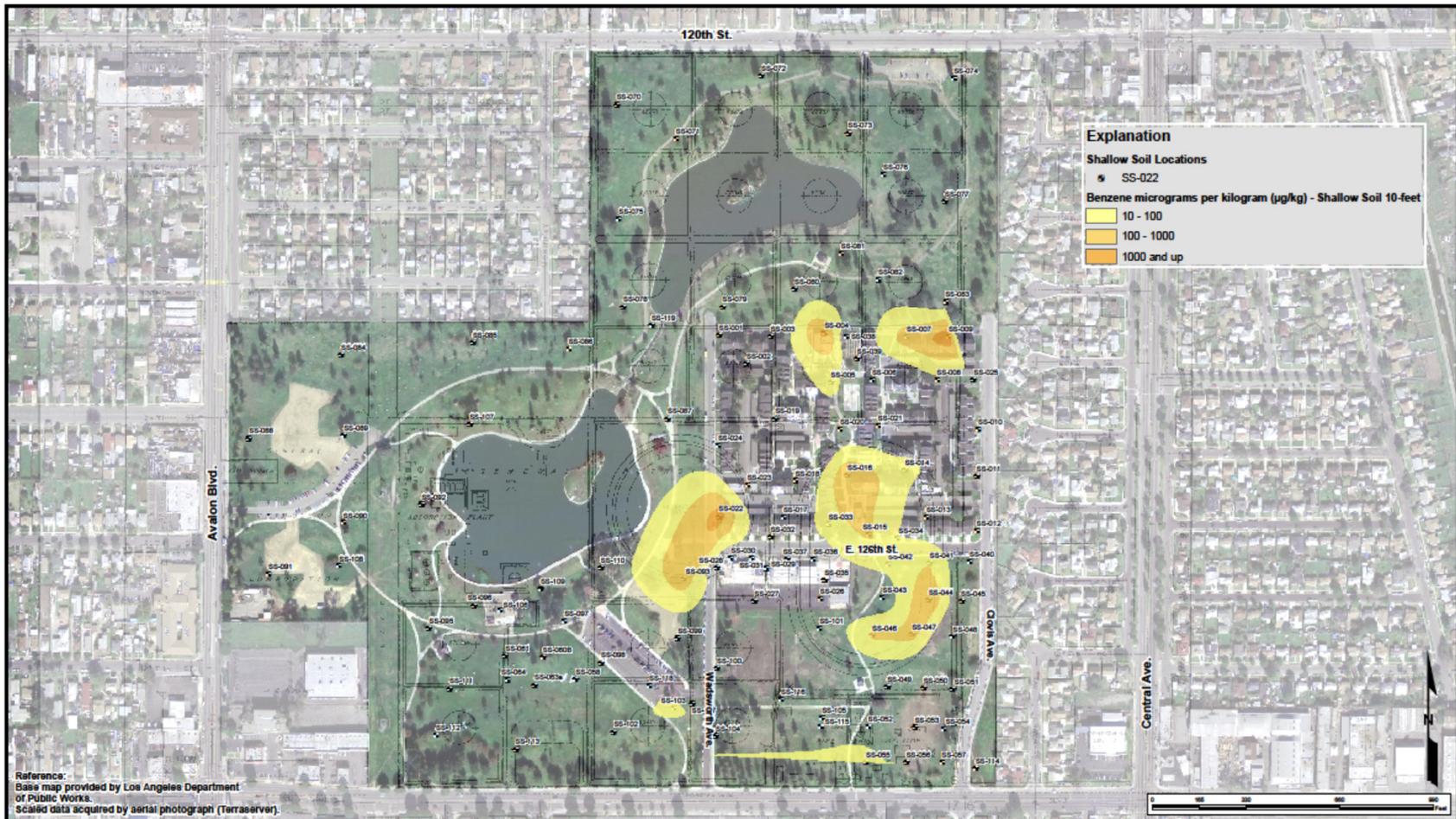
Soil gas are vapors that collect in tiny pore spaces between soil particles.

How are people exposed to soil gas?

VAPOR INTRUSION



Soil Contamination – Benzene at 10 ft



Reference:
 Base map provided by Los Angeles Department
 of Public Works.
 Scaled data acquired by aerial photograph (Terraserver).

