@AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

COMPREHENSIVE VALIDATION PACKAGE

ATL Applications

INVENTORY SHEET

WORK ORDER # 1010461A

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Completed by:

Kara McKiernan	Kara McKiernan/ Document Control	11/02/10
(Signature)	(Print Name & Title)	(Date)

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1010461A

Work Order Summary

CLIENT:	Mr. Brian Baker Environmental Health & Engineering, Inc. 117 Fourth Avenue Needham, MA 02494	**BILL TO:**	Accounts Payable Environmental Health & Engineering, Inc. 117 Fourth Avenue Needham, MA 02494
PHONE:	800-825-5343	**P.O. #**	17131
FAX:	781-247-4305	**PROJECT #**	17131
DATE RECEIVED:	10/21/2010	**CONTACT:**	Ausha Scott
DATE COMPLETED:	11/01/2010		

FRACTION #	NAME	TEST
01A	118501	ATL Applications
02A	118502	ATL Applications
03A	118503	ATL Applications
04A	118504	ATL Applications
05A	118505	ATL Applications
06A	118506	ATL Applications
07A	118517	ATL Applications
08A	118518	ATL Applications
09A	118519	ATL Applications
10A	118520	ATL Applications
11A	118521	ATL Applications
12A	118522	ATL Applications
13A	118533	ATL Applications
14A	118534	ATL Applications
15A	118535	ATL Applications
16A	118536	ATL Applications
16AA	118536 Lab Duplicate	ATL Applications
17A	Lab Blank	ATL Applications

Continued on next page

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DATE COMPLETED:	11/01/2010		

FRACTION #	NAME	TEST
17B	Lab Blank	ATL Applications
18A	LCS	ATL Applications

CERTIFIED BY: Linda S. Frumarx

Laboratory Director

DATE: 11/01/10

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Hydrogen Sulfide by Radiello 170
Environmental Health & Engineering, Inc.
Workorder# 1010461A

Sixteen Radiello 170 (H2S) samples were received on October 21, 2010. The procedure involves adsorption of H2S by zinc acetate to form zinc sulfide. The sulfide is then recovered by extraction with water and addition of ferric chloride in a strongly acidic solution to produce methylene blue. Methylene blue absorbance is then measured at 665 nm using a spectrophotometer. Results are reported in uG and uG/m3.

Sampling rate of 69 mL/min for H2S was provided by the manufacturer.

Receiving Notes

Sample collection date was not provided on the Chain of Custody for all samples. The client was contacted and collection dates of 10/4/10, 10/5/10, 10/19/10 and 10/20/10 were provided.

Analytical Notes

Results were calculated based on 25 deg C without temperature correction. The actual exposure time was used to calculate sample concentrations and reporting limits.

An exposure time of 21585 minutes was used for the QC samples and trip blanks.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
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 detection limit.
M - Reported value may be biased due to apparent matrix interferences.
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

Sample Results and Raw Data

AIR TOXICS LTD.

ATL Application # 59 for RAD 170 (Hydrogen Sulfide)

