Environmental Operations, Inc.
CLEARING THE WAY

December 15, 2016

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DEC 16 2016
AWMD/RCAP

Mr. Bruce Morrison
Project Manager
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, KS 66219

RE: Vapor Intrusion – Sub Slab Sampling
Solutia – John F. Queeny Plant
St. Louis, Missouri
EPA ID No. MOD 004 954 111

Dear Mr. Morrison:

EOI is providing this report on behalf of SWH Investments II, to address obligations under an Administrative Order on Consent (EPA Docket No: RCRA-07-2009-0015), and to prepare the property for redevelopment for industrial/commercial use. The July 5, 2016 Groundwater and Vapor Intrusion Work Plan was approved by the United States Environmental Protection Agency (EPA) via their letter dated July 19, 2016. This letter report covers the first phase of work conducted for the vapor intrusion component of the plan.

Background and Purpose

Prior to implementing the approved plan, EPA sent an email on August 19, 2016, which had comments pertaining to work not specified in the plan. A conversation with EPA and the Missouri Department of Natural Resources (MDNR) was held on August 22, 2016, and the agreed-upon work plan changes were memorialized in an email to EPA and MDNR on August 23, 2016. Specifically, the soil gas portion of the plan was deleted. In addition, the sub-slab vapor testing was augmented from one point per building to two points per building. This initial phase of an iterative process concerning vapor intrusion generated data to evaluate potential existing concerns for vapor generation from the groundwater impacts in downgradient locations to the north of the site. This report describes the field work and test results. The report also provides recommendations for the next phase of work.

Approach

The vapor intrusion evaluation at the Solutia site is being conducted in phases. The first phase involved evaluating the most recent groundwater data (May 2015) to determine if volatiles present in the closest upgradient groundwater are potentially a threat via the vapor intrusion

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pathway. To make this determination, the USEPA's Vapor Intrusion Screening Level (VISL) Calculator (USEPA, Nov. 2015) was used to screen for constituents of potential concern (COPCs). Screening was performed by comparing the maximum detected chemical concentration of volatile organic chemicals (VOCs) to levels established in the VISL calculator, for the industrial scenario at the 1E-05 cancer risk target level. Chemicals exceeding their respective screening level are considered to be COPCs and are evaluated further. Note that there are no values in the guidance for cis or trans 1,2-dichloroethene.

The COPCs include the following as approved by EPA: 1,1,1-trichloroethane, 1,2-dichloroethane, acetone, benzene, chlorobenzene, chloroform, cis-1,2-dichloroethene, ethylbenzene, methylene chloride, tetrachloroethene (PCE), toluene, trichloroethene (TCE), trans-1,2-dichloroethene, vinyl chloride, and xylenes. Due to the proximity of the diesel storage tank used by the school bus company and located immediately upgradient to the bus maintenance facility, naphthalene was added as a COPC at that location to evaluate potential presence of diesel fuel versus detections associated with the historic impacts.

The general Solutia site location is depicted in Figure 1. Figure 2 shows the two buildings identified and described in the work plan for collecting the sub-slab samples. The figure also shows the approximate location of the samples and their designation. These buildings are on property owned by Ahrens Contracting, Inc. (Ahrens). Mr. Ted Ahrens, Jr. was contacted to facilitate access. To minimize any disruptions to regular work activities at the planned locations, at the request of Mr. Ahrens, we agreed to conduct the sub-slab vapor collection on Saturday, September 24, 2016.

Field Work

Collection of sub-slab vapor samples was conducted on September 24, 2016. Ms. Christine Kump-Mitchell with MDNR was on-site observing and available for questions or input. Mr. Ahrens and an Ahrens employee, Charlie Evans, provided access to the buildings. The first samples were obtained from the Ahrens office building. Ms. Kump Mitchell agreed that one sample from each end of the east-west trending hallway was best. No known sub-grade utilities were present. The flooring, observed to be in good condition, consisted of 12-inch tile over concrete.

Probe and Vapor Pin™ Installation

The first sample location, SSV-1, was collected at the western end of the hallway. A rotary hammer was used to create the requisite hole for placement of sample equipment, a Vapor Pin™. The hole diameter in the floor slab for the pin was approximately 1.5-inches. A 5/8-inch hole was drilled through the slab and a least 1-inch below the slab to create a void. At this location, the floor slab was greater than 10-inches thick. After removal of the bit, the floor surface was cleaned, removing loose cuttings with a vacuum.

The Vapor Pin™ was installed in accordance with the manufacturer's instructions. Care was

taken to ensure that a tight seal was made, and the protective cap on the Vapor Pin™ was in place to prevent vapor loss prior to sampling. The sub-slab sample point was flush mounted. Although the Teflon sleeve on the pin should create an adequate seal, a secondary check was performed, utilizing a water dam. Leak testing (shut-in for sampling train) was conducted to ensure a representative sample was collected from the sub-slab vapor probe location.

Collection of SSV-2 was at the eastern end of the hallway. The first three attempts to penetrate the concrete slab were each terminated after drilling nearly three feet into concrete. Upon concurrence with MDNR, the location was moved further east into a room beyond the hallway. The concrete was about 10-inches thick, as seen in the west end of the building, and a sample was collected at this location.

Sample SSV-3 was obtained from the bus maintenance building. The specific location was at the southwest corner of the break room. Sample SSV-4 was also obtained from the bus maintenance building, collected from the northeast end of the break room. The concrete slab for these two locations was about 4-inches thick.

Sample Collection

At each sample location, the Vapor Pin™ was checked to determine that the pin was not blocked with material that could interfere with air flow. A lab-certified, pre-evacuated, clean 1.0-L Summa® canister was attached to the pin via Teflon tubing. The valve on Summa® canister was then opened. The sub-slab vapor sample was drawn into the canister by pressure equilibration. The sampling time varied by location.

Once this sample, designated SSV-1, was collected, the Summa® valve was closed, and the Teflon tubing was removed. The vapor pin was then removed from the hole. Using Ace® brand, quick-curing, hydraulic cement mixed according to manufacturer's directions, the penetration was sealed. A metal rod was used to tamp the cement mixture so that cement was placed from the base of the hole to the surface.

Sample number, sample location, and date collected was recorded on the chain of custody form and on the blank tag attached to the canister. The sample was submitted for analysis using EPA Method TO-15 for those COPCs previously described. This general approach was followed for each of the samples collected. The samples were taken to TekLab for analyses.

Analytical Testing

In accordance with the approved work plan, the samples were analyzed for the COPCs by EPA Method TO-15. The results are attached to this report. Detected COPCs in SSV-1 included 1,1,1-trichloroethane, acetone, chloroform, cis-1,2-dichloroethene, PCE, TCE, and trans-1,2-dichloroethene. Detected COPCs in SSV-2 included 1,1,1-trichloroethane, cis-1,2-dichloroethene, PCE, and TCE. Detected COPCs in SSV-3 included acetone, 1,1,1-trichloroethane, PCE, and toluene. Detected COPCs in SSV-4 included acetone, benzene,

ethylbenzene, PCE, and toluene. Results are presented in Tables 1 through 4.

Quality Assurance – Data Validation

Sample Collection and Sample Receipt

Samples were and shipped to Teklab, Inc. on September 24, 2016, as noted in the chain-of-custody (COC) form provided to the laboratory with sample submittal. The applicable data package from Teklab is designated 16091675.

The chain-of-custody was maintained and the canisters were received by Teklab at their analytical facility in good condition. Samples were transferred to the North Bluff Road facility in Collinsville, IL, for analysis.

Upon arrival at the laboratory, pressure readings on the sample canisters were obtained and then compared to the readings taken in the field following sample collection. Each of the comparisons demonstrated less than 5 inches Hg loss from field to lab, with the exception of sample SSV-3. While taking the final pressure reading in the field for sample SSV-3, there was an equipment malfunction regarding the canister's in-line gauge. Although it was not possible to obtain this final pressure reading, the sample collection is considered to have been complete, similar to the other three samples collected. Because of this, and the fact that the other three sample canisters did not show a loss of pressure greater than 5 inches Hg from field to lab, all sample are deemed to have arrived at the laboratory in an acceptable manner.

Analytical Methods

Air samples were analyzed by method TO15, providing results for the following VOC analytes by Gas Chromatograph/Mass Spectrometry (GC/MS):

1. 1,1,1-trichloroethane
2. 1,2-dichloroethane
3. acetone
4. benzene
5. chlorobenzene
6. chloroform
7. cis-1,2-dichloroethene
8. ethylbenzene
9. methylene chloride
10. naphthalene
11. tetrachloroethene
12. toluene
13. trans-1,2-dichloroethene
14. trichloroethene
15. vinyl chloride
16. xylenes, total

Analytical Reporting Limits

Reporting limits for all data packages were within project requirements. However, due to high concentrations of some target analytes and/or matrix interference, analyses of some analytes required dilutions, as follows.

All VOCs analyzed in sample SSV-1 required a dilution to a factor of 200, except for tetrachloroethene and trichloroethene, which required dilutions to a factor of 1000.

All VOCs analyzed in sample SSV-2 required a dilution to a factor of 200, except for trichloroethene, which required a dilution to a factor of 1000.

