Ameren Services

June 11, 2014

Greg Dunn
Voluntary Site Remediation Unit B
Remedial Project Management Section
Division of Remediation Management
1021 North Grand Ave East
P.O. Box 19276
Springfield, IL 62794-9276

Subject: Evaluation of Soil Gas Data Collected at the Center for Women in Transition Ameren Champaign MGP Site State ID 0190100008

Dear Mr. Dunn:

Gannett Fleming, on behalf of Ameren, completed soil gas sampling at several locations on properties owned by the Center for Women in Transition (CWT); 304 N. 5th Street and 504, 506 and 508 E. Church Street, in Champaign, IL. The sampling was done at the request of CWT to confirm results that were obtained at the same locations in 2009. The results were similar to the 2009 results. All measured soil gas concentrations were below the IEPA Tier 1 ROs. These results have been provided to CWT.

I have enclosed three copies of the Gannett Fleming report for your information. Ameren is not requesting a formal review of this document as it is not a Site Remediation Program document for our Champaign MGP site and CWT is not enrolled in the Site Remediation Program. Nevertheless, if you see any factual errors or if you have suggestions to improve future soil gas sampling efforts, we would welcome your suggestions.

Sincerely,

Brian H. Martin

Brian H. Martin, CHMM
Consulting Environmental Scientist
Environmental Services

Enclosure: Evaluation of Soil Gas Data Collected at the Center for Women in Transition, dated January 7, 2014 (3 copies)

cc: File: Champaign MGP 10.45

Report

Prepared for:

Ameren Illinois Company

One Ameren Plaza

1901 Chouteau Avenue

MC 602

St. Louis, MO 63103

Evaluation of Soil Gas Data Collected at the Center for Women in Transition

304 N. 5th St., 504, 506, and 508 E. Church St. Champaign, Illinois

Prepared by:

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January 07, 2014

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January 07, 2014

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LIST OF ABBREVIATIONS

AMB	Ambient air
Bgs	Below ground surface
COC	Chain of custody
CWT	Center for Women in Transition
Eurofins	Eurofins Air Toxics, Inc.
Ft	Feet
Hg	Mercury
IDW	Investigation derived waste
IEPA	Illinois Environmental Protection Agency
JULIE	Joint Utility Locating Information for Excavators
MGP	Manufactured gas plant
PID	Photoionization detector
Ppbv	parts per billion by volume
PPE	Personal protective equipment
PRT	Post-run tubing
QA/QC	Quality assurance/quality control
RAM Group	RAM Group of Gannett Fleming Inc.
REDI	Roberts Environmental Drilling, Inc.
ROs	Remediation objectives
TACO	Tiered Approach to Corrective Action Objectives
VOC	Volatile organic compounds

EXECUTIVE SUMMARY

Soil gas sampling was conducted on November 12 and 13, 2013 at the Center for Women in Transition (CWT) properties across the alley to the south of a former manufactured gas plant (MGP) site in Champaign, Illinois. The objective of this study was to compare the results with a similar investigation performed in December 2009 and to evaluate any changes. The following four properties were included in this sampling event:

- 304 N. 5th Street
- 504 E. Church Street
- 506 E. Church Street
- 508 E. Church Street

This investigation was performed based on a work plan submitted to Ameren Illinois Company (Ameren) on September 29, 2013. Eleven soil gas samples (including one field duplicate) were collected from ten locations along the north, east, and west edges of the four properties. An ambient air sample was also collected. The soil gas samples were collected using Geoprobe® post-run tubing (PRT) methods and analyzed for volatile organic compounds (VOCs) related to the former MGP operations. No VOCs were detected in the ambient air sample above laboratory reporting limits.

A leak detection compound, 1,1-Difluoroethane, was used to check for short circuiting in the sample train and annular spaces around the probe rods. The leak detection compound concentrations were below the acceptable range of 5 to 10% leak volume.

November 2013 soil gas concentrations were in the same range compared to the December 2009 sampling. The soil gas concentrations were compared with the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO) residential Tier 1 remediation objectives (ROs) for the indoor inhalation pathway. All the detected concentrations and reporting limits were below the corresponding soil gas ROs.

Based on the above results, and given that active remediation has been conducted to address potential source areas at the former MGP site, the conclusions of the December 2009 soil gas sampling event are confirmed and no further action is required relative to potential indoor inhalation risk to the residents and employees at the subject properties.

1.0. INTRODUCTION

1.1. Site Location

The former MGP site is located at 308 N. 5th Street in Champaign, Illinois. This investigation focused on the collection of soil gas samples to evaluate indoor inhalation risk at four CWT residential properties located across the alley to the south of the former MGP site.

The former MGP site has been the subject of several previous investigations (PSC, 2008). These investigations have resulted in the collection of soil and groundwater data and information on the site stratigraphy and hydrogeology. Active remediation, including the excavation of impacted soil for offsite disposal and in-situ chemical oxidation, was conducted from 2009 to 2013 to address MGP impacts.

Figure 1 shows the locations of the four residential properties, former MGP site boundary, and nearby streets. The former MGP site is fenced and access is restricted by locked gates.

1.2. Setting

The four CWT residential properties are located within the city of Champaign, Illinois in Champaign County. The general area consists of mostly residential and some commercial properties.

The subject properties are located to the south of the former MGP site and across a public alley at 304 N. 5th Street, 504 E. Church Street, 506 E. Church Street, and 508 E. Church Street. The homes are used as short and long-term temporary housing (up to 2 years) for women, children, and offices for the staff. The three E. Church Street homes all have basements with full concrete floors and walls. The 304 N. 5th Street home does not have a basement, but has a crawl space with a full concrete slab-on-grade below the home. The properties were noted to have the following:

304 N. 5th Street – alley on north, paved sidewalk on west, gravel driveway on south, and grassy areas on all sides.

504 E. Church Street – alley on north, paved parking on north, paved sidewalks on north, east, and south, and grassy areas on all sides.

506 E. Church Street – alley on north, paved parking on north, paved driveway on east (shared with 508 E. Church Street), paved sidewalks on north and south, and grassy areas on all sides.

508 E. Church Street – alley on north, paved parking area on north with some playground equipment, vegetable garden on east, play ground on south, paved sidewalks on south, paved driveway on west (shared with 506 E. Church Street), and minimal grassy areas on all sides.

1.3. Objective

This report presents the results of the November 12 and 13, 2013 soil gas sampling at the four CWT residential properties and data evaluation based on the work plan submitted to Mr. Brian Martin of Ameren (RAM Group 2013). A similar sampling plan submitted on November 5, 2009 (RAM Group 2009) was approved by IEPA on November 19, 2009 (IEPA, 2009). This soil gas sampling was conducted to compare the results with the December 2009 soil gas sampling event and evaluate any changes.

2.0. FIELD INVESTIGATION

The soil gas sampling was performed by Mr. Bhoom Korpol and Mr. Keith Klemm of RAM Group of Gannett Fleming Inc. (RAM Group). Drilling services including temporary soil gas sampling probe were provided by Roberts Environmental Drilling, Inc.'s (REDI) Mr. Pat Seymour and Mr. Jim Breeding. Mr. Brian Martin of Ameren was present at the site on November 12, 2013. Mr. Phil Van Ness, the attorney for CWT, visited the site during sampling on November 12, 2013.

Weather conditions on November 12, 2013, were clear with temperatures in the low 30's °F and a slight breeze. On November 13, 2013, the temperature started in the mid-teens in the morning with overcast skies and was sunny by afternoon with the temperature in the upper 40's °F.

2.1. Utility Clearance

REDI contacted Joint Utility Locating Information for Excavators (JULIE), the state utility locate service in Illinois, to coordinate marking of underground utilities on the surface on and near the four residential properties. Utilities were marked with flags prior to arrival at the site on November 12, 2013. RAM Group used these markings and site observations to avoid encountering subsurface utilities during sampling.

2.2. Daily Site Health & Safety Meetings

A field safety meeting was held on the mornings of November 12 and 13, 2013 before any fieldwork was performed to review the site-specific health and safety plan prepared for this project. The weather conditions, personal protective equipment (PPE), scope of work, and emergency procedures were discussed during the health and safety meeting. A photoionization detector (PID) was used to monitor hydrocarbon concentrations in breathing zone ambient air. The health and safety acknowledgement sign in sheet and PID calibration report are included in Appendix A.

2.3. Soil Gas and Ambient Air Sampling

Based on the PSC *Off-Site Investigation Report, Former Manufactured Gas Plant, Champaign, Illinois, State ID 0190100008*, dated August 22, 2008, soils in the vicinity of the site consist of glacial till composed of mostly silty clay in the upper 10 feet below ground surface (ft bgs) and sandy sediments more than 10 ft bgs. The water table has been measured at depths of 7 to 8 ft bgs during recent groundwater monitoring events. Field notes is included in Appendix A and field investigation pictures are presented in Appendix B.