Spectrophotometer

Field Sample I.D.	Lab Sample I.D.	Collection Date	Analysis Date	Dilution Factor	Reporting Limit (ug)	Reporting Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
118501	1010461A-01A	10/19/2010	10/26/2010	1.00	0.80	0.51	ND	ND
118502	1010461A-02A	10/19/2010	10/26/2010	1.00	0.80	0.51	ND	ND
118503	1010461A-03A	10/19/2010	10/26/2010	1.00	0.80	0.51	ND	ND
118504	1010461A-04A	10/19/2010	10/26/2010	1.00	0.80	0.51	1.1	0.72
118505	1010461A-05A	10/4/2010	10/26/2010	1.00	0.80	0.51	ND	ND
118506	1010461A-06A	10/4/2010	10/26/2010	1.00	0.80	0.51	ND	ND
118517	1010461A-07A	10/19/2010	10/26/2010	1.00	0.80	0.51	1.8	1.1
118518	1010461A-08A	10/19/2010	10/26/2010	1.00	0.80	0.51	1.9	1.2
118519	1010461A-09A	10/19/2010	10/26/2010	1.00	0.80	0.51	1.8	1.2
118520	1010461A-10A	10/19/2010	10/26/2010	1.00	0.80	0.51	1.1	0.68
118521	1010461A-11A	10/4/2010	10/26/2010	1.00	0.80	0.51	ND	ND
118522	1010461A-12A	10/4/2010	10/26/2010	1.00	0.80	0.51	ND	ND
118533	1010461A-13A	10/19/2010	10/26/2010	1.00	0.80	0.51	2.0	1.3
118534	1010461A-14A	10/19/2010	10/26/2010	1.00	0.80	0.51	1.8	1.2
118535	1010461A-15A	10/19/2010	10/26/2010	1.00	0.80	0.51	2.5	1.6
118536	1010461A-16A	10/19/2010	10/26/2010	1.00	0.80	0.51	0.80	0.51
118536 Lab Duplicate	1010461A-16AA	10/19/2010	10/26/2010	1.00	0.80	0.51	ND	ND
Method Blank	1010461A-17A	NA	10/26/2010	1.00	0.80	0.51	ND	ND
Method Blank	1010461A-17B	NA	10/26/2010	1.00	0.80	0.51	ND	ND
							%Rec	
LCS	1010461A-18A	NA	10/26/2010	1.00	0.80	0.51	86	

COMMENTS: 1. NA=Not Applicable
2. ND=Not Detected
3. Exposure time of 21585 minutes was assumed for the QC samples.
4. Background subtraction not performed.

Hydrogen Sulfide Radiello Calculation Worksheet

Workorder #: 1010461A

Sampling Rate (ng/ppb.min) 0.096 Typically0.096 for H2S

Sampling T (deg C) 25 Typically 25

Volume (mL) 10.5 Typically 10.5 for H2S

Date of Analysis: 10/26/2010

Corrected Q 0.096 Takes into account temp

Q includes conversion from Sulfide to H2S

(Abs-Y-int)xDF / Slope

Conc(ug/mL)xVol (mL)

conc (ug sulfide) *MW H2S / MW Sulfide

Conc (ug) x 1000 / Q x Duration

ppbx mw 24.45

LabSampleID	Client	Date of Collection	Abs	Duration (min)	DF	Conc (ug/mL) of sulfide	Conc (ug) of sulfide	Conc (ug) of H2S	T Corrected, no Blank correction: Conc (ppb) of H2S	T Corrected, no Blank correction: Conc (ug/m3) of H2S
01A	118501	10/19/2010	0.091	21580	1.00	0.051065249	0.536185113	0.569824166	0.259	0.361
02A	118502	10/19/2010	0.098	21580	1.00	0.057621772	0.605028607	0.642986747	0.292	0.407
03A	118503	10/19/2010	0.102	21580	1.00	0.061368357	0.644367747	0.684793937	0.311	0.434
04A	118504	10/19/2010	0.146	21580	1.00	0.102580789	1.077098284	1.144673019	0.520	0.725
05A	118505	10/4/2010	0.02	21585	1.00	-0.01543663	-0.162084618	-0.172253444	-0.078	-0.109
06A	118506	10/4/2010	0.019	21585	1.00	-0.016373276	-0.171919403	-0.182705241	-0.083	-0.116
07A	118517	10/19/2010	0.208	21555	1.00	0.160652852	1.68685495	1.792684453	0.815	1.136
08A	118518	10/19/2010	0.219	21555	1.00	0.17095596	1.795037584	1.907654223	0.867	1.209
09A	118519	10/19/2010	0.211	21555	1.00	0.163462791	1.716359305	1.824039845	0.829	1.156
10A	118520	10/19/2010	0.139	21555	1.00	0.096024266	1.008254789	1.071510438	0.487	0.679
11A	118521	10/4/2010	0.018	21585	1.00	-0.017309923	-0.181754188	-0.193157038	-0.088	-0.122
12A	118522	10/4/2010	0.02	21585	1.00	-0.01543663	-0.162084618	-0.172253444	-0.078	-0.109
13A	118533	10/19/2010	0.229	21585	1.00	0.180322422	1.893385434	2.012172197	0.914	1.274
14A	118534	10/19/2010	0.213	21585	1.00	0.165336083	1.736028875	1.844943439	0.838	1.168
15A	118535	10/19/2010	0.274	21585	1.00	0.222471501	2.335950756	2.482503076	1.127	1.571
16A	118536	10/19/2010	0.113	21585	1.00	0.071671465	0.752550381	0.799763707	0.363	0.506
16AA	118536 Lab Duplicate	10/19/2010	0.109	21585	1.00	0.06792488	0.713211241	0.757956518	0.344	0.480
					1.00	-0.034169554	-0.358780316	-0.38128939	#DIV/0!	#DIV/0!
					1.00	-0.034169554	-0.358780316	-0.38128939	#DIV/0!	#DIV/0!
					1.00	-0.034169554	-0.358780316	-0.38128939	#DIV/0!	#DIV/0!
					1.00	-0.034169554	-0.358780316	-0.38128939	#DIV/0!	#DIV/0!
					1.00	-0.034169554	-0.358780316	-0.38128939	#DIV/0!	#DIV/0!
17A	Method Blank	NA	0.02	21585	1.00	-0.01543663	-0.162084618	-0.172253444	-0.078	-0.109
17B	Method Blank	NA	0.021	21585	1.00	-0.014499984	-0.152249833	-0.161801646	-0.073	-0.102
18A	LCS	NA	0.158	21585	1.00	0.113820543	1.195115703	1.270094587	0.577	0.804

