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Mr. David P. Turner, RPM (3HS22)
Western PA Section
United States Environmental Protection Agency, Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

June 19, 2013

Reference: LORD-Shope RA Monthly Progress Report

Dear Mr. Turner:

LORD is hereby submitting two copies of the monthly progress report for the period of May 1, 2013 through May 31, 2013.

The following work was conducted during this period:

REMEDIAL ACTION

NPDES Report:

The May report will be submitted under a separate cover.

Thermal Oxidizer:

The thermal oxidizer was shut down as planned, on October 26, 2011. Startup of ISVS was April 24, 2012. As planned, ISVS was shut down again on May 30 and restarted June 27, 2012. ISVS was shut down as planned on August 1, 2012. The oxidizer was restarted on August 29 and was shut down for the year on October 30, 2012 as planned. The thermal oxidizer was restarted for the year on May 1, 2013 and shut down May 29, 2013 as scheduled. The ISVS influent was 182.8 ppm and the removal efficiency was 99.9%.

Groundwater Treatment:

The groundwater treatment system was operating normally during this interim. The groundwater TOC effluent concentration was 1.2 mg/l.

Sincerely,

LORD Corporation

George M. Kickel
Director, Environment, Safety, Health, and Regulatory Compliance

GMK13020/cmf

cc: (b) (4) [redacted] ARCADIS, Inc.
John Morettini, PADEP

Test America List	May-13		Jul-13		Sep-13		Oct-13	
	Influent ppb(v)	Effluent ppb(v)	Influent ppb(v)	Effluent ppb(v)	Influent ppb(v)	Effluent ppb(v)	Influent ppb(v)	Effluent ppb(v)
Ethylbenzene	ND	ND						
Styrene	ND	ND						
cis-1,3-Dichloropropene	ND	ND						
trans-1,3-Dichloropropene	ND	ND						
1,4-Dichlorobenzene	ND	ND						
1,2-Dibromoethane (EDB)	ND	ND						
1,3-Butadiene	ND	ND						
Acrolein	ND	ND						
3-Chloropropene	ND	ND						
1,2-Dichloroethane	ND	ND						
Acrylonitrile	ND	ND						
Vinyl acetate	ND	ND						
4-Methyl-2-pentanone (MIBK)	ND	0.64						
1,3,5-Trimethylbenzene	ND	ND						
Toluene	280	ND						
Chlorobenzene	110	ND						
Pentane	220	ND						
n-Hexane	600	ND						
n-Octane	ND	ND						
Propene	2100	1						
1,2,4-Trichlorobenzene	ND	ND						
1,4-Dioxane	ND	ND						
Dibromochloromethane	ND	ND						
Tetrachloroethene	5700	ND						
m-Xylene & p-Xylene	620	ND						
Ethyl acetate	ND	ND						
n-Heptane	ND	ND						
cis-1,2-Dichloroethene	71000	ND						
trans-1,2-Dichloroethene	350	ND						
Methyl tert-butyl ether	ND	ND						
4-Bromofluorobenzene	102	103						
2,2,4-Trimethylpentane	ND	ND						
1,3-Dichlorobenzene	ND	ND						
Carbon tetrachloride	ND	ND						
2-Hexanone	ND	0.67						

4-Ethyltoluene	ND	ND				
Acetone	ND	ND				
Chloroform	350	ND				
Benzene	150	ND				
1,1,1-Trichloroethane	310	ND				
Bromomethane	ND	ND				
Chloromethane	ND	ND				
Dibromomethane	ND	ND				
Chloroethane	190	ND				
Vinyl chloride	73000	ND				
Acetonitrile	ND	ND				
Methylene chloride	310	0.67				
Carbon disulfide	ND	0.4				
Bromoform	ND	ND				
Bromodichloromethane	ND	ND				
1,1-Dichloroethane	350	ND				
1,1-Dichloroethene	600	ND				
Chlorodifluoromethane	ND	ND				
tert-Butyl alcohol	ND	11				
Trichlorofluoromethane	ND	ND				
Dichlorodifluoromethane	ND	ND				
1,1,2-Trichloro-1,2,2-trifluor	ND	ND				
1,2-Dichloro-1,1,2,2-tetrafluo	ND	ND				
1,2-Dichloropropane	ND	ND				
2-Butanone (MEK)	ND	2.4				
1,1,2-Trichloroethane	ND	ND				
Trichloroethene	26000	ND				
1,1,2,2-Tetrachloroethane	ND	ND				
Methyl methacrylate	ND	ND				
Hexachlorobutadiene	ND	ND				
o-Xylene	510	ND				
1,2-Dichlorobenzene	ND	ND				
1,2,4-Trimethylbenzene	ND	ND				
Cumene	ND	ND				
alpha-Methylstyrene	ND	ND				
Totals	182,852	120	0	0	0	0
		99.93%		#DIV/0!		#DIV/0!
% Methane Influent	1		2.9		1.7	

H3E160414 Analytical Report **1**

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Total Number of Pages **284**

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

LORD Shope

Lot #: H3E160414

(b) (4) [redacted]

ARCADIS U.S., Inc.
284 Cramer Creek Court
Dublin, OH 43017

TESTAMERICA LABORATORIES, INC.

