

COMPREHENSIVE VALIDATION PACKAGE

ATL Applications

INVENTORY SHEET

WORK ORDER # 0909375A

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Completed by:

Kara McKiernan

(Signature)

Kara McKiernan/ Document Control

(Print Name & Title)

10/05/09

(Date)

WORK ORDER #: 0909375A

Work Order Summary

CLIENT: Mr. Taeko Minegishi
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. #** 16512

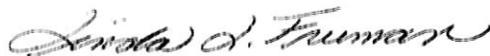
FAX: 781-247-4305 **PROJECT #** 16512

DATE RECEIVED: 09/18/2009 **CONTACT:** Ausha Scott

DATE COMPLETED: 10/01/2009

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	102783	ATL Applications
02A	102784	ATL Applications
03A	102785	ATL Applications
04A	102786	ATL Applications
05A	102787	ATL Applications
06A	102788	ATL Applications
07A	105647	ATL Applications
07AA	105647 Lab Duplicate	ATL Applications
08A	105648	ATL Applications
09A	105649	ATL Applications
10A	105650	ATL Applications
11A	105651	ATL Applications
12A	105652	ATL Applications
13A	Method Blank	ATL Applications
13B	Method Blank	ATL Applications
14A	CCV	ATL Applications

CERTIFIED BY:



Laboratory Director

DATE: 10/01/09

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

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

LABORATORY NARRATIVE
Nitrogen Dioxide by Radiello 166
Environmental Health & Engineering, Inc.
Workorder# 0909375A

Twelve Radiello 166 (NO₂) samples were received on September 18, 2009. The procedure involves extraction of nitrite from reaction of NO₂ with triethanolamine. Absorbance of nitrite is then measured at 537 nm using a spectrophotometer. Results are reported in uG and uG/m³.

Sampling rate of 141 mL/min was provided by the manufacturer.

Receiving Notes

The Chain of Custody (COC) was not relinquished properly. A signature and date were not provided by the field sampler.

A Temperature Blank was not included with the shipment. Temperature was measured on a representative sample and was not within 4±2 °C. Coolant in the form of blue ice was present. Analysis proceeded.

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 18720 minutes was used for the QC samples.

All media used for the sampling were supplied by the client. Blank subtraction was not performed on the sample results since the media used for Method Blanks may be from a different lot than the media used for the samples.

An Independent Calibration Verification (ICV) was not performed with this workorder.

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 # 61 for RAD 166 (Nitrogen Dioxide)

Spectrophotometer

Field Sample ID.	Lab Sample ID.	Collection Date	Analysis Date	Dilution Factor	Reporting Limit (ug)	Reporting Limit (ug/m ³)	Amount (ug)	Amount (ug/m ³)
102783	0909375A-01A	9/16/2009	9/18/2009	1.00	0.32	0.23	23	16
102784	0909375A-02A	9/16/2009	9/18/2009	1.00	0.32	0.23	31	22
102785	0909375A-03A	9/16/2009	9/18/2009	1.00	0.32	0.23	42	30
102786	0909375A-04A	9/16/2009	9/18/2009	1.00	0.32	0.23	24	17
102787	0909375A-05A	9/16/2009	9/18/2009	1.00	0.32	0.23	23	16
102788	0909375A-06A	NA	9/18/2009	1.00	0.32	0.23	ND	ND
105647	0909375A-07A	9/16/2009	9/18/2009	1.00	0.32	0.23	12	8.5
105647 Duplicate	0909375A-07AA	9/16/2009	9/18/2009	1.00	0.32	0.23	12	8.4
105648	0909375A-08A	9/16/2009	9/18/2009	1.00	0.32	0.23	11	7.9
105649	0909375A-09A	9/16/2009	9/18/2009	1.00	0.32	0.23	10	7.3
105650	0909375A-10A	9/16/2009	9/18/2009	1.00	0.32	0.23	8.3	5.9
105651	0909375A-11A	9/16/2009	9/18/2009	1.00	0.32	0.23	35	25
105652	0909375A-12A	NA	9/18/2009	1.00	0.32	0.23	0.50	0.36
Method Blank	0909375A-13A	NA	9/18/2009	1.00	0.32	0.23	ND	ND
Method Blank	0909375A-13B	NA	9/18/2009	1.00	0.32	0.23	ND	ND
CCV	0909375A-14A	NA	9/18/2009	1.00	0.32	0.23	%Rec 108	

