Table of Contents: ARI Job VS50

Client: Anchor QEA, LLC.

Project: 120891-01.01 City of Kenmore Sediments

BL

Signature

November-26-2012

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

November 27, 2012

David Gillingham
Anchor QEA
720 Olive Way, Suite 1900
Seattle, WA 98101

RE: Client Project: City of Kenmore Sediments, 120891-01.01
ARI Job No.: VS50

Dear David:

Please find enclosed the Chain of Custody record (COC), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: VS50

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: VS50

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number: VS50	Turn-around Requested: see COC
ARI Client Company: Anchor QEA, LLC	Phone:
Client Contact: David Gillingham	
Client Project Name: City of Kenmore Sediments	
Client Project #: 120891-01.01	Samplers: gc

Page: 1	of 1
Date: 11/14/12	Ice Present?
No. of Coolers: 1	Cooler Temps:

Sample ID	Date	Time	Matrix	No Containers	TBTs								Notes/Comments WAS:
SG-~~1~~4-S-E-121107	11/13/12	18:02	H2O	1	X								VR58 ~~X~~ F
SG-02-S-C-1211	↓	17:25	↓	3	X								VR82 A | MS/MSD
SG-03-S-C-1211	↓	14:37	↓	2	X								VR82 B
SG-04-S-C-1211	↓	17:22	↓	1	X								VR82 C
SG-05-S-C-1211	↓	14:39	↓	2	X								VR82 D
SG-06-S-C-1211	↓	14:42	↓	1	X								VR82 E
SG-07-S-C-1211	↓	18:04	↓	1	X								VR82 F
SG-07-S-C-dup-1211	↓	18:05	↓	1	X								VR82 G
SG-08-S-C-1211	↓	18:39	↓	1	X								VR82 H
SG-09-S-C-1211	↓	18:40	↓	1	X								VR82 I

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by	Received by
MS/MSD on SG-02-S-C-1211	(Signature) Guenna Curtis	(Signature) [signature]	(Signature)	(Signature)
	Printed Name Guenna Curtis	Printed Name Jennifer Millsap	Printed Name	Printed Name
	Company ARI	Company ARI	Company	Company:
	Date & Time 11/14/12 9:00	Date & Time 11/14/12 900	Date & Time	Date & Time:

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: VS50

Case Narrative

Client: Anchor QEA
Project: City of Kenmore Sediments, 120891-01.01
ARI Job No.: VS50

Sample receipt

Ten pore water samples were received on November 14, 2012 under ARI job VS50. Pore waters were extracted from sediment samples associated ARI jobs VR58 and VR82. The pore waters were analyzed for Tributyltin, as requested.

Tributyltin by Krone 1988 SIM

The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limit. The LCS percent recovery was within control limits.

The matrix spike duplicate percent recovery of Tributyltin was outside advisory control limits with a wide RPD for sample **SG-02-S-C-1211**. No corrective action is required for matrix QC.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: VS50
Client: Anchor QEA, LLC.
Project Event: 120891-01.01
Project Name: City of Kenmore Sediments

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SG-14-S-E-121107	VS50A	12-22844	Pore Water	11/13/12 18:02	11/14/12 09:00
2.	SG-02-S-C-1211	VS50B	12-22845	Pore Water	11/13/12 17:25	11/14/12 09:00
3.	SG-03-S-C-1211	VS50C	12-22846	Pore Water	11/13/12 14:37	11/14/12 09:00
4.	SG-04-S-C-1211	VS50D	12-22847	Pore Water	11/13/12 17:22	11/14/12 09:00
5.	SG-05-S-C-1211	VS50E	12-22848	Pore Water	11/13/12 14:39	11/14/12 09:00
6.	SG-06-S-C-1211	VS50F	12-22849	Pore Water	11/13/12 14:42	11/14/12 09:00
7.	SG-07-S-C-1211	VS50G	12-22850	Pore Water	11/13/12 18:04	11/14/12 09:00
8.	SG-07-S-C-Dup-1211	VS50H	12-22851	Pore Water	11/13/12 18:05	11/14/12 09:00
9.	SG-08-S-C-1211	VS50I	12-22852	Pore Water	11/13/12 18:39	11/14/12 09:00
10.	SG-09-S-C-1211	VS50J	12-22853	Pore Water	11/13/12 18:40	11/14/12 09:00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
M2	The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

Quality Control Summary for Butyl Tin Compounds
EPA Methods 8270D – SIM

Analyte	DL[1]	LOD[1]	LOQ[1]	Spike Recovery Limits (%)[2, 3]			RPD[4]
				LCS	MB/LCS Surrogate	Sample Surrogate	
TBTWSI – Aqueous Samples (Separatory Funnel Extraction – 100 to 0.5 mL) EPA Method 3510C – ARI Benchsheet TBT#1 – 3043F							
Tributyl Tin Ion[5]	0.043 µg/L	0.096 µg/L	0.193 µg/L	30-160	--	--	≤ 40
Dibutyl Tin Ion[5]	0.096 µg/L	0.216 µg/L	0.433 µg/L	30-160	--	--	≤ 40
Butyl Tin Ion[5]	0.108 µg/L	0.153 µg/L	0.306 µg/L	30-160	--	--	≤ 40
Tripentyl Tin	--	--	--	--	30-160	30-160	≤ 40
Tripropyl Tin	--	--	--	--	30-160	30-160	≤ 40
TBTWSI – Pore Water Samples (Separatory Funnel Extraction – 150 to 0.5 mL) EPA Method 3510C – ARI Benchsheet TBT #3 – 3047F							
Tributyl Tin Ion[6]	--	--	0.0052 µg/L	30-160	--	--	≤ 40
Dibutyl Tin Ion[6]	--	--	0.0077µg/L	30-160	--	--	≤ 40
Butyl Tin Ion[6]	--	--	0.0054 µg/L	30-160	--	--	≤ 40
Tripentyl Tin	--	--	--	--	30-160	30-160	≤ 40
Tripropyl Tin	--	--	--	--	30-160	30-160	≤ 40
TBTSMI – Soil / Sediment Samples (Microwave Extraction – 5g dry wt to 0.5mL) EPA Method 3546 – ARI Benchsheet TBT#4 – 3064F							
Tributyl Tin Ion	1.52 µg/kg	1.93 µg/kg	3.86 µg/kg	40 – 144	--	--	≤ 40
Dibutyl Tin Ion	3.72 µg/kg	4.33 µg/kg	5.78 µg/kg	34 – 115	--	--	≤ 40
Butyl Tin Ion	2.95 µg/kg	3.06 µg/kg	4.08 µg/kg	**10** – 111	--	--	≤ 40
Tripentyl Tin	--	--	--	--	35 – 130	25 – 140	≤ 40
Tripropyl Tin	--	--	--	--	28 – 106	32 – 104	≤ 40

(1) Detection Limit (DL), limit of detection (LOD) and limit of quantation (LOQ) as defined in ARI SOP 1018S.
(2) Highlighted control limits (**bold font**) are adjusted from the calculated values to reflect that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.
(3) 30 – 160 are default, advisory control limits used when there is insufficient data to calculate historic control limits. These limits are not used as the sole reason to reject data from a batch of of analyzes.
(4) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then $RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$

(5) DL from ARI MDL study QD32
(6) ARI does not report concentrations below the LOQ (low calibration standard concentration) and does not, therefore, determine a DL or LOD for butyl tin analysis in interstitial (pore) water.

Butyl Tin Analysis
Report and Summary QC Forms

ARI Job ID: VS50

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-14-S-E-121107**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: VS50A
LIMS ID: 12-22844
Matrix: Pore Water
Data Release Authorized: MW
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 14:18
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	**Tributyltin Ion**	**0.005**	**0.010**	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	67.7%
Tripentyl Tin Chloride	72.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-02-S-C-1211**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: VS50B
LIMS ID: 12-22845
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 14:39
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	**Tributyltin Ion**	**0.005**	**0.69**	**E**

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	70.1%
Tripentyl Tin Chloride	82.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-02-S-C-1211**
Extraction Method: SW3510C **DILUTION**

Lab Sample ID: VS50B
LIMS ID: 12-22845
Matrix: Pore Water
Data Release Authorized: MW
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/23/12 09:39
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 5.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	**Tributyltin Ion**	**0.026**	**0.67**	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	70.4%
Tripentyl Tin Chloride	86.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-03-S-C-1211**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: VS50C
LIMS ID: 12-22846
Matrix: Pore Water
Data Release Authorized: MW
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 15:41
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	**Tributyltin Ion**	**0.005**	**0.058**	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	66.0%
Tripentyl Tin Chloride	66.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-04-S-C-1211**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: VS50D
LIMS ID: 12-22847
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 16:01
Instrument/Analyst: NT12/VTS

Sample Amount: 46.0 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	**Tributyltin Ion**	**0.017**	**0.049**	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	68.7%
Tripentyl Tin Chloride	68.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-05-S-C-1211**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: VS50E
LIMS ID: 12-22848
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 16:22
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	**Tributyltin Ion**	**0.005**	**0.008**	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	55.1%
Tripentyl Tin Chloride	79.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-06-S-C-1211**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: VS50F
LIMS ID: 12-22849
Matrix: Pore Water
Data Release Authorized: MW
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 16:42
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	**Tributyltin Ion**	**0.005**	**0.023**	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	49.7%
Tripentyl Tin Chloride	56.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-07-S-C-1211**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: VS50G
LIMS ID: 12-22850
Matrix: Pore Water
Data Release Authorized: MW
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 17:03
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	67.4%
Tripentyl Tin Chloride	84.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-07-S-C-Dup-1211**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: VS50H
LIMS ID: 12-22851
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 17:24
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	68.7%
Tripentyl Tin Chloride	75.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-08-S-C-1211**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: VS50I
LIMS ID: 12-22852
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 17:44
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	52.4%
Tripentyl Tin Chloride	59.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-09-S-C-1211**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: VS50J
LIMS ID: 12-22853
Matrix: Pore Water
Data Release Authorized: MW
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 18:05
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	50.0%
Tripentyl Tin Chloride	67.7%

