APPENDIX C

DATA QUALITY ASSESSMENT AND VALIDATION

CONESTOGA-ROVERS & ASSOCIATES

2055 Niagara Falls Blvd., Suite #3
Niagara Falls, New York 14304
Telephone: (716) 297-6150 Fax: (716) 297-2265
www.CRAworld.com

MEMORANDUM

TO: Ian Richardson

REF. NO.: 007843

FROM: Susan Scrocchi/bjw/15-NF SCS

DATE: May 20, 2013
REVISION: June 4, 2013

C.C.: John Buyers; Rick Bieber

E-Mail and Hard Copy if Requested

RE: Data Quality Assessment and Validation
Vapor Investigation
Occidental Chemical Corporation
Tacoma, Washington
April 2013

INTRODUCTION

The following details a quality assessment and validation of the analytical data resulting from the April 2013, vapor investigation performed in and beneath various buildings on the Port of Tacoma (POT) Property located adjacent to the property at 605 Alexander Avenue owned by OCC (OCC Property) in Tacoma, Washington. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at ALS Laboratories in Simi Valley, California in accordance with the methodologies presented in Table 2. Analytical results summaries are presented in Table 3.

The quality assurance/quality control (QA/QC) criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and the documents entitled:

i) "Quality Assurance Project Plan, Vapor Investigation", Revision 1, December 2012

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review", EPA 540-R-08-01, June 2008

These guidelines are collectively referred to as "Guidelines" in this memorandum.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. The data quality assessment and validation presented in the following subsections were performed based on the sample results, supporting quality assurance/quality control (QA/QC) and all raw data provided.

SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time periods are summarized in the analytical methods. All sample analyses were performed within the specified holding times.

All samples were properly received and stored after collection.

GAS CHROMATOGRAPHY/MASS SPECTROMETER (GC/MS) – TUNING AND MASS CALIBRATION (INSTRUMENT PERFORMANCE CHECK) – ORGANIC ANALYSES

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each GC/MS instrument used for volatile organic compound (VOC) analyses was checked at the beginning of each 24-hour period using bromofluorobenzene (BFB). The resulting spectra must meet the criteria cited in the method before initiating an analysis sequence.

Instrument performance check data were reviewed. These tuning compounds were analyzed at the required frequency throughout the VOC analyses. The results of all instrument performance checks were within the acceptance criteria, indicating acceptable instrument performance.

INITIAL CALIBRATION – ORGANIC ANALYSES

Initial calibration data are used to demonstrate that each instrument is capable of generating acceptable quantitative data. A five point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each over a specific concentration range.

Initial calibration criteria for organic analyses are evaluated against the following criteria:

i) GC/MS (all compounds) – must meet a minimum mean relative response factor (RRF) of 0.05.

ii) GC/MS (all compounds) – the percent relative standard deviation (%RSD) values must not exceed 30.0 percent or a minimum coefficient of determination of 0.99 if quadratic equation calibration curves are used.

Calibration standards were analyzed at the required frequency and the results met the above criteria for sensitivity. Methylene chloride did not meet the linearity criterion in one of the calibration curves. The associated data were qualified as estimated (see Table 4).

CONTINUING CALIBRATION – ORGANIC ANALYSES

To ensure that each instrument was capable of producing acceptable quantitative data over the analysis period, continuing calibration standards must be analyzed every 24 hours. The following criteria are employed to evaluate the continuing calibration data:

i) GC/MS (all compounds) – must meet a minimum mean RRF of 0.05.

ii) GC/MS (all compounds) – the percent difference between the mean initial calibration RRF and the continuing calibration RRF must not exceed 30 percent.

iii) GC/MS (compounds determined by quadratic curve) – the percent drift between the true value and the continuing calibration value must not exceed 30 percent.

Calibration standards were analyzed at the required frequency and the results met the above criteria for instrument sensitivity and linearity.

METHOD BLANK SAMPLES

Method blank samples are prepared from a purified sample matrix and are processed concurrently with investigative samples to assess the presence and the magnitude of sample contamination introduced during sample analysis. Method blank samples are analyzed at a minimum frequency of one per analytical batch and target analytes should be non-detect.

Method blanks were analyzed at the recommended frequency and the results were non-detect for all analytes of interest with the exception of methylene chloride and benzene present at low concentrations. All associated sample results less than the blank results were qualified as non-detect (see Table 5).

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES

To assess the long term accuracy and precision of the analytical methods on various matrices, MS/MSD percent recoveries and relative percent differences (RPDs) of the concentrations were determined. The organic MS/MSD percent recovery and RPD control limits are established by the laboratory.

MS/MSD analyses were not requested with this set of investigative samples.

LABORATORY CONTROL SAMPLE (LCS)

The LCS analysis serves as a monitor of the overall performance in all steps of the sample analysis and is analyzed with each sample batch. The LCS percent recoveries were evaluated against method and laboratory established control limits.

The LCS percent recoveries were all within the laboratory control limits indicating acceptable analytical accuracy with the exception of some high recoveries. The associated non-detect results would not have been impacted by the implied high bias. The associated positive sample results were qualified as estimated (see Table 6).

INTERNAL STANDARD (IS) SUMMARIES – ORGANIC ANALYSES

To correct for variability in the GC/MS response and sensitivity, IS compounds are added to all samples. All results are calculated as a ratio of the compound and associated IS response. Overall instrument stability and performance for VOC analyses were monitored using IS peak area and retention time (RT) data. The IS peak areas and RTs of the samples are required to meet the following criteria:

i) IS area counts must not vary by more than ±40 percent from the associated continuing calibration standard IS area counts.

ii) The RT of the IS must not vary by more than plus or minus 30 seconds from the associated continuing calibration standard.

A review of the internal standard data showed that the IS area counts and retention time data were within the acceptance criteria for all samples.

TARGET COMPOUND IDENTIFICATION

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to identification criteria established by the methods. The organic compounds reported adhered to the specified identification criteria.

TARGET COMPOUND QUANTITATION

The reported quantitation results and limits were checked to ensure results reported were accurate. No discrepancies were found between the raw data and the sample results reported by the laboratory.

FIELD QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The field quality assurance/quality control consisted of three field duplicate sample sets.

Overall precision for the sampling event and laboratory procedures are monitored using the results of the field duplicate sample sets. The RPDs associated with the duplicate samples must be less than 20 percent. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value.

The data demonstrated acceptable agreement for all results.

ANALYTE REPORTING

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the practical quantitation limit (PQL) but greater than the MDL were qualified as estimated (J) in Table 3 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the PQL in Table 2.

The laboratory met all QAPP required reporting limits for the method by analyzing the samples using full scan method and selective ion monitoring (SIM) mode. The laboratory was calibrated in SIM mode for all but three compounds of concern (1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene and styrene).

The laboratory's instrumentation requires pressurizing the cans prior to analysis. This results in a small dilution factor (usually 1.4-2.0) which increases the reporting limits for the individual samples. The reported non-detect results were selected from the SIM analysis in order to achieve the lowest reporting limit. Positive sample results were selected based on the best curve fit.

OVERALL ASSESSMENT

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted herein.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Sample Identification	*Location*	*Collection Date (mm/dd/yyyy)*	*Collection Time (hr:min)*	*Analysis/Parameters*	*Comments*
				VOCs	
SS-041713-RB-16	Sub-Slab Probe-16	04/17/2013	16:45	X	
SS-041713-SL-15	Sub-Slab Probe-15	04/17/2013	14:30	X	
IA-041813-SL-15	Indoor Air-15	04/18/2013	13:51	X	
SS-041813-SL-9	Sub-Slab Probe-9	04/18/2013	10:35	X	
SS-041813-SL-6	Sub-Slab Probe-6	04/18/2013	14:40	X	
IA-041813-RB-16	Indoor Air-16	04/18/2013	14:50	X	
SS-041813-RB-10	Sub-Slab Probe-10	04/18/2013	15:20	X	
OA-041813-RB-15	Outside Air-15	04/18/2013	14:45	X	
IA-041813-RB-10	Indoor Air-10	04/19/2013	13:00	X	
IA-041813-RB-09	Indoor Air-9	04/19/2013	10:35	X	
IA-041813-RB-06	Indoor Air-6	04/19/2013	11:55	X	
OA-041813-RB-09	Outside Air-9	04/19/2013	10:35	X	
SS-041913-SL-12	Sub-Slab Probe-12	04/19/2013	11:26	X	
IA-042113-RB-1	Indoor Air-1	04/22/2013	9:30	X	
OA-042113-JC-1	Outside Air-1	04/22/2013	9:48	X	
FD-042113-RB-1	Indoor Air-1	04/22/2013	9:30	X	Field duplicate of IA-042113-RB-1
SS-042213-RB-18	Sub-Slab Probe-18	04/22/2013	12:35	X	
IA-042213-RB-21	Indoor Air-21	04/22/2013	9:55	X	
SS-042213-RB-17	Sub-Slab Probe-17	04/22/2013	12:20	X	
IA-042213-RB-3	Indoor Air-3	04/22/2013	9:50	X	
IA-042113-RB-2	Indoor Air-2	04/22/2013	9:45	X	
OA-041913-RB-11	Outside Air-11	04/20/2013	10:05	X	
SS-042013-JC-4	Sub-Slab Probe-4	04/20/2013	11:42	X	
IA-041913-RB-13	Indoor Air-13	04/20/2013	10:30	X	
FD-041913-RB-11	Outside Air-11	04/20/2013	10:05	X	Field duplicate of OA-041913-RB-11
IA-041813-RB-20	Indoor Air-20	04/19/2013	13:00	X	
SS-041913-SL-13	Sub-Slab Probe-13	04/19/2013	14:10	X	
SS-042013-JC-5	Sub-Slab Probe-5	04/20/2013	13:00	X	
IA-041913-RB-12	Indoor Air-12	04/20/2013	13:00	X	

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Sample Identification	*Location*	*Collection Date (mm/dd/yyyy)*	*Collection Time (hr:min)*	*Analysis/Parameters*	*Comments*
				VOCs	
SS-042113-JC-2	Sub-Slab Probe-2	04/21/2013	13:00	X	
SS-042113-JC-1	Sub-Slab Probe-1	04/21/2013	12:42	X	
IA-042013-JC-5	Indoor Air-5	04/21/2013	7:51	X	
OA-042013-RB-4	Outside Air-4	04/21/2013	7:50	X	
IA-042013-JC-4	Indoor Air-4	04/21/2013	9:08	X	
SS-042113-JC-3	Sub-Slab Probe-3	04/21/2013	16:05	X	
SS-042213-RB-19	Sub-Slab Probe-19	04/22/2013	15:45	X	
OA-042313-RB-14	Outside Air-14	04/24/2013	9:45	X	
IA-042313-RB-14	Indoor Air-14	04/24/2013	9:45	X	
OA-042313-RB-18	Outside Air-18	04/24/2013	12:29	X	
SS-042313-RB-7	Sub-Slab Probe-7	04/24/2013	14:40	X	
IA-042213-RB-17	Indoor Air-17	04/23/2013	10:01	X	
IA-042213-RB-19	Indoor Air-19	04/23/2013	10:00	X	
IA-042213-RB-18	Indoor Air-18	04/22/2013	19:10	X	
IA-042213-RB-22	Indoor Air-22	04/23/2013	15:22	X	
FD-042313-RB-8	Indoor Air-8	04/24/2013	10:10	X	Field duplicate of IA-042313-RB-8
IA-042313-RB-8	Indoor Air-8	04/24/2013	10:10	X	
OA-042313-RB-7	Outside Air-7	04/24/2013	11:10	X	
IA-042313-RB-7	Indoor Air-7	04/24/2013	11:40	X	
IA-042513-RB-11	Indoor Air-11	04/26/2013	10:15	X	
OA-042513-RB-11	Outside Air-11B	04/26/2013	10:15	X	
SS-042513-RB-11	Sub-Slab Probe-11	04/25/2013	11:25	X	

Notes:
VOCs Volatile organic compounds.

TABLE 2

SUMMARY OF ANALYTICAL METHODS
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Parameter	*Method*[1]
Selected Volatiles	TO-15
Selected Volatiles	TO-15 SIM

Notes:

[1] "Compendium of Methods of the Determination of Toxic Organic Compounds in Ambient Air", USEPA 600/4-84-041, April 1984 (with all subsequent revisions)

TO-15 Toxic Organic Compounds in Air.

SIM Selective ion monitoring.

TABLE 3

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Sample Location:		*Indoor Air-1*	*Indoor Air-1*	*Indoor Air-2*	*Indoor Air-3*	*Indoor Air-4*	*Indoor Air-5*	*Indoor Air-6*	*Indoor Air-7*
Sample ID:		*IA-042113-RB-1*	*FD-042113-RB-1*	*IA-042113-RB-2*	*IA-042213-RB-3*	*IA-042013-JC-4*	*IA-042013-JC-5*	*IA-041813-RB-06*	*IA-042313-RB-7*
Sample Date:		*4/22/2013*	*4/22/2013 (Duplicate)*	*4/22/2013*	*4/22/2013*	*4/21/2013*	*4/21/2013*	*4/19/2013*	*4/24/2013*
Parameters	***Units***								
Volatile Organic Compounds									
1,1,1-Trichloroethane	µg/m3	0.11	0.11	0.10	0.34	0.024 J	0.028 J	0.025 J	0.032 J
1,1,2,2-Tetrachloroethane	µg/m3	0.038 U	0.036 U	0.040 U	0.041 U	0.038 U	0.037 U	0.036 U	0.039 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.14 U	0.16 U	0.17 U	0.15 U	0.0051 J	0.15 U	0.16 U
1,1-Dichloroethene	µg/m3	0.0070 J	0.0052 J	0.040 U	0.041 U	0.038 U	0.037 U	0.036 U	0.022 J
1,2,4-Trichlorobenzene	µg/m3	0.038 U	0.036 U	0.040 U	0.041 U	0.038 U	0.037 U	0.036 U	0.039 U
1,2,4-Trimethylbenzene	µg/m3	2.0	2.1	1.3	1.0	1.0	1.2	53	4.7
1,3,5-Trimethylbenzene	µg/m3	0.56 J	0.59 J	0.48 J	0.30 J	0.28 J	0.33 J	17	1.5
1,4-Dichlorobenzene	µg/m3	0.055	0.053	0.022 J	0.18	0.022 J	0.037 U	0.036 U	0.14 J
Benzene	µg/m3	1.0	0.99	1.5	0.85	0.82	0.75	0.60	0.71
Carbon tetrachloride	µg/m3	0.46	0.47	0.47	0.48	0.44	0.47	0.35	0.45
Chloroform (Trichloromethane)	µg/m3	0.10 J	0.10 J	0.099 J	0.27	0.083 J	0.078 J	0.11 J	0.19
cis-1,2-Dichloroethene	µg/m3	0.038 U	0.036 U	0.040 U	0.032 J	0.023 J	0.037 U	0.036 U	0.039 U
Ethylbenzene	µg/m3	2.5	2.4	2.7	2.6	0.92	0.92	3.0	1.0
Hexachlorobutadiene	µg/m3	0.038 U	0.036 U	0.040 U	0.041 U	0.038 U	0.037 U	0.036 U	0.039 U
m&p-Xylenes	µg/m3	9.2	9.0	9.5	9.8	3.3	3.1	13	2.9
Methylene chloride	µg/m3	1.6 J	1.6 J	1.3 UJ	5.5 J	0.26	0.74 UJ	0.73 U	0.78 U
Naphthalene	µg/m3	0.41	0.53	0.067 J	0.37	0.23	0.20	0.17	0.16
o-Xylene	µg/m3	3.0	2.7	3.0	3.3	1.2	1.1	7.6	1.1
Styrene	µg/m3	0.34 J	0.36 J	0.26 J	0.29 J	0.35 J	0.28 J	88	0.35 J
Tetrachloroethene	µg/m3	1.1	1.1	0.95	2.9	0.34	1.4	0.062	4.1
Toluene	µg/m3	16	15	22	11	3.8	3.5	8.3	2.6
trans-1,2-Dichloroethene	µg/m3	0.038 U	0.036 U	0.040 U	0.025 J	0.038 U	0.037 U	0.036 U	0.039 U
Trichloroethene	µg/m3	7.3	6.6	13	6.6	0.089	0.24	0.040	3.9
Vinyl chloride	µg/m3	0.038 U	0.036 U	0.040 U	0.0044 J	0.0040 J	0.037 U	0.036 U	0.0042 J

TABLE 3

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Sample Location:		*Indoor Air-8*	*Indoor Air-8*	*Indoor Air-9*	*Indoor Air-10*	*Indoor Air-11*	*Indoor Air-12*	*Indoor Air-13*
Sample ID:		*IA-042313-RB-8*	*FD-042313-RB-8*	*IA-041813-RB-09*	*IA-041813-RB-10*	*IA-042513-RB-11*	*IA-041913-RB-12*	*IA-041913-RB-13*
Sample Date:		*4/24/2013*	*4/24/2013 (Duplicate)*	*4/19/2013*	*4/19/2013*	*4/26/2013*	*4/20/2013*	*4/20/2013*
Parameters	***Units***							
Volatile Organic Compounds								
1,1,1-Trichloroethane	µg/m3	0.030 J	0.029 J	0.027 J	0.027 J	0.024 J	0.032 J	0.034 J
1,1,2,2-Tetrachloroethane	µg/m3	0.035 U	0.036 U	0.037 U	0.042 U	0.038 U	0.046 U	0.039 U
1,1,2-Trichloroethane	µg/m3	0.14 U	0.14 U	0.15 U	0.17 U	0.15 U	0.18 U	0.16 U
1,1-Dichloroethene	µg/m3	0.040	0.042	0.037 U	0.042 U	0.038 U	0.046 U	0.039 U
1,2,4-Trichlorobenzene	µg/m3	0.035 U	0.036 U	0.037 U	0.042 U	0.038 U	0.046 U	0.039 U
1,2,4-Trimethylbenzene	µg/m3	1.0	0.98	56	6.0	0.60 J	1.3	1.1
1,3,5-Trimethylbenzene	µg/m3	0.31 J	0.32 J	17	1.9	0.76 U	0.39 J	0.36 J
1,4-Dichlorobenzene	µg/m3	2.0	1.9	0.022 J	0.026 J	0.13 J	5.4	1.6
Benzene	µg/m3	0.68	0.76	0.95	0.82	0.63	0.71	0.74
Carbon tetrachloride	µg/m3	0.48	0.44	0.46	0.46	0.40	0.44	0.45
Chloroform (Trichloromethane)	µg/m3	0.26	0.26	0.15 U	0.12 J	0.082 J	0.096 J	0.078 J
cis-1,2-Dichloroethene	µg/m3	0.035 U	0.036 U	0.037 U	0.042 U	0.020 J	0.046 U	0.039 U
Ethylbenzene	µg/m3	1.4	1.2	3.4	1.3	1.7	4.7	5.1
Hexachlorobutadiene	µg/m3	0.035 U	0.036 U	0.037 U	0.042 U	0.038 U	0.046 U	0.039 U
m&p-Xylenes	µg/m3	4.3	3.7	15	5.4	6.9	20	22
Methylene chloride	µg/m3	0.69 U	0.72 U	0.74 U	0.84 U	0.84 U	0.92 UJ	0.78 UJ
Naphthalene	µg/m3	0.21	0.23	0.24	0.54	0.23	0.17 J	0.20
o-Xylene	µg/m3	1.8	1.3	7.8	2.0	2.3	5.0	5.6
Styrene	µg/m3	0.45 J	0.51 J	83	6.1	0.34 J	0.32 J	0.28 J
Tetrachloroethene	µg/m3	0.66	0.63	0.24	0.12	0.18	1.5	1.8
Toluene	µg/m3	3.2	3.9	8.2	6.3	21	55	59
trans-1,2-Dichloroethene	µg/m3	0.035 U	0.051	0.037 U	0.042 U	0.034 J	0.046 U	0.039 U
Trichloroethene	µg/m3	0.45	0.44	0.052	0.047	0.10	0.34	0.86
Vinyl chloride	µg/m3	0.0060 J	0.0057 J	0.037 U	0.042 U	0.011 J	0.046 U	0.039 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