Projected Coordinate System: NAD 1983,
 State Plane, California V FIPS 4066 Feet
 Projection: Lambert Conformal Conic

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Note: Contour Methodology Description in Appendix O.
 Note: Drawing is the approximate
 layout of the former tank farm.

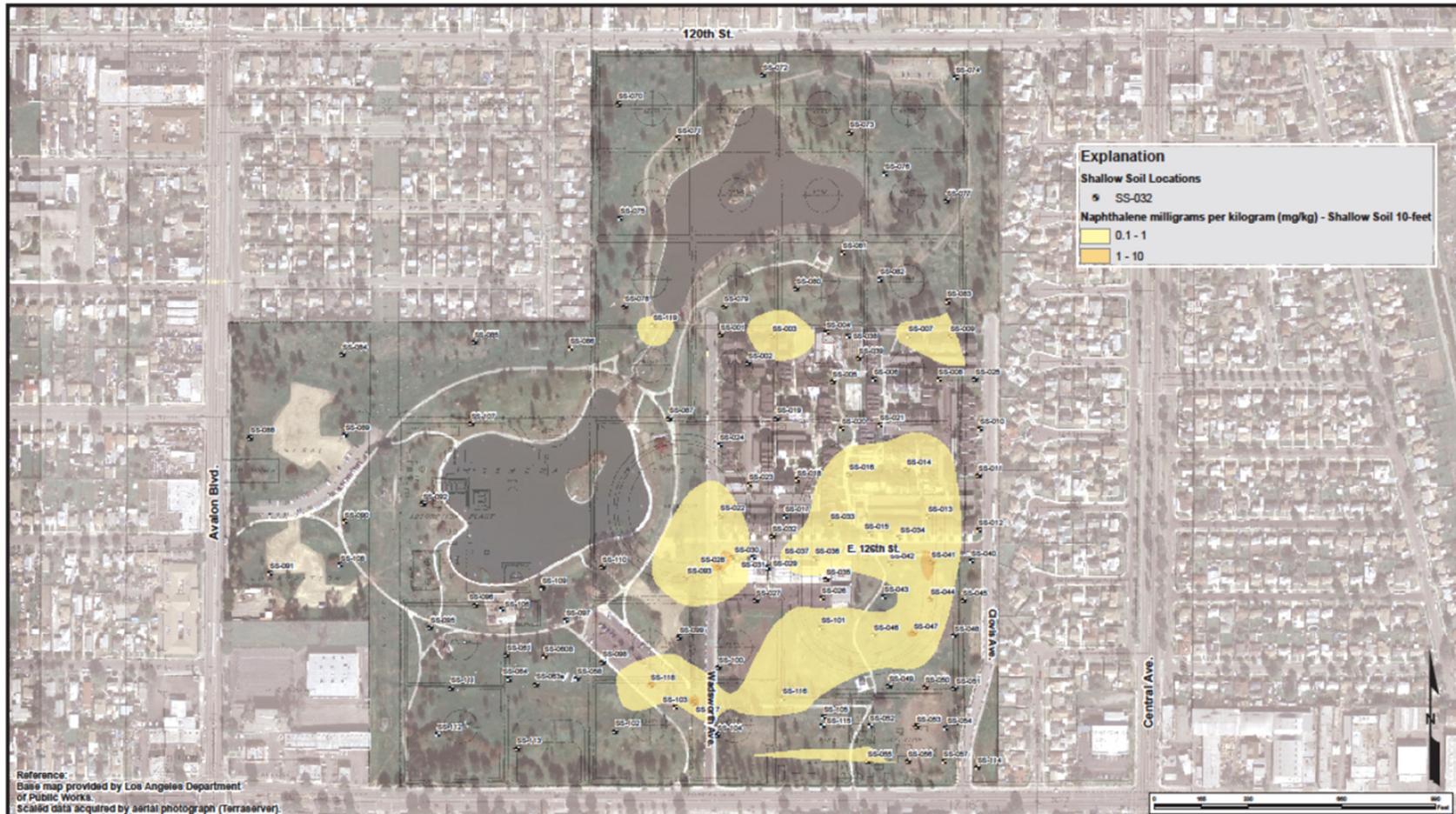


PROJECT NO.	100009
DRAWN:	06/2010
DRAWN BY:	W. Mumbleau
CHECKED BY:	J. Finegan
FILE NAME:	100009pl-10.pdf