(b) (4) [redacted]

Project Manager

May 28, 2013

ANALYTICAL METHODS SUMMARY

H3E160414

PARAMETER	ANALYTICAL METHOD
Method for Analysis of Reformed Gas by GC	ASTM D 1946/E 260
Volatile Organics by TO15	EPA-2 TO-15

References:

ASTM Annual Book Of ASTM Standards.

EPA-2 "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA-625/R-96/010b, January 1999.

SAMPLE SUMMARY

H3E160414

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
M0VV3	001	TOI/051413	05/14/13	14:00
M0VV9	002	TOE/051413	05/14/13	14:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE
H3E160414

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Volatiles

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

The EPA method requires that all target analytes in the continuing calibration verification standard be within 30% difference from the initial calibration. According to the laboratory standard operating procedure, the continuing calibration is acceptable if it meets the laboratory control sample acceptance criteria. Even though the calibration verification analyzed on 5/17/13 exhibited a % difference of > 30% for propene, the results were within the LCS acceptance limits.

There is a significant contribution from an interfering non-target analyte to the quantitation of propene in sample TOI/051413. Therefore, the propene results are biased high and should be considered estimated. The result is flagged with "EST".

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	ACLASS	DoD ELAP		ADE-1434
TestAmerica Knoxville	Arkansas	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana	NELAC	6	LA110001
TestAmerica Knoxville	Louisiana	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina	North Carolina DENR	4	64
TestAmerica Knoxville	North Carolina	North Carolina PHL	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	USDA	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia	West Virginia DEP	3	345
TestAmerica Knoxville	West Virginia	West Virginia DHHR (DW)	3	9955C
TestAmerica Knoxville	Wisconsin	State Program	5	998044300

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Data Summary

ARCADIS U.S., Inc.

Client Sample ID: TO1/051413

GC/MS Volatiles

Lot-Sample #	H3E160414 - 001	Work Order #	M0VV31AA	Matrix.....:	AIR

Date Sampled...:	05/14/2013	Date Received..:	05/16/2013
Prep Date.....:	05/17/2013	Analysis Date...	05/18/2013
Prep Batch #.....:	3139012		
Dilution Factor.:	2127.48	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	430	ND	1900
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	430	ND	3000
Acetone	ND	11000	ND	25000
1,4-Dioxane	ND	1100	ND	3800
Ethyl acetate	ND	4300	ND	15000
Ethylbenzene	ND	430	ND	1800
Trichlorofluoromethane	ND	430	ND	2400
n-Heptane	ND	1100	ND	4400
Hexachlorobutadiene	ND	2100	ND	23000
n-Hexane	**600 J**	**1100**	**2100 J**	**3700**
2-Hexanone	ND	1100	ND	4400
2,2,4-Trimethylpentane	ND	1100	ND	5000
Cumene	ND	850	ND	4200
tert-Butyl alcohol	ND	4300	ND	13000
Methylene chloride	**310 J B**	**1100**	**1100 J B**	**3700**
Methyl methacrylate	ND	1100	ND	4400
Benzene	**150 J**	**430**	**470 J**	**1400**
Acetonitrile	ND	2100	ND	3600
n-Octane	ND	850	ND	4000
Pentane	**220 J**	**2100**	**630 J**	**6300**
Styrene	ND	430	ND	1800
1,1,2,2-Tetrachloroethane	ND	430	ND	2900
Tetrachloroethene	**5700**	**430**	**38000**	**2900**
Toluene	**280 J**	**430**	**1100 J**	**1600**
1,2,4-Trichlorobenzene	ND	2100	ND	16000
1,1,1-Trichloroethane	**310 J**	**430**	**1700 J**	**2300**
1,1,2-Trichloroethane	ND	430	ND	2300
Trichloroethene	**26000**	**430**	**140000**	**2300**
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	430	ND	3300
1,2,4-Trimethylbenzene	ND	430	ND	2100
1,3,5-Trimethylbenzene	ND	430	ND	2100
Vinyl acetate	ND	2100	ND	7500
Vinyl chloride	**73000**	**430**	**190000**	**1100**
o-Xylene	**510**	**430**	**2200**	**1800**
Methyl tert-butyl ether	ND	2100	ND	7700
alpha-Methylstyrene	ND	850	ND	4100
Chlorodifluoromethane	ND	430	ND	1500

ARCADIS U.S., Inc.