	Sample Location:	*Indoor Air-14*	*Indoor Air-15*	*Indoor Air-16*	*Indoor Air-17*	*Indoor Air-18*	*Indoor Air-19*	*Indoor Air-20*
	Sample ID:	*IA-042313-RB-14*	*IA-041813-SL-15*	*IA-041813-RB-16*	*IA-042213-RB-17*	*IA-042213-RB-18*	*IA-042213-RB-19*	*IA-041813-RB-20*
	Sample Date:	*4/24/2013*	*4/18/2013*	*4/18/2013*	*4/23/2013*	*4/22/2013*	*4/23/2013*	*4/19/2013*
Parameters	***Units***							
Volatile Organic Compounds								
1,1,1-Trichloroethane	µg/m3	0.029 J	0.027 J	0.034 J	0.089	0.049	0.11	0.026 J
1,1,2,2-Tetrachloroethane	µg/m3	0.038 U	0.034 U	0.038 U	0.038 U	0.041 U	0.039 U	0.035 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.13 U	0.15 U	0.15 U	0.16 U	0.15 U	0.011 J
1,1-Dichloroethene	µg/m3	0.038 U	0.034 U	0.038 U	0.010 J	0.041 U	0.039 U	0.0049 J
1,2,4-Trichlorobenzene	µg/m3	0.038 U	0.034 U	0.038 U	0.038 U	0.041 U	0.039 U	0.035 U
1,2,4-Trimethylbenzene	µg/m3	0.80	0.59 J	0.54 J	1.3	0.82	0.80	16
1,3,5-Trimethylbenzene	µg/m3	0.26 J	0.67 U	0.76 U	0.40 J	0.30 J	0.27 J	4.7
1,4-Dichlorobenzene	µg/m3	0.062	0.14	2.9	0.054	0.14 J	0.16	0.032 J
Benzene	µg/m3	0.79	0.96	0.48	0.69	0.43	0.67	0.99
Carbon tetrachloride	µg/m3	0.47	0.47	0.45	0.51	0.31	0.46	0.45
Chloroform (Trichloromethane)	µg/m3	0.11 J	0.24	0.58	0.11 J	0.13 J	0.18	0.11 J
cis-1,2-Dichloroethene	µg/m3	0.038 U	0.071	0.038 U	0.038 U	0.041 U	0.039 U	0.016 J
Ethylbenzene	µg/m3	0.58 J	0.59 J	0.23 J	1.4	1.4	1.1	4.3
Hexachlorobutadiene	µg/m3	0.038 U	0.046	0.021 J	0.038 U	0.041 U	0.039 U	0.035 U
m&p-Xylenes	µg/m3	1.7	1.7	0.88	4.9	5.3	3.9	18
Methylene chloride	µg/m3	0.75 U	0.67 U	0.76 U	0.91 U	0.82 U	0.77 U	0.71 UJ
Naphthalene	µg/m3	0.20	0.36	0.085 J	0.62	0.081 J	0.095 J	0.31
o-Xylene	µg/m3	0.63 J	0.57 J	0.37 J	1.7	1.6	1.3	6.1
Styrene	µg/m3	0.23 J	0.21 J	0.89	0.40 J	0.82 U	0.23 J	18
Tetrachloroethene	µg/m3	0.12 J	8.8	0.70	0.21	0.23	0.60	0.15
Toluene	µg/m3	2.2	3.3	1.1	4.9	1.2	2.5	13
trans-1,2-Dichloroethene	µg/m3	0.038 U	0.034 U	0.038 U	0.050	0.041 U	0.017 J	0.024 J
Trichloroethene	µg/m3	0.025 J	5.0	0.24	0.074	0.054	0.045	0.085
Vinyl chloride	µg/m3	0.038 U	0.034 U	0.038 U	0.095	0.072	0.11	0.0036 J

TABLE 3

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

	Sample Location:	*Indoor Air-21*	*Indoor Air-22*	*Outside Air-1*	*Outside Air-4*	*Outside Air-7*	*Outside Air-9*	*Outside Air-11*
	Sample ID:	*IA-042213-RB-21*	*IA-042213-RB-22*	*OA-042113-JC-1*	*OA-042013-RB-4*	*OA-042313-RB-7*	*OA-041813-RB-09*	*OA-041913-RB-11*
	Sample Date:	*4/22/2013*	*4/23/2013*	*4/22/2013*	*4/21/2013*	*4/24/2013*	*4/19/2013*	*4/20/2013*
Parameters	***Units***							
Volatile Organic Compounds								
1,1,1-Trichloroethane	µg/m3	2.8	0.072	0.026 J	0.023 J	0.028 J	0.024 J	0.023 J
1,1,2,2-Tetrachloroethane	µg/m3	0.038 U	0.040 U	0.035 U	0.037 U	0.040 U	0.037 U	0.035 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.16 U	0.0084 J	0.15 U	0.16 U	0.15 U	0.027 J
1,1-Dichloroethene	µg/m3	0.017 J	0.040 U	0.035 U	0.037 U	0.040 U	0.037 U	0.013 J
1,2,4-Trichlorobenzene	µg/m3	0.038 U	0.040 U	0.035 U	0.037 U	0.040 U	0.037 U	0.026 J
1,2,4-Trimethylbenzene	µg/m3	1.9	0.86	0.28 J	0.75 U	1.2	0.65 J	0.69 U
1,3,5-Trimethylbenzene	µg/m3	0.52 J	0.30 J	0.71 U	0.75 U	0.38 J	0.74 U	0.69 U
1,4-Dichlorobenzene	µg/m3	2.7	0.15 J	0.027 J	0.018 J	0.038 J	0.037 U	0.060 J
Benzene	µg/m3	1.1	0.67	0.46	0.23	0.76	0.40	0.29
Carbon tetrachloride	µg/m3	0.48	0.46	0.50	0.49	0.47	0.45	0.39
Chloroform (Trichloromethane)	µg/m3	0.088 J	0.14 J	0.077 J	0.070 J	0.095 J	0.075 J	0.083 J
cis-1,2-Dichloroethene	µg/m3	0.035 J	0.040 U	0.021 J	0.037 U	0.040 U	0.037 U	0.046 J
Ethylbenzene	µg/m3	2.2	0.94	0.25 J	0.20	0.77 J	0.21	0.22 J
Hexachlorobutadiene	µg/m3	0.038 U	0.040 U	0.035 U	0.037 U	0.040 U	0.037 U	0.035 U
m&p-Xylenes	µg/m3	8.5	3.2	0.87	0.58 J	2.3	0.78	0.86
Methylene chloride	µg/m3	75 J	0.80 U	0.71 UJ	0.75 UJ	0.79 U	0.74 U	0.69 UJ
Naphthalene	µg/m3	0.46	0.17	0.11 J	0.032 J	0.15 J	0.047 J	0.073 J
o-Xylene	µg/m3	2.5	1.2	0.31 J	0.18	0.89	0.29 J	0.27 J
Styrene	µg/m3	0.46 J	0.80 U	0.71 U	0.75 U	0.79 U	0.64 J	0.69 U
Tetrachloroethene	µg/m3	12	0.36	0.13 J	0.19	0.13 J	0.082	0.16 J
Toluene	µg/m3	25	2.2	1.5	0.60 J	2.6	1.0	1.4
trans-1,2-Dichloroethene	µg/m3	0.14 J	0.040 U	0.035 U	0.037 U	0.040 U	0.037 U	0.043 J
Trichloroethene	µg/m3	19	0.033 J	0.38	0.038	0.024 J	0.013 J	0.085 J
Vinyl chloride	µg/m3	0.0048 J	0.066	0.035 U	0.037 U	0.040 U	0.037 U	0.014 J

TABLE 3

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Sample Location:	*Outside Air-11*	*Outside Air-11B*	*Outside Air-14*	*Outside Air-15*	*Outside Air-18*	*Sub-Slab Probe-1*	*Sub-Slab Probe-2*
Sample ID:	*FD-041913-RB-11*	*OA-042513-RB-11*	*OA-042313-RB-14*	*OA-041813-RB-15*	*OA-042313-RB-18*	*SS-042113-JC-1*	*SS-042113-JC-2*
Sample Date:	*4/20/2013 (Duplicate)*	*4/26/2013*	*4/24/2013*	*4/18/2013*	*4/24/2013*	*4/21/2013*	*4/21/2013*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.023 J	0.025 J	0.031 J	0.025 J	0.032 J	21	0.59
1,1,2,2-Tetrachloroethane	µg/m3	0.035 U	0.041 U	0.040 U	0.039 U	0.042 U	0.038 U	0.037 U
1,1,2-Trichloroethane	µg/m3	0.14 U	0.16 U	0.16 U	0.16 U	0.17 U	0.15 U	0.0075 J
1,1-Dichloroethene	µg/m3	0.035 U	0.041 U	0.040 U	0.039 U	0.042 U	0.31	0.0068 J
1,2,4-Trichlorobenzene	µg/m3	0.035 U	0.041 U	0.040 U	0.039 U	0.042 U	0.038 U	0.037 U
1,2,4-Trimethylbenzene	µg/m3	0.69 U	0.42 J	0.74 J	0.78 U	0.81 J	0.76 U	0.73 U
1,3,5-Trimethylbenzene	µg/m3	0.69 U	0.82 U	0.81 U	0.78 U	0.83 U	0.76 U	0.73 U
1,4-Dichlorobenzene	µg/m3	0.039 J	0.15 J	0.023 J	0.039 U	0.022 J	0.038 U	0.033 J
Benzene	µg/m3	0.34	0.49	0.75	0.34	0.72	0.20	0.11 U
Carbon tetrachloride	µg/m3	0.46	0.45	0.43	0.47	0.48	0.25	0.36
Chloroform (Trichloromethane)	µg/m3	0.071 J	0.080 J	0.099 J	0.071 J	0.089 J	0.52	0.046 J
cis-1,2-Dichloroethene	µg/m3	0.035 UJ	0.054	0.040 U	0.024 J	0.042 U	0.038 U	0.018 J
Ethylbenzene	µg/m3	0.26 J	0.96	0.54 J	0.13 J	1.1	0.11 J	0.060 J
Hexachlorobutadiene	µg/m3	0.035 U	0.041 U	0.040 U	0.039 U	0.042 U	0.038 U	0.026 J
m&p-Xylenes	µg/m3	0.99	3.8	1.6	0.44	3.8	0.38	0.20
Methylene chloride	µg/m3	0.69 UJ	0.82 U	0.81 U	0.78 U	0.83 U	0.76 UJ	0.73 UJ
Naphthalene	µg/m3	0.070 J	0.056 J	0.12 J	0.21	0.077 J	0.031 J	0.077 J
o-Xylene	µg/m3	0.31 J	1.0	0.59 J	0.17	1.3	0.12 J	0.066 J
Styrene	µg/m3	0.69 U	0.82 U	0.81 U	0.78 U	0.83 U	0.76 U	0.73 U
Tetrachloroethene	µg/m3	0.062 J	0.12 J	0.14	0.27	0.14 J	18	19
Toluene	µg/m3	1.9	5.9	2.3	0.81	2.1	0.62 J	0.39 J
trans-1,2-Dichloroethene	µg/m3	0.035 UJ	0.041 U	0.040 U	0.039 U	0.042 U	0.038 U	0.037 U
Trichloroethene	µg/m3	0.023 J	0.068	0.029 J	0.046	0.033 J	0.48	4.5
Vinyl chloride	µg/m3	0.035 U	0.017 J	0.040 U	0.039 U	0.042 U	0.038 U	0.037 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

	Sample Location:	*Sub-Slab Probe-3*	*Sub-Slab Probe-4*	*Sub-Slab Probe-5*	*Sub-Slab Probe-6*	*Sub-Slab Probe-7*
	Sample ID:	*SS-042113-JC-3*	*SS-042013-JC-4*	*SS-042013-JC-5*	*SS-041813-SL-6*	*SS-042313-RB-7*
	Sample Date:	*4/21/2013*	*4/20/2013*	*4/20/2013*	*4/18/2013*	*4/24/2013*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/m3	0.70	8.0	1.8	0.35	1.2
1,1,2,2-Tetrachloroethane	µg/m3	0.039 U	1.2 U	1.3 U	0.036 U	0.039 U
1,1,2-Trichloroethane	µg/m3	0.0060 J	4.9 U	5.1 U	0.14 U	0.16 U
1,1-Dichloroethene	µg/m3	0.039 U	1.2 U	1.3 U	0.0067 J	0.012 J
1,2,4-Trichlorobenzene	µg/m3	0.039 U	1.2 U	1.3 U	0.036 U	0.039 U
1,2,4-Trimethylbenzene	µg/m3	0.78 U	25 U	22 U	0.31 J	0.78 U
1,3,5-Trimethylbenzene	µg/m3	0.78 U	25 U	22 U	0.71 U	0.78 U
1,4-Dichlorobenzene	µg/m3	0.027 J	1.2 U	1.3 U	0.036 U	0.035 J
Benzene	µg/m3	0.18	3.7 U	3.9 U	0.11 U	0.12 U
Carbon tetrachloride	µg/m3	0.32	0.15 J	1.3 U	0.14 J	0.14
Chloroform (Trichloromethane)	µg/m3	0.041 J	2.2 J	1.4 J	0.011 J	0.15 J
cis-1,2-Dichloroethene	µg/m3	0.039 U	0.97 J	0.51 J	0.036 U	0.039 U
Ethylbenzene	µg/m3	0.081 J	4.9 U	5.1 U	0.044 J	0.043 J
Hexachlorobutadiene	µg/m3	0.097	1.2 U	1.3 U	0.34	0.026 J
m&p-Xylenes	µg/m3	0.31	4.9 U	5.1 U	0.15	0.13 J
Methylene chloride	µg/m3	0.78 UJ	25 UJ	22 UJ	0.71 U	0.78 U
Naphthalene	µg/m3	0.079 J	4.9 U	5.1 U	0.077 J	0.087 J
o-Xylene	µg/m3	0.12 J	4.9 U	5.1 U	0.068 J	0.035 J
Styrene	µg/m3	0.78 U	25 U	22 U	1.0	0.78 U
Tetrachloroethene	µg/m3	26	3800	3600	63	12
Toluene	µg/m3	0.34 J	4.9 U	5.1 U	0.44 J	0.26 J
trans-1,2-Dichloroethene	µg/m3	0.039 U	1.2 U	1.3 U	0.036 U	0.039 U
Trichloroethene	µg/m3	0.26	1600	1500	0.31	10
Vinyl chloride	µg/m3	0.039 U	1.2 U	1.3 U	0.036 U	0.039 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

	Sample Location:	*Sub-Slab Probe-9*	*Sub-Slab Probe-10*	*Sub-Slab Probe-11*	*Sub-Slab Probe-12*	*Sub-Slab Probe-13*
	Sample ID:	*SS-041813-SL-9*	*SS-041813-RB-10*	*SS-042513-RB-11*	*SS-041913-SL-12*	*SS-041913-SL-13*
	Sample Date:	*4/18/2013*	*4/18/2013*	*4/25/2013*	*4/19/2013*	*4/19/2013*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/m3	0.88	0.030 J	0.50	4.2	24
1,1,2,2-Tetrachloroethane	µg/m3	0.036 U	0.037 U	0.039 U	0.041 U	0.043 U
1,1,2-Trichloroethane	µg/m3	0.14 U	0.15 U	0.15 U	0.16 U	0.17 U
1,1-Dichloroethene	µg/m3	0.0074 J	0.037 U	0.039 U	0.058	0.31
1,2,4-Trichlorobenzene	µg/m3	0.036 U	0.037 U	0.039 U	0.041 U	0.043 U
1,2,4-Trimethylbenzene	µg/m3	0.68 J	0.74 U	0.77 U	0.82 U	0.86 U
1,3,5-Trimethylbenzene	µg/m3	0.71 U	0.74 U	0.77 U	0.82 U	0.86 U
1,4-Dichlorobenzene	µg/m3	0.018 J	0.037 U	0.039 U	0.13 J	0.046
Benzene	µg/m3	0.11 U	0.11 U	0.12 U	0.12	0.13 U
Carbon tetrachloride	µg/m3	0.25	0.34	0.66	0.16	0.064
Chloroform (Trichloromethane)	µg/m3	0.028 J	0.11 J	0.049 J	0.070 J	0.045 J
cis-1,2-Dichloroethene	µg/m3	0.036 U	0.037 U	0.039 U	0.041 U	0.043 U
Ethylbenzene	µg/m3	0.057 J	0.043 J	0.027 J	0.34 J	0.078 J
Hexachlorobutadiene	µg/m3	1.7	0.26	0.039 U	0.89	0.022 J
m&p-Xylenes	µg/m3	0.21	0.14 J	0.087 J	1.4	0.33
Methylene chloride	µg/m3	0.71 U	0.74 U	0.77 U	0.82 U	0.86 UJ
Naphthalene	µg/m3	1.2	0.059 J	0.15 U	0.092 J	0.85
o-Xylene	µg/m3	0.097 J	0.079 J	0.030 J	0.40 J	0.087 J
Styrene	µg/m3	0.62 J	0.74 U	0.77 U	0.82 U	0.86 U
Tetrachloroethene	µg/m3	2.8	0.53	3.2	27	20
Toluene	µg/m3	0.33 J	0.20	1.2	5.0	1.2
trans-1,2-Dichloroethene	µg/m3	0.036 U	0.037 U	0.039 U	0.041 U	0.043 U
Trichloroethene	µg/m3	0.15	0.14	0.27	0.37	24
Vinyl chloride	µg/m3	0.036 U	0.037 U	0.039 U	0.041 U	0.043 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

	Sample Location:	*Sub-Slab Probe-15*	*Sub-Slab Probe-16*	*Sub-Slab Probe-17*	*Sub-Slab Probe-18*	*Sub-Slab Probe-19*
	Sample ID:	*SS-041713-SL-15*	*SS-041713-RB-16*	*SS-042213-RB-17*	*SS-042213-RB-18*	*SS-042213-RB-19*
	Sample Date:	*4/17/2013*	*4/17/2013*	*4/22/2013*	*4/22/2013*	*4/22/2013*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/m3	74	62	1.6	0.19 J	1.2
1,1,2,2-Tetrachloroethane	µg/m3	13	4.7 J	0.24 U	0.20 U	0.038 U
1,1,2-Trichloroethane	µg/m3	19 J	3.2 J	0.94 U	0.81 U	0.15 U
1,1-Dichloroethene	µg/m3	5.6 J	1.5 J	0.24 U	0.20 U	0.038 U
1,2,4-Trichlorobenzene	µg/m3	8.2 U	5.6 U	0.24 U	0.20 U	0.038 U
1,2,4-Trimethylbenzene	µg/m3	160 U	110 U	4.7 U	4.0 U	0.76 U
1,3,5-Trimethylbenzene	µg/m3	160 U	110 U	4.7 U	4.0 U	0.76 U
1,4-Dichlorobenzene	µg/m3	8.2 U	5.6 U	0.24 U	0.20 U	0.038 U
Benzene	µg/m3	24 U	17 U	0.71 U	0.60 U	0.11 U
Carbon tetrachloride	µg/m3	2.1 J	3.1 J	1.6	1.9	6.5
Chloroform (Trichloromethane)	µg/m3	42	28	0.25 J	0.54 J	0.79
cis-1,2-Dichloroethene	µg/m3	97	9.4	0.24 U	0.20 U	0.038 U
Ethylbenzene	µg/m3	33 U	5.2 J	0.045 J	0.047 J	0.049 J
Hexachlorobutadiene	µg/m3	29	28	0.24 U	0.20 U	0.038 U
m&p-Xylenes	µg/m3	33 U	3.8 J	0.15 J	0.15 J	0.20
Methylene chloride	µg/m3	160 U	110 U	4.7 UJ	4.0 UJ	0.76 UJ
Naphthalene	µg/m3	33 U	23 U	0.94 U	0.81 U	0.057 J
o-Xylene	µg/m3	33 U	3.3 J	0.050 J	0.056 J	0.065 J
Styrene	µg/m3	160 U	110 U	4.7 U	4.0 U	0.76 U
Tetrachloroethene	µg/m3	30000	21000	0.70	5.0	5.4
Toluene	µg/m3	33 U	23 U	0.94 U	0.81 U	0.27 J
trans-1,2-Dichloroethene	µg/m3	10	10	0.24 U	0.20 U	0.038 U
Trichloroethene	µg/m3	18000	6000	0.084 J	1.3	0.23
Vinyl chloride	µg/m3	8.2 U	5.6 U	0.24 U	0.20 U	0.038 U

Notes:

J Estimated concentration.