All VOCs analyzed in samples SSV-3 and SSV-4 required a dilution to a factor of 2, except for acetone, which required a dilution to a factor of 20.

Laboratory Data Packages

The laboratory analytical data packages were complete, including the Quality Control information. A COC was included with each laboratory data package, double-signed and dated.

Sample Preservation

Sample preservation is not applicable for air samples.

Holding Times

All samples were analyzed by the laboratory within the specified holding. Samples were collected on September 24, 2016 and analyzed on September 28.

Blanks

Two method blank samples were analyzed for this batch of VOCs. Neither resulted in any detections above the method reporting limit.

Laboratory Control Sample

Two laboratory control samples (LCSs) with corresponding laboratory control sample duplicates (LCSDs) were analyzed for this batch. The percent recoveries of compounds spiked/analyzed were all within the percent quality control range limits and the relative percent difference (RPDs) for the duplicates were within the quality control criteria range.

Surrogate Recoveries

Surrogate recoveries for each of the four air samples were within the acceptable criteria range.

On the basis of the data validation described above, all sample data are deemed to be of sufficient quality.

Data Evaluation

As described in the work plan, for consistency in screening and evaluating data for an industrial risk scenario, if the sum of the carcinogenic risks exceeds 1E-05, or if the VI hazards sum exceeds 1.0, the next phase, an indoor air study, will be triggered.

USEPA's VISL Calculator (USEPA, May 2016) was used to calculate risk for chemicals analyzed in each gas sample. Detected chemical concentrations were input into the Sub-slab or Exterior Gas Concentration to Indoor Air Concentration (SGC-IAC) model of the VISL. As a conservative measure, the method detection limit (MDL) concentrations of chemicals which were not detected were also input into the VISL SGC-IAC. As indicated above, there are no values in the VISL calculator for cis or trans 1,2-dichloroethene.

Tables 1 through 4 show the COPC concentrations and their respective cancer risk results and noncancer hazard indices (HIs; with the HI being a sum of the individual chemical's hazard quotients [HQs]). Only samples SSV-1 and SSV-2 demonstrated a cumulative cancer risk greater than 1E-05 as well as an exceedance of the noncancer HI criteria of 1.0. The chemicals which demonstrated the major contribution to the cumulative risks in sample SSV-1 are: Chloroform, PCE, and TCE. Each of the risk results for those chemicals demonstrated either a cancer risk greater than 1E-05 and/or an HQ greater than 1.0. For sample SSV-2, the following constituents exceeded at least one of those criteria: PCE, and TCE.

Based upon the data for SSV-3 and SSV-4, criteria were not exceeded, either individually or cumulatively. Supporting documentation of the calculations and evaluation are attached to this report.

Conclusions and Recommendations

Based upon the work conducted and evaluation of the data, as no criteria were exceeded for samples obtained from the bus maintenance building, no additional work is needed per the VI Work Plan for that structure.

Based upon evaluation of the data obtained from the Ahrens office building, as criteria were exceeded, additional work is needed per the VI Work Plan. The next phase of work will be collection of indoor air samples. This task will be conducted per the Work Plan, with field work coordinated with the building owner. This first event will be conducted between December 15, 2016, and February 15, 2017, with two samples obtained from the building, per the approved work plan.

As described in the Work Plan, prior to sampling, a detailed survey of the building will be performed. The pre-sampling inspection will identify conditions that may affect or interfere with the proposed testing. The inspection will include the type of structure, floor layout, physical conditions, and airflows. A product inventory will help identify potential sources of interference.

Owners/occupants will also be requested to assist in filling out a pre-sampling questionnaire.

The questionnaire and inventory survey will enable the sampling investigator to document various information on building construction, the occupants, and potential sources of indoor air contamination. A photo-ionization detector (PID) may also be used as a screening tool to identify potential sources for interference.

If there are questions or concerns related to this report, please contact Larry Rosen, who can be reached by phone at (314) 480-4694, or via email at larryr@environmentalops.com.

Respectfully submitted,
ENVIRONMENTAL OPERATIONS, INC.

Lawrence C. Rosen

Lawrence C. Rosen, R.G.
Senior Project Manager

Copy: Mr. Michael House/Solutia
Ms. Christine Kump-Mitchell/MDNR
Mr. Rich Nussbaum/ MDNR

Attachments: Figure 1 – General Site Plan
Figure 2 – Sample Locations
Tables 1 through 4 – Summary Data with Risk Criteria
VISL Calculation Supporting Documentation
Analytical Laboratory Report 16091675

FIGURES

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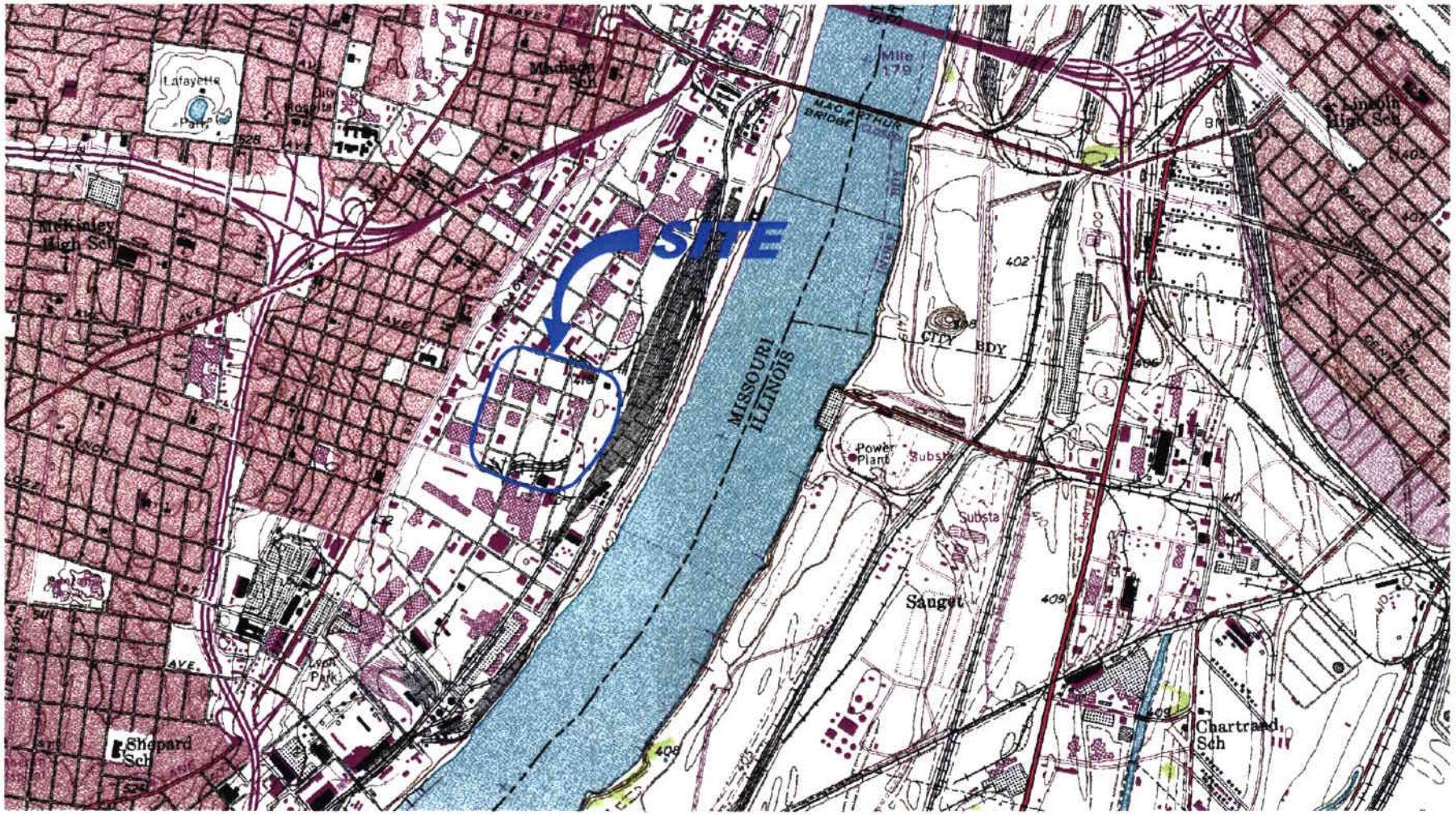

LEGEND

GENERAL LOCATION OF J.F. QUEENY PLANT

BASE MAP REFERENCE: MAP TAKEN FROM ELECTRONIC USGS DIGITAL RASTER GRAPHIC 7.5 MINUTE SERIES TOPOGRAPHIC MAP OF CAHOKIA, ILLINOIS, REVISED 1952.

