

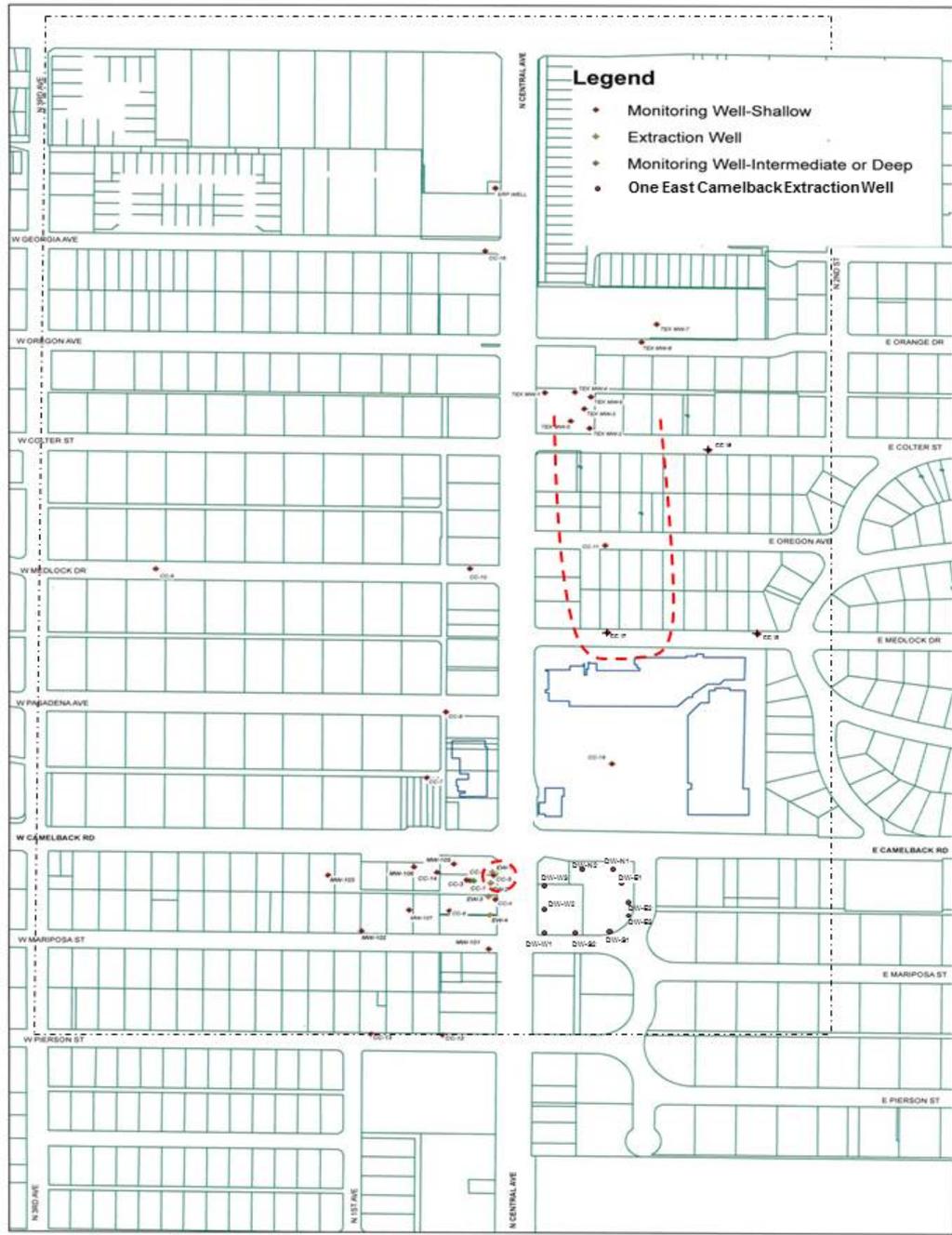
Central and Camelback WQARF Site

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January 8, 2014 5:30pm



Legend

- Monitoring Well-Shallow
- Extraction Well
- Monitoring Well-Intermediate or Deep
- One East Camelback Extraction Well



Groundwater Treatment Compound



EW-1

CC-5

EW-2

EW-3

SVE Compound

SVE-1

SVE-FC

SVE-MP1

SVE-2S
SVE-2D

EW-4

SVE-MP2

Events Since August 2013 CAB Meeting

- Soil Vapor Extraction (SVE) system and groundwater treatment system continue to operate and are fully funded.
- Groundwater samples were collected from monitor wells during the third and fourth quarters of 2013.
- Groundwater samples were collected from the extraction wells and groundwater treatment system quarterly and monthly, respectively. Vapor samples were collected from the SVE system twice monthly or monthly.