U Not detected at associated reporting limit.

UJ Not detected; associated reporting limit is estimated.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING INITIAL CALIBRATION RESULTS
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Parameter	*Analyte*	*Calibration Date*	*%RSD*	*Associated Sample ID*	*Qualified Result*	*Units*
VOCs	Methylene chloride	4/4/13	32	FD-042113-RB-1	1.6 J	µg/m³
				IA-042113-RB-1	1.6 J	µg/m³
				FD-041913-RB-11	0.69 UJ	µg/m³
				IA-042013-JC-4	0.76 UJ	µg/m³
				OA-041913-RB-11	0.69 UJ	µg/m³
				IA-042113-RB-2	1.3 UJ	µg/m³
				IA-042213-RB-21	75 J	µg/m³
				IA-042213-RB-3	5.5 J	µg/m³
				OA-042113-JC-1	0.71 UJ	µg/m³
				SS-042213-RB-17	4.7 UJ	µg/m³
				SS-042213-RB-18	4.0 UJ	µg/m³
				IA-041813-RB-20	0.71 UJ	µg/m³
				IA-041913-RB-12	0.92 UJ	µg/m³
				IA-041913-RB-13	0.78 UJ	µg/m³
				IA-042013-JC-5	0.74 UJ	µg/m³
				OA-042013-RB-4	0.75 UJ	µg/m³
				SS-041913-SL-13	0.86 UJ	µg/m³
				SS-042013-JC-4	25 UJ	µg/m³
				SS-042013-JC-5	22 UJ	µg/m³
				SS-042113-JC-1	0.76 UJ	µg/m³
				SS-042113-JC-2	0.73 UJ	µg/m³
				SS-042113-JC-3	0.78 UJ	µg/m³
				SS-042213-RB-19	0.76 UJ	µg/m³

Notes:

-	Not applicable.
J	Estimated concentration.
RSD	Relative standard deviation
UJ	Not detected; associated reporting limit is estimated.

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Parameter	*Analyte*	*Analysis Date*	*Blank Result*	*Sample ID*	*Original Result*	*Qualified Result*	*Units*
VOCs	Benzene	4/26/2013	0.010J	SS-042313-RB-7	0.095 J	0.12 U	µg/m^3
				SS-041813-RB-10	0.073 J	0.11 U	µg/m^3
				SS-041813-SL-6	0.073 J	0.11 U	µg/m^3
				SS-041813-SL-9	0.083 J	0.11 U	µg/m^3
			2.25J*	SS-041713-RB-16	4.6 J	17 U	µg/m^3
			3.26J*	SS-041713-SL-15	7.5 J	24 U	µg/m^3
VOCs	Benzene	4/29/2013	0.012J	SS-041913-SL-13	0.096	0.13 U	µg/m^3
				SS-042113-JC-2	0.096 J	0.11 U	µg/m^3
				SS-042213-RB-19	0.11 J	0.11 U	µg/m^3
			0.59J*	SS-042013-JC-4	1.3 J	3.7 U	µg/m^3
			0.62J*	SS-042013-JC-5	0.81 J	3.9 U	µg/m^3
VOCs	Benzene	4/30/2013	0.10J*	SS-042213-RB-17	0.12 J	0.71 U	µg/m^3
			0.089J*	SS-042213-RB-18	0.13	0.60 U	µg/m^3
VOCs	Methylene chloride	4/25/2013	0.17J	IA-041813-RB-06	0.53 J	0.73 U	µg/m^3
				IA-041813-RB-09	0.52 J	0.74 U	µg/m^3
				IA-041813-RB-16	0.61	0.76 U	µg/m^3
				IA-041813-SL-15	0.55 J	0.67 U	µg/m^3
				OA-041813-RB-09	0.49	0.74 U	µg/m^3
				OA-041813-RB-15	0.61 J	0.78 U	µg/m^3
				SS-041813-RB-10	0.32 J	0.74 U	µg/m^3
				SS-041813-SL-6	0.26 J	0.71 U	µg/m^3
				SS-041913-SL-12	0.35 J	0.82 U	µg/m^3
				IA-041813-RB-10	0.56 J	0.84 U	µg/m^3
			38J*	SS-041713-RB-16	35 J	110 U	µg/m^3
			55J*	SS-041713-SL-15	51 J	160 U	µg/m^3

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Parameter	*Analyte*	*Analysis Date*	*Blank Result*	*Sample ID*	*Original Result*	*Qualified Result*	*Units*
VOCs	Methylene chloride	4/26/2013	0.19J	FD-041913-RB-11	0.55 J	0.69 UJ	µg/m^3
				IA-041813-RB-20	0.76 J	0.71 UJ	µg/m^3
				IA-041913-RB-12	0.88 J	0.92 UJ	µg/m^3
				IA-041913-RB-13	0.76 J	0.78 UJ	µg/m^3
				IA-042013-JC-5	0.52 J	0.74 UJ	µg/m^3
				OA-041913-RB-11	0.51	0.69 UJ	µg/m^3
				SS-041913-SL-13	0.38 J	0.86 UJ	µg/m^3
				SS-042113-JC-1	0.40 J	0.76 UJ	µg/m^3
				SS-042113-JC-2	0.32 J	0.73 UJ	µg/m^3
				OA-042013-RB-4	0.53 J	0.75 UJ	µg/m^3
				SS-042113-JC-3	0.39 J	0.78 UJ	µg/m^3
				SS-042213-RB-19	0.34 J	0.76 UJ	µg/m^3
			9.37J*	SS-042013-JC-4	9.8 J	25 UJ	µg/m^3
			8.36J*	SS-042013-JC-5	8.6	22 UJ	µg/m^3
VOCs	Methylene chloride	4/29/2013	0.23J	FD-042313-RB-8	0.70 J	0.72 U	µg/m^3
				IA-042113-RB-2	1.3 J	1.3 UJ	µg/m^3
				OA-042113-JC-1	0.59 J	0.71 UJ	µg/m^3
				IA-042313-RB-8	0.67 J	0.69 U	µg/m^3
				IA-042213-RB-17	0.91 J	0.91 U	µg/m^3
				IA-042213-RB-19	0.69 J	0.77 U	µg/m^3
				IA-042313-RB-14	0.66 J	0.75 U	µg/m^3
				IA-042313-RB-7	0.75	0.78 U	µg/m^3
				OA-042313-RB-14	0.65	0.81 U	µg/m^3
				OA-042313-RB-18	0.74 J	0.83 U	µg/m^3
				OA-042313-RB-7	0.66 J	0.79 U	µg/m^3
				SS-042313-RB-7	0.77 J	0.78 U	µg/m^3
			9.4J*	SS-042213-RB-17	2.0	4.7 UJ	µg/m^3
			8.4J*	SS-042213-RB-18	1.8	4.0 UJ	µg/m^3

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Parameter	*Analyte*	*Analysis Date*	*Blank Result*	*Sample ID*	*Original Result*	*Qualified Result*	*Units*
VOCs	Methylene chloride	5/8/2013	0.20J	IA-042213-RB-18	0.63 J	0.82 U	µg/m^3
				IA-042213-RB-22	0.70	0.80 U	µg/m^3
VOCs	Toluene	4/26/2013	3.15J*	SS-041713-RB-16	3.0 J	23 U	µg/m^3
	Toluene	4/26/2013	4.56J*	SS-041713-SL-15	9.0 J	33 U	µg/m^3
VOCs	Toluene	4/29/2013	0.69J*	SS-042013-JC-4	0.39 J	4.9 U	µg/m^3
	Toluene	4/29/2013	0.72J*	SS-042013-JC-5	0.34 J	5.1 U	µg/m^3
VOCs	Toluene	4/30/2013	0.13J*	SS-042213-RB-17	0.23 J	0.94 U	µg/m^3
	Toluene	4/30/2013	0.11J*	SS-042213-RB-18	0.23 J	0.81 U	µg/m^3
VOCs	Benzene	5/2/2013	0.0097J	SS-042513-RB-11	0.055 J	0.12 U	µg/m^3
VOCs	Methylene chloride	5/3/2013	0.23J	IA-042513-RB-11	0.84 J	0.84 U	µg/m^3
				OA-042513-RB-11	0.73	0.82 U	µg/m^3
				SS-042513-RB-11	0.38 J	0.77 U	µg/m^3

Notes:

*	Blank result adjusted for sample dilution factors.
J	Estimated concentration.
U	Not detected at the associated reporting limit.
UJ	Not detected; associated reporting limit is estimated.

TABLE 6

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE RESULTS
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
APRIL 2013

Parameter	*Analyte*	*LCS Date*	*LCS (percent)*	*Control Limits (percent)*	*Associated Sample ID*	*Qualified Results*	*Units*
VOCs	1,2,4-Trimethylbenzene	5/2/13	151	64-131	IA-042513-RB-11	0.60 J	$\mu g/m^3$
					OA-042513-RB-11	0.42 J	$\mu g/m^3$

Notes:
J Estimated concentration.
LCS Laboratory control sample.

CONESTOGA-ROVERS & ASSOCIATES

2055 Niagara Falls Blvd., Suite #3
Niagara Falls, New York 14304
Telephone: (716) 297-6150 Fax: (716) 297-2265
www.CRAworld.com

MEMORANDUM

TO:	Ian Richardson	REF. NO.:	7843DM
FROM:	Susan Scrocchi/bjw/16 ECS	DATE:	August 6, 2013
C.C.:	John Buyers; Rick Bieber		E-Mail and Hard Copy if Requested

RE: Data Quality Assessment and Validation
Vapor Investigation
Occidental Chemical Corporation
Tacoma, Washington
June - July 2013

INTRODUCTION

The following details a quality assessment and validation of the analytical data resulting from the June and July 2013, vapor investigation performed in and beneath various buildings on the Port of Tacoma (POT) Property located adjacent to the property at 605 Alexander Avenue owned by OCC (OCC Property) in Tacoma, Washington. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at ALS Laboratories in Simi Valley, California in accordance with the methodologies presented in Table 2. Analytical results summaries are presented in Table 3A and 3B.

The quality assurance/quality control (QA/QC) criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 2 and the documents entitled:

i) "Quality Assurance Project Plan, Vapor Investigation", Revision 1, December 2012

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review", EPA 540-R-08-01, June 2008

These guidelines are collectively referred to as "Guidelines" in this memorandum.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. The data quality assessment and validation presented in the following subsections were performed based on the sample results, supporting quality assurance/quality control (QA/QC) and all raw data provided.

SAMPLE PRESERVATION AND HOLDING TIMES

Sample holding time periods are summarized in the analytical methods. All sample analyses were performed within the specified holding times.

All samples were properly received and stored after collection.

GAS CHROMATOGRAPHY/MASS SPECTROMETER (GC/MS) – TUNING AND MASS CALIBRATION (INSTRUMENT PERFORMANCE CHECK) – ORGANIC ANALYSES

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each GC/MS instrument used for volatile organic compound (VOC) analyses was checked at the beginning of each 24-hour period using bromofluorobenzene (BFB). The resulting spectra must meet the criteria cited in the method before initiating an analysis sequence.

Instrument performance check data were reviewed. These tuning compounds were analyzed at the required frequency throughout the VOC analyses. The results of all instrument performance checks were within the acceptance criteria, indicating acceptable instrument performance.

INITIAL CALIBRATION – ORGANIC ANALYSES

Initial calibration data are used to demonstrate that each instrument is capable of generating acceptable quantitative data. A five point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each over a specific concentration range.

Initial calibration criteria for organic analyses are evaluated against the following criteria:

i) GC/MS (all compounds) – must meet a minimum mean relative response factor (RRF) of 0.05.

ii) GC/MS (all compounds) – the percent relative standard deviation (%RSD) values must not exceed 30.0 percent or a minimum coefficient of determination of 0.99 if quadratic equation calibration curves are used.

Calibration standards were analyzed at the required frequency and the results met the above criteria for sensitivity and linearity.

CONTINUING CALIBRATION – ORGANIC ANALYSES

To ensure that each instrument was capable of producing acceptable quantitative data over the analysis period, continuing calibration standards must be analyzed every 24 hours. The following criteria are employed to evaluate the continuing calibration data:

i) GC/MS (all compounds) – must meet a minimum mean RRF of 0.05.

ii) GC/MS (all compounds) – the percent difference between the mean initial calibration RRF and the continuing calibration RRF must not exceed 30 percent.

iii) GC/MS (compounds determined by quadratic curve) – the percent drift between the true value and the continuing calibration value must not exceed 30 percent.

Calibration standards were analyzed at the required frequency and the results met the above criteria for instrument sensitivity and linearity.

METHOD BLANK SAMPLES

Method blank samples are prepared from a purified sample matrix and are processed concurrently with investigative samples to assess the presence and the magnitude of sample contamination introduced during sample analysis. Method blank samples are analyzed at a minimum frequency of one per analytical batch and target analytes should be non-detect.

Method blanks were analyzed at the recommended frequency and the results were non-detect for all analytes of interest with the exception of toluene and benzene present at low concentrations. All associated sample results were significantly greater than the blank results and would not have been impacted.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES

To assess the long term accuracy and precision of the analytical methods on various matrices, MS/MSD percent recoveries and relative percent differences (RPDs) of the concentrations were determined. The organic MS/MSD percent recovery and RPD control limits are established by the laboratory.

MS/MSD analyses were not requested with this set of investigative samples.

LABORATORY CONTROL SAMPLE (LCS)

The LCS analysis serves as a monitor of the overall performance in all steps of the sample analysis and is analyzed with each sample batch. The LCS percent recoveries were evaluated against method and laboratory established control limits.

The LCS percent recoveries were all within the laboratory control limits indicating acceptable analytical accuracy. The LCS associated with method TO-17 were analyzed in duplicate. All recoveries were comparable indicating acceptable analytical precision.

INTERNAL STANDARD (IS) SUMMARIES – ORGANIC ANALYSES

To correct for variability in the GC/MS response and sensitivity, IS compounds are added to all samples. All results are calculated as a ratio of the compound and associated IS response. Overall instrument stability and performance for VOC analyses were monitored using IS peak area and retention time (RT) data. The IS peak areas and RTs of the samples are required to meet the following criteria:

i) IS area counts must not vary by more than ±40 percent from the associated continuing calibration standard IS area counts.

ii) The RT of the IS must not vary by more than plus or minus 30 seconds from the associated continuing calibration standard.

A review of the internal standard data showed that the IS area counts and retention time data were within the acceptance criteria for all samples with one exception. It appeared that internal standards were not added to sample OA-070113-JW-4. Based on the nature of the Radiello tubes, reanalysis is not possible. The results for this sample were estimated using the internal standard areas from the associated method blank analysis. All results for this sample were qualified as estimated (see Table 4).

TARGET COMPOUND IDENTIFICATION

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to identification criteria established by the methods. The organic compounds reported adhered to the specified identification criteria.

TARGET COMPOUND QUANTITATION

The reported quantitation results and limits were checked to ensure results reported were accurate. No discrepancies were found between the raw data and the sample results reported by the laboratory.

FIELD QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The field quality assurance/quality control consisted of three field duplicate sample sets.

Overall precision for the sampling event and laboratory procedures are monitored using the results of the field duplicate sample sets. The RPDs associated with the duplicate samples must be less than 20 percent. If the reported concentration in either the investigative sample or its duplicate is less than five times the RL, the evaluation criteria is one times the RL value.

The data demonstrated acceptable agreement for all results.

ANALYTE REPORTING

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the practical quantitation limit (PQL) but greater than the MDL were qualified as estimated (J) in Table 3A and 3B unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the PQL with two exceptions. Samples Sub-Slab Probe-4 and Sub-slab Probe-5 required large dilutions which elevated the PQLs. The non-detect values for these samples were reported to the MDL.

The laboratory met all QAPP required reporting limits for method TO-15 by analyzing the samples using full scan method and selective ion monitoring (SIM) mode. The laboratory was calibrated in SIM mode for all but three compounds of concern (1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene and styrene).

The laboratory's instrumentation requires pressurizing the cans prior to analysis. This results in a small dilution factor (usually 1.4-2.0) which increases the reporting limits for the individual samples. The reported non-detect results were selected from the SIM analysis in order to achieve the lowest reporting limit.

Some indoor and outdoor air results exceeded the calibration range. Due to the nature of the Radiello tubes, reanalysis at a dilution is not possible. All results which exceeded the calibration range were qualified as estimated (see Table 5).

OVERALL ASSESSMENT

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted herein.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

					Analysis/Parameters
Sample Identification	*Location*	*Collection Media*	*Collection Date (mm/dd/yyyy)*	*Collection Time (hr:min)*	*Selected Volatiles*
SS-062513-JW-7	Sub-Slab Probe-7	Suma canister	6/25/2013	13:05	X
SS-062513-JW-11	Sub-Slab Probe-11	Suma canister	6/25/2013	17:00	X
SS-062613-JW-12	Sub-Slab Probe-12	Suma canister	6/26/2013	13:53	X
SS-062613-JW-13	Sub-Slab Probe-13	Suma canister	6/26/2013	17:28	X
SS-062713-JW-2	Sub-Slab Probe-2	Suma canister	6/27/2013	12:36	X
SS-062713-JW-3	Sub-Slab Probe-3	Suma canister	6/27/2013	16:53	X
SS-062813-JW-4	Sub-Slab Probe-4	Suma canister	6/28/2013	11:48	X
SS-062813-JW-5	Sub-Slab Probe-5	Suma canister	6/28/2013	14:10	X
SS-062913-JW-1	Sub-Slab Probe-1	Suma canister	6/29/2013	14:15	X
IA-070113-JW-13	Indoor Air-13	Radiello tube	7/1/2013	15:05	X
IA-070113-JW-4	Indoor Air-4	Radiello tube	7/1/2013	16:20	X
IA-070113-JW-7	Indoor Air-7	Radiello tube	7/1/2013	15:25	X
IA-070113-JW-1	Indoor Air-13	Radiello tube	7/1/2013	15:55	X
IA-070113-JW-12	Indoor Air-12	Radiello tube	7/1/2013	15:05	X
IA-070113-JW-11	Indoor Air-11	Radiello tube	7/1/2013	15:05	X
OA-070113-JW-7	Outside Air-7	Radiello tube	7/1/2013	16:05	X
IA-070113-JW-8	Indoor Air-8	Radiello tube	7/1/2013	15:55	X
IA-070113-JW-2	Indoor Air-2	Radiello tube	7/1/2013	15:55	X
IA-070113-JW-5	Indoor Air-5	Radiello tube	7/1/2013	16:30	X
OA-070113-JW-4	Outside Air-4	Radiello tube	7/1/2013	16:20	X
OA-070113-JW-11	Outside Air-11	Radiello tube	7/1/2013	15:00	X
IA-070113-JW-26	Indoor Air-26	Radiello tube	7/1/2013	16:30	X
IA-070113-JW-23	Indoor Air-23	Radiello tube	7/1/2013	15:15	X
IA-070113-JW-21	Indoor Air-21	Radiello tube	7/1/2013	16:15	X
IA-070113-JW-24	Indoor Air-24	Radiello tube	7/1/2013	16:05	X