QC Duration 21585

CCV Spike Amt 0.133

Verified: HH and AW on 9/4/09

Q includes conversion from Sulfide to H2S

Low PointxDF	RL(ug/mL)xVol (mL)	RL (ug sulfide) *MW H2S / MW Sulfide	RL (ug) x 1000 / Q x Duration	ppbx mw / 24.45				

T Corrected, no Blank correction

RL(ug/ml) of sulfide	RL (ug) of sulfide	RL (ug) of H2S	RL (ppb) of H2S	RL (ug/m3)	Result (ug) H2S	Result (ug/m3) H2S	Result (ppb) H2S	%Rec
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	
0.072	0.752	0.798966249	0.36	0.506	1.144673019	0.724734389	0.519915375	
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	
0.072	0.752	0.798966249	0.36	0.506	1.792684453	1.136330565	0.815189317	
0.072	0.752	0.798966249	0.36	0.506	1.907654223	1.20920656	0.867469644	
0.072	0.752	0.798966249	0.36	0.506	1.824039845	1.156205836	0.829447588	
0.072	0.752	0.798966249	0.36	0.506	1.071510438	0.67919932	0.487249086	
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	
0.072	0.752	0.798966249	0.36	0.506	2.012172197	1.273684765	0.913725501	
0.072	0.752	0.798966249	0.36	0.506	1.844943439	1.167830644	0.837787079	
0.072	0.752	0.798966249	0.36	0.506	2.482503076	1.571399482	1.12730231	
0.072	0.752	0.798966249	0.36	0.506	0.799763707	0.506242384	0.363171947	
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	
0.072	0.752	0.798966249	0.36	0.506	ND	ND	ND	%Rec
0.072	0.752	0.798966249	0.36	0.506	1.270094587	0.803957101	0.576748756	86

Calibration Data

Calibration Date 10/26/2010 Linear Regression

ug/ml of sulfide	absorbance		
0	0	Slope	1.067639005
0.0716	0.091	Y-int	0.036480749
0.143	0.184	R2	0.997754209
0.286	0.354		
0.572	0.679		
1.145	1.242		

QC Results and Raw Data

Spectrophotometer Logbook **@Air Toxics Ltd.** **Logbook#: 1927**

Work Order: 1010461A **Date:** 10/26/10 **Method:** Rad 170

Analyst: M. Skidmore **Wavelength:** 665 nm

Standard ID	Concentration	ABS
	Sulfide (ug/mL)	
Level 1 1993-86 - E	0.0716	0.091
Level 2 | - D	0.143	0.184
Level 3 - C	0.286	0.354
Level 4 - B	0.572	0.679
Level 5 ↓ - A	MJS 10/26/10 1.145	1.242
ICV 1993-89	0.286	0.354