Events Since August 2013 CAB Meeting

- ADEQ prepares operation & maintenance (O&M) reports for the Groundwater Remediation and Treatment System and the Soil Vapor Extraction (SVE) System on a quarterly basis.
- Hydro Geo Chem, Inc. conducts site activities weekly to keep remediation systems operational.
- Hydro Geo Chem, Inc. compiles groundwater monitoring reports on a semi annual basis.

Groundwater System Update

- The pumps in extraction wells CC-5 and EW-2 are only pumps currently in operation.
- EW-3 and EW-4 were shutdown because of low PCE concentrations in 2009.
- EW-1 was shutdown because of low pumping rate.

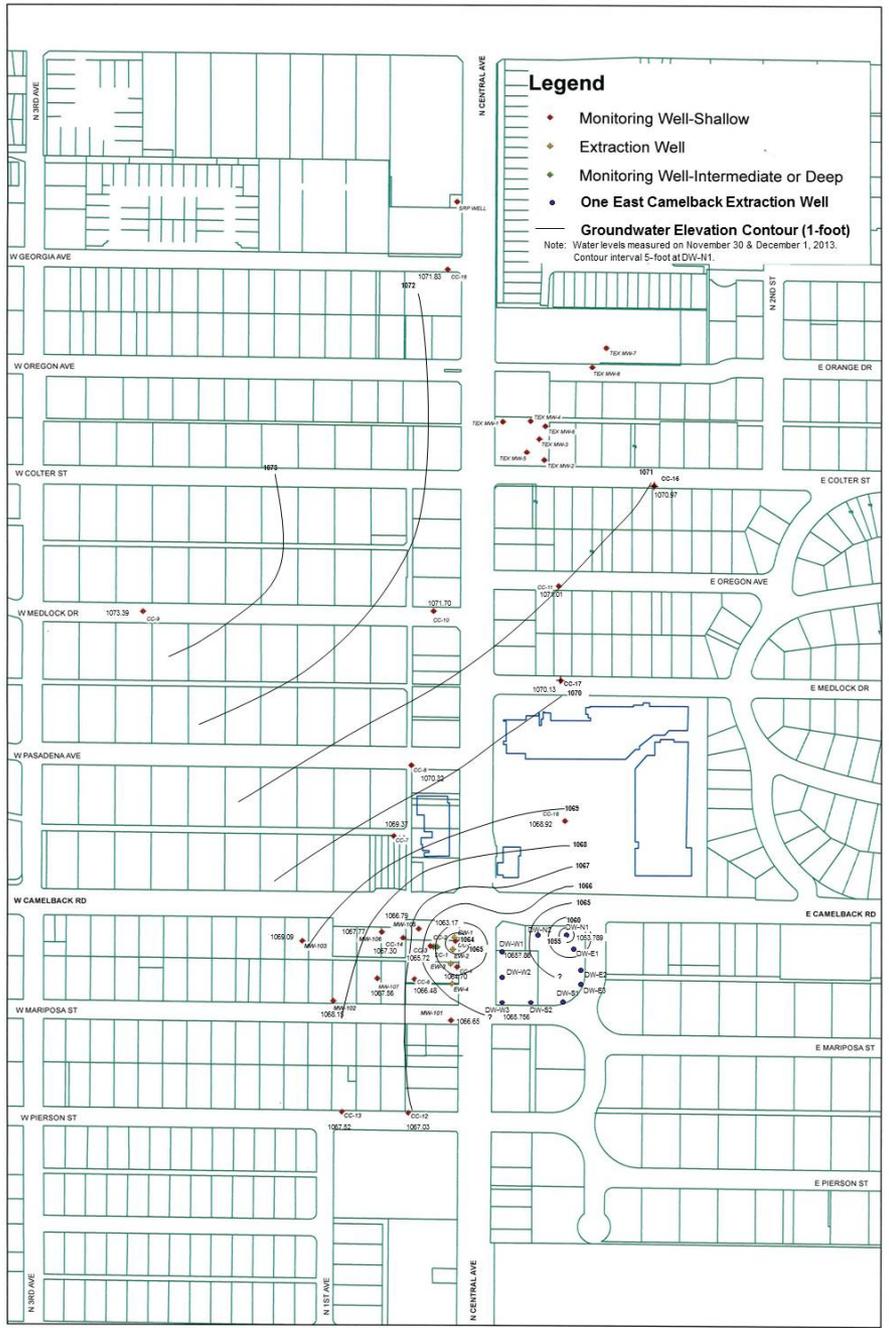
Groundwater System Update

- Repairs to the groundwater treatment system have included:
 - pump replacement in extraction well EW-2; and
 - sump pump replacement.