ANALYTICAL RESOURCES INCORPORATED

TBT SURROGATE RECOVERY SUMMARY

Matrix: Pore Water

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01

Client ID	TPRT	TPNT	TOT OUT
SG-14-S-E-121107	67.7%	72.6%	0
MB-111912	74.9%	83.2%	0
LCS-111912	69.8%	73.6%	0
SG-02-S-C-1211	70.1%	82.5%	0
SG-02-S-C-1211 DL	70.4%	86.9%	0
SG-02-S-C-1211 MS	74.9%	83.5%	0
SG-02-S-C-1211 MSD	70.8%	63.8%	0
SG-03-S-C-1211	66.0%	66.2%	0
SG-04-S-C-1211	68.7%	68.4%	0
SG-05-S-C-1211	55.1%	79.3%	0
SG-06-S-C-1211	49.7%	56.0%	0
SG-07-S-C-1211	67.4%	84.6%	0
SG-07-S-C-Dup-1211	68.7%	75.4%	0
SG-08-S-C-1211	52.4%	59.5%	0
SG-09-S-C-1211	50.0%	67.7%	0

	LCS/MB LIMITS	QC LIMITS
(TPRT) = Tripropyl Tin Chloride	(30-160)	(30-160)
(TPNT) = Tripentyl Tin Chloride	(30-160)	(30-160)

Prep Method: SW3510C
Analytical Method: Low TBT (Hexyl) Krone 1988
Log Number Range: 12-22844 to 12-22853

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-02-S-C-1211**
Page 1 of 1 **MATRIX SPIKE**

Lab Sample ID: VS50B
LIMS ID: 12-22845
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted MS: 11/19/12

Sample Amount MS: 150 mL
MSD: 150 mL

Date Analyzed MS: 11/21/12 14:59
MSD: 11/21/12 15:20

Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL

Instrument/Analyst MS: NT12/VTS
MSD: NT12/VTS

Dilution Factor MS: 1.00
MSD: 1.00

Alumina Cleanup: Yes

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Tributyltin Ion	0.688 E	0.737 E	0.074	66.2%	0.628 E	0.074	NA	NA

Results reported in µg/L
NA-No recovery due to high concentration of analyte in original sample and/or calculated negative recovery.
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-02-S-C-1211**
Extraction Method: SW3510C **MATRIX SPIKE**

Lab Sample ID: VS50B
LIMS ID: 12-22845
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 14:59
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	---	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	74.9%
Tripentyl Tin Chloride	83.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: SG-02-S-C-1211**
Extraction Method: SW3510C **MATRIX SPIKE DUP**

Lab Sample ID: VS50B
LIMS ID: 12-22845
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: 11/13/12
Date Received: 11/14/12

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 15:20
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	---	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	70.8%
Tripentyl Tin Chloride	63.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS

Sample ID: LCS-111912
LAB CONTROL SAMPLE

Lab Sample ID: LCS-111912
LIMS ID: 12-22845
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments 120891-01.01
Date Sampled: NA
Date Received: NA

Date Extracted LCS: 11/19/12
Date Analyzed LCS: 11/21/12 13:58
Instrument/Analyst LCS: NT12/VTS

Sample Amount LCS: 150 mL
Final Extract Volume LCS: 0.50 mL
Dilution Factor LCS: 1.00
Alumina Cleanup: Yes

Analyte	LCS	Spike Added	Recovery
Tributyltin Ion	0.053	0.074	71.6%

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	69.8%
Tripentyl Tin Chloride	73.6%

4B

SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO. VS50MBW1

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC.

ARI Job No: VS50

Project: CITY OF KENMORE SEDI

Lab File ID: VS50MB

Date Extracted: 11/19/12

Instrument ID: NT12

Date Analyzed: 11/21/12

Matrix: LIQUID

Time Analyzed: 1337

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	VS50LCSW1	VS50LCSW1	VS50SB	11/21/12
02	SG-14-S-E-121107	VS50A	VS50A	11/21/12
03	SG-02-S-C-1211	VS50B	VS50B	11/21/12
04	SG-02-S-C-1211 M	VS50BMS	VS50BMS	11/21/12
05	SG-02-S-C-1211 M	VS50BMSD	VS50BMSD	11/21/12
06	SG-03-S-C-1211	VS50C	VS50C	11/21/12
07	SG-04-S-C-1211	VS50D	VS50D	11/21/12
08	SG-05-S-C-1211	VS50E	VS50E	11/21/12
09	SG-06-S-C-1211	VS50F	VS50F	11/21/12
10	SG-07-S-C-1211	VS50G	VS50G	11/21/12
11	SG-07-S-C-DUP-12	VS50H	VS50H	11/21/12
12	SG-08-S-C-1211	VS50I	VS50I	11/21/12
13	SG-09-S-C-1211	VS50J	VS50J	11/21/12
14	SG-02-S-C-1211	VS50B	VS50BDL	11/23/12
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: MB-111912**
Extraction Method: SW3510C **METHOD BLANK**

Lab Sample ID: MB-111912
LIMS ID: 12-22845
Matrix: Pore Water
Data Release Authorized:
Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
Project: City of Kenmore Sediments
Event: 120891-01.01
Date Sampled: NA
Date Received: NA

Date Extracted: 11/19/12
Date Analyzed: 11/21/12 13:37
Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	74.9%
Tripentyl Tin Chloride	83.2%

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

Instrument ID: NT12 Project: CITY OF KENMORE

DFTPP Injection Date: 10/09/12 DFTPP Injection Time: 1625

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	26.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	92.6
70	Less than 2.0% of mass 69	0.5 (0.6)1
127	10.0 - 80.0% of mass 198	63.3
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 60.0% of mass 198	29.5
365	Greater than 1.0% of mass 198	4.78
441	0.0 - 24.0% of mass 442	13.6 (13.5)2
442	50.0 - 200.0% of mass 198	100.3
443	15.0 - 24.0% of mass 442	23.2 (23.1)2

1-Value is % mass 69 2-Value is % mass 442

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		PW 25	IC1009A	10/09/12	1643
02		PW 100	IC1009B	10/09/12	1704
03		PW 02	IC1009C	10/09/12	1724
04		PW 50	IC1009D	10/09/12	1745
05		PW 5	IC1009E	10/09/12	1806
06		PW 10	IC1009F	10/09/12	1826
07					
08					
09					
10					
11					
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17					
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21					
22					

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

Instrument ID: NT12 Project: CITY OF KENMORE

DFTPP Injection Date: 11/21/12 DFTPP Injection Time: 1256

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	24.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	98.6
70	Less than 2.0% of mass 69	1.0 (1.0)1
127	10.0 - 80.0% of mass 198	64.3
197	Less than 2.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.5
275	10.0 - 60.0% of mass 198	28.7
365	Greater than 1.0% of mass 198	4.64
441	0.0 - 24.0% of mass 442	14.9 (16.0)2
442	50.0 - 200.0% of mass 198	93.5
443	15.0 - 24.0% of mass 442	18.0 (19.3)2

1-Value is % mass 69 2-Value is % mass 442

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		PW 25	CC1121	11/21/12	1314
02	VS50MBW1	VS50MBW1	VS50MB	11/21/12	1337
03	VS50LCSW1	VS50LCSW1	VS50SB	11/21/12	1358
04	SG-14-S-E-121107	VS50A	VS50A	11/21/12	1418
05	SG-02-S-C-1211	VS50B	VS50B	11/21/12	1439
06	SG-02-S-C-1211 M	VS50BMS	VS50BMS	11/21/12	1459
07	SG-02-S-C-1211 M	VS50BMSD	VS50BMSD	11/21/12	1520
08	SG-03-S-C-1211	VS50C	VS50C	11/21/12	1541
09	SG-04-S-C-1211	VS50D	VS50D	11/21/12	1601
10	SG-05-S-C-1211	VS50E	VS50E	11/21/12	1622
11	SG-06-S-C-1211	VS50F	VS50F	11/21/12	1642
12	SG-07-S-C-1211	VS50G	VS50G	11/21/12	1703
13	SG-07-S-C-DUP-12	VS50H	VS50H	11/21/12	1724
14	SG-08-S-C-1211	VS50I	VS50I	11/21/12	1744
15	SG-09-S-C-1211	VS50J	VS50J	11/21/12	1805
16					
17					
18					
19					
20					
21					
22					

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

Instrument ID: NT12 Project: CITY OF KENMORE

DFTPP Injection Date: 11/23/12 DFTPP Injection Time: 0847

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	25.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	100.0
70	Less than 2.0% of mass 69	0.5 (0.5)1
127	10.0 - 80.0% of mass 198	64.5
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 60.0% of mass 198	28.2
365	Greater than 1.0% of mass 198	4.17
441	0.0 - 24.0% of mass 442	12.6 (14.7)2
442	50.0 - 200.0% of mass 198	86.2
443	15.0 - 24.0% of mass 442	17.9 (20.8)2

1-Value is % mass 69 2-Value is % mass 442

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		PW 25	CC1123	11/23/12	0908
02	SG-02-S-C-1211	VS50B	VS50BDL	11/23/12	0939
03					
04					
05					
06					
07					
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20					
21					
22					

FORM V SV

6B

SEMIVOLATILE 8270-D INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

ARI Job No: VS50 Project: CITY OF KENMORE

Instrument ID: NT12 Calibration Date: 10/09/12

LAB FILE ID: RRF2 =IC1009C RRF5 =IC1009E RRF10 =IC1009F
RRF25 =IC1009A RRF50 =IC1009D RRF100=IC1009B

COMPOUND	RRF 2	RRF 5	RRF 10	RRF 25	RRF 50	RRF 100	___ RRF	%RSD /R^2
Tributyl Tin (Hexyl)	0.675	0.612	0.715	0.768	0.678	0.708	0.693	7.5
Dibutyl Tin (Hexyl)	0.055	0.046	0.050	0.052	0.046	0.050	0.050	7.0
Butyl Tin (Hexyl)	0.079	0.070	0.083	0.087	0.072	0.082	0.079	8.3
Tetrabutyl Tin	0.808	0.723	0.782	0.806	0.730	0.751	0.767	4.9
Tripropyl Tin (Hexyl)	0.607	0.726	0.716	0.816	0.715	0.753	0.722	9.4
Tripentyl Tin (Hexyl)	0.074	0.058	0.068	0.074	0.064	0.071	0.068	9.0

<- Outside QC limits: %RSD <20% or R^2 > 0.990

7B

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

ARI Job No: VS50 Project: CITY OF KENMORE

Instrument ID: NT12 Cont. Calib. Date: 11/21/12

Init. Calib. Date: 10/09/12 Cont. Calib. Time: 1314

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Tributyl Tin (Hexyl)	0.693	0.682	0.010	AVRG	-1.6
Dibutyl Tin (Hexyl)	0.050	0.048	0.010	AVRG	-4.0
Butyl Tin (Hexyl)	0.079	0.077	0.010	AVRG	-2.5
Tetrabutyl Tin	0.767	0.697	0.010	AVRG	-9.1
Tripropyl Tin (Hexyl)	0.722	0.688	0.010	AVRG	-4.7
Tripentyl Tin (Hexyl)	0.068	0.066	0.010	AVRG	-2.9

<- Exceeds QC limit of 20% D

* RF less than minimum RF

FORM VII SV-1

7B

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

ARI Job No: VS50 Project: CITY OF KENMORE

Instrument ID: NT12 Cont. Calib. Date: 11/23/12

Init. Calib. Date: 10/09/12 Cont. Calib. Time: 0908

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Tributyl Tin (Hexyl)	0.693	0.683	0.010	AVRG	-1.4
Dibutyl Tin (Hexyl)	0.050	0.047	0.010	AVRG	-6.0
Butyl Tin (Hexyl)	0.079	0.077	0.010	AVRG	-2.5
Tetrabutyl Tin	0.767	0.701	0.010	AVRG	-8.6
Tripropyl Tin (Hexyl)	0.722	0.709	0.010	AVRG	-1.8
Tripentyl Tin (Hexyl)	0.068	0.064	0.010	AVRG	-5.9

<- Exceeds QC limit of 20% D

* RF less than minimum RF

FORM VII SV-1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC.

