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ANALYSIS: EXPLOSIVES METHOD NO.: 8330A

ARDL Report(s) #: 006620 MATRIX: SEA WEED (LIMU)

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	By:	Date:
Package Preparation	JAA	06/06/14
Analytical Review	[illegible]	6/10/14
Final Review	[illegible]	6/10/14
QA Review	[illegible]	6/10/14

Rev. 1.1

Organic Package Review Checklist

Rev. 1.1

ORGANIC PACKAGE REVIEW CHECKLIST

METHOD: 8330A

	Initial	Date
Case Narrative and/or Nonconformance Reports		
Case Narrative / Analyst Comment Sheets	JD	6/10/14
Nonconformance / Noncompliance Reports (if applicable)	NA	
Sample Receipt Information		
Copies of Original Chain-of-Custody Forms	JD	6/10/14
Cooler Receipt Form and Airbills		
Phone Messages (If applicable)		
Field Sample Results		
QC Summary Forms		
Surrogate Summary, if applicable	NA	
Spike Blank and/or MS Summary	JD	6/10/14
Blank Results & Blank Summary, if applicable	NA	
ISTD Area Summary, if applicable		
Sample Preparation Information (if applicable)		
Total Solids Determination (If applicable)		
Extraction Log (If applicable)	JD	6/10/14
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	JD	6/10/14
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	NA	
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		

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ORGANIC PACKAGE REVIEW CHECKLIST (Continued)

METHOD: 8330A

	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	GD	6/10/14
Miscellaneous Additional Data (if applicable)		

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: GD 6/10/14

Rev. 1.1

Case Narrative and/or Nonconformance Reports

Rev. 1.1

ORGANIC ANALYSIS CASE NARRATIVE

Corps of Engineers – ERDC, Vicksburg **Date: 06/06/14**

ARDL Report No.: 6620 **Lab Name: ARDL, Inc.**

Project Name: MAKAU MILITARY RESERVATION OAHU (LIMU)

Samples Received at ARDL: 04/29/2014

Lab ID No.	Sample ID No.	Date Collected	Date Extracted	Analysis Requested
006620-01	MAK130L	03/27/2014	05/23/2014	Explosives
006620-02	MAK132L	03/28/2014	05/23/2014	Explosives
006620-03	MAK134L	03/28/2014	05/23/2014	Explosives
006620-04	MAK135L	03/28/2014	05/23/2014	Explosives
006620-05	MAK138L	03/28/2014	05/23/2014	Explosives

EXPLOSIVES FRACTION – METHOD 8330A

Five (5) tissue (LIMU) samples were received by ARDL, Inc. on April 29, 2014, for 8330A analysis.

This project required analysis for only three target analytes (2,4-Dinitrotoluene, RDX and Nitroglycerine). HPLC analysis for Nitroglycerine required a modification in the standard method UV wavelength of 254 nm. to 205 nm. The samples were not dried prior to extraction. The HPLC analyses of the subject sample extracts all exhibited a large chromatographic interferent peak close to the retention time of the analyte, 2,4-Dinitrotoluene. This also masked the resolution of 2,4-DNT in the batch matrix spike/matrix spike duplicate analyses. Consequently, only RDX and Nitroglycerine are reported herein.

INITIAL CALIBRATION

The initial calibration was performed using five calibration points and passed method criteria.

CONTINUING CALIBRATIONS

Continuing calibration was performed after the analysis of 10 samples or less. All calibration criteria were met.

SURROGATE

All samples passed surrogate recovery criteria.

INTERNAL STANDARD

Not applicable.

LCS

The LCS analyses met the recovery limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The MS/MSD analysis was performed on sample MAK130L and met recovery criteria for RDX and nitroglycerine only. (See discussion above).

METHOD BLANKS

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

ORGANIC ANALYSIS CASE NARRATIVE

Corps of Engineers – ERDC, Vicksburg **Date: 06/06/14**

ARDL Report No.: 6620 **Lab Name: ARDL, Inc.**

Project Name: MAKAU MILITARY RESERVATION OAHU (LIMU)

Samples Received at ARDL: 04/29/2014

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									ARDL, Inc Remarks or Sample Location	PRESERVATION ICED	PRESERVATION Specify Chemicals added and final pH if known
MAK109O	1/31/2014	10:45		x	1	x	x	x	x									Octopus	x	
MAK110O	3/28/2014	8:38		x	1	x,14	x	x	x									Octopus	x	
MAK111O	3/28/2014	9:20		x	~~1~~ 3	x	x	x	x									Octopus	x	
MAK112O	3/28/2014	10:00		x	1	x	x	x	x									Octopus	x	
MAK113O	3/28/2014	10:35		x	1	x	x	x	x									Octopus	x	
MAK114O	3/28/2014	11:32		x	1	x	x	x	x									Octopus	x	
MAK115O	3/28/2014	13:01		x	1	x	x	x	x									Octopus	x	
MAK116O	3/28/2014	14:58		x	1	x	x	x	x									Octopus	x	
MAK117O	3/28/2014	16:43		x	1	x	x	x	x									Octopus	x	
MAK118O	3/27/2014	8:50		x	1	x	x	x	x									Octopus	x	
MAK119O	3/27/2014	9:20		x	1	x	x	x	x									Octopus	x	
MAK120O	3/27/2014	11:23		x	1	x	x	x	x									Octopus	x	
MAK121O	3/27/2014	12:05		x	1	x	x	x	x									Octopus	x	
MAK122O	3/27/2014	13:05		x	1	x	x	x	x									Octopus	x	
MAK123O	3/27/2014	15:08		x	1	x	x	x	x									Octopus	x	
MAK124O	3/28/2014	12:25		x	1	x	x	x	x									Octopus	x	
MAK130L	3/27/2014	8:20		x	~~1~~ 2	x	x	x	x									Limu (Sea Weed)	x	
MAK132L	3/28/2014	8:38		x	1	x	x	x	x									Limu (Sea Weed)	x	
MAK134L	3/28/2014	9:20		x	1	x	x	x	x									Limu (Sea Weed)	x	
MAK135L	3/28/2014	10:00		x	1	x	x	x	x									Limu (Sea Weed)	x	
MAK138L	3/28/2014	11:32		x	1	x	x	x	x									Limu (Sea Weed)	x	

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
[signature]	4-28	1600	
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Received for Laboratory by: (Signature)	Date	Time	Shipping Ticket No.
[signature]	4/29/14	0930	

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.

COOLER RECEIPT REPORT
ARDL, INC.

dly 4-29-14

ARDL #: ~~6620, 6621~~, 6619, 6620

Cooler # NA

Number of Coolers in Shipment: 2

Project: Makaw Military Res. Oahu

Date Received: 04/29/14

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 04/29/14 (Signature) LA Stewy

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

   If YES, enter carrier name and airbill number here: FED-EX Bill# 9325 1888 3037

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

   How many and where? 1 front, Seal Date: 04/28/14, Seal Name: K ? can not Read

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (YES) NO

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? Dan 4/29/14 ..... (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. -28.9 C

B. **LOG-IN PHASE:** Date samples were logged-in: 04-29-14 (Signature) LA Stewy

10. Describe type of packing in cooler: bubble pack, cardboard box

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? ..... 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: lax	By
On: 04-29-14	On

M:\ADMIN\FORMS\COOLER RECEIPT REPORT.doc Rev. 05/07/07

original in lab 1
dlc 4-29-14

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

GREEN BAY, WI 54302
UNITED STATES US

SHIP DATE: 28APR14
ACTWGT: 30.4 LB
CAD: 255289/CAFE2704

DRY ICE: 1.1 KGS
BILL THIRD PARTY

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

51BC1/78B9/6F03

FedEx Express

J131113B5280126

TRK# 0201 9325 1888 3037

TUE - 29 APR AA
STANDARD OVERNIGHT
ICE

NA MVNA

62864
IL-US STL

Part # 156148-434 RITZ 03/12

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

GREEN BAY, WI 54302
UNITED STATES US

SHIP DATE: 28APR14
ACTWGT: 18.3 LB
CAD: 255289/CAFE2704

DRY ICE: 1.1 KGS
BILL THIRD PARTY

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

51BC1/78B9/6F03

FedEx Express

J131113B5280126

TRK# 0201 9325 1888 3059

TUE - 29 APR AA
STANDARD OVERNIGHT
ICE

NA MVNA

62864
IL-US STL

Part # 156148-434 RITZ 03/12

Field Sample Results

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK130L	ARDL Lab No.:	006620-01
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/27/2014	Received Date:	04/29/2014
Sample Time:	0820	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	87%

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

Sample 006620-01, 8330, EXPLOSIVES

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK132L	ARDL Lab No.:	006620-02
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	0838	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	86%

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

Sample 006620-02, 8330, EXPLOSIVES

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK134L	ARDL Lab No.:	006620-03
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	0920	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	93%

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

Sample 006620-03, 8330, EXPLOSIVES

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK135L	ARDL Lab No.:	006620-04
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	1000	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	83%

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

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK138L	ARDL Lab No.:	006620-05
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	1132	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	89%

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

Sample 006620-05, 8330, EXPLOSIVES

QC Summary Forms

Surrogate Summary, if applicable

Spike Blank and/or MS Summary

Blank Results & Blank Summary, if applicable

ISTD Area Summary, if applicable

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BLANK SPIKE/SPIKE DUPLICATE REPORT

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES Analytical Method: 8330
Project No.: Prep Method: METHOD

Matrix: QC Material QC Batch: B10213 Prep. Date: 05/23/2014
Amount Used: 2 g Level: LOW Analysis Date: 05/30/2014

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Hexahydro-trinitro-triazine (RDX)	4240	4000	106	--	--	--	44-123	--	--
Nitroglycerine	4080	4000	102	--	--	--	50-150	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
1,4-Dinitrobenzene	96.2	--	50-150

'*' indicates a recovery outside of standard limits.

Spike Blanks for 006620-01, 8330, EXPLOSIVES

MATRIX SPIKE/SPIKE DUPLICATE REPORT

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES Analytical Method: 8330
Project No.: Prep Method: METHOD

Field ID: MAK130L
Desc/Location: MAKAU MILITARY RESERVATIO
Sample Date: 03/27/2014
Sample Time: 0820
Matrix: TISSUE

Prep. Date: 05/23/2014
Amount Used: 2 g
% Moisture: No Moisture Present
QC Batch: B10213
Level: LOW

ARDL Lab No.: 006620-01
Lab Filename:
Received Date: 04/29/2014
Analysis Date: 05/30/2014

Parameter	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit
Hexahydro-trinitro-triazine (RDX)	ND	2670	4000	66.7	3030	4000	75.7	63-133	12.6	25
Nitroglycerine	ND	3960	4000	99.1	3950	4000	98.7	50-150	0.4	25

SURROGATE RECOVERIES:	MS %R	MSD %R	%R Limits
1,4-Dinitrobenzene	101	98	50-150

'nc' indicates sample >4X spike level.
'*' indicates a recovery outside of standard limits.
Matrix Spikes for 006620-01, 8330, EXPLOSIVES

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	NA	ARDL Lab No.:	006620-01B1
Desc/Location:	NA	Lab Filename:	
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	05/23/2014
Matrix:	QC Material	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG
Nitroglycerine	300	500	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	104%

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

Blank for Run B10213, 8330, EXPLOSIVES

Sample Preparation Information

(Not Applicable for VOA Purge and Trap Method)

Rev. 1.1

SW 846
8330 EXPLOSIVES
TISSUES

DATE : 05 / 23 / 2014 **BATCH # B10213**

CUST: Makau Military Reservation Oahu **ARDL # 6617, 6620**

SAMPLES: BLK; SP BLK; 6617-1 thru 3; 6620-1 thru 5
QC SAMPLE: 6620-1ms/msd

SOLVENT USED: ACETONITRILE_# 091099
REAGENT USED: CALCIUM CHLORIDE SOL'N # 1217

SURROGATE # 1008191 CONC 16 PPM __X__ AMOUNT 500 uL __X__
SPIKE # 1008171 CONC 16 PPM __X__ AMOUNT 500 uL __X__

EXTRACTION METHOD: SONICATION_____X____SEP. FUNNEL _____ DILUTION_____

FINAL VOLUME 10 mL

EXTRACTION PERSONNEL SMN, GJC

SPIKER: SMN **WITNESS: GJC**

SAMPLE #	WEIGHT / g	Vf	DIL		SAMPLE #	WEIGHT / g	Vf	DIL
BLK	2.00 g	10 mL	2X					
SP BLK	"	"	"					
6617-1	"	"	"					
6617-2	"	"	"					
6617-3	"	"	"					
6620-1	"	"	"					
6620-1ms	"	"	"					
6620-1msd	"	"	"					
6620-2	"	"	"					
6620-3	"	"	"					
6620-4	"	"	"					
6620-5	"	"	"					

RECEIVED BY: GJ
DATE: 5/27/14

DELIVERED BY: SMN
DATE: 5/27/14

B01213 8330 - Explosives - Tissues

Sample I.D.	Wt	Vf	Dilution	Date ON:	Time ON
BLK	2.00g	10mL	2X	5/23/14	15:00
SpBLK	2.00g	10mL	2X		
6617-1	2.00g	10mL	2X	Date OFF:	Time OFF:
-2	2.00g	10mL	2X		
-3	2.00g	10mL	2X	5/24/14	09:00
6620-1(A)	2.00g	10mL	2X		
-1MS(A)	2.00g	10mL	2X		
-1MSD(A)	2.00g	10mL	2X		
-2	2.00g	10mL	2X		
-3	2.00g	10mL	2X		
-4	2.00g	10mL	2X		
-5	2.00g	10mL	2X		

All samples contain 500 ml of surrogate # 1008191 (16 ppm).

SpBLK, MS, MSD contain 500 ml of spike # 1008171 (16 ppm).

Solvent Used: Acetonitrile # 091099.

Reagent Used: $CaCl_2$ sol'n # 1217

Spiker SMN Witness GJC

Continued on Page

Read and Understood By

Steve Newcomb 5/23/14 Signed Date

GJC 5/23/14 Signed Date

PROJECT

1008191 EXPLOS - Surr

0.160 mL of 1008045 (1,000 ppm) 1,4 DNB exp 04/2015
QS ACN
10.0 mL of 16 µg/mL
gm 4/1/14 exp 10/1/14

1008192 2-Nitrotoluene Stock
110 gm 4/1/14
~~100~~ mg. of Fluka 31567 (Lot SZB9286XV) Neat exp Oct 13, 2014
QS ACN 2,200 gm 4/1/14
50.0 mL of 2,000 µg/mL
gm 4/1/14 exp 10/13/14

1008193 EXPLOS - Spike (LOD) 11 Cmpt Surr

40 µL HMX Cerilliant Lot 051210-01 1,000 ppm exp 05/2015
RDX 1008063 (AB) " " 07/2015
1,3,5-TNB 1007777 1,000 ppm 01/2017
NB 1007536 (Abs) " 08/2014
TNT 1007913 (Abs) " 07/2017
2,6-DNT Cerilliant Lot ER121908-03, 1,000
40 µL 2,4-DNT #1007912 (1,000 ppm) exp. 11/2015
18.2 µL 2-NT #1008192 (2,200 µg/mL) exp 10/13/14
40 µL 4-NT 1007914 (1,000 ppm) exp 11/2015
3-NT Absolute 79077 1,000 ppm Lot 110510 exp 11/2015
1,4-DNB (Surr) 1,000 ppm #1008045 exp 04/2015
40 µL Nitroglycerine
QS Acetonitrile
5.0 mL of 8.0 µg/mL each
gm 4/1/14 exp ~~10/13/14~~

Continued on Page

Read and Understood By

Signed gm Date 4/1/14 Signed JRC Date 4/4/14

1008042 HI ICAL STDS

To 5 mL

C Blank	0 mLs of 1008041	Diluent	Final µg/L
50	0.025	5.0 mL	50
100	0.050		100
200	0.100		200
400	0.200		400
800	0.400 mLs	5.0	800
1,000	Not made		

JO 10/24/13 exp 10/25/13

1008043 HI EXPLOS (ICV)

250µL of 8.0 ppm # 1008025 (8.0 µg/mL) exp 4/21/14
QS Diluent 1007782
5.0 mL of 400 µg/L

JO 10/24/13 exp 10/25/13

1008044-4 Pest Cal Stds
1007982-4 0.25 ppm exp 12/12/13

0.25 ug/ml × 0.5 ml / 1.0 ml Hex (Fisher 14961) = 0.125 ppm
0.25 ug/ml × 0.1 ml / 1 = 0.025 ppm
exp 12/12/13 DJ 10/24/13

1,4 DNB (8330 Surr) Stock

1008045-A6

Part #: 70912 Laboratory Use Only - See MSDS
Lot #: 042910 Exp: 042915 Storage 4 °C
1,4-Dinitrobenzene
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

exp 11/1/13
Rec'd 11/15/13

Continued on Page

Read and Understood By

JO 11/1/13 BR 11-12-13
Signed Date Signed Date

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Certified Reference Material CRM

ISO 9001 QS Registered
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

			Lot #	
Part Number:	70912	**Solvent(s):**	49162	Methanol
Lot Number:	042910			
Description:	1,4-Dinitrobenzene			

Expiration Date:	042915
Recommended Storage:	Refrigerate (4 °C)
Nominal Concentration (µg/mL):	1000

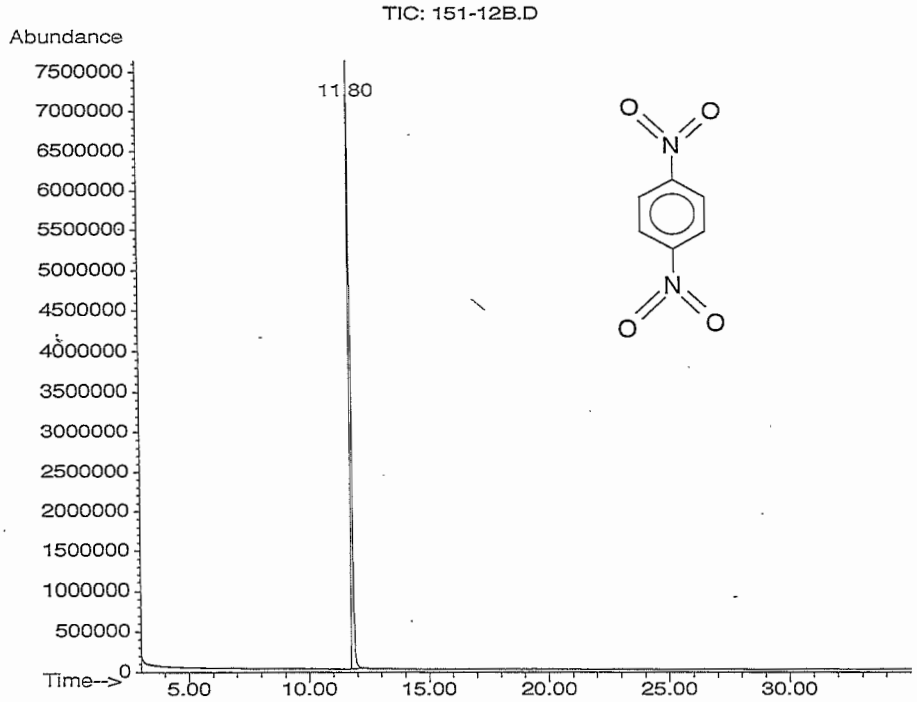
Formulated By:	Justin Dippold	042910	DATE
Reviewed By:	Pedro L. Rentas	042910	DATE