- The groundwater remediation and treatment system was started January 2003 and was fully operational February 2003. To this point the groundwater remediation and treatment system has removed approximately 287.3 lbs of PCE from groundwater.

Groundwater System Update

- A total of **345,490,805** gallons of GW have been pumped, treated and discharged as of November 2013.

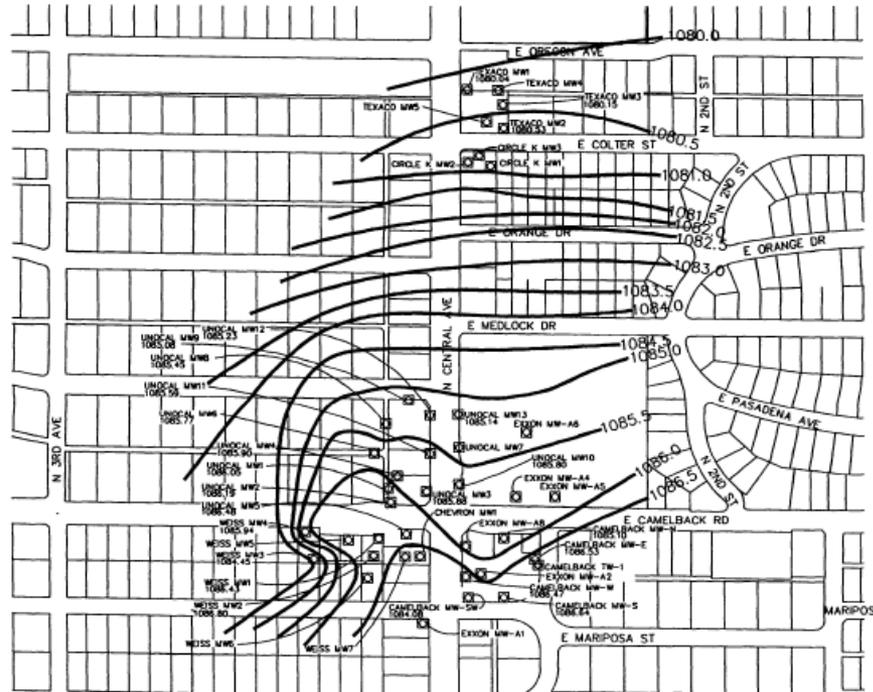
Quarter	Gallons Treated	Percent Operational	VOC/PCE Removed (Lbs.)
3 rd Qtr 2013	4,907,370	37%	1.01/0.72
Oct & Nov 2013	4,053,730	46%	0.68/0.48



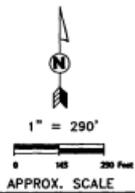
NOVEMBER 2013 GROUNDWATER ELEVATIONS

Figure 8 - Water Table Elevations - December 1994, 3rd Quarter

Conceptual Site Model
 Central & Camelback Area
 Phoenix, Arizona
 ADEQ



EXPLANATION
 □ GROUNDWATER ELEVATION IN FEET
 1085.90 ABOVE SEA LEVEL
 CONTOUR INTERVAL = 0.5 FEET



CENTRAL AND CAMELBACK AREA
 CONCEPTUAL SITE MODEL
 WATER TABLE ELEVATIONS
 FEBRUARY 1999
 PHOENIX, ARIZONA

Western Technologies Inc.