Client Sample ID: TOI/051413

GC/MS Volatiles

Lot-Sample # H3E160414 - 001 Work Order # M0VV31AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
m-Xylene & p-Xylene	**620**	**430**	**2700**	**1800**
Bromodichloromethane	ND	430	ND	2900
1,2-Dibromoethane (EDB)	ND	430	ND	3300
2-Butanone (MEK)	ND	2100	ND	6300
4-Methyl-2-pentanone (MIBK)	ND	1100	ND	4400
Bromoform	ND	430	ND	4400
Bromomethane	ND	430	ND	1700
1,3-Butadiene	ND	850	ND	1900
4-Ethyltoluene	ND	850	ND	4200
Acrolein	ND	1700	ND	3900
Carbon disulfide	ND	1100	ND	3300
Acrylonitrile	ND	4300	ND	9200
Carbon tetrachloride	ND	430	ND	2700
Chlorobenzene	**110 J**	**430**	**500 J**	**2000**
Dibromochloromethane	ND	430	ND	3600
Chloroethane	**190 J**	**430**	**500 J**	**1100**
Chloroform	**350 J**	**430**	**1700 J**	**2100**
Chloromethane	ND	1100	ND	2200
3-Chloropropene	ND	430	ND	1300
Propene	**2100 est**	**1100**	**3600 est**	**1800**
Dibromomethane	ND	850	ND	6100
1,2-Dichlorobenzene	ND	430	ND	2600
1,3-Dichlorobenzene	ND	430	ND	2600
1,4-Dichlorobenzene	ND	430	ND	2600
Dichlorodifluoromethane	ND	430	ND	2100
1,1-Dichloroethane	**350 J**	**430**	**1400 J**	**1700**
1,2-Dichloroethane	ND	430	ND	1700
1,1-Dichloroethene	**600**	**430**	**2400**	**1700**
cis-1,2-Dichloroethene	**71000**	**430**	**280000**	**1700**
trans-1,2-Dichloroethene	**350 J**	**430**	**1400 J**	**1700**
1,2-Dichloropropane	ND	430	ND	2000
cis-1,3-Dichloropropene	ND	430	ND	1900

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	102	60 - 140

ARCADIS U.S., Inc.

Client Sample ID: TOI/051413

GC/MS Volatiles

Lot-Sample #	H3E160414 - 001	Work Order #	M0VV31AA	Matrix.....:	AIR

Qualifiers

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
est	Estimated value. See narrative for details.
J	Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: TOE/051413

GC/MS Volatiles

Lot-Sample #	H3E160414 - 002	**Work Order #**	M0VV91AA	**Matrix.....:**	AIR

Date Sampled...:	05/14/2013	**Date Received..:**	05/16/2013
Prep Date.....:	05/17/2013	**Analysis Date...**	05/18/2013
Prep Batch #.....:	3139012		
Dilution Factor.:	10	**Method.....:**	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	2.0	ND	9.1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	2.0	ND	14
Acetone	ND	50	ND	120
1,4-Dioxane	ND	5.0	ND	18
Ethyl acetate	ND	20	ND	72
Ethylbenzene	ND	2.0	ND	8.7
Trichlorofluoromethane	ND	2.0	ND	11
n-Heptane	ND	5.0	ND	20
Hexachlorobutadiene	ND	10	ND	110
n-Hexane	ND	5.0	ND	18
2-Hexanone	**0.67 J**	**5.0**	**2.8 J**	**20**
2,2,4-Trimethylpentane	ND	5.0	ND	23
Cumene	ND	4.0	ND	20
tert-Butyl alcohol	**11 J**	**20**	**34 J**	**61**
Methylene chloride	**0.67 J B**	**5.0**	**2.3 J B**	**17**
Methyl methacrylate	ND	5.0	ND	20
Benzene	ND	2.0	ND	6.4
Acetonitrile	ND	10	ND	17
n-Octane	ND	4.0	ND	19
Pentane	ND	10	ND	30
Styrene	ND	2.0	ND	8.5
1,1,2,2-Tetrachloroethane	ND	2.0	ND	14
Tetrachloroethene	ND	2.0	ND	14
Toluene	ND	2.0	ND	7.5
1,2,4-Trichlorobenzene	ND	10	ND	74
1,1,1-Trichloroethane	ND	2.0	ND	11
1,1,2-Trichloroethane	ND	2.0	ND	11
Trichloroethene	ND	2.0	ND	11
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.0	ND	15
1,2,4-Trimethylbenzene	ND	2.0	ND	9.8
1,3,5-Trimethylbenzene	ND	2.0	ND	9.8
Vinyl acetate	ND	10	ND	35
Vinyl chloride	ND	2.0	ND	5.1
o-Xylene	ND	2.0	ND	8.7
Methyl tert-butyl ether	ND	10	ND	36
alpha-Methylstyrene	ND	4.0	ND	19
Chlorodifluoromethane	ND	2.0	ND	7.1

ARCADIS U.S., Inc.