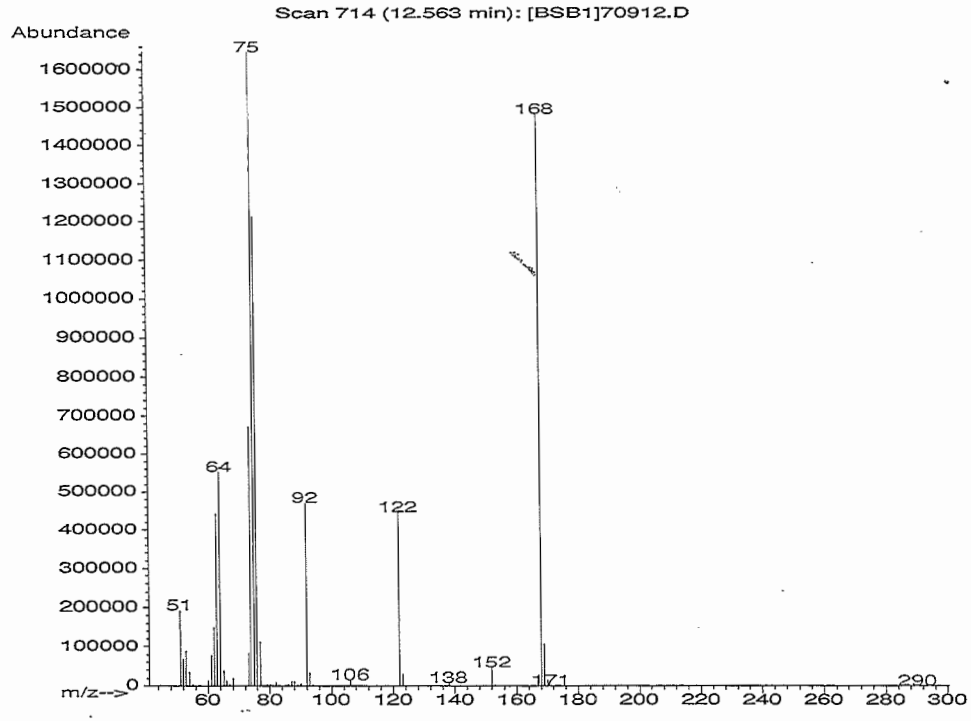
Weight(s) shown below were combined and diluted to: 100.0 — 5E-05 Balance Uncertainty; 0.012 Flask Uncertainty

MSDS Information (Solvent Safety Info. On Attached pg.)

	Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (g)	Actual Weight (g)	Actual Conc(µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1.	1,4-Dinitrobenzene	912	04003AM	1000	98	0.2	0.10208	0.10245	1003.6	0.00420	00100-25-4	1mg/m3/8H (skin)	N/A

Method GC8MSD-3.M: Column: SPB-5 (30m X 0.25mm ID X 0.25µm film thickness), Temp 1 = 50°C (1min.), Temp 2 = 300°C (9 min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 300°C. Analysis performed by Nicole Davis.





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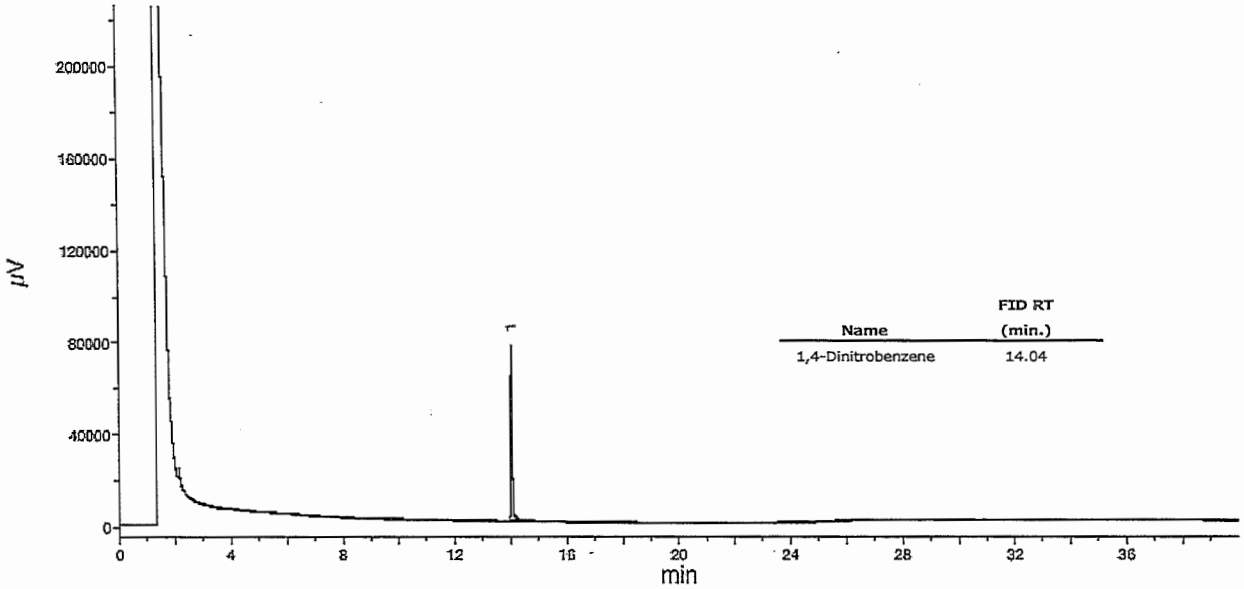
Run 48, "P70912 L042910 [1000μg/mL in MeOH]"

Run Length: 39.99 min, 23997 points at 10 points/second.
Created: Fri, Jul 30, 2010 at 3:53:13 AM.
Sampled: Sequence "072810-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9M2 Analysis by Candice Warren
SPB-5 30 meter x 0.53 μm x 1.5 df
Flow Rates; Total Flow = 300 mL/min, Helium (carrier)=6mL, Helium (makeup)=25mL, Hydrogen (detector)=30, Air (detector)=360
Oven Temp 1 = 50 C (1 min), Rate = 10 C/min, Oven Temp 2 = 300 (14 min), Total Run Time=40 min.
Injector Temp = 250 C, FID Temp = 300 C, FID Signal = Edaq Channel 1
Gas Chromatograph = HP5890, Inejector = HP7673A, Standard Injection = 0.5 uL, Range = 4



Name	FID RT (min.)
1,4-Dinitrobenzene	14.04

PROJECT

Continued From Page

1008168 Pest Eval

0.100 mL of 1007980 (1 ppm / 2 ppm) Std exp 06/13/14
0.900 mL Hexane
1.0 mL of 0.1 / 0.2 ppm mix
3/19/14 exp 5/19/14

1008169-AB Simazine Stock

Part #: 70263
Lot #: 081513
Laboratory Use Only - See MSDS
Exp: 081516 Storage 20 °C
Simazine
CAUTION: Sonicate Before Use
1000 ug/mL in acetone
1 mL
Recd 3-19-14
open 3-19-14
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1008170 NPD-Spike (RLCD Special)

50 µL Atrazine 1007851 (1000 ppm) exp 07/2017
50 µL Metolachlor 1007855 (1000 ppm) exp 06/2017
50 µL Simazine - 1008169-AB (1000) exp 08/2016
Acetone
5.0 mL of 10 µg/mL
3/19/14 exp 6/19/14

1008171 Hawaii EXPLO Spike (RDX, 2,4 DNT + NG)

0.160 mL of 1008172 (1,000 ppm) Restk exp 05/2018
0.160 mL 1008173 " " 04/2018
0.160 mL 1008028 NG 1,000 05/2015
QS Acetonitrile
10.0 mL Vol of 16.0 µg/mL each
3/20/14 exp 9/20/14

Continued on Page

Read and Understood By

Signed 3/20/14 Date Signed 3-26-14 Date

1008172 RDX Stock

RESTEK
Catalog# 31666
RDX Standard
110 Benner Circle
Bellefonte, PA 16823
Made in USA
1000 ug/mL each in Acetonitrile
Lot# A098101 Exp. Date: 05/2018 Store: 10°C or colder

Recd 3.18.14 opend 3/20/14 GD

1008173 2,4-DNT Stock

RESTEK
Catalog# 31663
2,4-Dinitrotoluene Standard
110 Benner Circle
Bellefonte, PA 16823
Made in USA
1000 ug/mL each in Acetonitrile
Lot# A097698 Exp. Date: 04/2018 Store: 10°C or colder

Recd 3.17.14 opend 3/20/14 GD

1008174 EXPLOS - Surrogate

0.400 mL of 1008075 (1,000 ppm) 1,4 DNB Xp 04/20/15
QS ACN Fisher 091099
25.0 mL of 16.0 µg/mL
GD 3/20/14 xp 9/20/14

1008175-U ocPest Calib Stds.

			Final Conc
125 µL of 1008155-U (10 µg/mL)	exp 5/31/14	VF 5 mL Hexane	= 0.250 ppm
75 µL " "		VF 5.0 mL	= 0.150
50 µL " "		"	= 0.100
200 µL of 1008175 (0.250)		VF - 1.0 mL	= 0.050
100 µL "		VF - 1.0 mL	= 0.025
100 µL of 1008175 (0.100)		VF - 1.0 mL	= 0.010
50 µL of 1008175 (0.100)		VF - 1.0 mL	= 0.005

Hexane (JTB 4350) GD 3/20/14 exp. 5/31/14

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
GD	3/20/14	BR	3-26-14

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. : 31666 **Lot No.:** A098101

Description : RDX Standard

RDX Std 1000µg/mL, Acetonitrile, 1mL/ampul *PGI BOX REQUIRED*
SHIP FED EX GROUND ONLY

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

Expiration Date : May 31, 2018 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound			Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)			
1	RDX			1,000.0	µg/mL	+/-	5.9397	µg/mL	Gravimetric
	CAS #	121-82-4	(Lot 080228JLM)			+/-	31.6700	µg/mL	Unstressed
	Purity	99%				+/-	44.3869	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

RESTEK CERTIFIED REFERENCE MATERIAL

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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

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. : 31663 **Lot No.:** A097698

Description : 2,4-Dinitrotoluene Standard

2, 4-Dinitrotoluene Std 1000µg/mL, Acetonitrile, 1mL/ampul

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

Expiration Date : April 30, 2018 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2,4-Dinitrotoluene	1,006.0 µg/mL	+/- 5.9753	µg/mL	Gravimetric
	CAS # 121-14-2 (Lot MKAA0690V)		+/- 10.6787	µg/mL	Unstressed
	Purity 99%		+/- 12.4178	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

1008024 OSP Cal Stds

STOCK 1007843 10-40 ppm OSP exp 02/14/14

10-40 ug/ml x 0.5/5 ml MeCl (Baker 4556-4) = 1.0 ppm OSP
x 0.4 = 0.8
x 0.3 = 0.6
x 0.2 = 0.4
x 0.1 = 0.2

exp 02/14/14 DT 10/17/13

1008025 EXPLOS SPIKE (HI Tissues)

0.800 mL 2,4 DNT # 1008026 – 100 µg/mL
0.800 mL RDX # 1008027 – 100 µg/mL
0.080 mL Nitroglycerine # 1008028 – 1,000 µg/mL
} Accusto.
Acetonitrile Fisher Lot 091099
10.0 mL @ 8.0 µg/mL each JD 10/21/13 exp 4/21/14

2,4-DNT STOCK

1008026 –

AccuStandard® 125 Market St. • New Haven, CT 06513 • USA Tel. 203-786-5290 • www.accustandard.com
M-8330-02-0.1X 1 mL
2,4-Dinitrotoluene
100 µg/mL in MeOH:AcCN (1:1)
Lot: 211031352
Exp. Mar 28, 2021
HIGHLY FLAMMABLE
Opened 10/21/13 JD
FOR LABORATORY USE ONLY
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
STORAGE Refrig (0-5° C)
2 Danger

1008027 RDX Stock

AccuStandard® 125 Market St. • New Haven, CT 0 Tel. 203-786-5290 • www.accusta
M-8330-05-0.1X
RDX
100 µg/mL in MeOH:AcCN (1:1)
Lot: 211111333-01
Exp. Jun 18, 2015
HIGHLY FLAMMABLE
Oped 10/21/13 JD 10/21/13

NG – Stock

1008028 –

AccuStandard® 125 Market St. • New Haven, CT 06513 • US Tel. 203-786-5290 • www.accustandard.co
M-8330-ADD-1-10X 1 mL
Nitroglycerin
1000 µg/mL in EtOH:MeOH (97:3)
Lot: 213031341
Exp. May 9, 2015
HIGHLY FLAMMABLE
Oped 10/21/13 JD

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
JD	10/21/13	JD	10/28/13
		BK	11/12/13

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-1-10X
Description: Nitroglycerin

Date Certified: May 9, 2013
Expiration: May 9, 2015
Sample Size: 1 mL
Storage Condition: Refrig (0-5° C)
Hazards: HIGHLY FLAMMABLE

		Ratio
Lot:	213031341	
Solvent:	Ethanol	97
	Methanol	3

[X] Included on ISO/IEC 17025 Scope of Accreditation
[X] Included on ISO Guide 34 Scope of Accreditation

Component	CAS #	Purity % (HPLC)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
Nitroglycerin	55-63-0	99.4	1003	997

AccuStandard follows U.S. conventions in reporting numerical values on both certificates and labels:

A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

1. All weights are traceable through NIST, Test No.822-275872-11
2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.
3. A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

For use in routine laboratory analysis.

See reverse side for additional information
Refer to the MSDS for additional safety information

Certified by: R. Cooper
Russ Cooper, QC Manager

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

OR-ORG/INO-001
Rev. 7/11

Standards Preparation Information

Rev. 1.1

PROJECT

Continued From Page

1008042 HI ICAL STDS

To 5 mL

C Blank	0 mLs of 1008041	Diluent	Final µg/L
50	0.025	5.0 mL	50
100	0.050		100
200	0.100		200
400	0.200		400
800	0.400 mLs	5.0	800
1,000	Not made		

JD 10/24/13 exp 10/25/13

1008043 HI EXPLOS (ICV)

250µL of 8.0 ppm # 1008025 (8.0 µg/mL) exp 4/21/14
QS Diluent 1007782
5.0 mL of 400 µg/L

JD 10/24/13 exp 10/25/13

1008044-4 Post Cal Stds
1007982-4 0.25 ppm exp 12/12/13

0.25 ug/ml × 0.5 ml / 1.0 ml HMX (Starbar 14961) = 0.125 ppm
0.25 ug/ml × 0.1 ml / 1 = 0.025 ppm
exp 12/12/13 JD 10/24/13

1,4 DNB (8330 Surr) Stock

1008045-A8

Part #: 70912 Laboratory Use Only - See MSDS
Lot #: 042910 Exp: 042915 Storage 4 °C
1,4-Dinitrobenzene
1000 ug/mL in methanol 1 mL
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opened 11/1/13
Recd 11/15/12

Continued on Page

Read and Understood By

Signed JD Date 11/1/13 Signed BR Date 11-12-13

1008038 OCP SURROGATE STOCK

1007977 200ppm OCP surrogate exp 02/02/17

200ug/ml x 0.25ml / 5ml Hex (Baker 14961) = 10ppm OCP surrogate

exp 01/22/14 [illegible] 10/22/13

1008039 PEST 2° STOCK (HAWAII)

1008037 10ppm PEST (HAWAII) exp 01/22/14
1008038 10ppm OCP Surrogate exp 01/22/14

10ug/ml x 0.5 ml each / 5ml Hex (Baker 14961) = 1.0ppm

exp 01/22/14 [illegible] 10/22/13

1008040 PEST CAL STDS (HAWAII)

1008039 1.0ppm PEST (HAWAII) exp 01/22/14 [illegible] 11/20/13

1.0 ug/ml X 0.2ml / 0.8ml Hex = 0.25 ppm PST (HAWAII)
x 0.2ml / 1.0 Hex = 0.2
x 0.1ml / 0.8ml Hex = 0.125
x 0.1ml / 1.0 ml Hex = 0.1
x 0.05ml / 1.0 ml Hex = 0.05
(1008040) 0.25 ug/ml x 0.05ml / 0.5ml Hex = 0.025
& 0.1 ug/ml x 0.05 ml / 0.5ml Hex = 0.01 in Hex (Baker 14961)

exp 01/22/14 [illegible] 10/22/13

1008041 HI Explos-Cal 2° STD

50 µL RDX Absolut (1000 ppm) Lot 111408 exp 11/2013
1,4 DNB (Surr) 1,000 ppm ID No. 1007915 exp 04/2015
Nitroglycerine (1,000 ppm) ID No. 1007911-A exp 12/2017
50 µL 2,4-DNT (1,000 ppm) ID No. 1007912-AB 11/2015
0.5 Acetonitrile (Fisher 091099)
5.00 ml of 10 µg/mL each [illegible] 10/24/13 [illegible] 11/14/13

Read and Understood By exp. 11/30/2013

Continued on Page 14

[illegible] Signed 10/24/13 Date [illegible] Signed 10/28/13 Date
11/13/13

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Analytical Reference Material ARM