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

					Analysis/Parameters
Sample Identification	*Location*	*Collection Media*	*Collection Date (mm/dd/yyyy)*	*Collection Time (hr:min)*	*Selected Volatiles*
IA-070113-JW-27	Indoor Air-27	Radiello tube	7/1/2013	15:05	X
IA-070113-JW-25	Indoor Air-25	Radiello tube	7/1/2013	16:05	X
IA-070113-JW-3	Indoor Air-3	Radiello tube	7/1/2013	16:15	X
IA-070113-JW-28	Indoor Air-28	Radiello tube	7/1/2013	15:25	X
OA-070113-JW-1	Outside Air-4	Radiello tube	7/1/2013	16:00	X

TABLE 2

SUMMARY OF ANALYTICAL METHODS
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

Parameter	*Method*[1]
Selected Volatiles	TO-15/TO-15 SIM
Selected Volatiles	TO-17

Notes:

1 "Compendium of Methods of the Determination of Toxic Organic Compounds in Ambient Air", USEPA 600/4-84-041, April 1984 (with all subsequent revisions)

TABLE 3A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

	Sample Location:	*Indoor Air-1*	*Indoor Air-2*	*Indoor Air-3*	*Indoor Air-4*	*Indoor Air-5*	*Indoor Air-7*	*Indoor Air-8*
	Sample ID:	*IA-070113-JW-1*	*IA-070113-JW-2*	*IA-070113-JW-3*	*IA-070113-JW-4*	*IA-070113-JW-5*	*IA-070113-JW-7*	*IA-070113-JW-8*
	Sample Description:	*Building 592*	*Building 592*	*Building 596*	*Building 595*	*Building 595*	*Building 326*	*Building 326*
	Sample Type:	*Indoor Air*	*Indoor Air*	*Indoor Air*	*Indoor Air*	*Indoor Air*	*Indoor Air*	*Indoor Air*
	Sample Date:	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*
Volatile Organic Compounds	*Units*							
1,1,1-Trichloroethane	µg/m3	0.053	0.068	0.34	0.050 UJ	0.050 U	0.050 U	0.050 U
1,2,4-Trimethylbenzene	µg/m3	3.3	5.3	2.2	0.72 J	1.8	16	1.8
1,4-Dichlorobenzene	µg/m3	0.045 U	0.086	1.1	0.052 J	0.062	1.3	58 J
Benzene	µg/m3	1.6	1.7	1.3	0.55 J	0.56	0.65	0.64
Ethylbenzene	µg/m3	4.5	6.8	8.4	1.6 J	2.1	4.1	6.9
Hexachlorobutadiene	µg/m3	-	-	-	-	-	-	-
m&p-Xylenes	µg/m3	16	25	32 J	5.6 J	7.0	16	29
o-Xylene	µg/m3	5.5	8.7	12	2.2 J	2.7	5.6	9.5
Styrene	µg/m3	1.2	1.1	1.8	1.7 J	1.8	1.9	1.2
Tetrachloroethene	µg/m3	1.1	1.4	3.0	0.64 J	1.0	6.9	0.79
Toluene	µg/m3	21 J	29 J	20 J	3.5 J	5.2	3.9	3.1
Trichloroethene	µg/m3	1.5	1.9	2.9	0.27 J	0.40	3.1	0.30

TABLE 3A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

	Sample Location:	*Indoor Air-11*	*Indoor Air-12*	*Indoor Air-13*	*Indoor Air-21*	*Indoor Air-23*	*Indoor Air-24*	*Indoor Air-25*
	Sample ID:	*IA-070113-JW-11*	*IA-070113-JW-12*	*IA-070113-JW-13*	*IA-070113-JW-21*	*IA-070113-JW-23*	*IA-070113-JW-24*	*IA-070113-JW-25*
	Sample Description:	*Building 532*	*Building 532*	*Building 532*	*Building 596*			
	Sample Type:	*Indoor Air*	*Indoor Air*	*Indoor Air*	*Indoor Air*	*Indoor Air*	*Indoor Air*	*Indoor Air*
	Sample Date:	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*
Volatile Organic Compounds	*Units*							
1,1,1-Trichloroethane	µg/m3	0.050 U	0.050 U	0.050 U	0.65	0.050 U	0.050 U	0.050 U
1,2,4-Trimethylbenzene	µg/m3	1.9	1.6	1.6	4.4	2.9	4.8	4.2
1,4-Dichlorobenzene	µg/m3	0.69	2.2	2.2	6.5	87 J	0.074	0.070
Benzene	µg/m3	0.64	0.61	0.86	0.82	1.2	0.67	0.65
Ethylbenzene	µg/m3	14	22 J	27 J	9.9	30 J	5.0	4.8
Hexachlorobutadiene	µg/m3	-	-	-	-	-	-	-
m&p-Xylenes	µg/m3	61 J	89 J	100 J	37 J	100 J	19	18
o-Xylene	µg/m3	21 J	32 J	40 J	13	43 J	6.9	6.7
Styrene	µg/m3	2.0	0.93	1.2	2.2	1.3	1.0	1.0
Tetrachloroethene	µg/m3	0.37	0.24	0.19	13	0.43	1.1	1.9
Toluene	µg/m3	28 J	8.4	19 J	37 J	28 J	10	29 J
Trichloroethene	µg/m3	0.12	0.049	0.076	15 J	0.046	1.2	1.3

TABLE 3A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

Sample Location:		*Indoor Air-26*	*Indoor Air-27*	*Indoor Air-28*	*Outside Air-1*	*Outside Air-4*	*Outside Air-7*	*Outside Air-11*
Sample ID:		*IA-070113-JW-26*	*IA-070113-JW-27*	*IA-070113-JW-28*	*OA-070113-JW-1*	*OA-070113-JW-4*	*OA-070113-JW-7*	*OA-070113-JW-11*
Sample Description:					*Building 592*	*Building 595*	*Building 326*	*Building 532*
Sample Type:		*Indoor Air*	*Indoor Air*	*Indoor Air*	*Outside Air*	*Outside Air*	*Outside Air*	*Outside Air*
Sample Date:		*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*	*7/1/2013*
Volatile Organic Compounds	***Units***							
1,1,1-Trichloroethane	µg/m3	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
1,2,4-Trimethylbenzene	µg/m3	0.73	2.1	10	0.35	0.47	0.71	0.49
1,4-Dichlorobenzene	µg/m3	0.052	26 J	2.2	0.045 U	0.045 U	0.61	0.050
Benzene	µg/m3	0.55	0.78	0.64	0.60	0.70	0.48	0.58
Ethylbenzene	µg/m3	1.5	26 J	4.0	0.50	1.5	4.8	16 J
Hexachlorobutadiene	µg/m3	-	-	-	-	-	-	-
m&p-Xylenes	µg/m3	5.1	100 J	15	1.8	6.1	21	67 J
o-Xylene	µg/m3	2.0	40 J	5.0	0.66	0.86	6.8	23 J
Styrene	µg/m3	1.8	1.3	2.1	0.43	0.61	0.52	0.69
Tetrachloroethene	µg/m3	0.55	0.31	4.9	0.070	1.0	0.082	0.084
Toluene	µg/m3	16 J	11	4.0	1.4	2.0	1.7	1.7
Trichloroethene	µg/m3	0.30	0.037 U	2.0	0.48	0.24	0.037 U	0.037 U

Notes:

- \- Not analyzed.
- J Estimated concentration.
- U Not detected at the associated reporting limit.
- UJ Not detected; associated reporting limit is estimated.

TABLE 3B

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

	Sample Location:	*Sub-Slab Probe-1*	*Sub-Slab Probe-2*	*Sub-Slab Probe-3*	*Sub-Slab Probe-4*	*Sub-Slab Probe-5*
	Sample ID:	*SS-062913-JW-1*	*SS-062713-JW-2*	*SS-062713-JW-3*	*SS-062813-JW-4*	*SS-062813-JW-5*
	Sample Description:	*Building 592*	*Building 592*	*Building 596*	*Building 595*	*Building 595*
	Sample Type:					
	Sample Date:	*6/29/2013*	*6/27/2013*	*6/27/2013*	*6/28/2013*	*6/28/2013*
Volatile Organic Compounds	*Units*					
1,1,1-Trichloroethane	µg/m3	20	0.35	0.74	9.8	2.2 J
1,1,2,2-Tetrachloroethane	µg/m3	0.038 U	0.040 U	0.038 U	0.81 U	0.75 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.16 U	0.15 U	0.59 U	0.54 U
1,1-Dichloroethene	µg/m3	0.33	0.0078 J	0.015 J	0.53 U	0.49 U
1,2,4-Trichlorobenzene	µg/m3	0.038 U	0.040 U	0.038 U	3.3 U	3.0 U
1,2,4-Trimethylbenzene	µg/m3	0.38 J	0.79 U	0.76 U	4.7 U	4.3 U
1,3,5-Trimethylbenzene	µg/m3	0.76 U	0.79 U	0.76 U	4.7 U	4.3 U
1,4-Dichlorobenzene	µg/m3	0.13	0.040 U	0.046	2.1 U	1.9 U
Benzene	µg/m3	0.33	0.069 J	0.54	6.9 J	5.1 J
Carbon tetrachloride	µg/m3	0.29	0.31	0.31	0.50 U	0.46 U
Chloroform (Trichloromethane)	µg/m3	0.43	0.070 J	0.079 J	3.2 J	1.9 J
cis-1,2-Dichloroethene	µg/m3	0.018 J	0.040 U	0.038 U	1.7 U	1.6 U
Ethylbenzene	µg/m3	0.22	0.37	0.53	0.79 U	0.73 U
Hexachlorobutadiene	µg/m3	0.038 U	0.040 U	0.038 U	1.6 U	1.5 U
m&p-Xylenes	µg/m3	0.91	1.5	1.8	1.7 U	1.5 U
Methylene chloride	µg/m3	0.082 J	0.034 J	0.59	1.6 U	1.5 U
Naphthalene	µg/m3	0.43	0.32	0.32	3.1 U	2.9 U
o-Xylene	µg/m3	0.45	0.51	0.70	0.76 U	0.70 U
Styrene	µg/m3	0.32 J	0.79 U	0.55 J	4.7 U	4.3 U
Tetrachloroethene	µg/m3	24	25	35	7400	5400
Toluene	µg/m3	0.69	0.40	2.5	2.6 J	2.5 J
trans-1,2-Dichloroethene	µg/m3	0.038 U	0.040 U	0.038 U	1.9 U	1.7 U
Trichloroethene	µg/m3	0.13	0.40	0.15	2500	1800
Vinyl chloride	µg/m3	0.038 U	0.040 U	0.038 U	0.43 U	0.40 U

TABLE 3B

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

	Sample Location:	*Sub-Slab Probe-7*	*Sub-Slab Probe-11*	*Sub-Slab Probe-12*	*Sub-Slab Probe-13*
	Sample ID:	*SS-062513-JW-7*	*SS-062513-JW-11*	*SS-062613-JW-12*	*SS-062613-JW-13*
	Sample Description:	*Building 326*	*Building 532*	*Building 532*	*Building 532*
	Sample Type:				
	Sample Date:	*6/25/2013*	*6/25/2013*	*6/26/2013*	*6/26/2013*
Volatile Organic Compounds	*Units*				
1,1,1-Trichloroethane	µg/m3	1.6	0.66	4.3	23
1,1,2,2-Tetrachloroethane	µg/m3	0.037 J	0.038 U	0.035 U	0.036 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.15 U	0.14 U	0.15 U
1,1-Dichloroethene	µg/m3	0.019 J	0.028 J	0.057	0.29
1,2,4-Trichlorobenzene	µg/m3	0.039 U	0.058	0.062	0.036 U
1,2,4-Trimethylbenzene	µg/m3	0.77 U	0.76 U	0.69 U	0.73 U
1,3,5-Trimethylbenzene	µg/m3	0.77 U	0.76 U	0.69 U	0.73 U
1,4-Dichlorobenzene	µg/m3	0.063	0.10	0.12	0.066
Benzene	µg/m3	0.16	0.13	0.10 J	0.10 J
Carbon tetrachloride	µg/m3	0.14	0.79	0.10	0.062
Chloroform (Trichloromethane)	µg/m3	0.37	0.15 J	0.12 J	0.059 J
cis-1,2-Dichloroethene	µg/m3	0.039 U	0.060	0.051	0.036 U
Ethylbenzene	µg/m3	0.12 J	0.13 J	0.12 J	0.11 J
Hexachlorobutadiene	µg/m3	0.039 U	0.038 U	0.020 J	0.036 U
m&p-Xylenes	µg/m3	0.34	0.42	0.33	0.43
Methylene chloride	µg/m3	0.37	0.13 J	0.17	0.035 J
Naphthalene	µg/m3	0.33	0.31	0.18	0.30
o-Xylene	µg/m3	0.17	0.25	0.18	0.28
Styrene	µg/m3	0.30 J	0.43 J	0.69 U	0.73 U
Tetrachloroethene	µg/m3	15	5.0	30	27
Toluene	µg/m3	0.34	0.33	0.17	0.17
trans-1,2-Dichloroethene	µg/m3	0.020 J	0.063	0.053	0.036 U
Trichloroethene	µg/m3	14	0.45	0.30	27
Vinyl chloride	µg/m3	0.0051 J	0.018 J	0.017 J	0.036 U

Notes:

J Estimated concentration.

U Not detected at the associated reporting limit.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING INTERNAL STANDARD (IS) RECOVERIES
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

Parameter	*Sample ID*	*Internal Standard*	*IS Area Count (percent)*	*Control Limits (percent)*	*Analytes*	*Qualified Result*	*Units*
TO-17	IA-070113-JW-4	Chlorobenzene-d5	NA	50-200	Ethylbenzene	1.6 J	µg/m3
		1.4-Difluorobenzene	NA	50-200	Styrene	1.7 J	µg/m3
					1,4-Dichlorobenzene	0.052 J	µg/m3
					Toluene	3.5 J	µg/m3
					Tetrachloroethene	0.64 J	µg/m3
					Benzene	0.55 J	µg/m3
					1,1,1-Trichloroethane	0.050 UJ	µg/m3
					Trichloroethene	0.27 J	µg/m3
					o-Xylene	2.2 J	µg/m3
					1,2,4-Trimethylbenzene	0.72 J	µg/m3
					m&p-Xylenes	5.6 J	µg/m3

Notes:

IS Internal standard.
TO-17
NA Not applicable.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.

TABLE 5

QUALIFIED SAMPLE DATA DUE TO EXCEEDENCE OF CALIBRATION RANGE
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

Parameter	*Sample ID*	*Analyte*	*Qualified Result*	*Units*
TO-17	IA-070113-JW-1	Toluene	21 J	µg/m3
TO-17	IA-070113-JW-11	Toluene	28 J	µg/m3
		o-Xylene	21 J	µg/m3
		m&p-Xylenes	61 J	µg/m3
TO-17	IA-070113-JW-12	Ethylbenzene	22 J	µg/m3
		o-Xylene	32 J	µg/m3
		m&p-Xylenes	89 J	µg/m3
TO-17	IA-070113-JW-13	Ethylbenzene	27 J	µg/m3
		Toluene	19 J	µg/m3
		o-Xylene	40 J	µg/m3
		m&p-Xylenes	100 J	µg/m3
TO-17	IA-070113-JW-2	Toluene	29 J	µg/m3
TO-17	IA-070113-JW-21	Toluene	37 J	µg/m3
		Trichloroethene	15 J	µg/m3
		m&p-Xylenes	37 J	µg/m3
TO-17	IA-070113-JW-23	Ethylbenzene	30 J	µg/m3
		1,4-Dichlorobenzene	87 J	µg/m3
		Toluene	28 J	µg/m3
		o-Xylene	43 J	µg/m3
		m&p-Xylenes	100 J	µg/m3

TABLE 5

QUALIFIED SAMPLE DATA DUE TO EXCEEDENCE OF CALIBRATION RANGE
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
JUNE - JULY 2013

Parameter	*Sample ID*	*Analyte*	*Qualified Result*	*Units*
TO-17	IA-070113-JW-25	Toluene	29 J	µg/m3
TO-17	IA-070113-JW-26	Toluene	16 J	µg/m3
TO-17	IA-070113-JW-27	Ethylbenzene	26 J	µg/m3
		1,4-Dichlorobenzene	26 J	µg/m3
		o-Xylene	40 J	µg/m3
		m&p-Xylenes	100 J	µg/m3
TO-17	IA-070113-JW-3	Toluene	20 J	µg/m3
		m&p-Xylenes	32 J	µg/m3
TO-17	IA-070113-JW-8	1,4-Dichlorobenzene	58 J	µg/m3
TO-17	OA-070113-JW-11	Ethylbenzene	16 J	µg/m3
		o-Xylene	23 J	µg/m3
		m&p-Xylenes	67 J	µg/m3

Notes:

J Estimated concentration.
TO-17

CONESTOGA-ROVERS & ASSOCIATES

2055 Niagara Falls Blvd., Suite #3
Niagara Falls, New York 14304
Telephone: (716) 297-6150 Fax: (716) 297-2265
www.CRAworld.com

MEMORANDUM

TO:	Ian Richardson	REF. NO.:	7843DM
FROM:	Susan Scrocchi/bjw/22	DATE:	May 1, 2014
CC:	John Buyers, Rick Bieber		
RE:	**Analytical Results and Reduced Validation Vapor Investigation Occidental Chemical Corporation Tacoma, Washington March 2014**		

1.0 Introduction

The following document details a reduced validation of analytical data resulting from the March 2014, vapor investigation performed in and beneath various buildings on the Port of Tacoma (POT) Property located adjacent to the property at 605 Alexander Avenue owned by OCC (OCC Property) in Tacoma, Washington. Samples were submitted to ALS Laboratory, located in Simi Valley, California. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Tables 2A-2C. A summary of the analytical methodology is presented in Table 3.

Standard Conestoga--Rovers & Associates (CRA) report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, duplicate data, recovery data from surrogate spikes, laboratory control samples (LCS), internal standards, and field QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) "Quality Assurance Project Plan, Vapor Investigation", Revision 1, December 2012

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review", United States Environmental Protection Agency (USEPA) 540-R-08-01, June 2008

These items will subsequently be referred to as the "Guidelines" in this Memorandum.

2.0 Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were analyzed within the required holding times.

All samples were properly delivered and stored by the laboratory at the required temperature.

3.0 Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Most method blank results were non-detect, indicating that laboratory contamination was not a major factor for this investigation. Some compounds of interest were present at low concentrations. All associated sample results with similar concentrations were qualified as non-detect (see Table 4).

4.0 Surrogate Spike Recoveries - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compound (VOC) determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the above criteria.

5.0 Internal Standard (IS) Recoveries - Organics

To correct for variability in the GC/MS response and sensitivity, IS compounds are added to all samples. All results are calculated as a ratio of the compound and associated IS response. Overall instrument stability and performance for VOC analyses were monitored using IS peak area and retention time (RT) data. The IS peak areas and RTs of the samples are required to meet the following criteria:

i) IS area counts must not vary by more than ±40 percent from the associated continuing calibration standard IS area counts.
ii) The RT of the IS must not vary by more than plus or minus 30 seconds from the associated continuing calibration standard.

According to the laboratory narrative, some high IS recoveries were observed. All associated positive sample results were qualified as estimate (see Table 5). All non-detect results would not have been impacted by the implied high bias.

6.0 Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

7.0 Duplicate Sample Analyses – Organics

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory as specified in Table 1. The laboratory performed additional site-specific duplicate analyses internally. The duplicate results were evaluated per the laboratory control limits of ±20%. All duplicate analyses performed were acceptable, demonstrating acceptable analytical precision.

8.0 Field QA/QC Samples

The field QA/QC consisted of three field duplicate sample sets.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, three field duplicate samples were collected and submitted "blind" to the laboratory, as specified in Table 1. The relative percent differences (RPDs) associated with these duplicate samples must be less than 20 percent. If the reported concentration in either the investigative sample or its duplicate is less than five times the practical quantitation limit (PQL), the evaluation criteria is one times the PQL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision with some variability between results. The samples and their duplicates were qualified as estimated (see Table 6).

9.0 Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the PQL but greater than the MDL were qualified as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the PQL in Table 2.

