

Update – Montrose/Del Amo Vapor Intrusion Sampling Data



August 2015

Summary of VI Indoor Air Sampling

107 units sampled

- 85 inside the target area
- 22 outside the target area

340 air samples

- 209 indoor air samples
- 52 outdoor air samples
- 62 crawlspace samples
- 17 subslab samples



Timeline of VI Indoor Air Sampling

Dates:	Activities:
2014	Webinars on VI investigation Sampling analysis plan (SAP) completed
January 27 th	Meeting with DAAC and technical advisors on VI investigation
February 7-8 th	Begin weekend door-to-door outreach with DAAC Fact sheets mailed to residents and property owners
February 17 th	Begin placing samplers (Feb 18 th – Exxon refinery incident)
February 27 th - March 1 st	Weekend door-to-door outreach
March 10-11 th & March 17-18 th	Mobile Information Center
May	Contacted all participants for a call-back results update
May 15 th	Picked up last sampler
June 24 th	Final validated data
June - July	Contacted all participants with results
August	Host a ‘working meeting’ with partner stakeholders
September	Results back to the community at-large

Levels of Concern

Compound	EPA Regional Screening Level ($\mu\text{g}/\text{m}^3$)	Indoor Air Goal (as updated DTSC-HERO, 2015) ($\mu\text{g}/\text{m}^3$)
TCE	0.48	n/a
Chlorobenzene	52	n/a
Benzene	0.36	0.097
1,1-Dichloroethane	1.8	n/a
1,2-Dichloroethane	0.11	n/a
1,4-Dichlorobenzene	0.26	n/a
Carbon tetrachloride	0.47	0.067
Chloroform	0.12	n/a
1,1,2-Trichloroethane	0.18	n/a
<i>cis</i> -1,2-Dichloroethene	None Available	8.3
<i>trans</i> -1,2-Dichloroethene	None Available	83
PCE	11	0.5
Vinyl Chloride	0.17	0.0095

selected Level of Concern

Changes to Levels of Concern

(from June)

- **PCE** changed from DTSC 0.48 to DTSC 0.5
- **Carbon Tetrachloride** changed from DTSC 0.067 to EPA RSL 0.47
- **Cis-1,2-dichloroethene** changed from EPA RSL “Non Available” to DTSC 8.3
- **Trans-1,2-dichloroethene** changed from EPA RSL “Non Available” to DTSC 83
- **Vinyl Chloride** changed from DTSC 0.0095 to EPA RSL 0.17

VI Indoor Air Sampling Results

Montrose-Del Amo Residential Investigation Summary Statistics for Samples Collected, February – May 2015

Chemicals of Potential Concern	Total Number of Samples Collected	Total Number of Detected Results	Total Number of Detected Results over the Level of Concern	Minimum Detected Concentration (µg/m ³)	Maximum Detected Concentration (µg/m ³)	95% UCL (µg/m ³)	Median Concentration (µg/m ³)	Mean Concentration (µg/m ³)
Ambient (Indoor) Air Samples								
Trichloroethene (TCE)	209	158	8	0.02	4.9	0.178*	0.05*	0.139*
Tetrachloroethene (PCE)	197	197	21	0.035	8.4	0.601*	0.17*	0.355*
1,1,2-Trichloroethane	209	3**	0	0.039	0.12	NA**	NA**	NA**
1,1-Dichloroethane	209	0	0	NA	NA	NA*	NA*	NA*
1,2-Dichloroethane	209	209	184	0.053	15	1.45*	0.26*	0.883*
1,4-Dichlorobenzene	209	192	41	0.032	220	15.68*	0.0925*	5.58*
Benzene	209	209	209	0.33	4	1.25*	1.1*	1.074*
Carbon Tetrachloride	209	209	27	0.17	0.76	0.38*	0.36*	0.37*
Chlorobenzene	209	24	0	0.011	0.15	0.0345*	0.0165*	0.031*
Chloroform	209	206	205	0.096	5.2	0.718*	0.51*	0.657*
cis-1,2-Dichloroethene	209	0	NA	NA	NA	NA*	NA*	NA*
trans-1,2-Dichloroethene	209	3	NA	1.5	6	NA*	NA*	NA*
Vinyl Chloride	209	0	0	NA	NA	NA*	NA*	NA*
Crawlspace Air Samples								
Trichloroethene (TCE)	62	45	0	0.021	0.54	0.0774*	0.045*	0.0653*
Tetrachloroethene (PCE)	59	59	0	0.044	0.32	0.203*	0.2*	2.526*
1,1,2-Trichloroethane	62	0	0	NA	NA	NA*	NA*	NA*
1,1-Dichloroethane	62	0	0	NA	NA	NA*	NA*	NA*
1,2-Dichloroethane	62	62	1	0.048	1.2	0.153*	0.087*	0.12*
1,4-Dichlorobenzene	62	55	1	0.032	4.4	0.566*	0.0775*	0.247*
Benzene	62	62	1	0.38	4.2	1.041*	1*	0.926*
Carbon Tetrachloride	62	62	1	0.23	0.92	0.371*	0.34*	0.351*
Chlorobenzene	62	0	0	NA	NA	NA*	NA*	NA*
Chloroform	62	62	0	0.083	0.48	0.223*	0.19*	0.207*
cis-1,2-Dichloroethene	62	0	0	NA	NA	NA*	NA*	NA*
trans-1,2-Dichloroethene	62	0	0	NA	NA	NA*	NA*	NA*
Vinyl Chloride	62	0	0	NA	NA	NA*	NA*	NA*