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SCALE FEET

Site Location Map

Former Solutia Queeny Plant

Saint Louis Missouri

Figure 1

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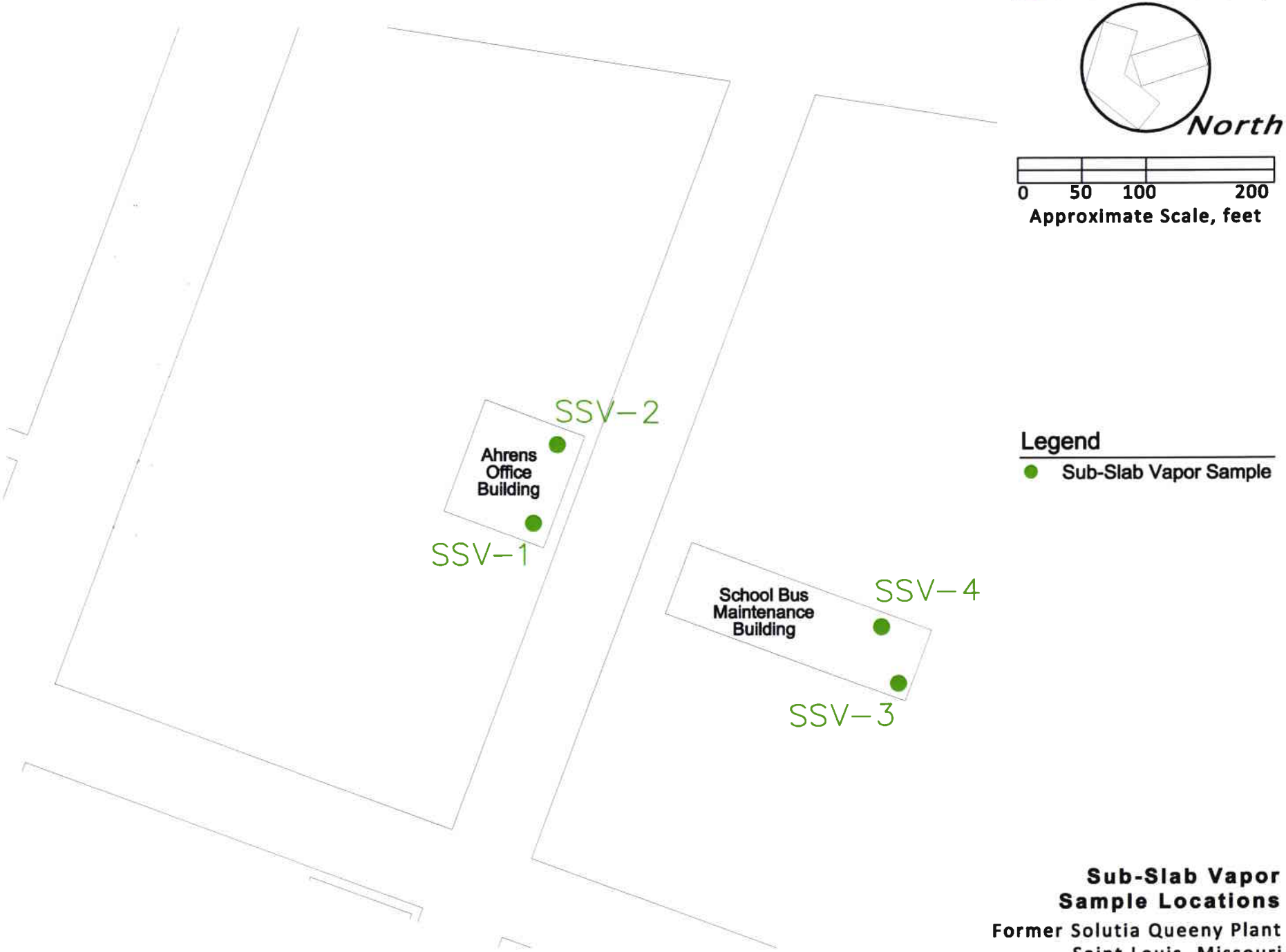

Sub-Slab Vapor Sample Locations

Former Solutia Queeny Plant
Saint Louis, Missouri

Figure 2

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TABLES

Table 1 SSV-1

Date Collected 9/24/2016 9:26:00 AM

Sample SSV-1 (Nondetects at the Method Detection Level)

Analyte	Unit		Result	Unit		Result	Unit		Result	Qual	Commercial[1] VISL Results CR	Commercial[1] VISL Results HQ
Acetone	ppbv		630	mg/M3		1.4965	ug/m3		1496.5		No IUR	3.30E-04
Benzene	ppbv	<	10	mg/M3	<	0.0319	ug/m3	<	31.9		6.10E-07	7.30E-03
Chlorobenzene	ppbv	<	10	mg/M3	<	0.046	ug/m3	<	46		No IUR	6.30E-03
Chloroform	ppbv		216	mg/M3		1.0546	ug/m3		1054.6		5.90E-05	7.40E-02
1,2-Dichloroethane	ppbv	<	10	mg/M3	<	0.0405	ug/m3	<	40.5		2.60E-06	4.00E-02
Ethylbenzene	ppbv	<	10	mg/M3	<	0.0434	ug/m3	<	43.4		2.70E-07	3.00E-04
Methylene chloride	ppbv	<	10	mg/M3	<	0.0347	ug/m3	<	34.7		8.50E-10	4.00E-04
Naphthalene	ppbv	<	20	mg/M3	<	0.1048	ug/m3	<	104.8		8.70E-06	2.40E-01
Tetrachloroethene	ppbv		8240	mg/M3		55.8882	ug/m3		55888		3.60E-05	9.60E+00
Toluene	ppbv	<	50	mg/M3	<	0.0377	ug/m3	<	37.7		No IUR	5.20E-05
1,1,1-Trichloroethane	ppbv		276	mg/M3		1.5059	ug/m3		1505.9		No IUR	2.10E-03
Trichloroethene	ppbv		10600	mg/M3		56.9618	ug/m3		56962		5.70E-04	2.00E+02
Vinyl chloride	ppbv	<	10	mg/M3	<	0.0256	ug/m3	<	25.6		2.80E-07	1.80E-03
Xylenes, Total	ppbv	<	30	mg/M3	<	0.1303	ug/m3	<	130.3		No IUR	8.90E-03
cis-1,2-Dichloroethene	ppbv		172	mg/M3		0.682	ug/m3		682		No IUR	No RfC
trans-1,2-Dichloroethene	ppbv		108	mg/M3		0.4282	ug/m3		428.2		No IUR	No RfC

ppbv = parts per billion by volume

VISL = vapor intrusion screening level

[1]Results obtained using EPA's Vapor Intrusion Screening Level Calculator, May 2016 Regional Screening Levels (RSLs)

Carcinogenic Risk Sum = 6.8E-04

Noncancer Hazard Index = 2.1E+02

= risk results exceed criteria

Table 2 SSV-2

Date Collected 9/24/2016 9:43:00 AM

Sample SSV-2 (Nondetects at the Method Detection Level)

Analyte	Unit		Result	Unit		Result	Unit		Result	Qual	Commercial[1] VISL Results CR	HQ
Acetone	ppbv	<	40	mg/M3	<	0.095	ug/m3	<	95		No IUR	2.10E-05
Benzene	ppbv	<	10	mg/M3	<	0.0319	ug/m3	<	31.9		6.10E-07	7.30E-03
Chlorobenzene	ppbv	<	10	mg/M3	<	0.046	ug/m3	<	46		No IUR	6.30E-03
Chloroform	ppbv	<	20	mg/M3	<	0.0977	ug/m3	<	97.7		5.50E-06	6.80E-03
1,2-Dichloroethane	ppbv	<	10	mg/M3	<	0.0396	ug/m3	<	39.6		2.50E-06	3.90E-02
Ethylbenzene	ppbv	<	10	mg/M3	<	0.0434	ug/m3	<	43.4		2.70E-07	3.00E-04
Methylene chloride	ppbv	<	10	mg/M3	<	0.0347	ug/m3	<	34.7		8.50E-10	4.00E-04
Naphthalene	ppbv	<	20	mg/M3	<	0.1048	ug/m3	<	104.8		8.70E-06	2.40E-01
Tetrachloroethene	ppbv		7220	mg/M3		48.97	ug/m3		48970		3.10E-05	8.40E+00
Toluene	ppbv	<	10	mg/M3	<	0.0377	ug/m3	<	37.7		No IUR	5.20E-05
1,1,1-Trichloroethane	ppbv		410	mg/M3		2.237	ug/m3		2237		No IUR	3.10E-03
Trichloroethene	ppbv		518	mg/M3		2.7836	ug/m3		2783.6		2.80E-05	9.50E+00
Vinyl chloride	ppbv	<	10	mg/M3	<	0.0256	ug/m3	<	25.6		2.80E-07	1.80E-03
Xylenes, Total	ppbv	<	30	mg/M3	<	0.1303	ug/m3	<	130.3		No IUR	8.90E-03
cis-1,2-Dichloroethene	ppbv		226	mg/M3		0.8961	ug/m3		896.1		No IUR	No RfC
trans-1,2-Dichloroethene	ppbv	<	10	mg/M3	<	0.0396	ug/m3	<	39.6		No IUR	No RfC

ppbv = parts per billion by volume

VISL = vapor intrusion screening level

[1]Results obtained using EPA's Vapor Intrusion Screening Level Calculator, May 2016 Regional Screening Levels (RSLs)

Carcinogenic Risk Sum = 7.7E-05

Noncancer Hazard Index = 1.8E+01

= risk results exceed criteria

Table 3 SSV-3

Date Collected 9/24/2016 11:13:00 AM

Sample SSV-3 (Nondetects at the Method Detection Level)

Analyte	Unit		Result	Unit		Result	Unit		Result	Qual	Commercial[1] VISL Results CR	HQ
Acetone	ppbv		44.4	mg/M3		0.1055	ug/m3		105.5		No IUR	2.30E-05
Benzene	ppbv	<	0.1	mg/M3	<	0.0003	ug/m3	<	0.3		5.70E-09	6.80E-05
Chlorobenzene	ppbv	<	0.1	mg/M3	<	0.0005	ug/m3	<	0.5		No IUR	6.80E-05
Chloroform	ppbv	<	0.2	mg/M3	<	0.001	ug/m3	<	1		5.60E-08	7.00E-05
1,2-Dichloroethane	ppbv	<	0.1	mg/M3	<	0.0004	ug/m3	<	0.4		2.50E-08	3.90E-04
Ethylbenzene	ppbv	<	0.1	mg/M3	<	0.0004	ug/m3	<	0.4		2.40E-09	2.70E-06
Methylene chloride	ppbv	<	0.1	mg/M3	<	0.0003	ug/m3	<	0.3		7.30E-12	3.40E-06
Naphthalene	ppbv	<	0.2	mg/M3	<	0.001	ug/m3	<	1		8.30E-08	2.30E-03
Tetrachloroethene	ppbv		4.38	mg/M3		0.0297	ug/m3		29.7		1.90E-08	5.10E-03
Toluene	ppbv		1.08	mg/M3		0.0041	ug/m3		4.1		No IUR	5.60E-06
1,1,1-Trichloroethane	ppbv		1.12	mg/M3		0.0061	ug/m3		6.1		No IUR	8.40E-06
Trichloroethene	ppbv	<	0.1	mg/M3	<	0.0005	ug/m3	<	0.5		5.00E-09	1.73-03
Vinyl chloride	ppbv	<	0.1	mg/M3	<	0.0003	ug/m3	<	0.3		3.20E-09	2.10E-05
Xylenes, Total	ppbv	<	0.3	mg/M3	<	0.0013	ug/m3	<	1.3		No IUR	8.90E-05
cis-1,2-Dichloroethene	ppbv	<	0.1	mg/M3	<	0.0004	ug/m3	<	0.4		No IUR	No RfC
trans-1,2-Dichloroethene	ppbv	<	0.1	mg/M3	<	0.0004	ug/m3	<	0.4		No IUR	No RfC

ppbv = parts per billion by volume

VISL = vapor intrusion screening level

[1]Results obtained using EPA's Vapor Intrusion Screening Level Calculator, May 2016 Regional Screening Levels (RSLs)

Carcinogenic Risk Sum =	2.0E-07	
Noncancer Hazard Index =		8.1E-03

Table 4 SSV-4

Date Collected 9/24/2016 11:07:00 AM

Sample SSV-4 (Nondetects at the Method Detection Level)

Analyte	Unit		Result	Unit		Result	Unit		Result	Qual	Commercial[1] VISL Results CR	HQ
Acetone	ppbv		53	mg/M3		0.1259	ug/m3		125.9		No IUR	2.80E-05
Benzene	ppbv		1.94	mg/M3		0.0062	ug/m3		6.2		1.20E-07	1.40E-03
Chlorobenzene	ppbv	<	0.1	mg/M3	<	0.0005	ug/m3	<	0.5		No IUR	6.80E-05
Chloroform	ppbv	<	0.2	mg/M3	<	0.001	ug/m3	<	1		5.60E-08	7.00E-05
1,2-Dichloroethane	ppbv	<	0.1	mg/M3	<	0.0004	ug/m3	<	0.4		2.50E-08	3.90E-04
Ethylbenzene	ppbv		1.44	mg/M3		0.0063	ug/m3		6.3		3.80E-08	4.30E-05
Methylene chloride	ppbv	<	0.1	mg/M3	<	0.0003	ug/m3	<	0.3		7.30E-12	3.40E-06
Naphthalene	ppbv	<	0.2	mg/M3	<	0.001	ug/m3	<	1		8.30E-08	2.30E-03
Tetrachloroethene	ppbv		4.86	mg/M3		0.033	ug/m3		33		2.10E-08	5.70E-03
Toluene	ppbv		4.56	mg/M3		0.0172	ug/m3		17.2		No IUR	2.40E-05
1,1,1-Trichloroethane	ppbv	<	0.1	mg/M3	<	0.0005	ug/m3	<	0.5		No IUR	6.80E-07
Trichloroethene	ppbv	<	0.1	mg/M3	<	0.0005	ug/m3	<	0.5		5.00E-09	1.70E-03
Vinyl chloride	ppbv	<	0.1	mg/M3	<	0.0003	ug/m3	<	0.3		3.20E-09	2.10E-05
Xylenes, Total	ppbv	<	0.3	mg/M3	<	0.0013	ug/m3	<	1.3		No IUR	8.90E-05
cis-1,2-Dichloroethene	ppbv	<	0.1	mg/M3	<	0.0004	ug/m3	<	0.4		No IUR	No RfC
trans-1,2-Dichloroethene	ppbv	<	0.1	mg/M3	<	0.0004	ug/m3	<	0.4		No IUR	No RfC

ppbv = parts per billion by volume

VISL = vapor intrusion screening level

[1]Results obtained using EPA's Vapor Intrusion Screening Level Calculator, May 2016 Regional Screening Levels (RSLs)

Carcinogenic Risk Sum = 3.5E-07

Noncancer Hazard Index = 1.2E-02

VISL SUPPORTING DOCUMENTATION

EPA-OLEM VAPOR INTRUSION ASSESSMENT

Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

Queeny Site, St. Louis, MO SSV-1 Sub-Slab Sample

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-05	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration Csg (ug/m^3)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator I
67-64-1	Acetone	1.5E+03	4.49E+01	No IUR	3.3E-04			3.10E+01	A	
71-43-2	Benzene	3.2E+01	9.57E-01	6.1E-07	7.3E-03	7.80E-06	I	3.00E-02	I	
108-90-7	Chlorobenzene	4.6E+01	1.38E+00	No IUR	6.3E-03			5.00E-02	P	
67-66-3	Chloroform	1.1E+03	3.16E+01	**5.9E-05**	7.4E-02	2.30E-05	I	9.80E-02	A	
107-06-2	Dichloroethane, 1,2-	4.1E+01	1.22E+00	2.6E-06	4.0E-02	2.60E-05	I	7.00E-03	P	
100-41-4	Ethylbenzene	4.3E+01	1.30E+00	2.7E-07	3.0E-04	2.50E-06	CA	1.00E+00	I	
75-09-2	Methylene Chloride	3.5E+01	1.04E+00	8.5E-10	4.0E-04	1.00E-08	I	6.00E-01	I	Mut
91-20-3	Naphthalene	1.0E+02	3.14E+00	8.7E-06	2.4E-01	3.40E-05	CA	3.00E-03	I	
127-18-4	Tetrachloroethylene	5.6E+04	1.68E+03	**3.6E-05**	**9.6E+00**	2.60E-07	I	4.00E-02	I	
108-88-3	Toluene	3.8E+01	1.13E+00	No IUR	5.2E-05			5.00E+00	I	
71-55-6	Trichloroethane, 1,1,1-	1.5E+03	4.52E+01	No IUR	2.1E-03			5.00E+00	I	
79-01-6	Trichloroethylene	5.7E+04	1.71E+03	**5.7E-04**	**2.0E+02**	see note	I	2.00E-03	I	TCE
75-01-4	Vinyl Chloride	2.6E+01	7.68E-01	2.8E-07	1.8E-03	4.40E-06	I	1.00E-01	I	VC
1330-20-7	Xylenes	1.3E+02	3.91E+00	No IUR	8.9E-03			1.00E-01	I	
	Trichloroethylene				Symbol	Value	Symbol	Value		Symbol	Value
	Vinyl Chloride		See the Navigation Guide equation for Cia,c for vinyl chloride								

EPA-OLEM VAPOR INTRUSION ASSESSMENT
Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)
Queeny Site, St. Louis, MO SSV-2 Sub-Slab Sample

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-05	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration Csg (ug/m³)	Calculated Indoor Air Concentration Cia (ug/m³)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m³)⁻¹	IUR Source*	Reference Concentration RfC (mg/m³)	RFC Source*	Mutagenic Indicator i
67-64-1	Acetone	9.5E+01	2.85E+00	No IUR	2.1E-05			3.10E+01	A	
71-43-2	Benzene	3.2E+01	9.57E-01	6.1E-07	7.3E-03	7.80E-06	I	3.00E-02	I	
108-90-7	Chlorobenzene	4.6E+01	1.38E+00	No IUR	6.3E-03			5.00E-02	P	
67-66-3	Chloroform	9.8E+01	2.93E+00	5.5E-06	6.8E-03	2.30E-05	I	9.80E-02	A	
107-06-2	Dichloroethane, 1,2-	4.0E+01	1.19E+00	2.5E-06	3.9E-02	2.60E-05	I	7.00E-03	P	
100-41-4	Ethylbenzene	4.3E+01	1.30E+00	2.7E-07	3.0E-04	2.50E-06	CA	1.00E+00	I	
75-09-2	Methylene Chloride	3.5E+01	1.04E+00	8.5E-10	4.0E-04	1.00E-08	I	6.00E-01	I	Mut
91-20-3	Naphthalene	1.0E+02	3.14E+00	8.7E-06	2.4E-01	3.40E-05	CA	3.00E-03	I	
127-18-4	Tetrachloroethylene	4.9E+04	1.47E+03	**3.1E-05**	**8.4E+00**	2.60E-07	I	4.00E-02	I	
108-88-3	Toluene	3.8E+01	1.13E+00	No IUR	5.2E-05			5.00E+00	I	
71-55-6	Trichloroethane, 1,1,1-	2.2E+03	6.71E+01	No IUR	3.1E-03			5.00E+00	I	
79-01-6	Trichloroethylene	2.8E+03	8.35E+01	**2.8E-05**	**9.5E+00**	see note	I	2.00E-03	I	TCE
75-01-4	Vinyl Chloride	2.6E+01	7.68E-01	2.8E-07	1.8E-03	4.40E-06	I	1.00E-01	I	VC
1330-20-7	Xylenes	1.3E+02	3.91E+00	No IUR	8.9E-03			1.00E-01	I	
	Trichloroethylene				Symbol	Value	Symbol	Value		Symbol	Value
	Vinyl Chloride	See the Navigation Guide equation for Cia,c for vinyl chloride.									

EPA-OLEM VAPOR INTRUSION ASSESSMENT

Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

Queeny Site, St. Louis, MO SSV-3 Sub-Slab Sample

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-05	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration Csg (ug/m^3)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ		Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i	
67-64-1	Acetone	1.1E+02	3.17E+00	No IUR	2.3E-05				3.10E+01	A		
71-43-2	Benzene	3.0E-01	9.00E-03	5.7E-09	6.8E-05		7.80E-06	I	3.00E-02	I		
108-90-7	Chlorobenzene	5.0E-01	1.50E-02	No IUR	6.8E-05				5.00E-02	P		
67-66-3	Chloroform	1.0E+00	3.00E-02	5.6E-08	7.0E-05		2.30E-05	I	9.80E-02	A		
107-06-2	Dichloroethane, 1,2-	4.0E-01	1.20E-02	2.5E-08	3.9E-04		2.60E-05	I	7.00E-03	P		
100-41-4	Ethylbenzene	4.0E-01	1.20E-02	2.4E-09	2.7E-06		2.50E-06	CA	1.00E+00	I		
75-09-2	Methylene Chloride	3.0E-01	9.00E-03	7.3E-12	3.4E-06		1.00E-08	I	6.00E-01	I	Mut	
91-20-3	Naphthalene	1.0E+00	3.00E-02	8.3E-08	2.3E-03		3.40E-05	CA	3.00E-03	I		
127-18-4	Tetrachloroethylene	3.0E+01	8.91E-01	1.9E-08	5.1E-03		2.60E-07	I	4.00E-02	I		
108-88-3	Toluene	4.1E+00	1.23E-01	No IUR	5.6E-06				5.00E+00	I		
71-55-6	Trichloroethane, 1,1,1-	6.1E+00	1.83E-01	No IUR	8.4E-06				5.00E+00	I		
79-01-6	Trichloroethylene	5.0E-01	1.50E-02	5.0E-09	1.7E-03		see note	I	2.00E-03	I	TCE	
75-01-4	Vinyl Chloride	3.0E-01	9.00E-03	3.2E-09	2.1E-05		4.40E-06	I	1.00E-01	I	VC	
1330-20-7	Xylenes	1.3E+00	3.90E-02	No IUR	8.9E-05				1.00E-01	I		
	Trichloroethylene					Symbol		Symbol				Symbol
	Vinyl Chloride					Value		Value				Value

See the Navigation Guide equation for Cia,c for vinyl chloride.

EPA-OLEM VAPOR INTRUSION ASSESSMENT

Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.6.1 (May 2016 RSLs)

Queeny Site, St. Louis, MO SSV-4 Sub-Slab Sample

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-05	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration Csg (ug/m^3)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RfC Source*	Mutagenic Indicator I
67-64-1	Acetone	1.3E+02	3.78E+00	No IUR	2.8E-05			3.10E+01	A	
71-43-2	Benzene	6.2E+00	1.86E-01	1.2E-07	1.4E-03	7.80E-06	I	3.00E-02	I	
108-90-7	Chlorobenzene	5.0E-01	1.50E-02	No IUR	6.8E-05			5.00E-02	P	
67-66-3	Chloroform	1.0E+00	3.00E-02	5.6E-08	7.0E-05	2.30E-05	I	9.80E-02	A	
107-06-2	Dichloroethane, 1,2-	4.0E-01	1.20E-02	2.5E-08	3.9E-04	2.60E-05	I	7.00E-03	P	
100-41-4	Ethylbenzene	6.3E+00	1.89E-01	3.9E-08	4.3E-05	2.50E-06	CA	1.00E+00	I	
75-09-2	Methylene Chloride	3.0E-01	9.00E-03	7.3E-12	3.4E-06	1.00E-08	I	6.00E-01	I	Mut
91-20-3	Naphthalene	1.0E+00	3.00E-02	8.3E-08	2.3E-03	3.40E-05	CA	3.00E-03	I	
127-18-4	Tetrachloroethylene	3.3E+01	9.90E-01	2.1E-08	5.7E-03	2.60E-07	I	4.00E-02	I	
108-88-3	Toluene	1.7E+01	5.16E-01	No IUR	2.4E-05			5.00E+00	I	
71-55-6	Trichloroethane, 1,1,1-	5.0E-01	1.50E-02	No IUR	6.8E-07			5.00E+00	I	
79-01-6	Trichloroethylene	5.0E-01	1.50E-02	5.0E-09	1.7E-03	see note	I	2.00E-03	I	TCE
75-01-4	Vinyl Chloride	3.0E-01	9.00E-03	3.2E-09	2.1E-05	4.40E-06	I	1.00E-01	I	VC
1330-20-7	Xylenes	1.3E+00	3.90E-02	No IUR	8.9E-05			1.00E-01	I	
	Trichloroethylene				Symbol	Value	Symbol	Value		Symbol	Value
	Vinyl Chloride		See the Navigation Guide equation for Cia,c for vinyl chloride.								

LABORATORY ANALYTICAL REPORT

September 30, 2016

Larry Rosen
Environmental Operations, Inc.
1530 South Second Street, Suite 200
St. Louis, MO 63104
TEL: (314) 480-4694
FAX: (314) 436-2900

RE: Solutia 2950R

WorkOrder: 16091675

Dear Larry Rosen:

TEKLAB, INC received 4 samples on 9/25/2016 4:20:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Shelly A Hennessy

Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com

Report Contents

Client: Environmental Operations, Inc.
Client Project: Solutia 2950R

Work Order: 16091675
Report Date: 30-Sep-16

This reporting package includes the following:

Cover Letter	1
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Chain of Custody	Appended

Definitions

Client: Environmental Operations, Inc. **Work Order:** 16091675

Client Project: Solutia 2950R **Report Date:** 30-Sep-16

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon
E -	Value above quantitation range
I -	Associated internal standard was outside method criteria
ND -	Not Detected at the Reporting Limit
S -	Spike Recovery outside recovery limits
X -	Value exceeds Maximum Contaminant Level
B -	Analyte detected in associated Method Blank
H -	Holding times exceeded
M -	Manual Integration used to determine area response
R -	RPD outside accepted recovery limits
T -	TIC(Tentatively identified compound)

Case Narrative

http://www.teklabinc.com/

Client: Environmental Operations, Inc.

Client Project: Solutia 2950R

Work Order: 16091675

Report Date: 30-Sep-16

Cooler Receipt Temp: NA °C

TO15 analysis was performed at the North Bluff Road facility in Collinsville Illinois, Agency Interest No. 166578.