r = 0.9978
m = 1.068
b = 0.0365

ICV % Recovery = 104

Fraction	Dilution	ABS	Sample ID	Sample Volume	Comments
01A	1.00	0.091	118501	10.5 mL	
02A	|	0.098	118502	|	
03A	|	0.102	118503	|	
04A	|	0.146	118504	|	
05A	|	0.020	118505	|	
06A	|	0.019	118506	|	
07A	|	0.208	118517	|	
08A	|	0.219	118518	|	
09A	|	0.211	118519	|	
MJS 10/26/10 10A	|	0.139	118520	|	
11A	|	0.018	118521	|	
12A	|	0.020	118522	|	
13A	|	0.229	118533	|	
14A	|	0.213	118534	|	
15A	|	0.274	118535	|	
16A	|	0.113	118536	|	
16AA	|	0.109	118536	|	
BLK1	|	0.020	N/A	|	Lot: 10101
BLK2	|	0.021	|	|	|
LCS	|	0.158	|	|	↓ 0.133 ug/mL
CCV	↓	0.350	↓	5.0 mL	0.286 ug/mL
				MJS 10/26/10	

Procedure:

1.) Add 10 mL of H_20 to sample tube, cap and vortex for 1 minute.
2.) Add 0.5 mL of Ferric Chloride-Amine solution and cap immediately.
3.) Allow color to develop for 30 minutes.
4.) Measure absorbance at 665nm.

MJS 10/26/10

Signed

10/26/10
Date

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-76
Project: Rad 170 Amine Solution
Analyst: M. Skidmore
Preparation Date: 10/18/10
Expiration Date: 11/18/10

Solvent: HPLC H2O
Solvent Lot #: DB 270

Procedure/Comments:

Sulfuric Acid Solution:
Slowly add 6.25 mL of concentrated sulfuric acid to 2.5 mL of D.I. H_2O, and let the solution cool. (sulfuric acid lot: 014281S).

Amine Solution:
Dissolve 1.6875g of N,N-dimethyl-p-phenylendiammonium oxalate (located in ER1A; Lot: 63797PJ) in the above mentioned sulfuric acid solution. Dilute this solution to 250 mL with sulfuric acid-water 1:1 v/v. (This is roughly 120 mL H_2O + 120 mL sulfuric acid).

MJS 10/18/10

MJS 10/18/10

Signed 10/18/10 Date Reviewed 10/22/10 Date

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-77
Project: Ferric Chloride Solution Rad 170
Analyst: M. Skidmore
Preparation Date: 10/18/10
Expiration Date: 10/18/11

Solvent: HPLC H_2O
Solvent Lot #: DB270

Procedure/Comments: Dissolve 125 g of ferric chloride hexahydrate (located in ERAC, lot: 73297) in 50 mL of H_2O.

MJS 10/18/10

Signed 10/18/10 Reviewed 10/22/10

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-86
Project: Rad 170 Calibration Curve
Analyst: M. Skidmore
Preparation Date: 10/26/10
Expiration Date: 10/26/10

Solvent: HPLC H_2O
Solvent Lot #: DB270

Procedure/Comments:

Solution A: 2 mL of Code Rad 171 (1476-2077, exp 6/16/11) (located in ER1B) with 98 mL of D.I. H_2O = 1.145 µg/mL

Solution B: 2.5 mL of Solution A with 2.5 mL of D.I. H_2O = 0.572 µg/mL

Solution C: 1.25 mL of Solution A with 3.75 mL of D.I. H_2O = 0.286 µg/mL

Solution D: 0.625 mL of Solution A with 4.375 mL of D.I. H_2O = 0.143 µg/mL

Solution E: 0.375 mL of Solution A with 5.625 mL of D.I. H_2O = 0.0716 µg/mL

Note: Each solution was measured immediately after it was prepared. Solution A is only stable in the flask it was prepared in.