ARI Job No: VS50 | Project: CITY OF KENMORE

Ical Midpoint ID: IC1009A | Ical Date: 10/09/12

Instrument ID: NT12 | Cont. Cal Date: 11/21/12

		IS1 AREA #	RT #	IS2 AREA #	RT #	AREA #	RT #
	ICAL MIDPT	124855	10.24	121433	11.20		
	UPPER LIMIT	249710		242866			
	LOWER LIMIT	62428		60716			
	CCAL	145461	10.22	140060	11.20		
	UPPER LIMIT		10.72		11.70		
	LOWER LIMIT		9.72		10.70		
01	VS50MBW1	135995	10.22	128917	11.20		
02	VS50LCSW1	142227	10.22	136788	11.20		
03	SG-14-S-E-12	142924	10.22	136269	11.20		
04	SG-02-S-C-12	150080	10.22	141482	11.20		
05	SG-02-S-C-12	151315	10.22	145669	11.20		
06	SG-02-S-C-12	152514	10.22	156826	11.20		
07	SG-03-S-C-12	154084	10.22	150801	11.20		
08	SG-04-S-C-12	151535	10.22	152904	11.20		
09	SG-05-S-C-12	155655	10.22	154149	11.20		
10	SG-06-S-C-12	153730	10.22	148002	11.20		
11	SG-07-S-C-12	157028	10.22	158915	11.20		
12	SG-07-S-C-DU	150301	10.22	154551	11.20		
13	SG-08-S-C-12	151700	10.22	150181	11.20		
14	SG-09-S-C-12	155389	10.22	149835	11.20		
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

IS1 = Tetrapentyl Tin
IS2 = p-Terphenyl-d14

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

FORM VIII SV-1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC.

ARI Job No: VS50 | Project: CITY OF KENMORE

Ical Midpoint ID: IC1009A | Ical Date: 10/09/12

Instrument ID: NT12 | Cont. Cal Date: 11/23/12

		IS1 AREA #	RT #	IS2 AREA #	RT #	AREA #	RT #
	ICAL MIDPT	124855	10.24	121433	11.20		
	UPPER LIMIT	249710		242866			
	LOWER LIMIT	62428		60716			
	CCAL	146285	10.22	140914	11.20		
	UPPER LIMIT		10.72		11.70		
	LOWER LIMIT		9.72		10.70		
01	SG-02-S-C-12	148160	10.22	147905	11.20		
02							
03							
04							
05							
06							
07							
08							
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22							
23							
24							
25							

IS1 = Tetrapentyl Tin
IS2 = p-Terphenyl-d14

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

FORM VIII SV-1

Butyl Tin Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: VS50

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: V550 Client ID: Anchor QEA, LLC

Parameter: TBT Pore Water Client Project: City of Kenmore Sediments

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☑ Turbid/Color= V550 Samples A-D tan turbid E light tan, turbid F tan turbid	AR 11/19/12
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☑ Other (Details)= V550 Samples G-J tan, turbid	AR 11/19/12
☑ Other Notes/Comments= (Note problems, concerns, corrective actions). V550 sample D (Centrifuge#1 used for all Centrifugations) had limited volume, used D.I. water to bring extraction to required volume.	AR 11/19/12

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

Tributyl Tin – Pore Water
Separatory Funnel (3510C) (SOP # 3311S)

Preparation Test TBT # 2 (TBTPSL)

ARI Job No(s) VS5ϕ Page 1 of 1 Low Level (0.0049-0.006ppb) Batch set up by: JH

Bottle #	Extraction Requirements	Volume Extracted	Final Effective Volume	Volume to Lab	Comments	Verify Client ID AR 11/19/12 Analyst Date
	VS5ϕ MBW	150mL	0.5mL	0.5mL	Blanks=Sea H20	KD Hexane Exchange (20mL X 2)
	↓ SBW	150mL	0.5mL	0.5mL	Blanks=Sea H20	
	~~SBWDup~~	~~150mL~~	~~0.5mL~~	~~0.5mL~~	~~Blanks=Sea H20~~	
	~~QLS~~	~~150mL~~	~~0.5mL~~	~~0.5mL~~	~~Blanks=Sea H20~~	YL 11/19/12 Analyst/Date
1	VS5ϕ A	150mL	0.5mL	0.5mL		TurboVap (1) 2 3
1	B	150mL	0.5mL	0.5mL		
2	BMS	150mL	0.5mL	0.5mL		SP 11/19/12 Analyst/Date
3	BMSd	150mL	0.5mL	0.5mL		HexMgBr Addition Vortex 45min +Overnight
1	C	150mL	0.5mL	0.5mL		
1	D	~~150mL~~ 46mL	0.5mL	0.5mL	See Analyst note	SP 11/19/12 Analyst/Date
	E	~~150mL~~ 150mL ~~60mL~~	0.5mL	0.5mL		(REQ) Derivitize (4mL) IS CSZ
	F	150mL AR 11/19/12	0.5mL	0.5mL		11-20-12 Analyst/Date
	G	150mL	0.5mL	0.5mL		(REQ) Alumina Clean (2mL)
	H	150mL	0.5mL	0.5mL		IS CSZ 11-20-12 Analyst/Date
	I	150mL	0.5mL	0.5mL		TurboVap (1) 2 3
	J	150mL	0.5mL	0.5mL		Post Alumina Cleanup IS CSZ
Analyst/Date	AR 11/19/12 →	CSZ IS 11-20-12	CSZ IS 11-20-12			11-20-12 Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	J (1915-4)	0.125µg/mL	100µL	11/23/12	AR	~~JH~~
Spike	9 (1918-2)	0.125/0.250µg/mL	100µL	11/23/12	AR	~~JH~~
~~QLS Spike~~	~~1 ( )~~	~~0.02µg/mL~~	~~40µL~~			
Extraction Time: 8:30						

SPECIAL INSTRUCTIONS: NOTE: TBT Extractions must be completed within 48 hours!
1. Rinse all glassware with 0.02% Tropolone. 2. Pre-wash "Sea Water" blanks with 30mL DCM (2min shake) (Discard DCM). 3. Add Surr/Spk. 4. Acidify with 1:1 HCL. 5. Check pH. 6. Let sit 10 minutes-Check pH again. 7. Extract 1 X with 30mL 0.02% Tropolone (4 min shake-SHAKE VIGOROUSLY)!. Plus 2 X 30mL DCM. 8. KD rinsed with 0.02% Tropolone (NO Drying Column) at 80°. 9. Exchange (2 X with 20mL) to Hexane at 100°. 10. TurboVap to 3mL-Transfer with Hexane to 40mL VOA vial.. 11. Derivitize=1 1/2 pipet HexMgBr (Mix by hand) then Vortex. Let sit 45min (vortex every 10 min). Then overnite in fridge. 12. Derivitize: Add (1) pipet conc. HCL. Vortex. Draw off/discard HCL. Add 5mL DI H2O. Vortex. Draw off/discard H20. Add 5mL DI H2O a second time. Vortex. Draw off/discard H2O. 13. Add sodium sulfate-Let sit 15min. 14. TurboVap to 2mL 15. 7.5g 0% Alumina Clean-up Required. (Collect 6mL). 16. TurboVap. 17. Vial in Hexane.

A. Archive (Y) N

Butyl Tin Raw Data
Initial Calibration

ARI Job ID: VS50

Analytical Resources, Incorporated
Analytical Chemists and Consultants

GC/MS,SVOA Initial Calibration Notes

ARI SOP: **801S**(SIM-PNA) **802S**(Butyl Tins) done **804S**(SVOA-8270D) **805S**(op-Pest)

Instrument: NT-4 NT-6 NT-8 NT-10 NT11 NT12

Curve Date(s): 10.9.12 Internal Standard ID 1961-2 Expiration 3.17.13

DFTPP Tune Meets Criteria?	YES / NO	Minimum Response Factors Met/	YES / NO
DDT Breakdown <20%?	YES / NO	ICV Exceeding ±20%? No ICV	YES / NO
Peak Tailing Factor ≤2?	YES / NO (1)	ICV Exceeding ±30%?	YES / NO
ICal Meets %RSD & r^2 Criteria?	YES / NO	Linear Fits Used?	YES / NO
Q flag applied?	YES / NO	Quadratic Fits Used?	YES / NO
Manual Integrations for ICal?	YES / NO	Calibration Points Dropped?	YES / NO
Spectral Library Updated?	YES / NO		

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
Pri Stock	1961-4	3.17.13			

Detail problems, corrective actions and/or other pertinent information below:

(1) PCP @ 2.35, Benzidine @ 2.04

Analyst: VD **Date:** 10.10.12

Reviewer: [signature] **Date:** 10/11/12

Q-FLAG SUMMARY FOR DATABATCH - /chem1/nt12.i/20121009A.b

Instrument: nt12.i Date: 09-OCT-2012 Method: pw3ul.m

INITIAL CAL: 09-OCT-2012

Compound	%RSD or R^2
NO Q-FLAGS	

CONTINUING CAL: 09-OCT-2012

Compound	%D
NO Q-FLAGS	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt12.i/20121009A.b