COMMENTS: 1. NA=Not Applicable

2. ND=Not Detected

3. Exposure time of 18720 minutes was assumed for the QC samples.

4. Background subtraction not performed.

1000ng/1ug

Low Point/Df RL (ug) x 1000 Dpbx mmw
0.5ml Q x Duration 24.45

Calibration Data Calibration Date
9/18/2009 Linear Regression

0.5 ml Aliquot
of Cal STD

Slope 0.057624326
Y-int 0.014094053
R2 0.996777647

RL(ug) for 0.5 ml aliquot	RL (ug) in full 5 ml of sample	RL (ppb)	RL (ug/m3)	Result (ug)	Result (ug/m3)	%Rec	ug/ml of NO2	ug of NO2	absorbance
0.033	0.325	0.1	0.232	22.71713288	16.19226223		0	0	0
0.033	0.325	0.1	0.232	30.87341042	22.00587377		0.065	0.0325	0.012
0.033	0.325	0.1	0.232	41.80629315	29.79858712		0.325	0.1625	0.02
0.033	0.325	0.1	0.232	24.27897322	17.30550699		1.3	0.65	0.051
0.033	0.325	0.1	0.232	22.89067065	16.31595609		6.5	3.25	0.217
0.033	0.325	0.1	0.232	ND	ND		13	6.5	0.381
0.033	0.325	0.1	0.232	11.95778791	8.523242747				
0.033	0.325	0.1	0.232	11.78425009	8.399548885				
0.033	0.325	0.1	0.232	11.09009881	7.90473434				
0.033	0.325	0.1	0.232	10.2224097	7.286304121				
0.033	0.325	0.1	0.232	8.31349367	5.925671632				
0.033	0.325	0.1	0.232	35.38539377	25.2219142				
0.033	0.325	0.1	0.232	0.504291718	0.359447814				
0.033	0.325	#DNV/0!	#DNV/0!	ND	#DNV/0!				
0.033	0.325	#DNV/0!	#DNV/0!	ND	#DNV/0!				
0.033	0.325	#DNV/0!	#DNV/0!	ND	#DNV/0!				
0.033	0.325	#DNV/0!	#DNV/0!	ND	#DNV/0!				
0.033	0.325	#DNV/0!	#DNV/0!	ND	#DNV/0!				
0.033	0.325	#DNV/0!	#DNV/0!	ND	#DNV/0!				
0.033	0.325	#DNV/0!	#DNV/0!	ND	#DNV/0!				
0.033	0.325	#DNV/0!	#DNV/0!	ND	#DNV/0!				
0.033	0.325	0.1	0.232	ND	ND	%Rec			
0.033	0.325	0.1	0.232	35.03831813	24.97452648	108			