Benzene Shallow Soil Isoconcentrations Depth: 10-feet
FORMER ATHENS TANK FARM 335 E. EL SEGUNDO BOULEVARD WILLOWBROOK, CA 90659

PLATE	5.10
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Soil Contamination - Naphthalene at 10 ft



Reference:
 Data map provided by Los Angeles Department
 of Public Works.
 Scaled data acquired by aerial photograph (TerraServer).

Projected Coordinate System: NAD 1983,
 State Plane, California V FIPS 9406 Feet
 Projection: Lambert Conformal Conic

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Note: Contour Methodology Description in Appendix O.
 Note: Drawing is the approximate layout of the former tank farm.
 Note: Results are from EPA Method 8270 SIM

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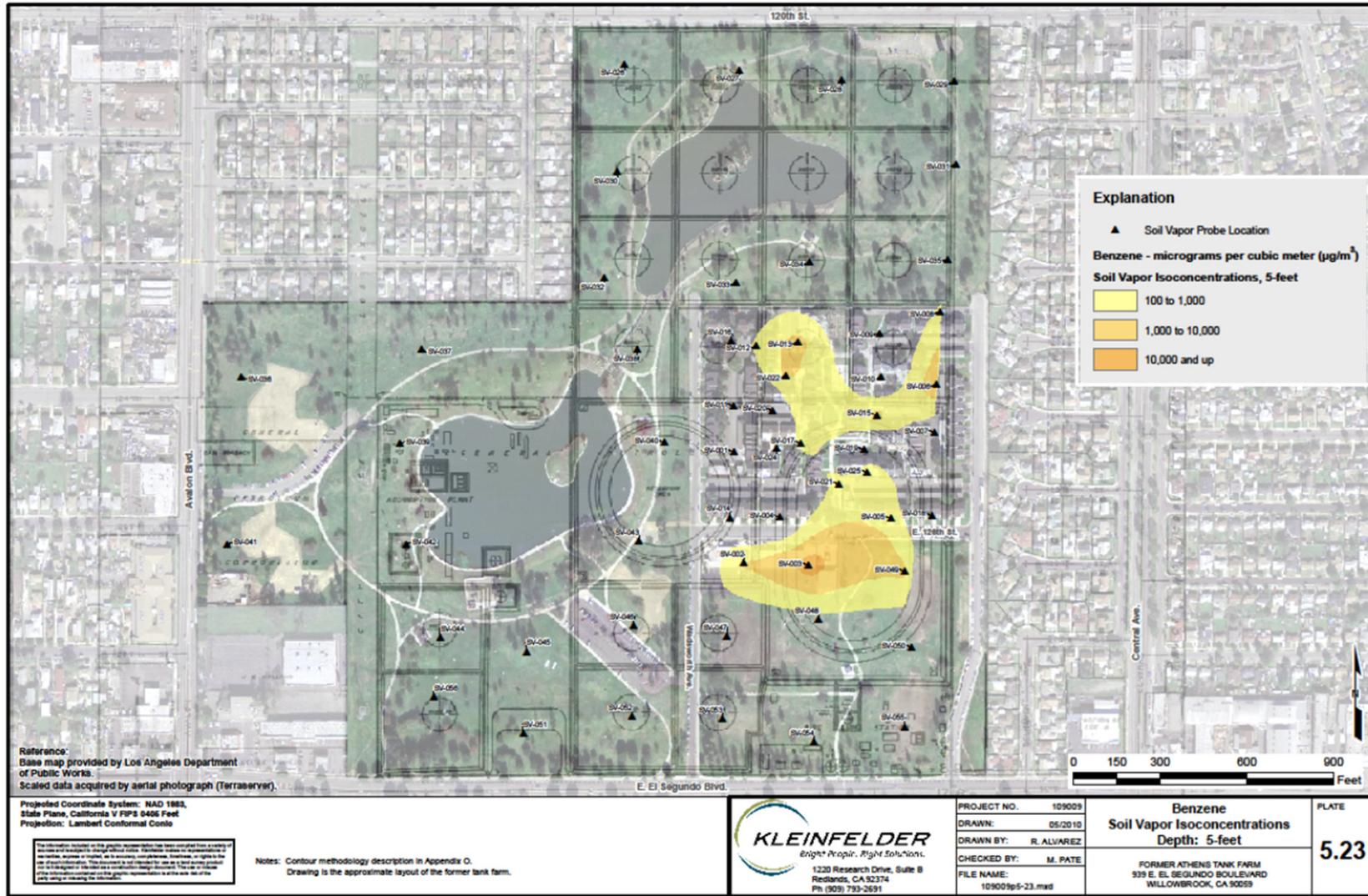
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DRAWN:	6/23/2010
DRAWN BY:	W. Mumbleau
CHECKED BY:	J. Finegan
FILE NAME:	ShallowSoil_Master.mxd