ARI Job No.: DFTP   Method: DF8270.m   Instrument: nt12.i   Date: 09-OCT-2012

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1625	df1009b.d	DFTPP 5		1	NO MANUAL INTEGRATION
1643	ic1009a.d	PW 25		1	NO MANUAL INTEGRATION
1704	ic1009b.d	PW 100		1	NO MANUAL INTEGRATION
1724	ic1009c.d	PW 02		1	NO MANUAL INTEGRATION
1745	ic1009d.d	PW 50		1	NO MANUAL INTEGRATION
1806	ic1009e.d	PW 5		1	NO MANUAL INTEGRATION
1826	ic1009f.d	PW 10		1	NO MANUAL INTEGRATION
1949	vl52a.d	VL52A	EFS-SC-1-2	1	NO MANUAL INTEGRATION
2010	vl52b.d	VL52B	PCE-SC-2-1	1	NO MANUAL INTEGRATION
2031	vl52c.d	VL52C	PCE-SC-3-0	1	NO MANUAL INTEGRATION
1847	vl52mb.d	VL52MBW1	VL52MBW1	1	NO MANUAL INTEGRATION
1908	vl52sb.d	VL52LCSW1	VL52LCSW1	1	NO MANUAL INTEGRATION
1929	vl52sbd.d	VL52LCSDW1	VL52LCSDW1	1	NO MANUAL INTEGRATION

Analytical Resources Inc.: Organics Instrument Log

NT-12 Serial No.:GC=US00032558, MS= US01180091

Date: 10·9·12 Analysis: pore TBT Analyst: VB

GC Program: Porebts Column No: 230930 Column Type: ZB·5ms,

Instrument Tune (.U or .CT.): 120927.U EM Voltage: 1906

Calibration File: df1009B Curve Date: 10·9·12 Injection Vol.: 3 uL

IS/SS	Ical/Ccal	LCS/ICV
1961-2	1961-4	

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt

	Time	Filename	LabID	ClientId	DF				
1	1625	df1009b.d	DFTPP 5		1	NO ISTDS FOUND			
2	1643	ic1009a.d	PW 25		1	10.24	124855	11.20	121433
3	1704	ic1009b.d	PW 100		1	10.24	130573	11.20	122984
4	1724	ic1009c.d	PW 02		1	10.22	130009	11.20	125886
5	1745	ic1009d.d	PW 50		1	10.24	126911	11.20	124605
6	1806	ic1009e.d	PW 5		1	10.24	118243	11.20	113572
7	1826	ic1009f.d	PW 10		1	10.24	124576	11.20	121168
8	1847	vl52mb.d	VL52MBW1	VL52MBW1	1	10.22	147582	11.20	135952
9	1908	vl52sb.d	VL52LCSW1	VL52LCSW1	1	10.22	133710	11.20	126640
10	1929	vl52sbd.d	VL52LCSDW1	VL52LCSDW1	1	10.22	140567	11.20	127179
11	1949	vl52a.d	VL52A	EFS-SC-1-2-3	1	10.22	139790	11.20	129339
12	2010	vl52b.d	VL52B	PCE-SC-2-1.3	1	10.22	137180	11.19	126469
13	2031	vl52c.d	VL52C	PCE-SC-3-0-1	1	10.22	135890	11.19	130170

VB 10.10.12

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Batch File: /chem1/nt12.i/20121009A.b
Inst ID: nt12.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	ic1009a	ic1009b	ic1009c	ic1009d	ic1009e	ic1009f
INJ.DATE:	09-OCT-2012	09-OCT-2012	09-OCT-2012	09-OCT-2012	09-OCT-2012	09-OCT-2012
INJ.TIME:	16:43	17:04	17:24	17:45	18:06	18:26

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
$	1 Tripropyl Tin (Hexyl)	8.594	8.594	8.594	8.594	8.594	8.594	8.594	8.422-8.766	8.594	0.000
	2 Tetrabutyl Tin	8.812	8.812	8.801	8.812	8.801	8.801	8.812	8.636-8.989	8.807	0.006
	3 Tributyl Tin (Hexyl)	9.583	9.583	9.583	9.583	9.583	9.583	9.583	9.392-9.775	9.583	0.000
*	4 Tetrapentyl Tin	10.237	10.237	10.224	10.237	10.237	10.237	10.237	10.032-10.442	10.235	0.006
	5 Dibutyl Tin (Hexyl)	10.277	10.277	10.277	10.277	10.277	10.277	10.277	10.072-10.483	10.277	0.000
$	6 Tripentyl Tin (Hexyl)	10.572	10.572	10.572	10.572	10.572	10.572	10.572	10.361-10.784	10.572	0.000
	7 Butyl Tin (Hexyl)	10.907	10.908	10.907	10.907	10.907	10.907	10.907	10.689-11.126	10.907	0.000
*	8 p-Terphenyl-d14	11.202	11.203	11.202	11.202	11.202	11.202	11.202	10.978-11.426	11.202	0.000

Reviewer 1 VT Date: 10·10·12
Reviewer 2 [signature] Date: 10/10/12

VS50:00046

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 09-OCT-2012 16:43
End Cal Date : 09-OCT-2012 18:26
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt12.i/20121009A.b/pw3ul.m
Cal Date : 10-Oct-2012 08:24 van
Curve Type : Average

Calibration File Names:
Level 1: /chem1/nt12.i/20121009A.b/ic1009c.d
Level 2: /chem1/nt12.i/20121009A.b/ic1009e.d
Level 3: /chem1/nt12.i/20121009A.b/ic1009f.d
Level 4: /chem1/nt12.i/20121009A.b/ic1009a.d
Level 5: /chem1/nt12.i/20121009A.b/ic1009d.d
Level 6: /chem1/nt12.i/20121009A.b/ic1009b.d

Compound	2.000 Level 1	5.000 Level 2	10.000 Level 3	25.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
2 Tetrabutyl Tin	0.80764	0.72326	0.78169	0.80644	0.73009	0.75098	0.76668	4.865
3 Tributyl Tin (Hexyl)	0.67534	0.61162	0.71507	0.76799	0.67786	0.70823	0.69269	7.503
5 Dibutyl Tin (Hexyl)	0.05537	0.04591	0.04958	0.05161	0.04657	0.04969	0.04979	6.953
7 Butyl Tin (Hexyl)	0.07948	0.06974	0.08283	0.08668	0.07239	0.08230	0.07890	8.295
$ 1 Tripropyl Tin (Hexyl)	0.60688	0.72596	0.71635	0.81599	0.71486	0.75270	0.72212	9.418
$ 6 Tripentyl Tin (Hexyl)	0.07411	0.05839	0.06752	0.07356	0.06369	0.07110	0.06806	9.033

Data File: /chem1/nt12.i/20121009A.b/df1009b.d

Date : 09-OCT-2012 16:25

Client ID:

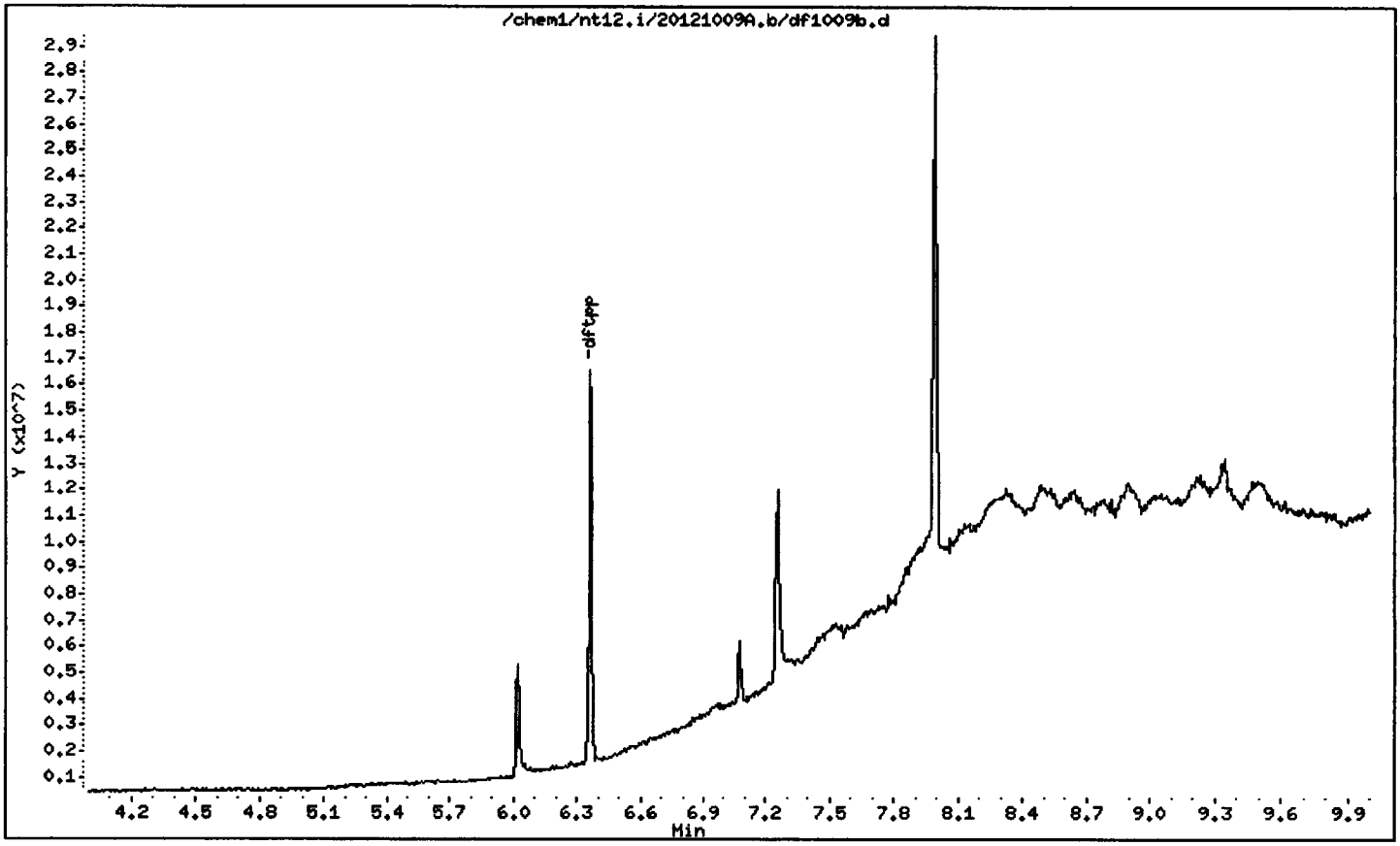
Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25



Data File: /chem1/nt12.i/20121009A.b/df1009b.d

Date : 09-OCT-2012 16:25

Client ID:

Instrument: nt12.i

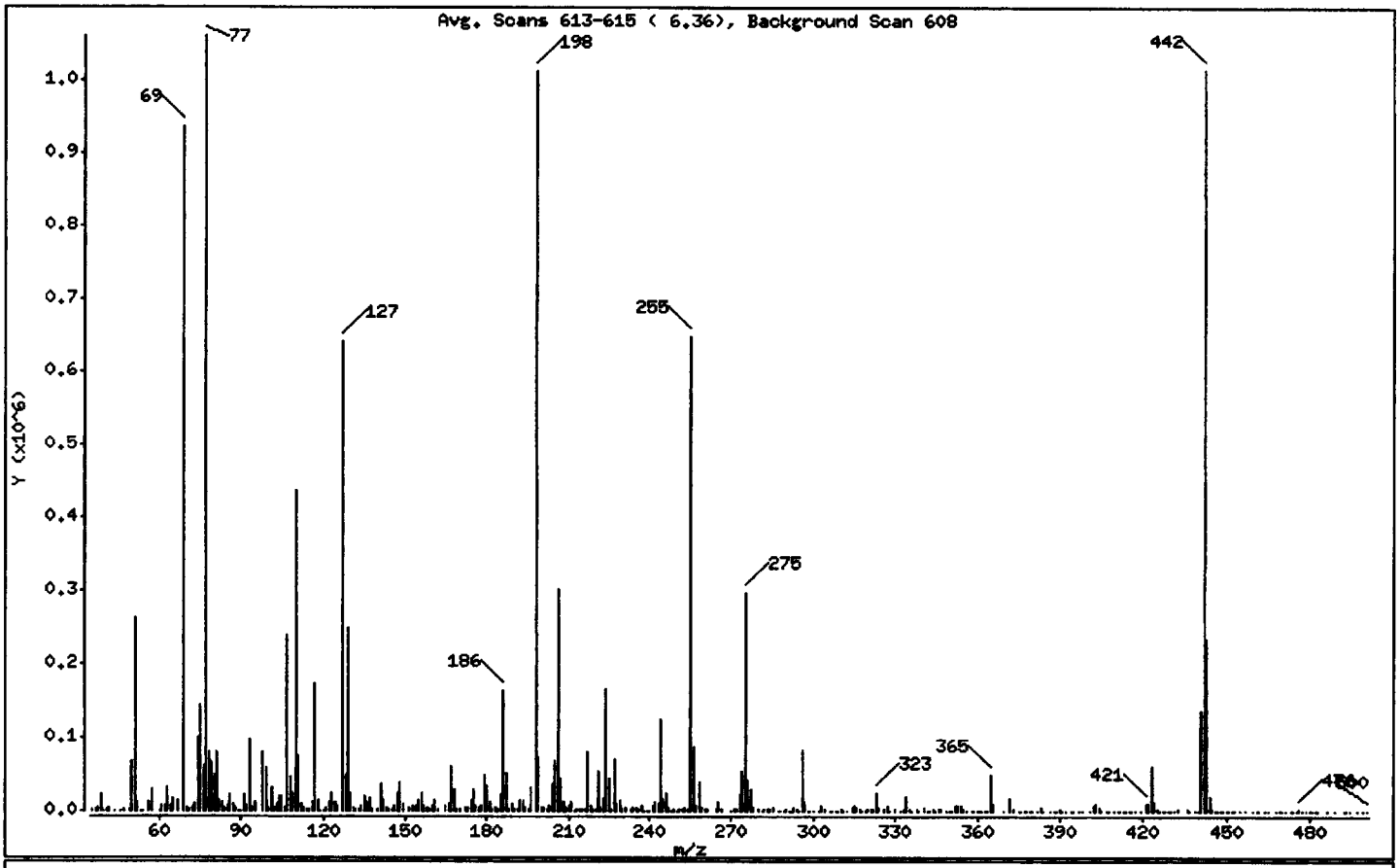
Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	26.17
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	92.60
70	Less than 2.00% of mass 69	0.54 (0.59)
127	10.00 - 80.00% of mass 198	63.35
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	7.19
275	10.00 - 60.00% of mass 198	29.49
365	Greater than 1.00% of mass 198	4.78
441	0.01 - 24.00% of mass 442	13.58 (13.54)
442	50.00 - 200.00% of mass 198	100.31
443	15.00 - 24.00% of mass 442	23.18 (23.11)

Data File: /chem1/nt12.i/20121009A.b/df1009b.d

Date : 09-OCT-2012 16:25

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

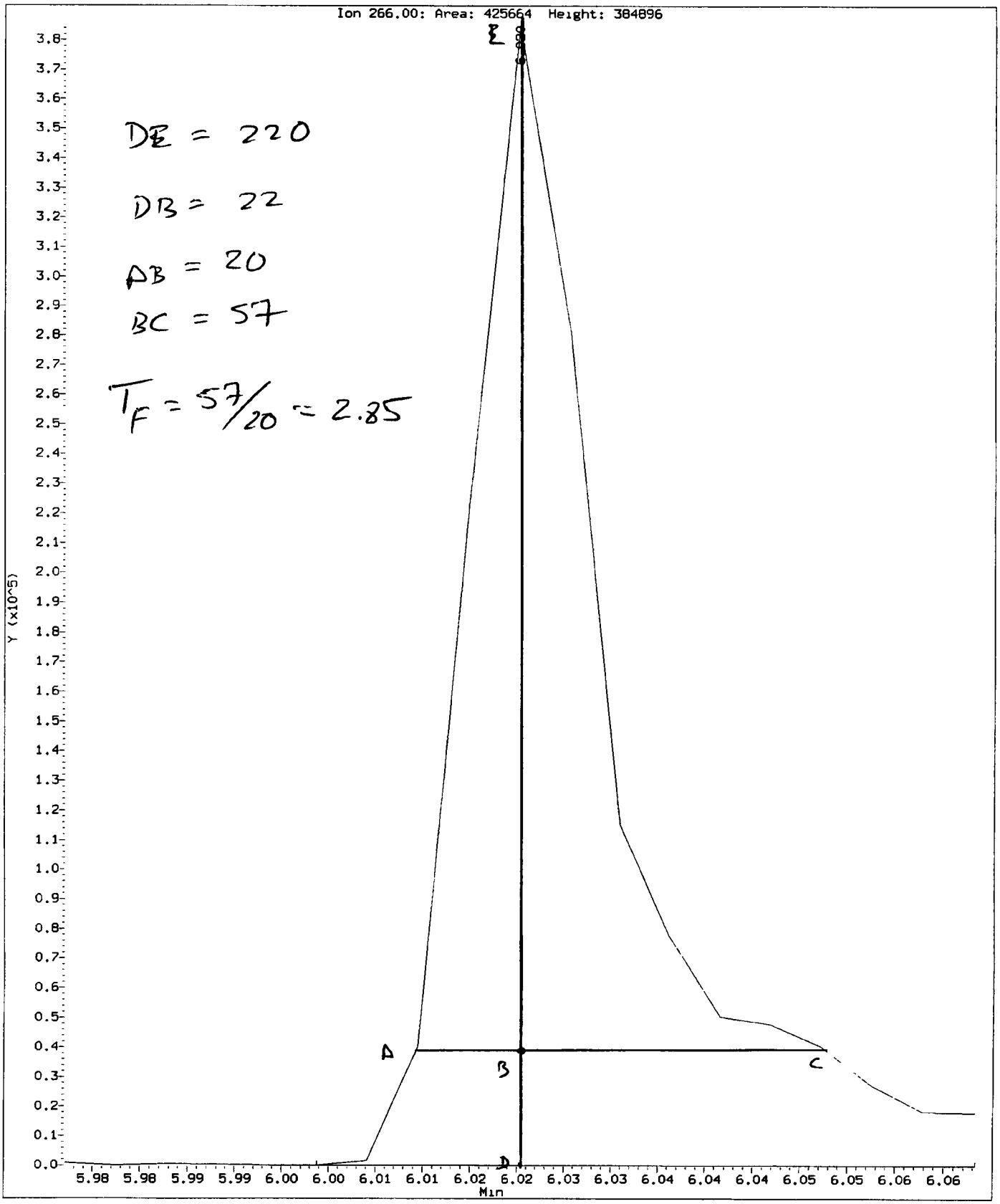
Column diameter: 0.25

Data File: df1009b.d
Spectrum: Avg. Scans 613-615 (6.36), Background Scan 608
Location of Maximum: 77.00
Number of points: 392

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1424	147.00	25248	253.00	5180	373.00	2198
37.00	1472	148.00	39480	254.00	3449	375.00	1037
38.00	4624	149.00	9036	255.00	649152	376.00	197
39.00	21432	151.00	4739	256.00	89056	377.00	110
40.00	382	153.00	6596	257.00	6579	378.00	1054
41.00	3644	154.00	7270	258.00	38832	379.00	84
42.00	5210	155.00	15120	259.00	6095	380.00	466
44.00	940	156.00	25176	260.00	1772	382.00	335
46.00	258	157.00	6754	261.00	3540	383.00	4753
47.00	1319	158.00	5830	264.00	1469	384.00	816
49.00	2765	159.00	2532	265.00	13358	387.00	763
50.00	67824	160.00	8005	266.00	3018	388.00	1065
51.00	264704	161.00	15595	270.00	1143	389.00	772
52.00	13241	162.00	1783	271.00	1346	390.00	2979
53.00	763	165.00	8229	272.00	3152	391.00	638
54.00	1136	166.00	10166	273.00	20840	392.00	1138
56.00	11553	167.00	61576	274.00	53120	394.00	171
57.00	28440	168.00	30200	275.00	298240	395.00	322
60.00	876	169.00	3014	276.00	40848	397.00	1067
61.00	7920	170.00	3003	277.00	28112	398.00	493
62.00	7831	172.00	5704	278.00	4015	401.00	1133
63.00	30984	173.00	5291	280.00	2215	402.00	6263
64.00	6912	174.00	13750	281.00	279	403.00	10076
65.00	17160	175.00	29472	282.00	1640	404.00	3887
67.00	15208	176.00	7088	283.00	2264	405.00	1158
69.00	936512	177.00	5313	284.00	2153	407.00	147
70.00	5509	178.00	7361	285.00	4204	408.00	788
71.00	1557	179.00	49280	287.00	1071	410.00	77
72.00	4357	180.00	33544	288.00	725	411.00	316
73.00	10013	181.00	12442	289.00	116	412.00	416
74.00	99872	182.00	3329	290.00	1952	413.00	653
75.00	143488	183.00	4259	291.00	517	414.00	486
76.00	60232	184.00	3268	292.00	136	415.00	409
77.00	1061376	185.00	22904	293.00	6074	416.00	187
78.00	80392	186.00	162944	294.00	1922	417.00	232