The soil gas sampling locations are presented on Figure 2. In general, the locations were selected based on the following criteria:

- In close proximity to each of the four CWT residences,
- In areas on the CWT properties near the former MGP site,
- At depths within the vadose zone above the shallow groundwater interval,
- At depths at or below the building basement floor slabs, and
- In soil intervals permeable enough to allow purging and sampling for soil vapors in a reasonable time frame.

The Soil gas samples were collected within a few feet of the December 2009 soil gas sampling locations with the exceptions noted below:

- 504-N-4 was moved approximately 10 feet northwest of 504-N and 504-N-12 was added as an extra sampling location, as requested by CWT's attorney.

- 508-N-9 was installed approximately 20 ft northwest of 508-E due to obstructions next to the building which prevented Geoprobe rig access.

Eleven soil gas samples (including one duplicate) were collected from ten locations using Geoprobe® PRT sampling methods (Geoprobe, 2013). The depths used in the previous sampling event were used to collect soil gas samples. The probe rods were pulled up an extra foot to facilitate sample collection when tight soils were encountered. All the soil gas samples were collected at a depth of more than 3 ft bgs and above the shallow groundwater table. Specific sample depths are presented in Table 1. Groundwater was not encountered at any of the locations.

The sampling involved the use of 1.25" diameter steel rods that were advanced vertically using a Geoprobe® 6610DT track-mounted rig by REDI. Care was taken to prevent damage to the properties. Hydrated bentonite was placed around the rods where they entered the ground to create a seal at the ground surface (e.g., see Photo 20 in Appendix B). Teflon® tubing was attached to the PRT adapter and pushed down inside the rods, seated, and threaded into an expendable point holder. Next, a Swagelok® three-way valve and a gas-tight 60-milliliter (mL) disposable syringe were connected to the Teflon® tubing (e.g., see Photos 16, 23, and 24 in Appendix B) and the steel rods were pulled up approximately 1 foot to dislodge the rods from the expendable point.

1,1-Difluoroethane was used as a leak detection compound to check for the presence of leaks in the sampling system (i.e., short-circuiting). Household paper towels, wetted with computer keyboard duster spray containing difluoroethane, were wrapped around the steel rods at the ground surface/bentonite seal (to test for short-circuiting at the borehole annulus) and around the top of the rod where the Teflon® tubing exited the steel rods to test for short-circuiting across the O-ring seal in the PRT adapter (e.g., see Photo 12 in Appendix B).

Soil gas samples were collected using 1-liter Summa canisters (process certified) except at 504-N-12 where a 6-liter canister was used due to shortage of canisters. Purge volume calculations were performed and the tubing was purged prior to sample collection using the Swagelok® three-way valve and 60-mL disposable syringe. Purge volumes are presented in Table 1 which ranged from 952 to 1756 mL. After purging, a Summa canister was connected to a flow controller set by the laboratory at 167 mL/min. The flow controller includes an internal filter to prevent solids from entering and to control the soil gas flow rate into the canister. The flow controller was then connected to the Swagelok® three-way valve for sample collection (e.g., see Photo 12 in Appendix B). For the duplicate sample, collected at 508-N-9, a sample splitter was used to allow soil gas to enter two canisters simultaneously using a single flow controller.

Generally, the sampling duration was between 3 and 6 minutes for the 1-liter canisters and about 30 minutes for 6-liter canisters. Canisters were filled until the final vacuum in a canister was about -5 in Hg. After collection of each sample and withdrawal of the steel rods, the borehole was filled with hydrated bentonite chips to the surface.

One ambient air sample was collected using a 6-liter canister simultaneously with the 504-N-12 soil gas sampling. The ambient air sample was collected by connecting the flow controller directly to the canister and opening the canister via the flow controller inlet to the outdoor air (see Photo 12 in Appendix B).

The sample collection time, initial vacuum, and the final vacuum were recorded on the COC and in the field log presented in Appendix A.

2.4. Soil Geotechnical Sampling

Two soil samples, 304-E-GT-11 and 506-E-GT-12, were collected at a depth of 4-8 and 3-7 feet, respectively in macro-core tubes using Geoprobe 6610DT rig for geotechnical parameter analysis (Figure 2). The samples were cut into two feet cores for ease of shipping and sent to PTS Laboratories in Santa Fe Springs, California. As per the work plan, the samples were placed on hold pending the results of the soil gas analysis. Since the soil gas sample results did not exceed target levels, the geotechnical samples were not analyzed.

2.5. Decontamination Procedures

The primary source of cross contamination from one sampling location to the next is the use of non-dedicated equipment. During this sampling event, 1.25-inch diameter rods with expendable point holder, Swagelok® components, valves, quick connects, adapters, syringes, and Teflon® tubing were used to obtain samples at each location. The Teflon® tubing and syringes were new, dedicated for each sample location, and disposed after each use. The 1.25-inch diameter rods were decontaminated before use at each soil gas sampling point using an Alconox soap wash followed by a distilled water rinse. Swagelok® components, valves, quick connects, and adapters were decontaminated by flushing with ultra-pure nitrogen gas.

2.6. Investigation Derived Waste

Investigation derived waste (IDW) consisted of nitrile gloves, tubing, and paper towels. The IDW was contained in a plastic storage bag and disposed in a trash dumpster at a Gannett Fleming office in Earth City, Missouri.

3.0. SOIL GAS DATA EVALUATION

3.1. Sample Analysis

Laboratory analysis was performed by Eurofins Air Toxics, Inc. (Eurofins) in Folsom, California. Similar to the December 2009 sampling and analysis, Eurofins analyzed the soil gas samples using Method TO-15 GC/MS in full scan mode for constituents of concern related to the former MGP operations: benzene, toluene, ethyl benzene, xylene, styrene, and naphthalene, and the leak detection chemical (1,1-difluoroethane). The leak detection compound was not analyzed in the ambient air sample. The laboratory report and chain-of-custody record are included in Appendix C. Table 2 presents a summary of the laboratory analytical results. All the detected soil gas concentrations were in the same range compared to the concentrations from the December 2009 sampling presented in Table 3. Benzene was detected at two locations, toluene was detected at three locations, and m,p-xylene was detected at one location. All the chemical concentrations in ambient air sample were below the laboratory's reporting limit.

3.2. Quality Assurance and Quality Control

There were no discrepancies in sample receipts at the laboratory. The data quality was ensured using leak detection and collection of field duplicate sample. Specific details of QA/QC are discussed below:

3.2.1. Vacuum Measurements

The initial vacuum of each canister was measured in the field prior to sampling using a liquid-filled vacuum gauge to confirm the vacuum. The initial vacuum was recorded on the chain of custody (COC) record and in the field log book. The initial vacuum of five Summa canisters was below the laboratory recommended 25 mmHg, which could be attributed to cold weather with ambient temperatures ranging between 13 to 40°F. The soil vapor

and ambient air sample collection was stopped once a vacuum of 5 mmHg is reached. The laboratory receipt vacuum for all the samples except 508-N-9D was comparable with the corresponding final vacuum reading recorded in the field. The laboratory receipt vacuum for 508-N-9D was 0.2 mmHg. Since the concentrations of 508-N-9 and 508-N-9D were comparable, there was no effect of the data quality. Refer to Table 1 for summary of vacuum measurements.

3.2.2. Leak Detection

The leak detection compound, 1,1-difluoroethane, concentration exceeded the instrument's calibration range for samples 304-E-3, 504-E-5, 506-N-6, 504-N-12, 508-N-8, 508-N-9, and 508-N-9D and was indicated with an "E" flag in Table 1. The leak detection compound concentrations ranged from below detection limit of 4.8 parts per billion by volume (ppbv) to 2,800,000 ppbv, which correspond to 0 to 0.28% leak volume. Per "*Vapor Intrusion Pathway: A Practical Guide*" (ITRC, 2007) a leak volume of 5 to 10 % is acceptable. The IEPA acceptable leak volume range of 5 to 10% was confirmed by Mr. Bhoom Korpol during a phone conversation with Mr. Gregory Dunn of IEPA on December 19, 2013. The maximum leak volume of 0.28% at 504-N-12 is below the acceptable range of 5 to 10%. Therefore, all the soil gas analytical data is acceptable with regards to leak detection.

3.2.3. Dilution Factors

The laboratory dilution factors ranged from 2.04 to 274. Higher dilutions were required for samples 506-N-6, 504-N-12 and 508-N-8 due to the presence of high concentration of 1,1-difluorethane. Initial laboratory report included only the higher dilution run results with elevated reporting limits. The laboratory also analyzed these three samples at lower dilutions. The laboratory report was reissued to include the lower dilution run results.