Some indoor air results exceeded the calibration range. Due to the nature of the Radiello tubes, reanalysis at a dilution is not possible. All results which exceeded the calibration range were qualified as estimated (see Table 7)

10.0 Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Tables 2A - 2C are acceptable with the specific qualifications noted herein.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
MARCH 2014

						Analysis/Parameters		
Sample Identification	***Location***	***Matrix***	***Collection Media***	***Collection Date (mm/dd/yyyy)***	***Collection Time (hr:min)***	***TO-15***	***TO-17***	***Comments***
SS-031214-MD-04	Sub-Slab Probe-4	Sub-slab Air	Summa canister	3/12/2014	12:40	X		
SS-031214-MD-26	Sub-Slab Probe-5	Sub-slab Air	Summa canister	3/12/2014	15:29	X		
SS-031214-NH-05	Sub-Slab Probe-26	Sub-slab Air	Summa canister	3/12/2014	16:05	X		
IA-031214-MD-36	Indoor Air-36	Indoor Air	Summa canister	3/13/2014	8:30	X		
OA-031214-MD-04	Outside Air-4	Outside Air	Summa canister	3/13/2014	10:05	X		
IA-031214-MD-04	Indoor Air-4	Indoor Air	Summa canister	3/13/2014	10:05	X		
IA-031214-MD-26	Indoor Air-26	Indoor Air	Summa canister	3/13/2014	9:35	X		
IA-031214-NH-05	Indoor Air-5	Indoor Air	Summa canister	3/13/2014	9:35	X		
SS-031314-MD-29	Sub-Slab Probe-29	Sub-slab Air	Summa canister	3/13/2014	11:43	X		
SS-031314-NH-17	Sub-Slab Probe-17	Sub-slab Air	Summa canister	3/13/2014	12:00	X		
SS-031314-MD-19	Sub-Slab Probe-19	Sub-slab Air	Summa canister	3/13/2014	14:40	X		
SS-031314-NH-18	Sub-Slab Probe-18	Sub-slab Air	Summa canister	3/13/2014	15:22	X		
IA-031314-MD-29	Indoor Air-29	Indoor Air	Summa canister	3/14/2014	11:40	X		DUP
IA-031314-MD-19	Indoor Air-19	Indoor Air	Summa canister	3/14/2014	9:45	X		
OA-031314-MD-18	Outside Air-18	Outside Air	Summa canister	3/14/2014	10:20	X		
IA-031314-NH-17	Indoor Air-17	Indoor Air	Summa canister	3/14/2014	9:45	X		
IA-031314-NH-18	Indoor Air-18	Indoor Air	Summa canister	3/14/2014	9:45	X		
SS-031414-NH-35	Sub-Slab Probe-35	Sub-slab Air	Summa canister	3/14/2014	12:45	X		
SS-031414-MD-03	Sub-Slab Probe-3	Sub-slab Air	Summa canister	3/14/2014	12:30	X		
SS-031414-NH-30	Sub-Slab Probe-30	Sub-slab Air	Summa canister	3/14/2014	15:45	X		
OA-031414-RB-30	Outside Air-30	Outside Air	Summa canister	3/15/2014	10:25	X		
OA-031414-MD-03	Outside Air-3	Outside Air	Summa canister	3/15/2014	9:30	X		
IA-031414-NH-35	Indoor Air-35	Indoor Air	Summa canister	3/15/2014	9:28	X		
IA-031414-RB-31	Indoor Air-31	Indoor Air	Summa canister	3/15/2014	19:45	X		
IA-031414-RB-30	Indoor Air-30	Indoor Air	Summa canister	3/15/2014	11:45	X		
IA-031414-MD-03	Indoor Air-3	Indoor Air	Summa canister	3/15/2014	9:25	X		DUP
IA-031414-NH-21	Indoor Air-21	Indoor Air	Summa canister	3/15/2014	9:30	X		
SS-031714-MD-32	Sub-Slab Probe-32	Sub-slab Air	Summa canister	3/17/2014	19:08	X		
SS-031714-NH-01	Sub-Slab Probe-1	Sub-slab Air	Summa canister	3/17/2014	14:47	X		
SS-031714-NH-24	Sub-Slab Probe-24	Sub-slab Air	Summa canister	3/17/2014	17:53	X		

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
MARCH 2014

						Analysis/Parameters		
Sample Identification	***Location***	***Matrix***	***Collection Media***	***Collection Date (mm/dd/yyyy)***	***Collection Time (hr:min)***	***TO-15***	***TO-17***	***Comments***
OA-031814-RB-18p	Outside Air-18	Outside Air	Radiello tube	3/18/2014	14:50		X	
IA-031814-RB-19p	Indoor Air-19	Indoor Air	Radiello tube	3/18/2014	14:55		X	
OA-031814-RB-05p	Outside Air-5	Outside Air	Radiello tube	3/18/2014	15:15		X	
IA-031814-RB-05p	Indoor Air-5	Indoor Air	Radiello tube	3/18/2014	15:20		X	
OA-031814-RB-03p	Outside Air-3	Outside Air	Radiello tube	3/18/2014	16:00		X	
IA-031814-RB-02p	Indoor Air-2	Indoor Air	Radiello tube	3/18/2014	16:08		X	
OA-031814-RB-01p	Outside Air-1	Outside Air	Radiello tube	3/18/2014	16:20		X	
OA-031914-RB-06p	Outside Air-6	Outside Air	Radiello tube	3/19/2014	15:15		X	
IA-031914-RB-06p	Indoor Air-6	Indoor Air	Radiello tube	3/19/2014	15:15		X	
IA-031914-RB-FD3p	Indoor Air-6	Indoor Air	Radiello tube	3/19/2014	15:15		X	Field duplicate of IA-031914-RB-06P
OA-032114-RB-03Ap	Outside Air-3	Outside Air	Radiello tube	3/21/2014	9:00		X	
IA-032114-RB-21p	Indoor Air-21	Indoor Air	Radiello tube	3/21/2014	9:00		X	
SS-031714-MD-02	Sub-Slab Probe-2	Sub-slab Air	Summa canister	3/17/2014	15:55	X		
OA-031714-RB-01	Outside Air-1	Outside Air	Summa canister	3/18/2014	1:05	X		
SS-031814-MD-10	Sub-Slab Probe-10	Sub-slab Air	Summa canister	3/18/2014	12:20	X		
SS-031814-MD-37	Sub-Slab Probe-37	Sub-slab Air	Summa canister	3/18/2014	15:30	X		
SS-031814-NH-09	Sub-Slab Probe-9	Sub-slab Air	Summa canister	3/18/2014	13:05	X		
SS-031814-NH-06	Sub-Slab Probe-6	Sub-slab Air	Summa canister	3/18/2014	16:47	X		
IA-031714-NH-F001	Indoor Air-1	Indoor Air	Summa canister	3/18/2014	12:40	X		Field duplicate of IA-031714-RB-01
IA-031714-NH-25	Indoor Air-25	Indoor Air	Summa canister	3/18/2014	1:00	X		
IA-031714-RB-01	Indoor Air-1	Indoor Air	Summa canister	3/18/2014	12:40	X		
IA-031714-NH-24	Indoor Air-24	Indoor Air	Summa canister	3/18/2014	12:40	X		
IA-031714-NH-02	Indoor Air-2	Indoor Air	Summa canister	3/18/2014	1:00	X		
IA-031714-NH-34	Indoor Air-34	Indoor Air	Summa canister	3/18/2014	12:38	X		
IA-031714-NH-33	Indoor Air-33	Indoor Air	Summa canister	3/18/2014	1:00	X		
IA-031714-NH-32	Indoor Air-32	Indoor Air	Summa canister	3/18/2014	3:55	X		
IA-031714-RB-40B	Indoor Air-40B	Indoor Air	Summa canister	3/18/2014	5:00	X		
OA-031814-NH-06	Outside Air-6	Outside Air	Summa canister	3/19/2014	10:42	X		DUP

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
MARCH 2014

						Analysis/Parameters		
Sample Identification	***Location***	***Matrix***	***Collection Media***	***Collection Date (mm/dd/yyyy)***	***Collection Time (hr:min)***	***TO-15***	***TO-17***	***Comments***
OA-031814-NH-FD2	Outside Air-6	Outside Air	Summa canister	3/19/2014	10:42	X		Field duplicate of OA-031814-NH-06
IA-031814-NH-38	Indoor Air-38	Indoor Air	Summa canister	3/19/2014	7:15	X		
IA-031814-NH-20	Indoor Air-20	Indoor Air	Summa canister	3/19/2014	10:00	X		
IA-031814-NH-09	Indoor Air-9	Indoor Air	Summa canister	3/19/2014	12:30	X		
IA-031814-NH-39	Indoor Air-39	Indoor Air	Summa canister	3/19/2014	10:00	X		
IA-031814-NH-06	Indoor Air-6	Indoor Air	Summa canister	3/19/2014	10:00	X		
IA-031814-NH-10	Indoor Air-10	Indoor Air	Summa canister	3/19/2014	10:00	X		
IA-031814-NH-37	Indoor Air-37	Indoor Air	Summa canister	3/19/2014	9:45	X		

Notes:

DUP - Laboratory duplicate
TO-15/TO-17 - "Compendium of Methods of the Determination of Toxic Organic Compounds in Ambient Air", USEPA 600/4-84-041, April 1984 (with all subsequent revisions)

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-1*	*Indoor Air-1*	*Indoor Air-2*	*Indoor Air-3*	*Indoor Air-4*
	Sample ID:	*IA-031714-RB-01*	*IA-031714-NH-F001*	*IA-031714-NH-02*	*IA-031414-MD-03*	*IA-031214-MD-04*
	Sample Date:	*3/18/2014*	*3/18/2014 (Duplicate)*	*3/18/2014*	*3/15/2014*	*3/13/2014*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/m3	0.070	0.072	0.058	0.65	0.023 J
1,1,2,2-Tetrachloroethane	µg/m3	0.040 U	0.039 U	0.039 U	0.038 U	0.030 U
1,1,2-Trichloroethane	µg/m3	0.16 U	0.16 U	0.15 U	0.15 U	0.12 U
1,1-Dichloroethene	µg/m3	0.040 U	0.039 U	0.039 U	0.038 U	0.030 U
1,2,4-Trichlorobenzene	µg/m3	0.040 U	0.039 U	0.039 U	0.038 U	0.030 U
1,2,4-Trimethylbenzene	µg/m3	1.6	1.4	2.3	1.2	0.83
1,3,5-Trimethylbenzene	µg/m3	0.54 J	0.40 J	0.76	0.37	0.24
1,4-Dichlorobenzene	µg/m3	0.093	0.093	0.030 J	0.34	0.034
Benzene	µg/m3	0.85	0.82	1.1	1.4	1.0
Carbon tetrachloride	µg/m3	0.33 J	0.46 J	0.45	0.47	0.42
Chloroform (Trichloromethane)	µg/m3	0.11 J	0.11 J	0.22	0.13 J	0.10 J
cis-1,2-Dichloroethene	µg/m3	0.15	0.18	0.14	0.051	0.042
Ethylbenzene	µg/m3	2.4	2.2	3.1	4.8	1.1
Hexachlorobutadiene	µg/m3	0.040 U	0.039 U	0.039 U	0.038 U	0.030 U
m&p-Xylenes	µg/m3	8.5	7.5	11	18	4.0
Methylene chloride	µg/m3	0.78	0.71	0.81	11	2.1
Naphthalene	µg/m3	0.39 J	0.53 J	0.48	0.70	0.41
o-Xylene	µg/m3	2.7	2.4	3.6	5.6	1.4
Styrene	µg/m3	0.35	0.28	0.26	0.55	0.38
Tetrachloroethene	µg/m3	26	23	55	1.2	0.57
Toluene	µg/m3	7.8	7.6	11	9.5	6.3

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-1*	*Indoor Air-1*	*Indoor Air-2*	*Indoor Air-3*	*Indoor Air-4*
	Sample ID:	*IA-031714-RB-01*	*IA-031714-NH-F001*	*IA-031714-NH-02*	*IA-031414-MD-03*	*IA-031214-MD-04*
	Sample Date:	*3/18/2014*	*3/18/2014 (Duplicate)*	*3/18/2014*	*3/15/2014*	*3/13/2014*
Parameters	***Units***					
Volatile Organic Compounds (Continued)						
trans-1,2-Dichloroethene	µg/m3	0.027 J	0.026 J	0.034 J	0.053	0.030 U
Trichloroethene	µg/m3	3.7	3.4	8.3	2.8	0.18
Vinyl chloride	µg/m3	0.18	0.17	0.16	0.021 J	0.017 J

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-5*	*Indoor Air-6*	*Indoor Air-9*	*Indoor Air-10*	*Indoor Air-17*	*Indoor Air-18*
	Sample ID:	*IA-031214-NH-05*	*IA-031814-NH-06*	*IA-031814-NH-09*	*IA-031814-NH-10*	*IA-031314-NH-17*	*IA-031314-NH-18*
	Sample Date:	*3/13/2014*	*3/19/2014*	*3/19/2014*	*3/19/2014*	*3/14/2014*	*3/14/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.026 J	0.023 J	0.022 J	0.021 J	0.064	0.028 J
1,1,2,2-Tetrachloroethane	µg/m3	0.036 U	0.035 U	0.035 U	0.037 U	0.035 U	0.036 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U
1,1-Dichloroethene	µg/m3	0.036 U	0.035 U	0.035 U	0.037 U	0.035 U	0.036 U
1,2,4-Trichlorobenzene	µg/m3	0.036 U	0.035 U	0.035 U	0.037 U	0.035 U	0.067
1,2,4-Trimethylbenzene	µg/m3	0.96	86	70	9.4	1.1	0.72
1,3,5-Trimethylbenzene	µg/m3	0.28	28	20	2.5	0.35	0.21
1,4-Dichlorobenzene	µg/m3	0.031 J	0.026 J	0.021 J	0.047	0.061	0.059
Benzene	µg/m3	1.2	1.0	1.1	1.3	1.1	0.87
Carbon tetrachloride	µg/m3	0.47	0.46	0.47	0.46	0.47	0.43
Chloroform (Trichloromethane)	µg/m3	0.11 J	0.085 J	0.082 J	0.082 J	0.10 J	0.10 J
cis-1,2-Dichloroethene	µg/m3	0.056	0.012 J	0.010 J	0.022 J	0.033 J	0.040
Ethylbenzene	µg/m3	1.5	6.1	12	5.3	1.2	1.0
Hexachlorobutadiene	µg/m3	0.036 U	0.035 U	0.035 U	0.037 U	0.035 U	0.036 U
m&p-Xylenes	µg/m3	4.9	19	41	18	4.3	3.9
Methylene chloride	µg/m3	0.57	0.33	0.42	0.49	0.50	0.41
Naphthalene	µg/m3	0.11 J	0.56	0.94	0.34	0.35	0.28
o-Xylene	µg/m3	1.7	9.5	20	5.5	1.5	1.3
Styrene	µg/m3	0.43	20	31	1.6	0.47	0.40
Tetrachloroethene	µg/m3	1.1	0.24	0.18	0.32	0.19	0.29
Toluene	µg/m3	6.6	3.3	3.4	4.7	4.8	2.9

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-5*	*Indoor Air-6*	*Indoor Air-9*	*Indoor Air-10*	*Indoor Air-17*	*Indoor Air-18*
	Sample ID:	*IA-031214-NH-05*	*IA-031814-NH-06*	*IA-031814-NH-09*	*IA-031814-NH-10*	*IA-031314-NH-17*	*IA-031314-NH-18*
	Sample Date:	*3/13/2014*	*3/19/2014*	*3/19/2014*	*3/19/2014*	*3/14/2014*	*3/14/2014*
Parameters	***Units***						
Volatile Organic Compounds (Continued)							
trans-1,2-Dichloroethene	µg/m3	0.0093 J	0.035 U	0.035 U	0.037 U	0.035 U	0.036 U
Trichloroethene	µg/m3	0.24	0.087	0.066	0.14	0.076	0.099
Vinyl chloride	µg/m3	0.026 J	0.011 J	0.035 U	0.049	0.049	0.026 J

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-19*	*Indoor Air-20*	*Indoor Air-21*	*Indoor Air-24*	*Indoor Air-25*
	Sample ID:	*IA-031314-MD-19*	*IA-031814-NH-20*	*IA-031414-NH-21*	*IA-031714-NH-24*	*IA-031714-NH-25*
	Sample Date:	*3/14/2014*	*3/19/2014*	*3/15/2014*	*3/18/2014*	*3/18/2014*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/m3	0.067	0.021 J	0.79	0.035	0.058
1,1,2,2-Tetrachloroethane	µg/m3	0.038 U	0.041 U	0.037 U	0.035 U	0.038 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.16 U	0.15 U	0.14 U	0.15 U
1,1-Dichloroethene	µg/m3	0.038 U	0.041 U	0.010 J	0.035 U	0.038 U
1,2,4-Trichlorobenzene	µg/m3	0.038 U	0.041 U	0.037 U	0.015 J	0.038 U
1,2,4-Trimethylbenzene	µg/m3	0.51	12	1.2	1.2	0.90
1,3,5-Trimethylbenzene	µg/m3	0.14 J	3.4	0.35	0.39	0.31
1,4-Dichlorobenzene	µg/m3	0.089	0.046	0.73	0.028 J	0.026 J
Benzene	µg/m3	0.80	1.3	1.3	0.87	0.83
Carbon tetrachloride	µg/m3	0.48	0.47	0.46	0.42	0.47
Chloroform (Trichloromethane)	µg/m3	0.094 J	0.090 J	0.085 J	0.13 J	0.11 J
cis-1,2-Dichloroethene	µg/m3	0.040	0.040 J	0.046	0.16	0.21
Ethylbenzene	µg/m3	0.82	3.0	4.9	2.3	1.7
Hexachlorobutadiene	µg/m3	0.038 U	0.041 U	0.037 U	0.035 U	0.038 U
m&p-Xylenes	µg/m3	3.0	9.8	19	8.1	6.0
Methylene chloride	µg/m3	0.36	0.34	26	0.77	2.2
Naphthalene	µg/m3	0.17	1.7	0.71	0.31	0.76
o-Xylene	µg/m3	1.0	3.7	5.4	2.5	2.0
Styrene	µg/m3	0.24	3.2	0.48	0.26	0.37
Tetrachloroethene	µg/m3	0.20	0.32	2.6	27	55
Toluene	µg/m3	2.5	4.5	13	6.6	6.6

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-19*	*Indoor Air-20*	*Indoor Air-21*	*Indoor Air-24*	*Indoor Air-25*
	Sample ID:	*IA-031314-MD-19*	*IA-031814-NH-20*	*IA-031414-NH-21*	*IA-031714-NH-24*	*IA-031714-NH-25*
	Sample Date:	*3/14/2014*	*3/19/2014*	*3/15/2014*	*3/18/2014*	*3/18/2014*
Parameters	***Units***					
Volatile Organic Compounds (Continued)						
trans-1,2-Dichloroethene	µg/m3	0.011 J	0.041 U	0.13	0.043	0.029 J
Trichloroethene	µg/m3	0.13	0.14	7.1	0.56	1.8
Vinyl chloride	µg/m3	0.038	0.012 J	0.018 J	0.20	0.25