ISO 9(QS Registered
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

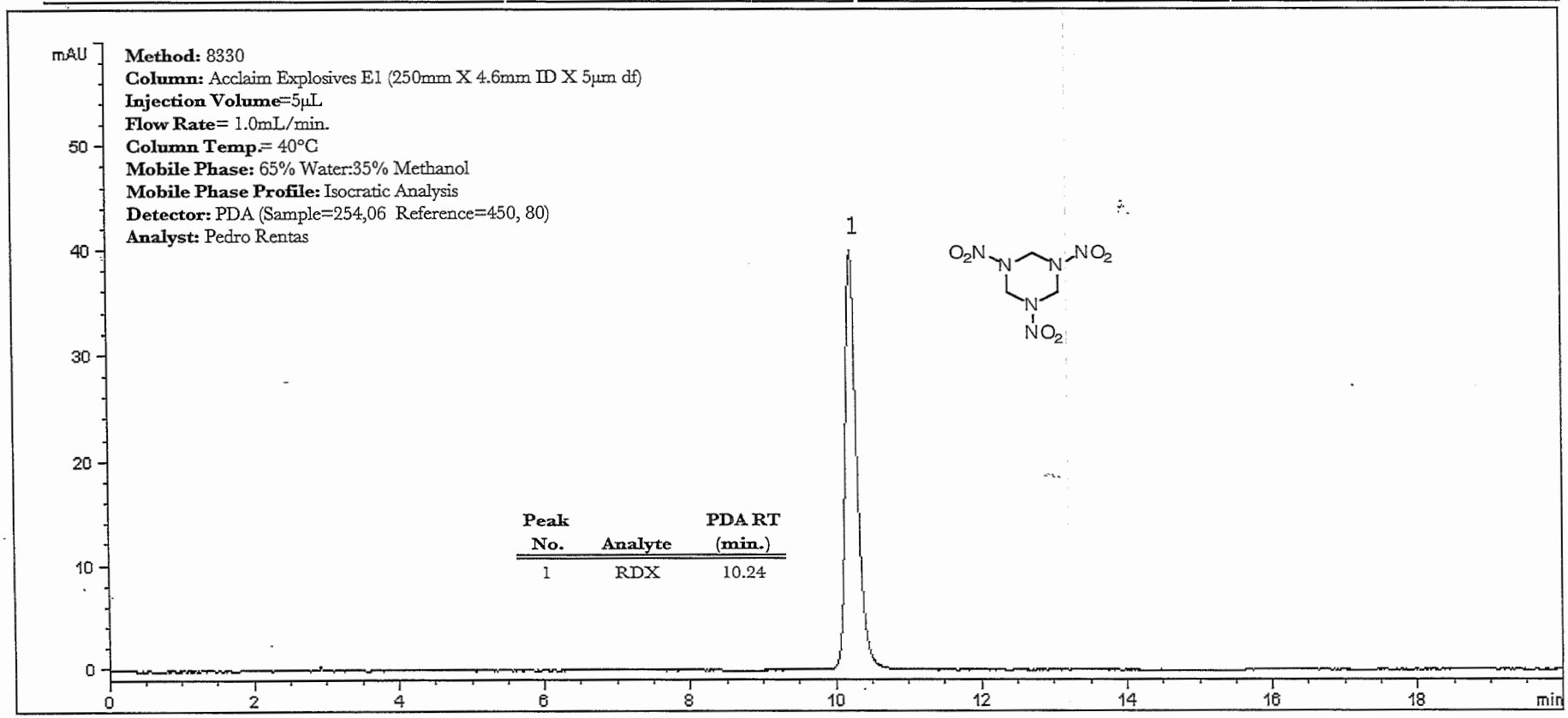
Part Number:	79079	**Solvent(s):**	Lot # J087	Acetonitrile
Lot Number:	111408			
Description:	RDX			
Expiration Date:	111413			
Storage:	0 °C			
Nominal Concentration (µg/mL):	1000			

Weight(s) shown below were combined and diluted to: 25.0 0.004 Flask Uncertainty; 5E-05 Balance Uncertainty

Formulated By:	Vincent K. Criscio, Jr.	111408 DATE
Reviewed By:	Pedro L. Rentas	111408 DATE

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. RDX	1429	ER091406-03	1000	99	0.2	0.02527	0.02532	1001.9	0.0057	00121-82-4	N/A	N/A



Peak No.	Analyte	PDA RT (min.)
1	RDX	10.24

PROJECT

Continued From Page

1007915

Part #: 70912 Laboratory Use Only - See MSDS
Lot #: 042910 Exp: 042915 Storage 4 °C
1,4-Dinitrobenzene / Surr.
1000 ug/mL in methanol 1 mL
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7/22/13

1007916 EXPLOS - "A" Spike

40 µL HMX Cert/H (1,000 ppm) Lot 051210-01 Exp 05/2015
40 µL RDX Abst " " 111408 " 11/2013
40 µL 1,3,5 TNB #1007777 1,000 ppm " 01/2017
40 µL NB #1007536 (Abs) 1,000 " 08/2014
2,6-DNT Cert/H (1,000 ppm) ER121908-03 " 12/2013
2,4-DNT #1007912 (1,000 ppm) 11/2015
2-NT Cert/H (1,000 ppm) ER052904-02 " 08/2013
4-NT 1007914 (1,000) " 11/2015
3-NT Abs (1000 ppm) Lot 11/05/10 Xp " 11/2015
40 µL Nitroglycerin #1007911 (1,000) 12/2017
40 µL TNT #1007913 (1,000) " 07/2017
40 µL 1,4DNB (Surr) 1,000 ppm #1007915 " 04/2015
5.0 mL Vol
0.8 µg/mL 7/22/13 Xp. 11/30/2013

1007917 ~~AR1221/AR1254~~ AR1221

Part #: 90124 Laboratory Use Only - See MSDS
Lot #: 081012 Exp: 081022 Storage 20 °C
Aroclor 1221
1000 ug/mL in hexane 1 mL
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opened 07/22/13

1007918 AR 1254

Part #: 90128 Laboratory Use Only - See MSDS
Lot #: 071612 Exp: 071622 Storage 20 °C
Aroclor 1254
1000 ug/mL in hexane 1 mL
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opened 07/22/13

Continued on Page

Read and Understood By

Signed 07/22/13 Date Signed 7/28/13 Date

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Certified Re..rence Material CRM

ISO 90(S Registered
ISO 17025-34-.. -43 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

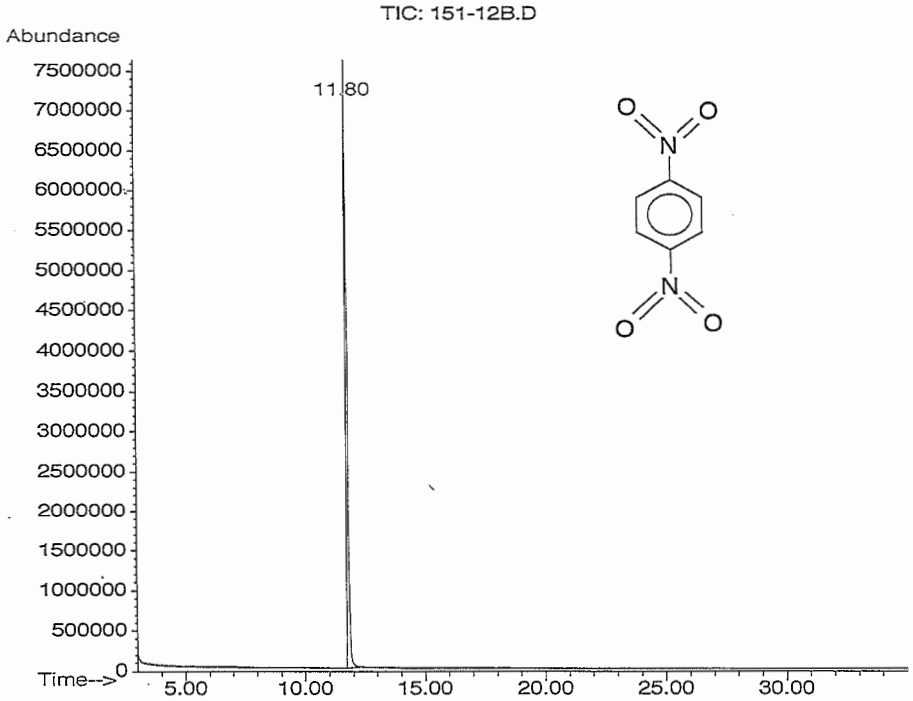
Part Number:	70912	**Solvent(s):**	Lot # 49162	Methanol
Lot Number:	042910			
Description:	1,4-Dinitrobenzene			
Expiration Date:	042915			
		Storage:	4 °C	
Nominal Concentration (μg/mL):	1000			
			5E-05 Balance Uncertainty	
Weight(s) shown below were combined and diluted to:			100.0	0.012 Flask Uncertainty

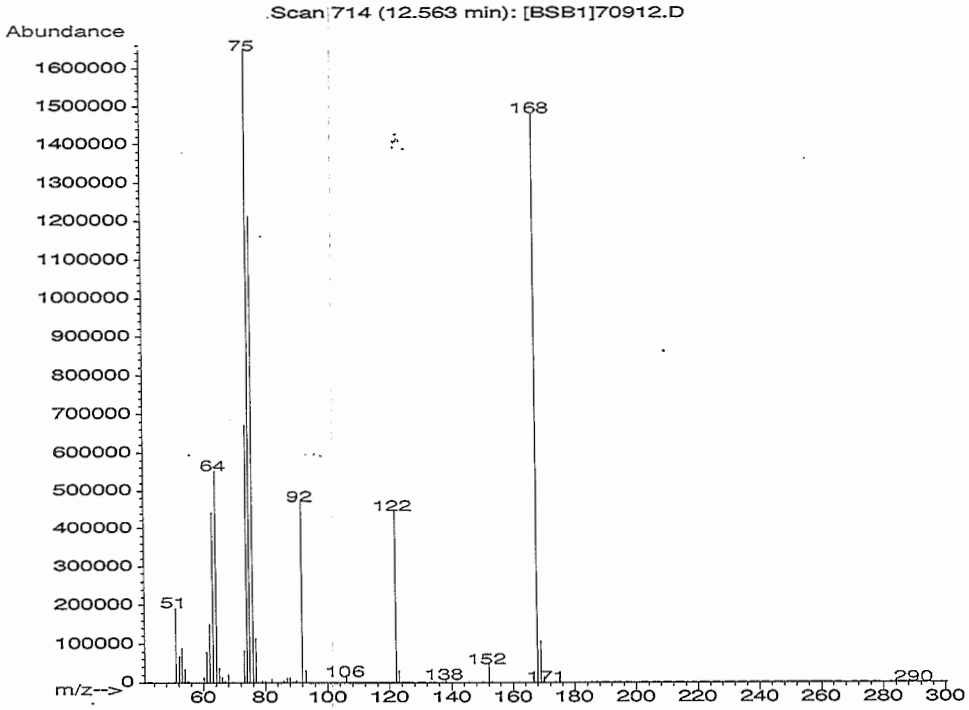
Formulated By:	Justin Dippold	042910 DATE
Reviewed By:	Pedro L. Rentas	042910 DATE

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	RM#	Lot Number	Nominal Conc (μg/mL)	Purity (%)	Uncertainty Purity	Target Weight (g)	Actual Weight (g)	Actual Conc(μg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dinitrobenzene	912	04003AM	1000	98	0.2	0.10208	0.10245	1003.6	0.00420	00100-25-4	1mg/m3/8H (skin)	N/A

Method GC8MSD-3.M: Column: SPB-5 (30m X 0.25mm ID X 0.25μm film thickness), Temp 1 = 50°C (1min.), Temp 2 = 300°C (9 min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 300°C. Analysis performed by Nicole Davis.





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Certified Reference Material CRM

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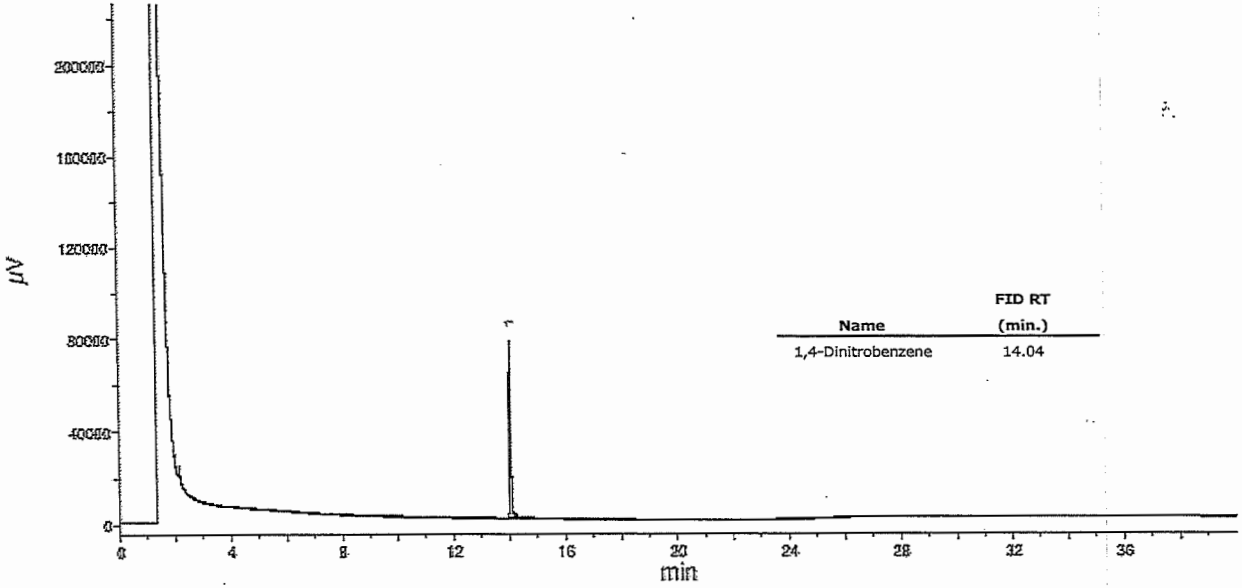
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

Run 48, "P70912 L042910 [1000µg/mL in MeOH]"

Run Length: 39.99 min, 23997 points at 10 points/second.
Created: Fri, Jul 30, 2010 at 3:53:13 AM.
Sampled: Sequence "072810-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9M2 Analysis by Candice Warren
SPB-5 30 meter x 0.53 µm x 1.5 df
Flow Rates: Total Flow = 300 mL/min, Helium (carrier)=6mL, Helium (makeup)=25mL, Hydrogen (detector)=30, Air (detector)=360
Oven Temp 1 = 50 C (1 min), Rate = 10 C/min, Oven Temp 2 = 300 (14 min), Total Run Time=40 min.
Injector Temp = 250 C, FID Temp = 300 C, FID Signal = Edaq Channel 1
Gas Chromatograph = HP5890, Inejector = HP7673A, Standard Injection = 0.5 uL, Range = 4



Name	FID RT (min.)
1,4-Dinitrobenzene	14.04

1007911-R NG - STOCK

RESTEK
110 Benner Circle
Bellefonte, PA 16823
Made in USA
Catalog # 31498 1007911
Nitroglycerin Standard
1000 ug/mL each in Methanol
Lot# A092411 Exp. Date: 12/2017 Store: 10°C or colder
Rec'd 4/18/13

opend 7/22/13 [illegible]

1007912-AB 2,4 DNT Stock

Part #: 79072 Laboratory Use Only - See MSDS
Lot #: 110510 Exp: 110515 Storage 0 °C
EPA Method 8330 Analyte
2,4-Dinitrotoluene
1000 ug/mL in acetonitrile 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

[illegible] 7/22/13

1007913-AB TNT - Stock

Part #: 79082 Laboratory Use Only - See MSDS
Lot #: 070612 Exp: 070617 Storage 0 °C
EPA Method 8330 Analyte
2,4,6-Trinitrotoluene
1000 ug/mL in acetonitrile 1 mL
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[illegible] 7/22/13

1007914-AB 4 - NT Stock

Part #: 79078 Laboratory Use Only - See MSDS
Lot #: 110510 Exp: 110515 Storage 4 °C
EPA Method 8330 Analyte
4-Nitrotoluene
1000 ug/mL in acetonitrile 1 mL
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[illegible] 7/22/13

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
[illegible]	7/22/13	[illegible]	07/26/13

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

www.restek.com

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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. : 31498 **Lot No.:** A092411

Description : Nitroglycerin Standard

1000µg/mL, Methanol, 1mL/ampul *PGI BOX REQUIRED* SHIP FED EX GROUND ONLY

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

Expiration Date : December 2017 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Nitroglycerin	1,000.0 µg/mL	+/- 5.8686	µg/mL	Gravimetric
	CAS # 55-63-0		+/- 32.1907	µg/mL	Unstressed
	Purity 99%		+/- 44.7599	µg/mL	Stressed

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

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Certified Reference Material CRM

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CERTIFIED WEIGHT REPORT

Part Number: 79072
Lot Number: 110510
Description: 2,4-Dinitrotoluene
EPA Method 8330 Analyte
Expiration Date: 110515
Storage: 0 °C
Nominal Concentration (µg/mL): 1000

Solvent(s): Lot # L140AN Acetonitrile

Formulated By:	Pat Scaturchio	110510 DATE
Reviewed By:	Pedro L. Rentas	110510 DATE

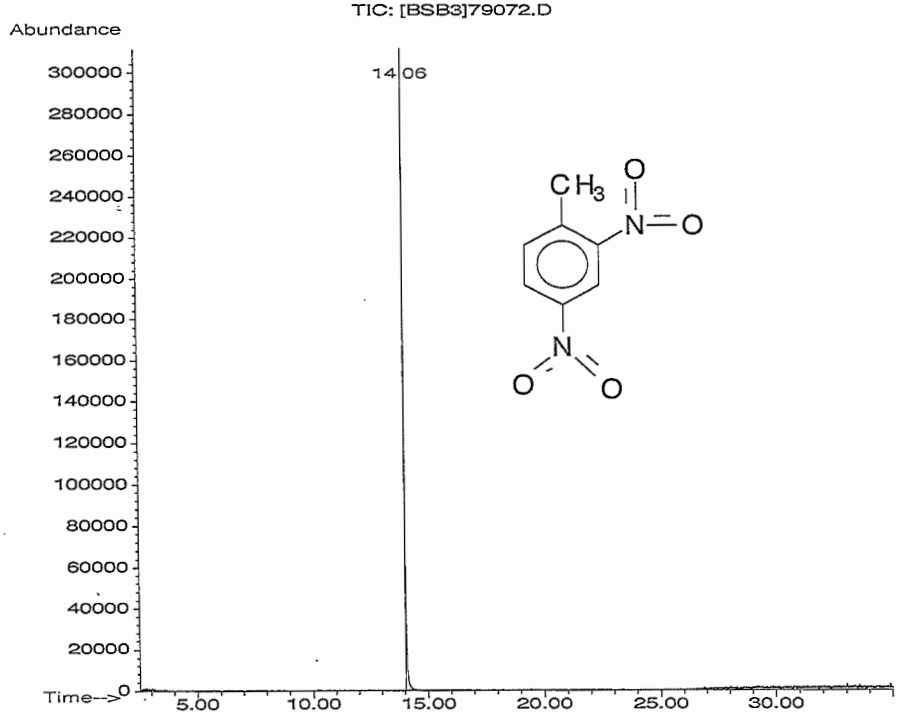
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to: 100.0 0.002 Flask Uncertainty

MSDS Information
(Solvent Safety Info. On Attached pg.)