Client Sample ID: TOE/051413

GC/MS Volatiles

Lot-Sample # H3B160414 - 002 Work Order # M0VV91AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
m-Xylene & p-Xylene	ND	2.0	ND	8.7
Bromodichloromethane	ND	2.0	ND	13
1,2-Dibromoethane (EDB)	ND	2.0	ND	15
2-Butanone (MEK)	**2.4 J**	**10**	**7.0 J**	**29**
4-Methyl-2-pentanone (MIBK)	**0.64 J**	**5.0**	**2.6 J**	**20**
Bromoform	ND	2.0	ND	21
Bromomethane	ND	2.0	ND	7.8
1,3-Butadiene	ND	4.0	ND	8.8
4-Ethyltoluene	ND	4.0	ND	20
Acrolein	ND	8.0	ND	18
Carbon disulfide	**0.40 J**	**5.0**	**1.3 J**	**16**
Acrylonitrile	ND	20	ND	43
Carbon tetrachloride	ND	2.0	ND	13
Chlorobenzene	ND	2.0	ND	9.2
Dibromochloromethane	ND	2.0	ND	17
Chloroethane	ND	2.0	ND	5.3
Chloroform	ND	2.0	ND	9.8
Chloromethane	ND	5.0	ND	10
3-Chloropropene	ND	2.0	ND	6.3
Propene	**1.0 J**	**5.0**	**1.8 J**	**8.6**
Dibromomethane	ND	4.0	ND	28
1,2-Dichlorobenzene	ND	2.0	ND	12
1,3-Dichlorobenzene	ND	2.0	ND	12
1,4-Dichlorobenzene	ND	2.0	ND	12
Dichlorodifluoromethane	ND	2.0	ND	9.9
1,1-Dichloroethane	ND	2.0	ND	8.1
1,2-Dichloroethane	ND	2.0	ND	8.1
1,1-Dichloroethene	ND	2.0	ND	7.9
cis-1,2-Dichloroethene	ND	2.0	ND	7.9
trans-1,2-Dichloroethene	ND	2.0	ND	7.9
1,2-Dichloropropane	ND	2.0	ND	9.2
cis-1,3-Dichloropropene	ND	2.0	ND	9.1

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	103	60 - 140

Qualifiers

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated result. Result is less than RL.

ARCADIS U.S., Inc.

Client Sample ID: TOE/051413

GC/MS Volatiles

Lot-Sample #	H3E160414 - 002	Work Order #	M0VV91AA	Matrix.....:	AIR

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample #	H3E190000 - 012B	**Work Order #**	M0WDP1AA	**Matrix.....:**	AIR
	05/09/2013	**Date Received..:**	05/15/2013		
Prep Date.....:	05/17/2013	**Analysis Date...**	05/17/2013		
Prep Batch #.....:	3139012				
Dilution Factor.:	1	**Method.....:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.20	ND	0.91
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND	1.4
Acetone	ND	5.0	ND	12
1,4-Dioxane	ND	0.50	ND	1.8
Ethyl acetate	ND	2.0	ND	7.2
Ethylbenzene	ND	0.20	ND	0.87
Trichlorofluoromethane	ND	0.20	ND	1.1
n-Heptane	ND	0.50	ND	2.0
Hexachlorobutadiene	ND	1.0	ND	11
n-Hexane	ND	0.50	ND	1.8
2-Hexanone	ND	0.50	ND	2.0
2,2,4-Trimethylpentane	ND	0.50	ND	2.3
Cumene	ND	0.40	ND	2.0
tert-Butyl alcohol	ND	2.0	ND	6.1
Methylene chloride	**0.058 J**	**0.50**	**0.20 J**	**1.7**
Methyl methacrylate	ND	0.50	ND	2.0
Benzene	ND	0.20	ND	0.64
Acetonitrile	ND	1.0	ND	1.7
n-Octane	ND	0.40	ND	1.9
Pentane	ND	1.0	ND	3.0
Styrene	ND	0.20	ND	0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND	1.4
Tetrachloroethene	ND	0.20	ND	1.4
Toluene	ND	0.20	ND	0.75
1,2,4-Trichlorobenzene	ND	1.0	ND	7.4
1,1,1-Trichloroethane	ND	0.20	ND	1.1
1,1,2-Trichloroethane	ND	0.20	ND	1.1
Trichloroethene	ND	0.20	ND	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.20	ND	1.5
1,2,4-Trimethylbenzene	ND	0.20	ND	0.98
1,3,5-Trimethylbenzene	ND	0.20	ND	0.98
Vinyl acetate	ND	1.0	ND	3.5
Vinyl chloride	ND	0.20	ND	0.51
o-Xylene	ND	0.20	ND	0.87
Methyl tert-butyl ether	ND	1.0	ND	3.6
alpha-Methylstyrene	ND	0.40	ND	1.9
Chlorodifluoromethane	ND	0.20	ND	0.71

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample # H3E190000 - 012B Work Order # M0WDP1AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
m-Xylene & p-Xylene	ND	0.20	ND	0.87
Bromodichloromethane	ND	0.20	ND	1.3
1,2-Dibromoethane (EDB)	ND	0.20	ND	1.5
2-Butanone (MEK)	ND	1.0	ND	2.9
4-Methyl-2-pentanone (MIBK)	ND	0.50	ND	2.0
Bromoform	ND	0.20	ND	2.1
Bromomethane	ND	0.20	ND	0.78
1,3-Butadiene	ND	0.40	ND	0.88
4-Ethyltoluene	ND	0.40	ND	2.0
Acrolein	ND	0.80	ND	1.8
Carbon disulfide	ND	0.50	ND	1.6
Acrylonitrile	ND	2.0	ND	4.3
Carbon tetrachloride	ND	0.20	ND	1.3
Chlorobenzene	ND	0.20	ND	0.92
Dibromochloromethane	ND	0.20	ND	1.7
Chloroethane	ND	0.20	ND	0.53
Chloroform	ND	0.20	ND	0.98
Chloromethane	ND	0.50	ND	1.0
3-Chloropropene	ND	0.20	ND	0.63
Propene	ND	0.50	ND	0.86
Dibromomethane	ND	0.40	ND	2.8
1,2-Dichlorobenzene	ND	0.20	ND	1.2
1,3-Dichlorobenzene	ND	0.20	ND	1.2
1,4-Dichlorobenzene	ND	0.20	ND	1.2
Dichlorodifluoromethane	ND	0.20	ND	0.99
1,1-Dichloroethane	ND	0.20	ND	0.81
1,2-Dichloroethane	ND	0.20	ND	0.81
1,1-Dichloroethene	ND	0.20	ND	0.79
cis-1,2-Dichloroethene	ND	0.20	ND	0.79
trans-1,2-Dichloroethene	ND	0.20	ND	0.79
1,2-Dichloropropane	ND	0.20	ND	0.92
cis-1,3-Dichloropropene	ND	0.20	ND	0.91

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	105	60 - 140

Qualifiers

J Estimated result. Result is less than RL.