PREP: LCF
 REV: DR
 REV DATE: 02/08/99
 FILE: 2189JF001

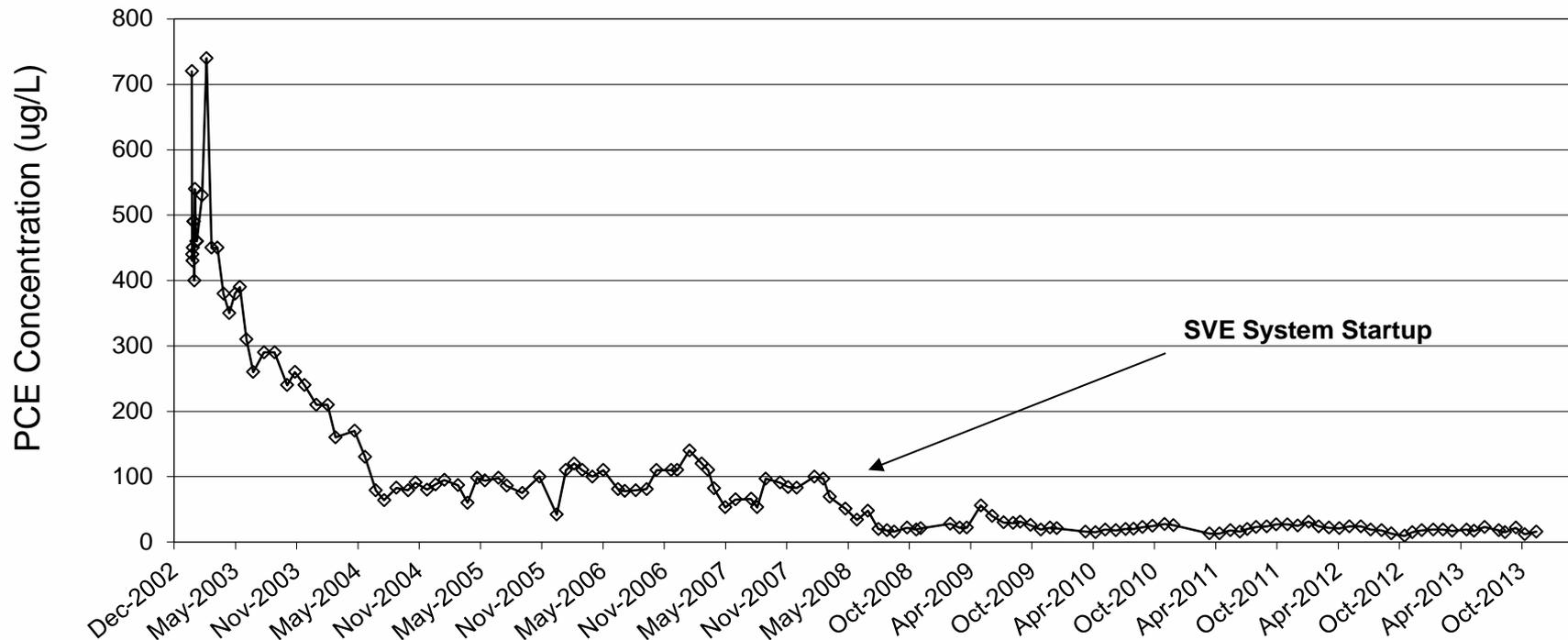
Groundwater System Update

- Range of VOC concentrations for influent samples during startup of system and second half of 2013:

Analyte	Range 1st & 2nd Qtr 2003	Range July to Nov 2013	AWQS
Benzene	<0.50 – 0.54	<0.50	5
Chloroform	1.8 – 2.8	3.5 - 4.6	100
cis 1,2-DCE	8.5 – 20	0.53 - 0.87	70
PCE	350 – 740	12 - 22	5
TCE	9.7 – 16	1.6 – 3.2	5
1,2-DCA	<1.0	<0.50	5

Concentrations in micrograms per liter ($\mu\text{g/L}$)

PCE Influent Concentration Changes with Time



Notes:

AWQS = 5 µg/L

Detection limit = 0.5 µg/L

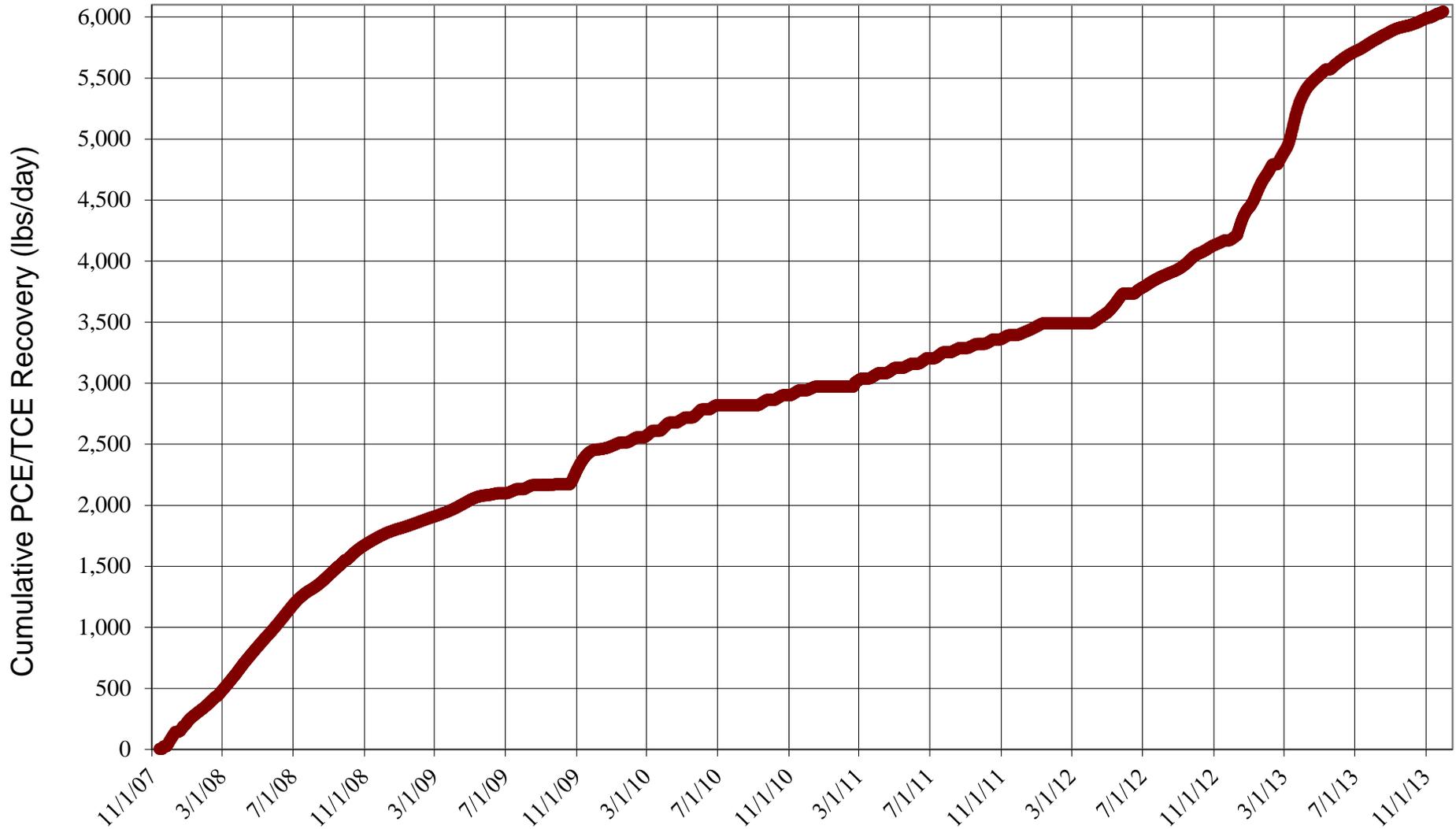
SVE (soil) System Update

- Granular activated carbon (GAC) filter change-out was done in November 2013.
- Conducting quarterly performance tests of system as required by renewed Air Quality Permit.
- The soil vapor extraction (SVE) system was started November 2007. To this point the SVE system has removed approximately 6,042.5 lbs of PCE from soil.

Operation & Maintenance Statistics for the Soil Vapor Extraction (SVE) system

Quarter	Percent Operational	PCE/TCE Removed (Lbs.)
3 rd Qtr 2013	100%	215.2
Oct & Nov 2013	87%	117.0

SVE Recovery With Time

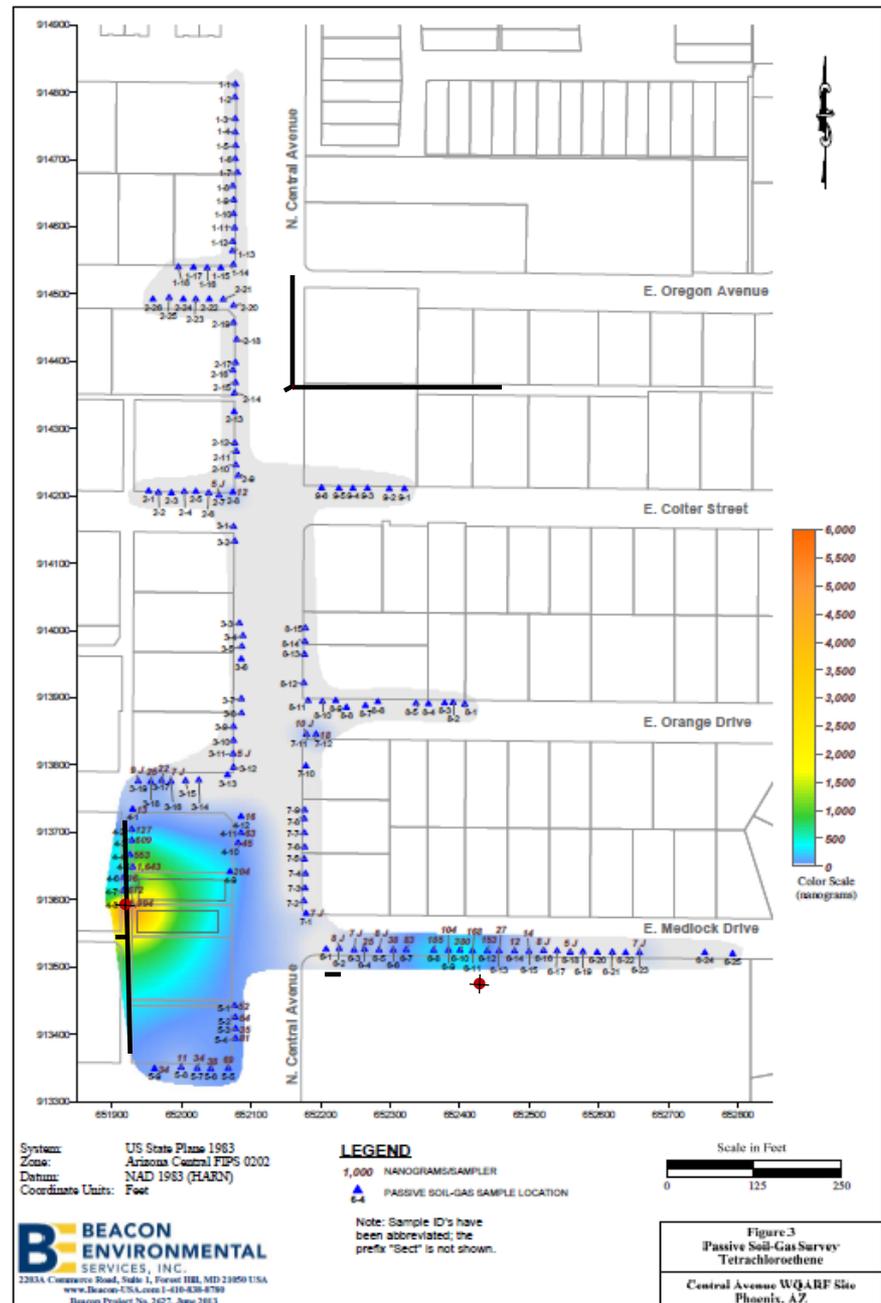


Events Since August 2013 CAB Meeting

- Conducted sewer video taping in select areas to investigate the sewer integrity.
- Drilled and sampled two soil borings in areas of relatively high tetrachloroethene (PCE) concentrations detected during previous passive soil gas survey.
- Collected groundwater samples from each soil boring.
- Installed a groundwater monitor well on East Medlock Drive.

Additional Site Investigation

Sewer video investigations conducted in locations of hotspots of recently conducted passive soil gas survey and where utilities prevented soil gas survey. Two soil borings drilled at hotspots of recently conducted passive soil gas survey along Central Avenue north of Camelback Road.



Future Planned Work

- Continue O&M Activities for both SVE and GW systems.
- Continue to monitor water levels monthly and collect groundwater samples quarterly as budget allows.
- Prepare draft Remedial Investigation (RI) Report.