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-26*	*Indoor Air-29*	*Indoor Air-30*	*Indoor Air-31*	*Indoor Air-32*	*Indoor Air-33*
	Sample ID:	*IA-031214-MD-26*	*IA-031314-MD-29*	*IA-031414-RB-30*	*IA-031414-RB-31*	*IA-031714-NH-32*	*IA-031714-NH-33*
	Sample Date:	*3/13/2014*	*3/14/2014*	*3/15/2014*	*3/15/2014*	*3/18/2014*	*3/18/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.026 J	0.047	0.058	0.080	0.024 J	0.030 J
1,1,2,2-Tetrachloroethane	µg/m3	0.036 U	0.037 U	0.037 U	0.042 U	0.039 U	0.041
1,1,2-Trichloroethane	µg/m3	0.14 U	0.15 U	0.15 U	0.17 U	0.15 U	0.15 U
1,1-Dichloroethene	µg/m3	0.036 U	0.037 U	0.037 U	0.042 U	0.039 U	0.037 U
1,2,4-Trichlorobenzene	µg/m3	0.036 U	0.020 J	0.037 U	0.042 U	0.039 U	0.037 U
1,2,4-Trimethylbenzene	µg/m3	1.2	0.82	1.0	0.98	0.93	1.1
1,3,5-Trimethylbenzene	µg/m3	0.41	0.25	0.28	0.27	0.32	0.38
1,4-Dichlorobenzene	µg/m3	0.12	0.054	0.024 J	0.025 J	0.028 J	0.020 J
Benzene	µg/m3	1.3	0.96	1.2	1.1	0.76	0.83
Carbon tetrachloride	µg/m3	0.46	0.47	0.42	0.43	0.40	0.44
Chloroform (Trichloromethane)	µg/m3	0.12 J	0.098 J	0.096 J	0.10 J	0.082 J	0.093 J
cis-1,2-Dichloroethene	µg/m3	0.054	0.030 J	0.079	0.080	0.17	0.17
Ethylbenzene	µg/m3	1.5	1.1	1.8	1.8	5.2	1.9
Hexachlorobutadiene	µg/m3	0.036 U	0.037 U	0.037 U	0.042 U	0.039 U	0.037 U
m&p-Xylenes	µg/m3	5.5	4.1	7.4	6.7	22	6.4
Methylene chloride	µg/m3	0.51	0.60	0.32	0.60	0.53	0.81
Naphthalene	µg/m3	0.19	0.32	0.90	0.29	0.28	0.39
o-Xylene	µg/m3	1.8	1.4	2.1	2.0	6.3	2.0
Styrene	µg/m3	0.65	0.39	0.22	0.30	0.99	0.24
Tetrachloroethene	µg/m3	0.65	0.55	0.16	0.32	17	23
Toluene	µg/m3	6.3	4.1	4.2	4.4	4.6	7.7

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-26*	*Indoor Air-29*	*Indoor Air-30*	*Indoor Air-31*	*Indoor Air-32*	*Indoor Air-33*
	Sample ID:	*IA-031214-MD-26*	*IA-031314-MD-29*	*IA-031414-RB-30*	*IA-031414-RB-31*	*IA-031714-NH-32*	*IA-031714-NH-33*
	Sample Date:	*3/13/2014*	*3/14/2014*	*3/15/2014*	*3/15/2014*	*3/18/2014*	*3/18/2014*
Parameters	***Units***						
Volatile Organic Compounds (Continued)							
trans-1,2-Dichloroethene	µg/m3	0.036 U	0.037 U	0.011 J	0.013 J	0.018 J	0.028 J
Trichloroethene	µg/m3	0.21	0.30	2.6	2.9	0.38	0.88
Vinyl chloride	µg/m3	0.021 J	0.042	0.040	0.042	0.16	0.20

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-34*	*Indoor Air-35*	*Indoor Air-36*	*Indoor Air-37*	*Indoor Air-38*	*Indoor Air-39*
	Sample ID:	*IA-031714-NH-34*	*IA-031414-NH-35*	*IA-031214-MD-36*	*IA-031814-NH-37*	*IA-031814-NH-38*	*IA-031814-NH-39*
	Sample Date:	*3/18/2014*	*3/15/2014*	*3/13/2014*	*3/19/2014*	*3/19/2014*	*3/19/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.045	0.097	0.026 J	0.021 J	0.14 U	0.021 J
1,1,2,2-Tetrachloroethane	µg/m3	0.034 U	0.039 U	0.035 U	0.038 U	0.14 U	0.039 U
1,1,2-Trichloroethane	µg/m3	0.13 U	0.16 U	0.14 U	0.15 U	0.57 U	0.16 U
1,1-Dichloroethene	µg/m3	0.034 U	0.039 U	0.035 U	0.038 U	0.14 U	0.039 U
1,2,4-Trichlorobenzene	µg/m3	0.034 U	0.039 U	0.035 U	0.038 U	0.14 U	0.039 U
1,2,4-Trimethylbenzene	µg/m3	1.3	0.47	1.0	340	730	7.0
1,3,5-Trimethylbenzene	µg/m3	0.42	0.13 J	0.32	120	340	2.4
1,4-Dichlorobenzene	µg/m3	0.020 J	0.052	0.038	0.026 J	0.14 U	0.017 J
Benzene	µg/m3	1.1	0.81	1.0	1.2	1.3	0.95
Carbon tetrachloride	µg/m3	0.43	0.46	0.47	0.46	0.17	0.39
Chloroform (Trichloromethane)	µg/m3	0.11 J	0.083 J	0.11 J	0.085 J	0.083 J	0.081 J
cis-1,2-Dichloroethene	µg/m3	0.21	0.042	0.055	0.011 J	0.14 U	0.017 J
Ethylbenzene	µg/m3	1.8	5.5	1.5	21	36	2.9
Hexachlorobutadiene	µg/m3	0.034 U	0.039 U	0.035 U	0.038 U	0.14 U	0.039 U
m&p-Xylenes	µg/m3	6.7	21	5.2	71	150	11
Methylene chloride	µg/m3	1.0	2.6	0.46	0.39	0.57 U	0.39
Naphthalene	µg/m3	0.24	0.24	0.19	3.8	19	0.24
o-Xylene	µg/m3	2.2	6.1	1.7	44	90	3.5
Styrene	µg/m3	0.22	0.17	0.62	220	1400	1.6
Tetrachloroethene	µg/m3	38	0.55	2.6	0.19	0.35	0.20
Toluene	µg/m3	6.6	3.4	6.3	6.4	16	3.4

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-34*	*Indoor Air-35*	*Indoor Air-36*	*Indoor Air-37*	*Indoor Air-38*	*Indoor Air-39*
	Sample ID:	*IA-031714-NH-34*	*IA-031414-NH-35*	*IA-031214-MD-36*	*IA-031814-NH-37*	*IA-031814-NH-38*	*IA-031814-NH-39*
	Sample Date:	*3/18/2014*	*3/15/2014*	*3/13/2014*	*3/19/2014*	*3/19/2014*	*3/19/2014*
Parameters	***Units***						
Volatile Organic Compounds (Continued)							
trans-1,2-Dichloroethene	µg/m3	0.031 J	0.029 J	0.0090 J	0.038 U	0.14 U	0.039 U
Trichloroethene	µg/m3	0.85	1.5	0.52	0.059	0.077 J	0.074
Vinyl chloride	µg/m3	0.27	0.019 J	0.024 J	0.011 J	0.14 U	0.019 J

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-40B*	*Outside Air-1*	*Outside Air-3*	*Outside Air-4*	*Outside Air-6*
	Sample ID:	*IA-031714-RB-40B*	*OA-031714-RB-01*	*OA-031414-MD-03*	*OA-031214-MD-04*	*OA-031814-NH-06*
	Sample Date:	*3/18/2014*	*3/18/2014*	*3/15/2014*	*3/13/2014*	*3/19/2014*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/m3	0.031 J	0.021 J	0.021 J	0.028 J	0.020 J
1,1,2,2-Tetrachloroethane	µg/m3	0.037 U	0.039 U	0.038 U	0.038 U	0.039 J
1,1,2-Trichloroethane	µg/m3	0.15 U	0.16 U	0.15 U	0.15 U	0.17 U
1,1-Dichloroethene	µg/m3	0.037 U	0.039 U	0.038 U	0.038 U	0.041 U
1,2,4-Trichlorobenzene	µg/m3	0.037 U	0.039 U	0.038 U	0.038 U	0.041 U
1,2,4-Trimethylbenzene	µg/m3	1.5	0.29	0.32	0.43	5.1
1,3,5-Trimethylbenzene	µg/m3	0.51	0.085 J	0.10 J	0.13 J	1.7 J
1,4-Dichlorobenzene	µg/m3	0.031 J	0.014 J	0.026 J	1.2	0.034 J
Benzene	µg/m3	0.88	0.65	0.67	1.2	0.66
Carbon tetrachloride	µg/m3	0.40	0.46	0.43	0.36	0.47
Chloroform (Trichloromethane)	µg/m3	0.11 J	0.080 J	0.086 J	0.094 J	0.12 J
cis-1,2-Dichloroethene	µg/m3	0.10	0.21	0.055	0.057	0.057
Ethylbenzene	µg/m3	6.5	0.49	4.2	0.91	1.0
Hexachlorobutadiene	µg/m3	0.037 U	0.039 U	0.038 U	0.020 J	0.041 U
m&p-Xylenes	µg/m3	26	1.8	17	3.1	3.5
Methylene chloride	µg/m3	0.77	0.44	0.39	0.56	0.38
Naphthalene	µg/m3	0.31	0.081 J	0.15 J	0.19	0.13 J
o-Xylene	µg/m3	7.7	0.59	4.9	0.90	1.3
Styrene	µg/m3	0.50	0.092 J	0.23	0.33	1.7
Tetrachloroethene	µg/m3	25	0.41	0.18	2.0	0.42
Toluene	µg/m3	9.2	1.7	2.0	2.9	1.9

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-40B*	*Outside Air-1*	*Outside Air-3*	*Outside Air-4*	*Outside Air-6*
	Sample ID:	*IA-031714-RB-40B*	*OA-031714-RB-01*	*OA-031414-MD-03*	*OA-031214-MD-04*	*OA-031814-NH-06*
	Sample Date:	*3/18/2014*	*3/18/2014*	*3/15/2014*	*3/13/2014*	*3/19/2014*
Parameters	***Units***					
Volatile Organic Compounds (Continued)						
trans-1,2-Dichloroethene	µg/m3	0.021 J	0.019 J	0.038 U	0.0097 J	0.041 U
Trichloroethene	µg/m3	0.78	0.25	0.20	0.30	0.80
Vinyl chloride	µg/m3	0.12	0.29	0.025 J	0.024 J	0.041 U

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Outside Air-6*	*Outside Air-18*	*Outside Air-30*	*Sub-Slab Probe-1*
	Sample ID:	*OA-031814-NH-FD2*	*OA-031314-MD-18*	*OA-031414-RB-30*	*SS-031714-NH-01*
	Sample Date:	*3/19/2014 (Duplicate)*	*3/14/2014*	*3/15/2014*	*3/17/2014*
Parameters	***Units***				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/m3	0.021 J	0.021 J	0.022 J	16
1,1,2,2-Tetrachloroethane	µg/m3	0.039 U	0.038 U	0.036 U	0.037 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.15 U	0.14 U	0.15 U
1,1-Dichloroethene	µg/m3	0.039 U	0.038 U	0.036 U	0.17
1,2,4-Trichlorobenzene	µg/m3	0.039 U	0.038 U	0.036 U	0.037 U
1,2,4-Trimethylbenzene	µg/m3	6.0	0.22	0.27	0.081 J
1,3,5-Trimethylbenzene	µg/m3	2.1 J	0.062 J	0.087 J	0.025 J
1,4-Dichlorobenzene	µg/m3	0.025 J	0.023 J	0.023 J	0.029 J
Benzene	µg/m3	0.68	0.62	0.62	0.16
Carbon tetrachloride	µg/m3	0.47	0.48	0.45	0.25
Chloroform (Trichloromethane)	µg/m3	0.10 J	0.082 J	0.085 J	0.39
cis-1,2-Dichloroethene	µg/m3	0.037 J	0.027 J	0.098	0.037 U
Ethylbenzene	µg/m3	1.1	0.74	1.6	0.11 J
Hexachlorobutadiene	µg/m3	0.039 U	0.038 U	0.036 U	0.037 U
m&p-Xylenes	µg/m3	4.1	2.8	6.5	0.34
Methylene chloride	µg/m3	0.34	0.40	0.31	0.15 U
Naphthalene	µg/m3	0.19	0.10 J	0.14 J	0.17
o-Xylene	µg/m3	1.5	0.93	1.8	0.11 J
Styrene	µg/m3	1.9	0.17	0.16	0.14 J
Tetrachloroethene	µg/m3	0.37	0.18	0.13	18
Toluene	µg/m3	1.8	3.1	2.1	0.37

TABLE 2A

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Outside Air-6*	*Outside Air-18*	*Outside Air-30*	*Sub-Slab Probe-1*
	Sample ID:	*OA-031814-NH-FD2*	*OA-031314-MD-18*	*OA-031414-RB-30*	*SS-031714-NH-01*
	Sample Date:	*3/19/2014 (Duplicate)*	*3/14/2014*	*3/15/2014*	*3/17/2014*
Parameters	***Units***				
Volatile Organic Compounds (Continued)					
trans-1,2-Dichloroethene	µg/m3	0.039 U	0.038 U	0.012 J	0.037 U
Trichloroethene	µg/m3	0.51	0.073	0.17	0.064
Vinyl chloride	µg/m3	0.039 U	0.012 J	0.044	0.037 U

Notes:

J - Estimated Concentration
U - Not detected at the associated reporting limit.

TABLE 2B

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-2*	*Indoor Air-5*	*Indoor Air-6*	*Indoor Air-6*	*Indoor Air-19*	*Indoor Air-21*
	Sample ID:	*IA-031814-RB-02p*	*IA-031814-RB-05p*	*IA-031914-RB-06p*	*IA-031914-RB-FD3p*	*IA-031814-RB-19p*	*IA-032114-RB-21p*
	Sample Date:	*3/18/2014*	*3/18/2014*	*3/19/2014*	*3/19/2014 (Duplicate)*	*3/18/2014*	*3/21/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.034	0.015	0.020	0.019 J	0.049	1.0 J
1,2,4-Trimethylbenzene	µg/m3	0.97 J	0.50 J	8.5 J	8.3 J	0.27	1.1 J
1,4-Dichlorobenzene	µg/m3	0.030 J	0.036 J	0.037 J	0.034 J	0.093	1.4 J
Benzene	µg/m3	0.92	0.71	1.0	0.97 J	0.64	0.93 J
Ethylbenzene	µg/m3	2.6 J	2.4 J	5.6 J	5.4 J	1.0	5.4 J
m&p-Xylenes	µg/m3	7.8 J	8.3 J	14 J	14 J	3.8	13 J
o-Xylene	µg/m3	2.6 J	2.5 J	6.9 J	6.7 J	1.2	7.1 J
Styrene	µg/m3	0.23 J	0.39 J	25 J	24 J	0.15	0.40 J
Tetrachloroethene	µg/m3	21 J	1.5 J	0.29 J	0.28 J	0.16	2.1 J
Toluene	µg/m3	8.5 J	4.6 J	5.2 J	5.0 J	2.2	8.3 J
Trichloroethene	µg/m3	2.2	0.27	0.031	0.030 J	0.095	4.8 J

TABLE 2B

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	***Outside Air-1***	***Outside Air-3***	***Outside Air-3***	***Outside Air-5***	***Outside Air-6***	***Outside Air-18***
	Sample ID:	***OA-031814-RB-01p***	***OA-031814-RB-03p***	***OA-032114-RB-03Ap***	***OA-031814-RB-05p***	***OA-031914-RB-06p***	***OA-031814-RB-18p***
	Sample Date:	***3/18/2014***	***3/18/2014***	***3/21/2014***	***3/18/2014***	***3/19/2014***	***3/18/2014***
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.0093 U	0.020	0.026	0.013	0.022	0.027
1,2,4-Trimethylbenzene	µg/m3	0.30	0.17	0.15	0.11	0.44	0.16
1,4-Dichlorobenzene	µg/m3	0.038	0.026	0.044	0.014	0.038	0.030
Benzene	µg/m3	0.42	0.72	0.59	0.77	0.62	0.75
Ethylbenzene	µg/m3	1.4	1.4	1.8	1.5	1.1	1.1
m&p-Xylenes	µg/m3	5.5	5.1	6.5	5.2	4.1	4.0
o-Xylene	µg/m3	1.7	1.6	2.0	1.4	1.2	1.2
Styrene	µg/m3	0.17	0.19	0.23	0.14	2.7	0.13
Tetrachloroethene	µg/m3	0.26	0.21	0.22	0.29	0.15	0.16
Toluene	µg/m3	2.1	1.9	1.3	1.8	1.6	1.8
Trichloroethene	µg/m3	0.050	0.11	0.10	0.24	0.021	0.076

Notes:

J - Estimated Concentration
U - Not detected at the associated reporting limit.

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

Sample Location:		*Indoor Air-1*	*Indoor Air-1*	*Indoor Air-2*	*Indoor Air-2*	*Indoor Air-3*	*Indoor Air-4*
Sample ID:		*IA-031714-RB-01*	*IA-031714-NH-F001*	*IA-031714-NH-02*	*IA-031814-RB-02p*	*IA-031414-MD-03*	*IA-031214-MD-04*
Sample Date:		*3/18/2014*	*3/18/2014 (Duplicate)*	*3/18/2014*	*3/18/2014*	*3/15/2014*	*3/13/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.070	0.072	0.058	0.034	0.65	0.023 J
1,1,2,2-Tetrachloroethane	µg/m3	0.040 U	0.039 U	0.039 U	-	0.038 U	0.030 U
1,1,2-Trichloroethane	µg/m3	0.16 U	0.16 U	0.15 U	-	0.15 U	0.12 U
1,1-Dichloroethene	µg/m3	0.040 U	0.039 U	0.039 U	-	0.038 U	0.030 U
1,2,4-Trichlorobenzene	µg/m3	0.040 U	0.039 U	0.039 U	-	0.038 U	0.030 U
1,2,4-Trimethylbenzene	µg/m3	1.6	1.4	2.3	0.97 J	1.2	0.83
1,3,5-Trimethylbenzene	µg/m3	0.54 J	0.40 J	0.76	-	0.37	0.24
1,4-Dichlorobenzene	µg/m3	0.093	0.093	0.030 J	0.030 J	0.34	0.034
Benzene	µg/m3	0.85	0.82	1.1	0.92	1.4	1.0
Carbon tetrachloride	µg/m3	0.33 J	0.46 J	0.45	-	0.47	0.42
Chloroform (Trichloromethane)	µg/m3	0.11 J	0.11 J	0.22	-	0.13 J	0.10 J
cis-1,2-Dichloroethene	µg/m3	0.15	0.18	0.14	-	0.051	0.042
Ethylbenzene	µg/m3	2.4	2.2	3.1	2.6 J	4.8	1.1
Hexachlorobutadiene	µg/m3	0.040 U	0.039 U	0.039 U	-	0.038 U	0.030 U
m&p-Xylenes	µg/m3	8.5	7.5	11	7.8 J	18	4.0
Methylene chloride	µg/m3	0.78	0.71	0.81	-	11	2.1
Naphthalene	µg/m3	0.39 J	0.53 J	0.48	-	0.70	0.41
o-Xylene	µg/m3	2.7	2.4	3.6	2.6 J	5.6	1.4
Styrene	µg/m3	0.35	0.28	0.26	0.23 J	0.55	0.38
Tetrachloroethene	µg/m3	26	23	55	21 J	1.2	0.57
Toluene	µg/m3	7.8	7.6	11	8.5 J	9.5	6.3
trans-1,2-Dichloroethene	µg/m3	0.027 J	0.026 J	0.034 J	-	0.053	0.030 U
Trichloroethene	µg/m3	3.7	3.4	8.3	2.2	2.8	0.18
Vinyl chloride	µg/m3	0.18	0.17	0.16	-	0.021 J	0.017 J