MJS 10/26/10

MJS 10/26/10

Signed 10/26/10 Date

Reviewed 10/26/10 Date

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-87
Project: Rad 170 H_2S LCS
Analyst: M.Skidmore
Preparation Date: 10/26/10
Expiration Date: 10/26/10

Solvent: HPLC H_2O
Solvent Lot #: DB270

Procedure/Comments:

MJS 10/26/10

A Rad 170 cartridge (lot: 101048) was placed in a 40 mL VOA vial. 10.0 mL of D.I. H_2O was aliquoted into the vial. 1.0 mL of H_2S gas (1476-1497; 1000ppm) was injected into the vial, into the H_2O. The solution was allowed to gently shake for 2 hours. Then 0.5 of the ferric-chloride-amine (1993-88) was added to the vial and capped immediately. The solution was allowed to sit for 30 minutes and the absorbance was measured at 665 nm.

MJS 10/26/10

MJS 10/26/10

Signed 10/26/10 Reviewed 10/26/10

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-88
Project: Ferric Chloride Amine Solution Rad 170
Analyst: M. S Kidmore
Preparation Date: 10/26/10
Expiration Date: 10/26/10

Solvent: HPLC H_2O
Solvent Lot #: DB 270

Procedure/Comments: Add 5.0 mL of ferric chloride solution (1993-77, exp 10/18/11) with 25 mL of Amine solution (1993-76; exp. 11/18/10).

MJS
10/26/10

Signed 10/26/10 Date Reviewed 10/26/10 Date

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-89
Project: Rad. 170 ICV
Analyst: FM
Preparation Date: 10/26/10
Expiration Date: 10/26/10

Solvent: HPLC H2O
Solvent Lot #: DB270

Procedure/Comments:

Solution A: 2 mL of Code Rad 171 (1476-2077, exp 6/16/11) (located in ER1B) with 98 mL of D.I. H_2O = 1.145 µg/mL

Solution C: 1.25 mL of Solution A with 3.75 mL of D.I. H_2O = 0.286 µg/mL

Note: Each solution was measured immediately after it was prepared. Solution A is only stable in the flask it was prepared in.

FM 10/26/10

FM
10/26/10

Fawzia 10/26/10 10/27/10

Page 89 Signed Date Reviewed Date

Shipping/ Receiving Documents

Air Toxics LTD.
Laboratory Services Since 1989

180 Blue Ravine Road, Suite B
Folsom, CA 95630

Phone (916) 985-1000 FAX (916) 985-1020
Hours 8:00 A.M. to 6:00 P.M. Pacific

COMPANY: Environmental Health & Engineering, Inc.
ATTENTION: Mr. Brian Baker
FAX #: 781-247-4305
FROM: Sample Receiving
Workorder #: 1010461A
# of pages (Including Cover): 4

11/2/2010

Thank you for selecting Air Toxics Ltd. We have received your samples and have found discrepancies. In order to expedite analysis and reporting, please review the attached information for accuracy. Corrections can be faxed to **Ausha Scott at 916-985-1020.**
ATL will proceed with the analysis as specified on the Chain of Custody and Sample Login page.

In accordance with your company's contract, this account is required to have a PO that is fully executed by both parties which also covers the cost of the workorder before any data can be released. Please ensure that you have given all appropriate information to our Project Manager so that there will be no delay in reporting of the data you are requesting.

The following discrepancy has been observed:

Sample collection date was not provided on the Chain of Custody for all samples. The collection dates of 10/4/10, 10/5/10, 10/19/10 and 10/20/10 that you provided will be used to analyze and report the samples.

Your prompt response is appreciated.

1010461

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 20 OCT 10

FROM: Environmental Health and Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494-2725

TO: AIR TOXICS

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 17131

The cost of this analysis will be covered by EH&E Purchase Order # 17131

For EH & E Data Coordinator - URGENT DATA ☐

	SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER: Time/Date/Vol.
01A	118501	AIR/PASSIVE	H_2S ANALYSIS	14D 23H 40M
02A	118502			
03A	118503			
04A	118504			
05A	118505			ØD
06A	118506			
07A	118517			14D 23H 15M
08A	118518			
09A	118519			
10A	118520			
11A	118521			ØD
12A	118522			
13A	118533			14D 23H 45M
14A	118534			
15A	118535			
16A	118536			

Special instructions:

☒ Standard turn around time ☐ Rush by _____ date/time ☐ Other _____

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☒ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient bakere@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: _____ of Environmental Health & Engineering, Inc. Date: 10/20/10