3.2.4. Field Duplicate

A field duplicate was collected at 508-N-9 using a sample splitter. Benzene was detected at 4.1 and 3.9 micrograms per cubic meter ($\mu g/m^3$) in the original and duplicate samples, respectively, with a relative percentage difference (RPD) of 5%. 1,1-Difluroethane was detected at 4,900 and 3,900 $\mu g/m^3$ in the original and duplicate samples, respectively, with an RPD of 23%. The RPD of both detected chemicals is below the acceptable level of 25%. Toluene and m,p-xylene were detected in the duplicate sample (508-N-9D) at 11 and 7.8 $\mu g/m^3$ but were below detection in the original sample (508-N-9). However, the detected concentrations are less than 5 times the reporting limit which is an acceptable level per conversations with the laboratory. Therefore, there is no effect on data quality and overall results indicate the data is acceptable.

3.3. Comparison of Soil Gas Concentrations with Remedial Objectives

The soil gas concentrations were compared with the residential Tier 1 soil gas ROs for indoor inhalation pathway obtained from IEPA TACO (http://www.ipcb.state.il.us/documents/dsweb/Get/Document-38408, downloaded on December 3, 2013). Because sampling results to date have determined that soil and groundwater impacts are located more than 5 feet, vertically and horizontally, from the subject homes, the ROs for diffusive migration of soil gas from the subsurface to indoor air are used as screening levels and presented in Table 2. All the detected soil gas concentrations and reporting limits were below the corresponding ROs. The ROs for diffusion and advection are also presented in Table 2 for reference purpose only. The soil gas concentrations are below these more conservative levels considering both diffusive and advective migration. Therefore, soil gas data indicates that none of the constituents of concern concentrations exceeded the Tier 1 soil gas ROs for residential properties.

3.4. Findings and Conclusions

This soil gas sampling was conducted to confirm the results of the December 2009 soil gas sampling and determine any changes in the subsurface conditions at the site with respect to indoor inhalation pathway. The field observations and analytical results indicate that the conditions remain similar to the December 2009 and the soil gas concentrations are below Tier 1 ROs. Based on the above results, soil gas does not pose a human health risk to residents and employees at the CWT properties via the indoor inhalation pathway, and no further action is required.

4.0. REFERENCES

Geoprobe® Systems. Soil Gas Sampling – PRT System Operation, http://geoprobe.com/sites/default/files/pdfs/soil_gas_prt_oper.pdf, downloaded on September 20, 2013.

ITRC 2007. Interstate Technology Regulatory Council, Vapor Intrusion Pathway: A Practical Guide, January.

IEPA, 2009. Approval of Sampling Plan letter, November 19.

IEPA 2013. Illinois Environmental Protection Agency, Title 35, Subtitle G, Chapter I, Subchapter f. Part 742: Tiered Approach to Corrective Action Objectives. http://www.ipcb.state.il.us/documents/dsweb/Get/Document-38408, downloaded on December 3, 2013

PSC Industrial Outsourcing, LP, 2008. Off-Site Investigation Report, Former Manufactured Gas Plant, Champaign, Illinois, State ID 0190100008, August 22.

RAM Group of Gannett Fleming, Inc. (RAM Group), 2009. Soil Vapor Sampling, Women in Transition Shelter near Former Manufactured Gas Plant Site, Champaign, Illinois. November 5 Letter to Brian Martin of Ameren Illinois Company.

RAM Group of Gannett Fleming, Inc. (RAM Group), 2013. Soil Vapor Sampling, Women in Transition Shelter near Former Manufactured Gas Plant Site, Champaign, Illinois. September 29 Letter to Brian Martin of Ameren Illinois Company.

TABLES

Gannett Fleming

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Table 1
Soil Gas Sampling Details
Ameren Illinois Company, Soil Gas Sampling
Center for Women in Transition, Champaign, Illinois

Sample		Basement	Canister Pressure/Vacuum			Purge	Leak Detection Compound[4]		Analytical	Date	Date
Name	Depth (ft bgs)	Depth (ft bgs)	Initial[1]	Final[2]	Lab receipt[3]	Volume (mL)	Concentration (ppbv)	Percent (%)	Method	Collected	Analyzed
			(inch Hg)								
504-N-12(AMB)	Surface	NA	-28.2	-5.0	-3.5	NA	NA	NA	Modified TO-15 in full scan mode for BTEX, styrene, naphthalene, and 1,1-difluoroethane	11/13/13	11/26/13
304-W-1	5-6	NA	-27.5	-5.0	-4.5	952	17	0.0000017		11/12/13	11/25/13
304-N-2	5-6	NA	-26.1	-5.0	-5.1	952	< 4.8	NA		11/12/13	11/25/13
304-E-3	7-8	NA	-22.4	-5.0	-9.0	1320	1,100 E	0.00011		11/12/13	11/25/13
504-N-4	6-8	7.1	-22.4	-5.0	-9.6	1680	69	0.0000069		11/12/13	11/25/13
504-N-12	6-7	7.1	-26.5	-5.0	-5.7	1276	2,800,000 E	0.28		11/13/13	11/27/13
504-E-5	5-7	7.1	-22.6	-5.0	-5.3	1756	1,600 E	0.00016		11/13/13	11/25/13
506-N-6	3.5-4.5	5.7	-24.5	-5.0	-4.7	970	95,000 E	0.0095		11/13/13	11/27/13
506-E-7	4-5	5.7	-28.2	-5.0	-3.7	1000	100	0.000010		11/13/13	11/25/13
508-N-8	5.5-7.5	5.8	-24.0	-5.0	-8.0	1736	360,000 E	0.036		11/13/13	11/27/13
508-N-9	5-6	5.8	-26.6	-5.0	-4.9	952	1,800 E	0.00018		11/13/13	11/25/13
508-N-9D	5-6	5.8	-26.6	-5.0	-0.2	NA	1,400 E	0.00014		11/13/13	11/25/13

Notes:
NA = Not applicable. inch Hg = inches of mercury. ft bgs= feet below ground surface.
ppbv = parts per billion, volume.
<: Less than reporting limit.
AMB = Ambient air sample.
E = exceeds instrument calibration range.

Footnotes:
(1) Field measurement prior to sampling.
(2) Field measurement after sampling.
(3) Lab measurement upon receipt of canister.
(4) Leak detection compound was 1,1-difluoroethane; 504-N-12(AMB) was not analyzed for this VOC.

Table 2

Soil Gas and Ambient Air Concentrations, November 2013 (ug/m^3)

Ameren Illinois Company, Soil Gas Sampling

Center for Women in Transition, Champaign, Illinois

Chemical	CAS #	Residential Tier 1 Soil Gas RO for Indoor Inhalation Pathway (ug/m^3)		304 N. 5th Street			504 E. Church St.			506 E. Church		508 E. Church Street			Ambient Air
		Diffusion only	Diffusion and Advection*	304-W-1	304-N-2	304-E-3	504-N-4	504-E-5	504-N-12	506-N-6	506-E-7	508-N-8	508-N-9	508-N-9D	506-E-AMB
Depth of Basement (ft bgs)				NA			7.1			5.7		5.8			NA
Date Sampled				11/12/13			11/13/13								
Depth of Sample (ft bgs)				5-6	5-6	7-8	6-8	5-7	6-7	3.5-4.5	4-5	5.5-7.5	5-6	5-6	Surface
Dilution Factor				2.37	2.4	2.89	2.96	2.45	16.5	2.37	2.3	11	2.4	2.04	1.52
Benzene	71-43-2	41,000	370	<3.8	<3.8	**11**	<4.7	<3.9	<26	<3.8	<3.7	<18	**4.1**	**3.9**	<2.4
Toluene	108-88-3	140,000,000	6,200,000	<4.5	<4.5	**6.8**	<5.6	<4.6	<31	**6.7**	<4.3	<21	<4.5	**11**	<2.9
Ethylbenzene	100-41-4	150,000	1,300	<5.1	<5.2	<6.3	<6.4	<5.3	<36	<5.1	<5.0	<24	<5.2	<4.4	<3.3
m,p-Xylene	108-38-3/ 106-42-3	17,000,000/ 16,000,000	140,000/ 130,000	<5.1	<5.2	<6.3	<6.4	<5.3	<36	<5.1	<5.0	<24	<5.2	**7.8**	<3.3
o-Xylene	95-47-6	14,000,000	120,000	<5.1	<5.2	<6.3	<6.4	<5.3	<36	<5.1	<5.0	<24	<5.2	<4.4	<3.3
Styrene	100-42-5	34,000,000	1,400,000	<5.0	<5.1	<6.2	<6.3	<5.2	<35	<5	<4.9	<23	<5.1	<4.3	<3.2
Naphthalene	91-20-3	14,000	110	<25	<25	<30	<31	<26	<170	<25	<24	<120	<25	<21	<16

Notes:

Concentrations are in micrograms per cubic meter (ug/m^3) and detected concentrations are shown in bold.

<: Less than reporting limit shown. NA= Not applicable.

RO = Remediation Objective obtained from Section 742 Appendix B Table I of IEPA Tiered Approach to Corrective Action Objectives (TACO) (http://www.ipcb.state.il.us/documents/dsweb/Get/Document-38408) downloaded on December 3, 2013.

Diffusion only ROs were used for comparison because sampling results to date have determined that all soil and groundwater contamination is located more than 5 feet, vertically and horizontally, from the subject homes.

*: Diffusion and advection ROs are presented for reference only. All the detected soil gas concentrations are below the more conservative diffusion and advection ROs also.

January 2014/BR

RAM Group (050067)

Table 3

Soil Gas Analytical Data, December 2009 (ug/m ^{3})

Ameren Illinois Company, Soil Gas Sampling

Center for Women in Transition, Champaign, Illinois

Chemical	CAS	304 N. 5th Street			504 E. Church St.		506 E. Church Street			508 E. Church Street			Ambient Air
		304-W	304-N	304-E	504-N	504-E	506-N	506-E	506-EF	508-N	508-E	508-E Lab Dup	506-E-AMB
Date Sampled		12/01/09					12/02/09	12/01/09		12/02/09	12/01/09		
Depth of Sample (ft bgs)		5.0	5.0	7.0	7.0	6.0	3.0	4.0	4.0	6.5	6.5	6.5	Surface
Depth of Basement (ft bgs)		NA	NA	NA	7.1	7.1	5.7	5.7	5.7	5.8	5.8	5.8	NA
Benzene	71-43-2	<15	4.5	4.8	<16	<4.0	5.4	<3.8	<3.8	<190	8.3	8	<2.7
Toluene	108-88-3	<18	<4.8	7.3	<19	<4.7	6.2	<4.5	<4.5	<230	12	11	<3.2
Ethyl Benzene	100-41-4	<20	<5.5	<5.6	<22	<5.4	<5.2	<5.1	6.3	<260	<4.9	<9.7	<3.7
m,p-Xylene	108-38-3/ 106-42-3	<20	<5.5	<5.6	<22	<5.4	<5.2	<5.1	5.7	<260	<4.9	<9.7	<3.7
o-Xylene	95-47-6	<20	<5.5	<5.6	<22	<5.4	<5.2	<5.1	<5.1	<260	<4.9	<9.7	<3.7
Styrene	100-42-5	<20	<5.4	<5.5	<22	<5.3	<5.2	<5.0	<5.0	<260	<4.8	<9.5	<3.6
Naphthalene	91-20-3	<98	<27	<27	<100	<26	<25	<25	<25	<1300	<23	<47	<18

Notes:

<: Less than reporting limit shown

NA: not applicable

E: Exceeds instrument calibration range

FIGURES

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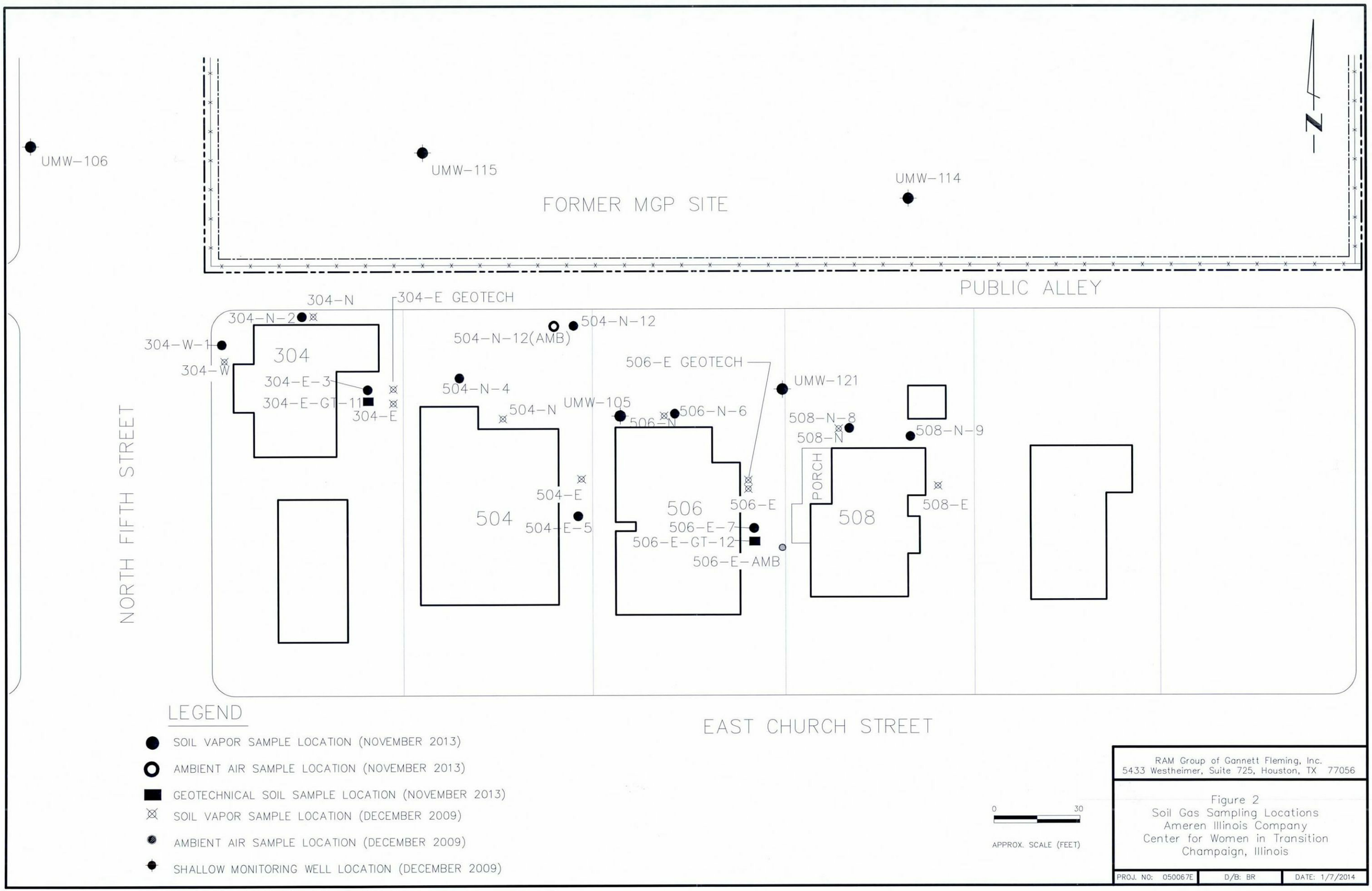
RAM Group of Gannett Fleming, Inc.
5433 Westheimer, Suite 725, Houston, TX 77056

Figure 1
Site Location and Aerial View
Ameren Illinois Company
Center for Women in Transition
Champaign, Illinois

PROJ. NO: 050067E | DATE: 1/7/2014



LEGEND

- SOIL VAPOR SAMPLE LOCATION (NOVEMBER 2013)
- AMBIENT AIR SAMPLE LOCATION (NOVEMBER 2013)
- GEOTECHNICAL SOIL SAMPLE LOCATION (NOVEMBER 2013)
- SOIL VAPOR SAMPLE LOCATION (DECEMBER 2009)
- AMBIENT AIR SAMPLE LOCATION (DECEMBER 2009)
- SHALLOW MONITORING WELL LOCATION (DECEMBER 2009)

0 30

APPROX. SCALE (FEET)

RAM Group of Gannett Fleming, Inc.
5433 Westheimer, Suite 725, Houston, TX 77056

Figure 2
Soil Gas Sampling Locations
Ameren Illinois Company
Center for Women in Transition
Champaign, Illinois

PROJ. NO: 050067E	D/B: BR	DATE: 1/7/2014

APPENDIX A: FIELD INVESTIGATION DOCUMENTATION

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HEALTH AND SAFETY PLAN ACKNOWLEDGEMENTS

I have been informed and fully understand the procedures set forth in the Health and Safety Plan for the Ameren, Champaign, Illinois

Name (Print)	Signature	Date
Bhoom Korpol	[signature]	11/12/13
Brian Martin	Brian K. Martin	11/12/13
Pat Seymour	[signature]	11-12-13
Jim Breeding	Jim Breeding	11-12-13
Keith Klemm	[signature]	11/12/13
Bhoom Korpol	[signature]	11/13/2013
Jim Breeding	Jim Breeding	11-13-13
Pat Seymour	[signature]	11-13-13
Keith Klemm	[signature]	11/13/13

FIELD ENVIRONMENTAL INSTRUMENTS, INC.
www.fieldenvironmental.com

301 Brushton Avenue
Suite A
Pittsburgh PA 15221
800-393-4009 Toll Free
(412) 436-2600 Local
(412) 436-2616 Fax

Photo-Ionization Detector Calibration Certificate

	Lot #	Expiration
Isobutylene Gas	1562665	9/1/2016

Cal Standard	Reading	Acceptable Range
100 ppm	100.0	(98 - 102)

	Pump Flow mL/min	Acceptable Range
☐ T.H.P. Sensor Check	516	(450+)

Response Factor
1.0

Model	MiniRae 2000
Lamp	10.6 eV
S/N	
Barcode	u366x
Order #	238603

Calibrated By: Corey Yates

Date of Calibration: 11/08/13

All calibrations performed by FEI conform to manufacturer's specifications. Please report any issues within 24 hours of receiving equipment.
All calibration gas used is traceable to NIST. Additional documentation is available upon request.