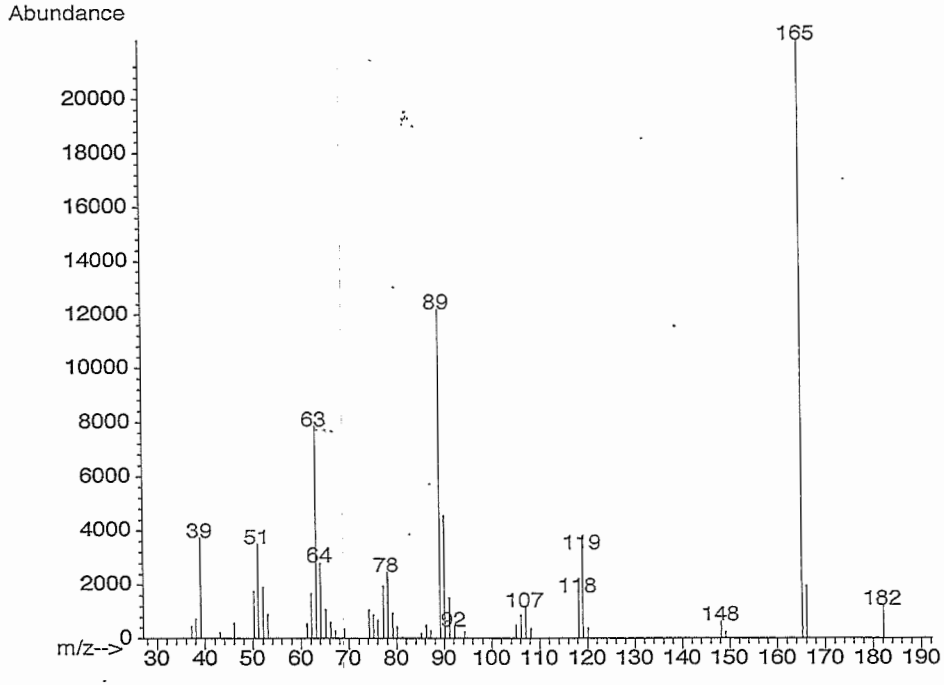
Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (g)	Actual Weight (g)	Actual Conc(µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. 2,4-Dinitrotoluene	160	00913MP	1000	97	0.2	0.10308	0.10318	1001.0	0.00424	00121-14-2	1.5mg/m3/8H (skin)	orl-rat 268mg/kg

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 300°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Nicole Poisson.

TIC: [BSB3]79072.D



Scan 768 (14.067 min): [BSB3]79072.D



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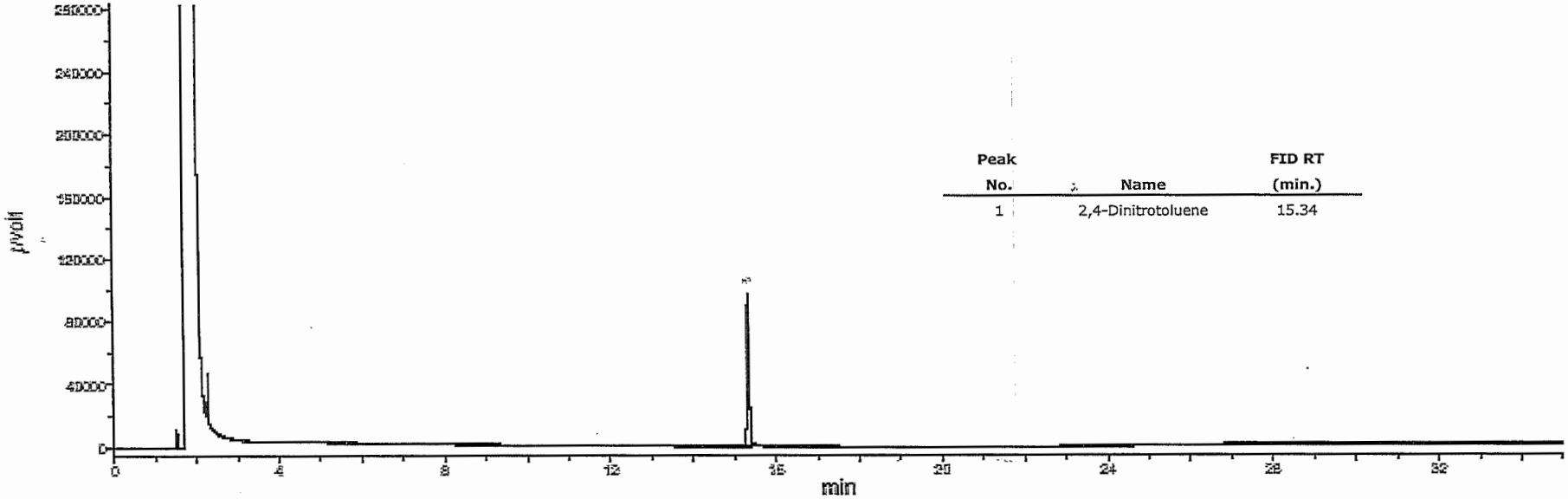
Run 42, "P79072 L110510 [1000µg/mL in ACN]"

Run Length: 35.00 min, 21002 points at 10 points/second.
Created: Wed, Nov 10, 2010 at 9:17:50 PM.
Sampled: Sequence "110910-GC4M1", Method "GC4-M1".
Analyzed using Method "GC4-M1".

Comments
GC4-M1 Analysis by Melissa Stonier
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness
Flow rates; Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL, Hydrogen (detector) = 30 mL, Air (detector) =360 mL
Oven Temp 1 = 50°C (1 min), Rate = 10°C/min, Oven Temp 2 = 300°C (9 min), Total Run Time = 35 Minutes.
Injector Temp = 200°C, FID Temp = 300°C, FID Signal = eDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4



Peak No.	Name	FID RT (min.)
1	2,4-Dinitrotoluene	15.34

PROJECT

1008280 PesT Eval

150 µL of 1008177 (1,2 ppm) exp 11/30/14
1350 µL of Hexane JTB 62582
1,500 µL of 0.1/0.2 ppm mix
gD 5/29/14 exp 8/29/14

1008281 UHSY PesT QC

50 µL of 1008209-RS (10 µg/mL) exp 6/30/14
QS Hexane JTB 62582
5.0 mL VF Hex of 0.100 µg/mL
gD 5/29/14 Xp 6/30/14

1008282 EXPLOS-Cal Std (Hawaii)

0.200 mL of 1008184 (10 µg/mL) exp 9/24/14
QS Diluent 1008179
5.0 mL of 400 µg/L
gD 5/30/14 exp 5/31/14

1008283 KC NP Pesticide Cal Stds.
(Same STKs as on p 24)

20 µL 1008265 Desethylatrazine (1,000 µg/mL) exp 11/15
(Same as p24) Deisopropylatrazine (1,000 µg/mL)
1007851 Atrazine
1008169 Simazine
1007852 Alachlor
1007855 Metolachlor
1007856 Metribuzin
20 µL 1007854 Cyanazine 1000 µg/mL
QS Hexane
10.0 mL VF gD 6/2/14 exp 9/2/14
of 2.0 µg/mL
ea.

Continued on Page 30

Read and Understood By

gD 6/2/14 Signed Date
BR 6-5-14 Signed Date

PROJECT

1008184 EXPLOS (2ND Stock) HLW.

50 µL 1008063(AB) RDX 1000 ppm exp 07/2015
50 µL 1007912(AB) 2,4-DNT " exp 11/2015
50 µL 1007911 Nitroglycerine " exp 12/2017
50 µL 1,4 DNB (Surr) 1,000 ppm #1008045 exp 04/2015
VF 5.0 mL of 10 µg/mL each GO 3/24/14 exp 9/24/14
Diluent Acetonitrile

1008185 EXPLOS Cal Std

0.200 mL of 1008184 (10 µg/mL) exp 9/24/14
as Diluent 1008179
5.0 mL of 400 µg/L
GO 3/24/14 exp 3/25/14

1008186

0.200 mL of 1008184 (10 ppm) 2° Std exp ~~3~~ 9/24/14
as Diluent GO 3/25/14
5.0 mL GO 3/25/14
of 400 µg/L exp 3/26/14

1008187 UHST PEST QC

50 µL of 1008135 (10 µg/mL) exp 6/30/14
as Hexane STB 43501
5.0 mL of 0.10 ppm STD
GO 3/25/14 exp 6/25/14

Continued on Page

Read and Understood By

GO Signed 3/25/14 Date PEK Signed 4/1/2014 Date

1008061 PEST Cal Std (HAWAII)

1008039 1.0 ppm PEST (HAWAII) exp 01/22/14

1.0 ug/ml × 0.2 ml / 0.8 ml Hex (Baker 1496) = 0.25 ppm
× 0.2 ml / 1.0 ml = 0.2 ppm
× 0.1 ml / 0.8 ml = 0.125 ppm
× 0.1 ml / 1.0 ml = 0.1 ppm
× 0.05 ml / 1.0 ml = 0.05 ppm
(1008061) 0.25 ug/ml × 0.05 ml / 0.5 ml = 0.025 ppm
+ 0.1 ug/ml × 0.05 ml / 0.5 ml = 0.01 ppm

exp 01/22/14 AD 11/20/13

1008062 EXPLOS 2° Stock (HI)

50 mL of 1008063-AB. (RDX) 1,000 ppm exp. 07/2015
50 mL of 1007911-R NG 1,000 " 12/2017
50 mL 1007912-AB 2,4 DNT 1000 ppm exp 11/2015
50 mL 1007915 1,3 DNB (Sum) 1,000 exp 04/2015
QS Acetonitrile, Fisher 091099

5.0 mL Volume of 10 µg/mL each
JO 11/23/13 exp 5/23/14

1008063-AB RDX - Stock soln

Part #: 79079 Laboratory Use Only - See MSDS
Lot #: 071910 Exp: 071915 Storage 0 °C
EPA Method 8330 Analyte
RDX
1000 ug/mL in acetonitrile 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131
Recd 11.19.13
opened JO 11/23/13

Continued on Page

Read and Understood By

JO 11/23/13 AD 11/26/13
Signed Date Signed Date

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Analytical Reference Material ARM

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Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 79079
Lot Number: 071910
Description: RDX

Expiration Date: 071915

Nominal Concentration (µg/mL): 1000

Lot #
Solvent(s): 021310JC Acetonitrile

Storage: 0 °C

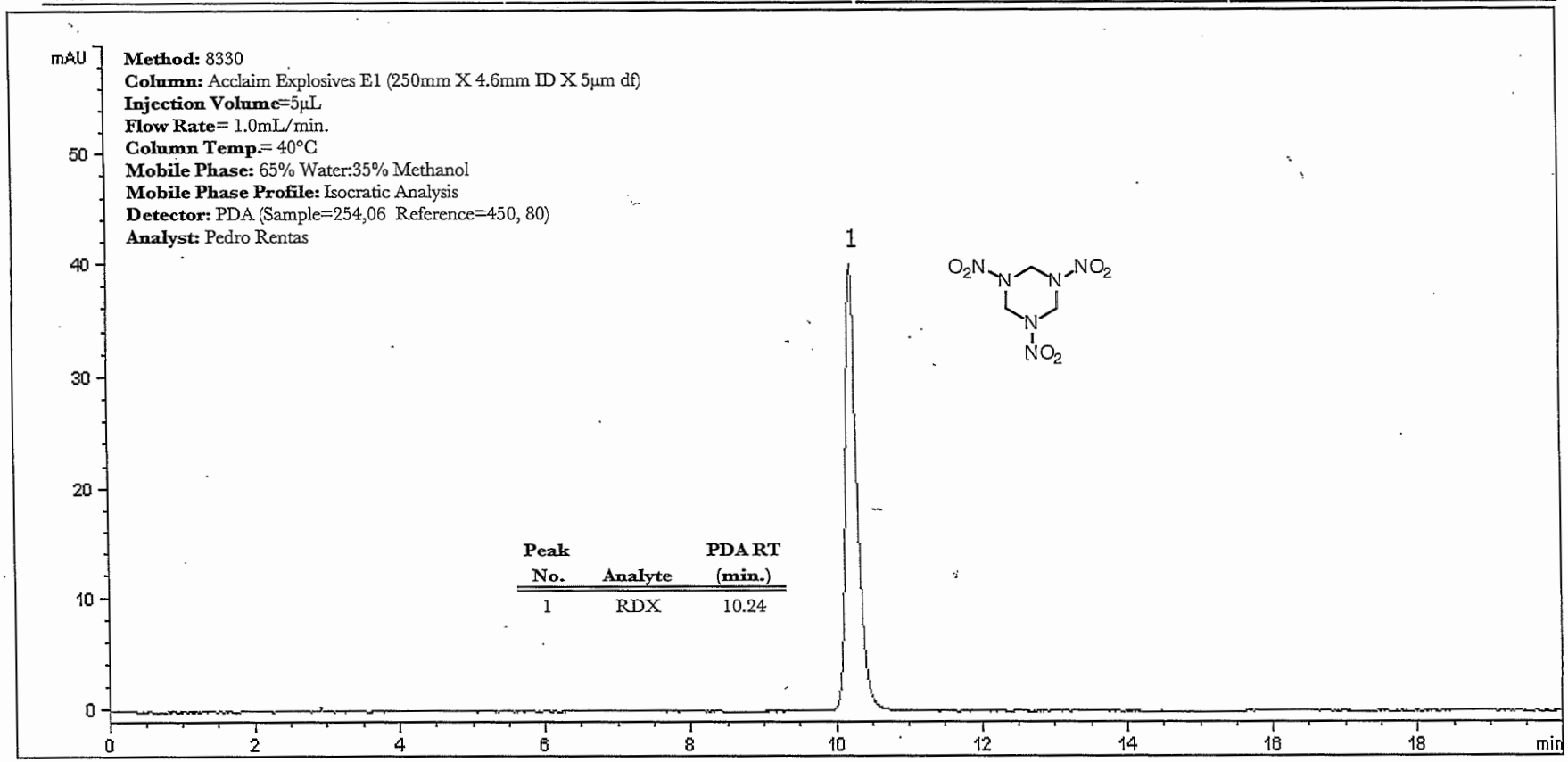
5E-05 Balance Uncertainty

Weight(s) shown below were combined and diluted to: 50.0 0.002 Flask Uncertainty

Formulated By:	Vincent K. Criscio, Jr.	071910 DATE
Reviewed By:	Pedro L. Rentas	071910 DATE

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. RDX	1429	ER091609-04	1000	99	0.2	0.05049	0.05055	1001.2	0.0045	00121-82-4	N/A	N/A



Peak No.	Analyte	PDA RT (min.)
1	RDX	10.24

1007911-R NG - STOCK

RESTEK
110 Benner Circle
Bellefonte, PA 16823
Made in USA
Catalog # 31498 1007911
Nitroglycerin Standard
1000 ug/mL each in Methanol
Lot# A092411 Exp. Date: 12/2017 Store: 10°C or colder
Rec'd 4/18/13

opend 7/22/13 gd

1007912-AB 2,4 DNT Stock

Part #: 79072 Laboratory Use Only - See MSDS
Lot #: 110510 Exp: 110515 Storage 0 °C
EPA Method 8330 Analyte
2,4-Dinitrotoluene
1000 ug/mL in acetonitrile 1 mL
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gd 7/22/13

1007913-AB TNT - Stock

Part #: 79082 Laboratory Use Only - See MSDS
Lot #: 070612 Exp: 070617 Storage 0 °C
EPA Method 8330 Analyte
2,4,6-Trinitrotoluene
1000 ug/mL in acetonitrile 1 mL
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gd 7/22/13

1007914-AB 4 - NT Stock

Part #: 79078 Laboratory Use Only - See MSDS
Lot #: 110510 Exp: 110515 Storage 4 °C
EPA Method 8330 Analyte
4-Nitrotoluene
1000 ug/mL in acetonitrile 1 mL
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gd 7/22/13

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
gd	7/22/13	AJ	07/26/13

1008042 HI ICAL STDS

To 5 mL

C Blank	0 mLs of 1008041	Diluent	Final µg/L
50	0.025	5.0 mL	50
100	0.050		100
200	0.100		200
400	0.200		400
800	0.400 mLs	5.0	800
1,000	Not made		

JD 10/24/13 exp 10/25/13

1008043 HI EXPLOS (ICV)

250µL of 8.0 ppm # 1008025 (8.0 µg/mL) exp 4/21/14
QS Diluent 1007782
5.0 mL of 400 µg/L

JD 10/24/13 exp 10/25/13

1008044-4 Post Cal Stds
1007982-4 0.25 ppm exp 12/12/13

0.25 ug/ml × 0.5 ml / 1.0 ml Hex (Baker 14961) = 0.125 ppm
0.25 ug/ml × 0.1 ml / 1 = 0.025 ppm
exp 12/12/13 JD 10/24/13

1,4 DNB (8330 Surr) Stock

1008045-A8

Part #: 70912 Laboratory Use Only - See MSDS
Lot #: 042910 Exp: 042915 Storage 4 °C
1,4-Dinitrobenzene
1000 ug/mL in methanol 1 mL
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Opened 11/1/13
Read 11/15/13

Continued on Page

Read and Understood By

JD 11/1/13 BR 11-12-13
Signed Date Signed Date

1008176 Hawaii ICV

50 µL of 1008135 (10 µg/mL) Pest. exp 6/30/14
25 Hexane JT Baker 43501
5.00 mL of 0.10 µg/mL each
JO 3/20/14 exp 4/3/14

1008177 PEST EVAL 2° STOCK

50 µL of Restek 32417 (100/200 ppm in MTBE) Lot A050346
Exp 11/30/14
25 MTBE Sigma 74496 EJ
5.00 mL of 1/2 ppm mix
JO 3/21/14 exp 11/30/2014

1008178 PEST EVAL Bench

150 µL of 1008177 (1/2 ppm) STD exp 11/30/14
25 Hexane JT Baker 43501
1,500 µL of 0.1/5.2 STD
JO 3/21/14 xp 06/21/14

1008179 EXPLOS DILUENT

100 mL of 5% CaCl2 # 1217
100 mL of MeOH Macron 44064
200 mL of 50/50 JO 3/22/14 x 3/22/15

1008180 EXPLOS Calib Std

0.200 mL of 1008062 (10 µg/mL) exp 05/23/14
Diluent
5.0 mL of 400 µg/L Std
JO 3/22/14 Xp 3/23/14