Data File: /chem1/nt12.1/20121009A.b/ddt.b/df1009b.d
Injection Date: 09-OCT-2012 16:25
Instrument: nt12.1
Client Sample ID:

Compound: Pentachlorophenol
CAS Number: 87-86-5



Date : 09-OCT-2012 16:26

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25

Data File: df1009b.d
Spectrum: Avg. Scans 613-615 (6.36), Background Scan 608
Location of Maximum: 77.00
Number of points: 392

m/z	Y	m/z	Y	m/z	Y	m/z	Y
79.00	65088	187.00	52384	295.00	880	419.00	233
80.00	48336	188.00	3378	296.00	83184	421.00	10491
81.00	79808	189.00	10332	297.00	12688	422.00	9614
82.00	14920	190.00	2492	298.00	646	423.00	60352
83.00	12802	191.00	2160	299.00	1137	424.00	11480
84.00	4053	192.00	13734	300.00	757	425.00	1888
85.00	7493	193.00	15443	302.00	369	426.00	271
86.00	21408	194.00	4549	303.00	7707	427.00	1005
87.00	8658	195.00	2729	304.00	1847	428.00	417
88.00	5970	196.00	32304	306.00	473	429.00	438
89.00	390	198.00	1011392	307.00	1013	430.00	1113
90.00	596	199.00	72744	308.00	85	431.00	883
91.00	21000	200.00	4313	309.00	655	433.00	1675
92.00	7744	201.00	4179	310.00	2015	435.00	146
93.00	98480	202.00	1691	311.00	872	436.00	1869
94.00	4054	203.00	8254	312.00	355	437.00	602
95.00	11642	204.00	37504	314.00	3730	439.00	484
98.00	80656	205.00	68488	315.00	6995	440.00	615
99.00	57376	206.00	301376	316.00	3725	441.00	137280
100.00	4988	207.00	42992	317.00	1322	442.00	1014464
101.00	31936	208.00	11580	318.00	755	443.00	234432
102.00	3956	209.00	4002	319.00	368	444.00	20144
103.00	9976	210.00	7846	320.00	1654	445.00	1501
104.00	20000	211.00	12444	321.00	2937	446.00	533
105.00	19696	212.00	1183	322.00	2001	447.00	534
106.00	4531	213.00	2046	323.00	24528	448.00	173
107.00	238400	214.00	1329	324.00	3708	449.00	116
108.00	47064	215.00	3540	326.00	1338	450.00	812
109.00	23552	216.00	1611	327.00	6498	451.00	504
110.00	435840	217.00	80864	328.00	1027	452.00	359
111.00	75824	218.00	8028	330.00	2298	453.00	681
112.00	10395	219.00	3507	332.00	546	455.00	51
113.00	4951	220.00	1318	333.00	2845	457.00	51
114.00	1673	221.00	53368	334.00	20528	460.00	261
115.00	1281	222.00	5856	335.00	3621	461.00	387

Date : 09-OCT-2012 16:25

Client ID: Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

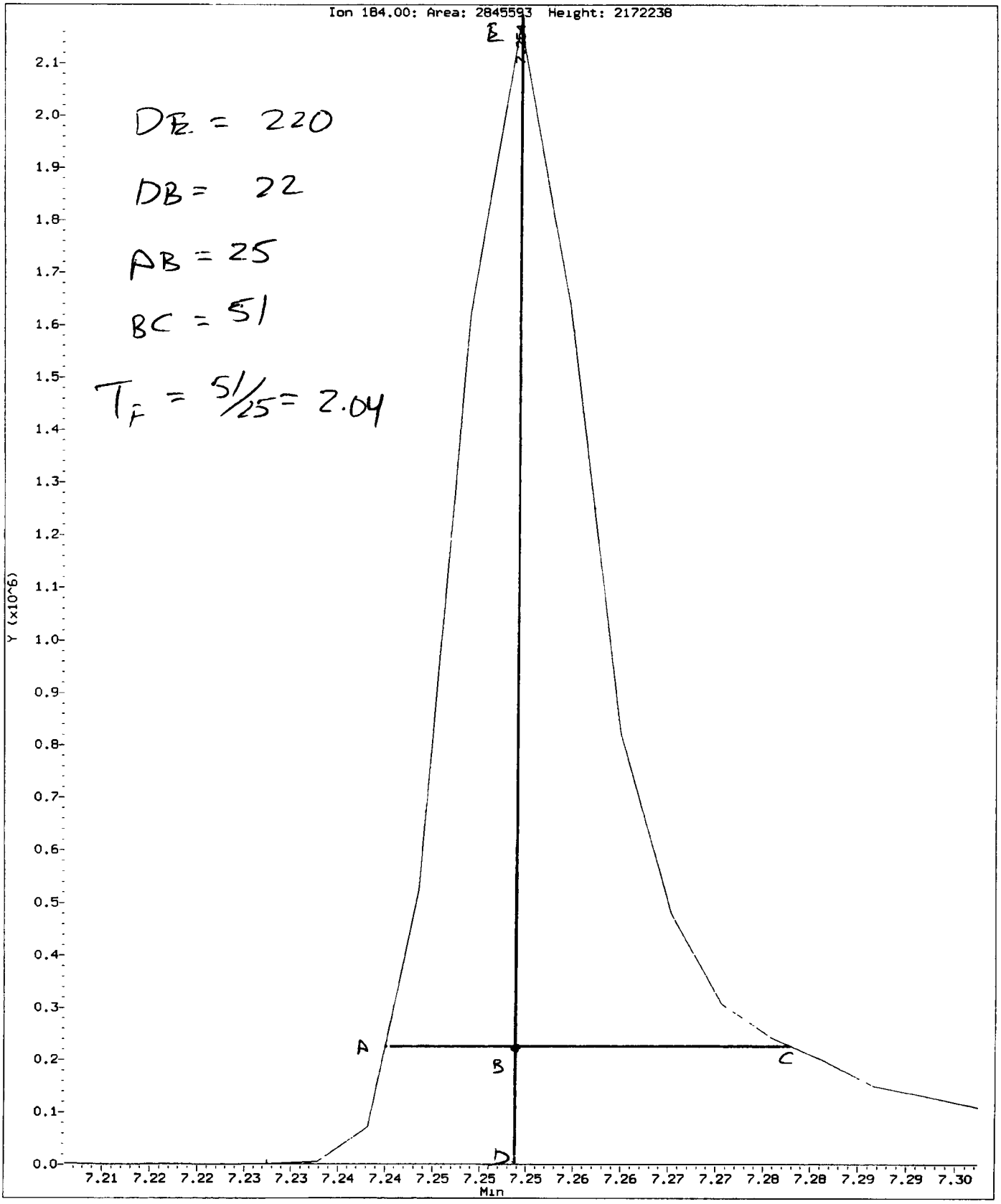
Column phase: ZB-5msi Column diameter: 0.25

Data File: df1009b.d
Spectrum: Avg. Scans 613-615 (6.36), Background Scan 608
Location of Maximum: 77.00
Number of points: 392

m/z	Y	m/z	Y	m/z	Y	m/z	Y
116.00	13189	223.00	15913	336.00	108	462.00	628
117.00	173312	224.00	165632	338.00	1428	464.00	177
118.00	14863	225.00	44048	339.00	521	465.00	354
119.00	31	226.00	2558	341.00	4447	468.00	1064
120.00	699	227.00	71080	342.00	745	469.00	261
121.00	5564	228.00	10200	343.00	1032	470.00	115
122.00	12082	229.00	13913	344.00	1424	471.00	602
123.00	25032	230.00	2230	345.00	354	473.00	545
124.00	11331	231.00	3934	346.00	3383	474.00	342
125.00	6626	233.00	2014	347.00	2674	475.00	117
127.00	640640	234.00	5363	349.00	843	476.00	1253
128.00	48936	235.00	5775	350.00	48	477.00	1083
129.00	249088	236.00	2137	351.00	163	479.00	173
130.00	23992	237.00	7228	352.00	8023	480.00	74
131.00	6002	238.00	876	353.00	6148	481.00	498
132.00	2692	239.00	598	354.00	7989	482.00	126
133.00	1698	240.00	629	355.00	2231	483.00	508
134.00	6521	241.00	6219	356.00	704	486.00	719
135.00	18336	242.00	11251	358.00	833	489.00	224
136.00	12496	243.00	9588	359.00	1115	492.00	158
137.00	16800	244.00	124600	360.00	87	493.00	203
138.00	3599	245.00	16864	361.00	558	494.00	302
140.00	3262	246.00	25320	362.00	1169	497.00	404
141.00	36064	247.00	4541	363.00	229	499.00	547
142.00	13954	248.00	262	364.00	427	500.00	267
143.00	5719	249.00	1410	365.00	48360		
144.00	2088	250.00	16	366.00	9289		
145.00	1565	251.00	1495	370.00	29		
146.00	6978	252.00	3576	372.00	16480		

Data File: /chem1/nt12.i/20121009A.b/ddt.b/df1009b.d
Injection Date: 09-OCT-2012 16:25
Instrument: nt12.i
Client Sample ID:

Compound: Benzidine
CAS Number:



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem1/nt12.i/20121009A.b/ddt.b/df1009b.d ARI ID: DFTPP 5
Method: /chem1/nt12.i/20121009A.b/ddt.b/sw846ddt.m Misc:
Analysis Date: 09-OCT-2012 16:25 Instrument: nt12.i

COMPOUND	RT	AREA
Pentachlorophenol	6.020	425664
Benzidine	7.254	2845593
4,4'-DDE	7.447	18140
4,4'-DDD	7.735	25351
4,4'-DDT	7.986	2588716

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

$$\text{DDT Percent Breakdown} = \frac{(18140 + 25351) * 100}{(18140 + 25351 + 2588716)}$$

DDT Percent Breakdown = 1.7 %

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009a.d
Lab Smp Id: PW 25
Inj Date : 09-OCT-2012 16:43
Operator : VTS Inst ID: nt12.i
Smp Info : PW 25
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van Quant Type: ISTD
Cal Date : 09-OCT-2012 16:43 Cal File: ic1009a.d
Als bottle: 2 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
$	1 Tripropyl Tin (Hexyl)	291	8.594	8.594	(0.839)	12735	25.0000	25.00
	2 Tetrabutyl Tin	289	8.812	8.812	(0.861)	12586	25.0000	25.00
	3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.936)	11986	25.0000	25.00
*	4 Tetrapentyl Tin	333	10.237	10.237	(1.000)	124855	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	15668	50.0000	50.00
$	6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	22332	50.0000	50.00
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	26314	50.0000	50.00
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	121433	20.0000	