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample #	H3E190000 - 012B	**Work Order #**	M0WDP1AA	**Matrix.....:**	AIR

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample # H3B190000 - 012C **Work Order #** M0WDP1AC **Matrix.....:** AIR

	05/09/2013	Date Received..:	05/15/2013
Prep Date.....:	05/17/2013	Analysis Date...	05/17/2013
Prep Batch #.....:	3139012		
Dilution Factor.:	1	Method.....:	TO-15

PARAMETER	SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
trans-1,3-Dichloropropene	5.00	5.25	23	23.8	105	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5.00	5.81	35	40.6	116	60 - 140
Acetone	5.00	4.99	12	11.9	100	60 - 140
1,4-Dioxane	5.00	5.46	18	19.7	109	60 - 140
Ethyl acetate	5.00	5.51	18	19.9	110	60 - 140
Ethylbenzene	5.00	4.48	22	19.4	90	70 - 130
Trichlorofluoromethane	5.00	6.29	28	35.4	126	60 - 140
n-Heptane	5.00	4.13	20	16.9	83	70 - 130
Hexachlorobutadiene	5.00	5.14	53	54.9	103	60 - 140
n-Hexane	5.00	4.99	18	17.6	100	70 - 130
2-Hexanone	5.00	4.41	20	18.1	88	60 - 140
2,2,4-Trimethylpentane	5.00	4.61	23	21.5	92	70 - 130
Cumene	5.00	5.01	25	24.6	100	70 - 130
tert-Butyl alcohol	5.00	5.09	15	15.4	102	60 - 140
Methylene chloride	5.00	4.39	17	15.2	88	70 - 130
Methyl methacrylate	5.00	5.29	20	21.7	106	60 - 140
Benzene	5.00	4.13	16	13.2	83	70 - 130
Acetonitrile	5.00	4.00	8.4	6.72	80	60 - 140
n-Octane	5.00	4.42	23	20.6	88	70 - 130
Pentane	5.00	5.51	15	16.3	110	70 - 130
Styrene	5.00	4.89	21	20.8	98	70 - 130
1,1,2,2-Tetrachloroethane	5.00	4.88	34	33.5	98	70 - 130
Tetrachloroethene	5.00	4.68	34	31.7	94	70 - 130
Toluene	5.00	4.25	19	16.0	85	70 - 130
1,2,4-Trichlorobenzene	5.00	5.75	37	42.7	115	60 - 140
1,1,1-Trichloroethane	5.00	5.10	27	27.8	102	70 - 130
1,1,2-Trichloroethane	5.00	4.74	27	25.9	95	70 - 130
Trichloroethene	5.00	4.33	27	23.3	87	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	5.00	4.28	38	32.8	86	70 - 130
1,2,4-Trimethylbenzene	5.00	5.47	25	26.9	109	70 - 130
1,3,5-Trimethylbenzene	5.00	4.99	25	24.5	100	70 - 130
Vinyl acetate	5.00	5.47	18	19.3	109	60 - 140
Vinyl chloride	5.00	5.03	13	12.9	101	70 - 130
o-Xylene	5.00	4.83	22	21.0	97	70 - 130
Methyl tert-butyl ether	5.00	4.95	18	17.8	99	60 - 140
alpha-Methylstyrene	5.00	5.10	24	24.6	102	60 - 140

ARCADIS U.S., Inc.

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample # H3E190000 - 012C Work Order # M0WDP1AC Matrix.....: AIR