**Naphthalene
 Shallow Soil Isoconcentrations
 Depth: 10-feet**

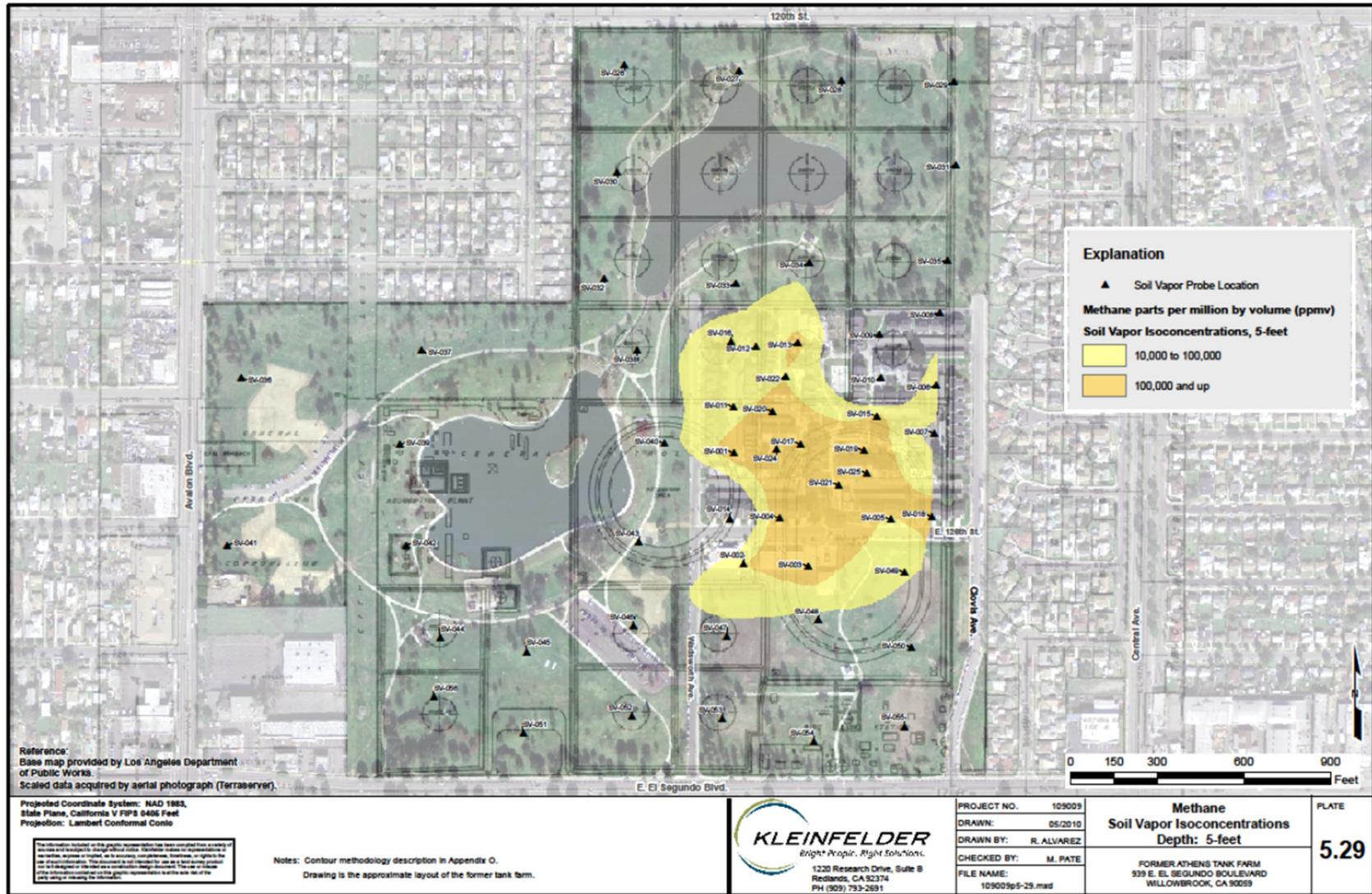
FORMER ATHENS TANK FARM
 539 E. EL SEGUNDO BOULEVARD
 WILLOWBROOK, CA 90059

PLATE
5.13

Soil Gas Contamination - Benzene 5 ft



Soil Gas Contamination – Methane 5 ft



Air Quality – Indoor & Outdoor

- Indoor & outdoor air data are consistent with air quality in the Los Angeles area
- Benzene & hexane not detected in crawl space samples at daycare
- Methane detected, but below thresholds



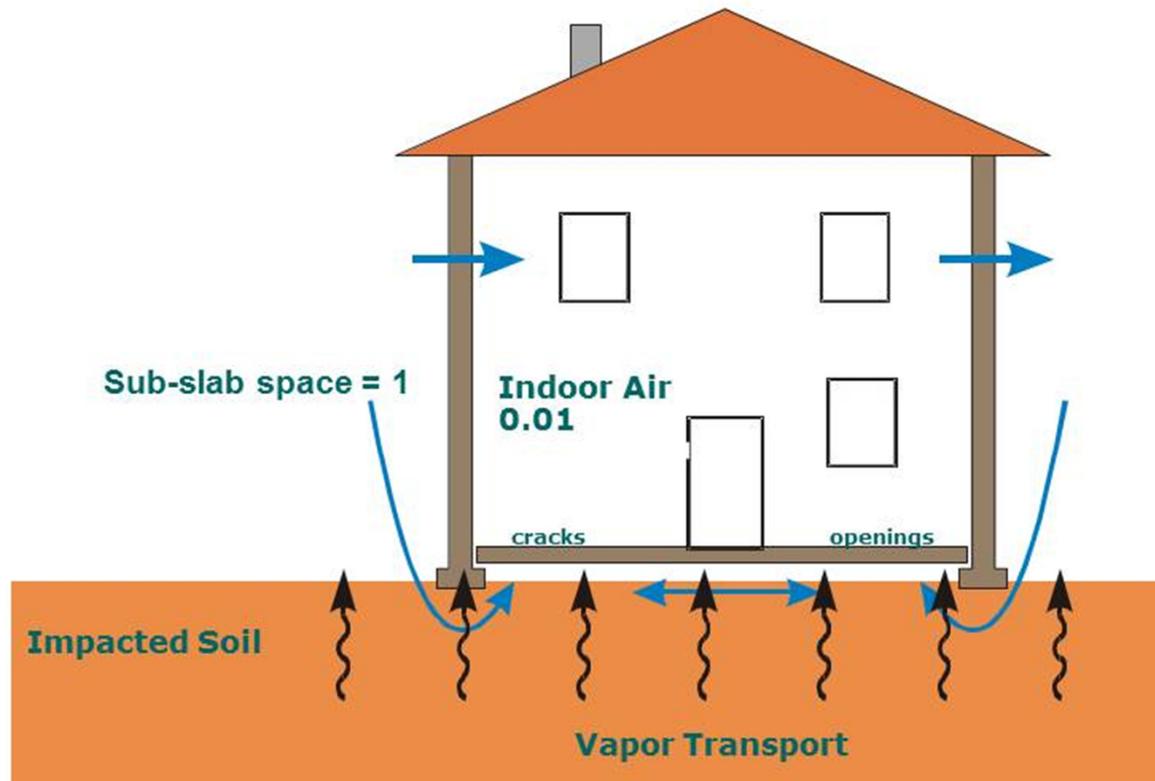
Exhibit 6
Analytical Data Summary of Current VOCs
Monthly Soil Gas Monitoring Report – September 2011
Former Athens Tank Farm
Willowbrook, Los Angeles County, California