Received by: Robert Whittaker of (company name) ATC Date: 10/21/10

Relinquished by: _____ of (company name) _____ Date: _____

CUSTODY SEAL INTACT? Y N NONE TEMP 5.4°C

Received by: _____ of (company name) _____ Date: _____

Relinquished by: FEDEX of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 2

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Air Toxics LTD.
Laboratory Services Since 1989

SAMPLE RECEIPT SUMMARY

WORKORDER 1010461A

Client

Mr. Brian Baker
Environmental Health &
Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494

Phone

800-825-5343

Fax

781-247-4305

Sales Rep: TL

Date Promised: 11/03/10 11:59 pm
Date Completed: 11/1/10
Date Received: 10/21/10
PO#: 17131
Project#: 17131

Total $: $ 1,360.00
Logged By: MW

Fraction	Sample #	Analysis	Collected	Amount$
01A	118501	ATL Applications	10/19/2010	$80.00
02A	118502	ATL Applications	10/19/2010	$80.00
03A	118503	ATL Applications	10/19/2010	$80.00
04A	118504	ATL Applications	10/19/2010	$80.00
05A	118505	ATL Applications	10/4/2010	$80.00
06A	118506	ATL Applications	10/4/2010	$80.00
07A	118517	ATL Applications	10/19/2010	$80.00
08A	118518	ATL Applications	10/19/2010	$80.00
09A	118519	ATL Applications	10/19/2010	$80.00
10A	118520	ATL Applications	10/19/2010	$80.00
11A	118521	ATL Applications	10/4/2010	$80.00
12A	118522	ATL Applications	10/4/2010	$80.00
13A	118533	ATL Applications	10/19/2010	$80.00
14A	118534	ATL Applications	10/19/2010	$80.00
15A	118535	ATL Applications	10/19/2010	$80.00
16A	118536	ATL Applications	10/19/2010	$80.00
16AA	118536 Lab Duplicate	ATL Applications	10/19/2010	$0.00
17A	Lab Blank	ATL Applications	NA	$0.00
17B	Lab Blank	ATL Applications	NA	$0.00
18A	LCS	ATL Applications	NA	$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: CPSC/14482

BILL TO: Accounts Payable
Environmental Health & Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494

Analysis Code: Other GC

TERMS:

Reporting Method: ATL Application #59 H2S-Radiello 170

SAMPLE RECEIPT SUMMARY Continued

Client	**Phone**	**Date Promised:**	
		Date Completed:	
		Date Received:	
	Fax	**PO#:**	
		Project#:	
Sales Rep:		**Total $:**	$ 1,360.00
		Logged By:	MW

Fraction	Sample #	Analysis	Collected	Amount$
Misc. Charges eCVP (16) @ $5.00 each.				$80.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: CPSC/14482

BILL TO: Accounts Payable
Environmental Health & Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494

Analysis Code: Other GC

TERMS:

Reporting Method: ATL Application #59 H2S-Radiello 170

Sample Discrepancy Report

Identification

Initiated By: MW **Project ID:**14482 **PM:** AS **Date:** 10/22/2010 **Discrepancy Type:** ☐ 1. ☒ 2. ☐ 3.

Workorder(s) affected:1010461 **Sample(s) affected:** All

1. Sample Receipt Discrepancies

Narration Not Required:

1.1. ☐ Sample container (cartridge/tube/VOA vial) was received broken, however sample was intact.
1.2. ☐ No brass cap on canister.
1.3. ☐ Date of Collection noted on first sample, but no arrow down to indicate all samples.

Notify Lab for further determination:

1.4. ☐ Tedlar bag received with minimal volume.

Initials: _____ Date: _____

Narration Required in Lab Narrative and Sample Confirmation:

1.5. ☐ COC was not filled out in ink.
1.6. ☐ COC improperly relinquished / received.
1.7. ☐ Sample tags / can numbers do not match the COC.
1.8. ☐ Sample date ☐ error / ☐ missing on COC but noted on sample tag (check one).
1.9. ☐ Custody Seal on the outside of the container was ☐ broken / ☐ improperly placed (check one).
1.10. ☐ ID-none on the sample Tag/Blank
1.11. ☒ Other (describe below).