PARAMETER	SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
Chlorodifluoromethane	5.00	6.00	18	21.2	120	60 - 140
m-Xylene & p-Xylene	10.0	9.46	43	41.1	95	70 - 130
Bromodichloromethane	5.00	4.98	34	33.4	100	70 - 130
1,2-Dibromoethane (EDB)	5.00	4.90	38	37.6	98	70 - 130
2-Butanone (MEK)	5.00	4.18	15	12.3	84	60 - 140
4-Methyl-2-pentanone (MIBK)	5.00	4.59	20	18.8	92	60 - 140
Bromoform	5.00	4.89	52	50.6	98	60 - 140
Bromomethane	5.00	5.52	19	21.5	110	70 - 130
1,3-Butadiene	5.00	4.61	11	10.2	92	60 - 140
4-Ethyltoluene	5.00	5.04	25	24.8	101	70 - 130
Acrolein	5.00	5.14	11	11.8	103	60 - 140
Carbon disulfide	5.00	4.68	16	14.6	94	70 - 130
Acrylonitrile	5.00	5.06	11	11.0	101	60 - 140
Carbon tetrachloride	5.00	3.93	31	24.7	79	70 - 130
Chlorobenzene	5.00	4.58	23	21.1	92	70 - 130
Dibromochloromethane	5.00	5.14	43	43.8	103	70 - 130
Chloroethane	5.00	4.94	13	13.0	99	70 - 130
Chloroform	5.00	4.86	24	23.7	97	70 - 130
Chloromethane	5.00	4.63	10	9.56	93	60 - 140
3-Chloropropene	5.00	4.89	16	15.3	98	60 - 140
Propene	5.00	6.66	8.6	11.5	133	60 - 140
Dibromomethane	5.00	5.04	36	35.9	101	70 - 130
1,2-Dichlorobenzene	5.00	5.28	30	31.7	106	70 - 130
1,3-Dichlorobenzene	5.00	5.18	30	31.1	104	70 - 130
1,4-Dichlorobenzene	5.00	5.18	30	31.1	104	70 - 130
Dichlorodifluoromethane	5.00	6.31	25	31.2	126	60 - 140
1,1-Dichloroethane	5.00	4.72	20	19.1	94	70 - 130
1,2-Dichloroethane	5.00	5.04	20	20.4	101	70 - 130
1,1-Dichloroethene	5.00	3.82	20	15.1	76	70 - 130
cis-1,2-Dichloroethene	5.00	4.19	20	16.6	84	70 - 130
trans-1,2-Dichloroethene	5.00	4.57	20	18.1	91	70 - 130
1,2-Dichloropropane	5.00	4.43	23	20.5	89	70 - 130
cis-1,3-Dichloropropene	5.00	5.06	23	23.0	101	70 - 130

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	114	60 - 140

ARCADIS U.S., Inc.

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample #	H3E190000 - 012C	Work Order #	M0WDP1AC	Matrix.....:	AIR

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding) * (Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Sample Data Summary

ARCADIS U.S., Inc.

Client Sample ID: TOI/051413

GC Volatiles

Lot-Sample #...: H3E160414-001 Work Order #...: M0VV31AC Matrix.....: AIR
Date Sampled...: 05/14/13 Date Received..: 05/16/13
Prep Date.....: 05/22/13 Analysis Date..: 05/22/13
Prep Batch #...: 3141042
Dilution Factor: 1.78 Method.....: ASTM D 1946/E 260

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	1.0	0.18	%

ARCADIS U.S., Inc.

Client Sample ID: TOE/051413

GC Volatiles

Lot-Sample #...: H3E160414-002 Work Order #...: M0VV91AC Matrix.....: AIR
Date Sampled...: 05/14/13 Date Received..: 05/16/13
Prep Date.....: 05/22/13 Analysis Date..: 05/22/13
Prep Batch #...: 3141042
Dilution Factor: 2.15 Method.....: ASTM D 1946/E 260

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	ND	0.22	%

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: H3E160414 Work Order #...: M0WVQ1AA Matrix.....: AIR
MB Lot-Sample #: H3E210000-042

Prep Date.....: 05/22/13
Analysis Date..: 05/22/13 Prep Batch #...: 3141042
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.10	%	ASTM D 1946/E 260

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: H3E160414 Work Order #...: M0WVQ1AC Matrix.....: AIR
LCS Lot-Sample#: H3E210000-042
Prep Date.....: 05/22/13 Analysis Date..: 05/22/13
Prep Batch #...: 3141042
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Methane	94	(70 - 130)	ASTM D 1946/E 260

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: H3E160414 Work Order #...: M0WVQ1AC Matrix.....: AIR
LCS Lot-Sample#: H3E210000-042
Prep Date.....: 05/22/13 Analysis Date..: 05/22/13
Prep Batch #...: 3141042
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Methane	4.00	3.76	%	94	ASTM D 1946/E

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Sample Receipt Documentation

H3E160414

Chain of Custody Record

TestAmerica Laboratory location: KNOXVILLE

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact			
Company Name: ARCADIS US INC	Client Project Manager: (b) (4) [redacted]	Site Contact: (b) (4) [redacted]	Lab Contact:	COC No: 029835
Address: 100 EAST CAMPUSVIEW BLVD	Telephone: 614-985-9130	Telephone: 814-720-1212	Telephone:	1 of 2 COCs
City/State/Zip: COLUMBUS OH 43235	Email:	Analysis Turnaround Time (in BUS days)		For lab use only
Phone: 614-985-9130		TAT if different from below ____ ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Walk-in client ☐ Lab pickup ☐ Lab sampling ☐
Project Name: LORD-SHOPE	Method of Shipment/Carrier: UPS			
Project Number:	Shipping/Tracking No:			Job/SDG No:
PO #				

Analyses: TO-15; METHANE-EPA-18

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other: SUMMA	Filtered Sample (Y/N)	Composite C/Grab G	TO-15	METHANE-EPA-18	Sample Specific Notes / Special Instructions:
TOI/051413	5/14/13	2:00P	X											X	N	G	X	X	
TOE/051413	5/14/13	2:00P	X											X	N	G	X		

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☒ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
(b) (4) [redacted]	[redacted]	5/14/13 4:00P	(b) (4) [redacted]	[redacted]	5/14/13 1145
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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TAL 0018-1 (04/10)