Sampling Location	Date Sampled	Probe Depth (feet/bgs)	Method:		EPA TO-16	EPA TO-16	EPA TO-16	EPA TO-16	EPA TO-16	EPA TO-16	EPA TO-16	EPA TO-16	EPA TO-16																													
			Analyze:		Acetone	Benzene	Chloroform	Chloromethane	Dichloro difluoromethane	ois-1,2-Dichloroethylene	Ethanol	Ethylbenzene	4-Ethyltoluene	Hexane	2-Hexanone	Methyl tert-Butyl Ether (MTBE)	Xylenes, total	Teri-Butyl Alcohol (TBA)	Tetrahaloro ethylene	Toluene																						
			Units:	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³																											
Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q																							
UHC-OS-001	9/9/2011	N/A	29		ND < 1.6	U	ND < 2.4	U	ND < 1.0	U	2.9		ND < 2.0	U	29		ND < 2.0	U	29		ND < 2.2	U	ND < 2.5	U	ND < 7.0	U	ND < 6.1	U	ND < 7.2	U	ND < 8.7	U	8.2		ND < 3.4	U	4.4		ND < 3.4	U	4.8	
UHC-OS-010	9/9/2011	N/A	29		ND < 1.6	U	ND < 2.4	U	1.1		2.9		ND < 2.0	U	29		ND < 2.0	U	29		ND < 2.2	U	ND < 2.5	U	ND < 7.0	U	ND < 6.1	U	ND < 7.2	U	ND < 8.7	U	8.2		ND < 3.4	U	4.4		ND < 3.4	U	4.8	
UHC-OS-013	9/9/2011	N/A	25		ND < 1.6	U	ND < 2.4	U	1.1		3		ND < 2.0	U	17		ND < 2.2	U	ND < 2.5	U	ND < 2.5	U	ND < 7.0	U	ND < 6.1	U	ND < 7.2	U	ND < 8.7	U	10		ND < 3.4	U	5.0		ND < 3.4	U	5.4			
UHC-OS-001	9/9/2011	N/A	150		ND < 1.6	U	ND < 2.4	U	1.4		2.9		ND < 2.0	U	29		ND < 2.2	U	ND < 2.5	U	39		13		ND < 7.2	U	ND < 8.7	U	290		ND < 3.4	U	5.4		ND < 3.4	U	6.0					
UHC-OS-002	9/9/2011	N/A	150		ND < 1.6	U	ND < 2.4	U	1.2		2.9		ND < 2.0	U	29		ND < 2.2	U	ND < 2.5	U	39		17		ND < 7.2	U	ND < 8.7	U	250		ND < 3.4	U	5.4		ND < 3.4	U	6.0					
UHC-OS-003	9/9/2011	N/A	120		ND < 1.6	U	ND < 2.4	U	1.5		2.9		ND < 2.0	U	22		ND < 2.2	U	ND < 2.5	U	22		9.5		ND < 7.2	U	ND < 8.7	U	290		ND < 3.4	U	5.3		ND < 3.4	U	5.3					
UHC-OS-004	9/9/2011	N/A	100		7.8		ND < 2.4	U	1.3		2.9		ND < 2.0	U	19		3.9		ND < 2.5	U	23		7.8		ND < 7.2	U	8.8		220		ND < 3.4	U	6.6		ND < 3.4	U	6.6					

Notes:
 µg/m³ = micrograms per cubic meter
 ND = not detected above RL
 EPA = Environmental Protection Agency
 bgs = below ground surface
 N/A = not applicable
 D = sample duplicate
 Q = qualifier
 J = Estimated value. Value measured between the method detection limit (MDL) and laboratory reporting limit (RL).
 U = The compound was analyzed for, but was not detected above the sample reporting limit.
 UU = Estimated value. The reported quantitation limit is approximate and may be inaccurate or imprecise.
 NS = not sampled

How are people exposed to soil gas?