VT
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009a.d
Lab Smp Id: PW 25
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

Calibration Date: 09-OCT-2012
Calibration Time: 16:43
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	124855	0.00
8 p-Terphenyl-d14	121433	60716	242866	121433	0.00

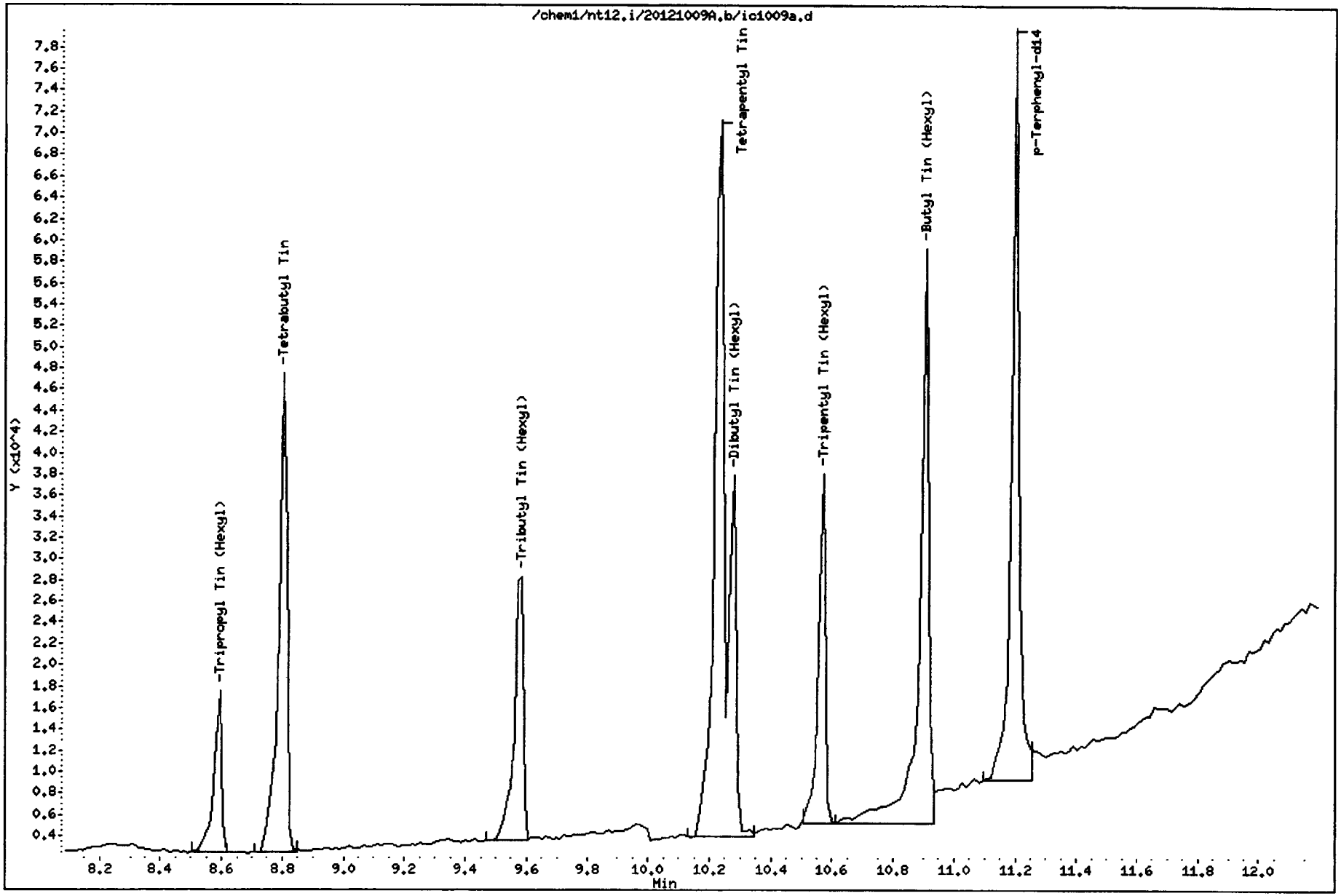
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20121009A.b/ic1009a.d
Date : 09-OCT-2012 16:43
Client ID:
Sample Info: PW 25

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25

Column phase: ZB-5msi



CO-ELUTION SUMMARY FOR FILE - ic1009a.d

Lab ID: PW 25, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009b.d
Lab Smp Id: PW 100
Inj Date : 09-OCT-2012 17:04
Operator : VTS Inst ID: nt12.i
Smp Info : PW 100
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van Quant Type: ISTD
Cal Date : 09-OCT-2012 17:04 Cal File: ic1009b.d
Als bottle: 3 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	ON-COL (ng/mL)
$	1 Tripropyl Tin (Hexyl)	291	8.594	8.594	(0.839)	49141	100.000	95.97
	2 Tetrabutyl Tin	289	8.812	8.812	(0.861)	49029	100.000	96.44
	3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.936)	46238	100.000	95.95
*	4 Tetrapentyl Tin	333	10.237	10.237	(1.000)	130573	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	61110	200.000	196.2
$	6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	87438	200.000	196.6
	7 Butyl Tin (Hexyl)	347	10.908	10.907	(0.974)	101210	200.000	194.8
*	8 p-Terphenyl-d14	244	11.203	11.202	(1.000)	122984	20.0000	

VI)
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009b.d
Lab Smp Id: PW 100
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

Calibration Date: 09-OCT-2012
Calibration Time: 16:43

Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	130573	4.58
8 p-Terphenyl-d14	121433	60716	242866	122984	1.28

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

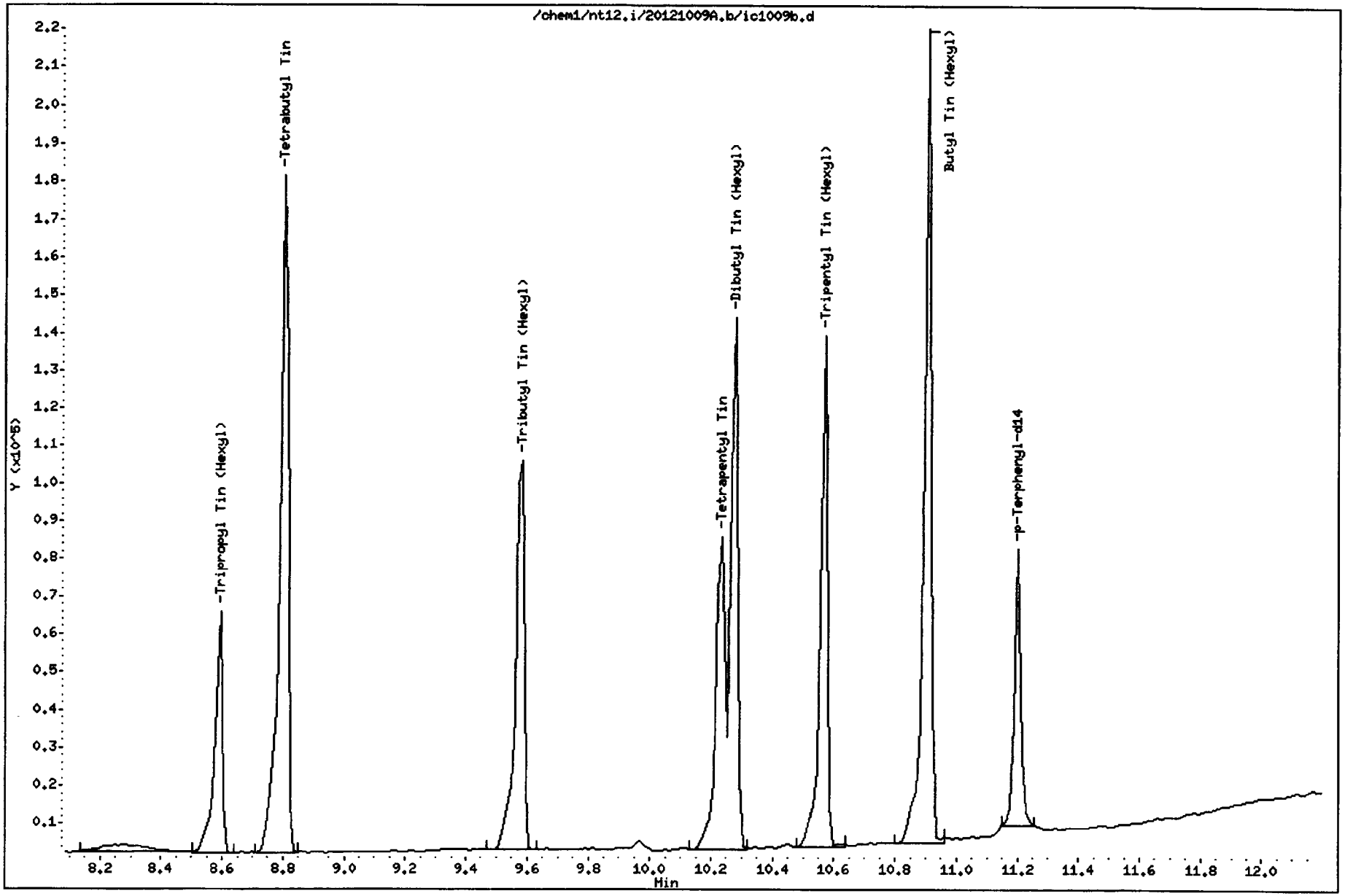
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20121009A.b/ic1009b.d
Date : 09-OCT-2012 17:04
Client ID:
Sample Info: PW 100

Instrument: nt12.i

Operator: VTS
Column diameter: 0.25

Column phase: ZB-5msi



CO-ELUTION SUMMARY FOR FILE - ic1009b.d

Lab ID: PW 100, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009c.d
Lab Smp Id: PW 02
Inj Date : 09-OCT-2012 17:24
Operator : VTS Inst ID: nt12.i
Smp Info : PW 02
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van Quant Type: ISTD
Cal Date : 09-OCT-2012 17:24 Cal File: ic1009c.d
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
$	1 Tripropyl Tin (Hexyl)	291	8.594	8.594	(0.841)	789	2.00000	1.674
	2 Tetrabutyl Tin	289	8.801	8.812	(0.861)	1050	2.00000	2.049
	3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.937)	878	2.00000	1.883
*	4 Tetrapentyl Tin	333	10.224	10.237	(1.000)	130009	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	1394	4.00000	4.241
$	6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	1866	4.00000	4.065
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	2001	4.00000	3.839
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	125886	20.0000	