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	3920 Pintail Dr Springfield, IL 62711-9415	8421 Nieman Road Lenexa, KS 66214	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	dthompson@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2017	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2017	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2017	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2016	Collinsville
Kentucky	UST	0073		1/31/2017	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2017	Collinsville
Oklahoma	ODEQ	9978		8/31/2017	Collinsville

Teklab, Inc.
Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Environmental Operations, Inc.
Client Project: Solutia 2950R

Work Order: 16091675
Report Date: 30-Sep-16

Lab ID: 16091675-001
Matrix: AIR CANISTER

Client Sample ID: SSV-4
Collection Date: 09/24/2016 11:07

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed
TO-15, VOLATILE ORGANIC COMPOUNDS, BY GC/MS								
1,1,1-Trichloroethane	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 18:38
MW 133.40		0.0005	0.0055		**ND**	mg/m3		
1,2-Dichloroethane	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 18:38
MW 98.96		0.0004	0.004		**ND**	mg/m3		
Acetone	NELAP	4	40.0		**53.0**	ppbv	20	09/27/2016 18:53
MW 58.08		0.0095	0.095		**0.1259**	mg/m3		
Benzene	NELAP	0.1	1.00		**1.94**	ppbv	2	09/28/2016 18:38
MW 78.11		0.0003	0.0032		**0.0062**	mg/m3		
Chlorobenzene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 18:38
MW 112.56		0.0005	0.0046		**ND**	mg/m3		
Chloroform	NELAP	0.2	1.00		**ND**	ppbv	2	09/28/2016 18:38
MW 119.38		0.001	0.0049		**ND**	mg/m3		
cis-1,2-Dichloroethene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 18:38
MW 96.94		0.0004	0.004		**ND**	mg/m3		
Ethylbenzene	NELAP	0.1	1.00		**1.44**	ppbv	2	09/28/2016 18:38
MW 106.17		0.0004	0.0043		**0.0063**	mg/m3		
Methylene chloride	NELAP	0.1	2.00		**ND**	ppbv	2	09/28/2016 18:38
MW 84.93		0.0003	0.0069		**ND**	mg/m3		
Naphthalene	NELAP	0.2	1.00		**ND**	ppbv	2	09/28/2016 18:38
MW 128.17		0.001	0.0052		**ND**	mg/m3		
Tetrachloroethene	NELAP	0.1	1.00		**4.86**	ppbv	2	09/28/2016 18:38
MW 165.83		0.0007	0.0068		**0.033**	mg/m3		
Toluene	NELAP	0.1	1.00		**4.56**	ppbv	2	09/28/2016 18:38
MW 92.14		0.0004	0.0038		**0.0172**	mg/m3		
trans-1,2-Dichloroethene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 18:38
MW 96.94		0.0004	0.004		**ND**	mg/m3		
Trichloroethene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 18:38
MW 131.39		0.0005	0.0054		**ND**	mg/m3		
Vinyl chloride	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 18:38
MW 62.50		0.0003	0.0026		**ND**	mg/m3		
Xylenes, Total	NELAP	0.3	3.00		**ND**	ppbv	2	09/28/2016 18:38
MW 106.17		0.0013	0.013		**ND**	mg/m3		
Surr: 4-Bromofluorobenzene		0	41.2-165		**95.1**	%REC	2	09/28/2016 18:38
MW 175.00		0	41.2-165		**95.1**	%REC		

Elevated reporting limit due to high levels of target and/or non-target analytes.

Teklab, Inc.
Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Environmental Operations, Inc.
Client Project: Solutia 2950R

Work Order: 16091675
Report Date: 30-Sep-16

Lab ID: 16091675-002
Matrix: AIR CANISTER

Client Sample ID: SSV-2
Collection Date: 09/24/2016 9:43

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed
TO-15, VOLATILE ORGANIC COMPOUNDS, BY GC/MS								
1,1,1-Trichloroethane	NELAP	10	100		**410**	ppbv	200	09/28/2016 19:27
MW 133.40		0.0546	0.5456		**2.237**	mg/m3		
1,2-Dichloroethane	NELAP	10	100		**ND**	ppbv	200	09/28/2016 19:27
MW 98.96		0.0405	0.4047		**ND**	mg/m3		
Acetone	NELAP	40	400		**ND**	ppbv	200	09/28/2016 19:27
MW 58.08		0.095	0.9502		**ND**	mg/m3		
Benzene	NELAP	10	100		**ND**	ppbv	200	09/28/2016 19:27
MW 78.11		0.0319	0.3195		**ND**	mg/m3		
Chlorobenzene	NELAP	10	100		**ND**	ppbv	200	09/28/2016 19:27
MW 112.56		0.046	0.4604		**ND**	mg/m3		
Chloroform	NELAP	20	100		**ND**	ppbv	200	09/28/2016 19:27
MW 119.38		0.0977	0.4883		**ND**	mg/m3		
cis-1,2-Dichloroethene	NELAP	10	100		**226**	ppbv	200	09/28/2016 19:27
MW 96.94		0.0396	0.3965		**0.8961**	mg/m3		
Ethylbenzene	NELAP	10	100		**ND**	ppbv	200	09/28/2016 19:27
MW 106.17		0.0434	0.4342		**ND**	mg/m3		
Methylene chloride	NELAP	10	200		**ND**	ppbv	200	09/28/2016 19:27
MW 84.93		0.0347	0.6947		**ND**	mg/m3		
Naphthalene	NELAP	20	100		**ND**	ppbv	200	09/28/2016 19:27
MW 128.17		0.1048	0.5242		**ND**	mg/m3		
Tetrachloroethene	NELAP	50	500		**7220**	ppbv	1000	09/29/2016 10:27
MW 165.83		0.3391	3.3913		**48.97**	mg/m3		
Toluene	NELAP	10	100		**ND**	ppbv	200	09/28/2016 19:27
MW 92.14		0.0377	0.3768		**ND**	mg/m3		
trans-1,2-Dichloroethene	NELAP	10	100		**ND**	ppbv	200	09/28/2016 19:27
MW 96.94		0.0396	0.3965		**ND**	mg/m3		
Trichloroethene	NELAP	10	100		**518**	ppbv	200	09/28/2016 19:27
MW 131.39		0.0537	0.5374		**2.7836**	mg/m3		
Vinyl chloride	NELAP	10	100		**ND**	ppbv	200	09/28/2016 19:27
MW 62.50		0.0256	0.2556		**ND**	mg/m3		
Xylenes, Total	NELAP	30	300		**ND**	ppbv	200	09/28/2016 19:27
MW 106.17		0.1303	1.3026		**ND**	mg/m3		
Surr: 4-Bromofluorobenzene		0	41.2-165		**98.9**	%REC	200	09/28/2016 19:27
MW 175.00		0	41.2-165		**98.9**	%REC		

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: Environmental Operations, Inc.

Work Order: 16091675

Client Project: Solutia 2950R

Report Date: 30-Sep-16

Lab ID: 16091675-003

Client Sample ID: SSV-1

Matrix: AIR CANISTER

Collection Date: 09/24/2016 9:26

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed
TO-15, VOLATILE ORGANIC COMPOUNDS, BY GC/MS								
1,1,1-Trichloroethane	NELAP	10	100		**276**	ppbv	200	09/28/2016 20:16
MW 133.40		0.0546	0.5456		**1.5059**	mg/m3		
1,2-Dichloroethane	NELAP	10	100		**ND**	ppbv	200	09/28/2016 20:16
MW 98.96		0.0405	0.4047		**ND**	mg/m3		
Acetone	NELAP	40	400		**630**	ppbv	200	09/28/2016 20:16
MW 58.08		0.095	0.9502		**1.4965**	mg/m3		
Benzene	NELAP	10	100		**ND**	ppbv	200	09/28/2016 20:16
MW 78.11		0.0319	0.3195		**ND**	mg/m3		
Chlorobenzene	NELAP	10	100		**ND**	ppbv	200	09/28/2016 20:16
MW 112.56		0.046	0.4604		**ND**	mg/m3		
Chloroform	NELAP	20	100		**216**	ppbv	200	09/28/2016 20:16
MW 119.38		0.0977	0.4883		**1.0546**	mg/m3		
cis-1,2-Dichloroethene	NELAP	10	100		**172**	ppbv	200	09/28/2016 20:16
MW 96.94		0.0396	0.3965		**0.682**	mg/m3		
Ethylbenzene	NELAP	10	100		**ND**	ppbv	200	09/28/2016 20:16
MW 106.17		0.0434	0.4342		**ND**	mg/m3		
Methylene chloride	NELAP	10	200		**ND**	ppbv	200	09/28/2016 20:16
MW 84.93		0.0347	0.6947		**ND**	mg/m3		
Naphthalene	NELAP	20	100		**ND**	ppbv	200	09/28/2016 20:16
MW 128.17		0.1048	0.5242		**ND**	mg/m3		
Tetrachloroethene	NELAP	50	500		**8240**	ppbv	1000	09/29/2016 11:12
MW 165.83		0.3391	3.3913		**55.8882**	mg/m3		
Toluene	NELAP	10	100		**ND**	ppbv	200	09/28/2016 20:16
MW 92.14		0.0377	0.3768		**ND**	mg/m3		
trans-1,2-Dichloroethene	NELAP	10	100		**108**	ppbv	200	09/28/2016 20:16
MW 96.94		0.0396	0.3965		**0.4282**	mg/m3		
Trichloroethene	NELAP	50	500		**10600**	ppbv	1000	09/29/2016 11:12
MW 131.39		0.2687	2.6869		**56.9618**	mg/m3		
Vinyl chloride	NELAP	10	100		**ND**	ppbv	200	09/28/2016 20:16
MW 62.50		0.0256	0.2556		**ND**	mg/m3		
Xylenes, Total	NELAP	30	300		**ND**	ppbv	200	09/28/2016 20:16
MW 106.17		0.1303	1.3026		**ND**	mg/m3		
Surr: 4-Bromofluorobenzene		0	41.2-165		**95.8**	%REC	200	09/28/2016 20:16
MW 175.00		0	41.2-165		**95.8**	%REC		

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: Environmental Operations, Inc. **Work Order:** 16091675

Client Project: Solutia 2950R **Report Date:** 30-Sep-16

Lab ID: 16091675-004 **Client Sample ID:** SSV-3

Matrix: AIR CANISTER **Collection Date:** 09/24/2016 11:13

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed
TO-15, VOLATILE ORGANIC COMPOUNDS, BY GC/MS								
1,1,1-Trichloroethane	NELAP	0.1	1.00		**1.12**	ppbv	2	09/28/2016 21:04
MW 133.40		0.0005	0.0055		**0.0061**	mg/m3		
1,2-Dichloroethane	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 98.96		0.0004	0.004		**ND**	mg/m3		
Acetone	NELAP	4	40.0		**44.4**	ppbv	20	09/27/2016 21:06
MW 58.08		0.0095	0.095		**0.1055**	mg/m3		
Benzene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 78.11		0.0003	0.0032		**ND**	mg/m3		
Chlorobenzene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 112.56		0.0005	0.0046		**ND**	mg/m3		
Chloroform	NELAP	0.2	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 119.38		0.001	0.0049		**ND**	mg/m3		
cis-1,2-Dichloroethene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 96.94		0.0004	0.004		**ND**	mg/m3		
Ethylbenzene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 106.17		0.0004	0.0043		**ND**	mg/m3		
Methylene chloride	NELAP	0.1	2.00		**ND**	ppbv	2	09/28/2016 21:04
MW 84.93		0.0003	0.0069		**ND**	mg/m3		
Naphthalene	NELAP	0.2	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 128.17		0.001	0.0052		**ND**	mg/m3		
Tetrachloroethene	NELAP	0.1	1.00		**4.38**	ppbv	2	09/28/2016 21:04
MW 165.83		0.0007	0.0068		**0.0297**	mg/m3		
Toluene	NELAP	0.1	1.00		**1.08**	ppbv	2	09/28/2016 21:04
MW 92.14		0.0004	0.0038		**0.0041**	mg/m3		
trans-1,2-Dichloroethene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 96.94		0.0004	0.004		**ND**	mg/m3		
Trichloroethene	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 131.39		0.0005	0.0054		**ND**	mg/m3		
Vinyl chloride	NELAP	0.1	1.00		**ND**	ppbv	2	09/28/2016 21:04
MW 62.50		0.0003	0.0026		**ND**	mg/m3		
Xylenes, Total	NELAP	0.3	3.00		**ND**	ppbv	2	09/28/2016 21:04
MW 106.17		0.0013	0.013		**ND**	mg/m3		
Surr: 4-Bromofluorobenzene		0	41.2-165		**95.6**	%REC	2	09/28/2016 21:04
MW 175.00		0	41.2-165		**95.6**	%REC		

Elevated reporting limit due to high levels of target and/or non-target analytes.

Client: Environmental Operations, Inc. **Work Order:** 16091675

Client Project: Solutia 2950R **Report Date:** 30-Sep-16

TO-15, VOLATILE ORGANIC COMPOUNDS, BY GC/MS

Batch 122846 **SampType: MBLK** Units **ppbv**

SampID: MBLK-U160927-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1-Trichloroethane	0.50		**ND**						09/27/2016
1,2-Dichloroethane	0.50		**ND**						09/27/2016
Acetone	2.00		**ND**						09/27/2016
Benzene	0.50		**ND**						09/27/2016
Chlorobenzene	0.50		**ND**						09/27/2016
Chloroform	0.50		**ND**						09/27/2016
cis-1,2-Dichloroethene	0.50		**ND**						09/27/2016
Ethylbenzene	0.50		**ND**						09/27/2016
Methylene chloride	1.00		**ND**						09/27/2016
Naphthalene	0.50		**ND**						09/27/2016
Tetrachloroethene	0.50		**ND**						09/27/2016
Toluene	0.50		**ND**						09/27/2016
trans-1,2-Dichloroethene	0.50		**ND**						09/27/2016
Trichloroethene	0.50		**ND**						09/27/2016
Vinyl chloride	0.50		**ND**						09/27/2016
Xylenes, Total	1.50		**ND**						09/27/2016
Surr: 4-Bromofluorobenzene			**9.68**	10.00		96.8	41.2	165	09/27/2016

Batch 122846 **SampType: LCSD** Units **ppbv** RPD Limit **30**

SampID: LCSD-U160927-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1-Trichloroethane	0.50		**9.06**	10.10	0	89.7	8.970	1.00	09/27/2016
1,2-Dichloroethane	0.50		**10.4**	10.00	0	103.8	10.32	0.58	09/27/2016
Acetone	2.00		**10.6**	10.90	0	96.8	10.63	0.76	09/27/2016
Benzene	0.50		**9.77**	10.40	0	93.9	9.710	0.62	09/27/2016
Chlorobenzene	0.50		**10.8**	10.60	0	101.6	10.72	0.47	09/27/2016
Chloroform	0.50		**9.91**	10.40	0	95.3	9.920	0.10	09/27/2016
cis-1,2-Dichloroethene	0.50		**9.66**	10.10	0	95.6	9.620	0.41	09/27/2016
Ethylbenzene	0.50		**10.4**	10.60	0	98.4	10.40	0.29	09/27/2016
Methylene chloride	1.00		**9.85**	9.500	0	103.7	9.830	0.20	09/27/2016
Naphthalene	0.50		**14.5**	10.60	0	136.7	13.98	3.58	09/27/2016
Tetrachloroethene	0.50		**10.3**	10.50	0	98.2	10.26	0.49	09/27/2016
Toluene	0.50		**9.92**	10.50	0	94.5	9.880	0.40	09/27/2016
trans-1,2-Dichloroethene	0.50		**10.4**	11.00	0	94.3	10.37	0.00	09/27/2016
Trichloroethene	0.50		**10.3**	10.80	0	95.0	10.22	0.39	09/27/2016
Vinyl chloride	0.50		**10.7**	10.40	0	102.5	10.63	0.28	09/27/2016
Xylenes, Total	1.50		**32.2**	31.30	0	102.8	32.19	0.06	09/27/2016
Surr: 4-Bromofluorobenzene			**10.0**	10.00		100.1			09/27/2016

Client: Environmental Operations, Inc. **Work Order:** 16091675

Client Project: Solutia 2950R **Report Date:** 30-Sep-16

TO-15, VOLATILE ORGANIC COMPOUNDS, BY GC/MS

Batch 122846 **SampType: LCS** Units **ppbv**

SampID: LCS-U160927-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1-Trichloroethane	0.50		**8.97**	10.10	0	88.8	54.7	131	09/27/2016
1,2-Dichloroethane	0.50		**10.3**	10.00	0	103.2	58.1	142	09/27/2016
Acetone	2.00		**10.6**	10.90	0	97.5	67.6	151	09/27/2016
Benzene	0.50		**9.71**	10.40	0	93.4	57.5	137	09/27/2016
Chlorobenzene	0.50		**10.7**	10.60	0	101.1	59.6	155	09/27/2016
Chloroform	0.50		**9.92**	10.40	0	95.4	72.3	136	09/27/2016
cis-1,2-Dichloroethene	0.50		**9.62**	10.10	0	95.2	78	138	09/27/2016
Ethylbenzene	0.50		**10.4**	10.60	0	98.1	58.3	158	09/27/2016
Methylene chloride	1.00		**9.83**	9.500	0	103.5	68.1	130	09/27/2016
Naphthalene	0.50		**14.0**	10.60	0	131.9	0	261	09/27/2016
Tetrachloroethene	0.50		**10.3**	10.50	0	97.7	60.3	148	09/27/2016
Toluene	0.50		**9.88**	10.50	0	94.1	56.9	150	09/27/2016
trans-1,2-Dichloroethene	0.50		**10.4**	10.00	0	103.7	69	134	09/27/2016
Trichloroethene	0.50		**10.2**	10.80	0	94.6	59.2	141	09/27/2016
Vinyl chloride	0.50		**10.6**	10.40	0	102.2	65	125	09/27/2016
Xylenes, Total	1.50		**32.2**	31.30	0	102.8	56	146	09/27/2016
Surr: 4-Bromofluorobenzene			**10.1**	10.00		100.7	41.2	165	09/27/2016

Batch 122887 **SampType: MBLK** Units **ppbv**

SampID: MBLK-U160928-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1-Trichloroethane	0.50		**ND**						09/28/2016
1,2-Dichloroethane	0.50		**ND**						09/28/2016
Acetone	2.00		**ND**						09/28/2016
Benzene	0.50		**ND**						09/28/2016
Benzene	0.50		**ND**						09/28/2016
Chlorobenzene	0.50		**ND**						09/28/2016
Chloroform	0.50		**ND**						09/28/2016
cis-1,2-Dichloroethene	0.50		**ND**						09/28/2016
Ethylbenzene	0.50		**ND**						09/28/2016
Ethylbenzene	0.50		**ND**						09/28/2016
Methylene chloride	1.00		**ND**						09/28/2016
Naphthalene	0.50		**ND**						09/28/2016
Tetrachloroethene	0.50		**ND**						09/28/2016
Toluene	0.50		**ND**						09/28/2016
Toluene	0.50		**ND**						09/28/2016
trans-1,2-Dichloroethene	0.50		**ND**						09/28/2016
Trichloroethene	0.50		**ND**						09/28/2016
Vinyl chloride	0.50		**ND**						09/28/2016
Xylenes, Total	1.50		**ND**						09/28/2016
Surr: 4-Bromofluorobenzene			**8.85**	10.00		88.5	41.2	165	09/28/2016
Surr: 4-Bromofluorobenzene			**9.07**	10.00		90.7	41.2	165	09/28/2016

Client: Environmental Operations, Inc. **Work Order:** 16091675

Client Project: Solutia 2950R **Report Date:** 30-Sep-16

TO-15, VOLATILE ORGANIC COMPOUNDS, BY GC/MS

Batch 122887 **SampType: LCSD** Units **ppbv** RPD Limit **30**

SampID: LCSD-U160928-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1,1-Trichloroethane	0.50		**9.63**	10.10	0	95.3	9.320	3.27	09/28/2016
1,2-Dichloroethane	0.50		**11.1**	10.00	0	111.2	10.96	1.45	09/28/2016
Acetone	2.00		**11.5**	10.90	0	105.5	11.37	1.14	09/28/2016
Benzene	0.50		**8.97**	10.40	0	86.2	8.700	3.06	09/28/2016
Benzene	0.50		**10.5**	10.40	0	100.8	10.17	3.00	09/28/2016
Chlorobenzene	0.50		**11.5**	10.60	0	108.9	11.21	2.90	09/28/2016
Chloroform	0.50		**10.4**	10.40	0	100.3	10.25	1.74	09/28/2016
cis-1,2-Dichloroethene	0.50		**10.2**	10.10	0	100.9	9.960	2.28	09/28/2016
Ethylbenzene	0.50		**11.3**	10.60	0	106.3	10.96	2.79	09/28/2016
Ethylbenzene	0.50		**10.6**	10.60	0	99.8	10.29	2.78	09/28/2016
Methylene chloride	1.00		**10.5**	9.500	0	110.7	10.32	1.92	09/28/2016
Naphthalene	0.50		**16.6**	10.60	0	157.0	15.24	8.78	09/28/2016
Tetrachloroethene	0.50		**10.9**	10.50	0	104.0	10.62	2.79	09/28/2016
Toluene	0.50		**10.6**	10.50	0	100.6	10.28	2.69	09/28/2016
Toluene	0.50		**9.46**	10.50	0	90.1	9.210	2.68	09/28/2016
trans-1,2-Dichloroethene	0.50		**11.0**	11.00	0	99.8	10.81	1.56	09/28/2016
Trichloroethene	0.50		**10.9**	10.80	0	101.1	10.62	2.79	09/28/2016
Vinyl chloride	0.50		**11.5**	10.40	0	110.2	11.24	1.94	09/28/2016
Xylenes, Total	1.50		**34.9**	31.30	0	111.5	34.07	2.41	09/28/2016
Surr: 4-Bromofluorobenzene			**8.81**	10.00		88.1			09/28/2016
Surr: 4-Bromofluorobenzene			**8.60**	10.00		86.0			09/28/2016

Batch 122887 **SampType: LCS** Units **ppbv**

SampID: LCS-U160928-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1-Trichloroethane	0.50		**9.32**	10.10	0	92.3	54.7	131	09/28/2016
1,2-Dichloroethane	0.50		**11.0**	10.00	0	109.6	58.1	142	09/28/2016
Acetone	2.00		**11.4**	10.90	0	104.3	67.6	151	09/28/2016
Benzene	0.50		**10.2**	10.40	0	97.8	57.5	137	09/28/2016
Benzene	0.50		**8.70**	10.40	0	83.7	57.5	137	09/28/2016
Chlorobenzene	0.50		**11.2**	10.60	0	105.8	59.6	155	09/28/2016
Chloroform	0.50		**10.2**	10.40	0	98.6	72.3	136	09/28/2016
cis-1,2-Dichloroethene	0.50		**9.96**	10.10	0	98.6	78	138	09/28/2016
Ethylbenzene	0.50		**11.0**	10.60	0	103.4	58.3	158	09/28/2016
Ethylbenzene	0.50		**10.3**	10.60	0	97.1	58.3	158	09/28/2016
Methylene chloride	1.00		**10.3**	9.500	0	108.6	68.1	130	09/28/2016
Naphthalene	0.50		**15.2**	10.60	0	143.8	0	261	09/28/2016
Tetrachloroethene	0.50		**10.6**	10.50	0	101.1	60.3	148	09/28/2016
Toluene	0.50		**10.3**	10.50	0	97.9	56.9	150	09/28/2016
Toluene	0.50		**9.21**	10.50	0	87.7	56.9	150	09/28/2016
trans-1,2-Dichloroethene	0.50		**10.8**	10.00	0	108.1	69	134	09/28/2016
Trichloroethene	0.50		**10.6**	10.80	0	98.3	59.2	141	09/28/2016
Vinyl chloride	0.50		**11.2**	10.40	0	108.1	65	125	09/28/2016
Xylenes, Total	1.50		**34.1**	31.30	0	108.8	56	146	09/28/2016
Surr: 4-Bromofluorobenzene			**8.91**	10.00		89.1	41.2	165	09/28/2016
Surr: 4-Bromofluorobenzene			**9.13**	10.00		91.3	41.2	165	09/28/2016

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Environmental Operations, Inc.
Client Project: Solutia 2950R

Work Order: 16091675
Report Date: 30-Sep-16

Carrier: John Riley

Received By: AMD

Completed by: Amber M. Dilallo
On: 26-Sep-16

Reviewed by: Elizabeth A. Hurley
On: 26-Sep-16

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C NA
Type of thermal preservation?	None ☑	Ice ☐	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

Samples were transferred to Collinsville Air Lab on 9/27/16 at 9:50AM. EAH 9/27/16

Clients final pressure readings followed by readings taken upon arrival at the laboratory. Controller used not indicated, digital gauge used for lab reading. HLR 9/27/16
SSV-4 -5/-3.08
SSV-2 -5/-3.88
SSV-1 -5.5/-2.73
SSV-3 _/-1.06

TEKLAB, INC.
3920 Pintail Drive Suite A, Springfield, IL 62711 Phone (217) 698-1004 Fax (217) 698-1005
5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

pg 1 of 1 Lab Work Order # 16091675

AIR SAMPLING FIELD FORM AND CHAIN OF CUSTODY

Client Name: Environmental Operations
Address: 1530 South 2nd Street
Phone:
Email: Larry@environmentalopc.com
Project ID:
Project Manager: Larry Kosen
Sampler: Robert Andrews
PO Number: 2950 R

Results Requested (check one)
X Standard
___ 1-3 Day (100% surcharge)
___ 4-5 Day (50% surcharge)
___ Other (specify below)

Sample Type (check one)
___ Ambient Air
___ Indoor Air
X Indoor Sub-Slab
___ Stack
X Soil Gas/Vapor
___ Landfill Gas
___ Other (specify)

Lab Use Only: Sample pick up: ✓ Y __ N, Samples on: ___ Ice/Blue ✓ No Ice, NA Temp. °C
Comments:

Lab Use Only

Laboratory ID	Sample Identification	Canister Number	Controller Number	Sample Start Parameters Date	Sample Start Parameters Time	Sample Start Parameters Vacuum (in. Hg)	Sample Stop Parameters Date	Sample Stop Parameters Time	Sample Stop Parameters Vacuum (in. Hg)	TO-15 Lists (circle) Standard Extended	TO-15 select BTEX MBTE Naphthalene Isopropanol TPH-GRO	TO-13	TO-4	PM10/ TSP	Metals	Other
	~~SSV-1~~	~~16090141-001~~		~~9-24~~	~~9:09~~		~~9-24~~	~~9:24~~								
	~~SSV-2~~	~~16090141-002~~		~~9-24~~	~~9~~											
	~~SSV-3~~	~~16090141-002~~		~~9-24~~												
16091675 001	SSV-4	0658	—	9-24	10:57	-23"	9-24	11:07	-5"	X						
002	SSV-2	0863	—	9-24	9:33	-29	9-24	9:43	-5	X						
003	SSV-1	0675	—	9-24	9:09	-31"	9-24	9:26	-5.5	X						
004	SSV-3	0674	—	9-24	11:12	-30	9-24	11:13	—	X						

Requested Analysis (list metals/other below in comments)

Are these samples known to be involved in litigation? If yes, a level IV data package will be generated and a surcharge will apply. ___ Yes ___ No
Are these samples known to be hazardous? ___ Yes ___ No
Special QC Requirements/Special Instructions/Comments:

TEKLAB Courier

Shipping Company and Tracking Number:

Relinquished By	Date/Time	Received By	Date/Time
[signature]	9-24 / 11:30	[signature]	9/24/16 11:30
[signature]	9/25/16 16:20	Amber DeCollo	9/28/16 1620
Amber DeCollo	9/27/16 950	Heather R[illegible]	9/27/16 950

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse, and has the authority to sign on behalf of client.

White Copy - Laboratory Yellow Copy- Sampler

[signature]