TAL Knoxville H3E160414
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	Project Manager: [redacted]	Sampled [redacted]	2 of 2 COCs
Company: ARCADIS US INC	Phone: [redacted]		
Address: 100 E. CAMPUS VIEW BLVD	Site Contact: [redacted]		
City/State/Zip COLUMBUS OH 43235	TAL Contact:		
Phone: 614-985-9130			
FAX:			
Project Name: LORD-SHOPE	Analysis Turnaround Time		
Site/location: FAIRVIEW PA	Standard (Specify) X		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
TOI/051413	5/14/13	2:00P					93189	X					X					X	
TOE/051413	5/14/13	2:00P					11347	X										X	

Sampled by :

Temperature (Fahrenheit)	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)	Interior	Ambient
Start		
Stop		

OTHER- METHANE EPA-18

1 Box Rec'd @ Ambient Temp with custody seal intact
DGH 5/16/13

1 Box UPS #
1Z 183 X76 03 0337 1681

Special Instructions/QC Requirements & Comments:

2 CANS/NO FLOWS

Canisters Shipped by: TR[redacted]	Date/Time:	Ca[redacted]
(b) (4) [redacted]	Date/Time: 5/14/13 4:00PM	[redacted] 1145
Relinquished by:	Date/Time:	Received by:

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: H3E160414

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ 1a Do not match COC ☐ 1b Incomplete information ☐ 1c Marking smeared ☐ 1d Label torn ☐ 1e No label ☐ 1f COC not received ☐ 1g Other:	
2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C)	✓			☐ 2a Temp Blank = _____ ☐ 2b Cooler Temp = _____ ☐ 2c Cooling initiated for recently collected samples, ice present.	
3. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ 3a Sample preservative =	
4. Were custody seals present/intact on cooler and/or containers?	✓			☐ 4a Not present ☐ 4b Not intact ☐ 4c Other:	
5. Were all of the samples listed on the COC received?	✓			☐ 5a Samples received-not on COC ☐ 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	✓			☐ 6a Leaking ☐ 6b Broken	
7. Were VOA samples received without headspace?			✓	☐ 7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	✓			☐ 8a Improper container	
9. Did you check for residual chlorine, if necessary?			✓	☐ 9a Could not be determined due to matrix interference	
10. Were samples received within holding time?	✓			☐ 10a Holding time expired	
11. For rad samples, was sample activity info. provided?			✓	☐ Incomplete information	
12. For 1613B water samples is pH<9?			✓	If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____	
13. Are the shipping containers intact?	✓			☐ 13a Leaking ☐ 13b Other:	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ 14a Not relinquished	
15. Are tests/parameters listed for each sample?	✓			☐ 15a Incomplete information	
16. Is the matrix of the samples noted?	✓			☐ 15a Incomplete information	
17. Is the date/time of sample collection noted?	✓			☐ 15a Incomplete information	
18. Is the client and project name/# identified?	✓			☐ 15a Incomplete information	
19. Was the sampler identified on the COC?	✓			☐ 19a Other	

Quote #: 79674 PM Instructions: _____

Sample Receiving Associat[redacted] Date: 5/16/13

QA026R23.doc, 022812

Test America - Knoxville ---- Air Canister Dilution Log

Lot Number: *H3E160414*

Initial Can Pressure							Subsequent Dilutions											
Analyst/Date	Can or Tedlar bag prep Time	Baro ID BL Pbarr (in)	Sample ID	Can #	Pres. upon receipt (-in or + psig)	Adj. Initial Pres. (-in or + psig)	Analyst/Date	I / S	Baro ID BL Pbarr (in)	Initial Pres. Pi (in)	Final Pres. Pf (psig)	First InCan Final Pres. Pf (psig)	Second In-can Final Pres. Pf (psig)	Third InCan Final Pres. Pf (psig)	Serial Dilution Can #	Vol (mL)	Final Pres. Pf (psig)	Comments
M 3/16/13	1725	28.87	M0VV3	93189 ✓	-3.1	+8.3	M 3/17/13	S	28.9						93001	10	+28	10520
↓	↓	↓	M0VV9	11347 ✓	-7.4	+8.5												↓

Test America - Knoxville ---- Air Canister Dilution Log

Lot Number: *H3E160414* Fixed Gas

Initial Can Pressure							Subsequent Dilutions											
Analyst/Date	Can or Tedlar bag prep Time	Baro ID BZ Pbarr (in)	Sample ID	Can #	Pres. upon receipt (-in or + psig)	Adj. Initial Pres. (-in or + psig)	Analyst/Date	I / S	Baro ID BZ Pbarr (in)	Initial Pres. Pi (in)	Final Pres. Pf (psig)	First InCan Final Pres. Pf (psig)	Second In-can Final Pres. Pf (psig)	Third InCan Final Pres. Pf (psig)	Serial Dilution Can #	Vol (mL)	Final Pres. Pf (psig)	Comments
3/16/13	1725	28.84	M0VV3	93189 ✓	-3.1	+8.3	3/17/13	S	28.9						93001	10	+28	10520
↓	↓	↓	M0VV9	11347 ✓	-7.4	+8.5												↓

Volatiles

Raw Sample Data

ARCADIS U.S., Inc.

Client Sample ID: TOI/051413

GC/MS Volatiles

Lot-Sample #	H3E160414 - 001	**Work Order #**	M0VV31AA	**Matrix.....:**	AIR

Date Sampled...:	05/14/2013	**Date Received..:**	05/16/2013
Prep Date.....:	05/17/2013	**Analysis Date...**	05/18/2013
Prep Batch #.....:	3139012		
Dilution Factor.:	2127.48	**Method.....:**	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	430	ND	1900
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	430	ND	3000
Acetone	ND	11000	ND	25000
1,4-Dioxane	ND	1100	ND	3800
Ethyl acetate	ND	4300	ND	15000
Ethylbenzene	ND	430	ND	1800
Trichlorofluoromethane	ND	430	ND	2400
n-Heptane	ND	1100	ND	4400
Hexachlorobutadiene	ND	2100	ND	23000
n-Hexane	**600 J**	**1100**	**2100 J**	**3700**
2-Hexanone	ND	1100	ND	4400
2,2,4-Trimethylpentane	ND	1100	ND	5000
Cumene	ND	850	ND	4200
tert-Butyl alcohol	ND	4300	ND	13000
Methylene chloride	**310 J B**	**1100**	**1100 J B**	**3700**
Methyl methacrylate	ND	1100	ND	4400
Benzene	**150 J**	**430**	**470 J**	**1400**
Acetonitrile	ND	2100	ND	3600
n-Octane	ND	850	ND	4000
Pentane	**220 J**	**2100**	**630 J**	**6300**
Styrene	ND	430	ND	1800
1,1,2,2-Tetrachloroethane	ND	430	ND	2900
Tetrachloroethene	**5700**	**430**	**38000**	**2900**
Toluene	**280 J**	**430**	**1100 J**	**1600**
1,2,4-Trichlorobenzene	ND	2100	ND	16000
1,1,1-Trichloroethane	**310 J**	**430**	**1700 J**	**2300**
1,1,2-Trichloroethane	ND	430	ND	2300
Trichloroethene	**26000**	**430**	**140000**	**2300**
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	430	ND	3300
1,2,4-Trimethylbenzene	ND	430	ND	2100
1,3,5-Trimethylbenzene	ND	430	ND	2100
Vinyl acetate	ND	2100	ND	7500
Vinyl chloride	**73000**	**430**	**190000**	**1100**
o-Xylene	**510**	**430**	**2200**	**1800**
Methyl tert-butyl ether	ND	2100	ND	7700
alpha-Methylstyrene	ND	850	ND	4100
Chlorodifluoromethane	ND	430	ND	1500

ARCADIS U.S., Inc.

Client Sample ID: TOI/051413

GC/MS Volatiles

Lot-Sample # H3E160414 - 001 **Work Order #** M0VV31AA **Matrix.....:** AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
m-Xylene & p-Xylene	**620**	**430**	**2700**	**1800**
Bromodichloromethane	ND	430	ND	2900
1,2-Dibromoethane (EDB)	ND	430	ND	3300
2-Butanone (MEK)	ND	2100	ND	6300
4-Methyl-2-pentanone (MIBK)	ND	1100	ND	4400
Bromoform	ND	430	ND	4400
Bromomethane	ND	430	ND	1700
1,3-Butadiene	ND	850	ND	1900
4-Ethyltoluene	ND	850	ND	4200
Acrolein	ND	1700	ND	3900
Carbon disulfide	ND	1100	ND	3300
Acrylonitrile	ND	4300	ND	9200
Carbon tetrachloride	ND	430	ND	2700
Chlorobenzene	**110 J**	**430**	**500 J**	**2000**
Dibromochloromethane	ND	430	ND	3600
Chloroethane	**190 J**	**430**	**500 J**	**1100**
Chloroform	**350 J**	**430**	**1700 J**	**2100**
Chloromethane	ND	1100	ND	2200
3-Chloropropene	ND	430	ND	1300
Propene	**2100 est**	**1100**	**3600 est**	**1800**
Dibromomethane	ND	850	ND	6100
1,2-Dichlorobenzene	ND	430	ND	2600
1,3-Dichlorobenzene	ND	430	ND	2600
1,4-Dichlorobenzene	ND	430	ND	2600
Dichlorodifluoromethane	ND	430	ND	2100
1,1-Dichloroethane	**350 J**	**430**	**1400 J**	**1700**
1,2-Dichloroethane	ND	430	ND	1700
1,1-Dichloroethene	**600**	**430**	**2400**	**1700**
cis-1,2-Dichloroethene	**71000**	**430**	**280000**	**1700**
trans-1,2-Dichloroethene	**350 J**	**430**	**1400 J**	**1700**
1,2-Dichloropropane	ND	430	ND	2000
cis-1,3-Dichloropropene	ND	430	ND	1900

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	102	60 - 140

ARCADIS U.S., Inc.

Client Sample ID: TOI/051413

GC/MS Volatiles

Lot-Sample #	H3E160414 - 001	**Work Order #**	M0VV31AA	**Matrix.....:**	AIR

Qualifiers

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
est	Estimated value. See narrative for details.
J	Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)