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-5*	*Indoor Air-5*	*Indoor Air-6*	*Indoor Air-6*	*Indoor Air-6*	*Indoor Air-9*
	Sample ID:	*IA-031214-NH-05*	*IA-031814-RB-05p*	*IA-031814-NH-06*	*IA-031914-RB-06p*	*IA-031914-RB-FD3p*	*IA-031814-NH-09*
	Sample Date:	*3/13/2014*	*3/18/2014*	*3/19/2014*	*3/19/2014*	*3/19/2014 (Duplicate)*	*3/19/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.026 J	0.015	0.023 J	0.020	0.019 J	0.022 J
1,1,2,2-Tetrachloroethane	µg/m3	0.036 U	-	0.035 U	-	-	0.035 U
1,1,2-Trichloroethane	µg/m3	0.15 U	-	0.14 U	-	-	0.14 U
1,1-Dichloroethene	µg/m3	0.036 U	-	0.035 U	-	-	0.035 U
1,2,4-Trichlorobenzene	µg/m3	0.036 U	-	0.035 U	-	-	0.035 U
1,2,4-Trimethylbenzene	µg/m3	0.96	0.50 J	86	8.5 J	8.3 J	70
1,3,5-Trimethylbenzene	µg/m3	0.28	-	28	-	-	20
1,4-Dichlorobenzene	µg/m3	0.031 J	0.036 J	0.026 J	0.037 J	0.034 J	0.021 J
Benzene	µg/m3	1.2	0.71	1.0	1.0	0.97 J	1.1
Carbon tetrachloride	µg/m3	0.47	-	0.46	-	-	0.47
Chloroform (Trichloromethane)	µg/m3	0.11 J	-	0.085 J	-	-	0.082 J
cis-1,2-Dichloroethene	µg/m3	0.056	-	0.012 J	-	-	0.010 J
Ethylbenzene	µg/m3	1.5	2.4 J	6.1	5.6 J	5.4 J	12
Hexachlorobutadiene	µg/m3	0.036 U	-	0.035 U	-	-	0.035 U
m&p-Xylenes	µg/m3	4.9	8.3 J	19	14 J	14 J	41
Methylene chloride	µg/m3	0.57	-	0.33	-	-	0.42
Naphthalene	µg/m3	0.11 J	-	0.56	-	-	0.94
o-Xylene	µg/m3	1.7	2.5 J	9.5	6.9 J	6.7 J	20
Styrene	µg/m3	0.43	0.39 J	20	25 J	24 J	31
Tetrachloroethene	µg/m3	1.1	1.5 J	0.24	0.29 J	0.28 J	0.18
Toluene	µg/m3	6.6	4.6 J	3.3	5.2 J	5.0 J	3.4
trans-1,2-Dichloroethene	µg/m3	0.0093 J	-	0.035 U	-	-	0.035 U
Trichloroethene	µg/m3	0.24	0.27	0.087	0.031	0.030 J	0.066
Vinyl chloride	µg/m3	0.026 J	-	0.011 J	-	-	0.035 U

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-10*	*Indoor Air-17*	*Indoor Air-18*	*Indoor Air-19*	*Indoor Air-19*	*Indoor Air-20*
	Sample ID:	*IA-031814-NH-10*	*IA-031314-NH-17*	*IA-031314-NH-18*	*IA-031314-MD-19*	*IA-031814-RB-19p*	*IA-031814-NH-20*
	Sample Date:	*3/19/2014*	*3/14/2014*	*3/14/2014*	*3/14/2014*	*3/18/2014*	*3/19/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.021 J	0.064	0.028 J	0.067	0.049	0.021 J
1,1,2,2-Tetrachloroethane	µg/m3	0.037 U	0.035 U	0.036 U	0.038 U	-	0.041 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.14 U	0.15 U	0.15 U	-	0.16 U
1,1-Dichloroethene	µg/m3	0.037 U	0.035 U	0.036 U	0.038 U	-	0.041 U
1,2,4-Trichlorobenzene	µg/m3	0.037 U	0.035 U	0.067	0.038 U	-	0.041 U
1,2,4-Trimethylbenzene	µg/m3	9.4	1.1	0.72	0.51	0.27	12
1,3,5-Trimethylbenzene	µg/m3	2.5	0.35	0.21	0.14 J	-	3.4
1,4-Dichlorobenzene	µg/m3	0.047	0.061	0.059	0.089	0.093	0.046
Benzene	µg/m3	1.3	1.1	0.87	0.80	0.64	1.3
Carbon tetrachloride	µg/m3	0.46	0.47	0.43	0.48	-	0.47
Chloroform (Trichloromethane)	µg/m3	0.082 J	0.10 J	0.10 J	0.094 J	-	0.090 J
cis-1,2-Dichloroethene	µg/m3	0.022 J	0.033 J	0.040	0.040	-	0.040 J
Ethylbenzene	µg/m3	5.3	1.2	1.0	0.82	1.0	3.0
Hexachlorobutadiene	µg/m3	0.037 U	0.035 U	0.036 U	0.038 U	-	0.041 U
m&p-Xylenes	µg/m3	18	4.3	3.9	3.0	3.8	9.8
Methylene chloride	µg/m3	0.49	0.50	0.41	0.36	-	0.34
Naphthalene	µg/m3	0.34	0.35	0.28	0.17	-	1.7
o-Xylene	µg/m3	5.5	1.5	1.3	1.0	1.2	3.7
Styrene	µg/m3	1.6	0.47	0.40	0.24	0.15	3.2
Tetrachloroethene	µg/m3	0.32	0.19	0.29	0.20	0.16	0.32
Toluene	µg/m3	4.7	4.8	2.9	2.5	2.2	4.5
trans-1,2-Dichloroethene	µg/m3	0.037 U	0.035 U	0.036 U	0.011 J	-	0.041 U
Trichloroethene	µg/m3	0.14	0.076	0.099	0.13	0.095	0.14
Vinyl chloride	µg/m3	0.049	0.049	0.026 J	0.038	-	0.012 J

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-21*	*Indoor Air-21*	*Indoor Air-24*	*Indoor Air-25*	*Indoor Air-26*	*Indoor Air-29*
	Sample ID:	*IA-031414-NH-21*	*IA-032114-RB-21p*	*IA-031714-NH-24*	*IA-031714-NH-25*	*IA-031214-MD-26*	*IA-031314-MD-29*
	Sample Date:	*3/15/2014*	*3/21/2014*	*3/18/2014*	*3/18/2014*	*3/13/2014*	*3/14/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.79	1.0 J	0.035	0.058	0.026 J	0.047
1,1,2,2-Tetrachloroethane	µg/m3	0.037 U	-	0.035 U	0.038 U	0.036 U	0.037 U
1,1,2-Trichloroethane	µg/m3	0.15 U	-	0.14 U	0.15 U	0.14 U	0.15 U
1,1-Dichloroethene	µg/m3	0.010 J	-	0.035 U	0.038 U	0.036 U	0.037 U
1,2,4-Trichlorobenzene	µg/m3	0.037 U	-	0.015 J	0.038 U	0.036 U	0.020 J
1,2,4-Trimethylbenzene	µg/m3	1.2	1.1 J	1.2	0.90	1.2	0.82
1,3,5-Trimethylbenzene	µg/m3	0.35	-	0.39	0.31	0.41	0.25
1,4-Dichlorobenzene	µg/m3	0.73	1.4 J	0.028 J	0.026 J	0.12	0.054
Benzene	µg/m3	1.3	0.93 J	0.87	0.83	1.3	0.96
Carbon tetrachloride	µg/m3	0.46	-	0.42	0.47	0.46	0.47
Chloroform (Trichloromethane)	µg/m3	0.085 J	-	0.13 J	0.11 J	0.12 J	0.098 J
cis-1,2-Dichloroethene	µg/m3	0.046	-	0.16	0.21	0.054	0.030 J
Ethylbenzene	µg/m3	4.9	5.4 J	2.3	1.7	1.5	1.1
Hexachlorobutadiene	µg/m3	0.037 U	-	0.035 U	0.038 U	0.036 U	0.037 U
m&p-Xylenes	µg/m3	19	13 J	8.1	6.0	5.5	4.1
Methylene chloride	µg/m3	26	-	0.77	2.2	0.51	0.60
Naphthalene	µg/m3	0.71	-	0.31	0.76	0.19	0.32
o-Xylene	µg/m3	5.4	7.1 J	2.5	2.0	1.8	1.4
Styrene	µg/m3	0.48	0.40 J	0.26	0.37	0.65	0.39
Tetrachloroethene	µg/m3	2.6	2.1 J	27	55	0.65	0.55
Toluene	µg/m3	13	8.3 J	6.6	6.6	6.3	4.1
trans-1,2-Dichloroethene	µg/m3	0.13	-	0.043	0.029 J	0.036 U	0.037 U
Trichloroethene	µg/m3	7.1	4.8 J	0.56	1.8	0.21	0.30
Vinyl chloride	µg/m3	0.018 J	-	0.20	0.25	0.021 J	0.042

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-30*	*Indoor Air-31*	*Indoor Air-32*	*Indoor Air-33*	*Indoor Air-34*	*Indoor Air-35*	*Indoor Air-36*
	Sample ID:	*IA-031414-RB-30*	*IA-031414-RB-31*	*IA-031714-NH-32*	*IA-031714-NH-33*	*IA-031714-NH-34*	*IA-031414-NH-35*	*IA-031214-MD-36*
	Sample Date:	*3/15/2014*	*3/15/2014*	*3/18/2014*	*3/18/2014*	*3/18/2014*	*3/15/2014*	*3/13/2014*
Parameters	***Units***							
Volatile Organic Compounds								
1,1,1-Trichloroethane	µg/m3	0.058	0.080	0.024 J	0.030 J	0.045	0.097	0.026 J
1,1,2,2-Tetrachloroethane	µg/m3	0.037 U	0.042 U	0.039 U	0.041	0.034 U	0.039 U	0.035 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.17 U	0.15 U	0.15 U	0.13 U	0.16 U	0.14 U
1,1-Dichloroethene	µg/m3	0.037 U	0.042 U	0.039 U	0.037 U	0.034 U	0.039 U	0.035 U
1,2,4-Trichlorobenzene	µg/m3	0.037 U	0.042 U	0.039 U	0.037 U	0.034 U	0.039 U	0.035 U
1,2,4-Trimethylbenzene	µg/m3	1.0	0.98	0.93	1.1	1.3	0.47	1.0
1,3,5-Trimethylbenzene	µg/m3	0.28	0.27	0.32	0.38	0.42	0.13 J	0.32
1,4-Dichlorobenzene	µg/m3	0.024 J	0.025 J	0.028 J	0.020 J	0.020 J	0.052	0.038
Benzene	µg/m3	1.2	1.1	0.76	0.83	1.1	0.81	1.0
Carbon tetrachloride	µg/m3	0.42	0.43	0.40	0.44	0.43	0.46	0.47
Chloroform (Trichloromethane)	µg/m3	0.096 J	0.10 J	0.082 J	0.093 J	0.11 J	0.083 J	0.11 J
cis-1,2-Dichloroethene	µg/m3	0.079	0.080	0.17	0.17	0.21	0.042	0.055
Ethylbenzene	µg/m3	1.8	1.8	5.2	1.9	1.8	5.5	1.5
Hexachlorobutadiene	µg/m3	0.037 U	0.042 U	0.039 U	0.037 U	0.034 U	0.039 U	0.035 U
m&p-Xylenes	µg/m3	7.4	6.7	22	6.4	6.7	21	5.2
Methylene chloride	µg/m3	0.32	0.60	0.53	0.81	1.0	2.6	0.46
Naphthalene	µg/m3	0.90	0.29	0.28	0.39	0.24	0.24	0.19
o-Xylene	µg/m3	2.1	2.0	6.3	2.0	2.2	6.1	1.7
Styrene	µg/m3	0.22	0.30	0.99	0.24	0.22	0.17	0.62
Tetrachloroethene	µg/m3	0.16	0.32	17	23	38	0.55	2.6
Toluene	µg/m3	4.2	4.4	4.6	7.7	6.6	3.4	6.3
trans-1,2-Dichloroethene	µg/m3	0.011 J	0.013 J	0.018 J	0.028 J	0.031 J	0.029 J	0.0090 J
Trichloroethene	µg/m3	2.6	2.9	0.38	0.88	0.85	1.5	0.52
Vinyl chloride	µg/m3	0.040	0.042	0.16	0.20	0.27	0.019 J	0.024 J

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Indoor Air-37*	*Indoor Air-38*	*Indoor Air-39*	*Indoor Air-40B*	*Outside Air-1*	*Outside Air-1*
	Sample ID:	*IA-031814-NH-37*	*IA-031814-NH-38*	*IA-031814-NH-39*	*IA-031714-RB-40B*	*OA-031714-RB-01*	*OA-031814-RB-01p*
	Sample Date:	*3/19/2014*	*3/19/2014*	*3/19/2014*	*3/18/2014*	*3/18/2014*	*3/18/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.021 J	0.14 U	0.021 J	0.031 J	0.021 J	0.0093 U
1,1,2,2-Tetrachloroethane	µg/m3	0.038 U	0.14 U	0.039 U	0.037 U	0.039 U	-
1,1,2-Trichloroethane	µg/m3	0.15 U	0.57 U	0.16 U	0.15 U	0.16 U	-
1,1-Dichloroethene	µg/m3	0.038 U	0.14 U	0.039 U	0.037 U	0.039 U	-
1,2,4-Trichlorobenzene	µg/m3	0.038 U	0.14 U	0.039 U	0.037 U	0.039 U	-
1,2,4-Trimethylbenzene	µg/m3	340	730	7.0	1.5	0.29	0.30
1,3,5-Trimethylbenzene	µg/m3	120	340	2.4	0.51	0.085 J	-
1,4-Dichlorobenzene	µg/m3	0.026 J	0.14 U	0.017 J	0.031 J	0.014 J	0.038
Benzene	µg/m3	1.2	1.3	0.95	0.88	0.65	0.42
Carbon tetrachloride	µg/m3	0.46	0.17	0.39	0.40	0.46	-
Chloroform (Trichloromethane)	µg/m3	0.085 J	0.083 J	0.081 J	0.11 J	0.080 J	-
cis-1,2-Dichloroethene	µg/m3	0.011 J	0.14 U	0.017 J	0.10	0.21	-
Ethylbenzene	µg/m3	21	36	2.9	6.5	0.49	1.4
Hexachlorobutadiene	µg/m3	0.038 U	0.14 U	0.039 U	0.037 U	0.039 U	-
m&p-Xylenes	µg/m3	71	150	11	26	1.8	5.5
Methylene chloride	µg/m3	0.39	0.57 U	0.39	0.77	0.44	-
Naphthalene	µg/m3	3.8	19	0.24	0.31	0.081 J	-
o-Xylene	µg/m3	44	90	3.5	7.7	0.59	1.7
Styrene	µg/m3	220	1400	1.6	0.50	0.092 J	0.17
Tetrachloroethene	µg/m3	0.19	0.35	0.20	25	0.41	0.26
Toluene	µg/m3	6.4	16	3.4	9.2	1.7	2.1
trans-1,2-Dichloroethene	µg/m3	0.038 U	0.14 U	0.039 U	0.021 J	0.019 J	-
Trichloroethene	µg/m3	0.059	0.077 J	0.074	0.78	0.25	0.050
Vinyl chloride	µg/m3	0.011 J	0.14 U	0.019 J	0.12	0.29	-

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

Sample Location:		*Outside Air-3*	*Outside Air-3*	*Outside Air-3*	*Outside Air-4*	*Outside Air-5*	*Outside Air-6*
Sample ID:		*OA-031414-MD-03*	*OA-031814-RB-03p*	*OA-032114-RB-03Ap*	*OA-031214-MD-04*	*OA-031814-RB-05p*	*OA-031814-NH-06*
Sample Date:		*3/15/2014*	*3/18/2014*	*3/21/2014*	*3/13/2014*	*3/18/2014*	*3/19/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.021 J	0.020	0.026	0.028 J	0.013	0.020 J
1,1,2,2-Tetrachloroethane	µg/m3	0.038 U	-	-	0.038 U	-	0.039 J
1,1,2-Trichloroethane	µg/m3	0.15 U	-	-	0.15 U	-	0.17 U
1,1-Dichloroethene	µg/m3	0.038 U	-	-	0.038 U	-	0.041 U
1,2,4-Trichlorobenzene	µg/m3	0.038 U	-	-	0.038 U	-	0.041 U
1,2,4-Trimethylbenzene	µg/m3	0.32	0.17	0.15	0.43	0.11	5.1
1,3,5-Trimethylbenzene	µg/m3	0.10 J	-	-	0.13 J	-	1.7 J
1,4-Dichlorobenzene	µg/m3	0.026 J	0.026	0.044	1.2	0.014	0.034 J
Benzene	µg/m3	0.67	0.72	0.59	1.2	0.77	0.66
Carbon tetrachloride	µg/m3	0.43	-	-	0.36	-	0.47
Chloroform (Trichloromethane)	µg/m3	0.086 J	-	-	0.094 J	-	0.12 J
cis-1,2-Dichloroethene	µg/m3	0.055	-	-	0.057	-	0.057
Ethylbenzene	µg/m3	4.2	1.4	1.8	0.91	1.5	1.0
Hexachlorobutadiene	µg/m3	0.038 U	-	-	0.020 J	-	0.041 U
m&p-Xylenes	µg/m3	17	5.1	6.5	3.1	5.2	3.5
Methylene chloride	µg/m3	0.39	-	-	0.56	-	0.38
Naphthalene	µg/m3	0.15 J	-	-	0.19	-	0.13 J
o-Xylene	µg/m3	4.9	1.6	2.0	0.90	1.4	1.3
Styrene	µg/m3	0.23	0.19	0.23	0.33	0.14	1.7
Tetrachloroethene	µg/m3	0.18	0.21	0.22	2.0	0.29	0.42
Toluene	µg/m3	2.0	1.9	1.3	2.9	1.8	1.9
trans-1,2-Dichloroethene	µg/m3	0.038 U	-	-	0.0097 J	-	0.041 U
Trichloroethene	µg/m3	0.20	0.11	0.10	0.30	0.24	0.80
Vinyl chloride	µg/m3	0.025 J	-	-	0.024 J	-	0.041 U

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Outside Air-6*	*Outside Air-6*	*Outside Air-18*	*Outside Air-18*	*Outside Air-30*	*Sub-Slab Probe-1*
	Sample ID:	*OA-031814-NH-FD2*	*OA-031914-RB-06p*	*OA-031314-MD-18*	*OA-031814-RB-18p*	*OA-031414-RB-30*	*SS-031714-NH-01*
	Sample Date:	*3/19/2014 (Duplicate)*	*3/19/2014*	*3/14/2014*	*3/18/2014*	*3/15/2014*	*3/17/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.021 J	0.022	0.021 J	0.027	0.022 J	16
1,1,2,2-Tetrachloroethane	µg/m3	0.039 U	-	0.038 U	-	0.036 U	0.037 U
1,1,2-Trichloroethane	µg/m3	0.15 U	-	0.15 U	-	0.14 U	0.15 U
1,1-Dichloroethene	µg/m3	0.039 U	-	0.038 U	-	0.036 U	0.17
1,2,4-Trichlorobenzene	µg/m3	0.039 U	-	0.038 U	-	0.036 U	0.037 U
1,2,4-Trimethylbenzene	µg/m3	6.0	0.44	0.22	0.16	0.27	0.081 J
1,3,5-Trimethylbenzene	µg/m3	2.1 J	-	0.062 J	-	0.087 J	0.025 J
1,4-Dichlorobenzene	µg/m3	0.025 J	0.038	0.023 J	0.030	0.023 J	0.029 J
Benzene	µg/m3	0.68	0.62	0.62	0.75	0.62	0.16
Carbon tetrachloride	µg/m3	0.47	-	0.48	-	0.45	0.25
Chloroform (Trichloromethane)	µg/m3	0.10 J	-	0.082 J	-	0.085 J	0.39
cis-1,2-Dichloroethene	µg/m3	0.037 J	-	0.027 J	-	0.098	0.037 U
Ethylbenzene	µg/m3	1.1	1.1	0.74	1.1	1.6	0.11 J
Hexachlorobutadiene	µg/m3	0.039 U	-	0.038 U	-	0.036 U	0.037 U
m&p-Xylenes	µg/m3	4.1	4.1	2.8	4.0	6.5	0.34
Methylene chloride	µg/m3	0.34	-	0.40	-	0.31	0.15 U
Naphthalene	µg/m3	0.19	-	0.10 J	-	0.14 J	0.17
o-Xylene	µg/m3	1.5	1.2	0.93	1.2	1.8	0.11 J
Styrene	µg/m3	1.9	2.7	0.17	0.13	0.16	0.14 J
Tetrachloroethene	µg/m3	0.37	0.15	0.18	0.16	0.13	18
Toluene	µg/m3	1.8	1.6	3.1	1.8	2.1	0.37
trans-1,2-Dichloroethene	µg/m3	0.039 U	-	0.038 U	-	0.012 J	0.037 U
Trichloroethene	µg/m3	0.51	0.021	0.073	0.076	0.17	0.064
Vinyl chloride	µg/m3	0.039 U	-	0.012 J	-	0.044	0.037 U