QC Results and Raw Data

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1858

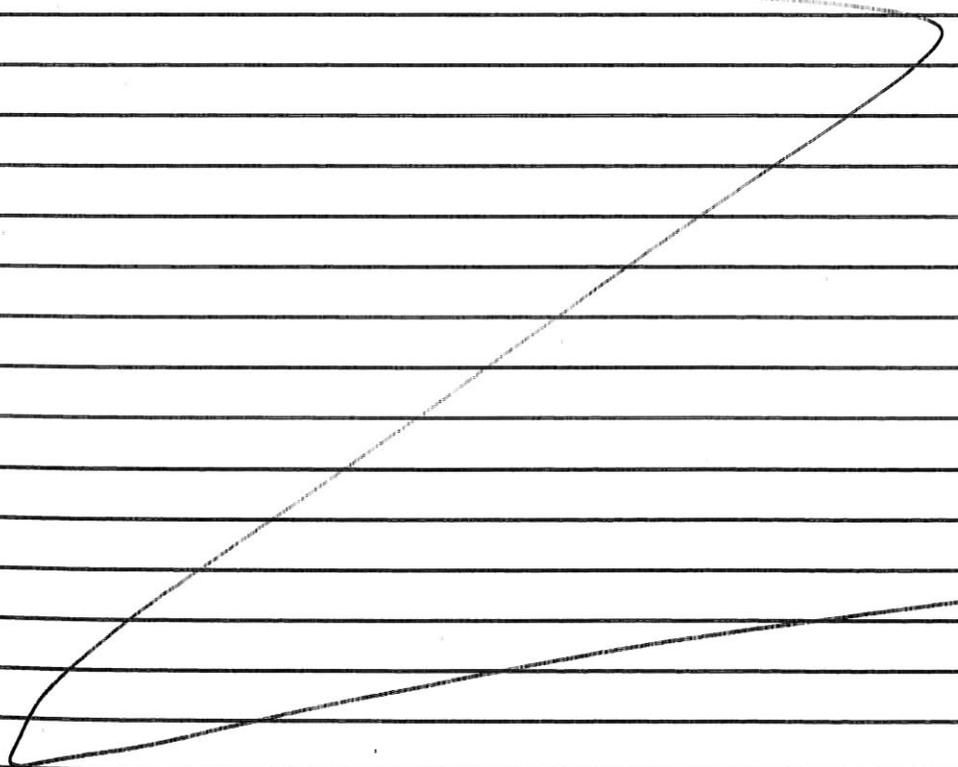
Standard ID: 1858-40
Project: Calibration Solution Rack 166
Analyst: M. Skidmore
Preparation Date: 9/18/09
Expiration Date: 9/18/09

Solvent: DI H₂O
Solvent Lot #: N/A

Procedure/Comments: Dissolve 5mg Sodium Nitrate, 97% (located ER2D)
in 250 mL DI H₂O to yield 13 mg/mL or 13 mg/L. From
this solution, dilute to make:

<u>6.5 mg/mL</u> <u>(315:630)</u>	<u>1.3 mg/mL</u> <u>(130:650)</u>	<u>0.325 mg/mL</u> <u>(150:600)</u>	and <u>0.065 mg/mL</u> <u>(100:500)</u>
--------------------------------------	--------------------------------------	--	--

To each of these calibration levels, transfer 0.5 mL
to vial and add 5 mL of sulfanilamide, cap tightly,
stir and wait 5 ^{mins} minutes. Then add 1 mL
of NEDA solution, stir and wait 10 minutes.
Measure absorbance at 537 nm.



MSS
9/18/09

Shipping/ Receiving Documents

**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. Taeko Minegishi
FAX #: 781-247-4305
FROM: Sample Receiving
Workorder #: 0909375A
of pages (Including Cover): 4

10/5/2009

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 discrepancies have been observed:

The Chain of Custody (COC) was not completed properly. Please note for future reference that the COC must be signed and dated in order to properly relinquish or receive samples.

Samples were not received at the recommended temperature (4 ± 2 °C). ATL will proceed with the analysis unless otherwise notified.

Your prompt response is appreciated.