Describe the Discrepancy: _____

2. Sample Receipt/Screening Discrepancies requiring PM notification

Document on Cover Page of Sample Receipt Confirmation and in Receiving Notes of Lab Narrative

If Section II. is filled out PM must be notified within 24 hrs of initiation

2.1. ☐ COC was not received with samples.
2.2. ☐ Analysis method(s) is ☐ not specified / ☐ incorrectly specified (check one) on the COC.
2.3. ☐ Incorrect sampling media / container for analysis requested.
2.4. ☐ Number of samples on the COC does not match the number of samples that were received.
2.5. ☐ Samples were received expired.
2.6. ☒ Sampling date (time for sulfur) is not documented for ☐ *some* / ☒ *any* samples (check one).
2.7. ☐ Sample received with amount of H_2O in the Tedlar Bag.
2.8. ☐ Sample cannot be analyzed. Container was ☐ received broken / ☐ leaking / ☐ flat / ☐ defective.
2.9. ☐ Tedlar bag / canister received emitting a strong odor; Sample ☐ can / ☐ cannot (check one) be analyzed.
2.10. ☐ Tedlar Bag for Sulfur analysis has metal fitting.
2.11. ☐ Environmental Supply Company valves
2.12. ☐ Sorbent samples-sampling volume was not provided
2.13. ☐ Flow controller used – canister samples received at ambient or under pressure.
2.14. ☐ Canister was at ambient pressure at time of pressurization and (check all that apply):
- ☐ Canister failed leak check on two manifolds,
- ☐ Canister valve was open,
- ☐ Brass nut was loose/not present.
- ☐ Sample can be analyzed
- ☐ Cannot be analyzed

2.15. ☐ Canister sample received with a vacuum difference >5.0"Hg between the receipt vac. And the final vac. reported on the COC, indicating loss of vacuum.
2.16. ☐ Canister sample received at >15"Hg (*not* identified as a Trip/Field Blank).
2.17. ☐ Canister Trip Blank received at low vacuum (< 25"Hg).
2.18. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C; ☐ ice / ☐ blue ice (check one) was present. A temp. Blank ☐ was / ☐ was not present (check one).
2.19. ☐ Other (describe below)

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐

Describe the Discrepancy: See spreadsheet for DOCs and TOCs

3. Lab Discrepancies requiring Team Leader/PM notification

Document in Analytical Notes of Lab Narrative

If Section III. is filled out PM must be notified within 24 hrs of initiation

3.1. ☐ Tedlar Bag found to be leaking at the time of analysis; sample ☐ can / ☐ cannot (check one) be analyzed.

3.2. ☐ Tedlar Bag found to be flat/low volume; sample cannot be analyzed.

3.3. ☐ Sulfur samples received with insufficient time to analyze prior to expiration.

3.4. ☐ Canister found to be leaking at the time of analysis.

3.5. ☐ VOST tube saturated; bag dilution necessary.

3.6. ☐ Sample loss due to instrument malfunction / broken glassware.

3.7. ☐ Low/high surrogate recoveries noted in QC/sample(s) for extractable samples.

3.8. ☐ Reporting Limit was raised.

3.9. ☐ Post weight > Pre weight in field/lab Blank for PM10/TSP samples.

3.10. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐ _____

Team Lead Initials: _____ **Date:** _____

Describe the Discrepancy: _____

_____

_____

How Does this Affect Client: _____

_____

_____

Project Manager Use Only

Project Manager Notification ☒ **Section 2 Complete** ☐ **Section 3 Complete**

Action:

☐ It is not necessary to notify the client. Narrate the discrepancy in Receiving Notes/Analytical Notes of Lab Narrative.