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

	Sample Location:	*Sub-Slab Probe-2*	*Sub-Slab Probe-3*	*Sub-Slab Probe-4*	*Sub-Slab Probe-5*	*Sub-Slab Probe-6*	*Sub-Slab Probe-9*
	Sample ID:	*SS-031714-MD-02*	*SS-031414-MD-03*	*SS-031214-MD-04*	*SS-031214-MD-26*	*SS-031814-NH-06*	*SS-031814-NH-09*
	Sample Date:	*3/17/2014*	*3/14/2014*	*3/12/2014*	*3/12/2014*	*3/18/2014*	*3/18/2014*
Parameters	***Units***						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/m3	0.37	0.45	6.2	1.9	0.32	0.79
1,1,2,2-Tetrachloroethane	µg/m3	0.043 U	0.039 U	0.86 U	0.43 U	0.034 U	0.037 U
1,1,2-Trichloroethane	µg/m3	0.17 U	0.16 U	3.4 U	1.7 U	0.14 U	0.15 U
1,1-Dichloroethene	µg/m3	0.043 U	0.039 U	0.86 U	0.43 U	0.034 U	0.037 U
1,2,4-Trichlorobenzene	µg/m3	0.043 U	0.039 U	0.86 U	0.43 U	0.034 U	0.037 U
1,2,4-Trimethylbenzene	µg/m3	0.12 J	0.069 J	3.4 U	1.7 U	0.64	0.33
1,3,5-Trimethylbenzene	µg/m3	0.036 J	0.023 J	3.4 U	1.7 U	0.20	0.12 J
1,4-Dichlorobenzene	µg/m3	0.040 J	0.032 J	0.86 U	0.43 U	0.013 J	0.033 J
Benzene	µg/m3	0.059 J	0.12 U	1.2 J	1.3	0.11	0.32
Carbon tetrachloride	µg/m3	0.36	0.29	0.86 U	1.4	0.15	0.27
Chloroform (Trichloromethane)	µg/m3	0.062 J	0.046 J	1.8 J	5.4	0.0095 J	0.034 J
cis-1,2-Dichloroethene	µg/m3	0.043 U	0.028 J	0.71 J	2.1	0.034 U	0.037 U
Ethylbenzene	µg/m3	0.086 J	0.037 J	3.4 U	1.7 U	0.080 J	0.068 J
Hexachlorobutadiene	µg/m3	0.043 U	0.039 U	0.86 U	0.43 U	0.034 U	0.037 U
m&p-Xylenes	µg/m3	0.30	0.15 J	3.4 U	0.38 J	0.16	0.25
Methylene chloride	µg/m3	0.17 U	0.16 U	3.4 U	1.7 U	0.14 U	0.15 U
Naphthalene	µg/m3	0.21	0.16	3.4 U	0.17 J	0.11 J	0.26
o-Xylene	µg/m3	0.11 J	0.054 J	3.4 U	0.30 J	0.084 J	0.11 J
Styrene	µg/m3	0.10 J	0.073 J	3.4 U	1.7 U	0.13 J	0.53
Tetrachloroethene	µg/m3	23	28	3000	1400	57	0.69
Toluene	µg/m3	0.24	0.098 J	0.59 J	0.86 J	0.14 U	0.19
trans-1,2-Dichloroethene	µg/m3	0.043 U	0.039 U	0.23 J	1.2	0.034 U	0.037 U
Trichloroethene	µg/m3	0.30	0.077	1400	940	0.10	0.022 J
Vinyl chloride	µg/m3	0.043 U	0.039 U	0.86 U	0.43 U	0.034 U	0.037 U

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

Sample Location:	*Sub-Slab Probe-10*	*Sub-Slab Probe-17*	*Sub-Slab Probe-18*	*Sub-Slab Probe-19*	*Sub-Slab Probe-24*	*Sub-Slab Probe-26*
Sample ID:	*SS-031814-MD-10*	*SS-031314-NH-17*	*SS-031314-NH-18*	*SS-031314-MD-19*	*SS-031714-NH-24*	*SS-031214-NH-05*
Sample Date:	*3/18/2014*	*3/13/2014*	*3/13/2014*	*3/13/2014*	*3/17/2014*	*3/12/2014*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/m3	0.030 J	1.0	0.16	0.91	3.8	1.5
1,1,2,2-Tetrachloroethane	µg/m3	0.039 U	0.20 U	0.037 U	0.19 U	0.036 U	0.34 U
1,1,2-Trichloroethane	µg/m3	0.16 U	0.79 U	0.15 U	0.78 U	0.14 U	1.4 U
1,1-Dichloroethene	µg/m3	0.039 U	0.20 U	0.037 U	0.19 U	0.041	0.50
1,2,4-Trichlorobenzene	µg/m3	0.039 U	0.20 U	0.037 U	0.19 U	0.036 U	0.34 U
1,2,4-Trimethylbenzene	µg/m3	0.049 J	0.084 J	0.029 J	0.78 U	0.035 J	0.18 J
1,3,5-Trimethylbenzene	µg/m3	0.016 J	0.79 U	0.15 U	0.78 U	0.14 U	1.4 U
1,4-Dichlorobenzene	µg/m3	0.024 J	0.20 U	0.014 J	0.19 U	0.013 J	0.34 U
Benzene	µg/m3	0.11 J	0.59 U	0.11 U	0.58 U	0.10 J	0.48 J
Carbon tetrachloride	µg/m3	0.32	1.2	1.8	2.3	2.2	0.12 J
Chloroform (Trichloromethane)	µg/m3	0.047 J	0.18 J	0.49	0.35 J	0.12 J	1.1 J
cis-1,2-Dichloroethene	µg/m3	0.039 U	0.20 U	0.037 U	0.19 U	0.036 U	0.37
Ethylbenzene	µg/m3	0.081 J	0.081 J	0.039 J	0.78 U	0.034 J	0.22 J
Hexachlorobutadiene	µg/m3	0.039 U	0.20 U	0.037 U	0.19 U	0.036 U	0.34 U
m&p-Xylenes	µg/m3	0.23	0.23 J	0.13 J	0.15 J	0.13 J	0.57 J
Methylene chloride	µg/m3	0.24	0.79 U	0.15 U	0.78 U	0.14 U	1.4 U
Naphthalene	µg/m3	0.066 J	0.14 J	0.087 J	0.19 J	0.080 J	0.12 J
o-Xylene	µg/m3	0.093 J	0.098 J	0.047 J	0.072 J	0.047 J	0.20 J
Styrene	µg/m3	0.078 J	0.79 U	0.15 U	0.78 U	0.034 J	1.4 U
Tetrachloroethene	µg/m3	0.49	1.0	4.5	5.1	6.9	2900
Toluene	µg/m3	0.42	1.1	1.5	2.6	0.14 U	2.5
trans-1,2-Dichloroethene	µg/m3	0.039 U	0.20 U	0.012 J	0.19 U	0.036 U	0.14 J
Trichloroethene	µg/m3	0.080	0.42	1.6	0.45	0.054	940
Vinyl chloride	µg/m3	0.039 U	0.20 U	0.037 U	0.19 U	0.036 U	0.34 U

TABLE 2C

ANALYTICAL RESULTS SUMMARY
VAPOR INVESTIGATION
OCCIDENTIAL CHEMICAL CORPORATION
TACOMA, WSHINGTON
MARCH 2014

Sample Location:	*Sub-Slab Probe-29*	*Sub-Slab Probe-30*	*Sub-Slab Probe-32*	*Sub-Slab Probe-35*	*Sub-Slab Probe-37*
Sample ID:	*SS-031314-MD-29*	*SS-031414-NH-30*	*SS-031714-MD-32*	*SS-031414-NH-35*	*SS-031814-MD-37*
Sample Date:	*3/13/2014*	*3/14/2014*	*3/17/2014*	*3/14/2014*	*3/18/2014*
Parameters	***Units***				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/m3	0.60	1.8	1.3	3.3	4.1
1,1,2,2-Tetrachloroethane	µg/m3	0.038 U	0.034 U	0.22 U	0.034 U	0.033 U
1,1,2-Trichloroethane	µg/m3	0.15 U	0.14 U	0.89 U	0.14 U	0.13 U
1,1-Dichloroethene	µg/m3	0.010 J	0.021 J	0.22 U	0.036	0.060
1,2,4-Trichlorobenzene	µg/m3	0.038 U	0.034 U	0.22 U	0.034 U	0.033 U
1,2,4-Trimethylbenzene	µg/m3	0.097 J	0.061 J	0.89 U	0.043 J	32
1,3,5-Trimethylbenzene	µg/m3	0.035 J	0.017 J	0.89 U	0.14 U	8.6
1,4-Dichlorobenzene	µg/m3	0.036 J	0.018 J	0.22 U	0.024 J	0.19
Benzene	µg/m3	0.65	0.20	0.11 J	0.10 U	0.43
Carbon tetrachloride	µg/m3	2.0	1.6	0.21 J	0.25	0.16
Chloroform (Trichloromethane)	µg/m3	0.48	2.1	0.095 J	2.6	0.042 J
cis-1,2-Dichloroethene	µg/m3	0.033 J	0.0089 J	0.22 U	0.034 U	0.0084 J
Ethylbenzene	µg/m3	0.087 J	0.067 J	0.89 U	0.073 J	1.3
Hexachlorobutadiene	µg/m3	0.038 U	0.034 U	0.22 U	0.034 U	0.033 U
m&p-Xylenes	µg/m3	0.31	0.27	0.16 J	0.26	3.3
Methylene chloride	µg/m3	0.33	0.14 U	0.89 U	0.18	2.9
Naphthalene	µg/m3	0.096 J	0.12 J	0.21 J	0.077 J	2.4
o-Xylene	µg/m3	0.15 J	0.11 J	0.89 U	0.084 J	1.6
Styrene	µg/m3	0.093 J	0.059 J	0.89 U	0.14	8.9
Tetrachloroethene	µg/m3	3.4	30	2000	69	7.1
Toluene	µg/m3	0.40	0.12 J	0.89 U	0.52	6.1
trans-1,2-Dichloroethene	µg/m3	0.016 J	0.034 U	0.22 U	0.034 U	0.013 J
Trichloroethene	µg/m3	0.37	100	2.4	0.13	0.40
Vinyl chloride	µg/m3	0.038 U	0.034 U	0.22 U	0.034 U	0.033 U

Notes:

J - Estimated Concentration
U - Not detected at the associated reporting limit.
- Not Analyzed

TABLE 3

ANALYTICAL METHODS AND HOLDING TIME CRITERIA
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
MARCH 2014

Parameter	*Method* [1]	*Collection Media*	*Holding Time* Collection to Analysis (Days)
Selected VOCs	TO-15 SIM	Summa Canisters	30
Selected VOCs	TO-17	Radiello Tubes	30

Notes:

[1] - "Compendium of Methods of the Determination of Toxic Organic Compounds in Ambient Air", USEPA 600/4-84-041, April 1984 (with all subsequent revisions)

VOCs - Volatile Organic Compounds

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
MARCH 2014

Parameter	*Analyte*	*Analysis Date*	*Blank Result **	*Sample ID*	*Original Result*	*Qualified Result*	*Units*
VOC	Benzene	3/31/2014	0.0087 J	SS-031314-MD-19	0.29 J	0.58 U	µg/m3
				SS-031314-NH-17	0.21 J	0.59 U	µg/m3
				SS-031314-NH-18	0.070 J	0.11 U	µg/m3
				SS-031414-MD-03	0.082 J	0.12 U	µg/m3
				SS-031414-NH-35	0.080 J	0.10 U	µg/m3
VOC	Methylene chloride	3/28/2014	0.013 J	SS-031214-MD-04	0.43 J	3.4 U	µg/m3
				SS-031214-MD-26	0.30 J	1.7 U	µg/m3
				SS-031214-NH-05	1.3 J	1.4 U	µg/m3
VOC	Methylene chloride	3/31/2014	0.013 J	SS-031314-MD-19	0.16 J	0.78 U	µg/m3
				SS-031314-NH-17	0.43 J	0.79 U	µg/m3
				SS-031314-NH-18	0.12 J	0.15 U	µg/m3
				SS-031414-MD-03	0.092 J	0.16 U	µg/m3
				SS-031414-NH-30	0.061 J	0.14 U	µg/m3
VOC	Methylene chloride	4/1/2014	0.017 J	SS-031714-MD-32	0.17 J	0.89 U	µg/m3
				SS-031714-NH-01	0.093 J	0.15 U	µg/m3
				SS-031714-NH-24	0.094 J	0.14 U	µg/m3
				SS-031714-MD-02	0.098 J	0.17 U	µg/m3
				SS-031814-NH-06	0.13 J	0.14 U	µg/m3
				SS-031814-NH-09	0.073 J	0.15 U	µg/m3
VOC	Methylene chloride	4/7/2014	0.016 J	IA-031814-NH-38	0.42 J	0.57 U	µg/m3
VOC	Toluene	4/1/2014	0.013 J	SS-031714-MD-32	0.21 J	0.89 U	µg/m3
				SS-031714-NH-24	0.14 J	0.14 U	µg/m3
				SS-031814-NH-06	0.068 J	0.14 U	µg/m3

Notes:

* - Blank result adjusted for sample factors where applicable
J - Estimated Concentration
U - Not detected at the associated reporting limit
VOC - Volatile Organic Compound

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING INTERNAL STANDARD (IS) RECOVERIES
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
MARCH 2014

Parameter	*Sample ID*	*Internal Standard*	*IS Area Count % Recovery*	*Control Limits % Recovery*	*Analytes*	*Qualified Result*	*Units*
VOC	IA-031814-RB-02p	Chlorobenzene-d5	>140	60 - 140	1,2,4-Trimethylbenzene	0.97 J	µg/m3
					m&p-Xylenes	7.8 J	µg/m3
					Tetrachloroethene	21 J	µg/m3
					1,4-Dichlorobenzene	0.030 J	µg/m3
					Ethylbenzene	2.6 J	µg/m3
					o-Xylene	2.6 J	µg/m3
					Styrene	0.23 J	µg/m3
VOC	IA-031814-RB-05p	Chlorobenzene-d5	>140	60 - 140	1,2,4-Trimethylbenzene	0.50 J	µg/m3
					1,4-Dichlorobenzene	0.036 J	µg/m3
					Ethylbenzene	2.4 J	µg/m3
					m&p-Xylenes	8.3 J	µg/m3
					o-Xylene	2.5 J	µg/m3
					Styrene	0.39 J	µg/m3
					Tetrachloroethene	1.5 J	µg/m3
VOC	IA-031914-RB-06p	Chlorobenzene-d5	>140	60 - 140	1,4-Dichlorobenzene	0.037 J	µg/m3
					1,2,4-Trimethylbenzene	8.5 J	µg/m3
					Ethylbenzene	5.6 J	µg/m3
					m&p-Xylenes	14 J	µg/m3
					o-Xylene	6.9 J	µg/m3
					Styrene	25 J	µg/m3
					Tetrachloroethene	0.29 J	µg/m3
VOC	IA-031914-RB-FD3p	1,4-Difluorobenzene	>140	60 - 140	1,1,1-Trichloroethane	0.019 J	µg/m3
		Chlorobenzene-d5	>140	60 - 140	1,4-Dichlorobenzene	0.034 J	µg/m3
					Benzene	0.97 J	µg/m3
					1,2,4-Trimethylbenzene	8.3 J	µg/m3
					Ethylbenzene	5.4 J	µg/m3

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING INTERNAL STANDARD (IS) RECOVERIES
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
MARCH 2014

Parameter	*Sample ID*	*Internal Standard*	*IS Area Count % Recovery*	*Control Limits % Recovery*	*Analytes*	*Qualified Result*	*Units*
VOC	IA-031914-RB-FD3p	Chlorobenzene-d5	>140	60 - 140	m&p-Xylenes	14 J	µg/m3
					o-Xylene	6.7 J	µg/m3
					Styrene	24 J	µg/m3
					Tetrachloroethene	0.28 J	µg/m3
					Toluene	5.0 J	µg/m3
					Trichloroethene	0.030 J	µg/m3
VOC	IA-032114-RB-21p	1,4-Difluorobenzene	>140	60 - 140	1,1,1-Trichloroethane	1.0 J	µg/m3
		Chlorobenzene-d5	>140	60 - 140	1,2,4-Trimethylbenzene	1.1 J	µg/m3
					1,4-Dichlorobenzene	1.4 J	µg/m3
					Benzene	0.93 J	µg/m3
					Styrene	0.40 J	µg/m3
					Tetrachloroethene	2.1 J	µg/m3
					Ethylbenzene	5.4 J	µg/m3
					m&p-Xylenes	13 J	µg/m3
					o-Xylene	7.1 J	µg/m3
					Toluene	8.3 J	µg/m3
					Trichloroethene	4.8 J	µg/m3

Notes:

IS - Internal Standard
J - Estimated Concentration
VOC - Volatile Organic Compound

TABLE 6

QUALIFIED SAMPLE DATA DUE TO VARIABILITY IN FIELD DUPLICATE RESULTS
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
MARCH 2014

Parameter	*Analyte*	*RPD/Diff*		*Sample ID*	*Qualified Result*	*Field Duplicate Sample ID*	*Qualified Result*	*Units*
VOC	1,3,5-Trimethylbenzene	30	RPD	IA-031714-RB-01	0.54 J	IA-031714-NH-F001	0.40 J	µg/m3
VOC	Carbon tetrachloride	33	RPD	IA-031714-RB-01	0.33 J	IA-031714-NH-F001	0.46 J	µg/m3
VOC	Naphthalene	30	RPD	IA-031714-RB-01	0.39 J	IA-031714-NH-F001	0.53 J	µg/m3
VOC	1,3,5-Trimethylbenzene	21	RPD	OA-031814-NH-06	1.7 J	OA-031814-NH-FD2	2.1 J	µg/m3

Notes:

Diff - Difference (i.e., >1X RL for waters or >2XRL for soils)
RPD - Relative Percent Difference
J - Estimated Concentration
VOC - Volatile Organic Compound

TABLE 7

QUALIFIED SAMPLE DATA DUE TO EXCEEDENCE OF CALIBRATION RANGE
VAPOR INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON
MARCH 2014

Parameter	*Sample ID*	*Analyte*	*Qualified Result*	*Units*
VOC	IA-031814-RB-02p	m&p-Xylenes	7.8 J	µg/m3
		Tetrachloroethene	21 J	µg/m3
		Toluene	8.5 J	µg/m3
VOC	IA-031814-RB-05p	m&p-Xylenes	8.3 J	µg/m3
		Toluene	4.6 J	µg/m3
VOC	IA-031914-RB-06p	1,2,4-Trimethylbenzene	8.5 J	µg/m3
		Ethylbenzene	5.6 J	µg/m3
		m&p-Xylenes	14 J	µg/m3
		o-Xylene	6.9 J	µg/m3
		Styrene	25 J	µg/m3
		Toluene	5.2 J	µg/m3
VOC	IA-031914-RB-FD3p	1,2,4-Trimethylbenzene	8.3 J	µg/m3
		Ethylbenzene	5.4 J	µg/m3
		m&p-Xylenes	14 J	µg/m3
		o-Xylene	6.7 J	µg/m3
		Styrene	24 J	µg/m3
		Toluene	5.0 J	µg/m3
VOC	IA-032114-RB-21p	Ethylbenzene	5.4 J	µg/m3
		m&p-Xylenes	13 J	µg/m3
		o-Xylene	7.1 J	µg/m3
		Toluene	8.3 J	µg/m3
		Trichloroethene	4.8 J	µg/m3

Notes:

J - Estimated Concentration
VOC - Volatile Organic Compound