Continued on Page

Read and Understood By

JO 3/22/14 DRC 4/1/14
Signed Date Signed Date

PROJECT

Continued From Page

#1215 10N - NaOH 8/2/13
Dissolved 400g of NaOH (McCron #0000037524) into 1000mL of DI H_2O. Exp: 8/2/14 SMW

#1216 10N - NaOH 10/3/13
Dissolved 400g of NaOH (McCron #0000037524) into 1000mL of DI H_2O. Exp: 10/3/14 SMW

#1217 $CaCl_2$ soln for Explosives 12/4/13
Dissolved 5 grams of $CaCl_2$ (Fisher #C77-500, lot #916800) into 1000mL of DI H_2O. Exp: 12/4/15 SMW

#1218 10N - NaOH 3/20/14
Dissolved 400g of NaOH (McCron #0000037524) into 1000mL of DI H_2O. Exp: 3/20/15 SMW

SMW 4/8/14

Continued on Page

Read and Understood By

Steve Mercon 4/8/14 Signed Date

Signed 4/8/14 Date

Analytical Run Number 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)

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

Method C:\HPCHEM\1\METHODS\EXPHH2.M

Calibration Table

Calib. Data Modified : Monday, October 28, 2013 10:25:13 AM

Calculate : External Standard
Based on : Peak Area

Rel. Reference Window : 0.000 %
Abs. Reference Window : 0.500 min
Rel. Non-ref. Window : 0.000 %
Abs. Non-ref. Window : 0.500 min
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Linear
Origin : Included
Weight : Equal

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Lvl	Amount [PPB]	Area	Amt/Area	Ref	Grp	Name
8.078	2	1	50.00000	7.59689	6.58164			RDX
		2	100.00000	15.85412	6.30751			
		3	200.00000	32.88393	6.08200			
		4	400.00000	65.29810	6.12575			
		5	800.00000	130.46573	6.13188			
13.125	2	1	50.00000	22.22412	2.24981			1,4-DNB(Surr)
		2	100.00000	44.25861	2.25945			
		3	200.00000	90.42964	2.21166			
		4	400.00000	180.48079	2.21630			
		5	800.00000	361.87109	2.21073			
18.179	1	1	50.00000	12.96533	3.85644			Nitroglycerine
		2	100.00000	25.27819	3.95598			
		3	200.00000	53.49364	3.73876			
		4	400.00000	102.50692	3.90218			
		5	800.00000	207.15292	3.86188			
24.995	2	1	50.00000	24.45439	2.04462			2,4-DNT
		2	100.00000	48.33740	2.06879			
		3	200.00000	97.77531	2.04551			
		4	400.00000	194.47369	2.05683			
		5	800.00000	390.39532	2.04920			

1 CAL
4 Compds only:
RDX
1,4-DNB (Surr)
NG
2,4-DNT

Pass JD 10/28/13

Peak Sum Table

No Entries in table

==========

Calibration Curves

==========

RDX at exp. RT: 8.078
VWD1 A, Wavelength=254 nm
Correlation: 0.99998
Residual Std. Dev.: 0.33271
Formula: y = mx + b
m: 1.63484e-1
b: -2.16881e-1
x: Amount[PPB]
y: Area

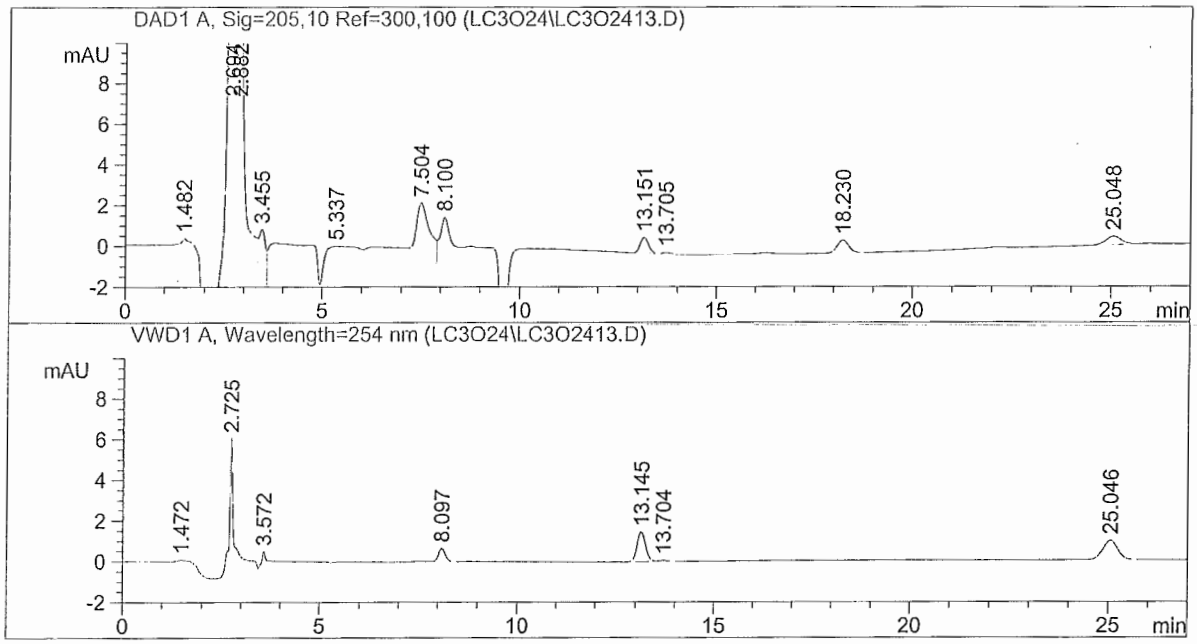
1,4-DNB(Surr) at exp. RT: 13.125
VWD1 A, Wavelength=254 nm
Correlation: 1.00000
Residual Std. Dev.: 0.40912
Formula: y = mx + b
m: 4.52724e-1
b: -4.09628e-1
x: Amount[PPB]
y: Area

Nitroglycerine at exp. RT: 18.179
DAD1 A, Sig=205,10 Ref=300,100
Correlation: 0.99993
Residual Std. Dev.: 1.04607
Formula: y = mx + b
m: 2.58593e-1
b: 9.62472e-2
x: Amount[PPB]
y: Area

2,4-DNT at exp. RT: 24.995
VWD1 A, Wavelength=254 nm
Correlation: 1.00000
Residual Std. Dev.: 0.39179
Formula: y = mx + b
m: 4.87881e-1
b: -1.29941e-1
x: Amount[PPB]
y: Area

Injection Date	: 10/24/13 7:18:27 PM	Seq. Line	: 13
Sample Name	: 50 PPB 1008042	Location	: Vial 6
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl
Acq. Method	: C:\HPCHEM\1\METHODS\EXPHH1.M		
Last changed	: 10/24/13 4:43:40 PM by JGD		
Analysis Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 10/28/13 10:15:40 AM by JGD (modified after loading)		

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	Monday, October 28, 2013 10:14:52 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

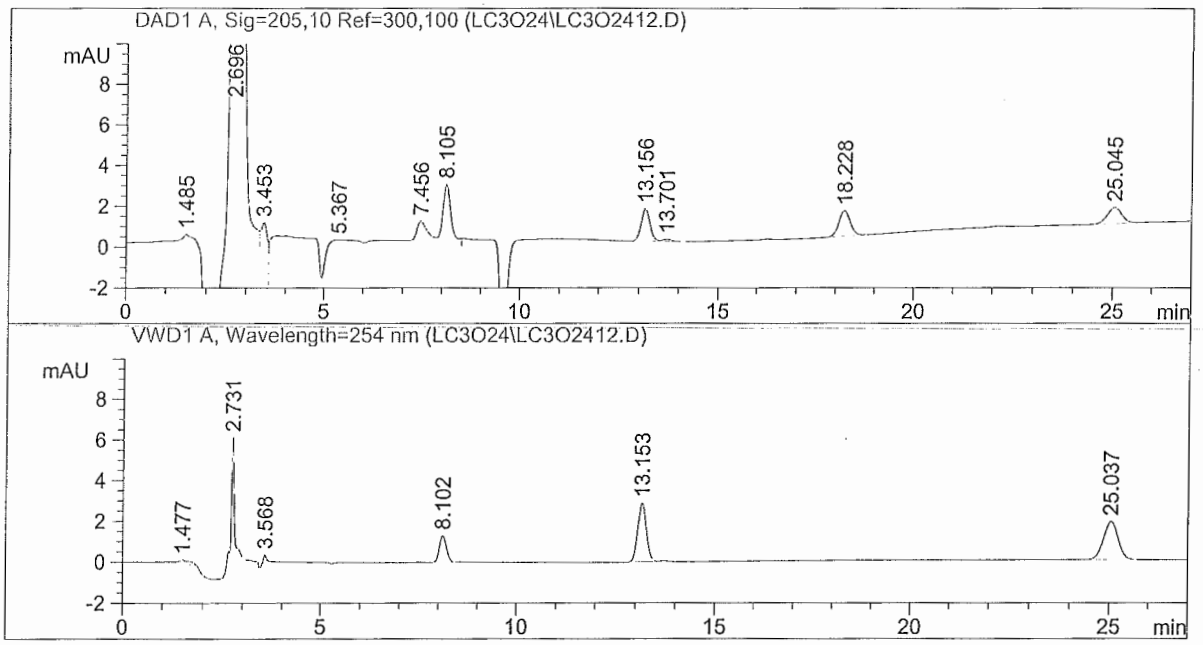
RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.097	2	BP	7.59689	6.58164	50.00000		RDX
13.145	2	BV	22.22412	2.24981	50.00000		1,4-DNB(Surr)
18.230	1	BP	12.96533	3.85644	50.00000		Nitroglycerine
25.046	2	BB	24.45439	2.04462	50.00000		2,4-DNT
Totals :					200.00000		

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 10/24/13 6:49:15 PM	Seq. Line :	12
Sample Name	: 100 PPB 1008042	Location :	Vial 5
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl
Acq. Method	: C:\HPCHEM\1\METHODS\EXPHH1.M		
Last changed	: 10/24/13 4:43:40 PM by JGD		
Analysis Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 10/28/13 10:19:36 AM by JGD (modified after loading)		

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	10/28/13 10:19:36 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

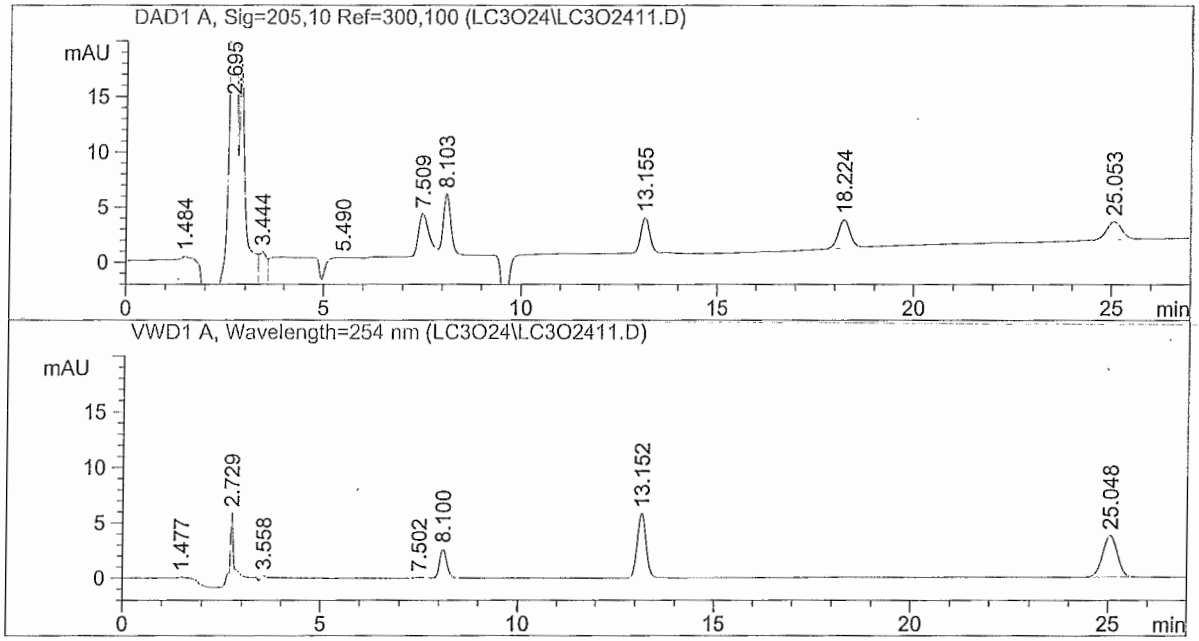
RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.102	2	BB	15.85412	6.35129	100.69418		RDX
13.153	2	BB	44.25861	2.25783	99.92859		1,4-DNB(Surr)
18.228	1	BP	25.27819	3.93896	99.56981		Nitroglycerine
25.037	2	BB	48.33740	2.06472	99.80299		2,4-DNT
Totals :					399.99557		

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 10/24/13 6:20:08 PM	Seq. Line :	11
Sample Name	: 200 PPB 1008042	Location :	Vial 4
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl
Acq. Method	: C:\HPCHEM\1\METHODS\EXPHH1.M		
Last changed	: 10/24/13 4:43:40 PM by JGD		
Analysis Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 10/28/13 10:21:16 AM by JGD (modified after loading)		

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	10/28/13 10:19:36 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

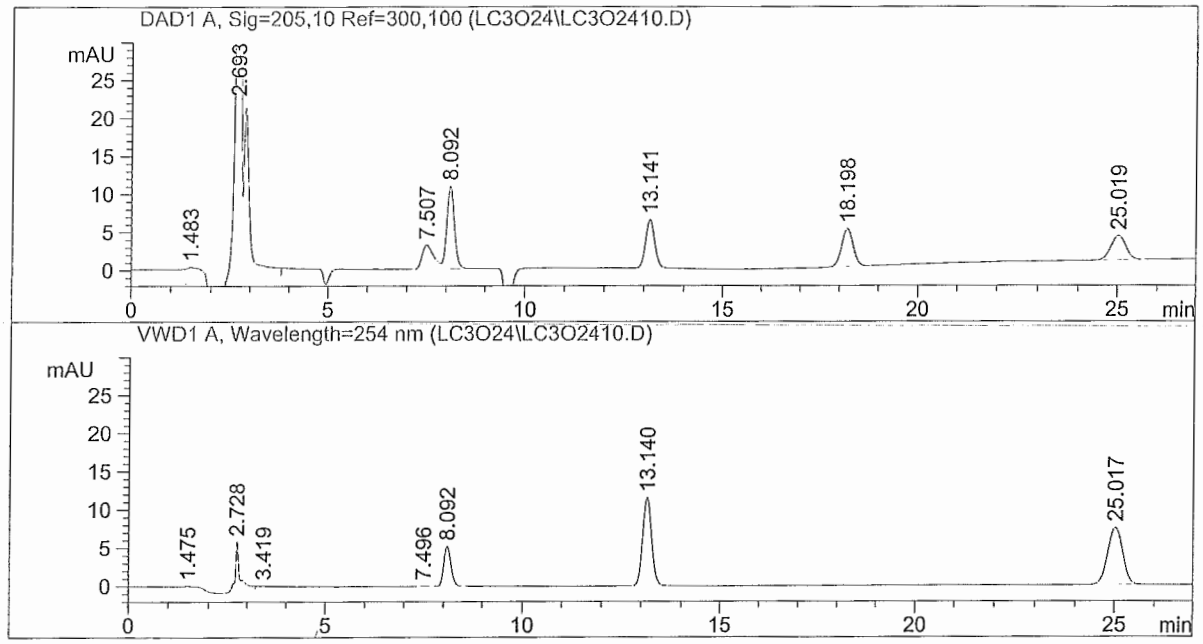
RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.100	2	BB	32.88393	6.32862	208.10987		RDX
13.152	2	BB	90.42964	2.25866	204.24962		1,4-DNB(Surr)
18.224	1	BB	53.49364	3.94794	211.18950		Nitroglycerine
25.048	2	BB	97.77531	2.06678	202.07972		2,4-DNT
Totals :					825.62871		

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 10/24/13 5:50:56 PM	Seq. Line :	10
Sample Name	: 400 PPB 1008042	Location :	Vial 3
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl
Acq. Method	: C:\HPCHEM\1\METHODS\EXPHH1.M		
Last changed	: 10/24/13 4:43:40 PM by JGD		
Analysis Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 10/28/13 10:22:36 AM by JGD (modified after loading)		

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	Monday, October 28, 2013 10:22:14 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

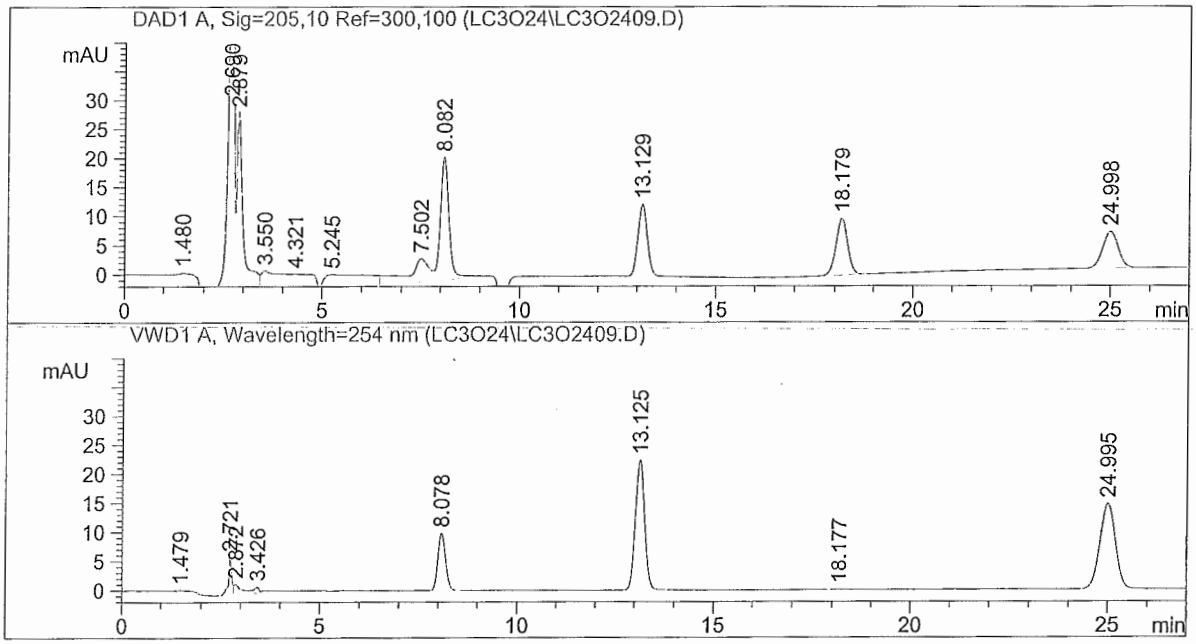
RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.092	2	BB	65.29810	6.08902	397.60141		RDX
13.140	2	BB	180.48079	2.21534	399.82709		1,4-DNB(Surr)
18.198	1	BP	102.50692	3.75739	385.15857		Nitroglycerine
25.017	2	BB	194.47369	2.04801	398.28454		2,4-DNT
Totals :					1580.87161		

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 10/24/13 5:21:49 PM	Seq. Line :	9
Sample Name	: 800 PPB 1008042	Location :	Vial 2
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl
Acq. Method	: C:\HPCHEM\1\METHODS\EXPHH1.M		
Last changed	: 10/24/13 4:43:40 PM by JGD		
Analysis Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 10/28/13 10:24:09 AM by JGD (modified after loading)		

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	Monday, October 28, 2013 10:23:42 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

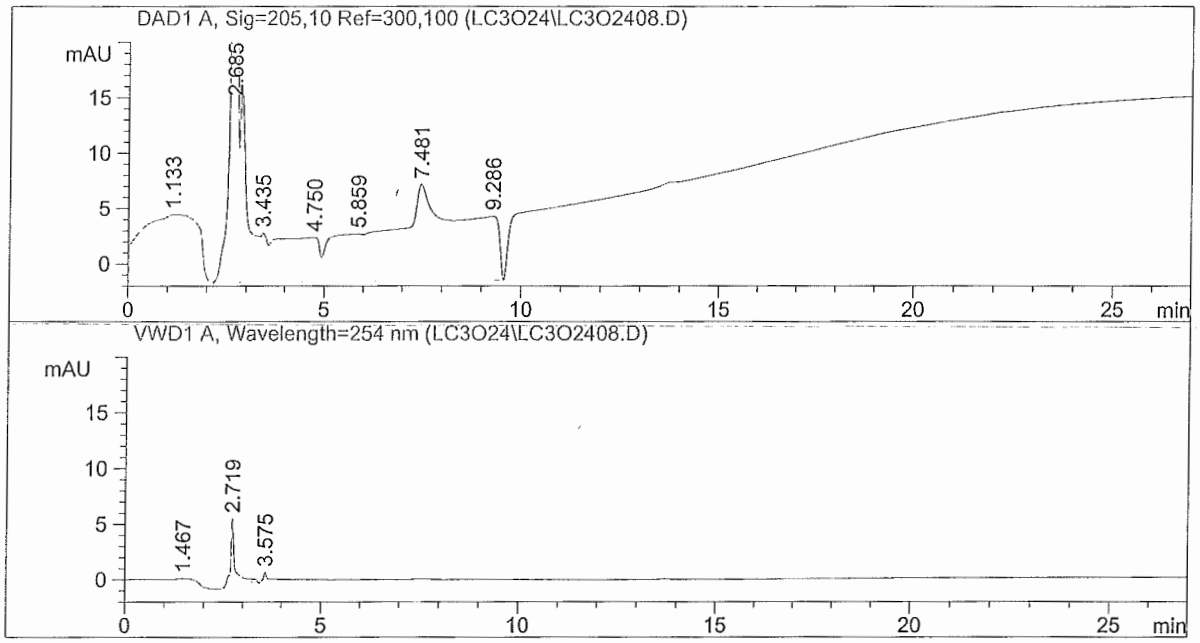
RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.078	2	BB	130.46573	6.10540	796.54608		RDX
13.125	2	BB	361.87109	2.21410	801.21946		1,4-DNB(Surr)
18.179	1	PB	207.15292	3.88041	803.83749		Nitroglycerine
24.995	2	BB	390.39532	2.05550	802.45750		2,4-DNT
Totals :					3204.06052		

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 10/24/13 4:52:37 PM	Seq. Line :	8
Sample Name	: CAL BLK 1008042	Location :	Vial 1
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl
Acq. Method	: C:\HPCHEM\1\METHODS\EXPHH1.M		
Last changed	: 10/24/13 4:43:40 PM by JGD		
Analysis Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 10/28/13 10:26:04 AM by JGD (modified after loading)		

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	Monday, October 28, 2013 10:25:13 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.078	2		-	-	-		RDX
13.125	2		-	-	-		1,4-DNB(Surr)
18.179	1		-	-	-		Nitroglycerine
24.995	2		-	-	-		2,4-DNT

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

```
==================================================================
Injection Date  : 10/24/13 4:52:37 PM          Seq. Line :   8
Sample Name     : CAL BLK 1008042               Location : Vial 1
Acq. Operator   : JGD                                Inj :   1
                                               Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed    : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 10/28/13 10:26:04 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================

==================================================================
                         Area Percent Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      Monday, October 28, 2013 10:25:13 AM
Multiplier             :      1.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

Peak RetTime Sig  Type     Area      Area    Name
  #   [min]                          %
----|-------|---|------|----------|--------|------------------------
   1   8.078  2            0.00000   0.0000 RDX
   2  13.125  2            0.00000   0.0000 1,4-DNB(Surr)
   3  18.179  1            0.00000   0.0000 Nitroglycerine
   4  24.995  2            0.00000   0.0000 2,4-DNT

Totals :                   0.00000

 Results obtained with enhanced integrator!
1 Warnings or Errors :

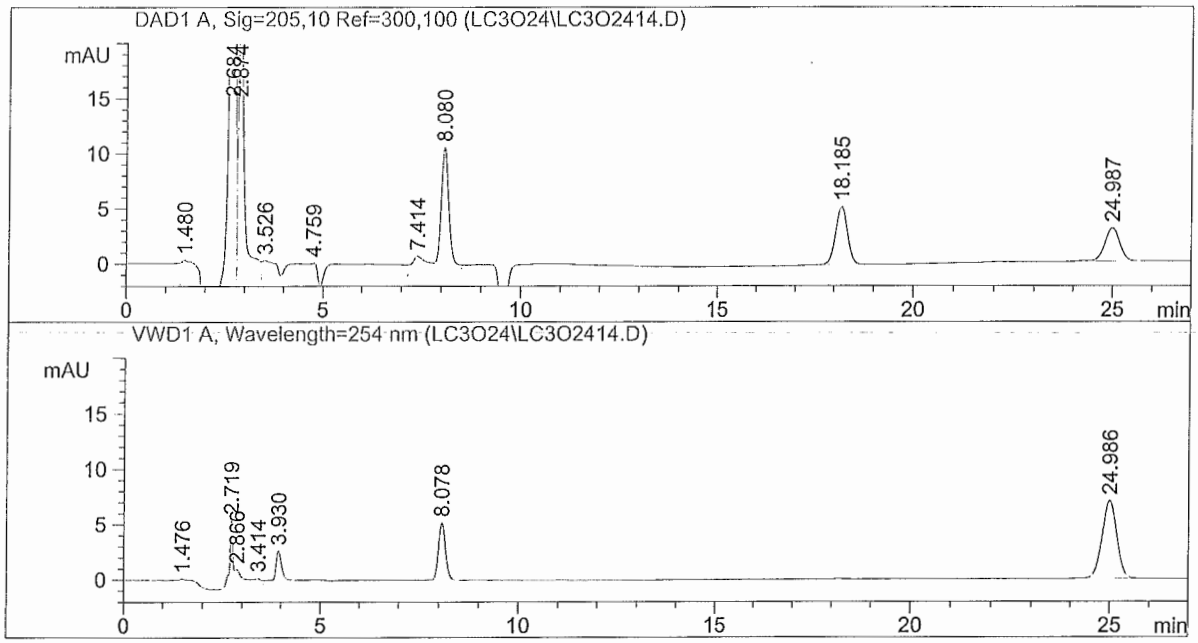
Warning : Calibrated compound(s) not found

==================================================================
                        *** End of Report ***
```

Injection Date : 10/24/13 7:47:35 PM
Sample Name : 400 PPB 1008043 ICV
Acq. Operator : JGD

Seq. Line : 14
Location : Vial 7
Inj : 1
Inj Volume : 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 10/28/13 10:26:04 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : Monday, October 28, 2013 10:25:13 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.078	2	BP	64.65681	6.13733	396.82007		RDX
13.125	2		-	-	-		1,4-DNB(Surr)
18.185	1	BB	109.86657	3.86369	424.49030		Nitroglycerine
24.986	2	BB	183.31058	2.05113	375.99429		2,4-DNT

Totals : 1197.30465

± 15% = 340 – 460
Pass
JD 10/28/13

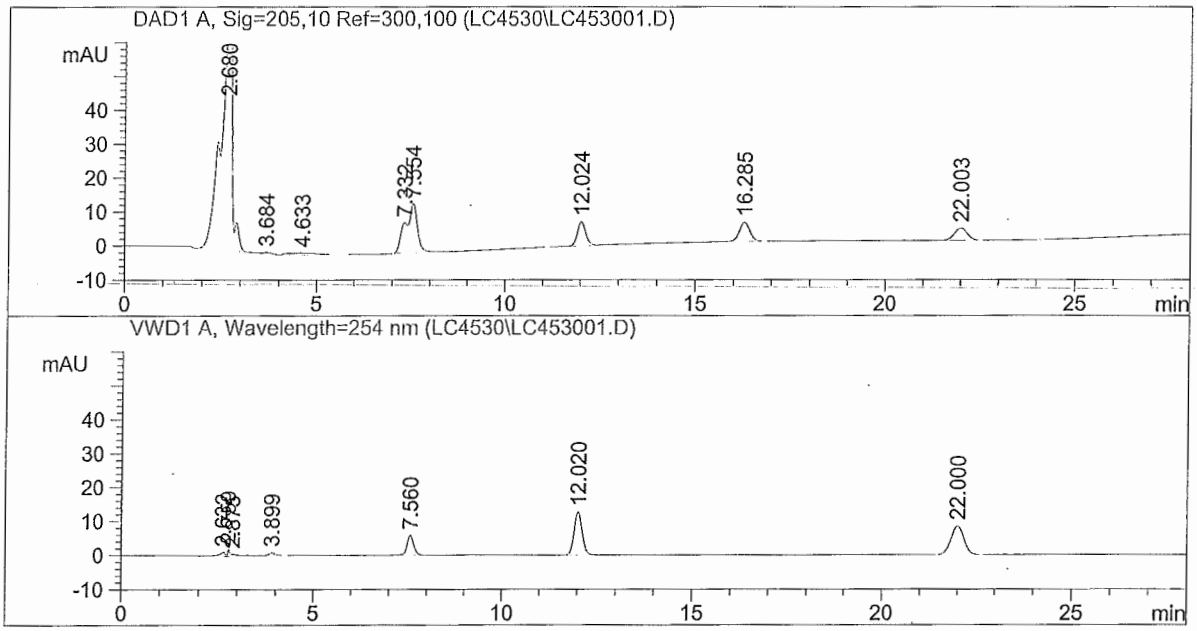
Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

Injection Date	: 5/30/14 10:29:12 AM	Seq. Line :	1
Sample Name	: 400 PPB 1008282	Location :	Vial 1
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 5/30/14 10:42:20 AM by JGD
(modified after loading)
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 6/4/14 8:16:11 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 5/30/14 11:05:47 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.560	2	BB	70.96929	6.13550	435.43229		RDX
12.020	2	BB	184.60559	2.21375	408.67121		1,4-DNB(Surr)
16.285	1	BB	105.85035	3.86356	408.95927		Nitroglycerine
22.000	2	BB	196.51843	2.05103	403.06616		2,4-DNT

Pass 340 → 460 JD 6/4/14

Totals : 1656.12893

Results obtained with enhanced integrator!

*** End of Report ***

==========

Injection Date : 5/30/14 3:41:14 PM
Sample Name : 400 PPB 1008282
Acq. Operator : JGD

Seq. Line : 11
Location : Vial 1
Inj : 1
Inj Volume : 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 6/4/14 8:21:29 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm

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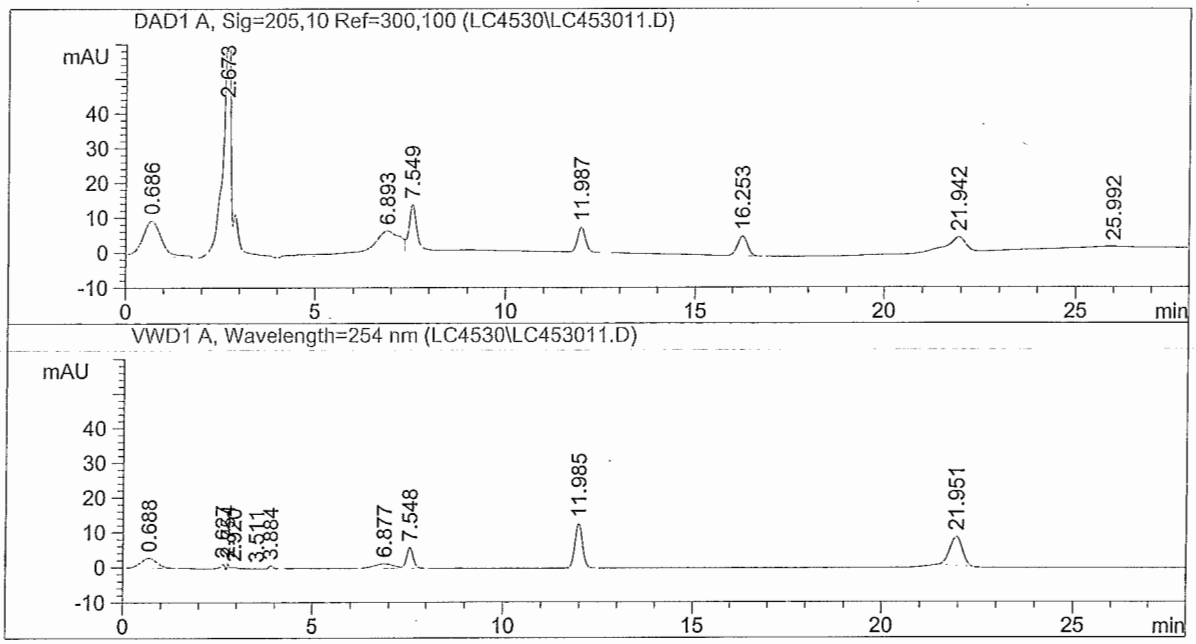

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External Standard Report

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Sorted By : Retention Time
Calib. Data Modified : 5/30/14 11:05:47 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.548	2	VB	72.59004	6.13509	445.34611		RDX
11.985	2	BB	183.67450	2.21378	406.61457		1,4-DNB(Surr)
16.253	1	BP	104.63591	3.86352	404.26294		Nitroglycerine
21.951	2	BP	186.90666	2.05110	383.36511		2,4-DNT
Totals :					1639.58873		

Pass
340 – 460
JD 6/4/14

Results obtained with enhanced integrator!

==========

*** End of Report ***

Instrument Logs/
Analysis Notebook Pages

Rev. 1.1

1° Colum. ICAL for HI Tissue *
Mobile Phase 3135-70
0.900 mL / min ; 100 µL inj. vol., 30°C
Column Ser No. 542447-2

* 3 Analytes only: RDX, NG + 2,4-DNT (+ 1,4 DNB Surr.)

Sequence: C:\HPCHEM\1\SEQUENCE\LC3024.S

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	
LC3024 1	Vial 1	CAL BLK 1008042	EXPHH1	1	DAD λ @ 214 nm
2	Vial 2	800 PPB 1008042	EXPHH1	1	
3	Vial 3	400 PPB 1008042	EXPHH1	1	
4	Vial 4	200 PPB 1008042	EXPHH1	1	
5	Vial 5	100 PPB 1008042	EXPHH1	1	
6	Vial 6	50 PPB 1008042	EXPHH1	1	
7	Vial 7	400 PPB 1008043	EXPHH1	1	
8	Vial 1	CAL BLK 1008042	EXPHH1	1	DAD λ @ 205 nm ** EXPHH2.m
9	Vial 2	800 PPB 1008042	EXPHH1	1	
10	Vial 3	400 PPB 1008042	EXPHH1	1	
11	Vial 4	200 PPB 1008042	EXPHH1	1	
12	Vial 5	100 PPB 1008042	EXPHH1	1	
13	Vial 6	50 PPB 1008042	EXPHH1	1	
LC3024 14	Vial 7	400 PPB 1008043	EXPHH1	1	

10/28/13

** NG area is better (higher) at this λ
5-point ICAL passes / Name EXPHH2.m

Continued on Page

Read and Understood By

Signed 10/28/13 Date Signed 11/14/13 Date

Sequence: C:\HPCHEM\1\SEQUENCE\LC4530.S

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj
LC453001.	Vial 1	400 PPB 1008282 Pass	EXPHH2	1
2	Vial 2	6620-01B1/B10213	EXPHH2	1
3	Vial 3	6620-01K1/B10213	EXPHH2	1
4	Vial 4	6620-01	EXPHH2	1
5	Vial 5	6620-01MS	EXPHH2	1
6	Vial 6	6620-01MD	EXPHH2	1
7	Vial 7	6620-02	EXPHH2	1
8	Vial 8	6620-03	EXPHH2	1
9	Vial 9	6620-04	EXPHH2	1
10	Vial 10	6620-05 B10213	EXPHH2	1
11	Vial 1	400 PPB 1008282 Pass	EXPHH2	1
12	Vial 11	6621-03B1/B10217	EXPHH2	1
13	Vial 12	6621-03K1/B10217	EXPHH2	1
14	Vial 13	6621-01 /B10217	EXPHH2	1
15	Vial 14	6621-02 /B10217	EXPHH2	1
16	Vial 15	6621-03 /B10217	EXPHH2	1
17	Vial 16	6621-3MS /B10217	EXPHH2	1
18	Vial 17	6621-3MD /B10217	EXPHH2	1
19	Vial 18	6621-04 /B10217	EXPHH2	1
20	Vial 19	6621-05 /B10217	EXPHH2	1
21	Vial 20	6621-06 /B10217	EXPHH2	1
22	Vial 21	6621-07 /B10217	EXPHH2	1
23	Vial 22	6621-08 /B10217	EXPHH2	1
LC453024.	Vial 1	400 PPB 1008282 Pass	EXPHH2	1

6/4/14

Continued on Page

Signed 6/4/14 Date

Read and Understood By PEK Signed 6/6/2014 Date

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

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	NA	ARDL Lab No.:	006620-01B1
Desc/Location:	NA	Lab Filename:	
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	05/23/2014
Matrix:	QC Material	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG
Nitroglycerine	300	500	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	104%

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

Blank for Run B10213, 8330, EXPLOSIVES

MBLK B10213

==========

Injection Date : 5/30/14 11:09:34 AM Seq. Line : 2
Sample Name : 6620-01B1/B10213 Location : Vial 2
Acq. Operator : JGD Inj : 1
Inj Volume : 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 6/4/14 8:25:56 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm

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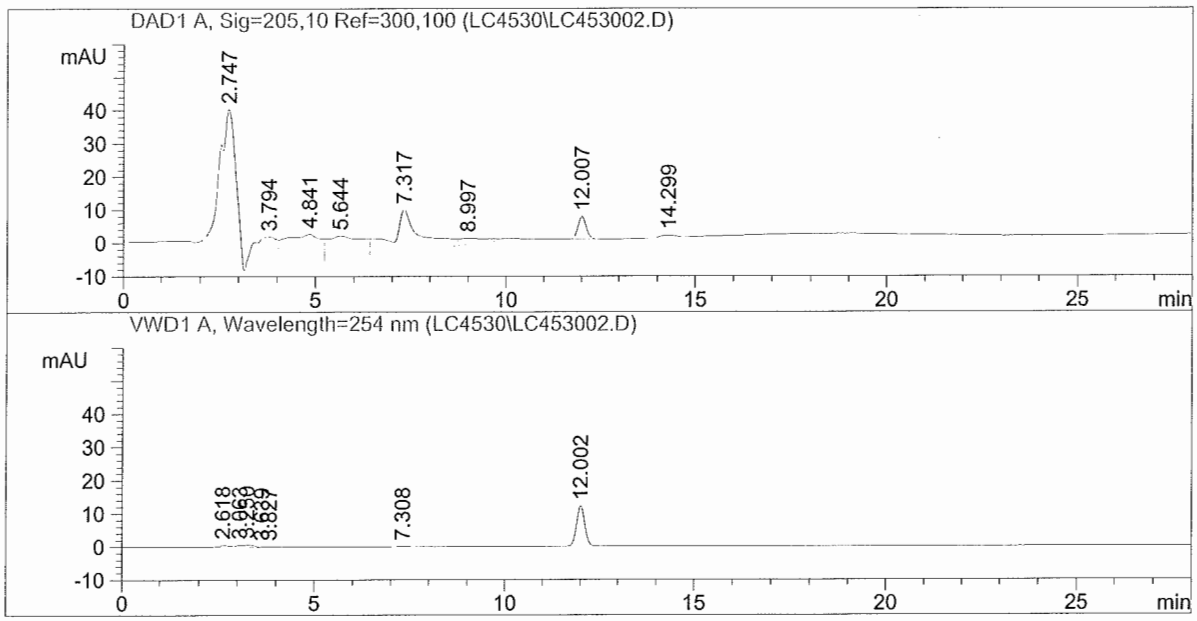

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External Standard Report

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Sorted By : Retention Time
Calib. Data Modified : 5/30/14 11:05:47 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.560	2		-	-	-		RDX
12.002	2	BB	188.77837	2.21364	4178.88258		1,4-DNB(Surr)
16.285	1		-	-	-		Nitroglycerine
22.000	2		-	-	-		2,4-DNT

Totals : 4178.88258

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	NA	ARDL Lab No.:	006620-01K1
Desc/Location:	NA	Lab Filename:	
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	05/23/2014
Matrix:	QC Material	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Hexahydro-trinitro-triazine (RDX)	200	500	4240		UG/KG
Nitroglycerine	300	500	4080		UG/KG

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	96%

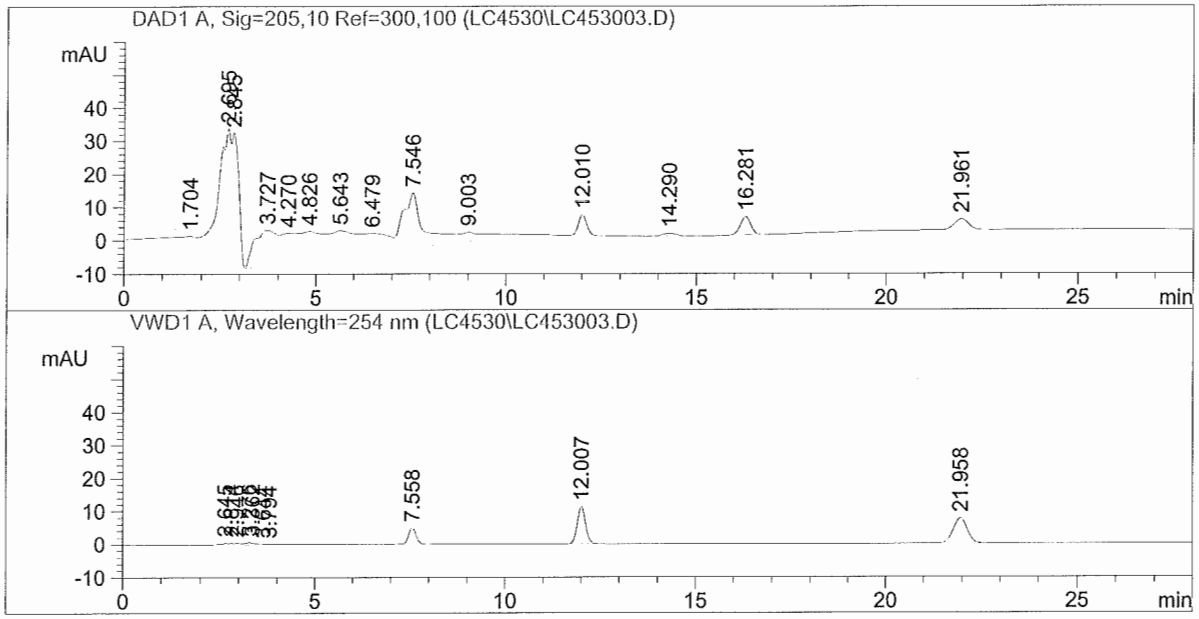
Surrogate recoveries marked with '*' indicates they are outside standard limits.

Spike Blank for Run B10213, 8330, EXPLOSIVES

LCS B10213

Injection Date	: 5/30/14 11:39:45 AM	Seq. Line :	3
Sample Name	: 6620-01K1/B10213	Location :	Vial 3
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl
Acq. Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 5/30/14 11:07:15 AM by JGD		
Analysis Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 6/4/14 8:25:56 AM by JGD (modified after loading)		

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	5/30/14 11:05:47 AM
Multiplier	:	10.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.558	2	BB	69.01851	6.13603	4234.99722		RDX
12.007	2	BB	173.77158	2.21406	3847.40481		1,4-DNB(Surr)
16.281	1	BP	105.52805	3.86355	4077.12895		Nitroglycerine
21.958	2	BP	185.80939	2.05111	3811.16046		2,4-DNT
Totals :					1.59707e4		

Results obtained with enhanced integrator!

*** End of Report ***

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK130L	ARDL Lab No.:	006620-01
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/27/2014	Received Date:	04/29/2014
Sample Time:	0820	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	87%

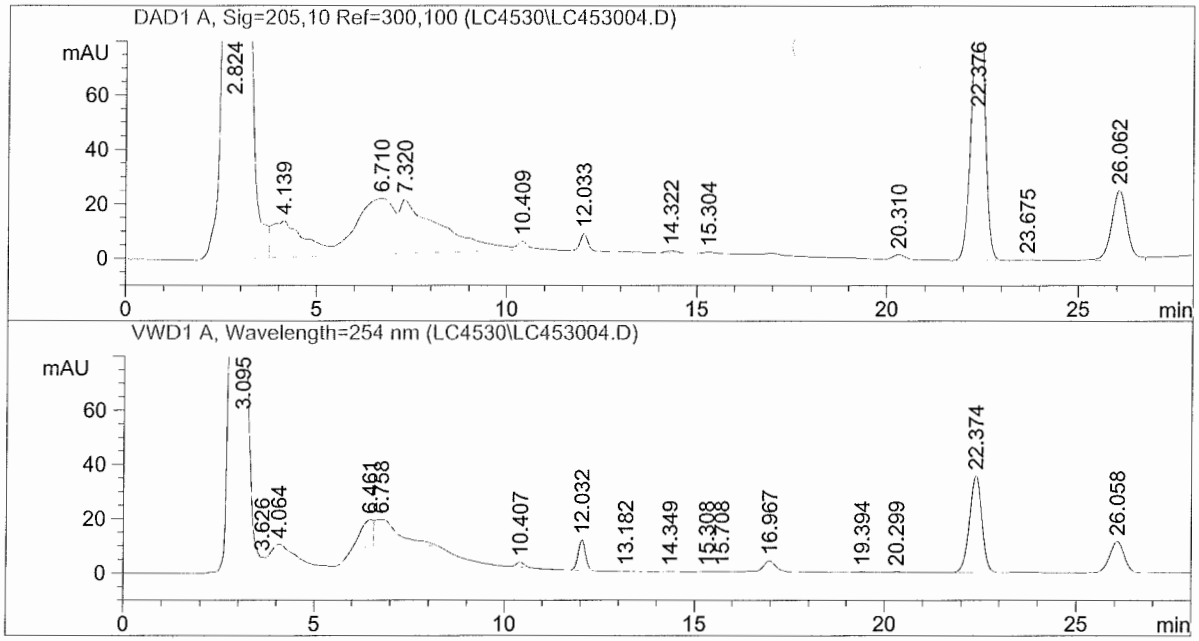
Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006620-01, 8330, EXPLOSIVES

Page 1 of 1

Injection Date	: 5/30/14 12:09:54 PM	Seq. Line	: 4
Sample Name	: 6620-01	Location	: Vial 4
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 6/4/14 8:32:57 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 5/30/14 11:05:47 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.560	2		-	-	-		RDX
12.032	2	VP	156.75912	2.21462	3471.62496		1,4-DNB(Surr)
16.285	1		-	-	-		Nitroglycerine
22.000	2		-	-	-		2,4-DNT

Totals : 3471.62496

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK130L	ARDL Lab No.:	006620-01MS
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/27/2014	Received Date:	04/29/2014
Sample Time:	0820	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	2670		UG/KG	1
Nitroglycerine	300	500	3960		UG/KG	1

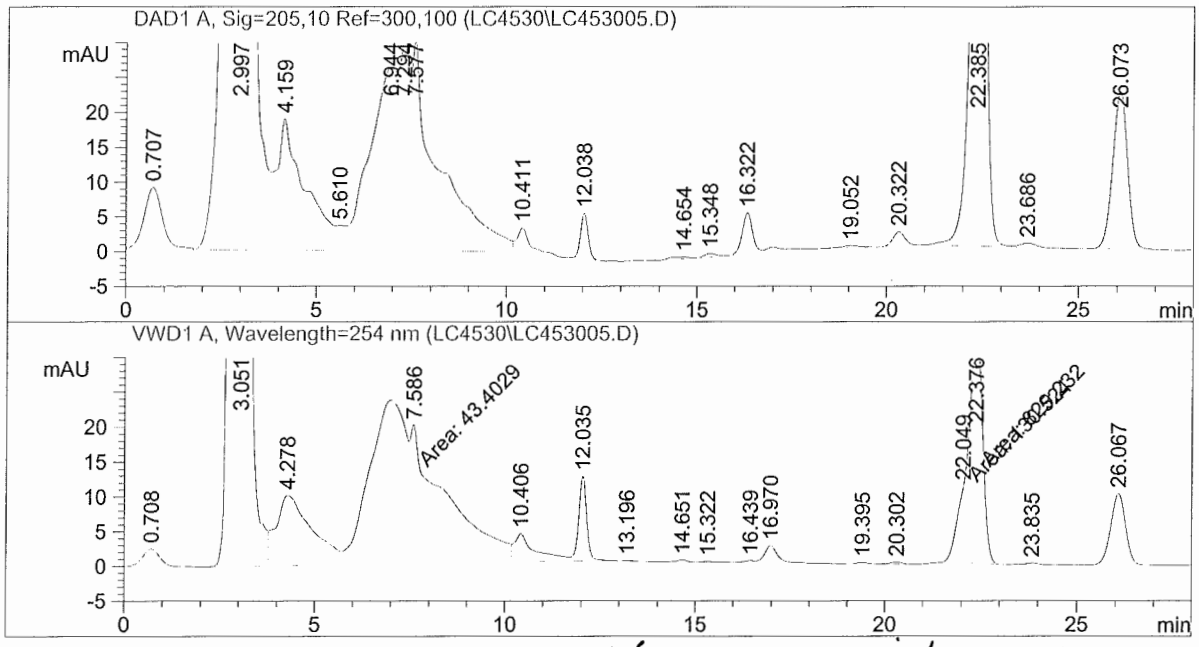
SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	101%

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

Matrix Spike for 006620-01, 8330, EXPLOSIVES

Injection Date	: 5/30/14 12:40:06 PM	Seq. Line :	5
Sample Name	: 6620-01MS	Location :	Vial 5
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 6/4/14 8:40:36 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



after manual integration GD 6/4/14

External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 5/30/14 11:05:47 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.586	2	MM	43.40290	6.14738	2668.13939		RDX
12.035	2	VB	183.27518	2.21379	4057.32528		1,4-DNB(Surr)
16.322	1	PP	102.54803	3.86345	3961.88933		Nitroglycerine
22.049	2	MF	130.52399	2.05172	~~2677.98689~~		~~2,4-DNT~~ Not Reported see case narr.
Totals :					1.33653e4		

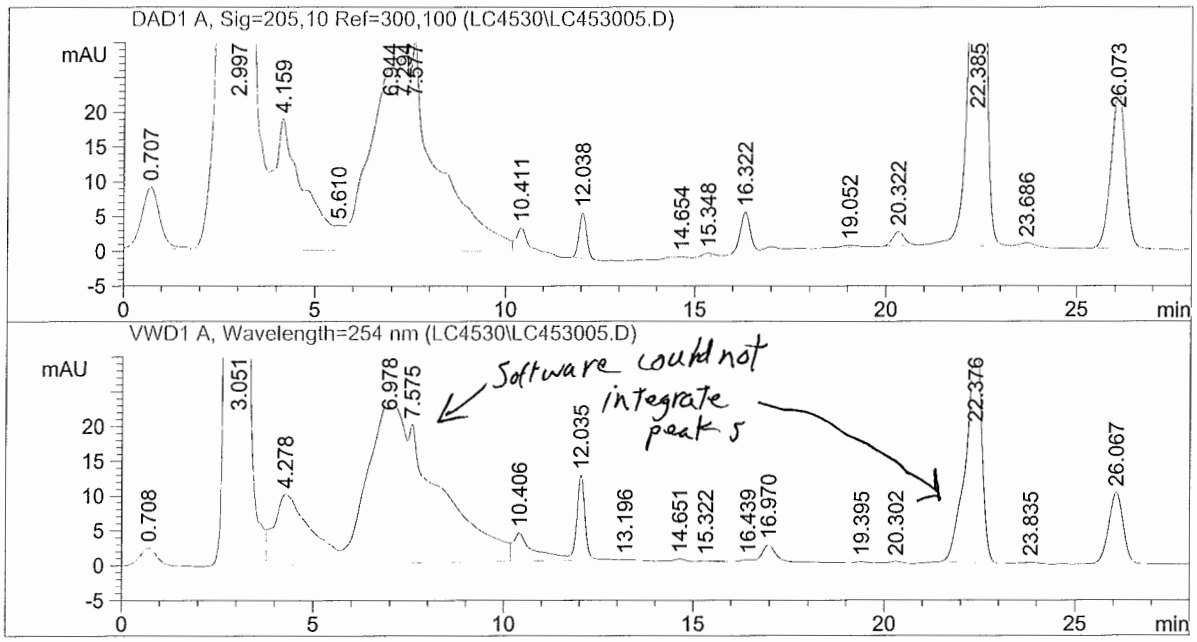
GD 6/4/14

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 5/30/14 12:40:06 PM	Seq. Line	: 5
Sample Name	: 6620-01MS	Location	: Vial 5
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 6/4/14 8:40:36 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



JD 6/4/14

External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 5/30/14 11:05:47 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.575	2	VV	1345.97583	6.11780	8.23440e4		RDX
12.035	2	VB	183.27518	2.21379	4057.32528		1,4-DNB(Surr)
16.322	1	PP	102.54803	3.86345	3961.88933		Nitroglycerine
22.000	2		-	-	-		2,4-DNT

Totals : 9.03633e4

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK130L	ARDL Lab No.:	006620-01MD
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/27/2014	Received Date:	04/29/2014
Sample Time:	0820	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

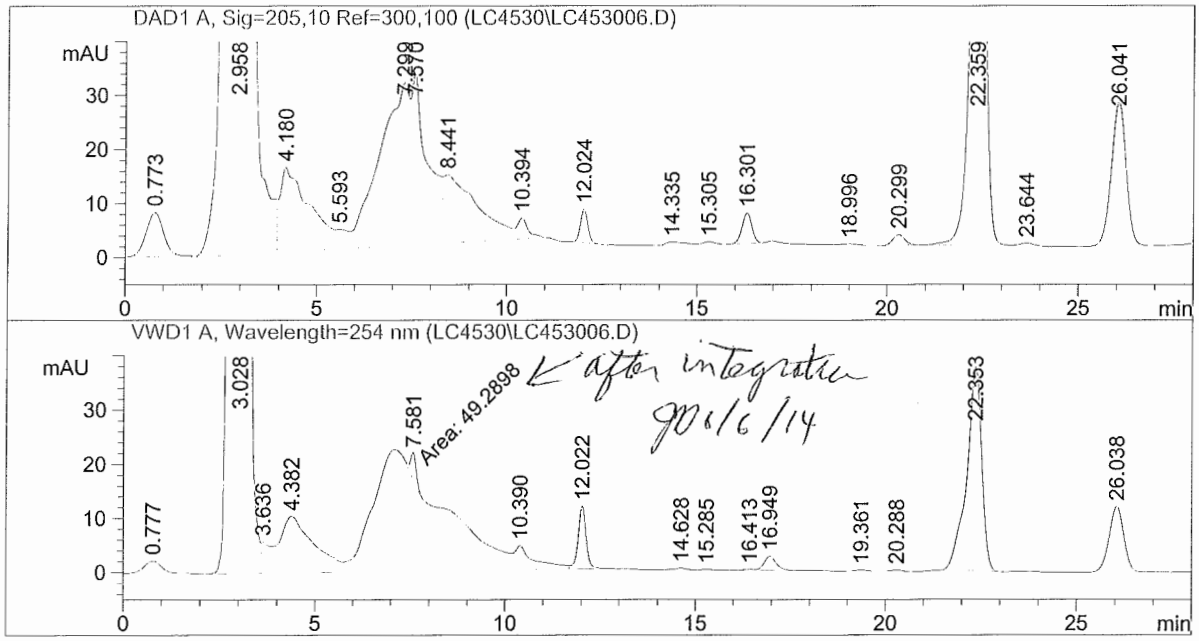
Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	3030		UG/KG	1
Nitroglycerine	300	500	3950		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	98%