PM Initials:_____ Date: _____

☒ Client notification required. See attached client contact / email, or comments below:

Client Notification:

PM Initials:AS Person notified: BBaker Date: 10/21/2010

☐ Waiting for Client Reply

Comments: **Client emailed spreadsheet with DOCs on 10/22.**

_____

☐ Notify Lab Name: _____ Date: _____ **Notify Receiving:** ☐

☐ **Additional notifications attached.**

Additional Comments:

_____

Other Records

Air Toxics LTD.
Laboratory Services Since 1989

Method : ATL Application #59 H2S-Radiello 170

CAS Number	Compound	Rpt. Limit (ug)
7783-06-4	Hydrogen Sulfide	1.2

@ Air Toxics Ltd	Title: Data Review Checklist			Release Date: 07/28/10
	Form #: F1.27	Revision #: 2	Revision Date:07/27/10	Page #: 1 of 2

DATA REVIEW CHECKLIST

Work Order #: 1010461A

A_1	A_2	W	T	R	Q	
☑	☐	☑	☐	☐	☐	Analysis/Reporting vs. Project Profile/SOP requirements checked (i.e. 100% Dups, J-Flag to MDL, etc)
		☑	☐	☐	☐	The final report has the correct reporting list, special units, and header info.
☑	☐	☑				Non-Standard sublist printed/verified, LOQ and LOD verified
		☑	☐	☐	☐	Lab Narrative is correct (proper method & description/Receiving & Analytical notes correct)
		☑	☐	☐	☐	Sample Discrepancy Report (SDR) is completed
☑	☐	☑	☐	☐	☐	Corrective Action issued - #
☑	☐	☑	☐		☐	Unusual circumstances have been documented in the notes section below

LUMEN *validation report present and initialed* ***CIRCLE (YES / NO)***

☑	☐	☑	☐	☐	☐	Lab Blank, CCV, LCS and DUP met QC criteria
☑	☐	☑	☐	☐	☐	Hold time is met for all samples
		☑	☐	☐	☐	Appropriate data qualifier flags are applied
		☑	☐	☐	☐	Manual integrations for samples and QC are properly documented
☑	☐	☑	☐		☐	Samples analyzed within the project or method specific clock
		☑	☐			Retention times have been verified
☑	☐	☑	☐		☐	Appropriate ICAL(s) included, %RSD Recalculation
		☑	☐		☐	At least one result per sample is verified against the target quant sheets/raw data
☑	☐	☑	☐		☐	Dilution factor correctly calculated (sample load volume, syringe and bag dilutions, can pressurization(s))
☑	☐	☑	☐			Correct amount of sample analyzed (i.e. sample not over-diluted)
		☑	☐			Spectra verified - documentation of spectral defense included (Section 5A of eCVP pkg)
		☐	☐			TICs resemble reference spectra
		☑	☐			TICs between duplicate samples are consistent
☑	☐	☑	☐	☐	☐	Checked samples for trends (i.e. Influent vs. Effluent, Field Dups, Field/Trip Blank, etc.)
☑	☐	☑	☐			Data for multiple analyses of sample(s) has been evaluated for comparability of results
		☑	☐			Special units for all samples in the final report are correctly calculated
		☑	☐			Manually entered results checked (i.e. TPH/NMOC)
☑	☐	☑				Chain of Custody verified for any special comments (i.e. different compounds/RLs, action levels)
		☑				Chain of Custody scanned correctly
					☐	Verify sample id's vs. chain of custody
☑	☐	☑				Date MDL(s) performed per instrument(s)
☑	☐	☑				Samples pressurized w/ appropriate gas (N_2 or He) ☐ Other (i.e. Tedlar bag, cartridge, sorbent)
☐	☐	☐				Final pressure consistent with canister size (6L vs. 1L)
☐	☐	☐				Verify receipt pressures
☑	☐	☑				Verify canister ID #'s
		☑	☐	☐		Final invoice amount correct (adjusted for TAT, Penalties, Re-issue Charges etc.)
		☑	☐	☐		Final PDF report reviewed for correctness

Notes: *(to include: noting samples with QA/QC problems, Blanks with positive hits, narratives, etc.)*

A/R: An exposure time of 21585 minutes was used for the QC samples and trip blanks

T/Q:

A_1/A_2 (Analytical Review/Date)	W/T (Write-up/Tech Review/Date)	R* (Report Review/Date)	Q (QA Review/Date)
A_1: 10/28/10	W: 10/28/10	R:	
A_2:	T:		

Note (1): Please check all the appropriate boxes. Indicate "NA" for any statement that does not apply.
Note (2): Report reviewer and write-up reviewer must be separate individuals for DoD & Client Specific projects.
* Report Review is completed for DoD & Client Specific projects only.