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 # 16512

The cost of this analysis will be covered by EH&E Purchase Order # 16512

For EH & E Data Coordinator - URGENT DATA

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	START	OTHER: Time/Date/Vol.	STUP
01A 102783	AIR/PASSIVE	NO ₂ SO ₂ HF ANALYSIS	9/3/09	9/16/09	
02A 102784					
03A 102785					
04A 102786					
05A 102787					
06A 102788				0	
07A 105647				9/16/09	
08A 105648					
09A 105649					
10A 105650					
11A 105651					
12A 105652				0	

Special Instructions:

- Standard turn around time
- Fax results 781-247-4305
- RETURN SAMPLES
- Additional report recipient MFRAGALA@EHEINC.COM
- Rush by _____ date/time
- Electronic transfer - datacoordinator@ehinc.com

CUSTODY SEAL INTACT?
Y N NON-TEMP 8.1°C

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

Relinquished by: _____ of Environmental Health & Engineering, Inc. Date: _____
 Received by: [Signature] of (company name) ATI 0850 Date: 9/18/09
 Relinquished by: _____ of (company name) _____ Date: _____
 Received by: _____ of (company name) _____ Date: _____
 Relinquished by: _____ of (company name) _____ Date: _____
 Received by: _____ of (company name) _____ Date: _____
 Lab Data
 Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

SAMPLE RECEIPT SUMMARY

WORKORDER 0909375A

Client	Phone	Date Promised: 09/29/09 11:59 pm
Mr. Taeko Minegishi	800-825-5343	Date Completed: 10/1/09
Environmental Health & Engineering, Inc.	Fax	Date Received: 9/18/09
117 Fourth Avenue	781-247-4305	PO#: 16512
Needham, MA 02494		Project#: 16512
Sales Rep: TL		Total \$: \$ 540.00
		Logged By: MW

<u>Fraction</u>	<u>Sample #</u>	<u>Analysis</u>	<u>Collected</u>	<u>Amount\$</u>
01A	102783	ATL Applications	9/16/2009	\$40.00
02A	102784	ATL Applications	9/16/2009	\$40.00
03A	102785	ATL Applications	9/16/2009	\$40.00
04A	102786	ATL Applications	9/16/2009	\$40.00
05A	102787	ATL Applications	9/16/2009	\$40.00
06A	102788	ATL Applications	NA	\$40.00
07A	105647	ATL Applications	9/16/2009	\$40.00
07AA	105647 Lab Duplicate	ATL Applications	9/16/2009	\$0.00
08A	105648	ATL Applications	9/16/2009	\$40.00
09A	105649	ATL Applications	9/16/2009	\$40.00
10A	105650	ATL Applications	9/16/2009	\$40.00
11A	105651	ATL Applications	9/16/2009	\$40.00
12A	105652	ATL Applications	NA	\$40.00
13A	Method Blank	ATL Applications	NA	\$0.00
13B	Method Blank	ATL Applications	NA	\$0.00
14A	CCV	ATL Applications	NA	\$0.00
Misc. Charges eCVP (12) @ \$5.00 each.				\$60.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
 Atlas Project Name/Profile#: CPSC Indoor Air Monitoring/13297

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

Analysis Code: Other GC

TERMS:

Reporting Method: ATL Application #61 NO2-Radiello 166

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

Sample Discrepancy Report

Identification

Initiated By: MW Project ID: 13297 PM: AS Date: 9/18/2009 Discrepancy Type: 1. 2. 3.

Workorder(s) affected: 0909375 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: 1.6: no relinq. signature and date

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 H₂O 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: samples rec'd at 8.4C

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: TM, BB & DS Date: 9/22/2009

Waiting for Client Reply

Comments: _____

Notify Lab Name: _____ Date: _____ Notify Receiving:

Additional notifications attached.

Additional Comments:

Other Records

Method : ATL Application #61 NO2-Radiello 166

CAS Number	Compound	Rpt. Limit (ug)
10102-44-0	Nitrogen Dioxide	1.0

DATA REVIEW CHECKLIST

Work Order #:

0909375A

A1 A2 R T M 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.
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
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 (N2 or He)
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.)
MDL date(s) present for all instruments utilized
Client LUMEN report reviewed for accuracy and completeness

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

A/R:

Dup. 07A
ICV not analyzed

M/Q:

A1/A2 (Analytical Review/Date) R/T (Reporting Review/Date) M (Management Review/Date) Q (QA Review/Date)
A1: 6/28/09 R: M 10/1/09
A2: M 10/1/09 T: