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ANALYSIS: VOA METHOD NO.: 8260B

ARDL Report(s) #: 006557 / 006558 MATRIX: Sea Cucumbers

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	By:	Date:
Package Preparation	JAA	12/05/13
Analytical Review	JA	12/10/13, 12/12/13
Final Review	BND	12/12/13
QA Review	DSD	12/12/13/13 DSD 12/12/13

Rev. 1.1

Organic Package Review Checklist

Rev. 1.1

ORGANIC PACKAGE REVIEW CHECKLIST

METHOD: 8260B

	Initial	Date
Case Narrative and/or Nonconformance Reports		
Case Narrative / Analyst Comment Sheets	JD	12/10/13
Nonconformance / Noncompliance Reports (if applicable)	NA	
Sample Receipt Information		
Copies of Original Chain-of-Custody Forms	JD	12/10/13
Cooler Receipt Form and Airbills		
Phone Messages (If applicable)		
Field Sample Results		
QC Summary Forms		
Surrogate Summary, if applicable		
Spike Blank and/or MS Summary		
Blank Results & Blank Summary, if applicable		
ISTD Area Summary, if applicable		
Sample Preparation Information (if applicable)		
Total Solids Determination (If applicable)		
Extraction Log (If applicable)		
Extraction Notebook Pages (If applicable)		
Spiking Solutions Notebook Pages		
MS/MSD's		
Surrogate/ISTDs		
Spiking Solutions Certificates Of Analyses		
MS/MSD's		
Surrogates/ISTDs		
Certificates of Analysis (Vendor)		
Standard Preparation Information		
Instrument Logs/Analysis Notebook Pages		
Certificates of Analysis (Vendor)		
Analytical Run Number 1		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Analytical Run Number 2 (if required)		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		

Rev. 1.1

ORGANIC PACKAGE REVIEW CHECKLIST (Continued)

METHOD: 8260B

	Initial	Date
Analytical Run Number 3 (if required)		
Calibration Information	NA	
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Analytical Run Number 4 (if required)		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Analytical Run Number 5 (if required)		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Analytical Run Number 6 (if required)		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Example Calculation		
Example Calculation Sheet	JO	12/10/13
Miscellaneous Additional Data (if applicable)	NA	

NA = Not Applicable

I have checked this package for completeness and verify the following:

1. Pencils, whiteout, whiteout tape, and dark highlighters were not used. ✓
2. All notebook pages are signed. ✓
3. All corrections contain the original data "struck through" with initials and date. ✓
4. All comments found throughout the data are defined as required. ✓
5. All pages are legible. ✓
6. Manual integrations, if applicable, are printed out and include an explanation with signature of the analyst and date. ✓

Package Completeness Checked By/Date: JO 12/10/13

Rev. 1.1

Case Narrative and/or Nonconformance Reports

Rev. 1.1

ORGANIC ANALYSIS CASE NARRATIVE

Corps of Engineers – ERDC, Vicksburg **Date: 12/12/13**

ARDL Report No.: 6557, 6558 **Lab Name: ARDL, Inc.**

Project Name: MAKAU MILITARY RESERVATION OAHU (SEA CUCUMBER)

Samples Received at ARDL: 10/23/2013

Lab ID No.	Sample ID No.	Date Collected	Date Analyzed	Analysis Requested
006557-01	MAK001C	09/09/2013	11/26/2013	PURGEABLE ORGANICS
006557-02	MAK002C	09/09/2013	11/26/2013	PURGEABLE ORGANICS
006557-03	MAK004C	09/09/2013	11/26/2013	PURGEABLE ORGANICS
006557-04	MAK005C	09/09/2013	11/26/2013	PURGEABLE ORGANICS
006557-05	MAK006C	09/11/2013	11/26/2013	PURGEABLE ORGANICS
006557-06	MAK007C	09/11/2013	11/27/2013	PURGEABLE ORGANICS
006557-07	MAK008C	09/11/2013	11/26/2013	PURGEABLE ORGANICS
006557-08	MAK009C	09/11/2013	11/26/2013	PURGEABLE ORGANICS
006555-09	MAK010C	09/13/2013	11/26/2013	PURGEABLE ORGANICS
006557-10	MAK014C	09/13/2013	11/27/2013	PURGEABLE ORGANICS
006557-11	MAK015C	09/13/2013	11/27/2013	PURGEABLE ORGANICS
006557-12	MAK018C	09/16/2013	11/27/2013	PURGEABLE ORGANICS
006557-13	MAK019C	09/16/2013	11/26/2013	PURGEABLE ORGANICS
006557-14	MAK020C	09/16/2013	11/27/2013	PURGEABLE ORGANICS
006557-15	MAK022C	09/16/2013	11/26/2013	PURGEABLE ORGANICS
006557-16	MAK024C	09/22/2013	11/26/2013	PURGEABLE ORGANICS
006557-17	MAK025C	09/22/2013	11/26/2013	PURGEABLE ORGANICS
006557-18	MAK026C	09/22/2013	11/26/2013	PURGEABLE ORGANICS
006557-19	MAK027C	09/22/2013	11/26/2013	PURGEABLE ORGANICS
006557-20	MAK032C	09/23/2013	11/26/2013	PURGEABLE ORGANICS
006558-01	MAK029C	09/23/2013	11/27/2013	PURGEABLE ORGANICS
006558-02	MAK030C	09/23/2013	11/27/2013	PURGEABLE ORGANICS
006558-03	MAK031C	09/23/2013	11/27/2013	PURGEABLE ORGANICS
006558-04	MAK028C	09/22/2013	11/27/2013	PURGEABLE ORGANICS

PURGEABLE ORGANICS – METHOD 8260B

Twenty five (25) tissue (sea cucumber) samples were received by ARDL, Inc. on October 23, 2013, for 8260B analysis. One sample (MAK003C-TEST) was provided for preliminary evaluation of test methods only. Due to specific project requirements and the unusual nature of the samples, some changes to standard protocol were made. The requested analyte list was limited to ethylbenzene, m & p-xylene, o-xylene, toluene, styrene and 1,2,4-trimethylbenzene. Only the two internal standards used to quantitate these analytes and their associated surrogate compounds (toluene-d8 and 4-bromofluorobenzene) were evaluated in all calibrations and sample analyses. A nominal sample weight of 2 grams was chosen to avoid problems related to the sample matrix while achieving a reporting limit of 12.5 ug/Kg. Due to the tendency of these samples to foam during the purge step, a commercial anti-foam agent (RESTEK Cat. No. 31822) was added to all samples, blanks and LCS analyses. Initial analyses also indicated a co-eluting interferent at o-xylene with a significant amount of M/Z 91, the standard quant ion for o-xylene. Therefore, initial and daily calibrations and all analyses used the secondary characteristic ion (M/Z 106) for o-xylene quantitation.

INITIAL CALIBRATION

The initial calibration was performed using six calibration points. All calibration criteria were met.

CONTINUING CALIBRATION

All daily calibration standards passed criteria.

ORGANIC ANALYSIS CASE NARRATIVE

Corps of Engineers – ERDC, Vicksburg **Date: 12/12/13**

ARDL Report No.: 6557, 6558 **Lab Name: ARDL, Inc.**

Project Name: MAKAU MILITARY RESERVATION OAHU (SEA CUCUMBER)

Samples Received at ARDL: 10/23/2013

SURROGATES

All surrogate recoveries met a default range of 50 – 150%.

INTERNAL STANDARD

Internal standard responses were acceptable for all analyses.

LCS

All associated LCS analyses passed the supplied recovery criteria.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Two MS/MSD analyses were performed on samples MAK032C and MAK030C and met the supplied recovery criteria.

METHOD BLANKS

No target analytes were detected in the method blanks above the method limit.

ORGANIC DATA REPORTING QUALIFIERS

The following organic data reporting qualifiers are used as required.

ND- Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. This flag is used when estimating a concentration of a compound that meets identification criteria but the result is less than the quantitation or reporting limit but greater than the method detection limit.

P - This flag is used for any two column confirmation methodology when there is greater than 40% difference for detected concentrations between the two columns. The primary column value is reported on the Form 1 and flagged with a "P".

B - This flag is used when the analyte is found above the reporting limit in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.

Dean S. Dickerson
Technical Services Manager

Sample Receipt Information

Rev. 1.1

ARDL, Inc

P.O. Box 1566, 400 Aviation Drive, Mount Vernon, Illinois 62864
Phone (618) 244-3235, Fax (618) 244-1149

CHAIN OF CUSTODY RECORD

Project
ARDL / Makau Military Reservation Oahu, Hawaii Project

SAMPLERS (Signature)

SAMPLE NUMBER	DATE	TIME	Comp	Grab	# of Containers	Purgeable Organics 8260B	Explosives 8330	OCPs 8081	SVCOs 8270C	Continuous Seal		ARDL, Inc Remarks or Sample Location	PRESERVATION ICED	PRESERVATION Specify Chemicals added and final pH if known
MAK010C	9/13/2013	1128		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK014C	9/13/2013	1355		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK015C	9/13/2013	958		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK018C	9/16/2013	905		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK019C	9/16/2013	915		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK020C	9/16/2013	1018		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK022C	9/16/2013	1150		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK024C	9/22/2013	830		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK025C	9/22/2013	906		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK026C	9/22/2013	1018		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK027C	9/22/2013	1140		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK028C	9/22/2013	1300		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK029C	9/23/2013	820		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK030C	9/23/2013	833		x	1	x	x	x	x	3	Extra Volume	Sea Cucumber	x	
MAK031C	9/23/2013	1050		x	1	x	x	x	x	1		Sea Cucumber	x	
MAK032C	9/23/2013	1210		x	1	x	x	x	x	3	Extra Volume	Sea Cucumber	x	
Trip Blank					2									
Temp Blank					1									

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
	10/22/13	1600	
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Received for Laboratory by: (Signature)	Date	Time	Shipping Ticket No.
	10/23/13	0910	

REMARKS / SPECIAL INSTRUCTIONS:

Project Samples. Please treat each matrix separately.

Please send level 4 hardcopy report and excel edd to: Dean Dickerson, c/o ARDL, Inc. 400 Aviation Drive, Mount Vernon, IL 62864. Email questons to ddickerson@ardlinc.com.

10-23-13 4307 16558 16559 16560

Report Numbers 6557 & 6558 - Sea Cucumber - Volatiles 8260B

ARDL, Inc

P.O. Box 1566, 400 Aviation Drive, Mount Vernon, Illinois 62864
Phone (618) 244-3235, Fax (618) 244-1149

CHAIN OF CUSTODY RECORD

Project
ARDL / Makau Military Reservation Oahu, Hawaii Project

SAMPLERS (Signature)

SAMPLE NUMBER	DATE	TIME	Comp	Grab	# of Containers	Purgeable Organics 8260B	Explosives 8330	OCPs 8081	SVCOs 8270C	~~Containers Sent~~								ARDL, Inc Remarks or Sample Location	PRESERVATION ICED	PRESERVATION Specify Chemicals added and final pH if known
58 MAK003C - test	9/9/2013	1005		x	1	x	x	x	x	1								Sea Cucumber	x	
56 MB-SO-HEE000 - Test	8/29/2013	1049		x	1	x	x	x	x	1								Octopus	x	
~~MB-SO-LIMU000-test~~	~~8/29/2013~~	~~1100~~		~~x~~	~~1~~	~~x~~	~~x~~	~~x~~	~~x~~	~~1~~								~~Limu~~	~~x~~	~~ABF~~ 10-18-13
Trip Blank	9/12/2013			x	1	x													x	

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
	10/22/13	1600	
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Received for Laboratory by: (Signature)	Date	Time	Shipping Ticket No.
	10/23/13	0910	

REMARKS / SPECIAL INSTRUCTIONS:

Test samples - please process this group before or with the accompanying project samples.

Please send level 4 hardcopy report and excel edd to: Dean Dickerson, c/o ARDL, Inc. 400 Aviation Drive, Mount Vernon, IL 62864. Email questons to ddickerson@ardlinc.com.

COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 6555- 6558

Cooler # NONE (1 of 2)
Number of Coolers in Shipment: 2

Project: MAKAU Military Reservation Oahu

Date Received: 10-23-13

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 10-23-13 (Signature) [signature]

1. Did cooler come with a shipping slip (airbill, etc.)? ..... (YES) NO

   If YES, enter carrier name and airbill number here: Fed 9325 1887 7914

2. Were custody seals on outside of cooler? ..... YES (NO) N/A

   How many and where? _____, Seal Date: _____, Seal Name: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (N/A)
4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO
5. Were custody papers sealed in a plastic bag ~~and taped inside to the lid~~? dle 10/23/13 ..... (YES) NO
6. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO N/A
7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... (YES) NO N/A
9. Was a separate container provided for measuring temperature? YES ____ NO ✓ Cooler Temp. -15.0 C

B. **LOG-IN PHASE:** Date samples were logged-in: 10-23-13 (Signature) [signature]

10. Describe type of packing in cooler: ice/bubble pack
11. Were all bottles ~~sealed~~ in separate plastic bags? dle 10/23/13 ..... (YES) NO N/A
12. Did all bottles arrive unbroken and were labels in good condition? ..... (YES) NO
13. Were bottle labels complete? ..... (YES) NO
14. Did all bottle labels agree with custody papers? ..... (YES) NO
15. Were correct containers used for the tests indicated? ..... (YES) NO
16. Was pH correct on preserved water samples? ..... YES NO (N/A)
17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO
18. Were bubbles absent in VOA samples? If NO, list by sample #: _____ YES NO (N/A)
19. Was the ARDL project coordinator notified of any deficiencies? ..... YES NO (N/A)

Comments and/or Corrective Action:
(By: Signature) Date:

Sample Transfer	
Fraction: all	Fraction:
Area #: Freezer	Area #:
By: dle	By:
On: 10-23-12	On:

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COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 6555-6558

Cooler # 2 of 2
Number of Coolers in Shipment: 2

Project: MAKAU Military Reservation Oahu

Date Received: 10-23-13

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 10-23-13 (Signature) LA Stewart

1. Did cooler come with a shipping slip (airbill, etc.)? ..... (YES) NO
   If YES, enter carrier name and airbill number here: FED-EX TRK# 9325 1887 7885
2. Were custody seals on outside of cooler? ..... YES (NO) N/A
   How many and where? NA, Seal Date: NA, Seal Name: NA
3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (NA)
4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO
5. Were custody papers sealed in a plastic bag and taped inside to the lid? ..... YES (NO)
6. Were custody papers filled out properly (ink, signed, etc.)? ..... YES NO (N/A)
7. Were custody papers signed in appropriate place by ARDL personnel? ..... YES NO (N/A)
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... YES NO (N/A)
9. Was a separate container provided for measuring temperature? YES ____ NO ✓ Cooler Temp. 10.4 C

B. **LOG-IN PHASE:** Date samples were logged-in: 10-23-13 (Signature) LA Stewart

10. Describe type of packing in cooler: dry ice, bubble pack + bubble bags
11. Were all bottles sealed in separate plastic bags? ..... (YES) NO N/A
12. Did all bottles arrive unbroken and were labels in good condition? ..... (YES) NO
13. Were bottle labels complete? ..... (YES) NO
14. Did all bottle labels agree with custody papers? See #5 ..... YES NO (NA)
15. Were correct containers used for the tests indicated? ..... (YES) NO
16. Was pH correct on preserved water samples? ..... YES NO (N/A)
17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO
18. Were bubbles absent in VOA samples? If NO, list by sample #: ____ YES NO (N/A)
19. Was the ARDL project coordinator notified of any deficiencies? ..... YES NO (N/A)

Comments and/or Corrective Action:
(By: Signature) Date:

Sample Transfer	
Fraction: ALL	Fraction:
Area #: Freezer	Area #:
By: Ras	By:
On: 10-23-13	On:

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ORIGIN ID:GRBA (920) 469-2436
SHIPPING
PACE ANALYTICAL
1241 BELLEVUE

GREEN BAY, WI 54302
UNITED STATES US

SHIP DATE: 22OCT13
ACTWGT: 25.0 LB MAN
CAD: 255289/CAFE2704

DRY ICE: 4.5 KGS
BILL THIRD PARTY

TO DEAN DICKERSON
ARDL
400 AVIATION DRIVE
P.O BOX 1566
MOUNT VERNON IL 62864
(618) 244-3235
INV:
PO: REF:
DEPT:

518C1/A81B/GF03

FedEx Express

J131113062301 28

TRK# 0201 9325 1887 7914

WED - 23 OCT AA
STANDARD OVERNIGHT
ICE

NA MVNA

62864
IL-US STL

Part # 156148-434 RIT2 03/12

ORIGIN ID:GRBA (920) 469-2436
SHIPPING
PACE ANALYTICAL
1241 BELLEVUE

GREEN BAY, WI 54302
UNITED STATES US

SHIP DATE: 22OCT13
ACTWGT: 35.0 LB MAN
CAD: 255289/CAFE2704

DRY ICE: 4.5 KGS
BILL THIRD PARTY

TO DEAN DICKERSON
ARDL
400 AVIATION DRIVE
P.O BOX 1566
MOUNT VERNON IL 62864
(618) 244-3235
DEPT: INT BILL REF 1301-9501

518C1/A81B/GF03

FedEx Express

J131113062301 28

TRK# 0201 9325 1887 7888

WED - 23 OCT AA
STANDARD OVERNIGHT
ICE

NA MVNA

62864
IL-US STL

Part # 156148-434 RIT2 03/12

Field Sample Results

Rev. 1.1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK001C	ARDL Lab No.:	006557-01
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126306
Sample Date:	09/09/2013	Received Date:	10/23/2013
Sample Time:	1403	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	100%
4-Bromofluorobenzene	50-150	101%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-01, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK002C	ARDL Lab No.:	006557-02
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126307
Sample Date:	09/09/2013	Received Date:	10/23/2013
Sample Time:	1227	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	125%
4-Bromofluorobenzene	50-150	122%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-02, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK004C	ARDL Lab No.:	006557-03
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126308
Sample Date:	09/09/2013	Received Date:	10/23/2013
Sample Time:	1420	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	109%
4-Bromofluorobenzene	50-150	105%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-03, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK005C	ARDL Lab No.:	006557-04
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126309
Sample Date:	09/09/2013	Received Date:	10/23/2013
Sample Time:	1514	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	130%
4-Bromofluorobenzene	50-150	125%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-04, VOLATILES, GC/MS (8260)

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ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK006C	ARDL Lab No.:	006557-05
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126310
Sample Date:	09/11/2013	Received Date:	10/23/2013
Sample Time:	1005	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	114%
4-Bromofluorobenzene	50-150	114%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-05, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK007C	ARDL Lab No.:	006557-06
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127306
Sample Date:	09/11/2013	Received Date:	10/23/2013
Sample Time:	1020	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	119%
4-Bromofluorobenzene	50-150	116%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-06, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK008C	ARDL Lab No.:	006557-07
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126312
Sample Date:	09/11/2013	Received Date:	10/23/2013
Sample Time:	1115	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	110%
4-Bromofluorobenzene	50-150	101%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-07, VOLATILES, GC/MS (8260)

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ARDL, INC.
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Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK009C	ARDL Lab No.:	006557-08
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126313
Sample Date:	09/11/2013	Received Date:	10/23/2013
Sample Time:	1126	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	113%
4-Bromofluorobenzene	50-150	113%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-08, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK010C	ARDL Lab No.:	006557-09
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126314
Sample Date:	09/13/2013	Received Date:	10/23/2013
Sample Time:	1128	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	110%
4-Bromofluorobenzene	50-150	106%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-09, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/12/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK014C	ARDL Lab No.:	006557-10
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127307
Sample Date:	09/13/2013	Received Date:	10/23/2013
Sample Time:	1355	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.5	12.5	ND		UG/KG	1
Ethyl Benzene	2.5	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.5	12.5	ND		UG/KG	1
o-Xylene	2.5	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.5	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	133%
4-Bromofluorobenzene	50-150	122%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-10, VOLATILES, GC/MS (8260)

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ARDL, INC.
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Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK015C	ARDL Lab No.:	006557-11
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127308
Sample Date:	09/13/2013	Received Date:	10/23/2013
Sample Time:	0958	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	104%
4-Bromofluorobenzene	50-150	98%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-11, VOLATILES, GC/MS (8260)

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ARDL, INC.
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Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK018C	ARDL Lab No.:	006557-12
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127309
Sample Date:	09/16/2013	Received Date:	10/23/2013
Sample Time:	0905	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	107%
4-Bromofluorobenzene	50-150	99%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-12, VOLATILES, GC/MS (8260) Page 1 of 1

ARDL, INC.
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Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK019C	ARDL Lab No.:	006557-13
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126316
Sample Date:	09/16/2013	Received Date:	10/23/2013
Sample Time:	0915	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	115%
4-Bromofluorobenzene	50-150	105%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-13, VOLATILES, GC/MS (8260)

ARDL, INC.
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Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK020C	ARDL Lab No.:	006557-14
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127310
Sample Date:	09/16/2013	Received Date:	10/23/2013
Sample Time:	1018	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	113%
4-Bromofluorobenzene	50-150	109%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-14, VOLATILES, GC/MS (8260) Page 1 of 1

ARDL, INC.
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Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK022C	ARDL Lab No.:	006557-15
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126317
Sample Date:	09/16/2013	Received Date:	10/23/2013
Sample Time:	1150	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	111%
4-Bromofluorobenzene	50-150	112%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-15, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK024C	ARDL Lab No.:	006557-16
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126318
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	0830	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	117%
4-Bromofluorobenzene	50-150	111%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-16, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK025C	ARDL Lab No.:	006557-17
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126319
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	0906	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	106%
4-Bromofluorobenzene	50-150	102%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-17, VOLATILES, GC/MS (8260)

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ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK026C	ARDL Lab No.:	006557-18
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126320
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	1018	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	109%
4-Bromofluorobenzene	50-150	106%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-18, VOLATILES, GC/MS (8260) Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK027C	ARDL Lab No.:	006557-19
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126321
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	1140	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	105%
4-Bromofluorobenzene	50-150	107%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-19, VOLATILES, GC/MS (8260) Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK032C	ARDL Lab No.:	006557-20
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126322
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	1210	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	107%
4-Bromofluorobenzene	50-150	100%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-20, VOLATILES, GC/MS (8260)

Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK029C	ARDL Lab No.:	006558-01
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127313
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	0820	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	100%
4-Bromofluorobenzene	50-150	97%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006558-01, VOLATILES, GC/MS (8260)

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK030C	ARDL Lab No.:	006558-02
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127314
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	0833	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	107%
4-Bromofluorobenzene	50-150	97%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006558-02, VOLATILES, GC/MS (8260)

Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK031C	ARDL Lab No.:	006558-03
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127317
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	1050	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	100%
4-Bromofluorobenzene	50-150	99%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006558-03, VOLATILES, GC/MS (8260) Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK028C	ARDL Lab No.:	006558-04
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127318
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	1300	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	101%
4-Bromofluorobenzene	50-150	95%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006558-04, VOLATILES, GC/MS (8260)

QC Summary Forms

Surrogate Summary, if applicable

Spike Blank and/or MS Summary

Blank Results & Blank Summary, if applicable

ISTD Area Summary, if applicable

Rev. 1.1

2B
SEA CUCUMBER VOLATILE SURROGATE RECOVERY

Lab Name: ARDL, INC. Contract: ---

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: ---

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 ( ) #	S4 ( ) #			TOT OUT
01	SPBK 11/26/13	99	96					0
02	BK 11/26/13	106	96					0
03	MAK001C	100	101					0
04	MAK002C	125	122					0
05	MAK004C	109	105					0
06	MAK005C	130	125					0
07	MAK006C	114	114					0
08	MAK008C	110	101					0
09	MAK009C	113	113					0
10	MAK010C	110	106					0
11	MAK019C	115	105					0
12	MAK022C	111	112					0
13	MAK024C	117	111					0
14	MAK025C	106	102					0
15	MAK026C	109	106					0
16	MAK027C	105	107					0
17	MAK032C	107	100					0
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

		QC LIMITS	MATRIX LIMITS
S1	Toluene-d8	(50 - 150)	(50 - 150)
S2	4-Bromofluorobenzene	(50 - 150)	(50 - 150)
S3		(-)	(-)
S4		(-)	(-)

column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

2B

SEA CUCUMBER VOLATILE SURROGATE RECOVERY

Lab Name: ARDL, INC. Contract: ---

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: ---

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 ( ) #	S4 ( ) #			TOT OUT
01	SPBK 11/27/13	103	95					0
02	BK 11/27/13	107	103					0
03	MAK007C	119	116					0
04	MAK014C	133	122					0
05	MAK015C	104	98					0
06	MAK018C	107	99					0
07	MAK020C	113	109					0
08	MAK032CMS	101	98					0
09	MAK032CMSD	103	93					0
10	MAK029C	100	97					0
11	MAK030C	107	97					0
12	MAK030CMS	102	95					0
13	MAK030CMSD	109	99					0
14	MAK031C	100	99					0
15	MAK028C	101	95					0
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

		QC LIMITS	MATRIX LIMITS
S1	Toluene-d8	(50 - 150)	(50 - 150)
S2	4-Bromofluorobenzene	(50 - 150)	(50 - 150)
S3		(-)	(-)
S4		(-)	(-)

column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

BLANK SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 006557

Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O
Project No.:

Analysis: VOLATILES, GC/MS (8260)

Analytical Method: 8260B
Prep Method: 5030A

Matrix: QC Material
Amount Used: 2 g

QC Batch: 1203JFSW
Level: LOW

Prep. Date: 11/26/2013
Analysis Date: 11/26/2013

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Toluene	91.6	100	92	--	--	--	85-118	--	--
Ethyl Benzene	94.4	100	94	--	--	--	86-119	--	--
m & p-Xylene	185	200	92	--	--	--	81-121	--	--
Styrene	96.2	100	96	--	--	--	84-119	--	--
o-Xylene	94.3	100	94	--	--	--	81-121	--	--
1,2,4-Trimethylbenzene	92	100	92	--	--	--	83-119	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
Toluene-d8	99.1	--	50-150
4-Bromofluorobenzene	96	--	50-150

'*' indicates a recovery outside of standard limits.

Spike Blanks for 006557-20, VOLATILES, GC/MS (8260)

BLANK SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 006558

Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O
Project No.:

Analysis: VOLATILES, GC/MS (8260)

Analytical Method: 8260B
Prep Method: 5030A

Matrix: QC Material
Amount Used: 2 g

QC Batch: 1203JFSX
Level: LOW

Prep. Date: 11/27/2013
Analysis Date: 11/27/2013

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Toluene	90.9	100	91	--	--	--	85-118	--	--
Ethyl Benzene	94.5	100	94	--	--	--	86-119	--	--
m & p-Xylene	186	200	93	--	--	--	81-121	--	--
Styrene	98.3	100	98	--	--	--	84-119	--	--
o-Xylene	94.1	100	94	--	--	--	81-121	--	--
1,2,4-Trimethylbenzene	91.4	100	91	--	--	--	83-119	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
Toluene-d8	103.3	--	50-150
4-Bromofluorobenzene	95.2	--	50-150

'*' indicates a recovery outside of standard limits.
Spike Blanks for 006558-02, VOLATILES, GC/MS (8260)

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 006557

Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O
Project No.:

Analysis: VOLATILES, GC/MS (8260)

Analytical Method: 8260B
Prep Method: 5030A

Field ID: MAK032C
Desc/Location: MAKAU MILITARY RESERV OAH
Sample Date: 09/23/2013
Sample Time: 1210
Matrix: TISSUE

Prep. Date: 11/27/2013
Amount Used: 2 g
% Moisture: No Moisture Present
QC Batch: 1203JFSW
Level: LOW

ARDL Lab No.: 006557-20
Lab Filename:
Received Date: 10/23/2013
Analysis Date: 11/27/2013

Parameter	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit
Toluene	ND	96.5	100	96.5	89.3	100	89.3	81-126	7.8	25
Ethyl Benzene	ND	99.5	100	99.5	92.1	100	92.1	82-130	7.7	25
m & p-Xylene	ND	196	200	97.8	181	200	90.7	84-129	7.6	25
Styrene	ND	100	100	100.5	92.1	100	92.1	79-127	8.8	25
o-Xylene	ND	99.3	100	99.3	91.2	100	91.2	81-128	8.5	25
1,2,4-Trimethylbenzene	ND	98	100	98	87.4	100	87.4	80-124	11.4	25

SURROGATE RECOVERIES:	MS %R	MSD %R	%R Limits
Toluene-d8	101	103	50-150
4-Bromofluorobenzene	98	93	50-150

'nc' indicates sample >4X spike level.
'*' indicates a recovery outside of standard limits.
Matrix Spikes for 006557-20, VOLATILES, GC/MS (8260)

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 006558

Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O
Project No.:

Analysis: VOLATILES, GC/MS (8260)

Analytical Method: 8260B
Prep Method: 5030A

Field ID: MAK030C
Desc/Location: MAKAU MILITARY RESERV OAH
Sample Date: 09/23/2013
Sample Time: 0833
Matrix: TISSUE

Prep. Date: 11/27/2013
Amount Used: 2 g
% Moisture: No Moisture Present
QC Batch: 1203JFSX
Level: LOW

ARDL Lab No.: 006558-02
Lab Filename:
Received Date: 10/23/2013
Analysis Date: 11/27/2013

Parameter	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit
Toluene	ND	95.4	100	95.4	99.1	100	99.1	81-126	3.8	25
Ethyl Benzene	ND	97.4	100	97.4	101	100	100.8	82-130	3.4	25
m & p-Xylene	ND	192	200	95.8	197	200	98.4	84-129	2.7	25
Styrene	ND	97.1	100	97.1	96	100	96	79-127	1.1	25
o-Xylene	ND	97.2	100	97.2	101	100	100.9	81-128	3.7	25
1,2,4-Trimethylbenzene	ND	92.4	100	92.4	96.5	100	96.5	80-124	4.3	25

SURROGATE RECOVERIES:	MS %R	MSD %R	%R Limits
Toluene-d8	102	109	50-150
4-Bromofluorobenzene	95	99	50-150

'nc' indicates sample >4X spike level.
'*' indicates a recovery outside of standard limits.
Matrix Spikes for 006558-02, VOLATILES, GC/MS (8260)

4B

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

BK 11/26/13

Lab Name: ARDL, INC. Contract: ---

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: ---

Lab File ID: A1126305 Lab Sample ID: 006557-20B1

Date Analyzed: 11/26/13 Time Analyzed: 10:15

GC Column: RTX-VMS ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: AG1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	MAK001C	006557-01	A1126306	10:47
02	MAK002C	006557-02	A1126307	11:15
03	MAK004C	006557-03	A1126308	11:42
04	MAK005C	006557-04	A1126309	12:12
05	MAK006C	006557-05	A1126310	12:42
06	MAK008C	006557-07	A1126312	13:53
07	MAK009C	006557-08	A1126313	14:21
08	MAK010C	006557-09	A1126314	14:49
09	MAK019C	006557-13	A1126316	15:48
10	MAK022C	006557-15	A1126317	16:18
11	MAK024C	006557-16	A1126318	16:48
12	MAK025C	006557-17	A1126319	17:18
13	MAK026C	006557-18	A1126320	17:47
14	MAK027C	006557-19	A1126321	18:15
15	MAK032C	006557-20	A1126322	18:42
16				
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29				
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COMMENTS:

METHOD BLANK REPORT
ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	NA	ARDL Lab No.:	006557-20B1
Desc/Location:	NA	Lab Filename:	A1126305
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	11/26/2013
Matrix:	QC Material	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Toluene	2.5	12.5	ND		UG/KG
Ethyl Benzene	2.5	12.5	ND		UG/KG
m & p-Xylene	5.0	25.0	ND		UG/KG
Styrene	2.5	12.5	ND		UG/KG
o-Xylene	2.5	12.5	ND		UG/KG
1,2,4-Trimethylbenzene	2.5	12.5	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	106%
4-Bromofluorobenzene	50-150	96%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Blank for Run 1203JFSW, VOLATILES, GC/MS (8260)

4B

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

BK 11/27/13

Lab Name: ARDL, INC. Contract: ---

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: ---

Lab File ID: A1127305 Lab Sample ID: 006558-02B1

Date Analyzed: 11/27/13 Time Analyzed: 10:43

GC Column: RTX-VMS ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: AG1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	MAK007C	006557-06	A1127306	11:18
02	MAK014C	006557-10	A1127307	11:46
03	MAK015C	006557-11	A1127308	12:13
04	MAK018C	006557-12	A1127309	12:44
05	MAK020C	006557-14	A1127310	13:14
06	MAK032CMS	006557-20MS	A1127311	13:44
07	MAK032CMSD	006557-20MD	A1127312	14:12
08	MAK029C	006558-01	A1127313	14:39
09	MAK030C	006558-02	A1127314	15:06
10	MAK030CMS	006558-02MS	A1127315	15:37
11	MAK030CMSD	006558-02MD	A1127316	16:04
12	MAK031C	006558-03	A1127317	16:35
13	MAK028C	006558-04	A1127318	17:05
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
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COMMENTS:

METHOD BLANK REPORT
ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	NA	ARDL Lab No.:	006558-02B1
Desc/Location:	NA	Lab Filename:	A1127305
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	11/27/2013
Matrix:	QC Material	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Toluene	2.5	12.5	ND		UG/KG
Ethyl Benzene	2.5	12.5	ND		UG/KG
m & p-Xylene	5.0	25.0	ND		UG/KG
Styrene	2.5	12.5	ND		UG/KG
o-Xylene	2.5	12.5	ND		UG/KG
1,2,4-Trimethylbenzene	2.5	12.5	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	107%
4-Bromofluorobenzene	50-150	103%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Blank for Run 1203JFSX, VOLATILES, GC/MS (8260)

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: ---

Lab File ID (Standard):A1125308 Date Analyzed: 11/25/13

Instrument ID: AG1 Time Analyzed: 12:29

Matrix: (soil/water) SEA CUCUM Level: (low/med) Low Column: (pack/cap) CAP

		IS1(CBZ) AREA #	RT #	IS2(DCB) AREA #	RT #	IS3( ) AREA #	RT #
	12 HOUR STANDARD	113737	8.54	115803	9.94		
	UPPER LIMIT	227474	9.04	231606	10.44		
	LOWER LIMIT	56869	8.04	57902	9.44		
	EPA SAMPLE NO.						
1	SPBK 11/26/13	116550	8.54	122706	9.94		
2	BK 11/26/13	97035	8.54	105818	9.94		
3	MAK001C	130416	8.54	132665	9.94		
4	MAK002C	99854	8.54	102668	9.94		
5	MAK004C	116518	8.54	126763	9.94		
6	MAK005C	88030	8.53	92428	9.94		
7	MAK006C	104503	8.53	109997	9.93		
8	MAK008C	96961	8.53	98037	9.94		
9	MAK009C	104935	8.53	108202	9.94		
10	MAK010C	112574	8.53	118897	9.94		
11	MAK019C	76950	8.53	69759	9.94		
12	MAK022C	88171	8.53	78354	9.93		
13	MAK024C	92598	8.53	91345	9.93		
14	MAK025C	102996	8.53	106311	9.93		
15	MAK026C	99153	8.53	98434	9.93		
16	MAK027C	94107	8.53	90699	9.93		
17	MAK032C	99386	8.53	100691	9.93		
18							
19							
20							
21							
22							

IS1 (CBZ) = Chlorobenzene-d5
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 ( ) =

UPPER LIMIT = +100%
of internal standard area
LOWER LIMIT = - 50%
of internal standard area

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: ---

Lab File ID (Standard):A1125308 Date Analyzed: 11/25/13

Instrument ID: AG1 Time Analyzed: 12:29

Matrix: (soil/water) SEA CUCUM Level: (low/med) Low Column: (pack/cap) CAP

		IS1(CBZ) AREA #	RT #	IS2(DCB) AREA #	RT #	IS3( ) AREA #	RT #
	12 HOUR STANDARD	113737	8.54	115803	9.94		
	UPPER LIMIT	227474	9.04	231606	10.44		
	LOWER LIMIT	56869	8.04	57902	9.44		
	EPA SAMPLE NO.						
1	SPBK 11/27/13	113851	8.54	126482	9.94		
2	BK 11/27/13	104605	8.54	115206	9.94		
3	MAK007C	97071	8.53	101758	9.94		
4	MAK014C	73557	8.53	81945	9.93		
5	MAK015C	110897	8.53	112990	9.93		
6	MAK018C	93771	8.53	95460	9.94		
7	MAK020C	80317	8.53	75277	9.93		
8	MAK032CMS	104177	8.53	110961	9.93		
9	MAK032CMSD	111183	8.53	121881	9.93		
10	MAK029C	113236	8.53	119231	9.93		
11	MAK030C	104507	8.53	113557	9.93		
12	MAK030CMS	104736	8.53	115067	9.93		
13	MAK030CMSD	94737	8.53	101831	9.93		
14	MAK031C	102666	8.53	103278	9.93		
15	MAK028C	102150	8.53	111019	9.93		
16							
17							
18							
19							
20							
21							
22							

IS1 (CBZ) = Chlorobenzene-d5
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 ( ) =

UPPER LIMIT = +100%
of internal standard area
LOWER LIMIT = - 50%
of internal standard area

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits

Sample Preparation Information

(Not Applicable for VOA Purge and Trap Method)

Rev. 1.1

Standards Preparation Information

Rev. 1.1

X0899 IC MIX

8260 Mix (U)	MTBE (U)	RMA (CS)	Ketones (RES)	CS2 (ABS)		MEOH	Final Vol. (uL)
DWM-589N Lot Ch-3339 2000 ug/mL R4385 Exp.11/30/14	STS-440-1 Lot CG-4444 2000 ug/mL R4232 Exp. 01/31/15	SP-1022-345DSZ Lot 1181400 Varied Conc. R4422 Exp. 01/31/14	30006 Lot A090981 5000 ug/mL R4498 Exp. 12/2015	70060 Lot 011312 1000 ug/mL R4411 Exp. 01/13/15		R4488	
200	200	400	160	400		2640	4000