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

Matrix Spike Duplicate for 006620-01, 8330, EXPLOSIVES

```
==================================================================
Injection Date  : 5/30/14 1:10:14 PM          Seq. Line :   6
Sample Name     : 6620-01MD                    Location : Vial 6
Acq. Operator   : JGD                               Inj :   1
                                             Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 6/6/14 8:32:12 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```




```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      5/30/14 11:05:47 AM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
```

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.581	2	MM	49.28976	6.14372	3028.22742		RDX
12.022	2	VB	177.37195	2.21395	3926.93170		1,4-DNB(Surr)
16.301	1	BP	102.19402	3.86344	3948.19973		Nitroglycerine
22.000	2		-	-	-		2,4-DNT

Totals : 1.09034e4

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========
*** End of Report ***

==========

Injection Date : 5/30/14 1:10:14 PM
Sample Name : 6620-01MD
Acq. Operator : JGD

Seq. Line : 6
Location : Vial 6
Inj : 1
Inj Volume : 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 6/6/14 8:25:34 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm

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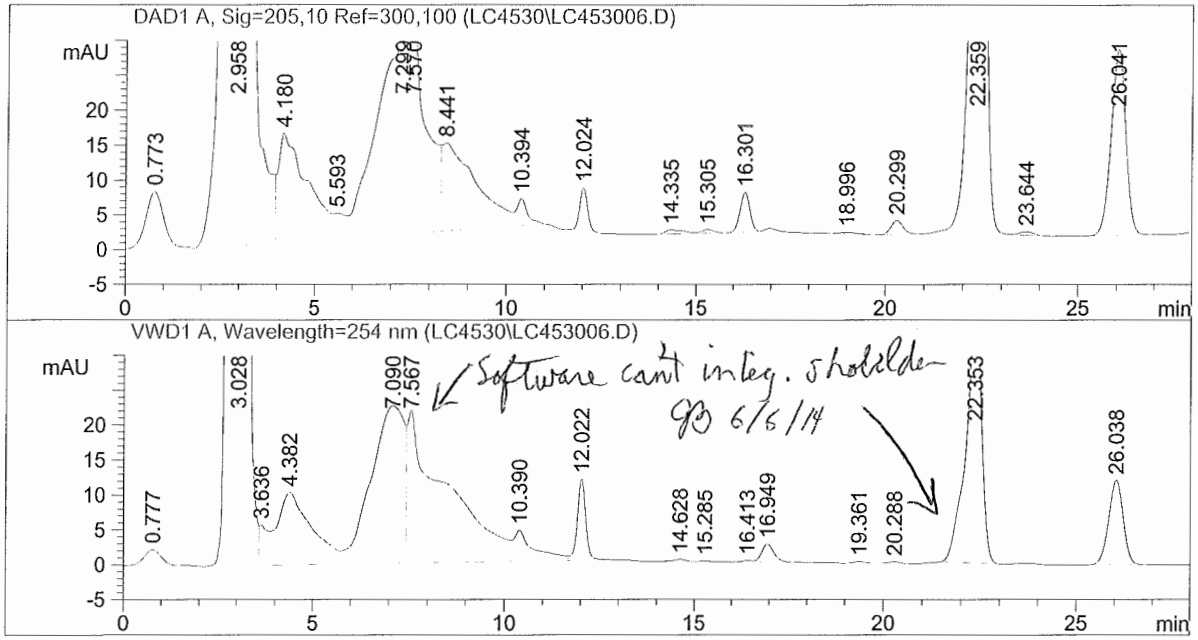

Software can't integ. shoulder
GB 6/6/14

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External Standard Report

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Sorted By : Retention Time
Calib. Data Modified : 5/30/14 11:05:47 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.567	2	VV	1539.19434	6.11767	9.41629e4		RDX
12.022	2	VB	177.37195	2.21395	3926.93170		1,4-DNB(Surr)
16.301	1	BP	102.19402	3.86344	3948.19973		Nitroglycerine
22.000	2		-	-	-		2,4-DNT

Totals : 1.02038e5

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK132L	ARDL Lab No.:	006620-02
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	0838	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

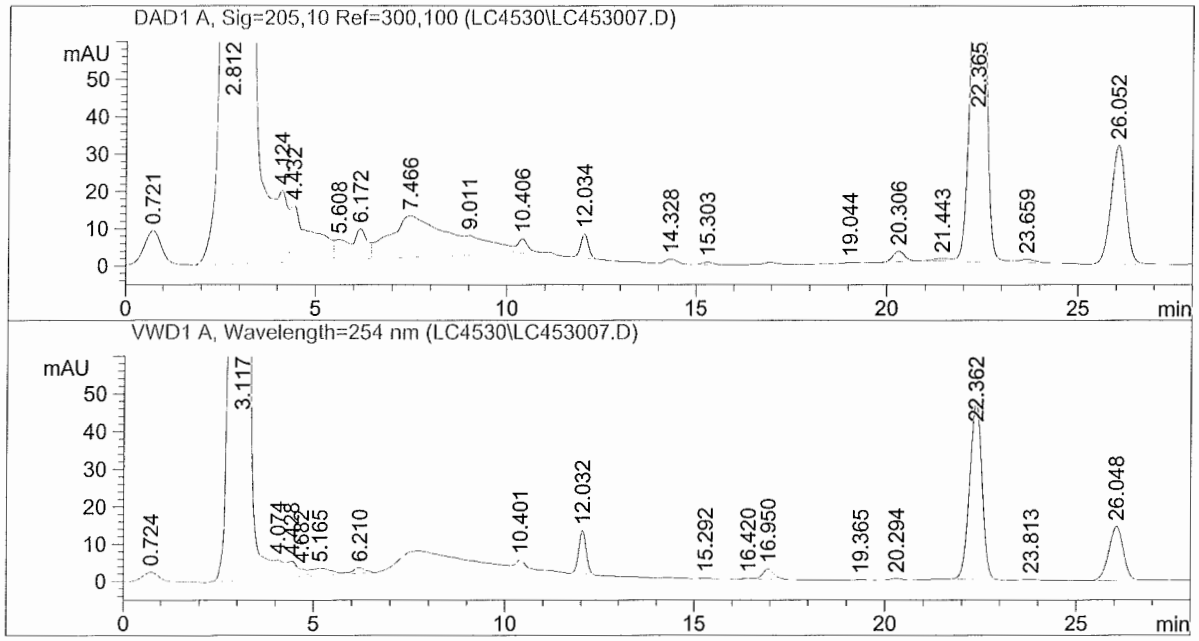
SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	86%

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

Sample 006620-02, 8330, EXPLOSIVES

Injection Date	: 5/30/14 1:40:23 PM	Seq. Line :	7
Sample Name	: 6620-02	Location :	Vial 7
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 6/6/14 8:38:26 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 5/30/14 11:05:47 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.560	2		-	-	-		RDX
12.032	2	BP	155.95433	2.21465	3453.84824		1,4-DNB(Surr)
16.285	1		-	-	-		Nitroglycerine
22.000	2		-	-	-		2,4-DNT

Totals : 3453.84824

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK134L	ARDL Lab No.:	006620-03
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	0920	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

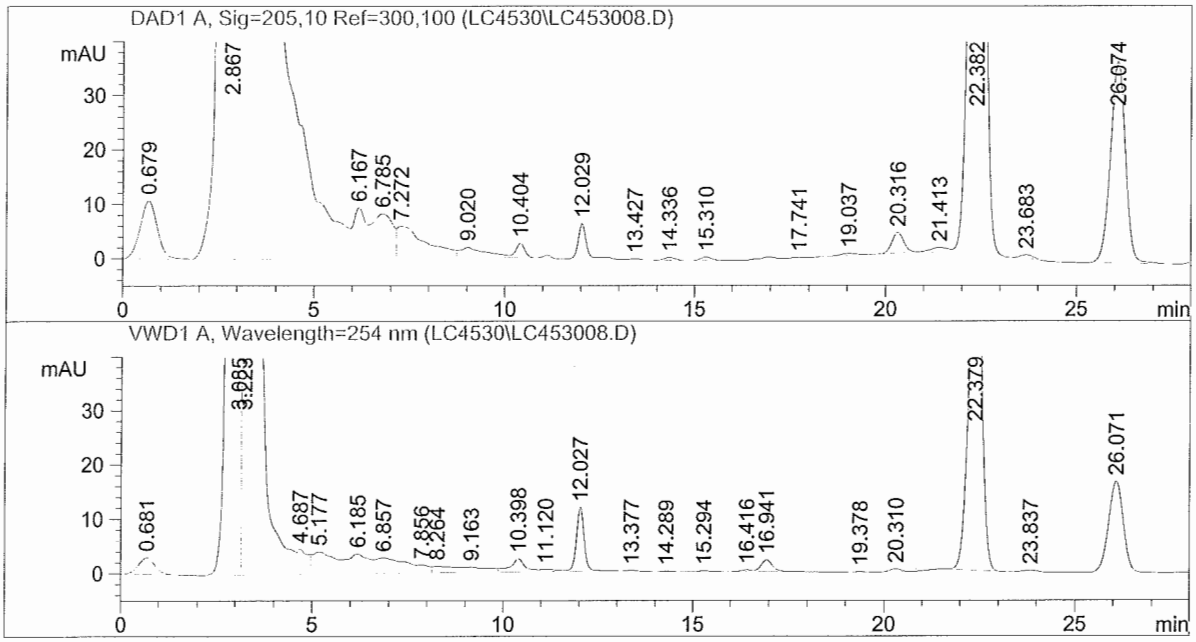
SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	93%

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

Sample 006620-03, 8330, EXPLOSIVES

Page 1 of 1

```
==================================================================
Injection Date  : 5/30/14 2:10:35 PM          Seq. Line :   8
Sample Name     : 6620-03                      Location : Vial 8
Acq. Operator   : JGD                               Inj :   1
                                             Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 6/6/14 8:34:34 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```




```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      5/30/14 11:05:47 AM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
```

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.560	2		-	-	-		RDX
12.027	2	VB	167.86963	2.21424	3717.03954		1,4-DNB(Surr)
16.285	1		-	-	-		Nitroglycerine
22.000	2		-	-	-		2,4-DNT

Totals : 3717.03954

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========
*** End of Report ***

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK135L	ARDL Lab No.:	006620-04
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	1000	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

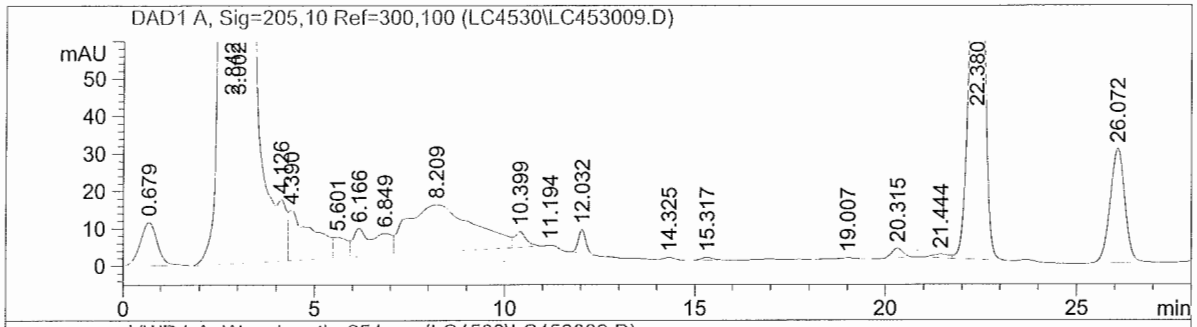
SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	83%

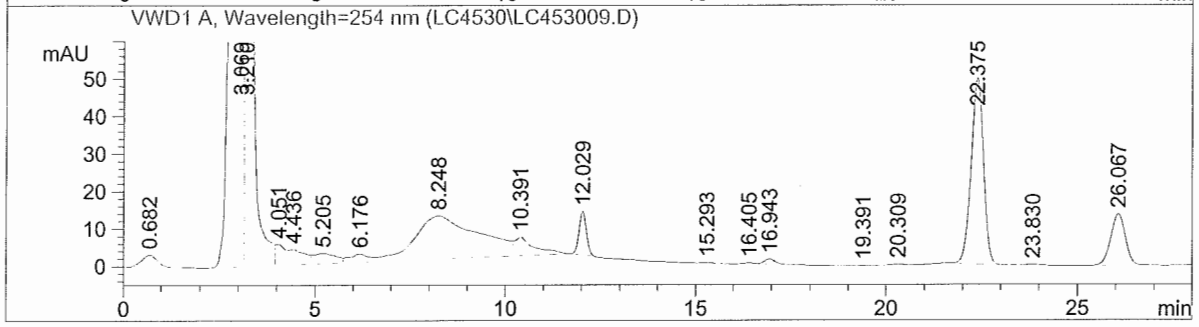
Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006620-04, 8330, EXPLOSIVES

Injection Date	: 5/30/14 2:40:48 PM	Seq. Line :	9
Sample Name	: 6620-04	Location :	Vial 9
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 6/6/14 8:36:01 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm





External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 5/30/14 11:05:47 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.560	2		-	-	-		RDX
12.029	2	BP	149.12883	2.21492	3303.08305		1,4-DNB(Surr)
16.285	1		-	-	-		Nitroglycerine
22.000	2		-	-	-		2,4-DNT

Totals : 3303.08305

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

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

Lab Report No: 006620 Report Date: 06/06/2014

Project Name: MAKAU MILITARY RESER Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK138L	ARDL Lab No.:	006620-05
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	1132	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/30/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10213
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	89%

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

Sample 006620-05, 8330, EXPLOSIVES

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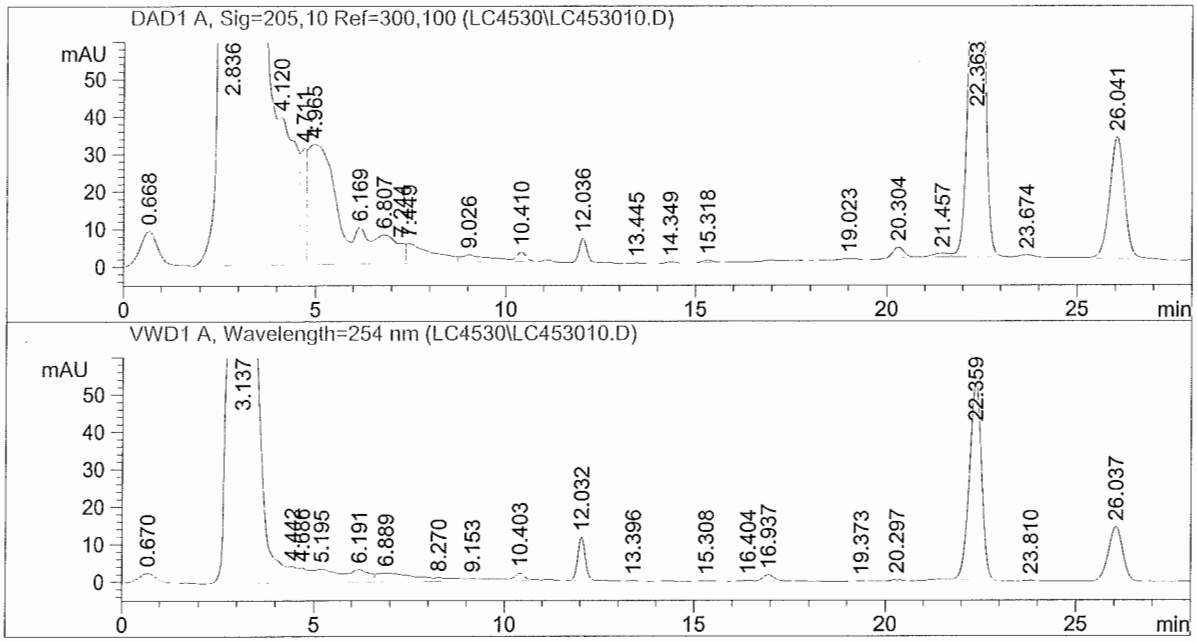
==================================================================
Injection Date  : 5/30/14 3:11:03 PM          Seq. Line :  10
Sample Name     : 6620-05                      Location : Vial 10
Acq. Operator   : JGD                               Inj :   1
                                              Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 5/30/14 11:07:15 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 6/6/14 8:36:01 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```

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==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      5/30/14 11:05:47 AM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
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RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.560	2		-	-	-		RDX
12.032	2	BB	160.48111	2.21449	3553.83809		1,4-DNB(Surr)
16.285	1		-	-	-		Nitroglycerine
22.000	2		-	-	-		2,4-DNT

Totals : 3553.83809

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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*** End of Report ***

Example Calculation

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EXAMPLE CALCULATIONS
(Explosives)

As appropriate for each analyte, use the values either for the average calibration factor (CF) or the linear regression equation from the full initial calibration. Calculate the apparent concentration in the sample using the relationship given below:

$$\text{ug analyte/mL} = \frac{\text{Peak Area}}{\text{Average CF}}$$

Nitroglycerine

$$\text{ug analyte/L} = \frac{\text{Peak Area - b}}{\text{m}} = \frac{102.548 - (0.0962)}{0.2586} = 396$$

where: m is the slope of the initial calibration curve, and b is the zero intercept of that curve

Sample Calculations

$$\text{Concentration of analyte} = \frac{(A)\ (Vt)\ (Df)}{(Vi)}$$

Water:

Where:
- A = Concentration of the analyte in the sample extract (ug/L)
- Vi = Initial sample volume (L)
- Vt = Volume of final extract (L)
- Df = Dilution Factor

Soil:

Where:
- A = Concentration of the analyte in the sample extract (ug/L)
- Vi = Initial sample weight (kg)
- Vt = Volume of final extract (L)
- Df = Dilution Factor (2x DL per method)

Example Sample Calculation 6620-01 MS

$$\text{Water Result} = \frac{(____)(____)(____)}{(____)} = (____)\ \text{ug/L}$$

$$\text{Soil Result} = \frac{(396)(0.010L)(2)}{(0.002)} = (3960)\ \text{ug/kg}$$

Example Calculations
Performed By: GD Date: 6/10/14

Miscellaneous Additional Data
(If applicable)

☑ None _____

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