Gannett Fleming

SUBJECT ~~Appendix A~~ Field Documentation | SHEET NO. OF | JOB NO.

BY DATE CHKD. BY DATE

Tuesday, 11/12/13

1120 - K. Klemm and B. Korpol onsite at Ameren - Champaign, IL (5th and Church Streets). Roberts Drilling and B. Martin (Ameren) already onsite.
- Safety briefing conducted - Walk-through of locations completed.

1220 - K. Klemm performed check on all PRT adapters to verify no leakage.
- Geoprobe PRT Method will be used to collect soil vapor samples at depths where previously successful during 2009 investigation.

Sample	304-W-1	304-N-2	304-E-3	~~SW~~ SG4-N-4
Depth	5-6	5-6	7-8	6-8
Purge Vol	952 mL	952 mL	1140+180 = 1320 mL	1650mL
Canister #	15749	12027	30830	33709
Flow Control #	FC00293	FC00261	FC00566	FC00133
Sample Start	1347:00	1442:45	1521:00	1636:00
Sample Stop	1350:09	1447:50	1530:55	1640:00
Init. Vac (inHg)	27.5	26.1	22.4	22.4
Final Vac (inHg)	5.0	5.0	5.0	5.0

*extra 180mL purged due to syringe disconnecting

1540 - "304-E-GT-11" Geotech sample collected from 4-8Ft bgs
1659 - All offsite

Gannett Fleming

SUBJECT: Appendix A Field Documentation | SHEET NO. | OF | JOB NO.

BY | DATE | CHKD. BY | DATE

Wednesday, 11/13/13 20°F, partly cloudy

0650 - K. Klemm, B. Kappel (GF) onsite at Ameren-Champaign, IL site. Roberts Drilling already onsite with Geoprobe 6620DT. Safety briefing conducted.
- Sampling details summarized below

Sample	504-E-5	504-N-12	506-N-6	504-N-12 (6-Liter)	504-N-12 (AMB) (6-Liter)
Depth	~~5~~ 6-7	6-7	3.5-4.5	6-7	Ambient
Purge Vol	~~1036~~ 1756	1036	970	1036 + 240	
Canister #	12378	20314	37715	10799	30933
Flow Contr #	006748	FC00418	FC00347	FC0~~0463~~ 525	
Sample Start	0757:40	0922:50	0846:48	~~Fc~~ 0928:30	0928:30
Sample Stop	0902:50		0851:35	0957:00	1000:10
Init. Vac (in Hg)	22.6	23.1	24.5	26.5	28.2
Final Vac (in Hg)	5.0		5.0	5.0	5.0

* 506-N-6 had extra tubing, produced high purge volume

0740 - Encountered strong resistance in 504-E-5. Will need to raise rod before proceeding.

0824 - Inadvertently sampled ambient air through 504-N-12 assembly. Will re-assemble and re-start.

Sample	508-N-8	508-N-9	503-N-9D	506-E-7
Depth	5.5-7.5	~~5.5-7.5~~ 5-6	5-6	4-5
Purge	1736	~~1236~~ 952	* Duplicate *	1000
Canister #	31777	15737	35646	37324
Flow Control #	FC00413	FC0020	→	FC00650
Sample Start	1112:00	1144:00	→	1232:55
Sample Stop	1116:00	1151:50	→	1237:37
Init Vac	24.0	26.6	26.6	28.2
Final Vac	5.0	5.0	5.0	5.0

1045 - Driller encountered trouble connecting to PRT adapters in both 508-N-8 and 508-N-9. Had to pull rods and install new PRT boring approx 3 ft away. Former borings sealed using Bentonite.

1300 - Geotech Sample "506-E-6T-12" collected 3-7 ft bgs.

Gannett Fleming

SUBJECT Appendix A Field Documentation | SHEET NO. | OF
JOB NO.
BY | DATE | CHKD. BY | DATE

11/13/13 (continued)

1315 - Drillers offsite
1340 - GF offsite

KK

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Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Bhoom Korpol

Collected by: (Print and Sign) Kerth Klemm

Company Ameren/RAM Group of Garrett Flemming Email Bkorpol@gfnet.com

Address 5433 Westheimer Rd City Houston State Tx Zip 77056

Phone 713-784-5151 Suite 725 Fax 713-784-6105

Project Info:
P.O. # 050067.E
Project # 050067
Project Name Ameren - Champaign, IL

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
	304-W-1	15749	11/12/13	1350	TO15 (BTEX,	27.5	5.0		
	304-N-2	12027	11/12/13	1447	styrene, naphthalene	26.1	5.0		
	304-E-3	30430	11/12/13	1530	1,1-d.fluoroethane)	22.4	5.0		
	504-N-4	33709	11/12/13	1640		22.4	5.0		
	504-E-5	12378	11/13/13	0802		22.6	5.0		
	506-N-6	37715	11/13/13	0851		24.5	5.0		
	504-N-12	10799	11/13/13	0957		26.5	5.0		
	508-N-8	31777	11/13/13	1116		24.0	5.0		
	508-N-9	15737	11/13/13	1159		26.6	5.0		
	508-N-9D	35646	11/13/13	1159		26.6	5.0		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Kerth Klemm 11/13/13 1700	
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact? Yes No None	Work Order #

Form 1293 rev.11

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Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Bhoom Korpol
Collected by: (Print and Sign) Keith Klemm
Company Ameren/RAM Group Email BrKorpol@gfnet.com
Address 5433 Westheimer Rd Suite 725 City Houston State TX Zip 77056
Phone 713-784-5151 Fax 713-784-6105

Project Info:
P.O. # 050067.E
Project # 050067
Project Name Ameren-Champaign, IL

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
	506-E-7	37324	11/13/13	1237	TO15 (BTEX, styrene, naphthalene, 1,1-difluoroethane)	28.2	5.0		
	504-N-12 (AMB)	30933	11/13/13	1000	TO15 (BTEX, Styrene, naphthalene)	28.2	5.0		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Keith Klemm 11/13/13 1700	
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact? Yes No None	Work Order #

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APPENDIX B: SOIL GAS SAMPLING PICTURES

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Appendix B

Soil Gas Sampling Pictures, Ameren Illinois Company,

Center for Women in Transition, Champaign, Illinois

Photo 1: 304-W-1 Boring Installation Using Geoprobe 6610DT

Photo 2: 304-W-1-Soil Vapor Boring Installed

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 3 304-N-2-Boring Installation

Photo 4: 304-N-2-Boring Installed

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 5: 304-N-2-Soil Vapor Sampling

Photo 6: Mud Mats used at 304-E-3 to avoid damage to grass and pavement

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 7: 304-E-3-Boring Installation

Photo 8: 304-E-GT-11 Geotech Soil Sampling

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 9: 504-E-5 Boring Installation

Photo 10: 504-E-5 Soil Vapor Sampling

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 11: 504-N-12 Boring Installation

Photo 12: 504-N-12-Soil Vapor Sampling and Ambient Air Sampling

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 13: 506-N-6 Boring Installation

Photo 14: 304-W-1-Soil Vapor Boring Installed

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 15: 506-E-7-Soil Vapor Well

Photo 16: 506-E-7-Soil Vapor Purging

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 17: 506-E-7-Soil Vapor Sampling

Photo 18: 508-N-8 Boring Installation

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 19: 508-N-8 Soil Vapor Sampling

Photo 20: 508-N-9 Boring Installation

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 21: 508-N-9-Soil Vapor Sampling with Duplicate

Photo 22: Leak Detection Compound (Duster Spray containing 1,1-Difluoroethane)

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

Photo 23: Post Run Tubing (PRT) Method Soil Vapor Sampling Assembly

Photo 24: Post Run Tubing (PRT) Method Soil Vapor Sampling Assembly-2

Appendix B
Soil Gas Sampling Pictures, Ameren Illinois Company,
Center for Women in Transition, Champaign, Illinois

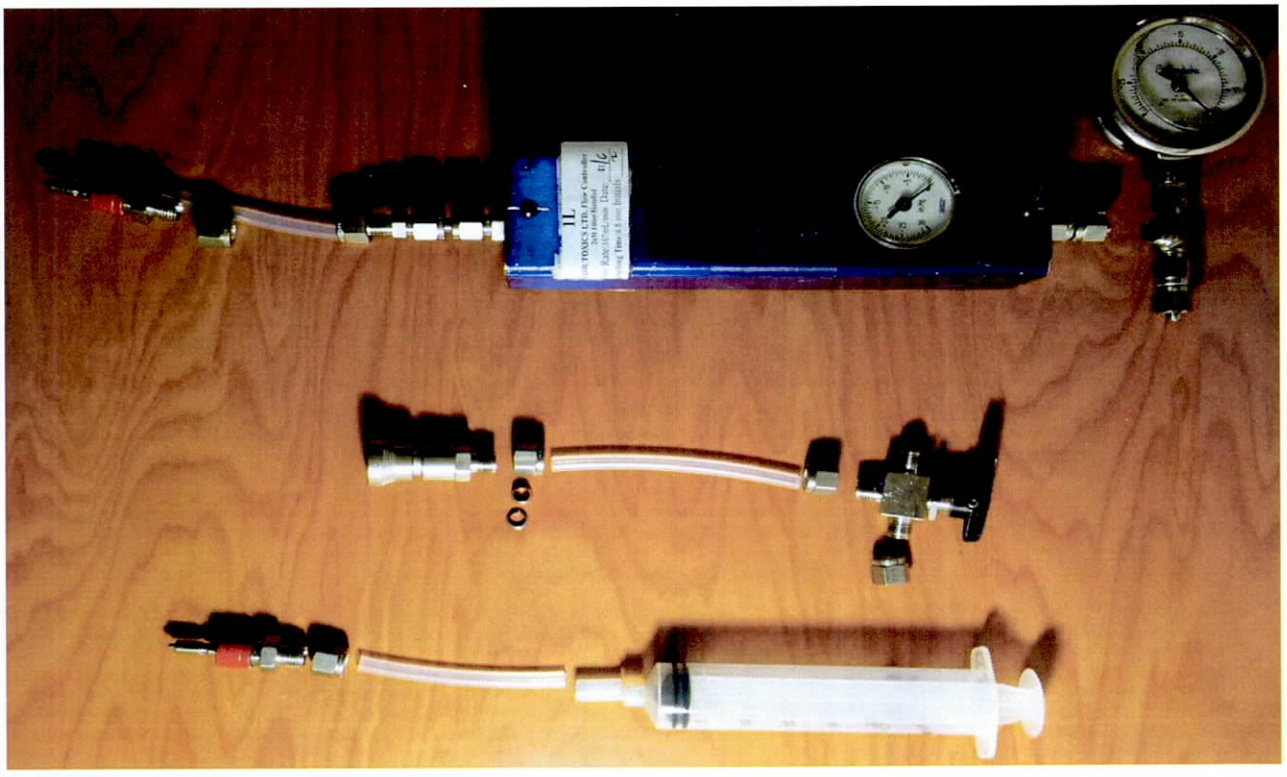

Photo 25: Soil Vapor Purging and Sampling Assembly

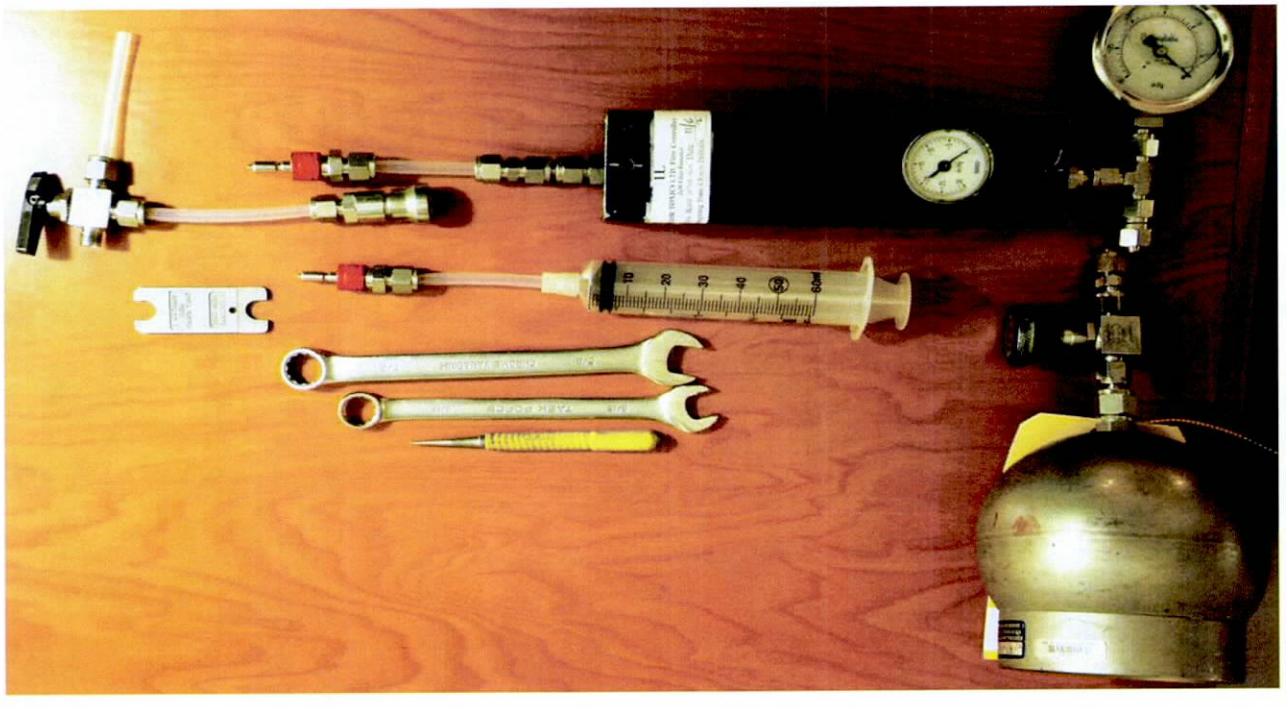

Photo 26: Soil Vapor Purging and Sampling Assembly with Summa Can

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APPENDIX C: LABORATORY ANAYTICAL REPORT

Gannett Fleming

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12/20/2013

Mr. Bhoom Reddy Korpol
Gannett Fleming
5433 Westheimer Road
Suite 725
Houston TX 77056-5312

Project Name: Ameren - Champaign, IL
Project #: 050067
Workorder #: 1311273R1

Dear Mr. Bhoom Reddy Korpol

The following report includes the data for the above referenced project for sample(s) received on 11/14/2013 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1311273R1

Work Order Summary

CLIENT:	Mr. Bhoom Reddy Korpol Gannett Fleming 5433 Westheimer Road Suite 725 Houston, TX 77056-5312	**BILL TO:**	Accounts Payable Gannett Fleming 7133 Rutherford Road Suite 300 Baltimore, MD 21244
PHONE:	(713) 784-5151	**P.O. #**	050067.E
FAX:	(713) 784-6105	**PROJECT #**	050067 Ameren - Champaign, IL
DATE RECEIVED:	11/14/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/30/2013		
DATE REISSUED:	12/20/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	304-W-1	TO-15	4.5 "Hg	14.9 psi
02A	304-N-2	TO-15	5.1 "Hg	14.6 psi
03A	304-E-3	TO-15	9 "Hg	15 psi
04A	504-N-4	TO-15	9.6 "Hg	14.9 psi
05A	504-E-5	TO-15	5.3 "Hg	15 psi
06A	506-N-6	TO-15	4.7 "Hg	14.7 psi
06B	506-N-6	TO-15	4.7 "Hg	14.7 psi
07A	504-N-12	TO-15	5.7 "Hg	4.9 psi
07B	504-N-12	TO-15	5.7 "Hg	4.9 psi
08A	508-N-8	TO-15	8 "Hg	14.9 psi
08B	508-N-8	TO-15	8 "Hg	14.9 psi
09A	508-N-9	TO-15	4.9 "Hg	14.8 psi
10A	508-N-9D	TO-15	0.2 "Hg	15.1 psi
11A	506-E-7	TO-15	3.7 "Hg	14.9 psi
12A	504-N-12(AMB)	TO-15	3.5 "Hg	5 psi
13A	Lab Blank	TO-15	NA	NA
13B	Lab Blank	TO-15	NA	NA
13C	Lab Blank	TO-15	NA	NA
14A	CCV	TO-15	NA	NA
14B	CCV	TO-15	NA	NA
14C	CCV	TO-15	NA	NA
15A	LCS	TO-15	NA	NA
15AA	LCSD	TO-15	NA	NA

Continued on next page

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WORK ORDER #: 1311273R1

Work Order Summary

CLIENT:	Mr. Bhoom Reddy Korpol Gannett Fleming 5433 Westheimer Road Suite 725 Houston, TX 77056-5312	**BILL TO:**	Accounts Payable Gannett Fleming 7133 Rutherford Road Suite 300 Baltimore, MD 21244
PHONE:	(713) 784-5151	**P.O. #**	050067.E
FAX:	(713) 784-6105	**PROJECT #**	050067 Ameren - Champaign, IL
DATE RECEIVED:	11/14/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/30/2013		
DATE REISSUED:	12/20/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
15B	LCS	TO-15	NA	NA
15BB	LCSD	TO-15	NA	NA
15C	LCS	TO-15	NA	NA
15CC	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 12/20/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-13-6, UT NELAP CA009332013-4, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2013, Expiration date: 10/17/2014.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 956
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
Gannett Fleming
Workorder# 1311273R1

Ten 1 Liter Summa Canister and two 6 Liter Summa Canister samples were received on November 14, 2013. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

1,1-Difluoroethane exceeded the instrument's calibration range for samples 304-E-3, 504-E-5, 506-N-6, 504-N-12, 508-N-8, 508-N-9, and 508-N-9D and was flagged accordingly.

Dilutions were performed on samples 506-N-6, 504-N-12 and 508-N-8 due to the presence of high level target species.

PER CLIENT REQUEST, THE WORKORDER WAS RE-ISSUED ON 12/20/13 FOR THE FOLLOWING REASONS:

1. TO REPORT LESS-DILUTED ANALYTICAL RUNS FOR SAMPLES 506-N-6, 504-N-12 AND 508-N-8 AS "B" FRACTIONS FOR EACH SAMPLE. THESE RUNS ARE REPORTED WITH "S" FLAGS INDICATING THE COMPOUND SATURATED THE INSTRUMENT DETECTOR.

2. TO NARRATE THAT THE RPD OF FIELD DUPLICATE SAMPLES 508-N-9 AND 508-N-9D EXCEEDED ACCEPTANCE LIMITS FOR SOME TARGET SPECIES DUE TO TARGET COMPOUND CONCENTRATIONS PRESENT AT LESS THAN 5X THE REPORTING LIMIT. THERE IS NO EFFECT ON DATA QUALITY.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 304-W-1

Lab ID#: 1311273R1-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	4.7	17	13	45

Client Sample ID: 304-N-2

Lab ID#: 1311273R1-02A

No Detections Were Found.

Client Sample ID: 304-E-3

Lab ID#: 1311273R1-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.4	3.5	4.6	11
Toluene	1.4	1.8	5.4	6.8
1,1-Difluoroethane	5.8	1100 E	16	3000 E

Client Sample ID: 504-N-4

Lab ID#: 1311273R1-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	5.9	69	16	190

Client Sample ID: 504-E-5

Lab ID#: 1311273R1-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	4.9	1600 E	13	4400 E

Client Sample ID: 506-N-6

Lab ID#: 1311273R1-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	4700	95000 E	13000	260000 E

eurofins | Air Toxics

Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 506-N-6

Lab ID#: 1311273R1-06B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	1.2	1.8	4.5	6.7
1,1-Difluoroethane	4.7	>70000 S	13	>190000 S

Client Sample ID: 504-N-12

Lab ID#: 1311273R1-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	3300	2800000 E	8900	7500000 E

Client Sample ID: 504-N-12

Lab ID#: 1311273R1-07B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	33	>600000 S	89	>1600000 S

Client Sample ID: 508-N-8

Lab ID#: 1311273R1-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	5500	360000 E	15000	990000 E

Client Sample ID: 508-N-8

Lab ID#: 1311273R1-08B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	22	>300000 S	59	>820000 S

Client Sample ID: 508-N-9

Lab ID#: 1311273R1-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	1.3	3.8	4.1

eurofins | Air Toxics

Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 508-N-9

Lab ID#: 1311273R1-09A

1,1-Difluoroethane	4.8	1800 E	13	4900 E

Client Sample ID: 508-N-9D

Lab ID#: 1311273R1-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.0	1.2	3.2	3.9
Toluene	1.0	3.0	3.8	11
m,p-Xylene	1.0	1.8	4.4	7.8
1,1-Difluoroethane	4.1	1400 E	11	3900 E

Client Sample ID: 506-E-7

Lab ID#: 1311273R1-11A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	4.6	100	12	280

Client Sample ID: 504-N-12(AMB)

Lab ID#: 1311273R1-12A

No Detections Were Found.

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Client Sample ID: 304-W-1

Lab ID#: 1311273R1-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112517**	**Date of Collection: 11/12/13 1:50:00 PM**	
Dil. Factor:	**2.37**	**Date of Analysis: 11/25/13 06:12 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
m,p-Xylene	1.2	Not Detected	5.1	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
Styrene	1.2	Not Detected	5.0	Not Detected
Naphthalene	4.7	Not Detected	25	Not Detected
1,1-Difluoroethane	4.7	17	13	45

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	94	70-130

eurofins | Air Toxics

Client Sample ID: 304-N-2

Lab ID#: 1311273R1-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112518**	**Date of Collection: 11/12/13 2:47:00 PM**	
Dil. Factor:	**2.40**	**Date of Analysis: 11/25/13 06:33 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: 304-E-3

Lab ID#: 1311273R1-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112519**	**Date of Collection: 11/12/13 3:30:00 PM**	
Dil. Factor:	**2.89**	**Date of Analysis: 11/25/13 06:55 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.4	3.5	4.6	11
Toluene	1.4	1.8	5.4	6.8
Ethyl Benzene	1.4	Not Detected	6.3	Not Detected
m,p-Xylene	1.4	Not Detected	6.3	Not Detected
o-Xylene	1.4	Not Detected	6.3	Not Detected
Styrene	1.4	Not Detected	6.2	Not Detected
Naphthalene	5.8	Not Detected	30	Not Detected
1,1-Difluoroethane	5.8	1100 E	16	3000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: 504-N-4

Lab ID#: 1311273R1-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112520**	**Date of Collection: 11/12/13 4:40:00 PM**	
Dil. Factor:	**2.96**	**Date of Analysis: 11/25/13 07:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.5	Not Detected	4.7	Not Detected
Toluene	1.5	Not Detected	5.6	Not Detected
Ethyl Benzene	1.5	Not Detected	6.4	Not Detected
m,p-Xylene	1.5	Not Detected	6.4	Not Detected
o-Xylene	1.5	Not Detected	6.4	Not Detected
Styrene	1.5	Not Detected	6.3	Not Detected
Naphthalene	5.9	Not Detected	31	Not Detected
1,1-Difluoroethane	5.9	69	16	190

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: 504-E-5

Lab ID#: 1311273R1-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112521**	**Date of Collection: 11/13/13 8:02:00 AM**	
Dil. Factor:	**2.45**	**Date of Analysis: 11/25/13 07:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.9	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
Ethyl Benzene	1.2	Not Detected	5.3	Not Detected
m,p-Xylene	1.2	Not Detected	5.3	Not Detected
o-Xylene	1.2	Not Detected	5.3	Not Detected
Styrene	1.2	Not Detected	5.2	Not Detected
Naphthalene	4.9	Not Detected	26	Not Detected
1,1-Difluoroethane	4.9	1600 E	13	4400 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: 506-N-6

Lab ID#: 1311273R1-06A

EPA METHOD TO-15 GC/MS

File Name:	**14112627**	**Date of Collection:**	**11/13/13 8:51:00 AM**
Dil. Factor:	**237**	**Date of Analysis:**	**11/27/13 11:44 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1200	Not Detected	3800	Not Detected
Toluene	1200	Not Detected	4500	Not Detected
Ethyl Benzene	1200	Not Detected	5100	Not Detected
m,p-Xylene	1200	Not Detected	5100	Not Detected
o-Xylene	1200	Not Detected	5100	Not Detected
Styrene	1200	Not Detected	5000	Not Detected
Naphthalene	4700	Not Detected	25000	Not Detected
1,1-Difluoroethane	4700	95000 E	13000	260000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: 506-N-6

Lab ID#: 1311273R1-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112522**	**Date of Collection: 11/13/13 8:51:00 AM**	
Dil. Factor:	**2.37**	**Date of Analysis: 11/25/13 08:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Toluene	1.2	1.8	4.5	6.7
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
m,p-Xylene	1.2	Not Detected	5.1	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
Styrene	1.2	Not Detected	5.0	Not Detected
Naphthalene	4.7	Not Detected	25	Not Detected
1,1-Difluoroethane	4.7	>70000 S	13	>190000 S

S = Saturated peak; data reported as estimated.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: 504-N-12

Lab ID#: 1311273R1-07A

EPA METHOD TO-15 GC/MS

File Name:	**14112628**	**Date of Collection:**	**11/13/13 9:57:00 AM**
Dil. Factor:	**165**	**Date of Analysis:**	**11/27/13 12:10 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	820	Not Detected	2600	Not Detected
Toluene	820	Not Detected	3100	Not Detected
Ethyl Benzene	820	Not Detected	3600	Not Detected
m,p-Xylene	820	Not Detected	3600	Not Detected
o-Xylene	820	Not Detected	3600	Not Detected
Styrene	820	Not Detected	3500	Not Detected
Naphthalene	3300	Not Detected	17000	Not Detected
1,1-Difluoroethane	3300	2800000 E	8900	7500000 E

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: 504-N-12

Lab ID#: 1311273R1-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112527**	**Date of Collection: 11/13/13 9:57:00 AM**	
Dil. Factor:	**16.5**	**Date of Analysis: 11/25/13 09:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	8.2	Not Detected	26	Not Detected
Toluene	8.2	Not Detected	31	Not Detected
Ethyl Benzene	8.2	Not Detected	36	Not Detected
m,p-Xylene	8.2	Not Detected	36	Not Detected
o-Xylene	8.2	Not Detected	36	Not Detected
Styrene	8.2	Not Detected	35	Not Detected
Naphthalene	33	Not Detected	170	Not Detected
1,1-Difluoroethane	33	>600000 S	89	>1600000 S

S = Saturated peak; data reported as estimated.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: 508-N-8

Lab ID#: 1311273R1-08A

EPA METHOD TO-15 GC/MS

File Name:	**14112629**	**Date of Collection:**	**11/13/13 11:16:00 AM**
Dil. Factor:	**274**	**Date of Analysis:**	**11/27/13 12:38 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1400	Not Detected	4400	Not Detected
Toluene	1400	Not Detected	5200	Not Detected
Ethyl Benzene	1400	Not Detected	5900	Not Detected
m,p-Xylene	1400	Not Detected	5900	Not Detected
o-Xylene	1400	Not Detected	5900	Not Detected
Styrene	1400	Not Detected	5800	Not Detected
Naphthalene	5500	Not Detected	29000	Not Detected
1,1-Difluoroethane	5500	360000 E	15000	990000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	92	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: 508-N-8

Lab ID#: 1311273R1-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112526**	**Date of Collection: 11/13/13 11:16:00 AM**	
Dil. Factor:	**11.0**	**Date of Analysis: 11/25/13 09:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	5.5	Not Detected	18	Not Detected
Toluene	5.5	Not Detected	21	Not Detected
Ethyl Benzene	5.5	Not Detected	24	Not Detected
m,p-Xylene	5.5	Not Detected	24	Not Detected
o-Xylene	5.5	Not Detected	24	Not Detected
Styrene	5.5	Not Detected	23	Not Detected
Naphthalene	22	Not Detected	120	Not Detected
1,1-Difluoroethane	22	>300000 S	59	>820000 S

S = Saturated peak; data reported as estimated.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: 508-N-9

Lab ID#: 1311273R1-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112523**	**Date of Collection:**	**11/13/13 11:59:00 AM**
Dil. Factor:	**2.40**	**Date of Analysis:**	**11/25/13 08:22 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	1.3	3.8	4.1
Toluene	1.2	Not Detected	4.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	1800 E	13	4900 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: 508-N-9D

Lab ID#: 1311273R1-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112524**	**Date of Collection:**	**11/13/13 11:59:00 AM**
Dil. Factor:	**2.04**	**Date of Analysis:**	**11/25/13 08:43 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.0	1.2	3.2	3.9
Toluene	1.0	3.0	3.8	11
Ethyl Benzene	1.0	Not Detected	4.4	Not Detected
m,p-Xylene	1.0	1.8	4.4	7.8
o-Xylene	1.0	Not Detected	4.4	Not Detected
Styrene	1.0	Not Detected	4.3	Not Detected
Naphthalene	4.1	Not Detected	21	Not Detected
1,1-Difluoroethane	4.1	1400 E	11	3900 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: 506-E-7

Lab ID#: 1311273R1-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112525**	**Date of Collection: 11/13/13 12:37:00 PM**	
Dil. Factor:	**2.30**	**Date of Analysis: 11/25/13 09:05 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.7	Not Detected
Toluene	1.2	Not Detected	4.3	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
m,p-Xylene	1.2	Not Detected	5.0	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
Styrene	1.2	Not Detected	4.9	Not Detected
Naphthalene	4.6	Not Detected	24	Not Detected
1,1-Difluoroethane	4.6	100	12	280

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: 504-N-12(AMB)

Lab ID#: 1311273R1-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112609**	**Date of Collection: 11/13/13 10:00:00 AM**	
Dil. Factor:	**1.52**	**Date of Analysis: 11/26/13 12:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.76	Not Detected	2.4	Not Detected
Toluene	0.76	Not Detected	2.9	Not Detected
Ethyl Benzene	0.76	Not Detected	3.3	Not Detected
m,p-Xylene	0.76	Not Detected	3.3	Not Detected
o-Xylene	0.76	Not Detected	3.3	Not Detected
Styrene	0.76	Not Detected	3.2	Not Detected
Naphthalene	3.0	Not Detected	16	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1311273R1-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112506**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/25/13 10:01 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1311273R1-13B

EPA METHOD TO-15 GC/MS

File Name:	**14112607d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/26/13 04:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	5.0	Not Detected	16	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Naphthalene	20	Not Detected	100	Not Detected
1,1-Difluoroethane	20	Not Detected	54	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1311273R1-13C

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112607**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/26/13 10:34 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: CCV

Lab ID#: 1311273R1-14A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112502**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/25/13 08:28 AM**

Compound	%Recovery
Benzene	103
Toluene	100
Ethyl Benzene	98
m,p-Xylene	100
o-Xylene	99
Styrene	109
Naphthalene	127
1,1-Difluoroethane	107

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: CCV

Lab ID#: 1311273R1-14B

EPA METHOD TO-15 GC/MS

File Name:	**14112602**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/26/13 01:46 PM**	

Compound	%Recovery
Benzene	105
Toluene	103
Ethyl Benzene	103
m,p-Xylene	108
o-Xylene	105
Styrene	106
Naphthalene	92
1,1-Difluoroethane	78

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: CCV

Lab ID#: 1311273R1-14C

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112602**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/26/13 08:26 AM**	

Compound	%Recovery
Benzene	104
Toluene	101
Ethyl Benzene	100
m,p-Xylene	100
o-Xylene	100
Styrene	109
Naphthalene	124

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCS

Lab ID#: 1311273R1-15A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/25/13 08:49 AM**	

Compound	%Recovery	Method Limits
Benzene	101	70-130
Toluene	96	70-130
Ethyl Benzene	98	70-130
m,p-Xylene	99	70-130
o-Xylene	97	70-130
Styrene	107	70-130
Naphthalene	65	60-140
1,1-Difluoroethane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: LCSD

Lab ID#: 1311273R1-15AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/25/13 09:10 AM**	

Compound	**%Recovery**	**Method Limits**
Benzene	102	70-130
Toluene	96	70-130
Ethyl Benzene	99	70-130
m,p-Xylene	101	70-130
o-Xylene	98	70-130
Styrene	110	70-130
Naphthalene	66	60-140
1,1-Difluoroethane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	109	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: LCS

Lab ID#: 1311273R1-15B

EPA METHOD TO-15 GC/MS

File Name:	**14112603**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/26/13 02:16 PM**	

Compound	%Recovery	Method Limits
Benzene	97	70-130
Toluene	93	70-130
Ethyl Benzene	92	70-130
m,p-Xylene	94	70-130
o-Xylene	91	70-130
Styrene	92	70-130
Naphthalene	70	60-140
1,1-Difluoroethane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: LCSD

Lab ID#: 1311273R1-15BB

EPA METHOD TO-15 GC/MS

File Name:	**14112604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/26/13 02:51 PM**	

Compound	%Recovery	Method Limits
Benzene	97	70-130
Toluene	91	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	97	70-130
o-Xylene	93	70-130
Styrene	96	70-130
Naphthalene	68	60-140
1,1-Difluoroethane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCS

Lab ID#: 1311273R1-15C

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/26/13 09:07 AM**	

Compound	%Recovery	Method Limits
Benzene	108	70-130
Toluene	103	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	109	70-130
o-Xylene	106	70-130
Styrene	119	70-130
Naphthalene	68	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: LCSD

Lab ID#: 1311273R1-15CC

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17112605**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/26/13 09:52 AM**	

Compound	%Recovery	Method Limits
Benzene	100	70-130
Toluene	96	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	97	70-130
o-Xylene	95	70-130
Styrene	106	70-130
Naphthalene	61	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	97	70-130