Ketones = 200 ug/mL
Acrylo/m&p-Xylenes = 200ug/mL
All other = 100ug/ml

Prep: 11/19/13

Exp: 12/03/13

US 11/19/13

X0900 ISTD/Surrogate - UM85

68.8uL STM-520-1 lot CH-3660 2500 ug/mL (R4311) exp. 12/31/14
68.8uL STM-530-1 lot CJ-1280 2500 ug/mL (R4233) exp. 5/31/15
3862.4uL MeOH (R4488)
4000uL 43 ug/mL US 11/20/13 Exp. 12/04/13

X0901 ISTD ONLY

80uL STM-520-1 lot CH-3660 2500 ug/mL (R4311) exp 12/31/14
3920uL MeOH (R4488)
4000uL 50 ug/mL ORC 11/22/13 EXP 11/29/13

X0902 Surrogate - ONLY

80uL STM-530-1 lot CJ-1280 2500 ug/mL (R4233) exp 5/31/15
3920uL MeOH (R4488)
4000uL 50 ug/mL ORC 11/22/13 EXP 11/29/13

Continued on Page

Read and Understood By

ORC 11/22/13 GD 11/22/13
Signed Date Signed Date

X0882 IC MIX

	8260 Mix (U)	MTBE (U)	RMA (CS)	Ketones (RES)	CS2 (ABS)		MEOH	Final Vol.
	DWM-589N Lot Ch-3339 2000 ug/mL R4385 Exp.11/30/14	STS-440-1 Lot CG-4444 2000 ug/mL R4232 Exp. 01/31/15	SP-1022-345DSZ Lot 1181400 Varied Conc. R4422 Exp. 01/31/14	30006 Lot A090981 5000 ug/mL R4498 Exp. 12/2015	70060 Lot 011312 1000 ug/mL R4411 Exp. 01/13/15		R4476	(uL)
~~X0363~~	200	200	400	160	400		2640	4000

Ketones = 200 ug/mL
Acrylo/m&p-Xylenes = 200ug/mL
All other = 100ug/ml

Prep: 11/04/13
Exp: 11/18/13

TRC 11/4/13

X0883 ISTD/Sur - WM85

68.8 uL STM-530-1 lot CH-3660 2500 ug/mL (R4311) exp. 12/31/14
68.8 uL STM-530-1 lot CJ-1280 2500 ug/mL (R4333) Exp. 5/31/15
3862.4 uL MeOH (R4476)
4000 uL 43 ug/mL LS 11/05/13 Exp. 11/19/13

X0884 Gasoline Std - Restek

20 uL 30205 lot A092370 50,000 ug/mL (R4534) exp. 01/2020
3980 uL MeOH (R4473)
4000 uL 250 ug/mL LS 11/08/13 Exp. 12/08/13

X0885 BFB

STS-110N-1
Lot: CF-5373
Exp: 01/31/2014
ULTRA 1 mL
4-Bromofluorobenzene Solution
R4006
1 analyte(s) at 2000 µg/mL in methanol
250 Smith St, No Kingstown, RI 02852 USA
For ug/mL
11/08/13

50 uL
3950 uL MeOH (R4473)
4000 uL 25 ug/mL LS 11/08/13 Exp. ~~5/08/13~~ 1/31/14 LS 10/04/13

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
LS	11/08/13	TRC	11/8/13

X0903 IC MIX - 8260 only

100 uL DWM-589N lot CH-3339 2000ug/mL (R4385) exp 11/30/14
3900 uL MeOH (R4488)
4000 uL 50 ug/mL TRC 11/22/13 EXP 11/29/13

X0904 Hawaii Spike Solution

80 uL X0878 (BTEX) 30213 lot A094024 (R4537) 2000 ug/mL EXP 04/2020
80 uL X0866 (1,2,4-TMB) 30422 lot ~~A075601~~ A075706 (R4529) TRC 11/22/13 2000 ug/mL EXP 07/2015
80 uL X0867 (Styrene) 30410 lot A095301 (R4528) 2000 ug/mL EXP 05/2018
3760 uL MeOH (R4488)
4000 uL 40 ug/mL TRC 11/22/13 EXP 11/29/13

X0905 IIS - UM85

68.8 uL STM-520-1 Lot: CH-3660 Exp: 12/31/2014 ULTRA 1 mL Internal Standard Mixture R4530 analyte(s) at 2500 µg/mL in methanol 250 Smith St, No Kingstown, RI 02852 USA For Lab Use Only 11/25/13

68.8 uL STM-530-1 Lot: CJ-1280 Exp: 05/31/2015 ULTRA 1 mL Method 8260 Surrogate Standard Mixture R4534 analyte(s) at 2500 µg/mL in methanol 250 Smith St, No Kingstown, RI 02852 USA For Lab Use Only 11/25/13

3862.4 uL MeOH (R4488)
4000 uL 43 ug/mL 11/25/13 Exp. 12/09/13

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
	11/25/13	TRC	11/26/13

X0906 Hawaii Spike Solution

80 mL X0878 (BTEX) 30213 lot A094024 (R4537) 2000 ug/mL exp. 4/2020
80 mL X0866 (1,2,4-TMB) 30422 lot A075706 (R4539) 2000 ug/mL exp. 7/2015
80 mL X0867 (Styrene) 30410 lot A095301 (R4528) 2000 ug/mL exp. 5/2018
3760 mL MeOH (R4488)
4000 mL 40 ug/mL LS 11/25/13 Exp. 12/02/13

X0907 BFB

50 mL STS-110N-1 lot CF-5373 2000 ug/mL (R4206) exp. 1/31/14
3950 mL MeOH (R4488)
4000 mL 25 ug/mL LS 11/25/13 Exp. 1/31/14

X0908 IC MIX - 8260 Mix mix

100 mL DWM-589N-1 lot CH-3339 2000 ug/mL (R4385) exp. 11/30/14
3900 mL MeOH (R4488)
4000 mL 50 ug/mL LS 11/25/13 Exp. 12/02/13

X0909 Anti-Foam Agent (Purge Water)

300 mg of RESTEK Cat. No 31822 LOT A096340 Xp 07/2018
DI Water
1,500 mL JD 11/27/13 Exp 11/27/14

Continued on Page

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JD 11/27/13 LS 12/02/13
Signed Date Signed Date

BTEX Stock

X0878

RESTEK
Catalog# 30213
BTEX Standard
110 Benner Circle
Bellefonte, PA 16823
Made in USA
R4537
2000 ug/mL each in P&T Methanol
Lot# A094024 Exp. Date: 04/2020 Store: 0°C or colder
opened 10/31/13 GD

X0879 HIN. Spike Soln (40 µg/mL)

80 µL of X0878 BTEX (2,000 ppm) above)
80 µL X0866 1,2,4 TMB "
80 µL X0867 Styrene "
QS MeOH R4472
4.00 mL of 40 µg/mL each
GD 10/31/13 exp 11/14/13

X0880 8260 ISTD ONLY

80 µL ISTD Ultra R4312 2,500 µg/mL Lot CHB660 Xp 12/2014
3920 µL R4472
4,000 µL of 50 µg/mL
GD 11/1/13 exp 11/15/13

X0881 8260 Surr. only

80 µL Ultra 2,500 ppm STN530-1 Lot C5-1280 exp 05/2015
3920 µL MeOH R4472
4,000 µL 50 µg/mL GD 11/1/13 Xp 11/15/13

Continued on Page

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GD 11/1/13 Signed Date
[illegible] 11/4/13 Signed Date

X08665 ISTD / Sur - UM85

68.8 ul STM-530-1 lot CH-3660 2500 ug/ml (R4311) exp. 12/31/14
68.8 ul STM-530-1 lot CJ-1780 2500 ug/ml (R4333) exp. 5/31/15
3862.4 ul MeOH (R4476)
4000 ul 43 ug/ml LS 10/21/13 Exp. 11/04/13

1,2,4-TMB Stock

✓ 66
X08665

RESTEK Made in USA
Cat# 30422
1,2,4-Trimethylbenzene Standard
2000 ug/mL each in P&T Methanol
Lot# A075706 Exp. Date: 07/2015 Store: Freezer
Restek Corporation - 110 Benner Circle - Bellefonte, PA 16823
R4599 opened 10/25/13

✓ 67
X08666 Styrene Stock

RESTEK 110 Benner Circle Bellefonte, PA 16823 Made in USA
Catalog# 30410
Styrene Standard
2000 ug/mL each in P&T Methanol
Lot# A095301 Exp. Date: 05/2018 Store: 0°C or colder
R4598 opend 10/25/13

X08868 ✓

UST-140-1 ULTRA 1 mL
Lot: CG-0130
Exp: 02/28/2014
PVOC Mixture (California)
R33391
6 analyte(s) at 1000 µg/mL in methanol
250 Smith St, No Kingstown, RI 02852 USA
For Lab Use Only
BTEX + MTBE
* No p-Xylene
opd 10/25/13 gp

✓ X08669 MI Tissues (Spike) (Test)
10 µL of X08665 (2,000 ppm)
10 µL " X08667 (2,000 ")
20 µL " X08668 (1,000 µg/mL)
2,460 µL MeOH
2.50 mL Total of 8.0 µg/mL ea.
✓ 8 Correction gp 10/28/13
gp 10/25/13 exp 11/8/13

Continued on Page

Read and Understood By

gp 10/25/13 LS 10/28/13

Certificate of Analysis

Rec'd 1/11/13

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Analytical Solutions

Internal Standard Mixture

Product Number: STM-520 **Page:** 1 of 1

Lot Number: CH-3660 **Lot Issue Date:** 15-Nov-2011 **Expiration Date:** 31-Dec-2014

This Certified Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
chlorobenzene-d5	003114-55-4	RM01430-01	2503 ± 13 µg/mL
1,4-dichlorobenzene-d4	003855-82-1	RM01700-06	2500 ± 13 µg/mL
fluorobenzene	000462-06-6	RM03366-01	2513 ± 13 µg/mL

Matrix: methanol (methyl alcohol)

Storage: Store at < 4° C

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

ACCREDITED
ISO 17025:2005 Accredited A2LA Cert. No. 0851-01

ISO 9001:2008 Registered TUV USA, Inc. Cert. No. 09-1009

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William J. Leary
Quality Assurance Manager

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Certificate of Analysis

Rec'd 12/28/11

4-Bromofluorobenzene Solution

Product Number: STS-110N

Page: 1 of 1

Lot Number: CF-5373 **Lot Issue Date:** Jan-2010 **Expiration Date:** Jan-2014

This Certified Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
4-bromofluorobenzene	000460-00-4	20401KO	2010 ± 10 µg/mL

Matrix: methanol (methyl alcohol)

Storage: Store at < 4° C

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

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Cert. No. 0851-01

ISO 9001:2008
Registered
TUV USA, Inc.
Cert. No. 09-1009

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William J. Leary
Quality Assurance Manager

Rec'd 9/18/12

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Method 8260 Surrogate Standard Mixture

Product Number: STM-530 **Page:** 1 of 1

Lot Number: CJ-1280 **Lot Issue Date:** 17-Apr-2012 **Expiration Date:** 31-May-2015

This certified Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
4-bromofluorobenzene	000460-00-4	RM03908-	2512 ± 13 µg/mL
dibromofluoromethane	001868-53-7	RM04871-01	2512 ± 13 µg/mL
1,2-dichloroethane-d4	017060-07-0	RM04304-	2512 ± 13 µg/mL
toluene-d8	002037-26-5	RM04138-	2512 ± 13 µg/mL

Matrix: methanol (methyl alcohol)

Storage: Store at < 4° C

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

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Quality Assurance Manager

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VOC Mixture

Product Number: DWM-589N **Page:** 1 of 3

Lot Number: CH-3339 **Lot Issue Date:** 19-Oct-2011 **Expiration Date:** 30-Nov-2014

This Certified Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
bromochloromethane	000074-97-5	RM00009	2006 ± 10 µg/mL
bromodichloromethane	000075-27-4	10529HD	2006 ± 10 µg/mL
bromoform	000075-25-2	RM01801	2006 ± 10 µg/mL
carbon tetrachloride	000056-23-5	RM00012	2006 ± 10 µg/mL
chloroform	000067-66-3	RM01693	2006 ± 10 µg/mL
dibromochloromethane	000124-48-1	07705AN	2006 ± 10 µg/mL
dibromomethane	000074-95-3	RM02090	2006 ± 10 µg/mL
methylene chloride	000075-09-2	RM01647	2006 ± 10 µg/mL
1,2-dibromoethane	000106-93-4	RM00018	2006 ± 10 µg/mL
1,1-dichloroethane	000075-34-3	RM00019	2006 ± 10 µg/mL
1,2-dichloroethane	000107-06-2	RM02111	2006 ± 10 µg/mL
1,1-dichloroethene	000075-35-4	RM01356	2006 ± 10 µg/mL
cis-1,2-dichloroethene	000156-59-2	RM01500	2006 ± 10 µg/mL
trans-1,2-dichloroethene	000156-60-5	01306HD	2006 ± 10 µg/mL
1,1,1,2-tetrachloroethane	000630-20-6	RM02567	2006 ± 10 µg/mL
1,1,2,2-tetrachloroethane	000079-34-5	RM02540	2006 ± 10 µg/mL
tetrachloroethene	000127-18-4	RM00026	2006 ± 10 µg/mL
1,1,1-trichloroethane	000071-55-6	RM00027	2006 ± 10 µg/mL
1,1,2-trichloroethane	000079-00-5	RM02575	2006 ± 10 µg/mL

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

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William J. Leary
Quality Assurance Manager

Certificate of Analysis

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Analytical Solutions

VOC Mixture

Product Number: DWM-589N **Page:** 2 of 3

Lot Number: CH-3339 **Lot Issue Date:** 19-Oct-2011 **Expiration Date:** 30-Nov-2014

This Certified Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

trichloroethene	000079-01-6	RM00029	2006 ± 10 µg/mL
1,2-dibromo-3-chloropropane	000096-12-8	RM02088	2006 ± 10 µg/mL
1,2-dichloropropane	000078-87-5	RM02091	2006 ± 10 µg/mL
1,3-dichloropropane	000142-28-9	RM02080	2006 ± 10 µg/mL
2,2-dichloropropane	000594-20-7	01104EE	2006 ± 10 µg/mL
1,1-dichloropropene	000563-58-6	RM01234	2006 ± 10 µg/mL
cis-1,3-dichloropropene	010061-01-5	RM01442	2006 ± 10 µg/mL
trans-1,3-dichloropropene	010061-02-6	RM01443	2006 ± 10 µg/mL
hexachlorobutadiene	000087-68-3	RM02247	2004 ± 10 µg/mL
1,2,3-trichloropropane	000096-18-4	RM02562	2006 ± 10 µg/mL
benzene	000071-43-2	RM03830	2006 ± 10 µg/mL
n-butylbenzene	000104-51-8	RM01802	2006 ± 10 µg/mL
sec-butylbenzene	000135-98-8	RM01800	2006 ± 10 µg/mL
tert-butylbenzene	000098-06-6	RM01814	2006 ± 10 µg/mL
ethylbenzene	000100-41-4	RM00783	2006 ± 10 µg/mL
isopropylbenzene	000098-82-8	RM02285	2006 ± 10 µg/mL
4-isopropyltoluene	000099-87-6	RM00046	2006 ± 10 µg/mL
naphthalene	000091-20-3	RM02406	2006 ± 10 µg/mL
n-propylbenzene	000103-65-1	RM02468	2006 ± 10 µg/mL

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

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William J. Leary
Quality Assurance Manager

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Analytical Solutions

VOC Mixture

Product Number: DWM-589N **Page:** 3 of 3

Lot Number: CH-3339 **Lot Issue Date:** 19-Oct-2011 **Expiration Date:** 30-Nov-2014

This Certified Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

styrene	000100-42-5	LR-11228MQ	2006 ± 10 µg/mL
toluene	000108-88-3	RM02555	2006 ± 10 µg/mL
1,2,4-trimethylbenzene	000095-63-6	RM00050	2006 ± 10 µg/mL
1,3,5-trimethylbenzene	000108-67-8	RM02563	2006 ± 10 µg/mL
o-xylene	000095-47-6	RM00052	2006 ± 10 µg/mL
m-xylene	000108-38-3	RM00053	2006 ± 10 µg/mL
p-xylene	000106-42-3	RM02647	2006 ± 10 µg/mL
bromobenzene	000108-86-1	RM00056	2006 ± 10 µg/mL
chlorobenzene	000108-90-7	RM01874	2006 ± 10 µg/mL
2-chlorotoluene	000095-49-8	NT00290	2006 ± 10 µg/mL
4-chlorotoluene	000106-43-4	RM01866	2006 ± 10 µg/mL
1,2-dichlorobenzene	000095-50-1	RM00060	2006 ± 10 µg/mL
1,3-dichlorobenzene	000541-73-1	RM00061	2006 ± 10 µg/mL
1,4-dichlorobenzene	000106-46-7	RM01501	2006 ± 10 µg/mL
1,2,3-trichlorobenzene	000087-61-6	RM02563	2006 ± 10 µg/mL
1,2,4-trichlorobenzene	000120-82-1	RM00063	2006 ± 10 µg/mL

Matrix: methanol (methyl alcohol)

Storage: Store at < 4° C

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

A2LA ACCREDITED
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William J. Leary
Quality Assurance Manager

Rec'd 10/30/13

RESTEK

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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ACCREDITED
ISO Guide 34 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30213 **Lot No.:** A094024

Description : BTEX Standard

BTEX Std 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Benzene CAS # 71-43-2 Purity 99%	2,000.0 µg/mL	+/- 11.6282 +/- 24.1076 +/- 27.2017	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Toluene CAS # 108-88-3 Purity 99%	2,000.0 µg/mL	+/- 11.6282 +/- 24.1076 +/- 27.2017	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Ethylbenzene CAS # 100-41-4 Purity 99%	2,000.0 µg/mL	+/- 11.6282 +/- 24.1076 +/- 27.2017	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	p-Xylene CAS # 106-42-3 Purity 99%	2,000.0 µg/mL	+/- 11.6282 +/- 24.1076 +/- 27.2017	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	m-Xylene CAS # 108-38-3 Purity 99%	2,000.0 µg/mL	+/- 11.6282 +/- 24.1076 +/- 27.2017	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	o-Xylene CAS # 95-47-6 Purity 99%	2,000.0 µg/mL	+/- 11.6282 +/- 24.1076 +/- 27.2017	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Rec'd 10/8/13

RESTEK

Certificate of Analysis

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

Catalog No. : 30422 Lot No.: A075706

Description : 1,2,4-Trimethylbenzene Standard

Expiration Date[1]: July 2015 Storage: Freezer

Elution Order	Compound	CAS #	Percent Purity 2	Concentration 3 (weight/volume)	% Uncertainty 4 (95% C.L.; K=2)
1	1,2,4-Trimethylbenzene	95-63-6	99%	2,000.000 ug/ml	+/-0.59 %
Solvent:	P&T Methanol	67-56-1	99%		

Column:
105m x .53mm x 3.0um
Rtx-502.2 (cat.#10910)

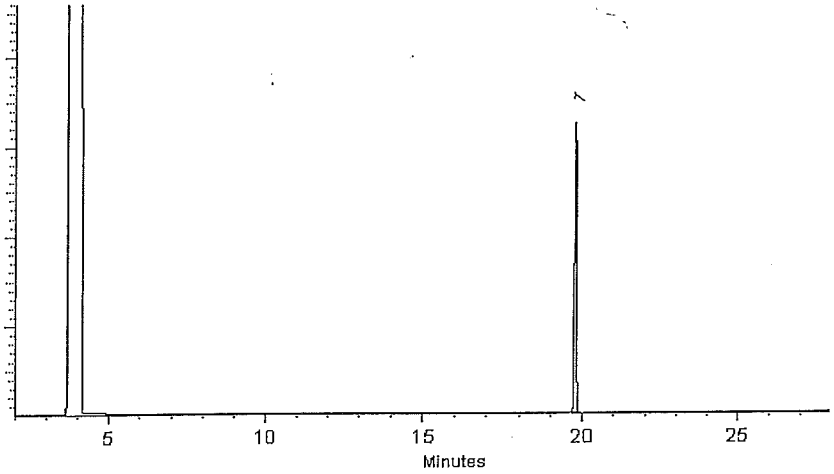
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:



Diane Shaffer
Diane Shaffer - QA Analyst

Date Passed: 15-Jul-2010 Balance: 1128342314

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

1 Expiration date of the unopened ampule stored at the recommended storage condition.

2A Purity is determined by one or more of the following techniques: GC/FID, HPLC, GC/ECD, GC/MS. Value is rounded to the nearest whole number. Chemical identity is confirmed using GC/MS. See data pack or contact provider for further details.

2B Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities.

2C The following types of compounds will have a listed purity of less than 99%: Aldehyde/Ketone-DNPH compounds, Bromides, Chlorides, HCL salts, HBR salts, sulfates, hydrates, and other compounds as necessary. The listed purity is a correction factor that is equivalent to the percentage of parent compound in the molecule. This correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution. The concentration listed on the certificate is the concentration of the parent compound in the solution.

2D Purity of isomeric compounds is reported as the sum of the isomers. Value is rounded to the nearest whole number after summation.

3 Based upon gravimetric preparation with balance calibration verified using NIST traceable weights (seven mass levels) and/or class A glassware used for dilutions.

4 Uncertainties determined using data for balances and glassware from measurement systems analysis methodology, raw material purity, and, when significant, equipment tolerances or calibration results.

Rec'd 10/30/13

RESTEK CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30410 **Lot No.:** A095301

Description : Styrene Standard

Styrene 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2018 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Styrene CAS # 100-42-5 (Lot 10174567) Purity 99%	2,004.0 µg/mL	+/- 11.9032 µg/mL +/- 24.2782 µg/mL +/- 27.3647 µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Rec'd 6/13/13

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis

J.T.Baker | Part of AVANTOR™ PERFORMANCE MATERIALS

Material No.: 9077-02
Batch No.: 0000038701
Manufactured Date: 2013/02/20
Retest Date: 2018/02/19

Certificate of Analysis

Test	Specification	Result
Assay (CH_3OH) (by GC, corrected for water)	>= 99.9 %	100.0
Residue after Evaporation	<= 1.0000 ppm	< 0.1000
Titrable Acid (µeq/g)	<= 0.3	<0.1
Titrable Base (µeq/g)	<= 0.1	<0.01
Water (by KF, coulometric)	<= 0.08 %	<0.01
Photoionization Detection (PID) Below CRQL	Passes Test	PT
Electroconductivity Detection (ELCD) Below CRQL	Passes Test	PT

For Laboratory, Research or Manufacturing Use
Performance Tested for Use in EPA Methods
500 Series for Drinking Water
600 Series for Wastewater
846 for Solid Waste

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

ISO

Richard M. Siberski
Global Director Quality Assurance

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600
Avantor ™ Performance Materials Inc.
3477 Corporate Parkway, Suite #200, Center Valley, PA 18034, U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610

Analytical Run Number _____

Calibration Information

Tune Data (If applicable)

Initial Calibration (If different than Initial Calibration in Run 1)
- Calibration Factor Summary
- Chromatogram
- Quant Report (If applicable)

Continuing Calibration
- Calibration Response Check
- Chromatogram
- Quant Report (If applicable)

Instrument Logs/Analysis Notebook Pages

Blank / Field Sample / QC Data

Sample Results
Chromatogram
Quant Report (If applicable)
Confirmation Analysis Quant Report / Chromatogram (If applicable)
Tentatively Identified Compounds (If required)

Rev. 1.1

Calibration Information

Tune Data (If applicable)

Initial Calibration (If different than Initial Calibration in Run 1)
- Calibration Factor Summary
- Chromatogram
- Quant Report (If applicable)

Continuing Calibration
- Calibration Response Check
- Chromatogram
- Quant Report (If applicable)

Rev. 1.1

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: ---

Lab File ID: A1125303 BFB Injection Date: 11/25/13

Instrument ID: AG1 BFB Injection Time: 09:43

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	14.5	
75	30.0 - 66.0% of mass 95	48.1	
95	Base Peak, 100% relative abundance	100.	
96	5.0 - 9.0% of mass 95	6.6	
173	Less than 2.0% of mass 174	0.0	(1)
174	Greater than 50.0% of mass 95	86.5	
175	4.0 - 9.0% of mass 174	7.9	(1)
176	Greater than 93.0%, but less that 101.0% of mass 174	100.9	(1)
177	5.0 - 9.0% of mass 176	6.1	(2)

(1)-Value is % mass 174 2-Value is % mass 176

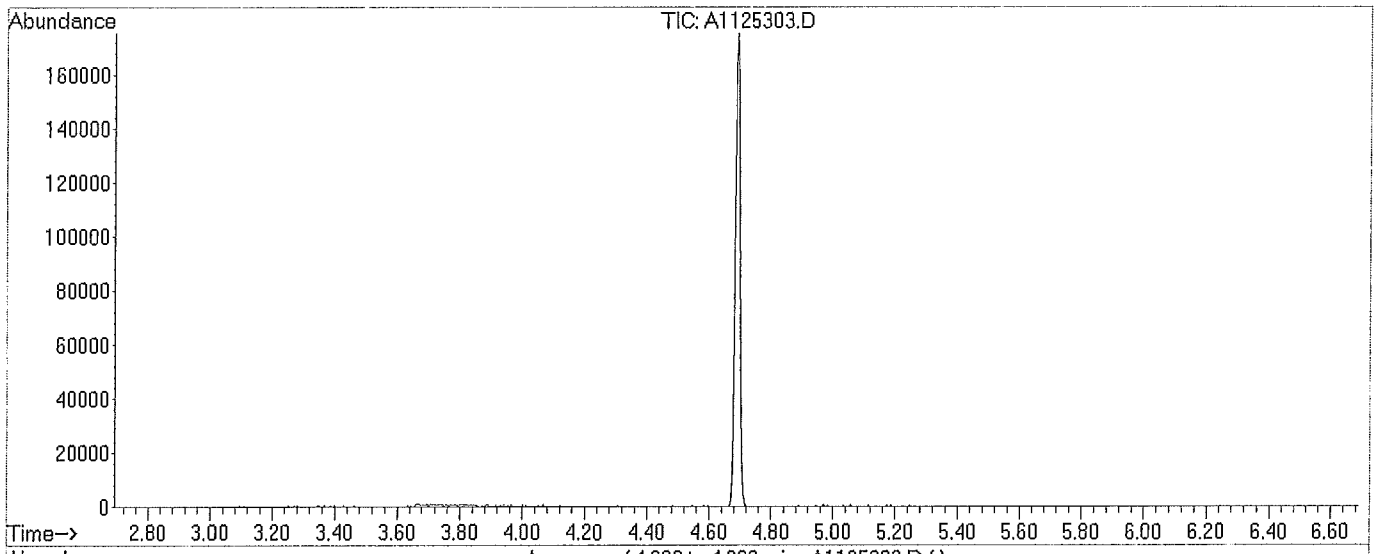
THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

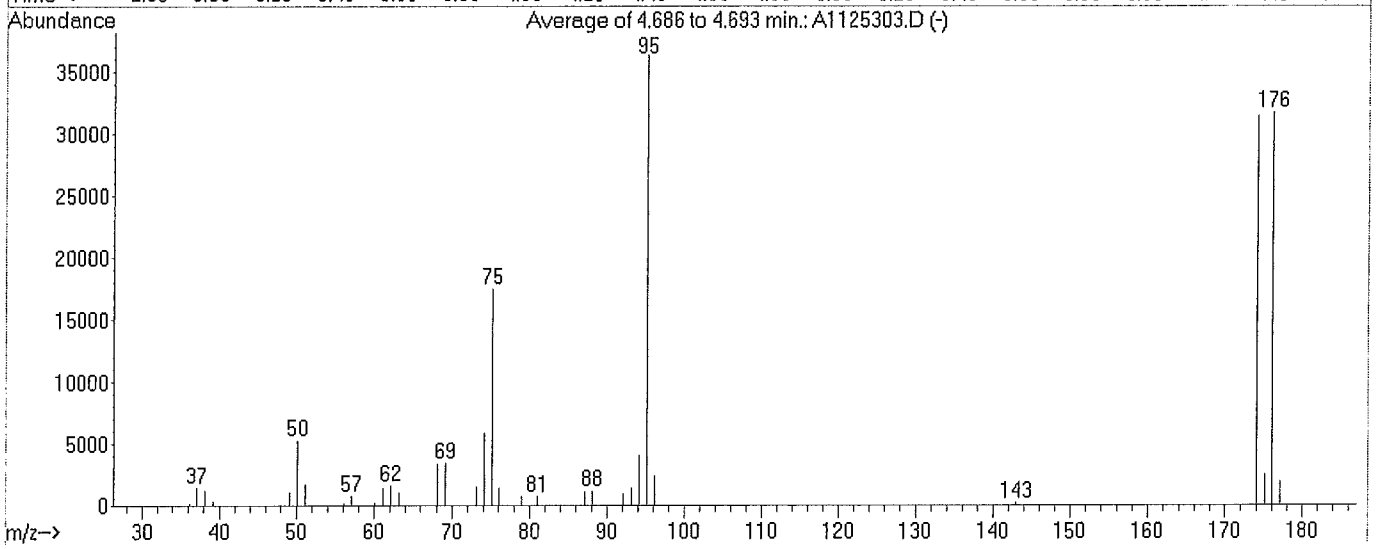
	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	BLK STD	000 STD	A1125304	11/25/13	10:08
2	VOA STD	12.5 STD	A1125305	11/25/13	10:46
3	VOA STD	025 STD	A1125306	11/25/13	11:22
4	VOA STD	050 STD	A1125307	11/25/13	11:57
5	VOA STD	100 STD	A1125308	11/25/13	12:29
6	VOA STD	150 STD	A1125309	11/25/13	13:00
7	VOA STD	200 STD	A1125310	11/25/13	13:37
8	ICV	100 STD	A1125312	11/25/13	14:40
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125303.D
Acq On : 25 Nov 2013 9:43 am
Operator :
Sample : 50 NG BFB
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\MSDCHEM\1\METHODS\BFBSOIL.M
Title :
Last Update :





AutoFind: Scans 500, 501, 502; Background Corrected with Scan 491

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	14.5	5285	PASS
75	95	30	66	48.1	17482	PASS
95	95	100	100	100.0	36352	PASS
96	95	5	9	6.6	2395	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	86.5	31434	PASS
175	174	4	9	7.9	2468	PASS
176	174	93	101	100.9	31704	PASS
177	176	5	9	6.1	1922	PASS

Average of 4.686 to 4.693 min.: A1125303.D
50 NG BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.20	166	62.10	1592	88.05	1164		
37.10	1445	63.15	1039	92.05	927		
38.15	1184	68.10	3358	93.10	1407		
39.20	362	69.10	3414	94.10	4041		
49.10	1091	73.10	1508	95.10	36352		
50.10	5285	74.10	5875	96.10	2395		
51.10	1740	75.10	17482	143.00	201		
56.10	176	76.10	1389	174.00	31434		
57.05	775	79.00	723	175.00	2468		
60.10	200	81.00	721	176.00	31704		
61.15	1435	87.10	1082	177.05	1922		

Response Factor Report AG1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : SOIL_27.M
Title : 8260 VOLATILES
Last Update : Mon Nov 25 13:59:03 2013
Response Via : Initial Calibration

Calibration Files
12.5=A1125305.D 25 =A1125306.D 50 =A1125307.D
100 =A1125308.D 150 =A1125309.D 200 =A1125310.D

		Compound	12.5	25	50	100	150	200	Avg	%RSD
1)	I	Chlorobenzene-d5	----------ISTD----------							
2)	S	Toluene-d8	2.450	2.299	2.202	2.159	2.120	2.298	2.255	5.33
3)	MCT	Toluene	3.148	3.121	2.907	2.865	2.794	2.799	2.939	5.37
4)	CT	Ethylbenzene	3.633	3.691	3.470	3.393	3.364	3.264	3.469	4.74
5)	T	m & p-Xylene	3.031	2.973	2.814	2.762	2.701	2.615	2.816	5.67
6)	T	Styrene	2.188	2.181	2.102	2.156	2.051	1.921	2.100	4.84
7)	T	o-Xylene	1.446	1.382	1.291	1.291	1.277	1.230	1.320	6.00
8)	I	1,4-Dichlorobenzene-d	----------ISTD----------							
9)	S	4-Bromofluorobenz	0.993	0.895	0.876	0.889	0.876	0.945	0.912	5.16
10)	T	1,2,4-Trimethylbe	3.382	3.209	3.183	3.132	3.086	3.115	3.184	3.35

(#) = Out of Range ### Number of calibration levels exceeded format ###

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125304.D
Acq On : 25 Nov 2013 10:08 am
Operator :
Sample : VSTD000
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:05:59 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	125488	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	131981	125.00	ug/Kg	0.00

System Monitoring Compounds

2) Toluene-d8	0.00	98	0	0.00	ug/Kg	
Spiked Amount 100.000			Recovery	=	0.00%	
9) 4-Bromofluorobenzene	0.00	95	0	0.00	ug/Kg	
Spiked Amount 100.000			Recovery	=	0.00%	

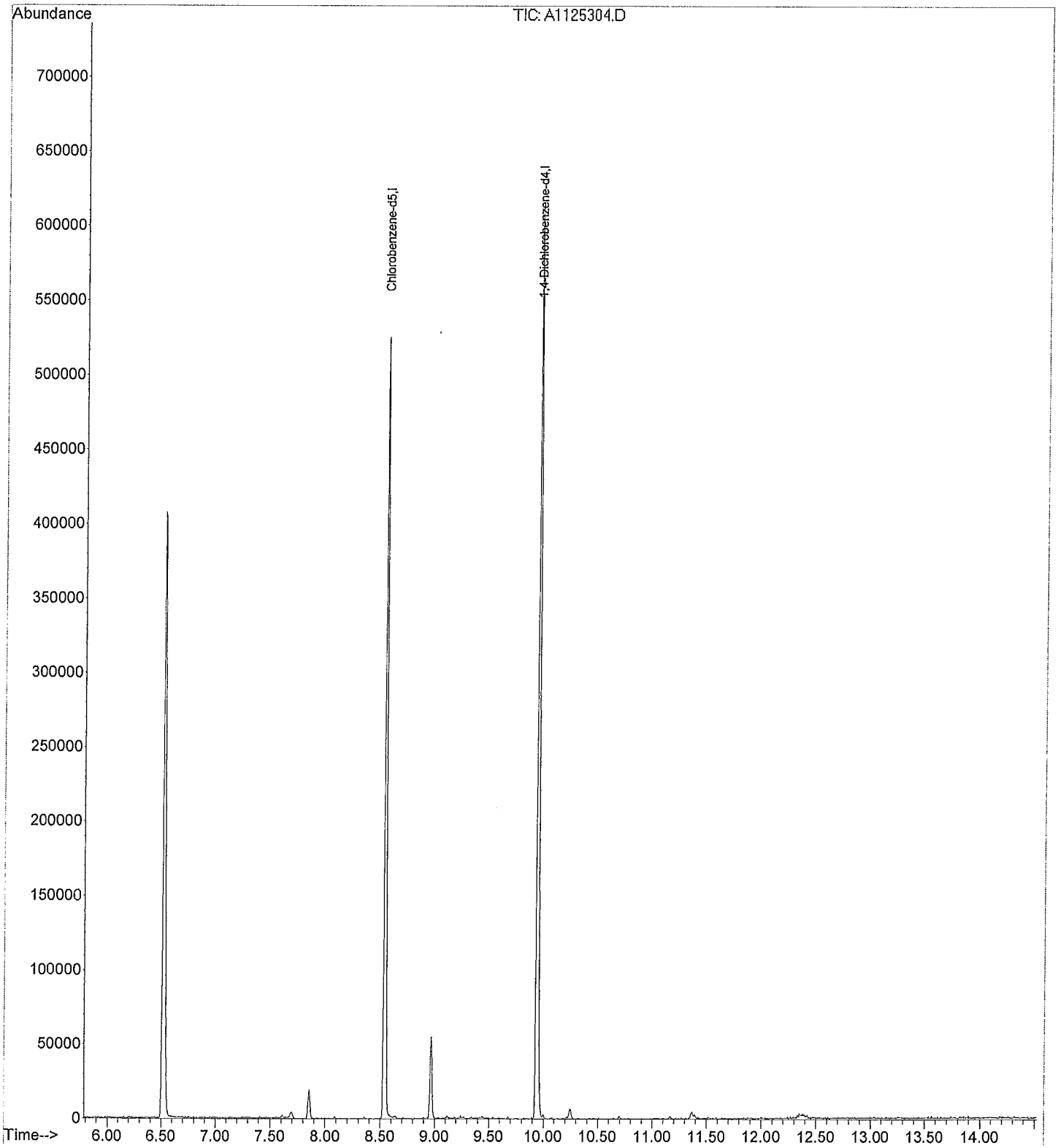
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125304.D
Acq On : 25 Nov 2013 10:08 am
Operator :
Sample : VSTD000
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:05:59 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125305.D
Acq On : 25 Nov 2013 10:46 am
Operator :
Sample : VSTD12.5
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:07:44 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration

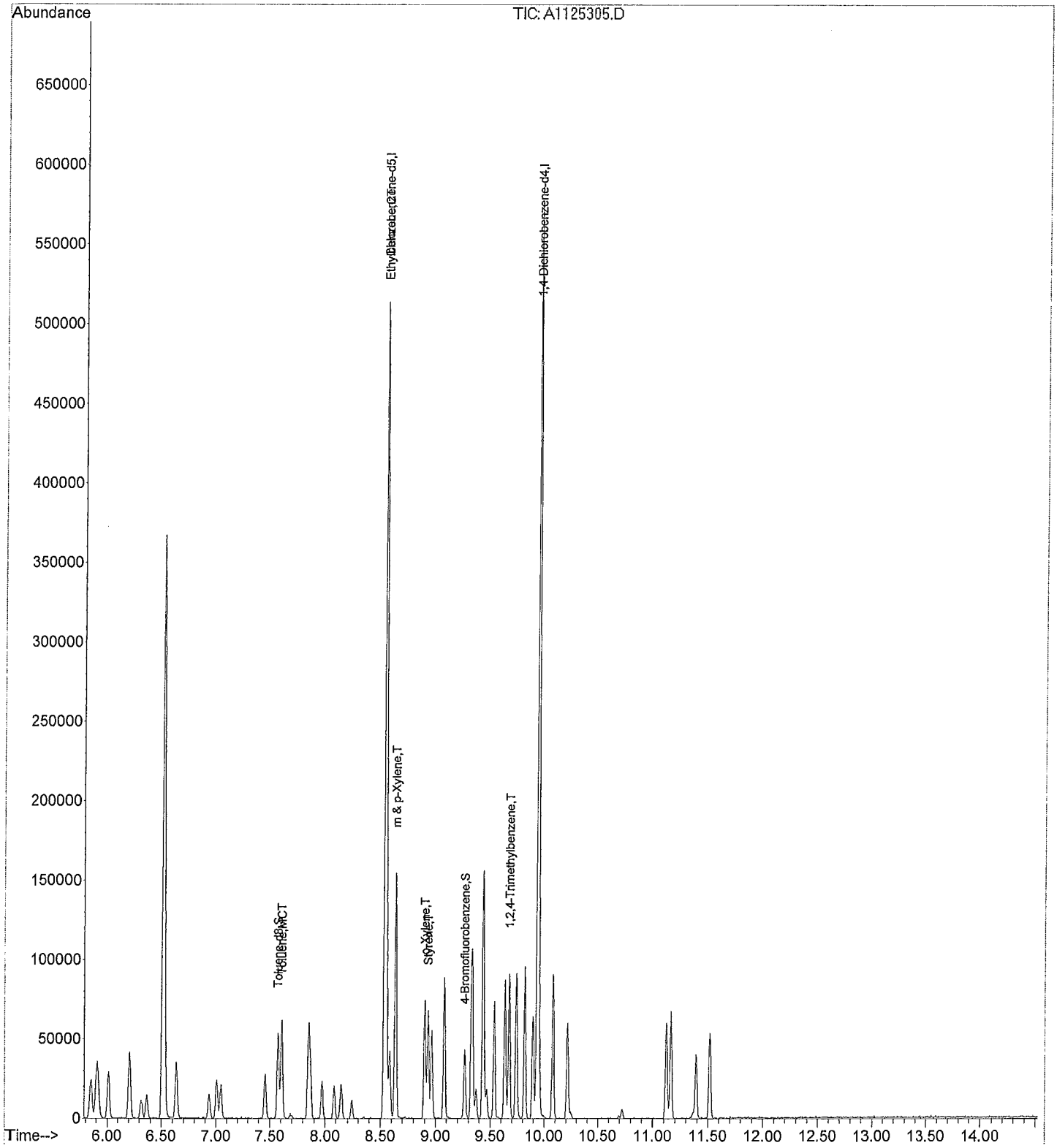
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	112887	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	116353	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	27658	12.72	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 12.72%			
9) 4-Bromofluorobenzene	9.26	95	11553	12.47	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 12.47%			
Target Compounds						Qvalue
3) Toluene	7.61	91	35542	13.08	ug/Kg	99
4) Ethylbenzene	8.55	91	41013	13.11	ug/Kg	99
5) m & p-Xylene	8.63	91	68441	27.27	ug/Kg	94
6) Styrene	8.93	104	24700	13.01	ug/Kg#	85
7) o-Xylene	8.90	106	16327	6.36	ug/Kg	93
10) 1,2,4-Trimethylbenzene	9.67	105	39345	13.48	ug/Kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125305.D
Acq On : 25 Nov 2013 10:46 am
Operator :
Sample : VSTD12.5
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:07:44 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125306.D
Acq On : 25 Nov 2013 11:22 am
Operator :
Sample : VSTD025
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:08:20 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration

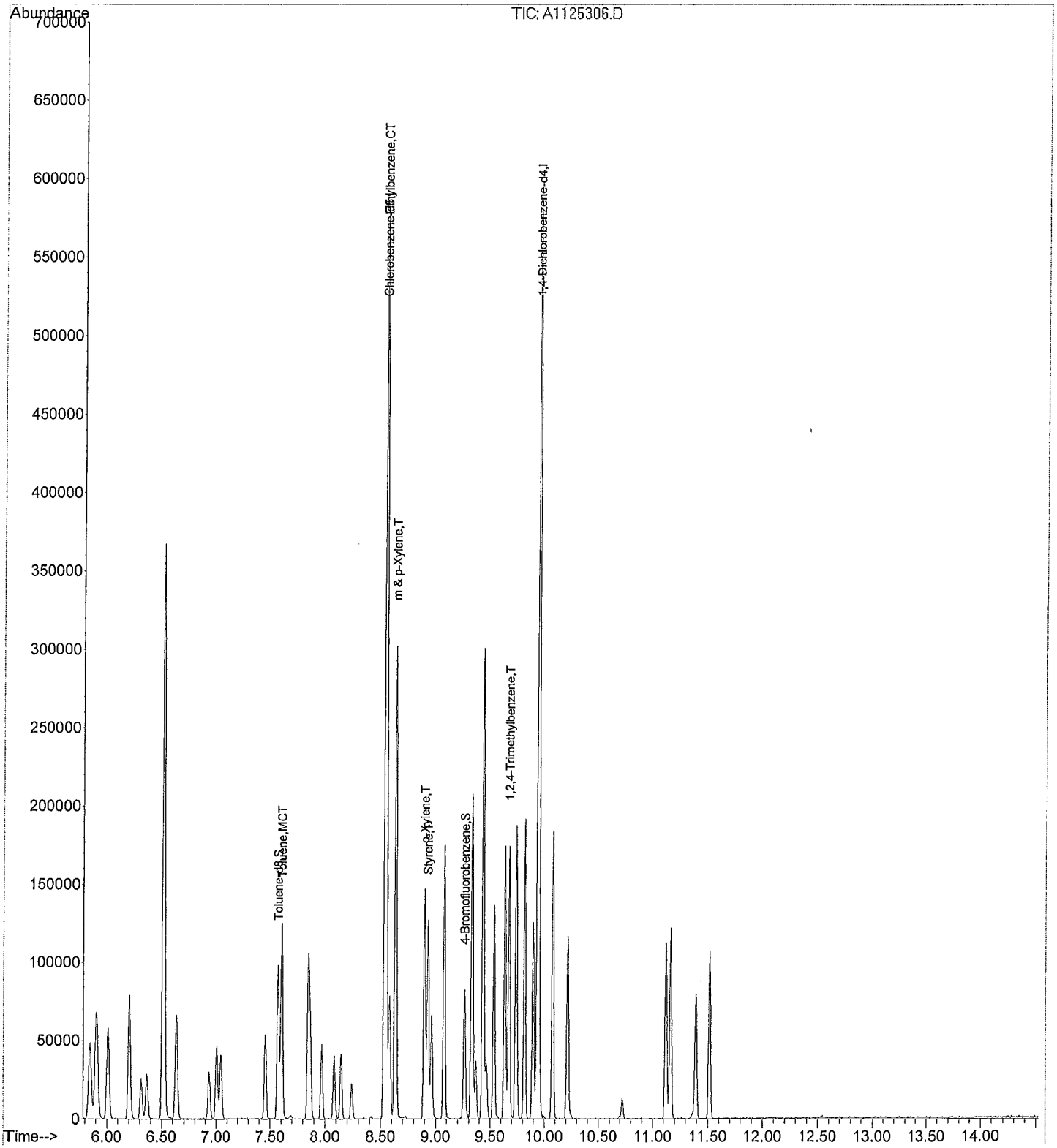
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	111254	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	116803	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.57	98	51165	23.87 ug/Kg	0.00
Spiked Amount 100.000			Recovery =	23.87%	
9) 4-Bromofluorobenzene	9.26	95	20909	22.48 ug/Kg	0.00
Spiked Amount 100.000			Recovery =	22.48%	
Target Compounds					Qvalue
3) Toluene	7.61	91	69452	25.94 ug/Kg	99
4) Ethylbenzene	8.55	91	82122	26.63 ug/Kg	99
5) m & p-Xylene	8.63	91	132287	53.49 ug/Kg	95
6) Styrene	8.93	104	48524	25.92 ug/Kg	88
7) o-Xylene	8.90	106	30753	12.16 ug/Kg	89
10) 1,2,4-Trimethylbenzene	9.67	105	74961	25.58 ug/Kg	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125306.D
Acq On : 25 Nov 2013 11:22 am
Operator :
Sample : VSTD025
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:08:20 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125307.D
Acq On : 25 Nov 2013 11:57 am
Operator :
Sample : VSTD050
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:12:59 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration

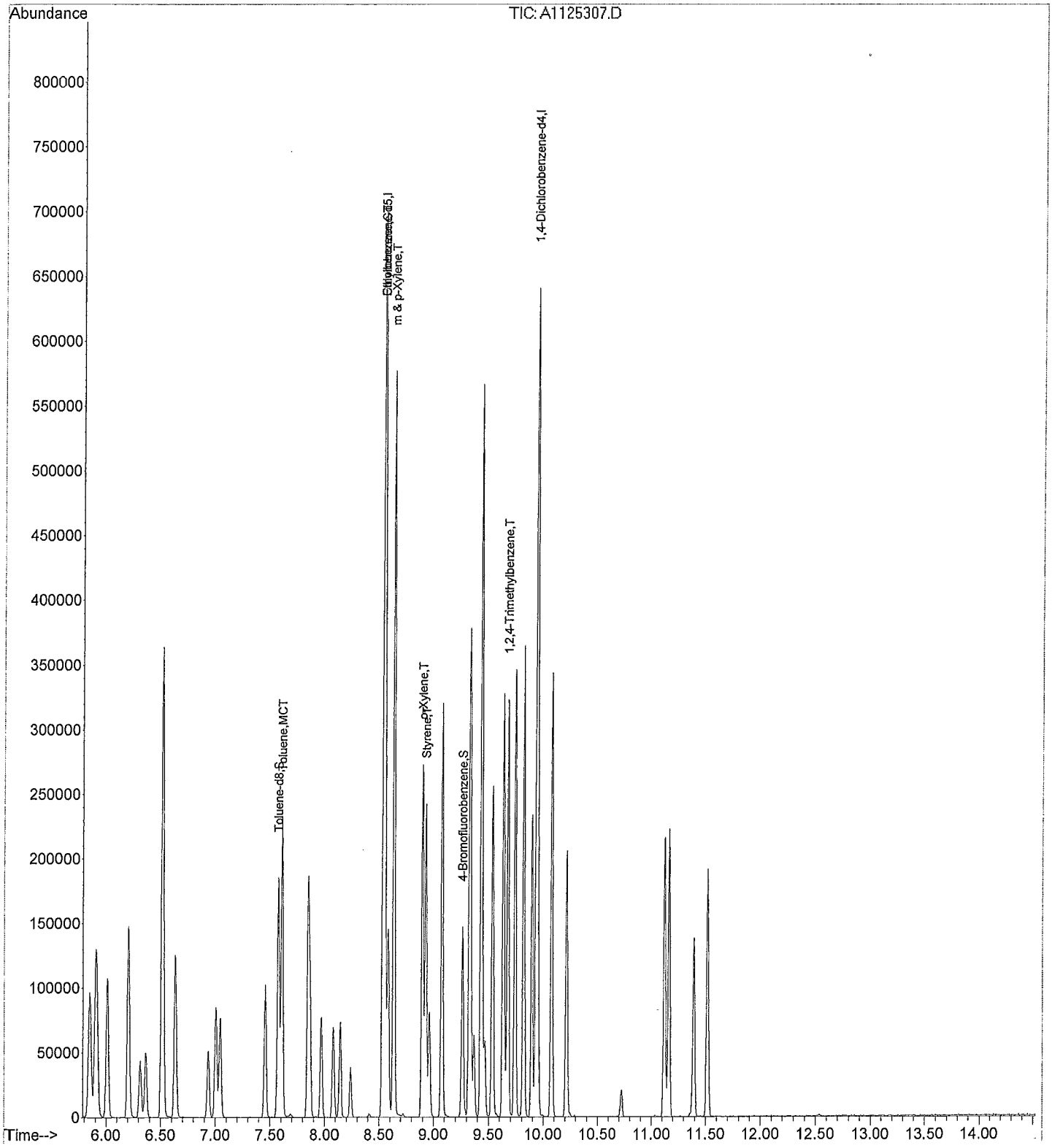
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	110281	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	109882	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	97144	45.71	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	45.71%	
9) 4-Bromofluorobenzene	9.26	95	38490	43.98	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	43.98%	
Target Compounds						Qvalue
3) Toluene	7.61	91	128237	48.32	ug/Kg	100
4) Ethylbenzene	8.55	91	153066	50.08	ug/Kg	99
5) m & p-Xylene	8.63	91	248247	101.26	ug/Kg	96
6) Styrene	8.93	104	92715	49.97	ug/Kg#	86
7) o-Xylene	8.90	106	56939	22.72	ug/Kg	89
10) 1,2,4-Trimethylbenzene	9.67	105	139880	50.75	ug/Kg	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125307.D
Acq On : 25 Nov 2013 11:57 am
Operator :
Sample : VSTD050
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:12:59 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125308.D
Acq On : 25 Nov 2013 12:29 pm
Operator :
Sample : VSTD100
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:47:11 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration

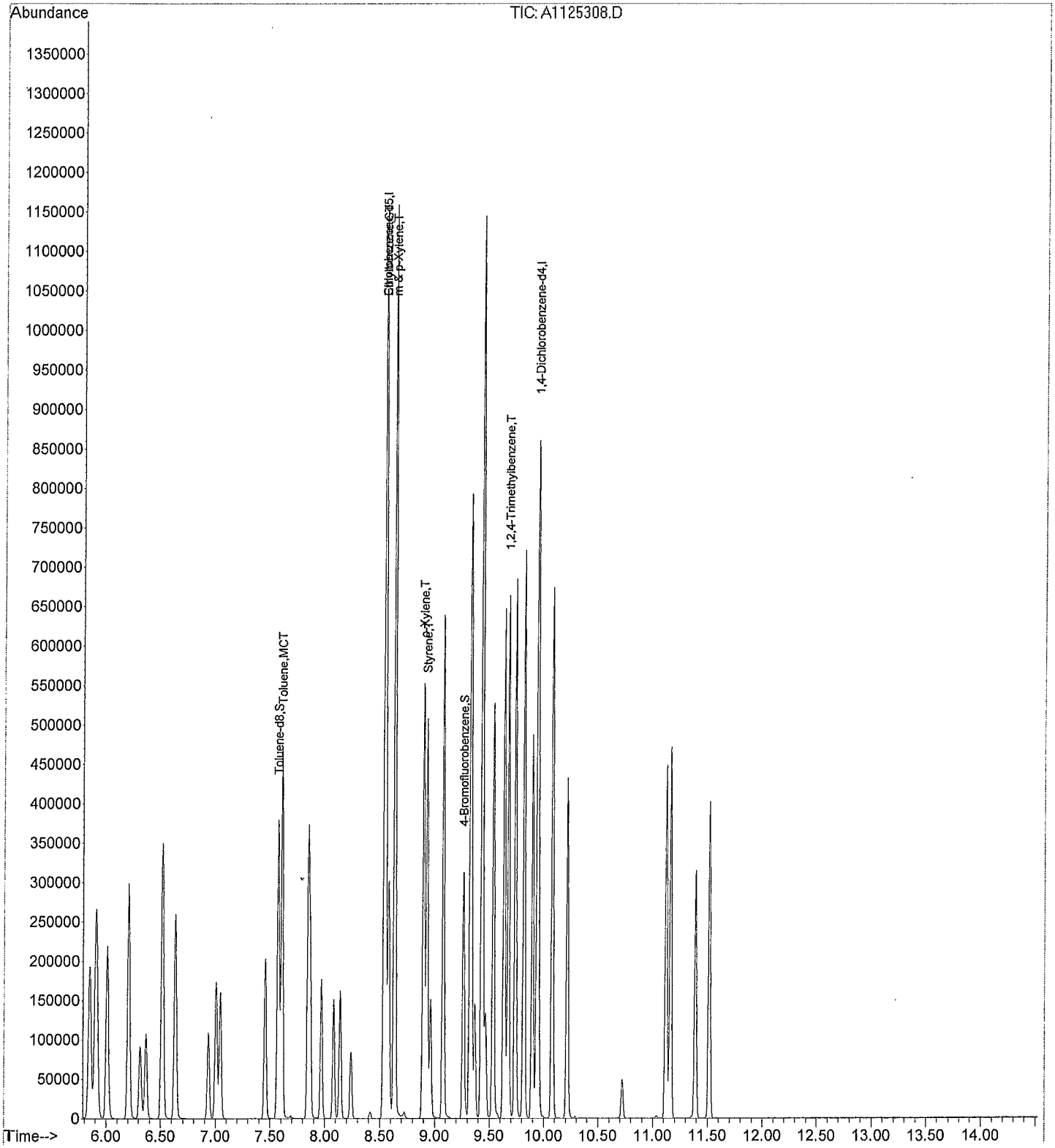
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	113737	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	115803	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	196489	89.66	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 89.66%			
9) 4-Bromofluorobenzene	9.26	95	82386	89.32	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 89.32%			
Target Compounds						Qvalue
3) Toluene	7.61	91	260644	95.23	ug/Kg	100
4) Ethylbenzene	8.55	91	308722	97.94	ug/Kg	100
5) m & p-Xylene	8.63	91	502704	198.82	ug/Kg	96
6) Styrene	8.93	104	196151	102.51	ug/Kg	89
7) o-Xylene	8.90	106	117442	45.44	ug/Kg	88
10) 1,2,4-Trimethylbenzene	9.67	105	290119	99.87	ug/Kg	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125308.D
Acq On : 25 Nov 2013 12:29 pm
Operator :
Sample : VSTD100
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 12:47:11 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125309.D
Acq On : 25 Nov 2013 1:00 pm
Operator :
Sample : VSTD150
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 13:21:26 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration

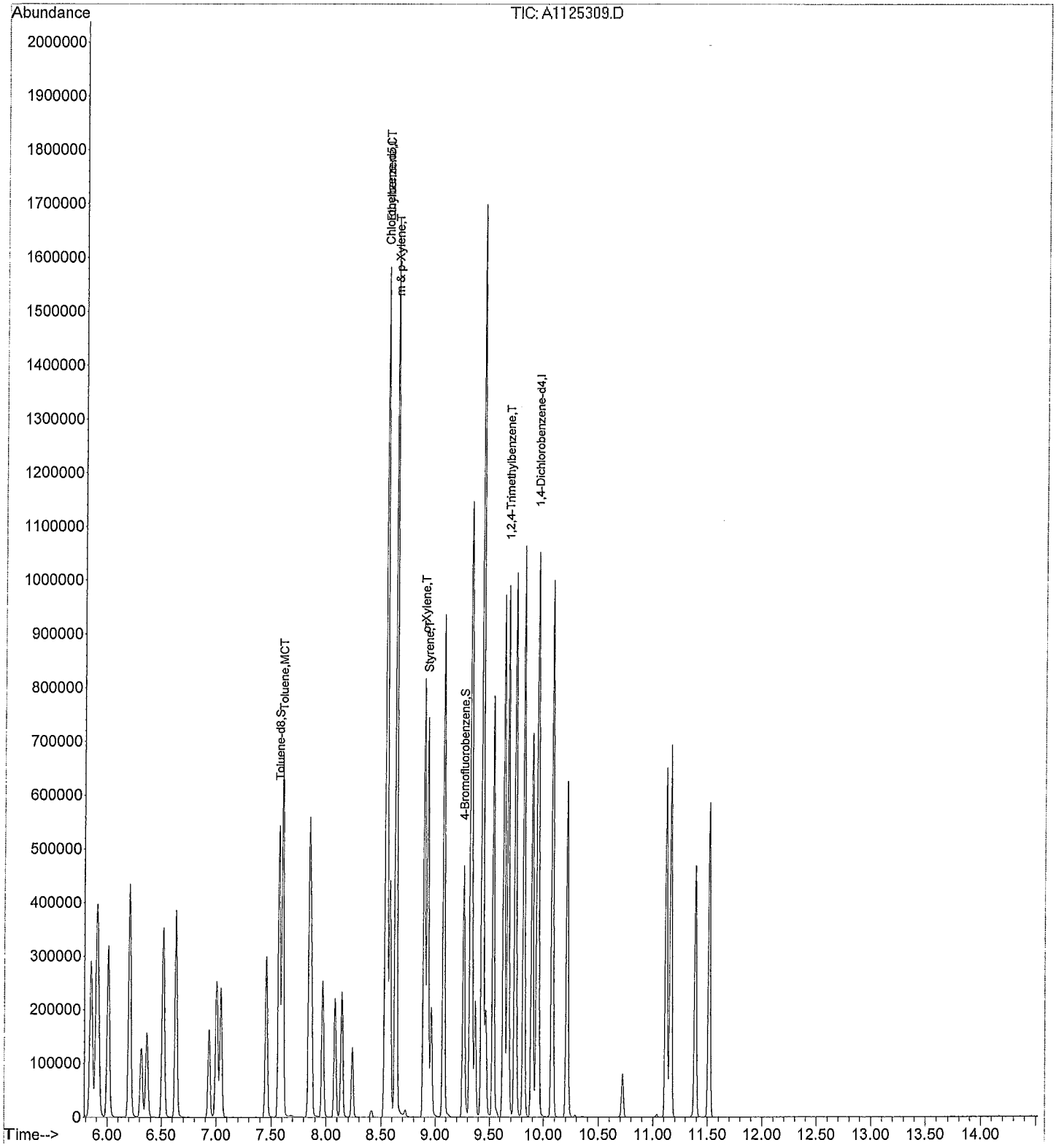
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	113274	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	115282	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	288103	132.00	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	132.00%	
9) 4-Bromofluorobenzene	9.26	95	121150	131.94	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	131.94%	
Target Compounds						Qvalue
3) Toluene	7.61	91	379743	139.31	ug/Kg	98
4) Ethylbenzene	8.55	91	457270	145.66	ug/Kg	99
5) m & p-Xylene	8.63	91	734316	291.61	ug/Kg	96
6) Styrene	8.93	104	278778	146.28	ug/Kg#	86
7) o-Xylene	8.90	106	173643	67.45	ug/Kg	89
10) 1,2,4-Trimethylbenzene	9.67	105	426884	147.61	ug/Kg	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125309.D
Acq On : 25 Nov 2013 1:00 pm
Operator :
Sample : VSTD150
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 13:21:26 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125310.D
Acq On : 25 Nov 2013 1:37 pm
Operator :
Sample : VSTD200
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 13:55:55 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration

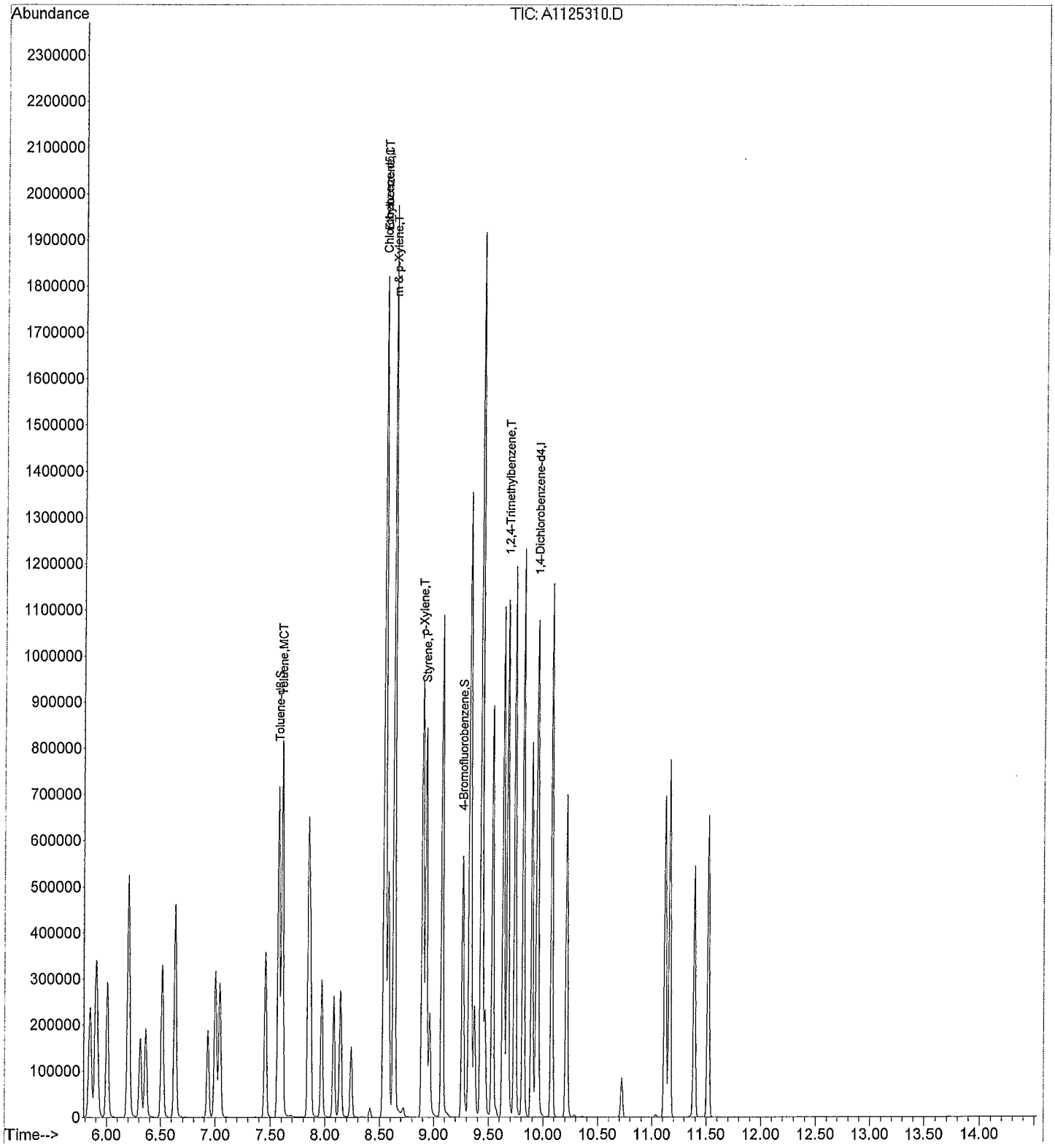
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	103849	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	99740	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	381758	190.78	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	190.78%	
9) 4-Bromofluorobenzene	9.26	95	150825	189.86	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	189.86%	
Target Compounds						Qvalue
3) Toluene	7.60	91	465020	186.08	ug/Kg	100
4) Ethylbenzene	8.55	91	542325	188.43	ug/Kg	99
5) m & p-Xylene	8.63	91	868903	376.37	ug/Kg	97
6) Styrene	8.93	104	319238	182.71	ug/Kg#	84
7) o-Xylene	8.90	106	204410	86.61	ug/Kg	88
10) 1,2,4-Trimethylbenzene	9.67	105	497118	198.69	ug/Kg	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125310.D
Acq On : 25 Nov 2013 1:37 pm
Operator :
Sample : VSTD200
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 13:55:55 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_26.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 12:05:47 2013
Response via : Initial Calibration



Continuing Calibration Report AG1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : SOIL_27.M
Title : 8260 VOLATILES
Last Update : Mon Nov 25 15:07:55 2013
Response Via : Initial Calibration

CC Data File: A1125312.D

Min. RRF : 0.000 Min. Rel. Area : 50%
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%
1	I	Chlorobenzene-d5	1.000	1.000	0.0	92
2	S	Toluene-d8	2.255	2.480	-10.0	105
3	MCT	Toluene	2.939	2.742	6.7	88
4	CT	Ethylbenzene	3.469	3.311	4.5	90
5	T	m & p-Xylene	2.816	2.648	6.0	88
6	T	Styrene	2.100	1.906	9.2	81
7	T	o-Xylene	1.320	1.228	6.9	87
8	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	95
9	S	4-Bromofluorobenzene	0.912	0.921	-1.0	98
10	T	1,2,4-Trimethylbenzene	3.184	2.950	7.4	89

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125312.D
Acq On : 25 Nov 2013 2:40 pm
Operator :
Sample : VSTD100/ICV
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 15:07:46 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 13:59:03 2013
Response via : Initial Calibration

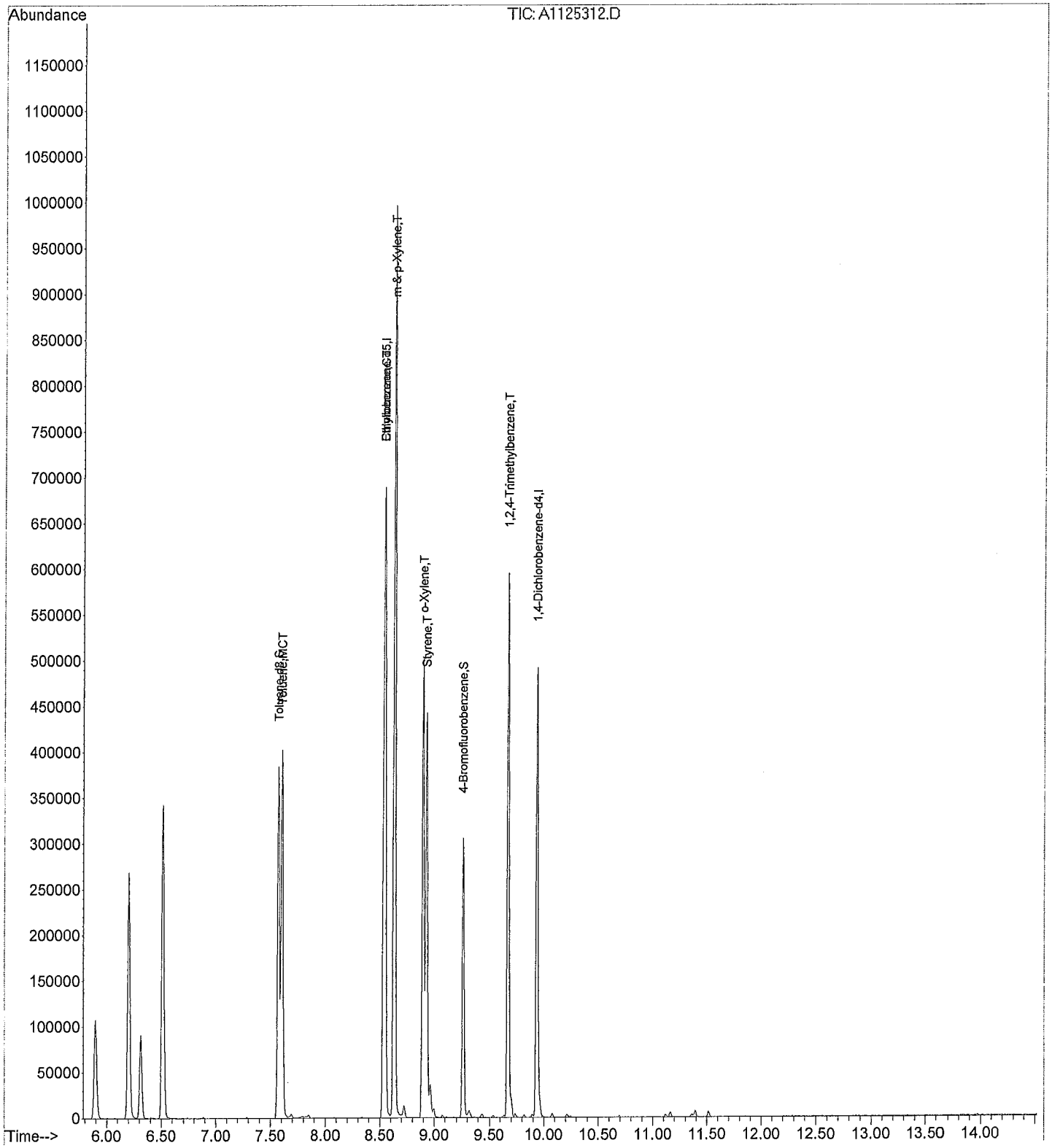
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	104377	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	109452	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	207119	110.01	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	110.01%	
9) 4-Bromofluorobenzene	9.26	95	80665	100.98	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	100.98%	
Target Compounds						Qvalue
3) Toluene	7.60	91	228969	93.30	ug/Kg	100
4) Ethylbenzene	8.55	91	276500	95.45	ug/Kg	99
5) m & p-Xylene	8.63	91	442154	188.04	ug/Kg	97
6) Styrene	8.93	104	159164	90.78	ug/Kg#	86
7) o-Xylene	8.90	106	102569	93.09	ug/Kg	88
10) 1,2,4-Trimethylbenzene	9.67	105	258321	92.65	ug/Kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112513\
Data File : A1125312.D
Acq On : 25 Nov 2013 2:40 pm
Operator :
Sample : VSTD100/ICV
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 25 15:07:46 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Mon Nov 25 13:59:03 2013
Response via : Initial Calibration



5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: ---

Lab File ID: A1126302 BFB Injection Date: 11/26/13

Instrument ID: AG1 BFB Injection Time: 08:43

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	14.0	
75	30.0 - 66.0% of mass 95	50.1	
95	Base Peak, 100% relative abundance	100.	
96	5.0 - 9.0% of mass 95	6.1	
173	Less than 2.0% of mass 174	0.0	(1)
174	Greater than 50.0% of mass 95	88.3	
175	4.0 - 9.0% of mass 174	7.6	(1)
176	Greater than 93.0%, but less that 101.0% of mass 174	98.4	(1)
177	5.0 - 9.0% of mass 176	6.8	(2)

(1)-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

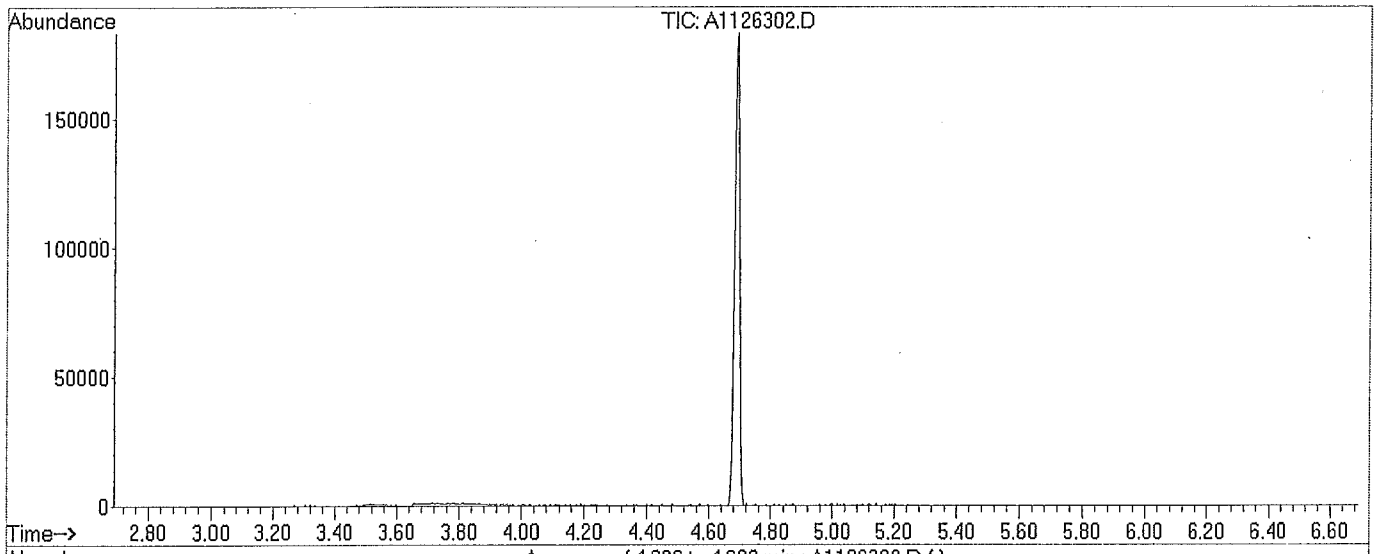
	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VOA STD	100 STD	A1126303	11/26/13	09:08
2	SPBK 11/26/13	006557-20K1	A1126304	11/26/13	09:41
3	BK 11/26/13	006557-20B1	A1126305	11/26/13	10:15
4	MAK001C	006557-01	A1126306	11/26/13	10:47
5	MAK002C	006557-02	A1126307	11/26/13	11:15
6	MAK004C	006557-03	A1126308	11/26/13	11:42
7	MAK005C	006557-04	A1126309	11/26/13	12:12
8	MAK006C	006557-05	A1126310	11/26/13	12:42
9	MAK008C	006557-07	A1126312	11/26/13	13:53
10	MAK009C	006557-08	A1126313	11/26/13	14:21
11	MAK010C	006557-09	A1126314	11/26/13	14:49
12	MAK019C	006557-13	A1126316	11/26/13	15:48
13	MAK022C	006557-15	A1126317	11/26/13	16:18
14	MAK024C	006557-16	A1126318	11/26/13	16:48
15	MAK025C	006557-17	A1126319	11/26/13	17:18
16	MAK026C	006557-18	A1126320	11/26/13	17:47
17	MAK027C	006557-19	A1126321	11/26/13	18:15
18	MAK032C	006557-20	A1126322	11/26/13	18:42
19					
20					
21					
22					

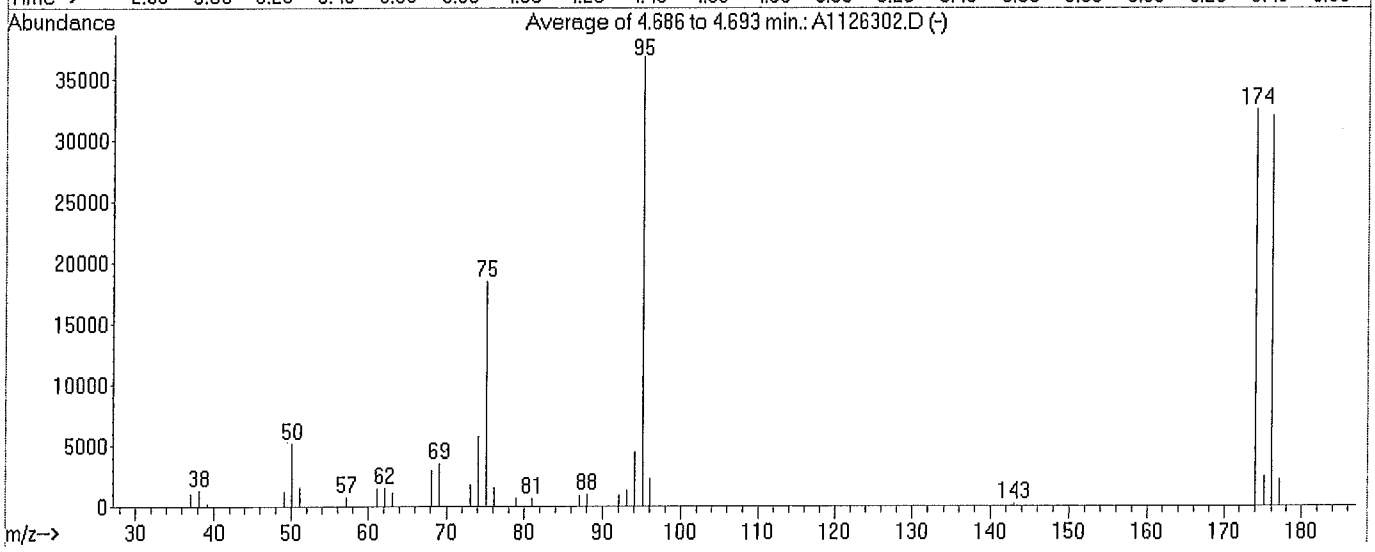
BFB

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126302.D
Acq On : 26 Nov 2013 8:43 am
Operator :
Sample : 50 NG BFB
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\MSDCHEM\1\METHODS\BFBSOIL.M
Title :
Last Update :





AutoFind: Scans 500, 501, 502; Background Corrected with Scan 491

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	14.0	5156	PASS
75	95	30	66	50.1	18456	PASS
95	95	100	100	100.0	36824	PASS
96	95	5	9	6.1	2259	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	88.3	32509	PASS
175	174	4	9	7.6	2475	PASS
176	174	93	101	98.4	31978	PASS
177	176	5	9	6.8	2167	PASS

Average of 4.686 to 4.693 min.: A1126302.D
50 NG BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
37.10	1029	69.10	3519	94.10	4466		
38.15	1298	73.10	1789	95.10	36824		
39.20	222	74.10	5741	96.05	2259		
49.10	1210	75.10	18456	143.00	196		
50.10	5156	76.10	1510	174.00	32509		
51.10	1582	79.00	675	175.05	2475		
57.15	765	81.00	660	176.00	31978		
61.10	1424	87.05	870	177.05	2167		
62.10	1487	88.05	956				
63.10	1127	92.05	919				
68.10	2970	93.10	1323				

Continuing Calibration Report AG1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : SOIL_27.M
Title : 8260 VOLATILES
Last Update : Tue Nov 26 09:25:52 2013
Response Via : Initial Calibration

CC Data File: A1126303.D

Min. RRF : 0.000 Min. Rel. Area : 50%
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%
1	I	Chlorobenzene-d5	1.000	1.000	0.0	105
2	S	Toluene-d8	2.255	2.082	7.7	101
3	MCT	Toluene	2.939	2.717	7.6	99
4	CT	Ethylbenzene	3.469	3.230	6.9	100
5	T	m & p-Xylene	2.816	2.621	6.9	99
6	T	Styrene	2.100	1.904	9.3	93
7	T	o-Xylene	1.320	1.206	8.6	98
8	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	103
9	S	4-Bromofluorobenzene	0.912	0.833	8.7	97
10	T	1,2,4-Trimethylbenzene	3.184	2.951	7.3	97

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126303.D
Acq On : 26 Nov 2013 9:08 am
Operator :
Sample : VSTD100
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 09:25:49 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:22:33 2013
Response via : Initial Calibration

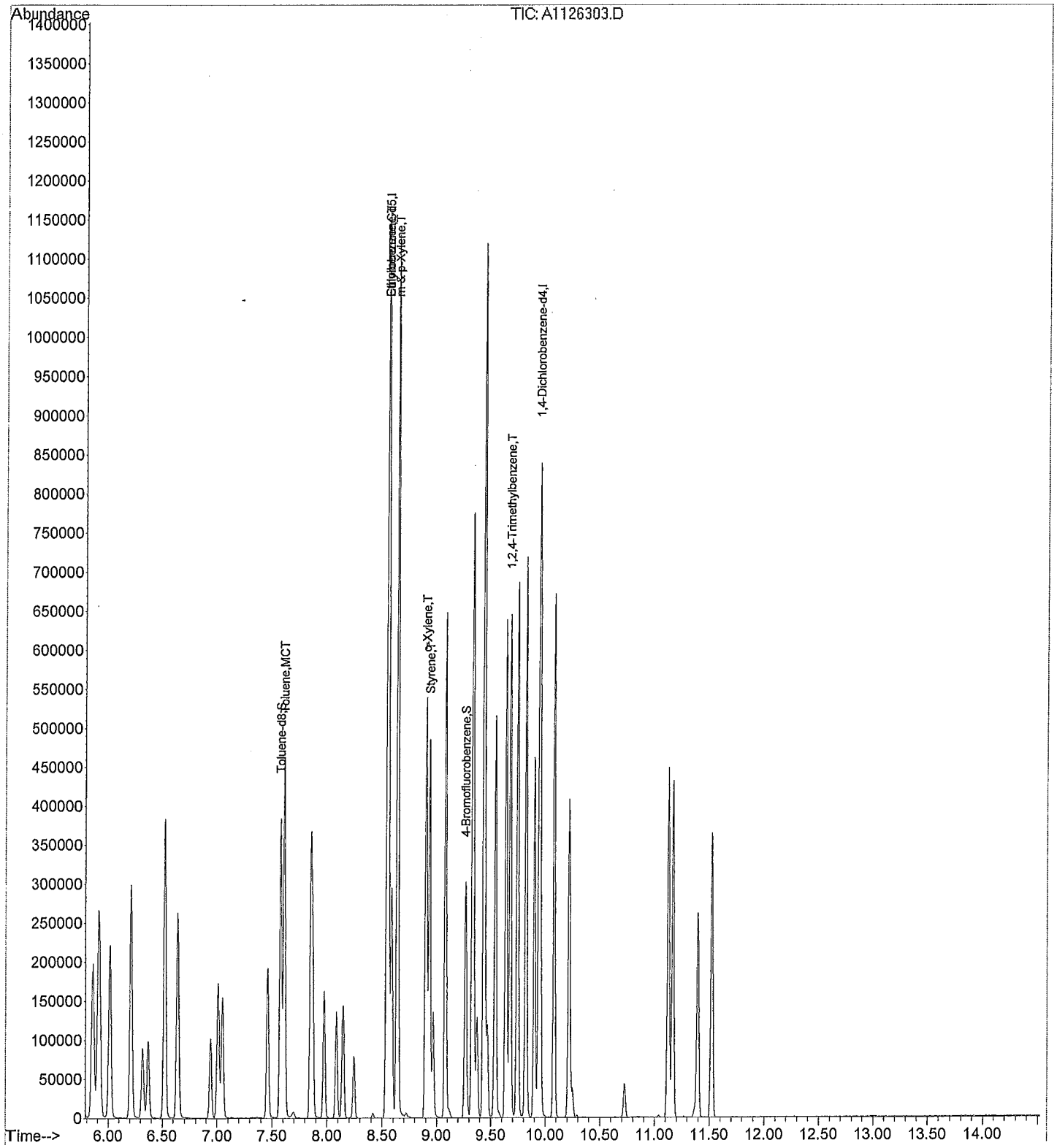
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	119184	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	119770	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.58	98	198472	92.32	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	92.32%	
9) 4-Bromofluorobenzene	9.27	95	79782	91.27	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	91.27%	
Target Compounds						Qvalue
3) Toluene	7.61	91	259051	92.45	ug/Kg	99
4) Ethylbenzene	8.55	91	307976	93.11	ug/Kg	98
5) m & p-Xylene	8.64	91	499896	186.18	ug/Kg	96
6) Styrene	8.93	104	181500	90.66	ug/Kg#	85
7) o-Xylene	8.90	106	114982	91.39	ug/Kg	89
10) 1,2,4-Trimethylbenzene	9.68	105	282743	92.67	ug/Kg	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126303.D
Acq On : 26 Nov 2013 9:08 am
Operator :
Sample : VSTD100
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 26 09:25:49 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:22:33 2013
Response via : Initial Calibration



Instrument Logs/
Analysis Notebook Pages

Rev. 1.1

Run Method = SOIL.m 5uL-ISTD = X0901
Tune = BFBSOIL.u EM = 1718
Tekmar = NB 3167 pg. 34
Quant Method = SOIL_26

1	1	A1125301.d	0.	FLUSH
2	1	A1125302.d	0.	50 NG BFB (2uL-X0885) - Fail
3	1	A1125303.d	0.	50 NG BFB ⊥ - Pass 9:43am
4	1	A1125304.d	0.	VSTD000 Pass
5	1	A1125305.d	0.	VSTD12.5
6	1	A1125306.d	0.	VSTD025
7	1	A1125307.d	0.	VSTD050
8	1	A1125308.d	0.	VSTD100
9	1	A1125309.d	0.	VSTD150
10	1	A1125310.d	0.	VSTD200
11	1	A1125311.d	0.	FLUSH
12	1	A1125312.d	0.	VSTD100/ICV - Pass

IC Passes SOIL_27

US 11/26/13

	ISTD X0901	Sur X0902	IC MIX X0903
VSTD12.5	5uL	0.5uL	0.5uL
025		1	1
050		2	2
100		4	4
150		6	6
200		8	8

ICV = 5uL-X0901; 4uL-X0902; 5uL-X0906

Only target compounds Toluene, Ethylbenzene, m+p-Xylene, Styrene, o-Xylene + 1,2,4-Trimethylbenzene were evaluated.

Continued on Page

Read and Understood By

US — Signed; 11/26/13 — Date; TRC — Signed; 12/4/13 — Date

PROJECT 11/26/13 AGI 8260

Notebook No. 3317 5

Continued from Page

Run Method = SOIL.M
Tune = BFBSOIL.U EM = 1718
Telemar = NB 3167 pg. 34
Quant Method = SOIL_27

5ul - ISTD = X0901
4 ul - Surr = X0902

A1126301.d	0.	FLUSH		8260
A1126302.d	0.	50 NG BFB (2ul-X0907) Pass 8:43am		8260
A1126303.d	0.	VSTD100 (4ul-X0908) Pass		8260
A1126304.d	0.	LCS (5ul-X0906) Pass		8260
A1126305.d	0.	VSTD000 Pass		8260
A1126306.d	0.	006557-01		8260 MAK001C 2.0G
A1126307.d	0.	006557-02		8260 MAK002C 2.0G
A1126308.d	0.	006557-03		8260 MAK004C 2.0G
A1126309.d	0.	006557-04		8260 MAK005C 2.0G
A1126310.d	0.	006557-05		8260 MAK006C 2.0G
A1126311.d	0.	006557-06 No I/S - RE		8260 MAK007C 2.0G
A1126312.d	0.	006557-07 Pass		8260 MAK008C 2.0G
A1126313.d	0.	006557-08		8260 MAK009C 2.0G
A1126314.d	0.	006557-09		8260 MAK010C 2.0G
A1126315.d	0.	006557-12 Areas ↓ - RE		8260 MAK018C 2.0G
A1126316.d	0.	006557-13 Pass		8260 MAK019C 2.0G
A1126317.d	0.	006557-15		8260 MAK022C 2.0G
A1126318.d	0.	006557-16		8260 MAK024C 2.0G
A1126319.d	0.	006557-17		8260 MAK025C 2.0G
A1126320.d	0.	006557-18		8260 MAK026C 2.0G
A1126321.d	0.	006557-19		8260 MAK027C 2.0G
A1126322.d	0.	006557-20	(A)	8260 MAK032C 2.0G

11/27/13

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
	11/27/13		12/4/13

Blank / Field Sample / QC Data

Sample Results

Chromatogram

Quant Report (If applicable)

Confirmation Analysis Quant Report / Chromatogram (If applicable)

Tentatively Identified Compounds (If required)

Rev. 1.1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	NA	ARDL Lab No.:	006557-20K1
Desc/Location:	NA	Lab Filename:	A1126304
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	11/26/2013
Matrix:	QC Material	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Toluene	2.5	12.5	91.6		UG/KG
Ethyl Benzene	2.5	12.5	94.4		UG/KG
m & p-Xylene	5	25	185		UG/KG
Styrene	2.5	12.5	96.2		UG/KG
o-Xylene	2.5	12.5	94.3		UG/KG
1,2,4-Trimethylbenzene	2.5	12.5	92		UG/KG

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	99%
4-Bromofluorobenzene	50-150	96%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Spike Blank for Run 1203JFSW, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126304.D
Acq On : 26 Nov 2013 9:41 am
Operator :
Sample : ~~LCS~~ 006557-20K1
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

DAR 11/27/13

Quant Time: Nov 26 09:58:21 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

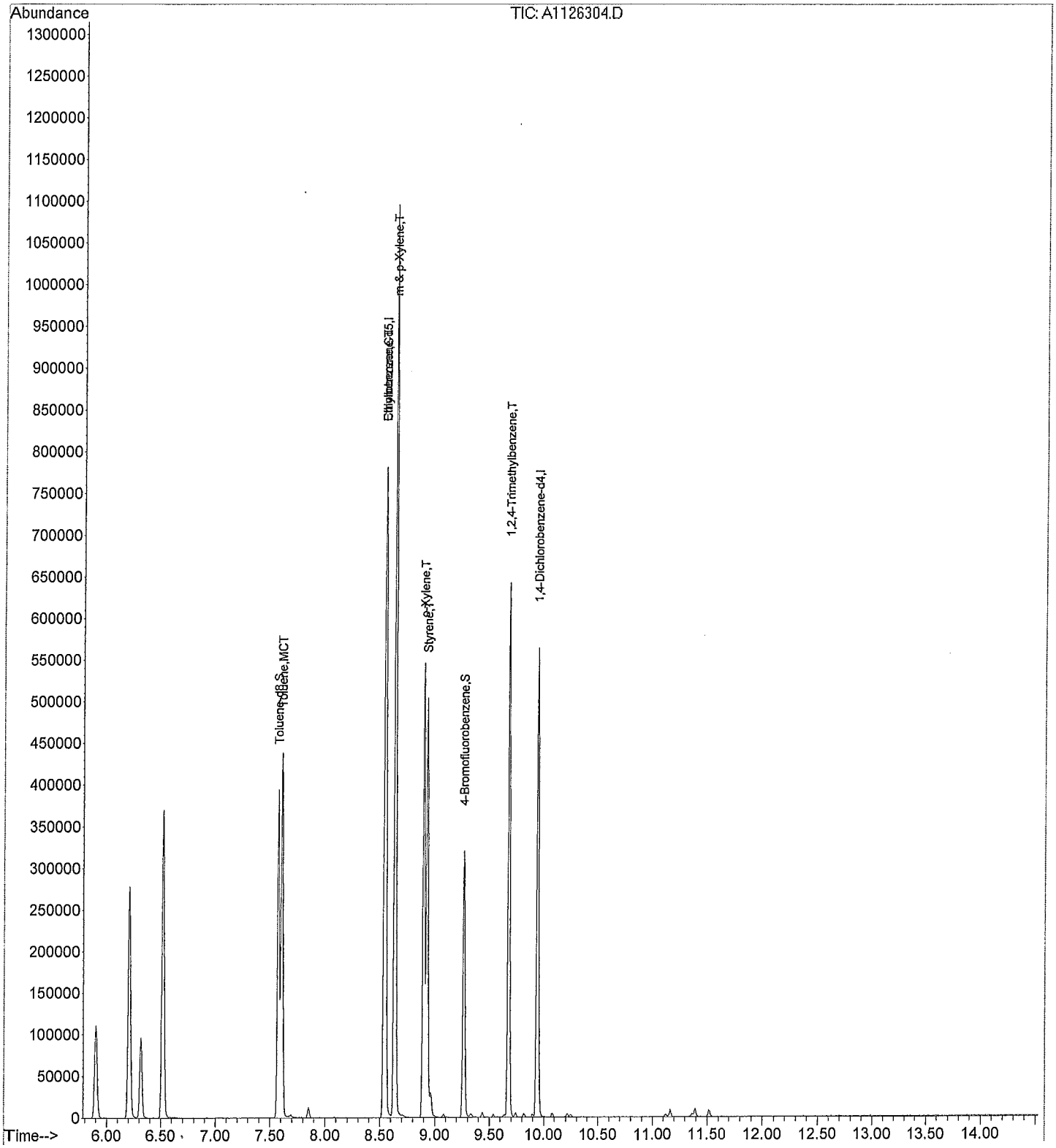
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	116550	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	122706	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.58	98	208317	99.09 ug/Kg	0.00
Spiked Amount 100.000			Recovery =	99.09%	
9) 4-Bromofluorobenzene	9.26	95	86006	96.04 ug/Kg	0.00
Spiked Amount 100.000			Recovery =	96.04%	
Target Compounds					Qvalue
3) Toluene	7.61	91	250938	91.57 ug/Kg	100
4) Ethylbenzene	8.55	91	305481	94.44 ug/Kg	100
5) m & p-Xylene	8.64	91	485336	184.84 ug/Kg	96
6) Styrene	8.93	104	188388	96.22 ug/Kg	88
7) o-Xylene	8.90	106	116038	94.31 ug/Kg	90
10) 1,2,4-Trimethylbenzene	9.67	105	287627	92.02 ug/Kg	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126304.D
Acq On : 26 Nov 2013 9:41 am
Operator :
Sample : ~~LGS~~ 006557-20K1
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1 JJS 11/27/13

Quant Time: Nov 26 09:58:21 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



METHOD BLANK REPORT
ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	NA	ARDL Lab No.:	006557-20B1
Desc/Location:	NA	Lab Filename:	A1126305
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	11/26/2013
Matrix:	QC Material	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Toluene	2.5	12.5	ND		UG/KG
Ethyl Benzene	2.5	12.5	ND		UG/KG
m & p-Xylene	5.0	25.0	ND		UG/KG
Styrene	2.5	12.5	ND		UG/KG
o-Xylene	2.5	12.5	ND		UG/KG
1,2,4-Trimethylbenzene	2.5	12.5	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	106%
4-Bromofluorobenzene	50-150	96%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Blank for Run 1203JFSW, VOLATILES, GC/MS (8260)

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126305.D
Acq On : 26 Nov 2013 10:15 am
Operator :
Sample : ~~VSTD000~~ Q06557-20B1
Misc : 8260
ALS Vial : 2 Sample Multiplier: 1 JDS 12/02/13

Quant Time: Dec 02 14:54:21 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	97035	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	105818	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.58	98	185596	106.04 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 106.04%	
9) 4-Bromofluorobenzene	9.26	95	74101	95.95 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 95.95%	

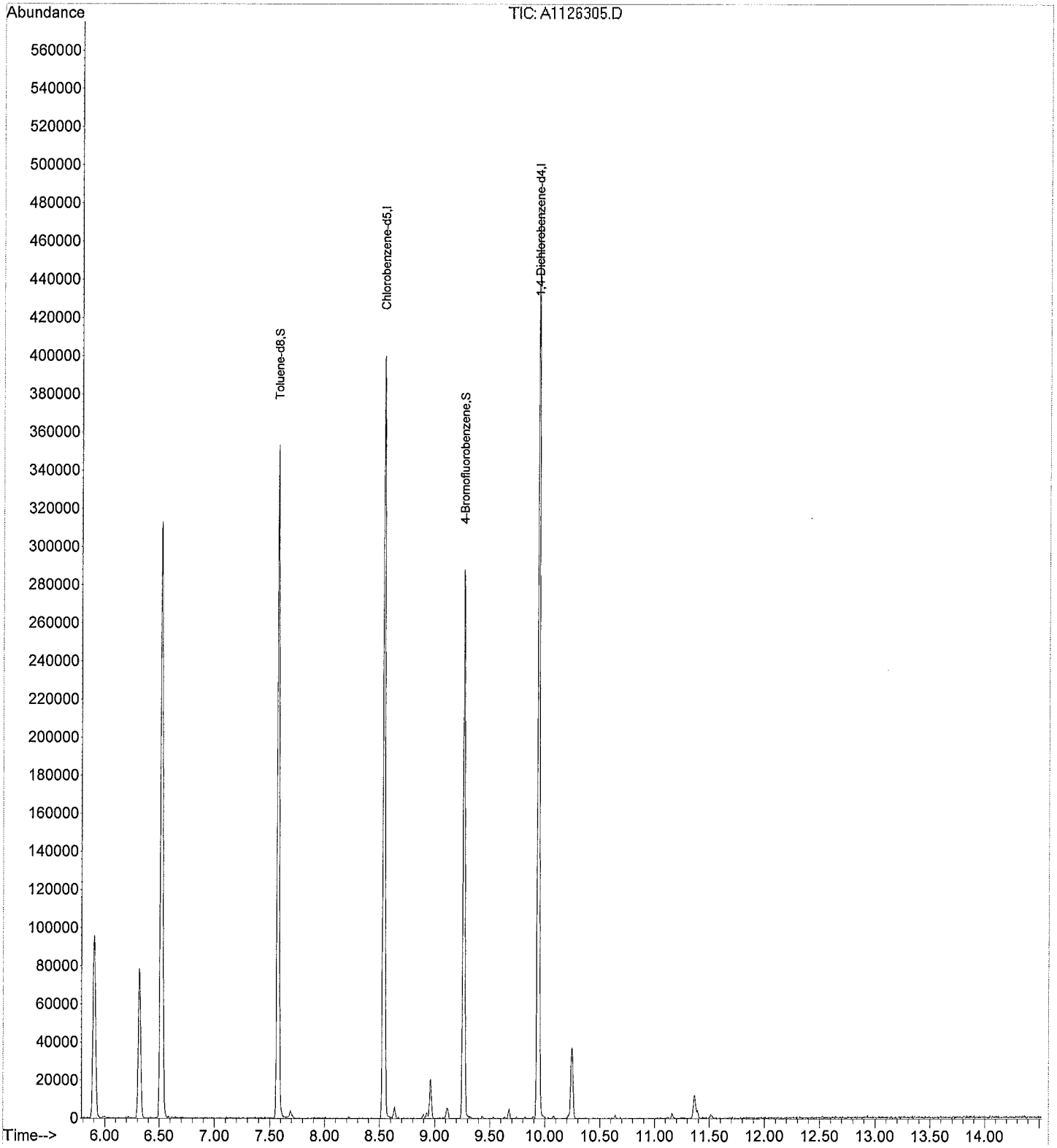
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126305.D
Acq On : 26 Nov 2013 10:15 am
Operator :
Sample : ~~VSTD000~~ 006557-20B1
Misc : 8260
ALS Vial : 2 Sample Multiplier: 1 JAB 12/02/13

Quant Time: Dec 02 14:54:21 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK001C	ARDL Lab No.:	006557-01
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126306
Sample Date:	09/09/2013	Received Date:	10/23/2013
Sample Time:	1403	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	100%
4-Bromofluorobenzene	50-150	101%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-01, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126306.D
Acq On : 26 Nov 2013 10:47 am
Operator :
Sample : 006557-01
Misc : 8260 MAK001C 2.0G
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Dec 02 14:54:51 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	130416	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	132665	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	234435	99.66	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 99.66%			
9) 4-Bromofluorobenzene	9.26	95	97528	100.73	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 100.73%			

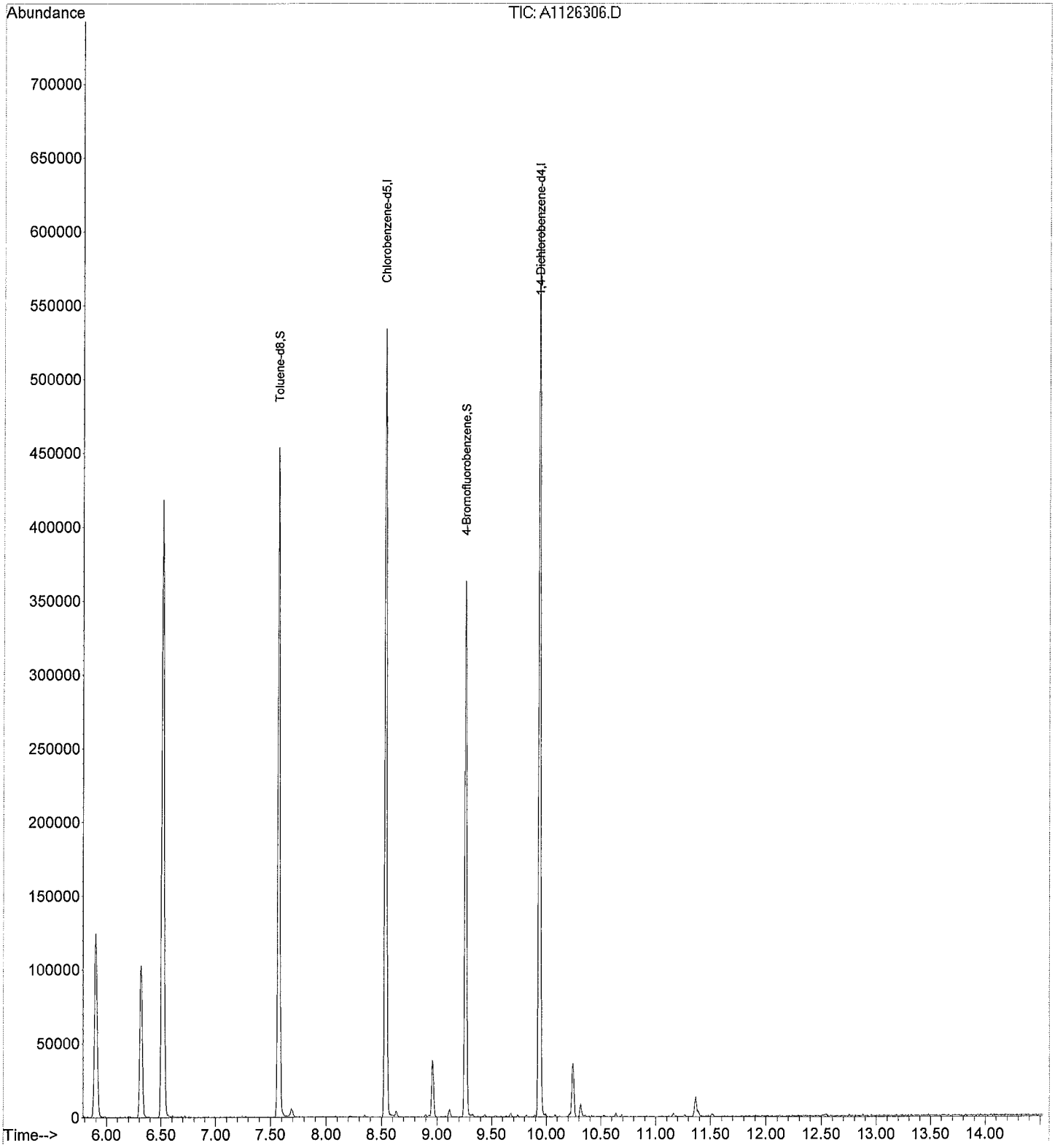
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126306.D
Acq On : 26 Nov 2013 10:47 am
Operator :
Sample : 006557-01
Misc : 8260 MAK001C 2.0G
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Dec 02 14:54:51 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK002C	ARDL Lab No.:	006557-02
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126307
Sample Date:	09/09/2013	Received Date:	10/23/2013
Sample Time:	1227	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	125%
4-Bromofluorobenzene	50-150	122%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126307.D
Acq On : 26 Nov 2013 11:15 am
Operator :
Sample : 006557-02
Misc : 8260 MAK002C 2.0G
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 11:32:04 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	99854	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	102668	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	225236	125.05	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	125.05%	
9) 4-Bromofluorobenzene	9.26	95	91061	121.53	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	121.53%	

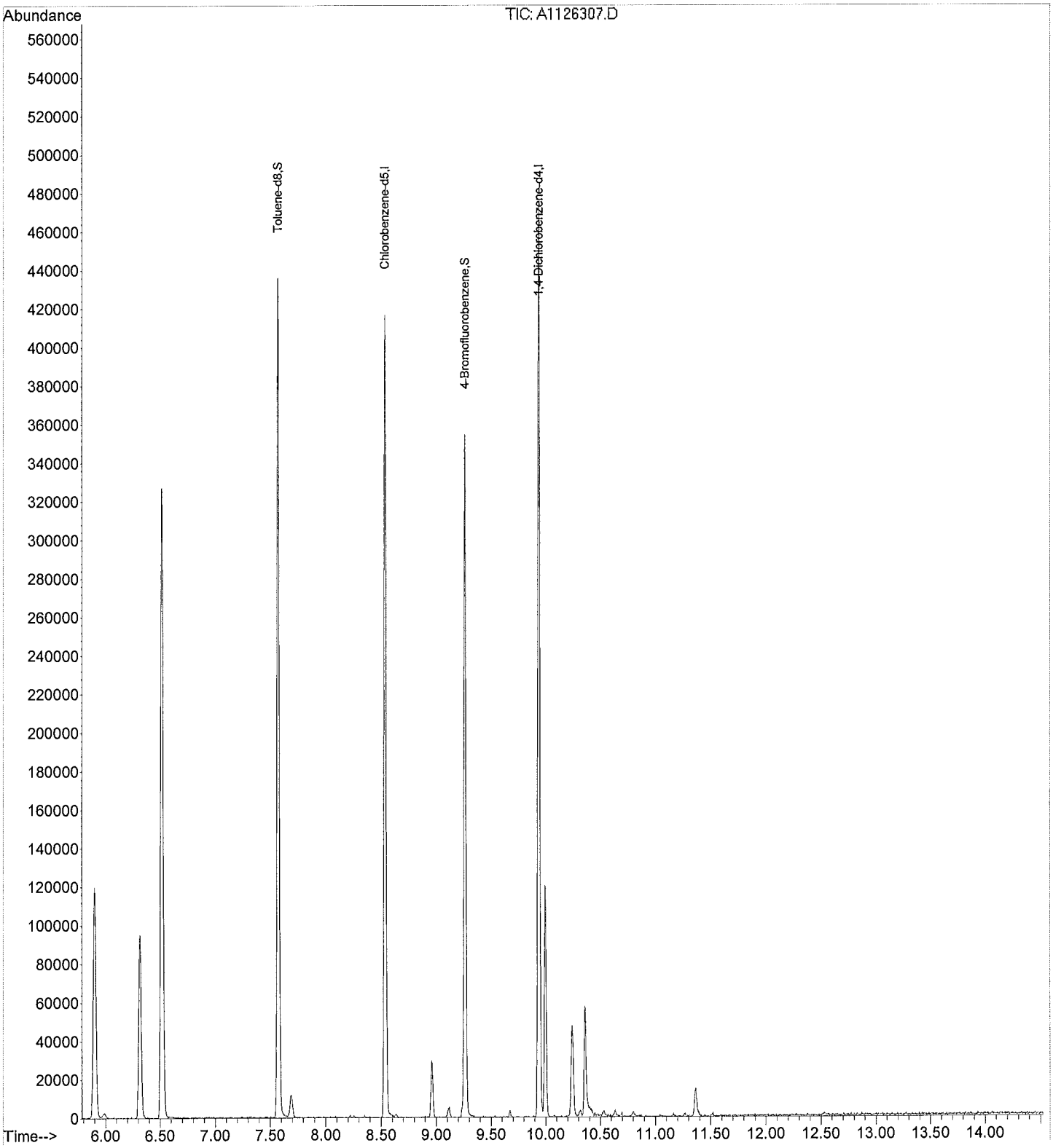
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126307.D
Acq On : 26 Nov 2013 11:15 am
Operator :
Sample : 006557-02
Misc : 8260 MAK002C 2.0G
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 26 11:32:04 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



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Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK004C	ARDL Lab No.:	006557-03
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126308
Sample Date:	09/09/2013	Received Date:	10/23/2013
Sample Time:	1420	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	109%
4-Bromofluorobenzene	50-150	105%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-03, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126308.D
Acq On : 26 Nov 2013 11:42 am
Operator :
Sample : 006557-03
Misc : 8260 MAK004C 2.0G
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 26 11:57:24 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	116518	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	126763	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	228105	108.53	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	108.53%	
9) 4-Bromofluorobenzene	9.26	95	97367	105.24	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	105.24%	

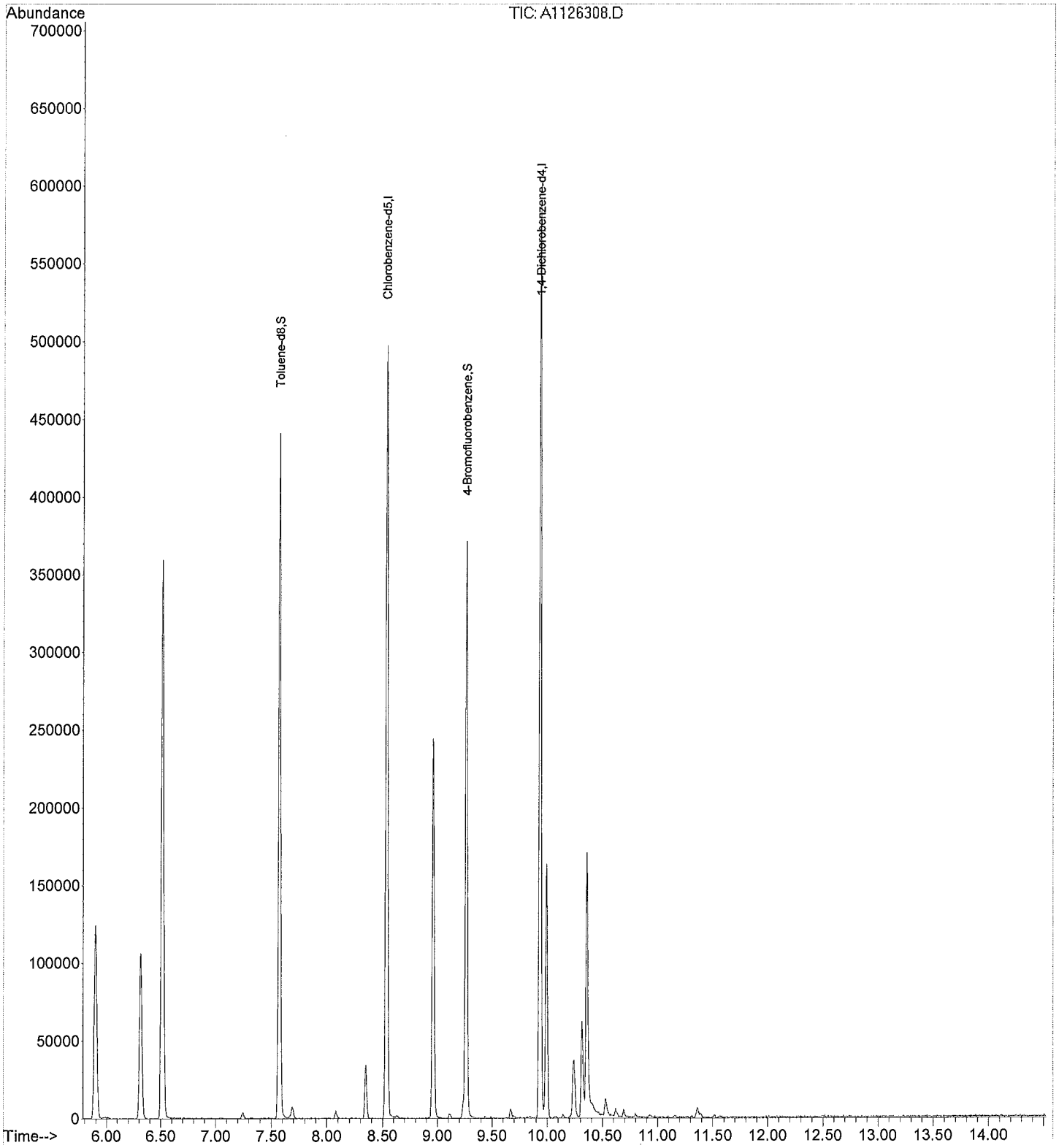
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126308.D
Acq On : 26 Nov 2013 11:42 am
Operator :
Sample : 006557-03
Misc : 8260 MAK004C 2.0G
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 26 11:57:24 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK005C	ARDL Lab No.:	006557-04
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126309
Sample Date:	09/09/2013	Received Date:	10/23/2013
Sample Time:	1514	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	130%
4-Bromofluorobenzene	50-150	125%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-04, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126309.D
Acq On : 26 Nov 2013 12:12 pm
Operator :
Sample : 006557-04
Misc : 8260 MAK005C 2.0G
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 26 13:22:46 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	88030	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	92428	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	206408	129.99	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	129.99%	
9) 4-Bromofluorobenzene	9.26	95	84412	125.13	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	125.13%	

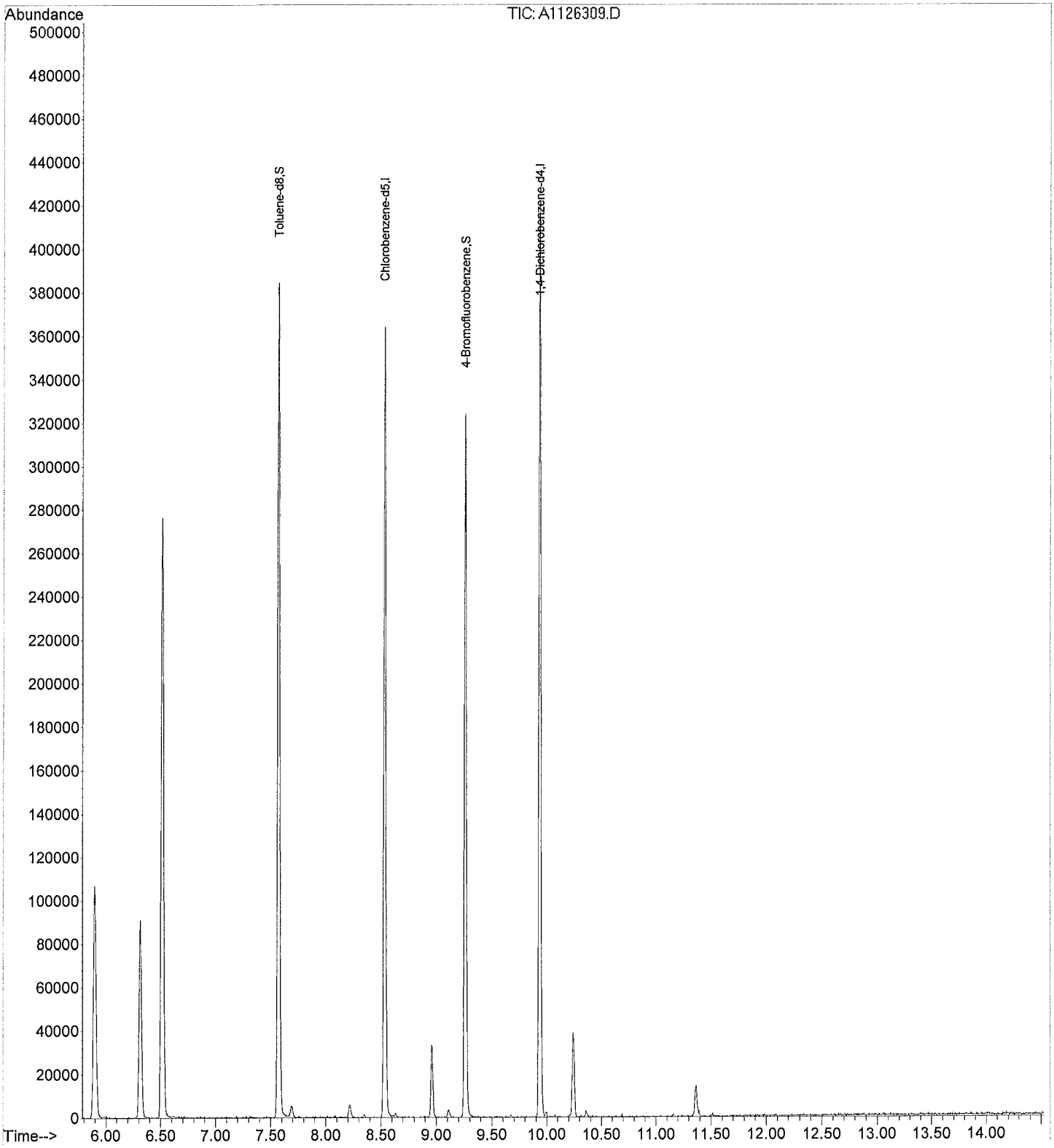
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126309.D
Acq On : 26 Nov 2013 12:12 pm
Operator :
Sample : 006557-04
Misc : 8260 MAK005C 2.0G
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 26 13:22:46 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK006C	ARDL Lab No.:	006557-05
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126310
Sample Date:	09/11/2013	Received Date:	10/23/2013
Sample Time:	1005	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	114%
4-Bromofluorobenzene	50-150	114%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-05, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126310.D
Acq On : 26 Nov 2013 12:42 pm
Operator :
Sample : 006557-05
Misc : 8260 MAK006C 2.0G
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 26 13:23:01 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	104503	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	109997	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	215741	114.45	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	114.45%	
9) 4-Bromofluorobenzene	9.26	95	91494	113.97	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	113.97%	

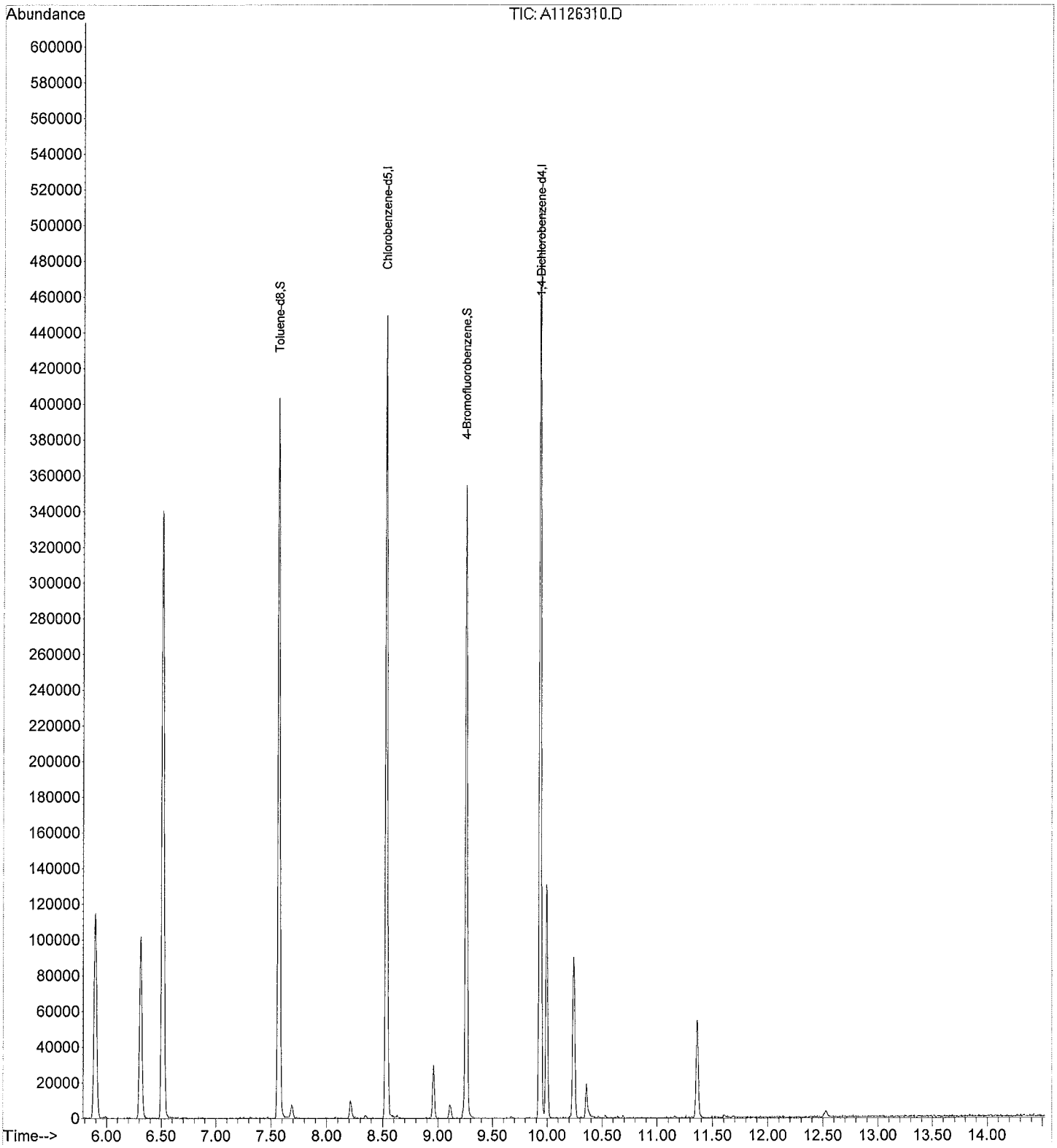
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126310.D
Acq On : 26 Nov 2013 12:42 pm
Operator :
Sample : 006557-05
Misc : 8260 MAK006C 2.0G
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 26 13:23:01 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



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400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK008C	ARDL Lab No.:	006557-07
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126312
Sample Date:	09/11/2013	Received Date:	10/23/2013
Sample Time:	1115	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	110%
4-Bromofluorobenzene	50-150	101%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-07, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126312.D
Acq On : 26 Nov 2013 1:53 pm
Operator :
Sample : 006557-07
Misc : 8260 MAK008C 2.0G
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 26 14:08:23 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	96961	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	98037	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	192449	110.04	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	110.04%	
9) 4-Bromofluorobenzene	9.26	95	72291	101.03	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	101.03%	

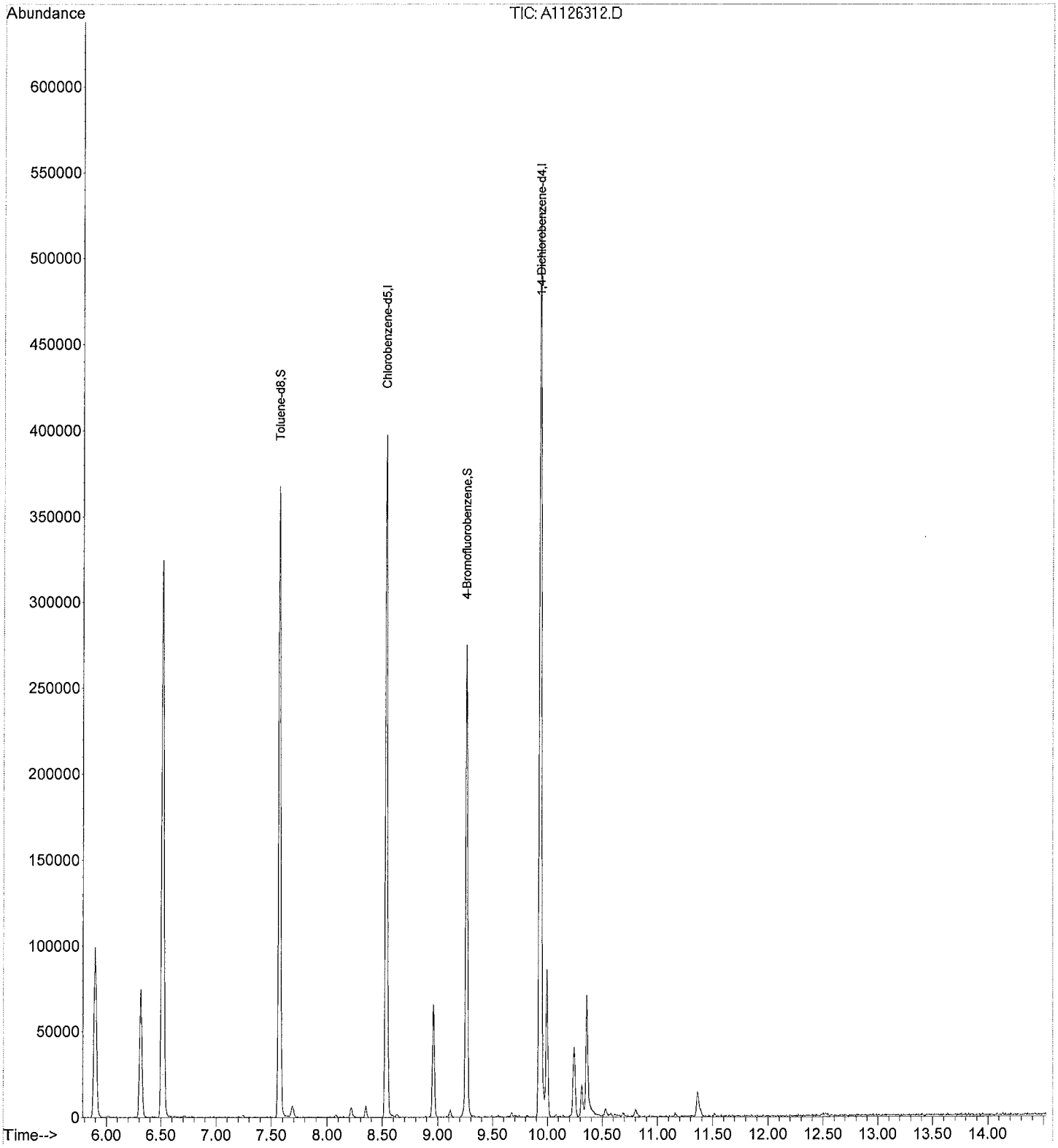
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126312.D
Acq On : 26 Nov 2013 1:53 pm
Operator :
Sample : 006557-07
Misc : 8260 MAK008C 2.0G
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 26 14:08:23 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



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Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK009C	ARDL Lab No.:	006557-08
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126313
Sample Date:	09/11/2013	Received Date:	10/23/2013
Sample Time:	1126	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	113%
4-Bromofluorobenzene	50-150	113%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-08, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126313.D
Acq On : 26 Nov 2013 2:21 pm
Operator :
Sample : 006557-08
Misc : 8260 MAK009C 2.0G
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 26 14:48:54 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	104935	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	108202	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	213459	112.78	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	112.78%	
9) 4-Bromofluorobenzene	9.26	95	89467	113.29	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	113.29%	

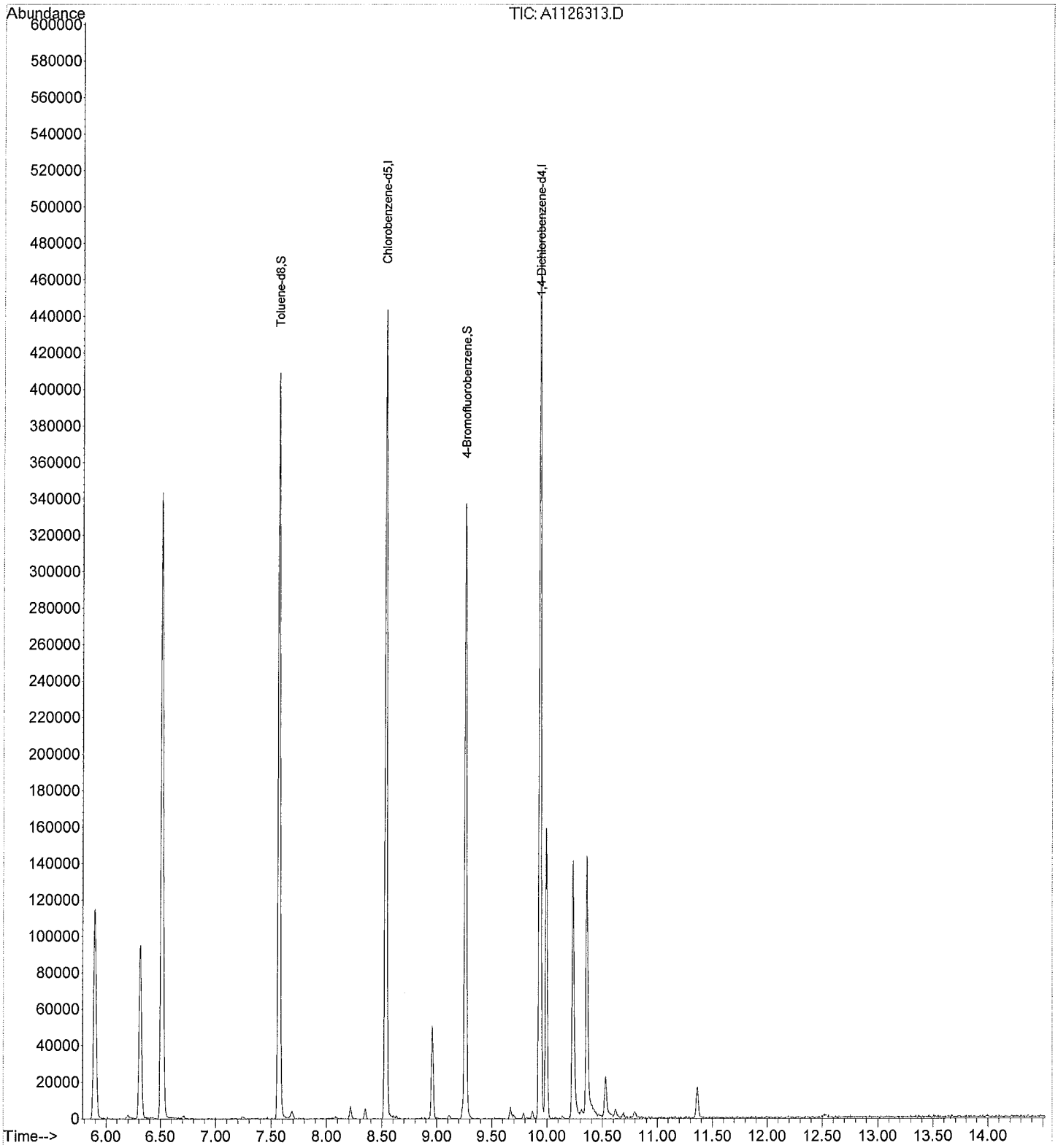
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126313.D
Acq On : 26 Nov 2013 2:21 pm
Operator :
Sample : 006557-08
Misc : 8260 MAK009C 2.0G
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 26 14:48:54 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



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Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK010C	ARDL Lab No.:	006557-09
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126314
Sample Date:	09/13/2013	Received Date:	10/23/2013
Sample Time:	1128	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	110%
4-Bromofluorobenzene	50-150	106%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-09, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126314.D
Acq On : 26 Nov 2013 2:49 pm
Operator :
Sample : 006557-09
Misc : 8260 MAK010C 2.0G
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 26 15:06:06 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	112574	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	118897	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	222513	109.58	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	109.58%	
9) 4-Bromofluorobenzene	9.26	95	92270	106.33	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	106.33%	

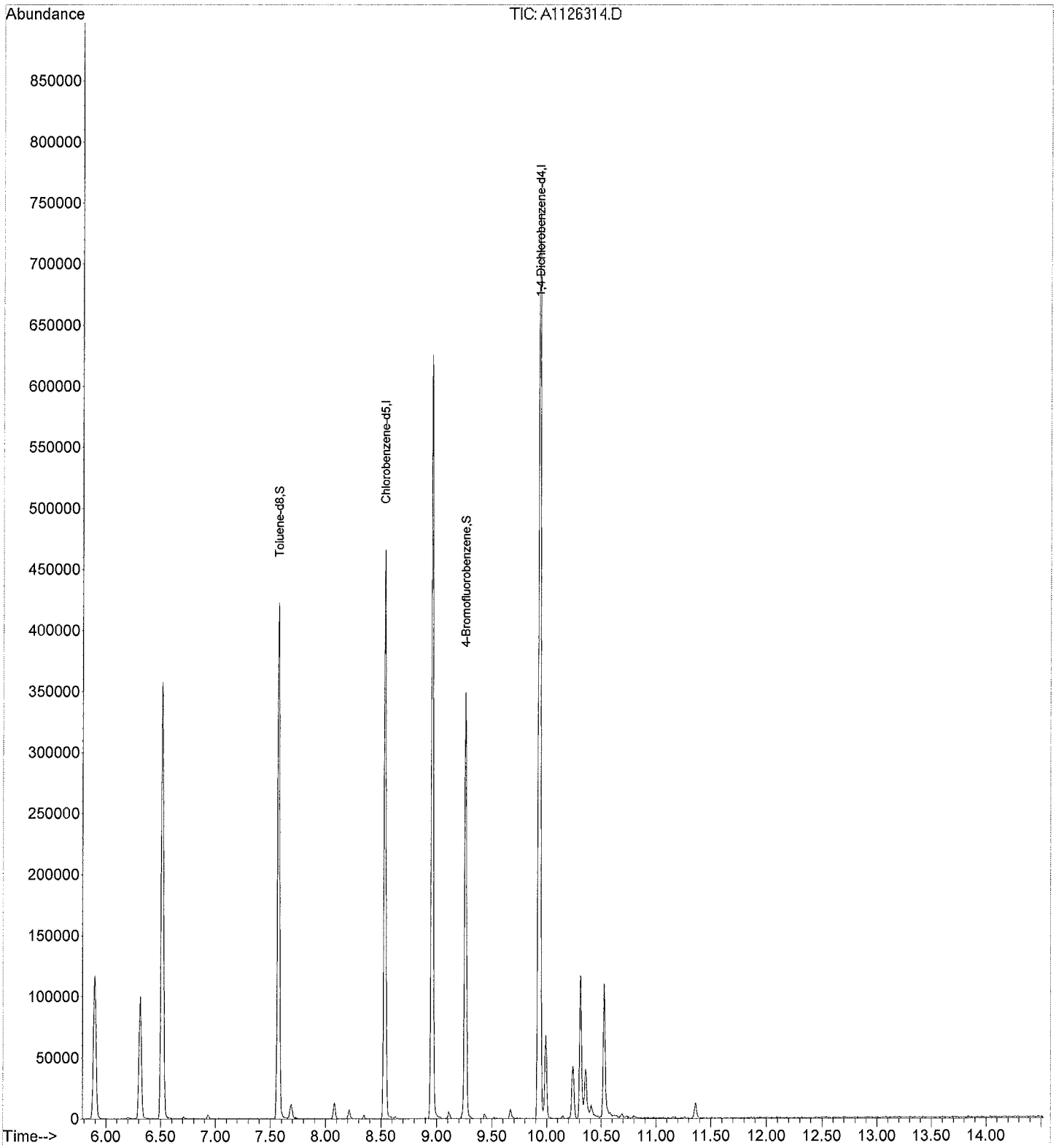
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126314.D
Acq On : 26 Nov 2013 2:49 pm
Operator :
Sample : 006557-09
Misc : 8260 MAK010C 2.0G
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 26 15:06:06 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



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Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK019C	ARDL Lab No.:	006557-13
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126316
Sample Date:	09/16/2013	Received Date:	10/23/2013
Sample Time:	0915	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	115%
4-Bromofluorobenzene	50-150	105%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-13, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126316.D
Acq On : 26 Nov 2013 3:48 pm
Operator :
Sample : 006557-13
Misc : 8260 MAK019C 2.0G
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 02 14:55:45 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	76950	125.00	ug/Kg	-0.01
8) 1,4-Dichlorobenzene-d4	9.94	152	69759	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	159717	115.07	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	115.07%	
9) 4-Bromofluorobenzene	9.26	95	53573	105.22	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	105.22%	

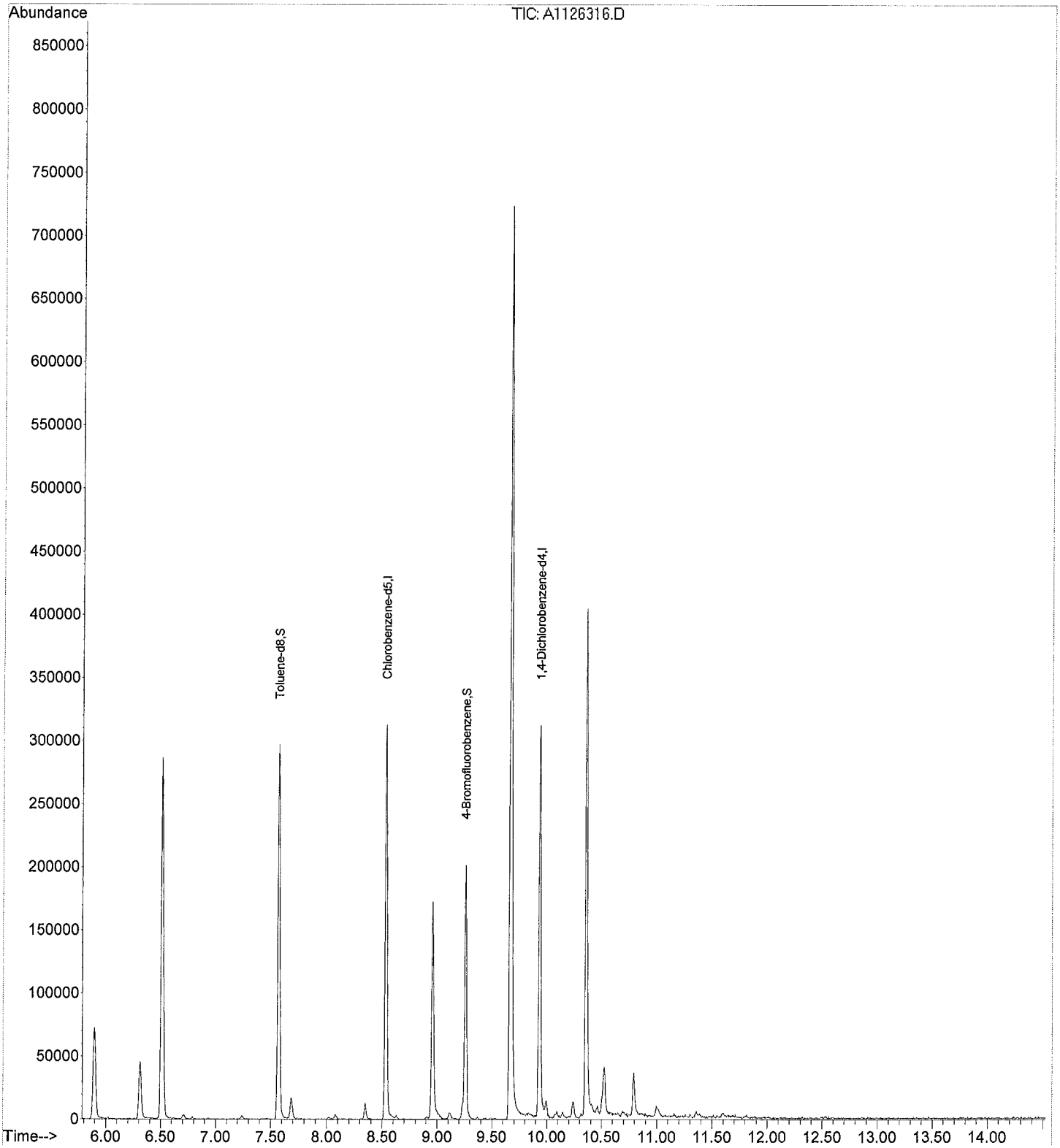
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126316.D
Acq On : 26 Nov 2013 3:48 pm
Operator :
Sample : 006557-13
Misc : 8260 MAK019C 2.0G
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 02 14:55:45 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



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Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK022C	ARDL Lab No.:	006557-15
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126317
Sample Date:	09/16/2013	Received Date:	10/23/2013
Sample Time:	1150	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	111%
4-Bromofluorobenzene	50-150	112%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-15, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126317.D
Acq On : 26 Nov 2013 4:18 pm
Operator :
Sample : 006557-15
Misc : 8260 MAK022C 2.0G
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 02 14:56:06 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	88171	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	78354	125.00	ug/Kg	-0.01
System Monitoring Compounds						
2) Toluene-d8	7.57	98	176561	111.02	ug/Kg	-0.01
Spiked Amount 100.000			Recovery	=	111.02%	
9) 4-Bromofluorobenzene	9.26	95	63940	111.81	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	111.81%	

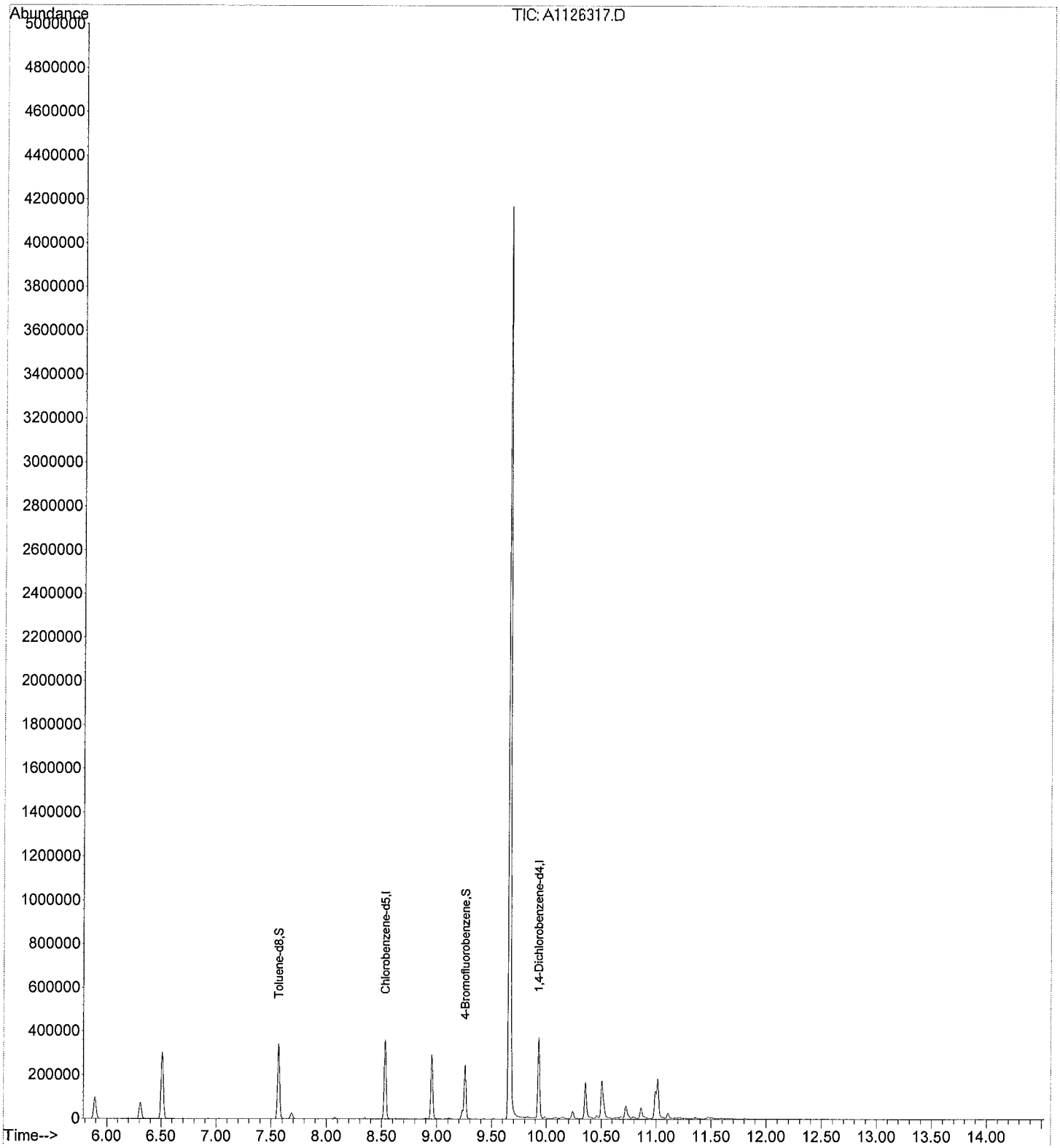
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126317.D
Acq On : 26 Nov 2013 4:18 pm
Operator :
Sample : 006557-15
Misc : 8260 MAK022C 2.0G
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 02 14:56:06 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



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Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK024C	ARDL Lab No.:	006557-16
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126318
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	0830	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	117%
4-Bromofluorobenzene	50-150	111%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-16, VOLATILES, GC/MS (8260)

Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126318.D
Acq On : 26 Nov 2013 4:48 pm
Operator :
Sample : 006557-16
Misc : 8260 MAK024C 2.0G
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 27 08:30:23 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	92598	125.00	ug/Kg	-0.01
8) 1,4-Dichlorobenzene-d4	9.93	152	91345	125.00	ug/Kg	-0.01
System Monitoring Compounds						
2) Toluene-d8	7.57	98	194657	116.54	ug/Kg	-0.01
Spiked Amount 100.000			Recovery	=	116.54%	
9) 4-Bromofluorobenzene	9.25	95	73797	110.69	ug/Kg	-0.01
Spiked Amount 100.000			Recovery	=	110.69%	

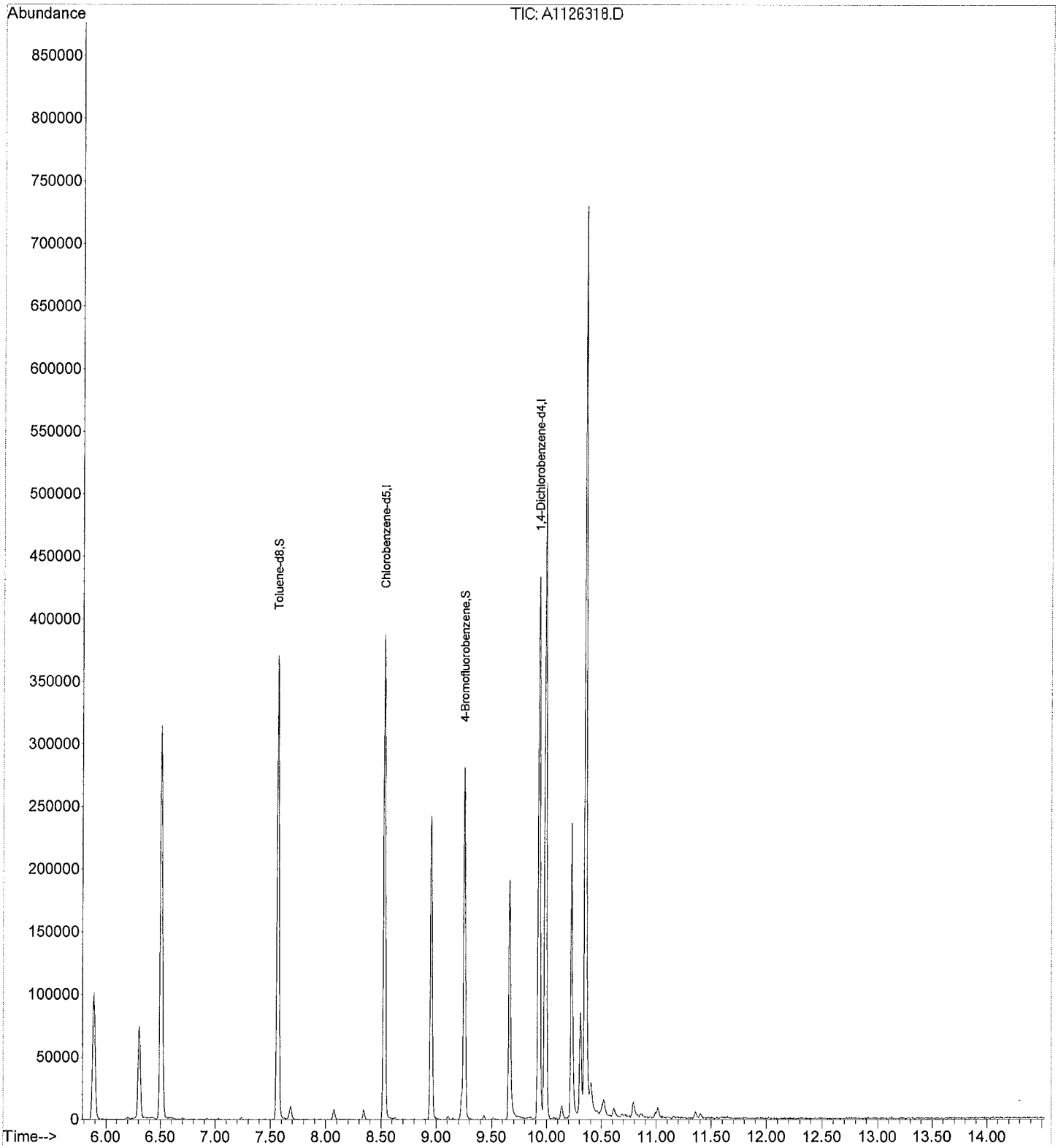
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126318.D
Acq On : 26 Nov 2013 4:48 pm
Operator :
Sample : 006557-16
Misc : 8260 MAK024C 2.0G
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 27 08:30:23 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



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Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK025C	ARDL Lab No.:	006557-17
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126319
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	0906	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	106%
4-Bromofluorobenzene	50-150	102%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-17, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126319.D
Acq On : 26 Nov 2013 5:18 pm
Operator :
Sample : 006557-17
Misc : 8260 MAK025C 2.0G
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 27 08:30:29 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	102996	125.00	ug/Kg	-0.01
8) 1,4-Dichlorobenzene-d4	9.93	152	106311	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	197446	106.28	ug/Kg	-0.01
Spiked Amount 100.000			Recovery	=	106.28%	
9) 4-Bromofluorobenzene	9.26	95	79108	101.96	ug/Kg	0.00
Spiked Amount 100.000			Recovery	=	101.96%	

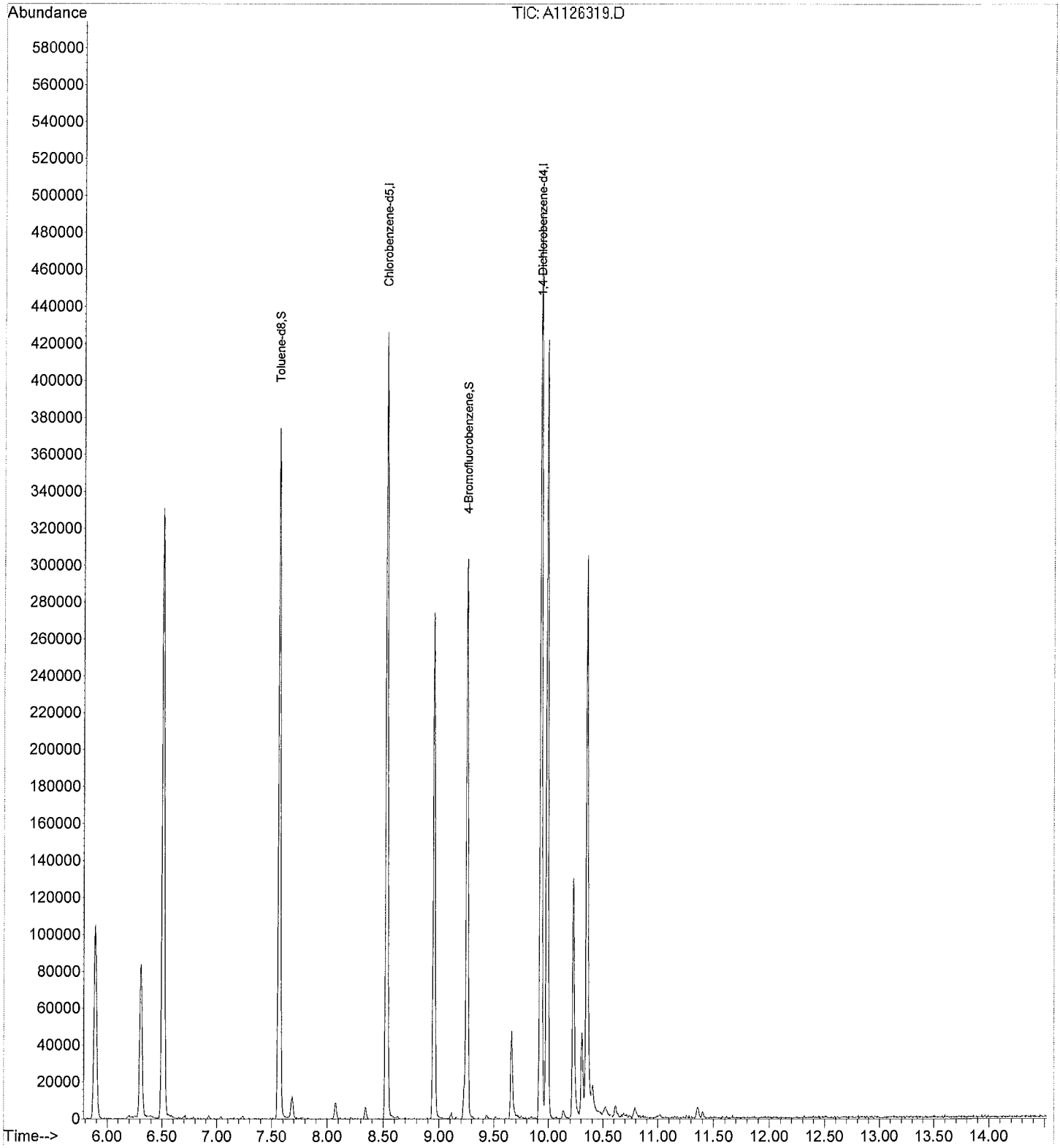
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126319.D
Acq On : 26 Nov 2013 5:18 pm
Operator :
Sample : 006557-17
Misc : 8260 MAK025C 2.0G
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 27 08:30:29 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK026C	ARDL Lab No.:	006557-18
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126320
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	1018	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	109%
4-Bromofluorobenzene	50-150	106%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-18, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126320.D
Acq On : 26 Nov 2013 5:47 pm
Operator :
Sample : 006557-18
Misc : 8260 MAK026C 2.0G
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 27 08:30:34 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	99153	125.00	ug/Kg	-0.01
8) 1,4-Dichlorobenzene-d4	9.93	152	98434	125.00	ug/Kg	-0.01
System Monitoring Compounds						
2) Toluene-d8	7.57	98	195067	109.07	ug/Kg	-0.01
Spiked Amount 100.000			Recovery	=	109.07%	
9) 4-Bromofluorobenzene	9.25	95	75838	105.56	ug/Kg	-0.01
Spiked Amount 100.000			Recovery	=	105.56%	

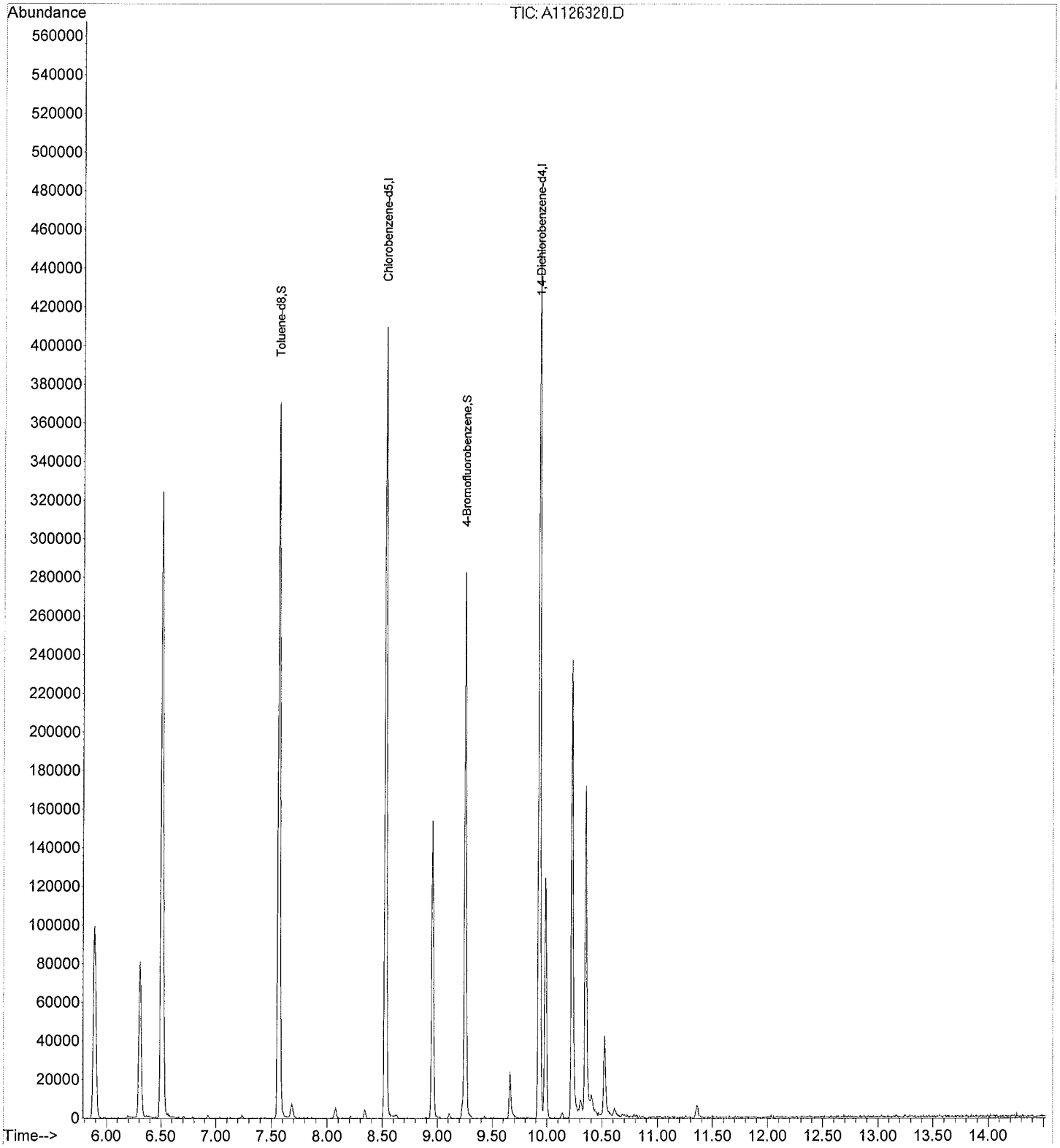
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126320.D
Acq On : 26 Nov 2013 5:47 pm
Operator :
Sample : 006557-18
Misc : 8260 MAK026C 2.0G
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 27 08:30:34 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK027C	ARDL Lab No.:	006557-19
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126321
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	1140	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	105%
4-Bromofluorobenzene	50-150	107%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-19, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126321.D
Acq On : 26 Nov 2013 6:15 pm
Operator :
Sample : 006557-19
Misc : 8260 MAK027C 2.0G
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 27 08:30:42 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	94019	125.00	ug/Kg	-0.01
8) 1,4-Dichlorobenzene-d4	9.93	152	90699	125.00	ug/Kg	-0.01
System Monitoring Compounds						
2) Toluene-d8	7.57	98	178490	105.25	ug/Kg	-0.01
Spiked Amount 100.000			Recovery	=	105.25%	
9) 4-Bromofluorobenzene	9.25	95	71096	107.40	ug/Kg	-0.01
Spiked Amount 100.000			Recovery	=	107.40%	

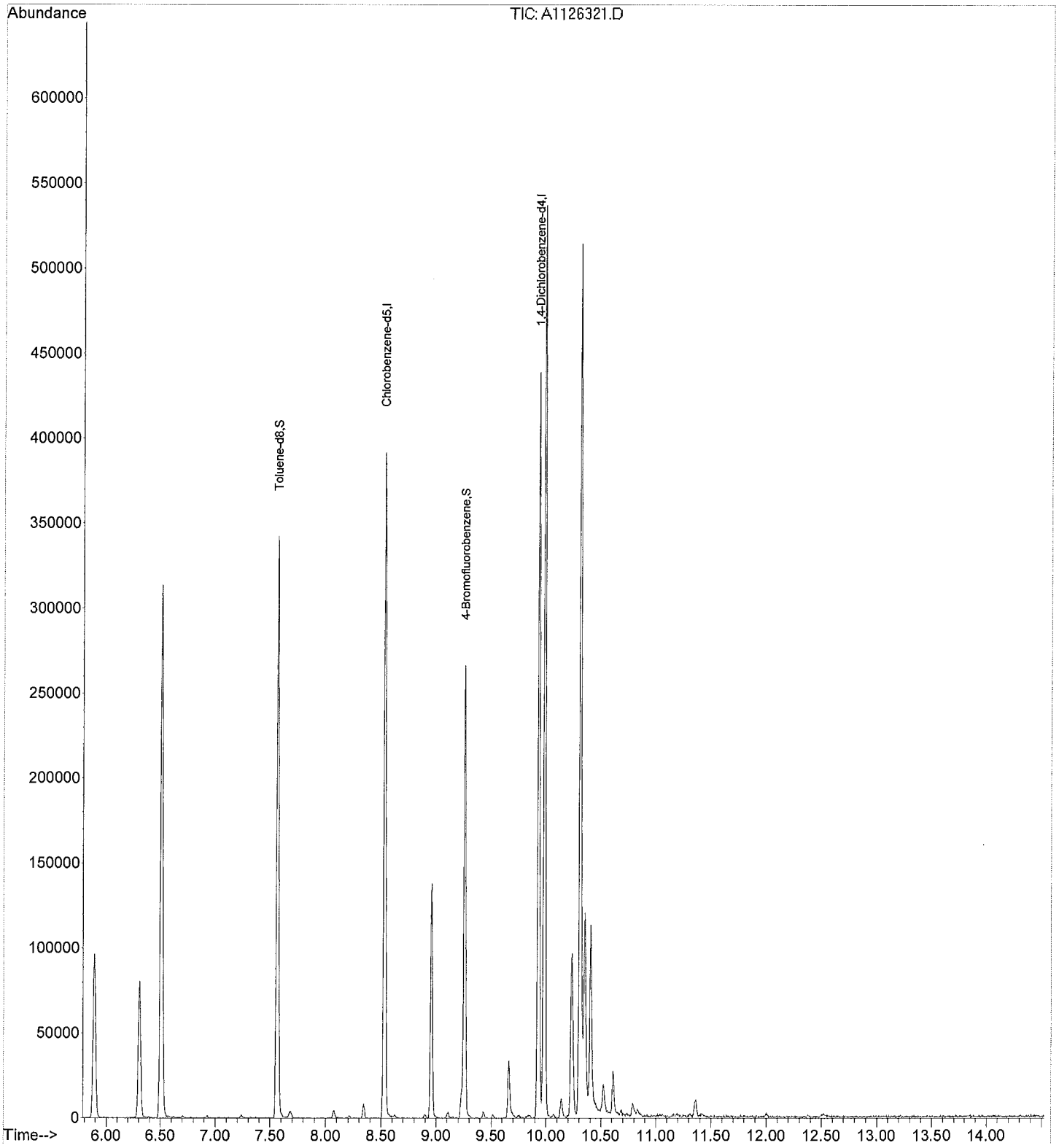
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126321.D
Acq On : 26 Nov 2013 6:15 pm
Operator :
Sample : 006557-19
Misc : 8260 MAK027C 2.0G
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 27 08:30:42 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK032C	ARDL Lab No.:	006557-20
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1126322
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	1210	Prep. Date:	11/26/2013
Matrix:	TISSUE	Analysis Date:	11/26/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	107%
4-Bromofluorobenzene	50-150	100%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-20, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126322.D
Acq On : 26 Nov 2013 6:42 pm
Operator :
Sample : 006557-20
Misc : 8260 MAK032C 2.0G
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 27 08:30:47 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	99386	125.00 ug/Kg	-0.01
8) 1,4-Dichlorobenzene-d4	9.93	152	100691	125.00 ug/Kg	-0.01
System Monitoring Compounds					
2) Toluene-d8	7.57	98	191331	106.73 ug/Kg	-0.01
Spiked Amount 100.000			Recovery	= 106.73%	
9) 4-Bromofluorobenzene	9.25	95	73299	99.74 ug/Kg	-0.01
Spiked Amount 100.000			Recovery	= 99.74%	

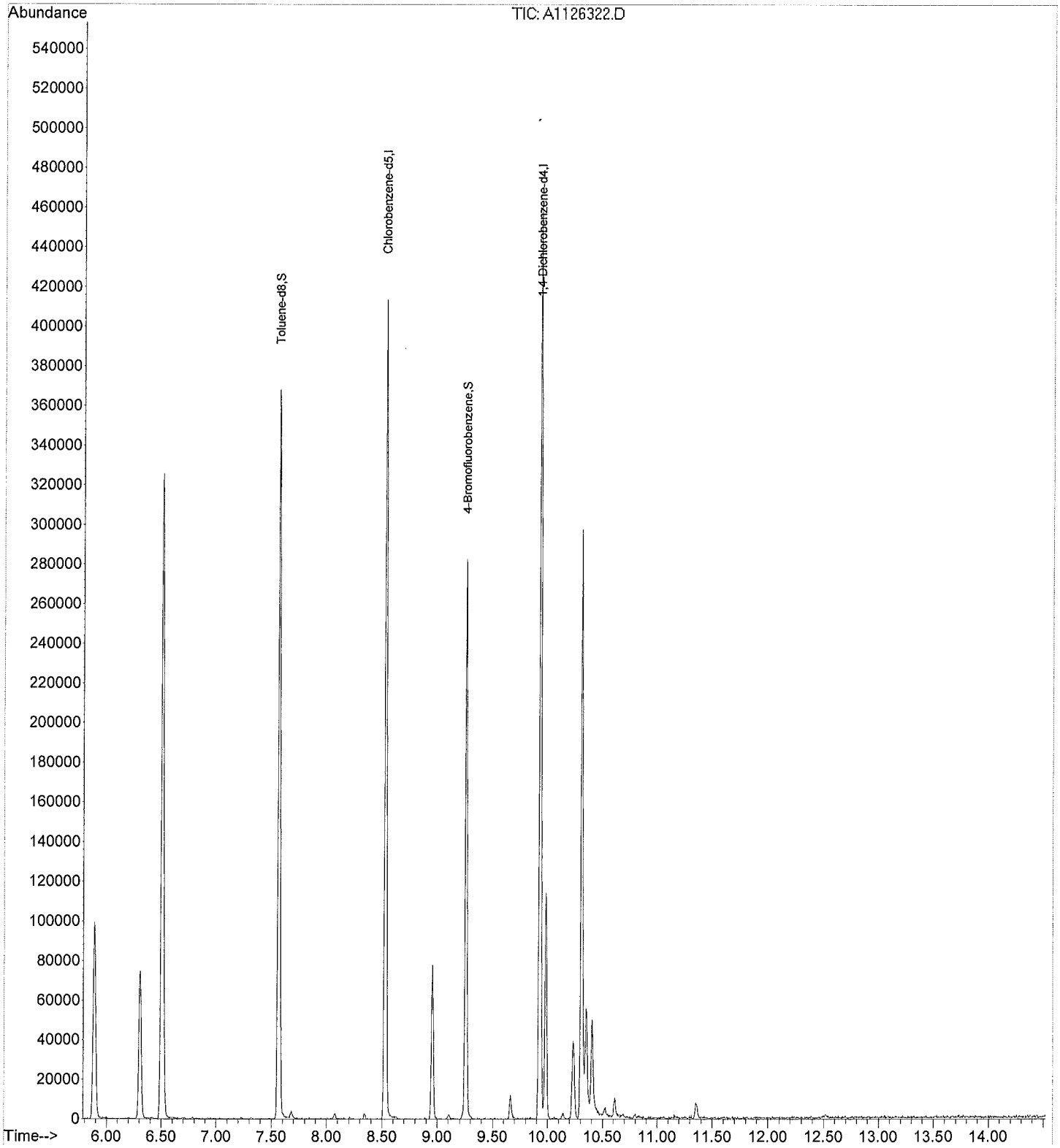
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112613\
Data File : A1126322.D
Acq On : 26 Nov 2013 6:42 pm
Operator :
Sample : 006557-20
Misc : 8260 MAK032C 2.0G
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 27 08:30:47 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Tue Nov 26 09:25:52 2013
Response via : Initial Calibration



Analytical Run Number 2

Calibration Information

Tune Data (If applicable)

Initial Calibration (If different than Initial Calibration in Run 1)
- Calibration Factor Summary
- Chromatogram
- Quant Report (If applicable)

Continuing Calibration
- Calibration Response Check
- Chromatogram
- Quant Report (If applicable)

Instrument Logs/Analysis Notebook Pages

Blank / Field Sample / QC Data

Sample Results
Chromatogram
Quant Report (If applicable)
Confirmation Analysis Quant Report / Chromatogram (If applicable)
Tentatively Identified Compounds (If required)

Rev. 1.1

Calibration Information

Tune Data (If applicable)

Initial Calibration (If different than Initial Calibration in Run 1)
- Calibration Factor Summary
- Chromatogram
- Quant Report (If applicable)

Continuing Calibration
- Calibration Response Check
- Chromatogram
- Quant Report (If applicable)

Rev. 1.1

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: --- SAS No.: --- SDG No.: ---

Lab File ID: A1127302 BFB Injection Date: 11/27/13

Instrument ID: AG1 BFB Injection Time: 09:05

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	13.4	
75	30.0 - 66.0% of mass 95	46.0	
95	Base Peak, 100% relative abundance	100.	
96	5.0 - 9.0% of mass 95	6.1	
173	Less than 2.0% of mass 174	0.0	(1)
174	Greater than 50.0% of mass 95	85.0	
175	4.0 - 9.0% of mass 174	8.0	(1)
176	Greater than 93.0%, but less that 101.0% of mass 174	96.8	(1)
177	5.0 - 9.0% of mass 176	6.7	(2)

(1)-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

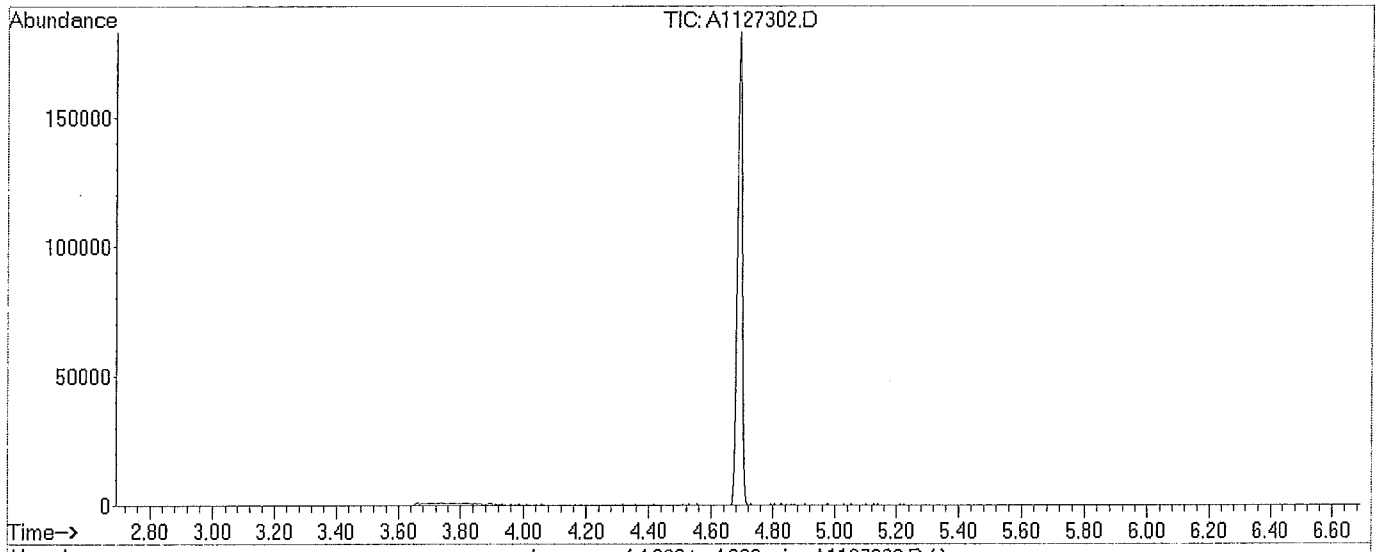
	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VOA STD	100 STD	A1127303	11/27/13	09:31
2	SPBK 11/27/13	006558-02K1	A1127304	11/27/13	10:02
3	BK 11/27/13	006558-02B1	A1127305	11/27/13	10:43
4	MAK007C	006557-06	A1127306	11/27/13	11:18
5	MAK014C	006557-10	A1127307	11/27/13	11:46
6	MAK015C	006557-11	A1127308	11/27/13	12:13
7	MAK018C	006557-12	A1127309	11/27/13	12:44
8	MAK020C	006557-14	A1127310	11/27/13	13:14
9	MAK032CMS	006557-20MS	A1127311	11/27/13	13:44
10	MAK032CMSD	006557-20MD	A1127312	11/27/13	14:12
11	MAK029C	006558-01	A1127313	11/27/13	14:39
12	MAK030C	006558-02	A1127314	11/27/13	15:06
13	MAK030CMS	006558-02MS	A1127315	11/27/13	15:37
14	MAK030CMSD	006558-02MD	A1127316	11/27/13	16:04
15	MAK031C	006558-03	A1127317	11/27/13	16:35
16	MAK028C	006558-04	A1127318	11/27/13	17:05
17					
18					
19					
20					
21					
22					

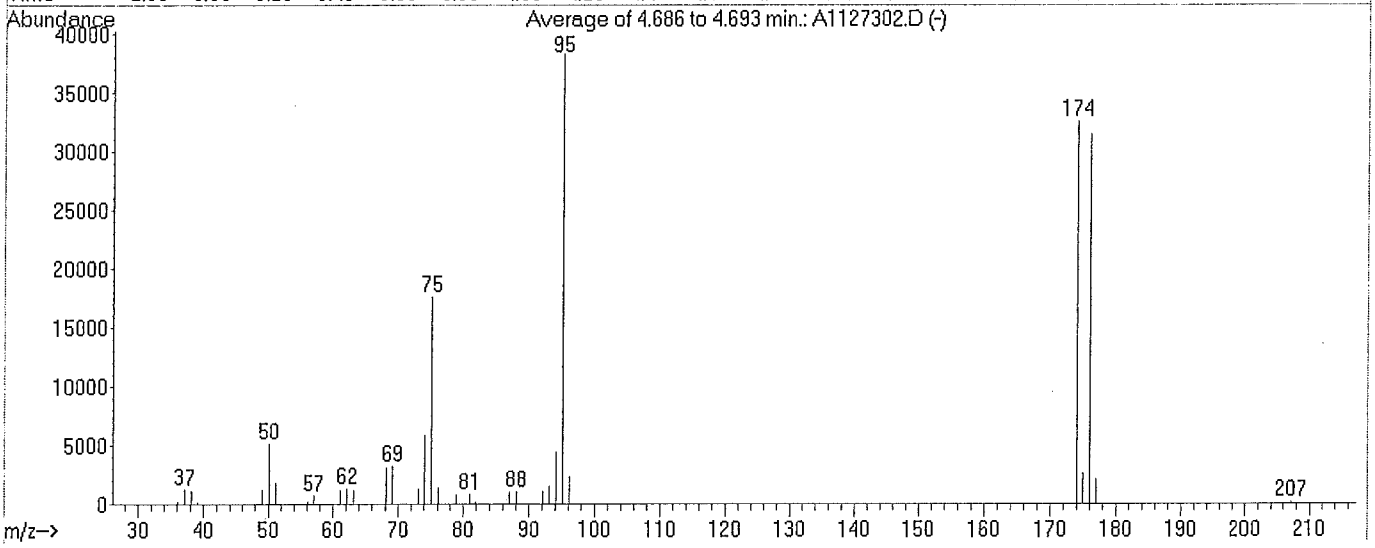
BFB

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127302.D
Acq On : 27 Nov 2013 9:05 am
Operator :
Sample : 50 NG BFB
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\MSDCHEM\1\METHODS\BFBSOIL.M
Title :
Last Update :





AutoFind: Scans 500, 501, 502; Background Corrected with Scan 491

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	13.4	5147	PASS
75	95	30	66	46.0	17614	PASS
95	95	100	100	100.0	38290	PASS
96	95	5	9	6.1	2344	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	85.0	32560	PASS
175	174	4	9	8.0	2616	PASS
176	174	93	101	96.8	31504	PASS
177	176	5	9	6.7	2098	PASS

Average of 4.686 to 4.693 min.: A1127302.D
50 NG BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.10	199	63.15	1146	88.05	1037		
37.15	1248	68.10	3072	92.10	1056		
38.15	1116	69.10	3247	93.05	1533		
39.10	168	73.10	1277	94.10	4447		
49.05	1225	74.10	5909	95.10	38290		
50.10	5147	75.10	17614	96.10	2344		
51.15	1794	76.10	1372	174.00	32560		
56.10	206	79.00	783	175.00	2616		
57.05	724	81.00	839	176.00	31504		
61.15	1178	81.90	172	177.00	2098		
62.15	1310	87.05	1008	207.20	167		

Continuing Calibration Report AG1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : SOIL_27.M
Title : 8260 VOLATILES
Last Update : Wed Nov 27 09:47:20 2013
Response Via : Initial Calibration

CC Data File: A1127303.D

Min. RRF : 0.000 Min. Rel. Area : 50%
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%
1	I	Chlorobenzene-d5	1.000	1.000	0.0	107
2	S	Toluene-d8	2.255	2.126	5.7	106
3	MCT	Toluene	2.939	2.514	14.4	94
4	CT	Ethylbenzene	3.469	3.021	12.9	96
5	T	m & p-Xylene	2.816	2.447	13.1	95
6	T	Styrene	2.100	1.885	10.2	94
7	T	o-Xylene	1.320	1.148	13.0	95
8	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	109
9	S	4-Bromofluorobenzene	0.912	0.828	9.2	102
10	T	1,2,4-Trimethylbenzene	3.184	2.712	14.8	95

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127303.D
Acq On : 27 Nov 2013 9:31 am
Operator :
Sample : VSTD100
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 27 09:47:17 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 09:41:26 2013
Response via : Initial Calibration

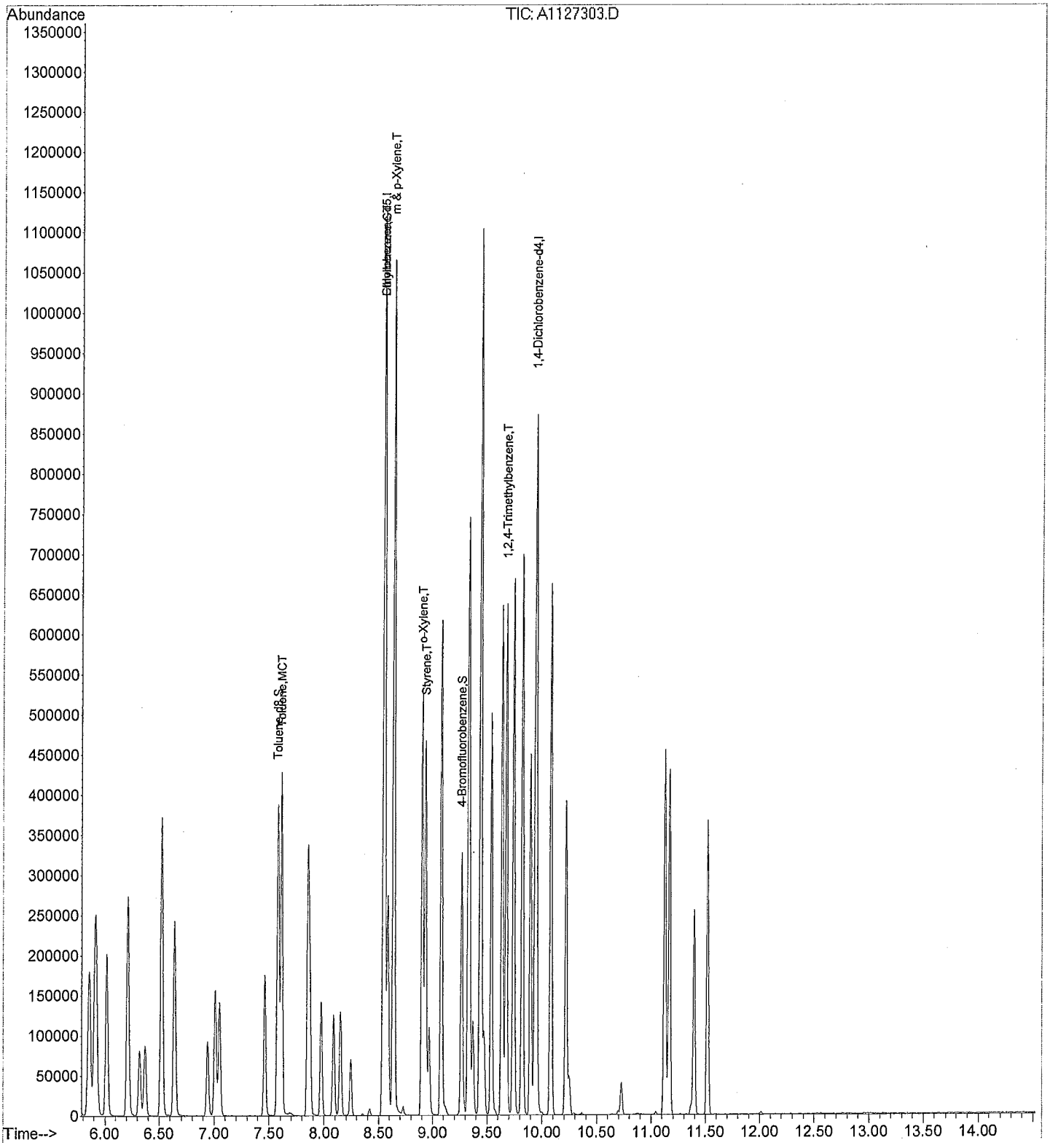
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	122064	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	126753	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.58	98	207575	94.28	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 94.28%			
9) 4-Bromofluorobenzene	9.27	95	83956	90.75	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 90.75%			
Target Compounds						Qvalue
3) Toluene	7.61	91	245529	85.55	ug/Kg	100
4) Ethylbenzene	8.55	91	294990	87.08	ug/Kg	99
5) m & p-Xylene	8.64	91	477964	173.81	ug/Kg	96
6) Styrene	8.93	104	184104	89.79	ug/Kg	90
7) o-Xylene	8.90	106	112135	87.02	ug/Kg	91
10) 1,2,4-Trimethylbenzene	9.68	105	275052	85.18	ug/Kg	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127303.D
Acq On : 27 Nov 2013 9:31 am
Operator :
Sample : VSTD100
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 27 09:47:17 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 09:41:26 2013
Response via : Initial Calibration



Instrument Logs/
Analysis Notebook Pages

Rev. 1.1

6
PROJECT 11/27/13 AGI 8260

Notebook No. _____
Continued from Page _____

Run Method= SOIL.m
Tune= BFBSOIL.u EM=1718
Tekmar= NB 3167 pg. 34
Quant Method= SOIL_27

5ul-ISTD-X0901
4ul-Surr-X0902

A1127301.d	0.	FLUSH		8260
A1127302.d	0.	50 NG BFB (2ul-X0907) Pass (9:05am)		8260
A1127303.d	0.	VSTD100 (4ul-X0908) Pass		8260
A1127304.d	0.	LCS (5ul-X0906) Pass		8260
A1127305.d	0.	VSTD000 - Pass		8260
A1127306.d	0.	006557-06		8260 MAK007C 2.0G
A1127307.d	0.	006557-10		8260 MAK014C 2.0G
A1127308.d	0.	006557-11		8260 MAK015C 2.0G
A1127309.d	0.	006557-12		8260 MAK018C 2.0G
A1127310.d	0.	006557-14		8260 MAK020C 2.0G
A1127311.d	0.	006557-20MS (5ul-X0906) Pass	(B)	8260 MAK032CMS 2.0G
A1127312.d	0.	006557-20MD Pass	(C)	8260 MAK032CMSD 2.0G
A1127313.d	0.	006558-01 Pass		8260 MAK029C 2.0G
A1127314.d	0.	006558-02	(A)	8260 MAK030C 2.0G
A1127315.d	0.	006558-02MS (5ul-X0906) Pass	(B)	8260 MAK030CMS 2.0G
A1127316.d	0.	006558-02MD Pass	(C)	8260 MAK030CMSD 2.0G
A1127317.d	0.	006558-03 Pass		8260 MAK031C 2.0G
A1127318.d	0.	006558-04		8260 MAK028C 2.0G
A1127319.d	0.	006556-01	(A)	8260 MAK007O 2.0G
A1127320.d	0.	006556-02		8260 MAK022O 2.0G
A1127321.d	0.	006556-03		8260 MAK023O 2.0G
A1127322.d	0.	006556-04 IZ↓ -RE		8260 MAK024O 2.0G
A1127323.d	0.	006556-01MS (5ul-X0906) Pass	(B)	8260 MAK007OMS 2.0G
A1127324.d	0.	006556-01MD Pass	(C)	8260 MAK007OMSD 2.0G
A1127325.d	0.	VSTD100 (4ul-X0908) Pass 8:26pm		8260
A1127326.d	0.	VSTD100 Not evaluated		8260

LS 11/29/13

LS 11/29/13

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
LS	11/29/13	ORC	12/4/13

Blank / Field Sample / QC Data

Sample Results

Chromatogram

Quant Report (If applicable)

Confirmation Analysis Quant Report / Chromatogram (If applicable)

Tentatively Identified Compounds (If required)

Rev. 1.1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	NA	ARDL Lab No.:	006558-02K1
Desc/Location:	NA	Lab Filename:	A1127304
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	11/27/2013
Matrix:	QC Material	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Toluene	2.5	12.5	90.9		UG/KG
Ethyl Benzene	2.5	12.5	94.5		UG/KG
m & p-Xylene	5	25	186		UG/KG
Styrene	2.5	12.5	98.3		UG/KG
o-Xylene	2.5	12.5	94.1		UG/KG
1,2,4-Trimethylbenzene	2.5	12.5	91.4		UG/KG

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	103%
4-Bromofluorobenzene	50-150	95%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Spike Blank for Run 1203JFSX, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127304.D
Acq On : 27 Nov 2013 10:02 am
Operator :
Sample : ~~Les~~ Q06558-02K1
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1 JR 12/02/13

Quant Time: Nov 27 10:19:47 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 09:47:20 2013
Response via : Initial Calibration

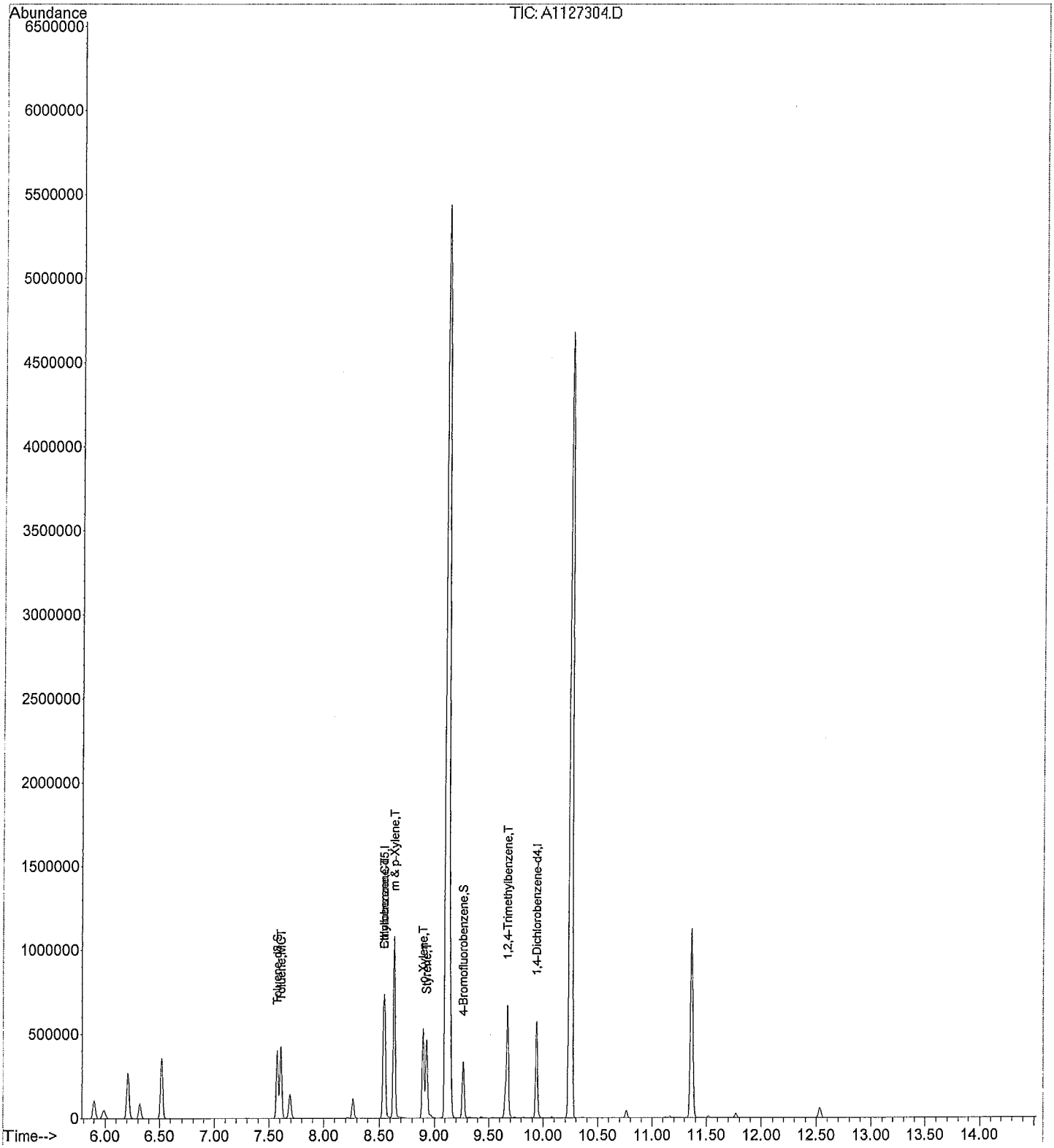
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	113851	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	126482	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.58	98	212146	103.30 ug/Kg	0.00
Spiked Amount 100.000			Recovery = 103.30%		
9) 4-Bromofluorobenzene	9.26	95	87851	95.17 ug/Kg	0.00
Spiked Amount 100.000			Recovery = 95.17%		
Target Compounds					Qvalue
3) Toluene	7.61	91	243228	90.86 ug/Kg	99
4) Ethylbenzene	8.55	91	298435	94.45 ug/Kg	100
5) m & p-Xylene	8.64	91	477113	186.02 ug/Kg	97
6) Styrene	8.93	104	187983	98.29 ug/Kg	91
7) o-Xylene	8.90	106	113059	94.07 ug/Kg	90
10) 1,2,4-Trimethylbenzene	9.67	105	294318	91.35 ug/Kg	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127304.D
Acq On : 27 Nov 2013 10:02 am
Operator :
Sample : ~~LCS~~ QD6558-02K1
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1 JR 12/02/13

Quant Time: Nov 27 10:19:47 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 09:47:20 2013
Response via : Initial Calibration



METHOD BLANK REPORT
ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	NA	ARDL Lab No.:	006558-02B1
Desc/Location:	NA	Lab Filename:	A1127305
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	11/27/2013
Matrix:	QC Material	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Toluene	2.5	12.5	ND		UG/KG
Ethyl Benzene	2.5	12.5	ND		UG/KG
m & p-Xylene	5.0	25.0	ND		UG/KG
Styrene	2.5	12.5	ND		UG/KG
o-Xylene	2.5	12.5	ND		UG/KG
1,2,4-Trimethylbenzene	2.5	12.5	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	107%
4-Bromofluorobenzene	50-150	103%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Blank for Run 1203JFSX, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127305.D
Acq On : 27 Nov 2013 10:43 am
Operator :
Sample : V~~STD000~~ 006558-02B1
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1 SB 12/02/13

Quant Time: Dec 02 14:57:28 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 09:47:20 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.54	82	104605	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	115206	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.57	98	202518	107.33 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 107.33%	
9) 4-Bromofluorobenzene	9.26	95	86692	103.10 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 103.10%	

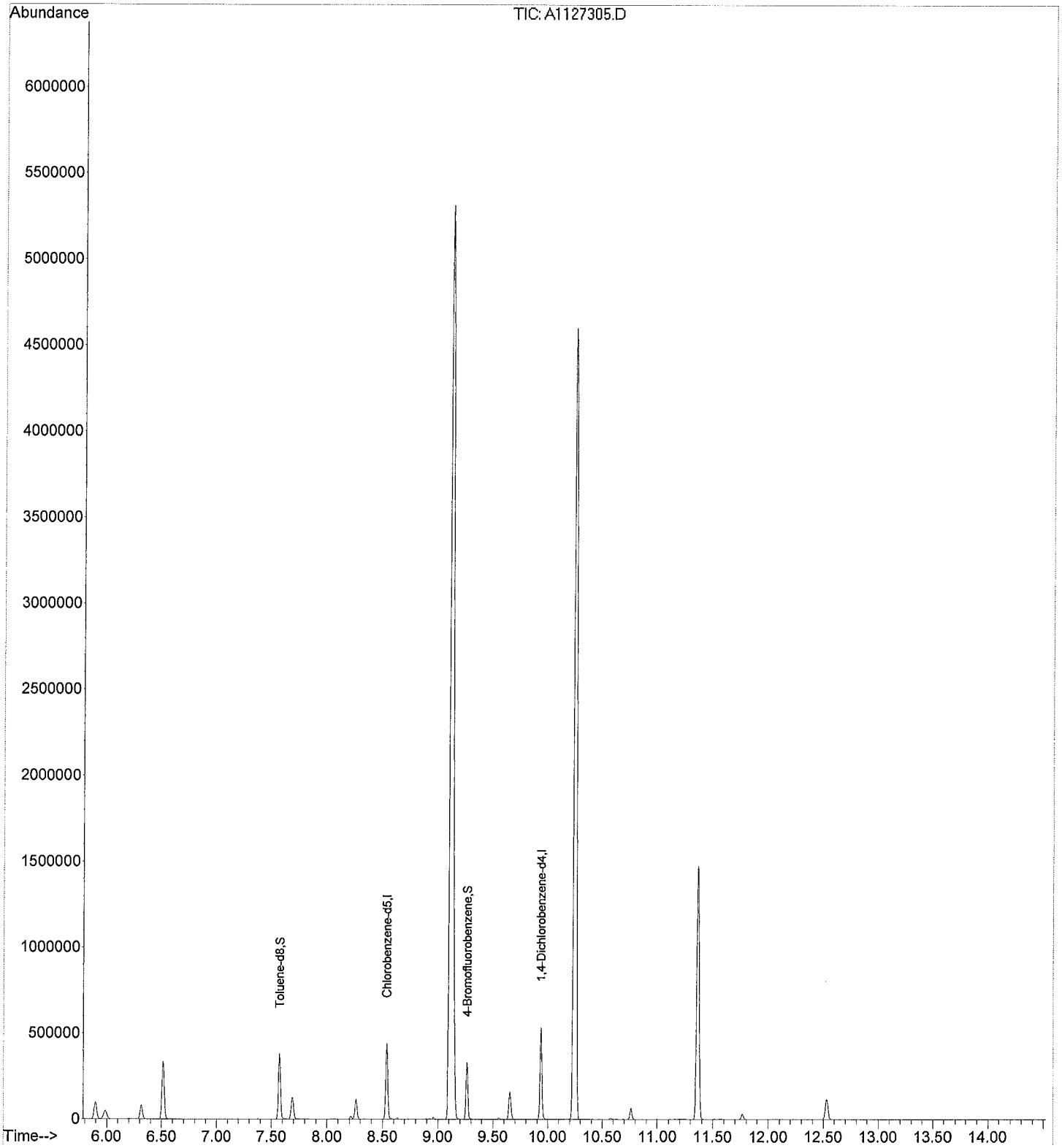
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127305.D
Acq On : 27 Nov 2013 10:43 am
Operator :
Sample : ~~VSTD000~~ 006658-02B1
Misc : 8260
ALS Vial : 1 Sample Multiplier: 1 JB 12/02/13

Quant Time: Dec 02 14:57:28 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 09:47:20 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK007C	ARDL Lab No.:	006557-06
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127306
Sample Date:	09/11/2013	Received Date:	10/23/2013
Sample Time:	1020	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	119%
4-Bromofluorobenzene	50-150	116%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-06, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127306.D
Acq On : 27 Nov 2013 11:18 am
Operator :
Sample : 006557-06
Misc : 8260 MAK007C 2.0G
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Dec 02 14:57:56 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:45:59 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	97071	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	101758	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.57	98	207918	118.75 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 118.75%	
9) 4-Bromofluorobenzene	9.26	95	85924	115.69 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 115.69%	

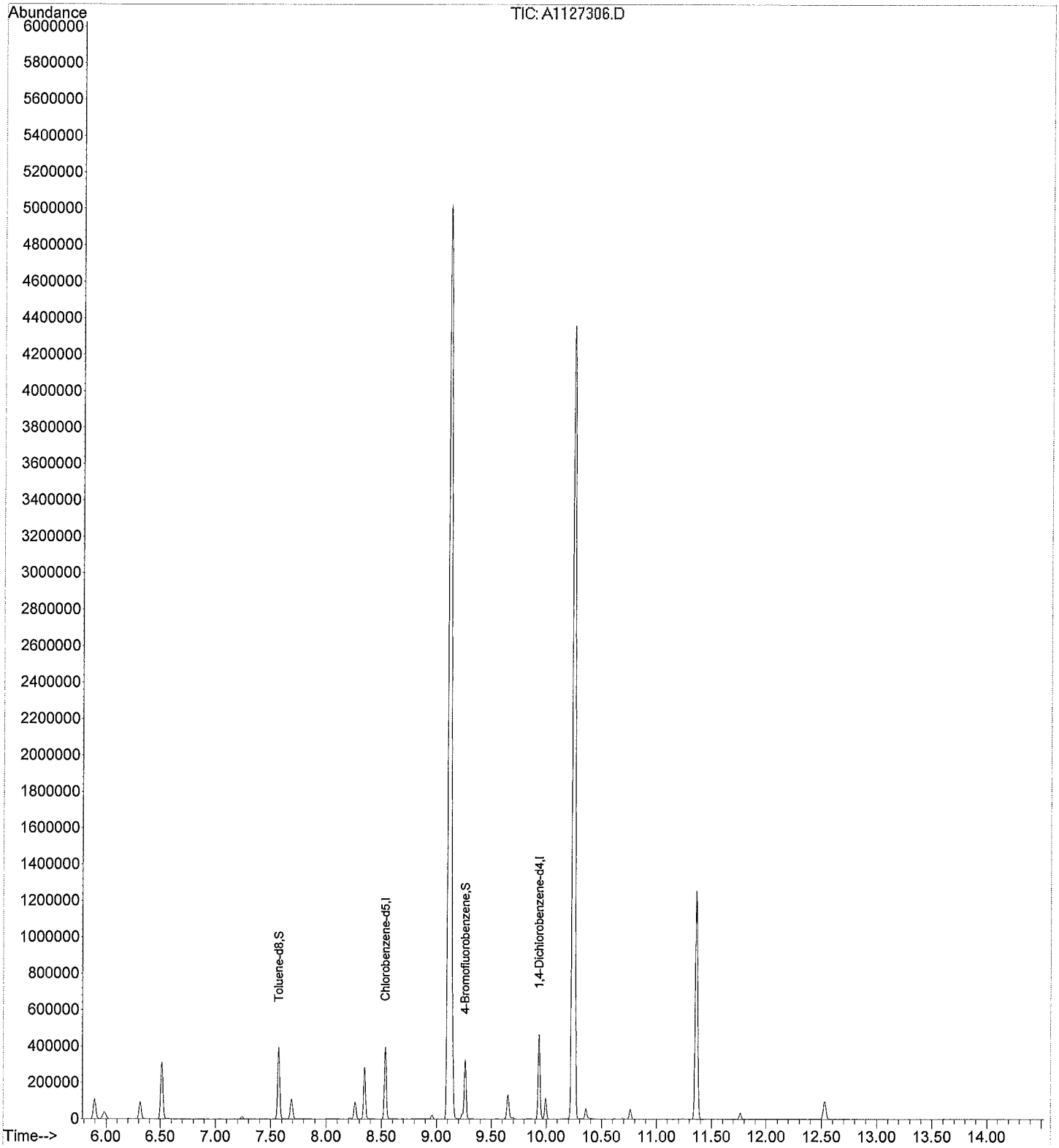
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127306.D
Acq On : 27 Nov 2013 11:18 am
Operator :
Sample : 006557-06
Misc : 8260 MAK007C 2.0G
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Dec 02 14:57:56 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:45:59 2013
Response via : Initial Calibration



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Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/12/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK014C	ARDL Lab No.:	006557-10
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127307
Sample Date:	09/13/2013	Received Date:	10/23/2013
Sample Time:	1355	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.5	12.5	ND		UG/KG	1
Ethyl Benzene	2.5	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.5	12.5	ND		UG/KG	1
o-Xylene	2.5	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.5	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	133%
4-Bromofluorobenzene	50-150	122%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-10, VOLATILES, GC/MS (8260)

Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127307.D
Acq On : 27 Nov 2013 11:46 am
Operator :
Sample : 006557-10
Misc : 8260 MAK014C 2.0G
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 02 14:58:30 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 09:47:20 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	73557	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	81945	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.57	98	176828	133.27 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 133.27%	
9) 4-Bromofluorobenzene	9.26	95	73001	122.06 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 122.06%	

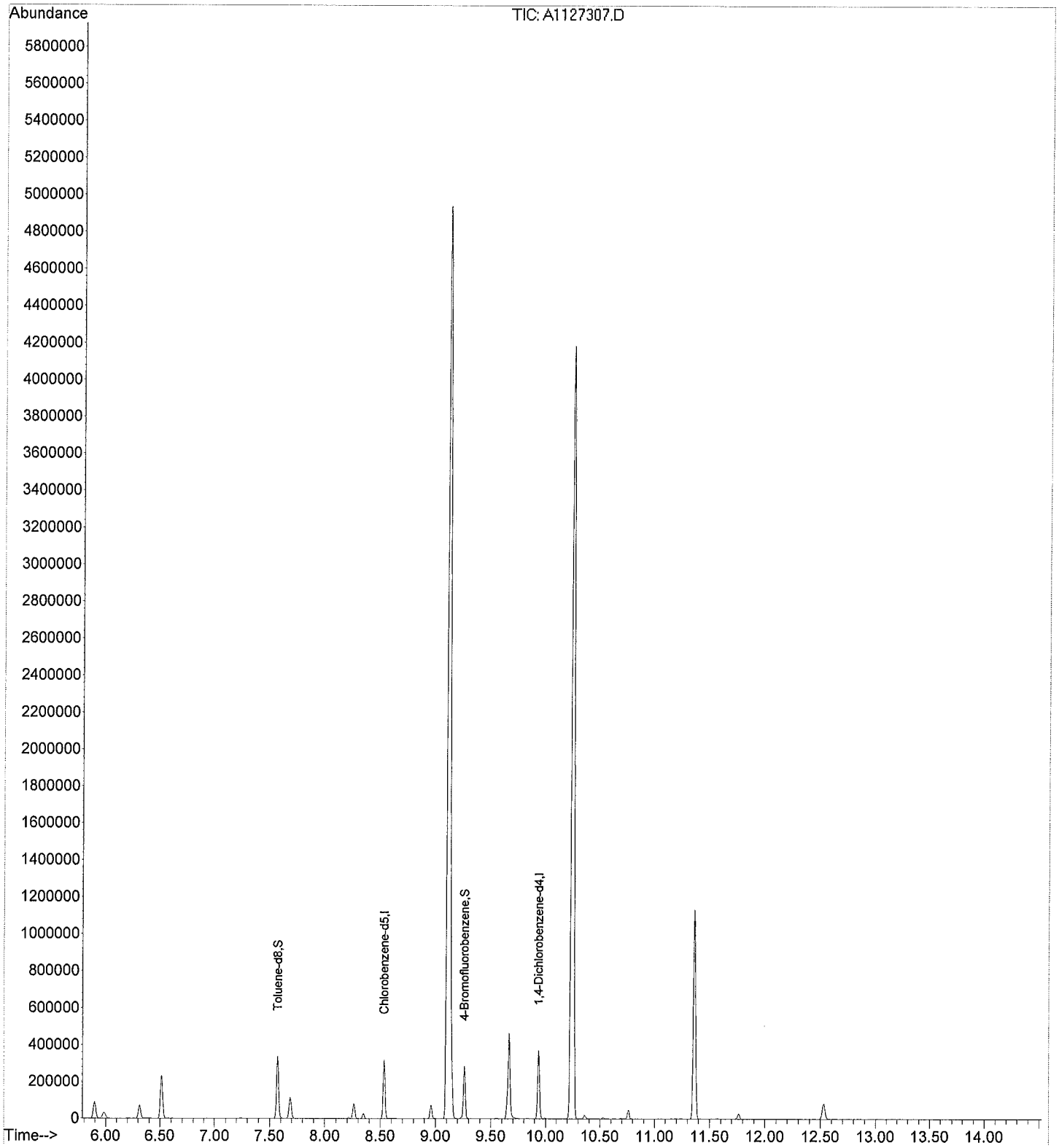
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127307.D
Acq On : 27 Nov 2013 11:46 am
Operator :
Sample : 006557-10
Misc : 8260 MAK014C 2.0G
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 02 14:58:30 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 09:47:20 2013
Response via : Initial Calibration



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Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK015C	ARDL Lab No.:	006557-11
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127308
Sample Date:	09/13/2013	Received Date:	10/23/2013
Sample Time:	0958	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	104%
4-Bromofluorobenzene	50-150	98%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-11, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127308.D
Acq On : 27 Nov 2013 12:13 pm
Operator :
Sample : 006557-11
Misc : 8260 MAK015C 2.0G
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 02 14:58:49 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 12:39:20 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	110897	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	112990	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.57	98	207664	103.82 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 103.82%	
9) 4-Bromofluorobenzene	9.26	95	80448	97.55 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 97.55%	

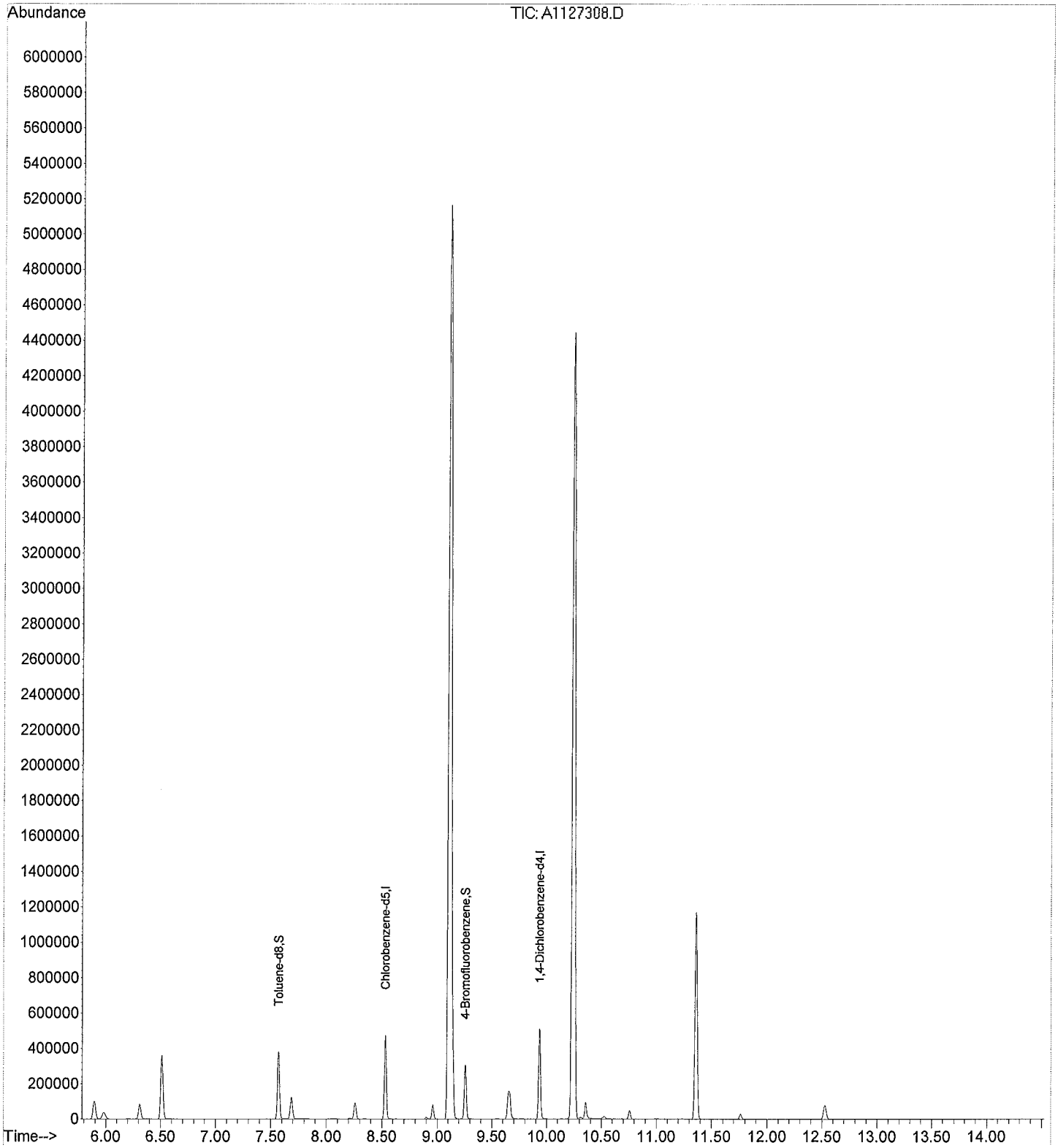
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127308.D
Acq On : 27 Nov 2013 12:13 pm
Operator :
Sample : 006557-11
Misc : 8260 MAK015C 2.0G
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 02 14:58:49 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 12:39:20 2013
Response via : Initial Calibration



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Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK018C	ARDL Lab No.:	006557-12
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127309
Sample Date:	09/16/2013	Received Date:	10/23/2013
Sample Time:	0905	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	107%
4-Bromofluorobenzene	50-150	99%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-12, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127309.D
Acq On : 27 Nov 2013 12:44 pm
Operator :
Sample : 006557-12
Misc : 8260 MAK018C 2.0G
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 02 14:59:08 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 12:39:20 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	93771	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.94	152	95460	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.57	98	180824	106.91 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 106.91%	
9) 4-Bromofluorobenzene	9.26	95	68737	98.66 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 98.66%	

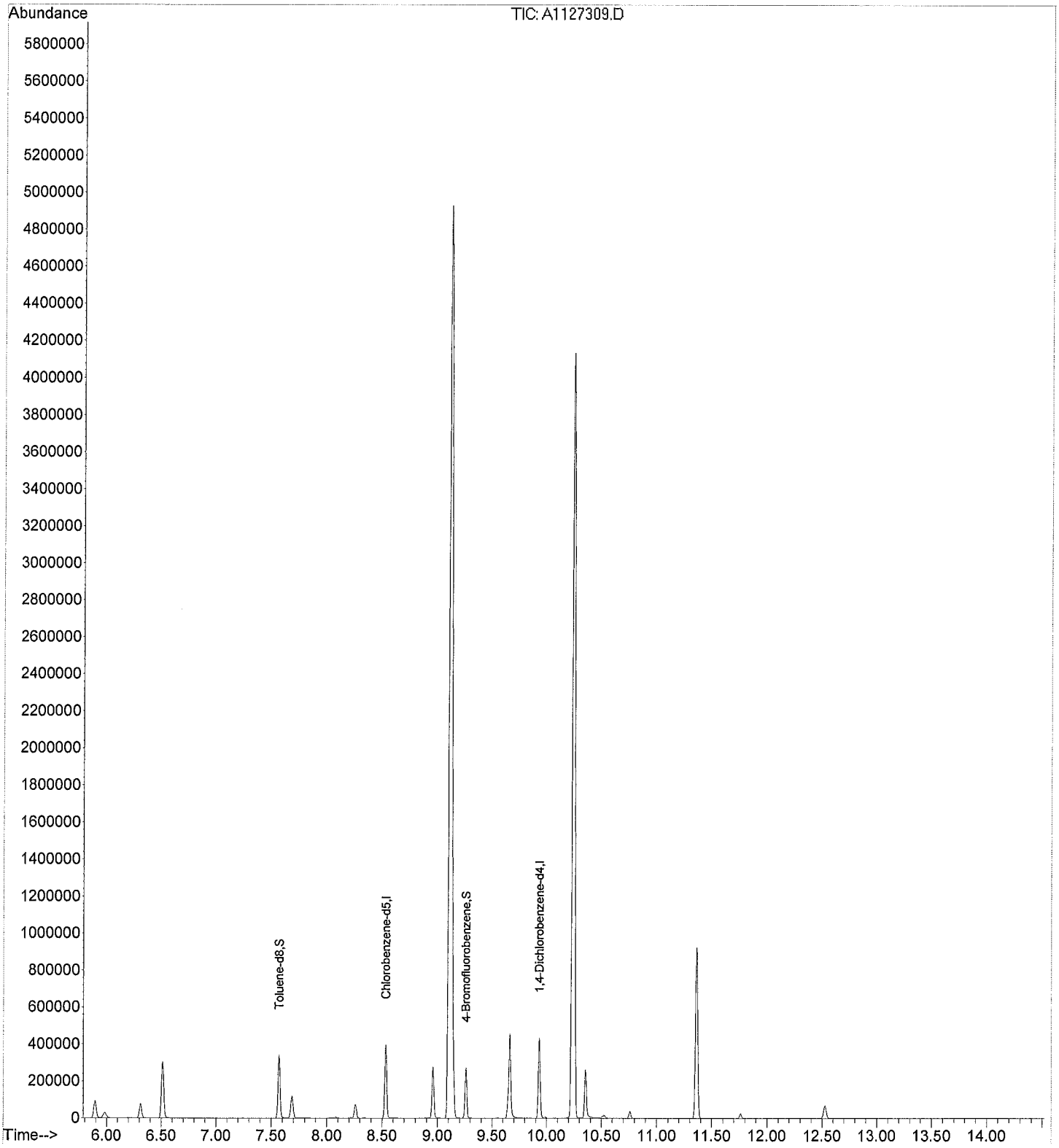
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127309.D
Acq On : 27 Nov 2013 12:44 pm
Operator :
Sample : 006557-12
Misc : 8260 MAK018C 2.0G
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 02 14:59:08 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 12:39:20 2013
Response via : Initial Calibration



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400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK020C	ARDL Lab No.:	006557-14
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127310
Sample Date:	09/16/2013	Received Date:	10/23/2013
Sample Time:	1018	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	113%
4-Bromofluorobenzene	50-150	109%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006557-14, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127310.D
Acq On : 27 Nov 2013 1:14 pm
Operator :
Sample : 006557-14
Misc : 8260 MAK020C 2.0G
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 02 14:59:35 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 12:39:20 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	80317	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	75277	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.57	98	163553	112.89 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 112.89%	
9) 4-Bromofluorobenzene	9.26	95	60010	109.23 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 109.23%	

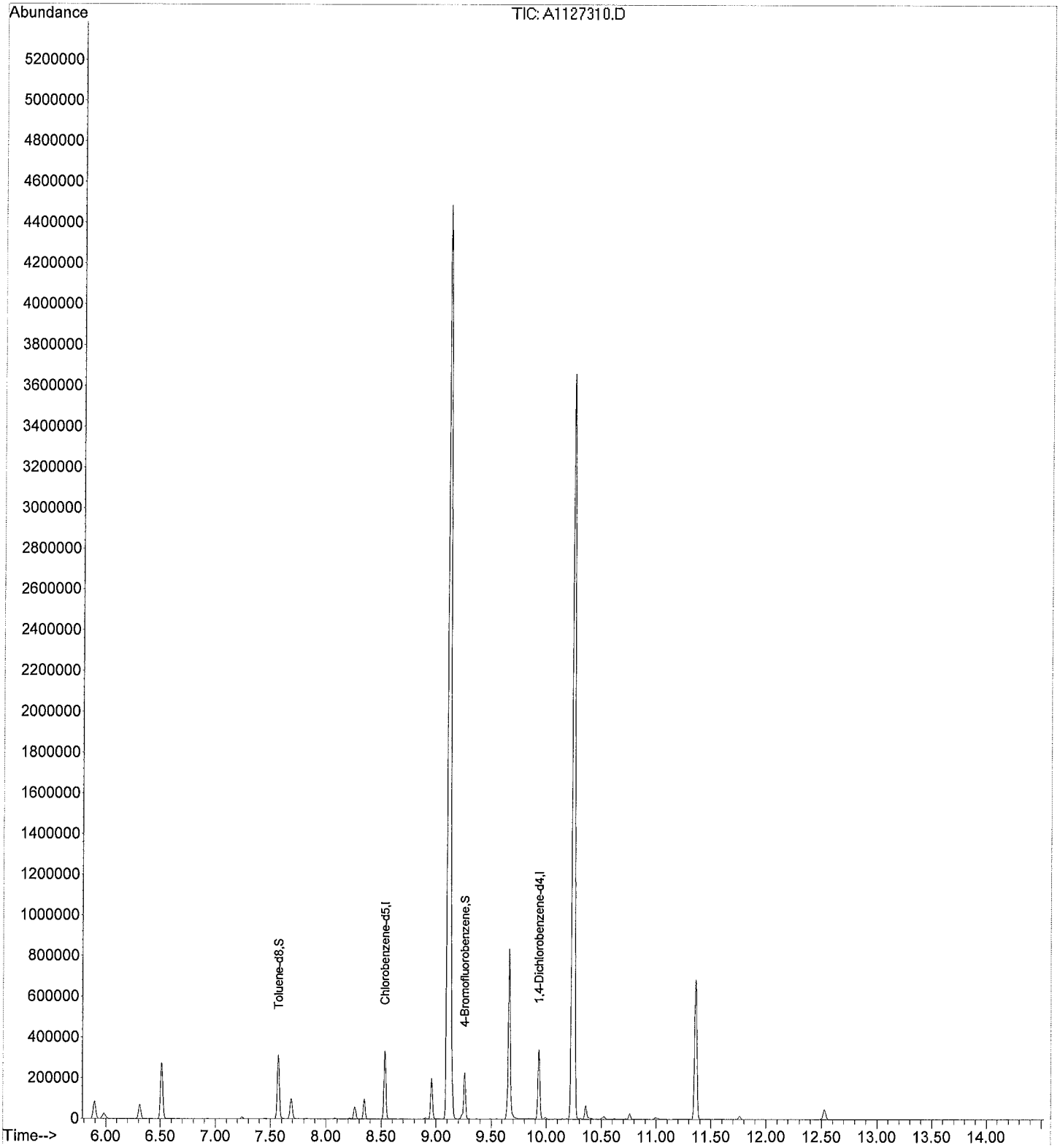
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127310.D
Acq On : 27 Nov 2013 1:14 pm
Operator :
Sample : 006557-14
Misc : 8260 MAK020C 2.0G
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 02 14:59:35 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 12:39:20 2013
Response via : Initial Calibration



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Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK032C	ARDL Lab No.:	006557-20MS
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127311
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	1210	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	96.5		UG/KG	1
Ethyl Benzene	2.50	12.5	99.5		UG/KG	1
m & p-Xylene	5.0	25.0	196		UG/KG	1
Styrene	2.50	12.5	100		UG/KG	1
o-Xylene	2.50	12.5	99.3		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	98.0		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	101%
4-Bromofluorobenzene	50-150	98%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Matrix Spike for 006557-20, VOLATILES, GC/MS (8260)

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127311.D
Acq On : 27 Nov 2013 1:44 pm
Operator :
Sample : 006557-20MS
Misc : 8260 MAK032CMS 2.0G
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 14:04:35 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration

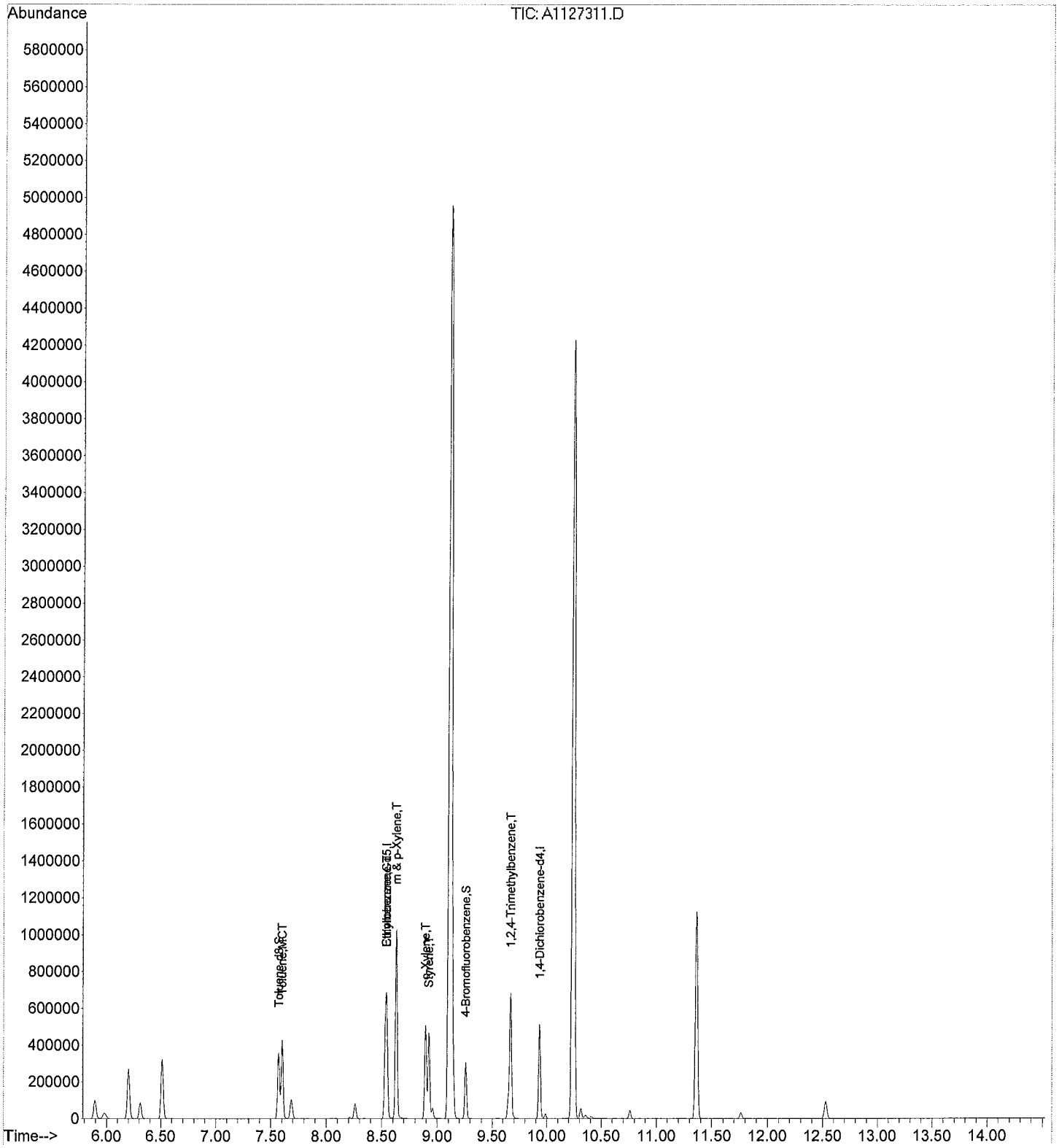
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	104177	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	110961	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	189731	100.97	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 100.97%			
9) 4-Bromofluorobenzene	9.26	95	79073	97.64	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 97.64%			
Target Compounds						Qvalue
3) Toluene	7.60	91	236443	96.53	ug/Kg	98
4) Ethylbenzene	8.55	91	287722	99.52	ug/Kg	99
5) m & p-Xylene	8.63	91	458944	195.55	ug/Kg	96
6) Styrene	8.92	104	175830	100.48	ug/Kg#	87
7) o-Xylene	8.89	106	109238	99.33	ug/Kg	90
10) 1,2,4-Trimethylbenzene	9.67	105	277005	98.00	ug/Kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127311.D
Acq On : 27 Nov 2013 1:44 pm
Operator :
Sample : 006557-20MS
Misc : 8260 MAK032CMS 2.0G
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 14:04:35 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration



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400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006557 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK032C	ARDL Lab No.:	006557-20MD
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127312
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	1210	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSW
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	89.3		UG/KG	1
Ethyl Benzene	2.50	12.5	92.1		UG/KG	1
m & p-Xylene	5.0	25.0	181		UG/KG	1
Styrene	2.50	12.5	92.1		UG/KG	1
o-Xylene	2.50	12.5	91.2		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	87.4		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	103%
4-Bromofluorobenzene	50-150	93%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Matrix Spike Duplicate for 006557-20, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127312.D
Acq On : 27 Nov 2013 2:12 pm
Operator :
Sample : 006557-20MD
Misc : 8260 MAK032CMSD 2.0G
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 27 14:27:21 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration

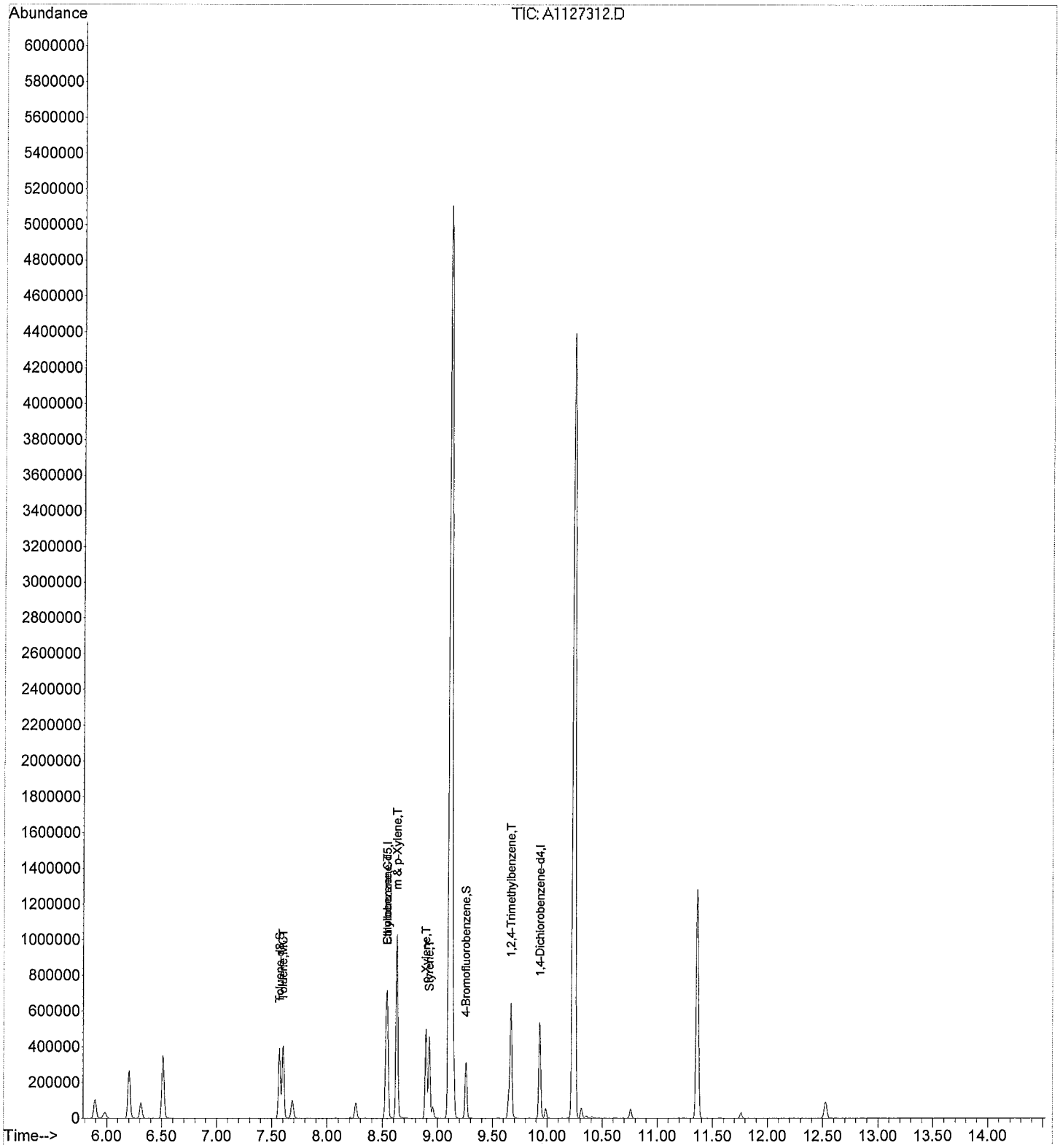
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	111183	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	121881	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	207308	103.37	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 103.37%			
9) 4-Bromofluorobenzene	9.26	95	83051	93.36	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 93.36%			
Target Compounds						Qvalue
3) Toluene	7.60	91	233475	89.31	ug/Kg	98
4) Ethylbenzene	8.55	91	284282	92.13	ug/Kg	100
5) m & p-Xylene	8.63	91	454148	181.32	ug/Kg	97
6) Styrene	8.92	104	171924	92.05	ug/Kg	89
7) o-Xylene	8.89	106	107087	91.24	ug/Kg	90
10) 1,2,4-Trimethylbenzene	9.67	105	271325	87.39	ug/Kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127312.D
Acq On : 27 Nov 2013 2:12 pm
Operator :
Sample : 006557-20MD
Misc : 8260 MAK032CMSD 2.0G
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 27 14:27:21 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration



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400 Aviation Drive; P.O. Box 1566
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Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK029C	ARDL Lab No.:	006558-01
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127313
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	0820	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	100%
4-Bromofluorobenzene	50-150	97%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006558-01, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127313.D
Acq On : 27 Nov 2013 2:39 pm
Operator :
Sample : 006558-01
Misc : 8260 MAK029C 2.0G
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 02 15:00:14 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	113236	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	119231	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	204615	100.18	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 100.18%			
9) 4-Bromofluorobenzene	9.26	95	84022	96.55	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 96.55%			

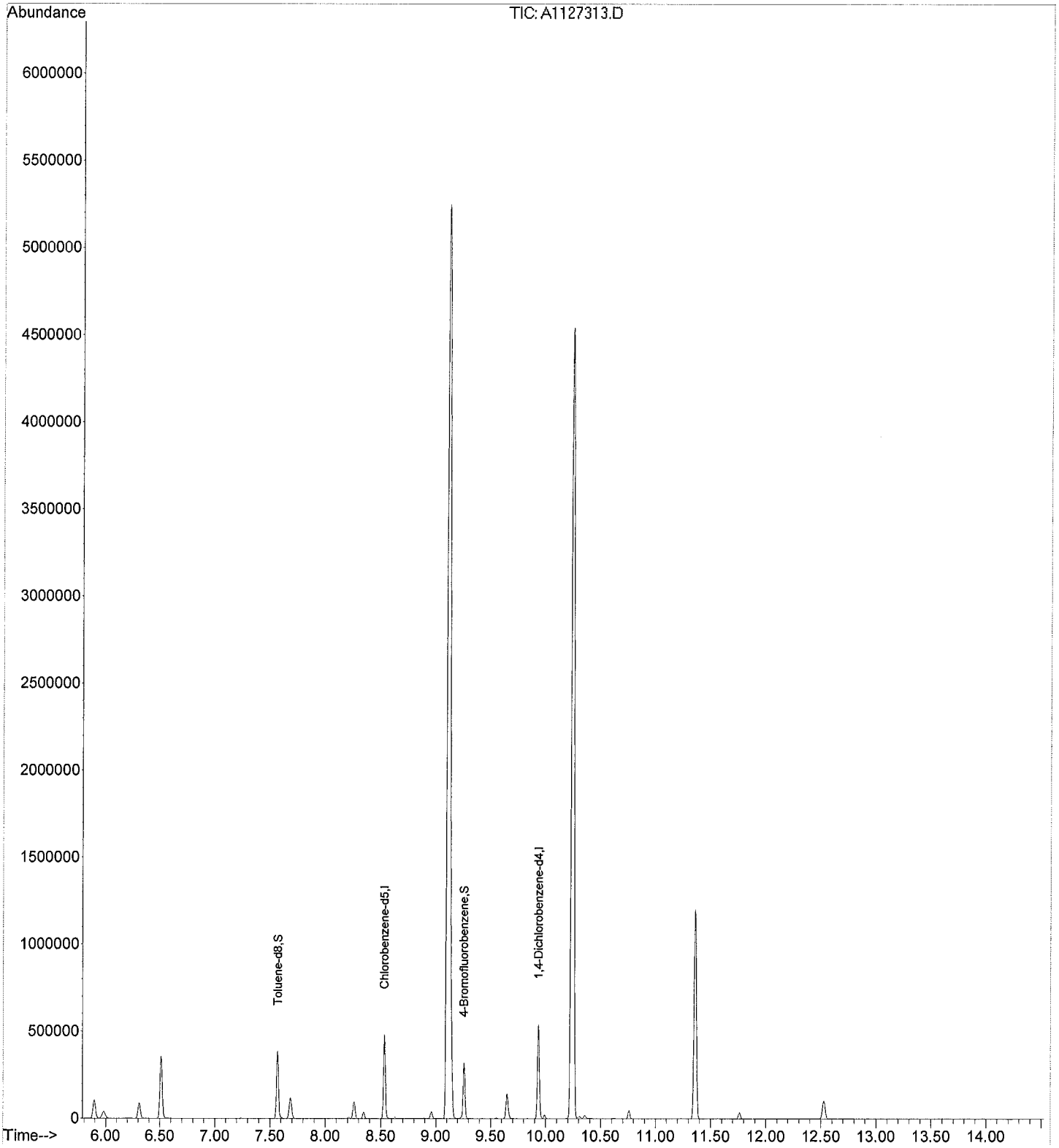
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127313.D
Acq On : 27 Nov 2013 2:39 pm
Operator :
Sample : 006558-01
Misc : 8260 MAK029C 2.0G
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 02 15:00:14 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration



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Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK030C	ARDL Lab No.:	006558-02
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127314
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	0833	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	107%
4-Bromofluorobenzene	50-150	97%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006558-02, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127314.D
Acq On : 27 Nov 2013 3:06 pm
Operator :
Sample : 006558-02
Misc : 8260 MAK030C 2.0G
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 02 15:00:36 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	104507	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	113557	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	201593	106.94	ug/Kg	-0.01
Spiked Amount 100.000			Recovery = 106.94%			
9) 4-Bromofluorobenzene	9.26	95	80719	97.39	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 97.39%			

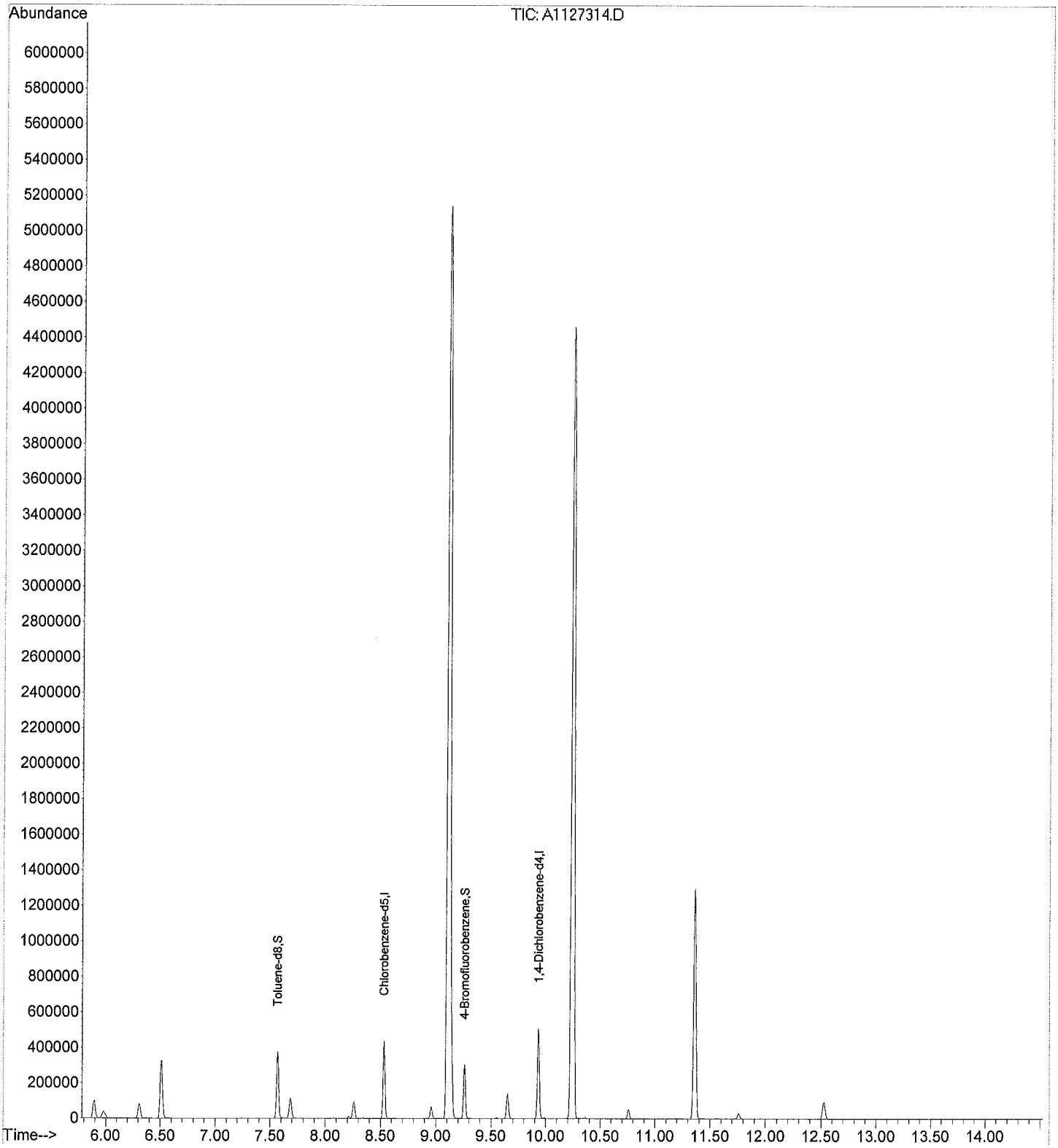
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127314.D
Acq On : 27 Nov 2013 3:06 pm
Operator :
Sample : 006558-02
Misc : 8260 MAK030C 2.0G
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 02 15:00:36 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration



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Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK030C	ARDL Lab No.:	006558-02MS
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127315
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	0833	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	95.4		UG/KG	1
Ethyl Benzene	2.50	12.5	97.4		UG/KG	1
m & p-Xylene	5.0	25.0	192		UG/KG	1
Styrene	2.50	12.5	97.1		UG/KG	1
o-Xylene	2.50	12.5	97.2		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	92.4		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	102%
4-Bromofluorobenzene	50-150	95%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Matrix Spike for 006558-02, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127315.D
Acq On : 27 Nov 2013 3:37 pm
Operator :
Sample : 006558-02MS
Misc : 8260 MAK030CMS 2.0G
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 15:56:51 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration

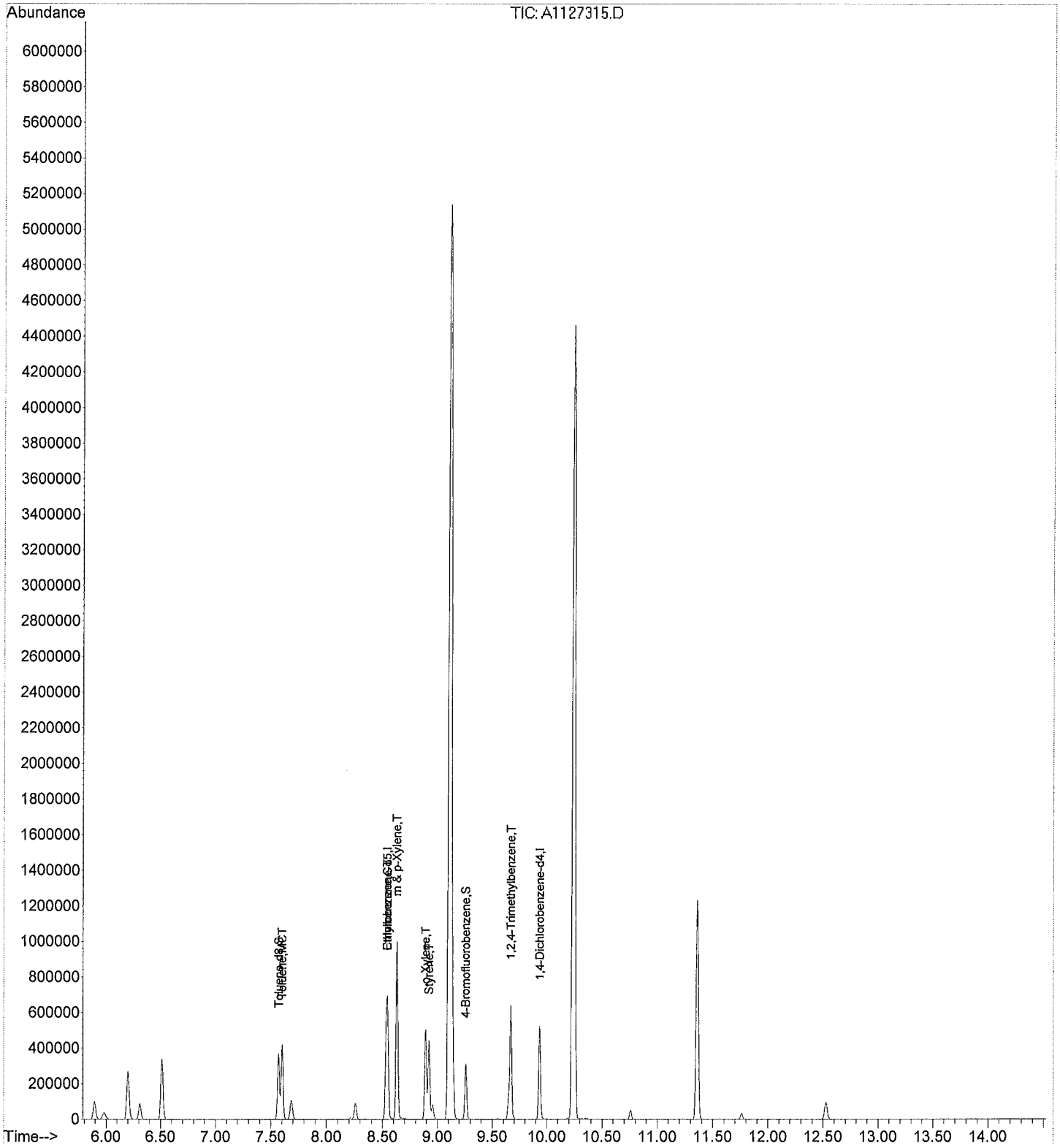
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	104736	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	115067	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	193347	102.34	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 102.34%			
9) 4-Bromofluorobenzene	9.26	95	79771	94.99	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 94.99%			
Target Compounds						Qvalue
3) Toluene	7.60	91	234796	95.35	ug/Kg	99
4) Ethylbenzene	8.55	91	283135	97.41	ug/Kg	100
5) m & p-Xylene	8.63	91	452086	191.60	ug/Kg	97
6) Styrene	8.92	104	170900	97.14	ug/Kg	89
7) o-Xylene	8.89	106	107493	97.22	ug/Kg	91
10) 1,2,4-Trimethylbenzene	9.67	105	270878	92.41	ug/Kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127315.D
Acq On : 27 Nov 2013 3:37 pm
Operator :
Sample : 006558-02MS
Misc : 8260 MAK030CMS 2.0G
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 15:56:51 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration



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Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK030C	ARDL Lab No.:	006558-02MD
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127316
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	0833	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	99.1		UG/KG	1
Ethyl Benzene	2.50	12.5	101		UG/KG	1
m & p-Xylene	5.0	25.0	197		UG/KG	1
Styrene	2.50	12.5	96.0		UG/KG	1
o-Xylene	2.50	12.5	101		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	96.5		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	109%
4-Bromofluorobenzene	50-150	99%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Matrix Spike Duplicate for 006558-02, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127316.D
Acq On : 27 Nov 2013 4:04 pm
Operator :
Sample : 006558-02MD
Misc : 8260 MAK030CMSD 2.0G
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 29 07:59:33 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration

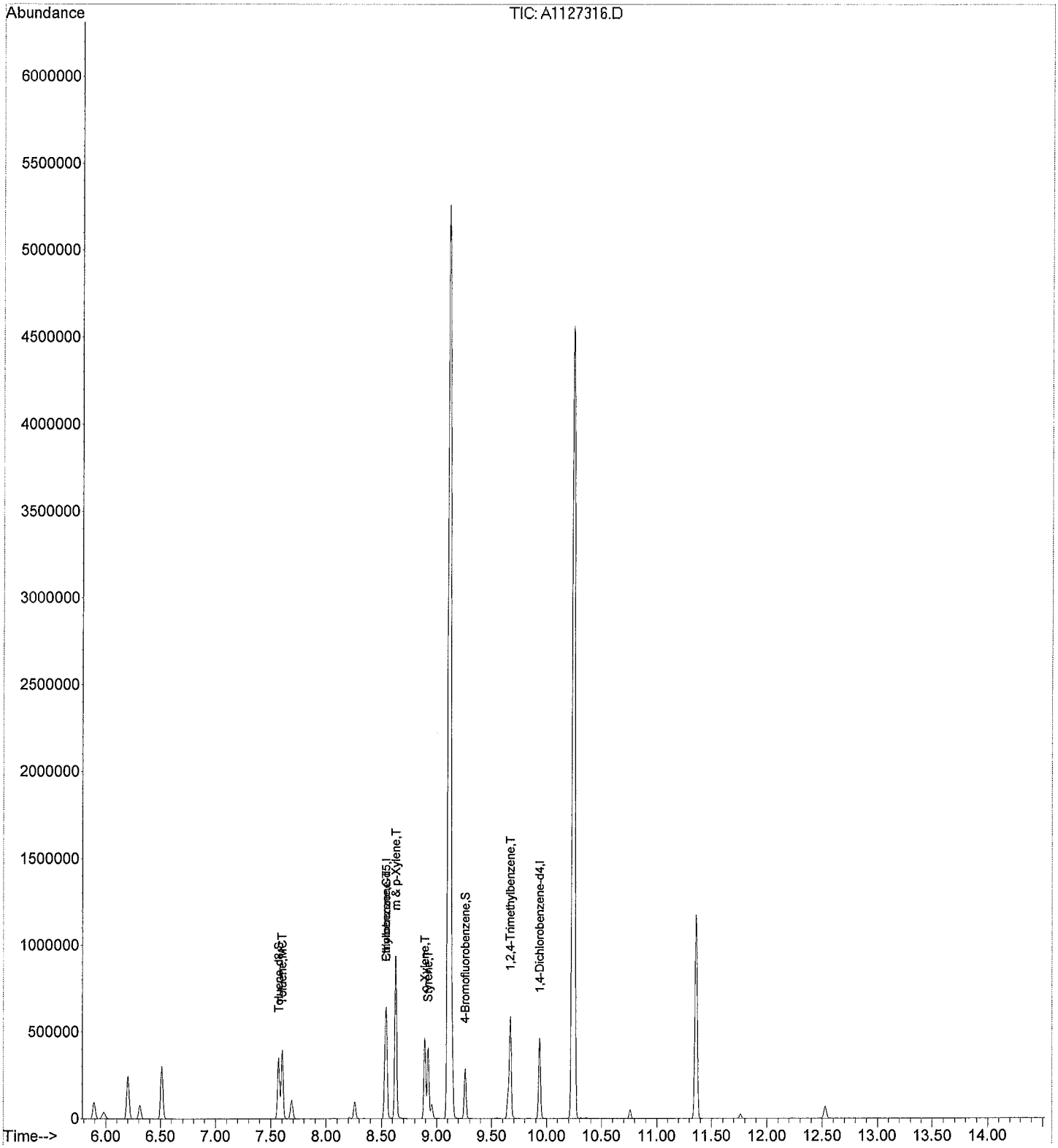
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	94737	125.00 ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	101831	125.00 ug/Kg	0.00
System Monitoring Compounds					
2) Toluene-d8	7.57	98	186948	109.40 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 109.40%	
9) 4-Bromofluorobenzene	9.26	95	73755	99.24 ug/Kg	0.00
Spiked Amount 100.000			Recovery	= 99.24%	
Target Compounds					Qvalue
3) Toluene	7.60	91	220693	99.08 ug/Kg	100
4) Ethylbenzene	8.55	91	264971	100.78 ug/Kg	98
5) m & p-Xylene	8.63	91	420165	196.87 ug/Kg	96
6) Styrene	8.92	104	152821	96.03 ug/Kg	88
7) o-Xylene	8.89	106	100905	100.89 ug/Kg	92
10) 1,2,4-Trimethylbenzene	9.67	105	250327	96.50 ug/Kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127316.D
Acq On : 27 Nov 2013 4:04 pm
Operator :
Sample : 006558-02MD
Misc : 8260 MAK030CMSD 2.0G
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 29 07:59:33 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK031C	ARDL Lab No.:	006558-03
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127317
Sample Date:	09/23/2013	Received Date:	10/23/2013
Sample Time:	1050	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	100%
4-Bromofluorobenzene	50-150	99%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006558-03, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127317.D
Acq On : 27 Nov 2013 4:35 pm
Operator :
Sample : 006558-03
Misc : 8260 MAK031C 2.0G
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 02 15:01:13 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	102666	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	103278	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	185352	100.09	ug/Kg	-0.01
Spiked Amount 100.000			Recovery = 100.09%			
9) 4-Bromofluorobenzene	9.26	95	74315	98.59	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 98.59%			

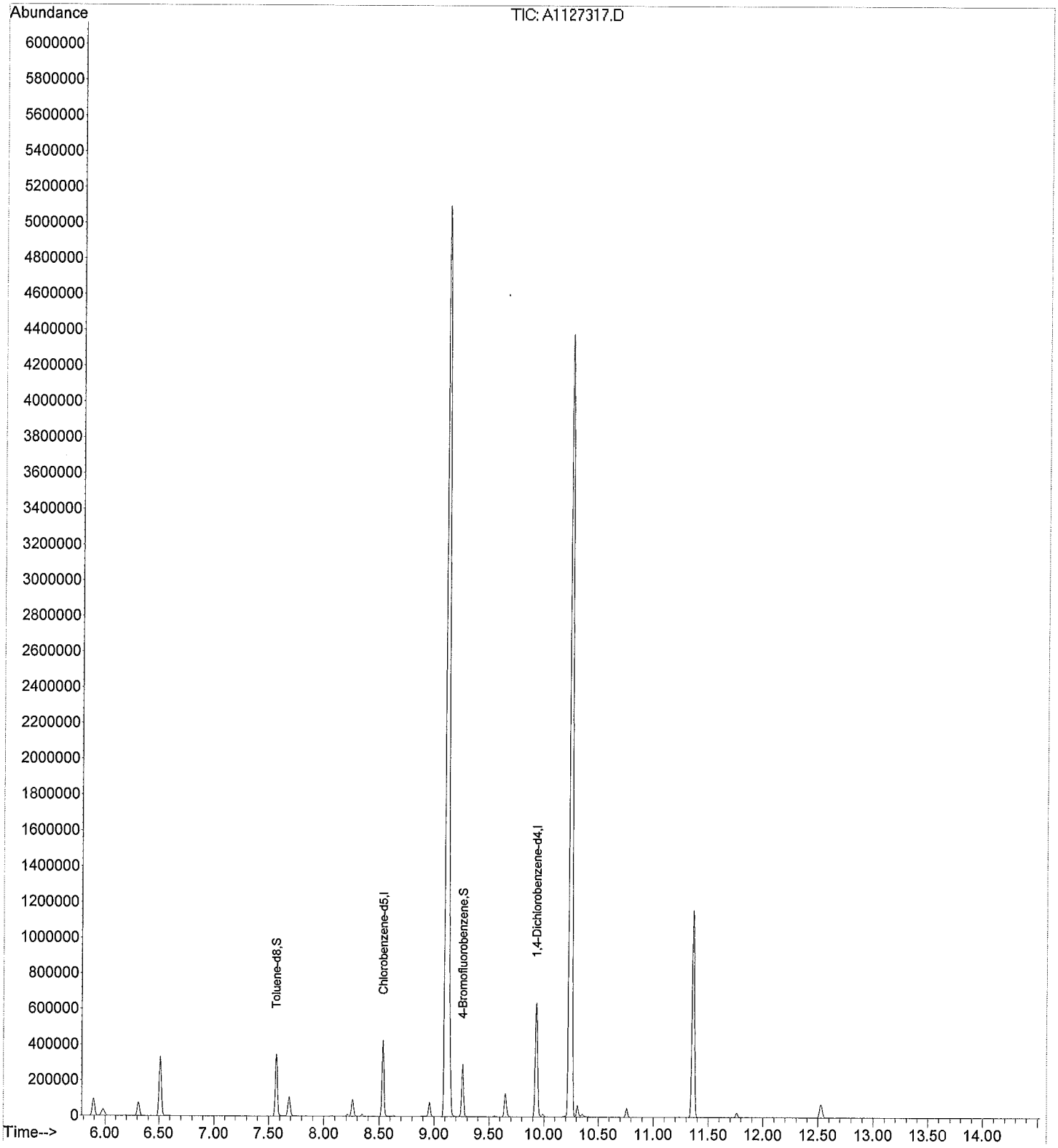
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127317.D
Acq On : 27 Nov 2013 4:35 pm
Operator :
Sample : 006558-03
Misc : 8260 MAK031C 2.0G
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 02 15:01:13 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration



ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006558 Report Date: 12/03/2013

Project Name: MAKAU MILITARY RES O Analysis: VOLATILES, GC/MS (8260)
Project No.: Analytical Method: 8260B
NELAC Certified - IL100308 Prep Method: 5030A

Field ID:	MAK028C	ARDL Lab No.:	006558-04
Desc/Location:	MAKAU MILITARY RESERV OAHU	Lab Filename:	A1127318
Sample Date:	09/22/2013	Received Date:	10/23/2013
Sample Time:	1300	Prep. Date:	11/27/2013
Matrix:	TISSUE	Analysis Date:	11/27/2013
Amount Used:	2 g	Instrument ID:	AG1
Final Volume:	5 mL	QC Batch:	1203JFSX
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Toluene	2.50	12.5	ND		UG/KG	1
Ethyl Benzene	2.50	12.5	ND		UG/KG	1
m & p-Xylene	5.0	25.0	ND		UG/KG	1
Styrene	2.50	12.5	ND		UG/KG	1
o-Xylene	2.50	12.5	ND		UG/KG	1
1,2,4-Trimethylbenzene	2.50	12.5	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Toluene-d8	50-150	101%
4-Bromofluorobenzene	50-150	95%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006558-04, VOLATILES, GC/MS (8260) Page 1 of 1

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127318.D
Acq On : 27 Nov 2013 5:05 pm
Operator :
Sample : 006558-04
Misc : 8260 MAK028C 2.0G
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 02 15:01:34 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Chlorobenzene-d5	8.53	82	102150	125.00	ug/Kg	0.00
8) 1,4-Dichlorobenzene-d4	9.93	152	111019	125.00	ug/Kg	0.00
System Monitoring Compounds						
2) Toluene-d8	7.57	98	186518	101.23	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 101.23%			
9) 4-Bromofluorobenzene	9.26	95	76604	94.54	ug/Kg	0.00
Spiked Amount 100.000			Recovery = 94.54%			

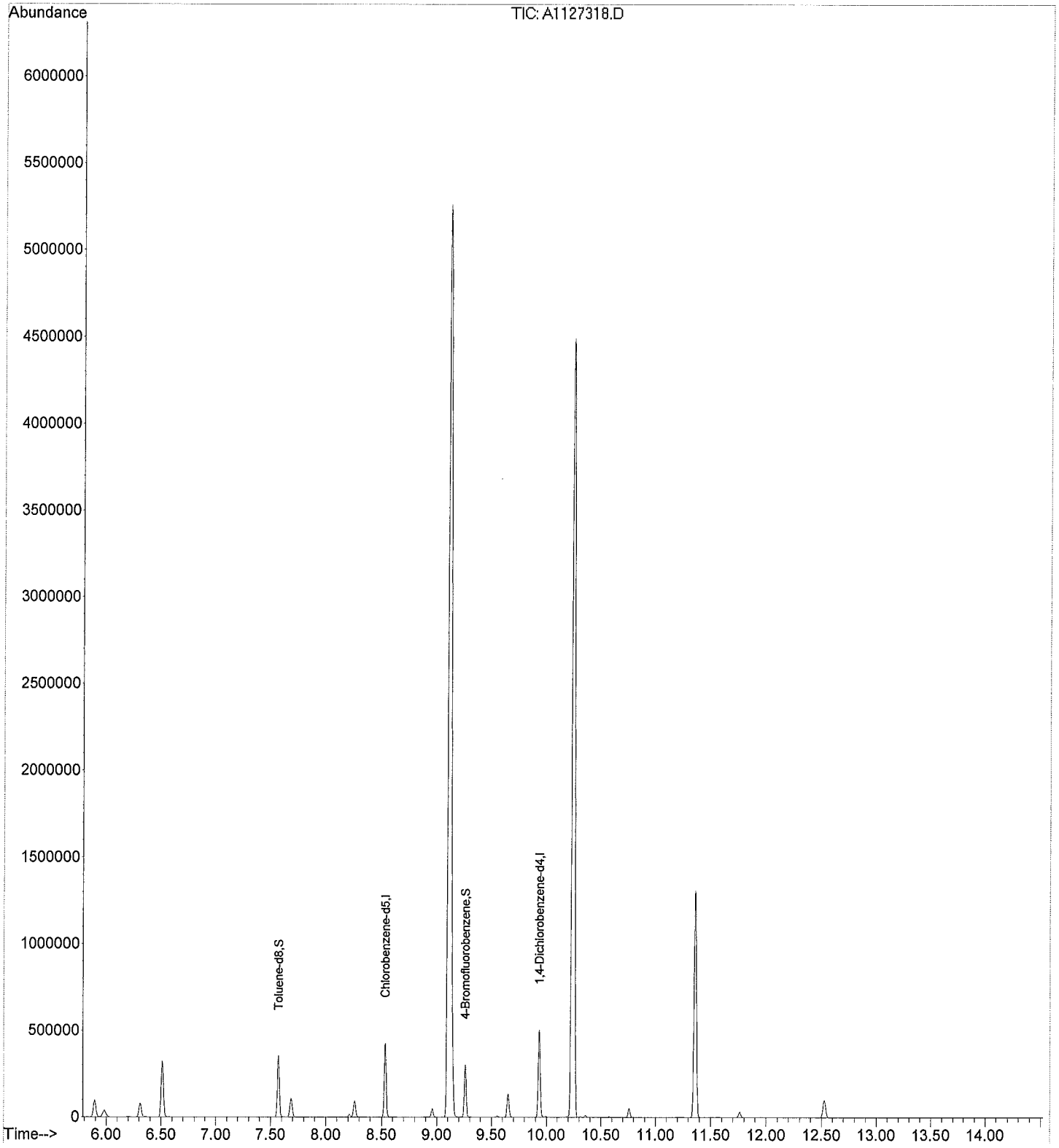
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\112713\
Data File : A1127318.D
Acq On : 27 Nov 2013 5:05 pm
Operator :
Sample : 006558-04
Misc : 8260 MAK028C 2.0G
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 02 15:01:34 2013
Quant Method : C:\MSDCHEM\1\METHODS\SOIL_27.M
Quant Title : 8260 VOLATILES
QLast Update : Wed Nov 27 13:49:17 2013
Response via : Initial Calibration



Example Calculation

Rev. 1.1

EXAMPLE CALCULATIONS

Response Factor Calculations

The data system tabulates the area response of the characteristic ions against the concentration for each compound and each internal standard. Response factors (RF) are calculated for each compound relative to the internal standard assignments. The RF is calculated as follows:

$$RF = (A_X C_{is})/A_{is} C_X)$$

where:

A_X = Area of the characteristic ion for the compound being measured.
A_{is} = Area of the characteristic ion for the specific internal standard.
C_{is} = Concentration of the specific internal standard.
C_X = Concentration of the compound being measured.

The RF is calculated for each standard concentration level in the initial calibration curve. The average RF is then calculated off these points.

Sample Calculations

Sample calculations are made by the instrument software and are performed as follows:

Water

$$\text{Concentration (ug/L)} = \frac{(Ax)\,(Is)}{(Ais)\,(RF)(V_o)}$$

where:

A_X = Area of characteristic ion for compound being measured.
Is = Amount of internal standard injected (ng).
A_{is} = Area of characteristic ion for the internal standard.
RF = Average response factor for compound being measured.
V_o = Volume of water purged (mL).

Soil: (low level)

$$\text{concentration (ug/Kg)} = \frac{(A_X)(Is)}{(A_{is})(RF)(W_g)}$$

where:

A_X = Area of characteristic ion for compound being measured.
Is = Amount of internal standard injected (ng).
A_{is} = Area of characteristic ion for the internal standard.
RF = Average response factor for compound being measured.
W_g = Weight of sample purged (g).

EXAMPLE CALCULATIONS

Sample Calculations

Soil: (Low and Medium Level)

$$\text{Concentration (ug/Kg)} = \frac{(A_x)(Is)(V_t)}{(A_{is})(RF)(V_i)(W_s)}$$

where:

A_x	=	Area of characteristic ion for the compound being measured.
Is	=	Amount of internal standard injected (ng).
A_{is}	=	Area of characteristic ion for the internal standard.
RF	=	Average response factor for the compound being measured.
V_i	=	Volume of extract injected (uL).
V_t	=	Volume of total extract (uL).
W_s	=	Weight of sample extracted (g).

Sample Calculations

Sample No.: 6557-20MS MAK032C Compound: Styrene

Matrix: Sea Cuc.

$$\text{Concentration (ug/Kg)} = \frac{(175830)(250\ ng)(____)}{(104177)(2.100)(2\ g)(____)} = 100\ ng/g$$

Example Calculations Performed By: _____ Date: 12/10/13

Miscellaneous Additional Data

(If applicable)

☑ **None** DSD 12/12/13

Rev. 1.1