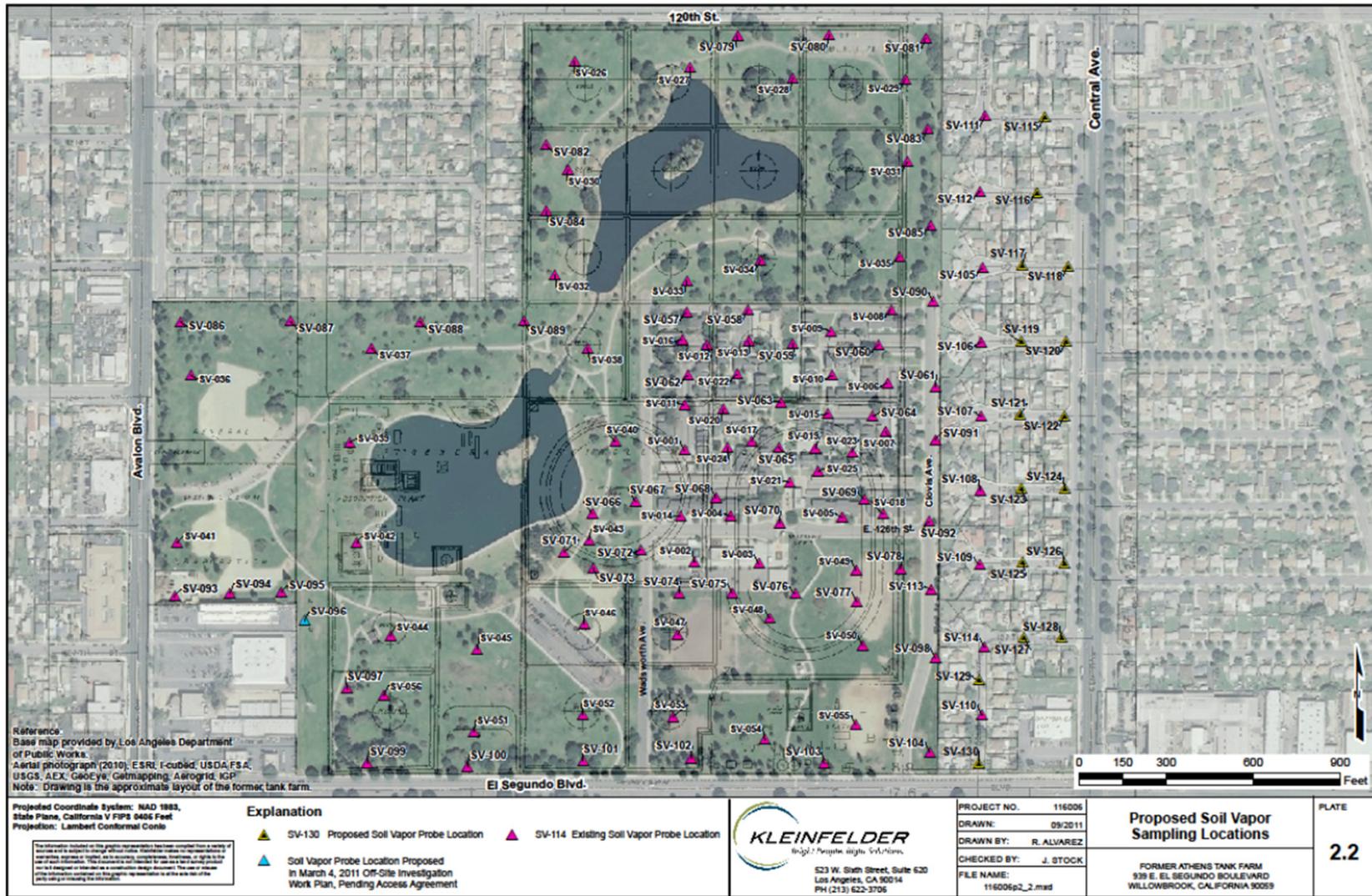
VAPOR INTRUSION



Current Work

- Offsite investigation
- Vapor intrusion evaluation
- Site specific pathway assessment
- Offsite Human Health Risk Assessment
- Methane and VOCs monthly monitoring
- Soil Vapor Extraction pilot test

Offsite Monitoring Map



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- Technical Reports

<http://geotracker.waterboards.ca.gov/search.asp>

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