In Summary

- Currently, there is not an urgent health risk associated with vapor intrusion in homes, and there are no urgent actions required.
- EPA's goal is to verify the potential for vapor intrusion from underground contaminants related to Superfund site contamination. EPA will continue to review the data and assess the potential for vapor intrusion (source and contaminant levels).
 - Phase 1 – The next step is to retest certain homes.
 - Phase 2 – Develop a sampling analysis plan (SAP) for the second phase of investigation, which includes collecting soil gas information.
- EPA uses two lines of evidence to assess whether vapor intrusion is occurring:
 - 1) Finding contaminant levels in the crawlspace or sub slab samples that are comparable with contaminant levels in the indoor air samples; and
 - 2) Finding contaminant levels in outdoor air samples that are lower than contaminant levels in the indoor air samples.

In Summary

- The South Coast Air Quality Management District (SCAQMD) has collected air data in the community to assist EPA in assessing ambient air.
- EPA really appreciates the community participation!
 - DAAC collaborated with us on the door-to-door outreach. We look forward to continuing to work with community leaders to understand how to improve indoor air quality and discuss the next steps of the investigation.
 - Community members invited us into their homes.

What would be background levels of VOCs?

- Scientific literature from indoor air sampling across the country show that indoor levels of VOCs associated with:
 - Outdoor sources, such as car exhaust or industrial emissions, and
 - Indoor sources, such as cleaning products, hobby materials, or other household products that contain volatile chemicals as an ingredient.

EPA Del Amo/Montrose Decision Tree – Attachment 2

South Coast Air Quality Management District, Multiple Air Toxics Exposure Study
(October 2014) North Long Beach monitoring station

Site Contaminant	Ambient Average Concentration ($\mu\text{g}/\text{m}^3$) Sampling from July 2012 – June 2013
Benzene	1.05
Chloroform	0.146
Carbon Tetrachloride	0.503
1, 4-Dichlorobenzene	Not detected at MDL of <0.057
1,2-Dichloroethane	0.040
PCE	0.136
TCE	Not detected at MDL of <0.441
Vinyl Chloride	Not detected at MDL of <0.130

MDL = method detection limit

EPA Del Amo/Montrose Decision Tree – Attachment 3

Potential Background (Indoor /Outdoor Air Sources) of Site Compounds of Concern

Analyte	Significant Indoor Sources	Significant Outdoor Sources	Typical Indoor Air Concentration Range
Trichloroethene (TCE)	No	No	Non Detect – 0.4 ug/m ³
Chlorobenzene	No	No	Non Detect – 0.3 ug/m ³
Benzene	Yes	Yes	0.5 – 10 ug/m ³
1,1-Dichloroethane	No	No	Non Detect – 1 ug/m ³
1,2-Dichloroethane	Yes	No	Non Detect – 2 ug/m ³
1,4-Dichlorobenzene	Yes	No	Non Detect – 10 ug/m ³
Carbon Tetrachloride	No	No	Non Detect -1 ug/m ³
Chloroform	Yes	No	0.2 – 10 ug/m ³
1,1,2-Trichloroethane	?	?	Insufficient Data
cis-1,2-Dichloroethene	No	No	Non Detect
trans-1,2-Dichloroethene	No	No	Non Detect
Tetrachloroethene (PCE)	Yes	Yes	0.1 – 10 ug/m ³
Vinyl Chloride	No	No	Non Detect – 0.2 ug/m ³

Indoor Air Resampling

- TCE above EPA RSLs;
- PCE above CalMod Indoor Air Goal ($0.5 \mu\text{g}/\text{m}^3$); **or**
- 1,2 DCA/1,4 DCB 100 times above RSLs (10^{-4})

Soil Gas Sampling – Proposed Grid