VJ
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009c.d
Lab Smp Id: PW 02
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

Calibration Date: 09-OCT-2012
Calibration Time: 16:43

Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	130009	4.13
8 p-Terphenyl-d14	121433	60716	242866	125886	3.67

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.24	9.74	10.74	10.22	-0.13
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

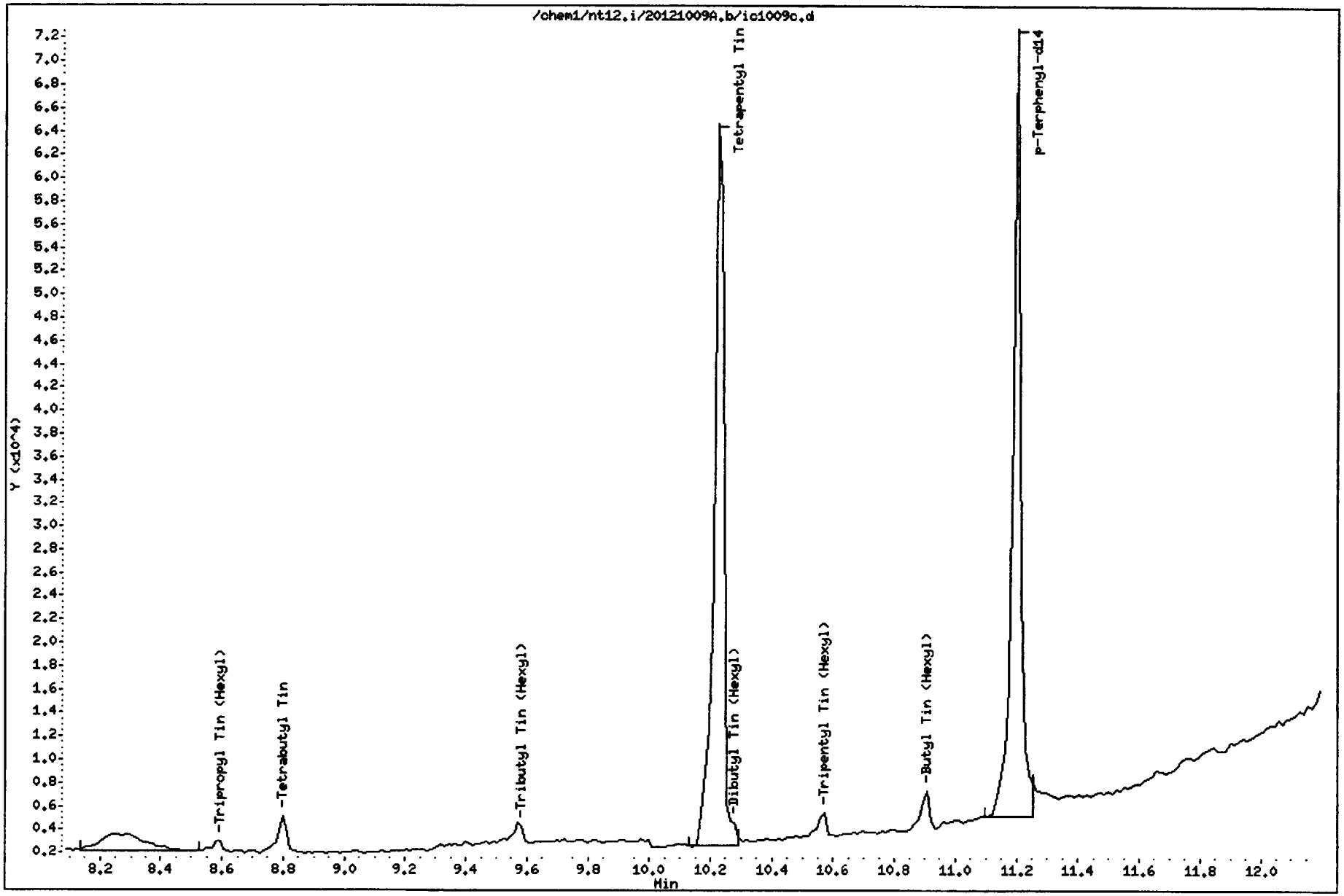
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20121009A.b/ic1009c.d
Date : 09-OCT-2012 17:24
Client ID:
Sample Info: PW 02

Instrument: nt12.i

Operator: VTS
Column diameter: 0.25

Column phase: ZB-5ms1



CO-ELUTION SUMMARY FOR FILE - ic1009c.d

Lab ID: PW 02, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009d.d
Lab Smp Id: PW 50
Inj Date : 09-OCT-2012 17:45
Operator : VTS Inst ID: nt12.i
Smp Info : PW 50
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van Quant Type: ISTD
Cal Date : 09-OCT-2012 17:45 Cal File: ic1009d.d
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
$	1 Tripropyl Tin (Hexyl)	291	8.594	8.594	(0.839)	22681	50.0000	49.46
	2 Tetrabutyl Tin	289	8.812	8.812	(0.861)	23164	50.0000	47.18
	3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.936)	21507	50.0000	47.92
*	4 Tetrapentyl Tin	333	10.237	10.237	(1.000)	126911	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	29013	100.000	91.65
$	6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	39679	100.000	90.19
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	45099	100.000	90.25
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	124605	20.0000	

VTS
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009d.d
Lab Smp Id: PW 50
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

Calibration Date: 09-OCT-2012
Calibration Time: 16:43
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	126911	1.65
8 p-Terphenyl-d14	121433	60716	242866	124605	2.61

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20121009A.b/ic1009d.d

Date : 09-OCT-2012 17:45

Client ID:

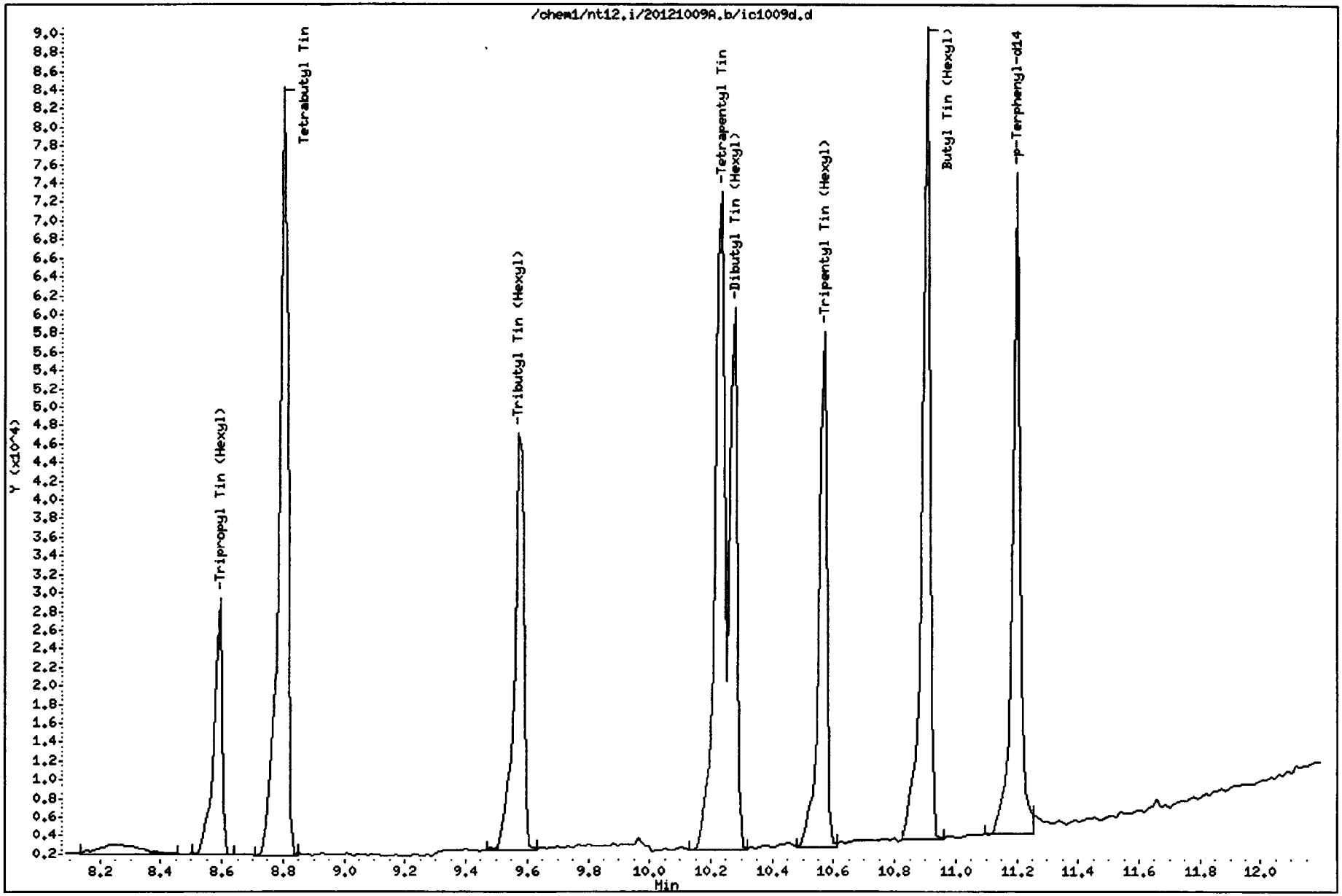
Sample Info: PW 50

Column phase: ZB-5msi

Instrument: nt12.i

Operator: VTS

Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - ic1009d.d

Lab ID: PW 50, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009e.d
Lab Smp Id: PW 5
Inj Date : 09-OCT-2012 18:06
Operator : VTS Inst ID: nt12.i
Smp Info : PW 5
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:06 Cal File: ic1009e.d
Als bottle: 6 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
$	1 Tripropyl Tin (Hexyl)	291	8.594	8.594	(0.839)	2146	5.00000	5.019
	2 Tetrabutyl Tin	289	8.801	8.812	(0.860)	2138	5.00000	4.735
	3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.936)	1808	5.00000	4.444
*	4 Tetrapentyl Tin	333	10.237	10.237	(1.000)	118243	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	2607	10.0000	9.213
$	6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	3316	10.0000	8.566
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	3960	10.0000	8.927
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	113572	20.0000	

VD
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009e.d
Lab Smp Id: PW 5
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

Calibration Date: 09-OCT-2012
Calibration Time: 16:43

Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	118243	-5.30
8 p-Terphenyl-d14	121433	60716	242866	113572	-6.47

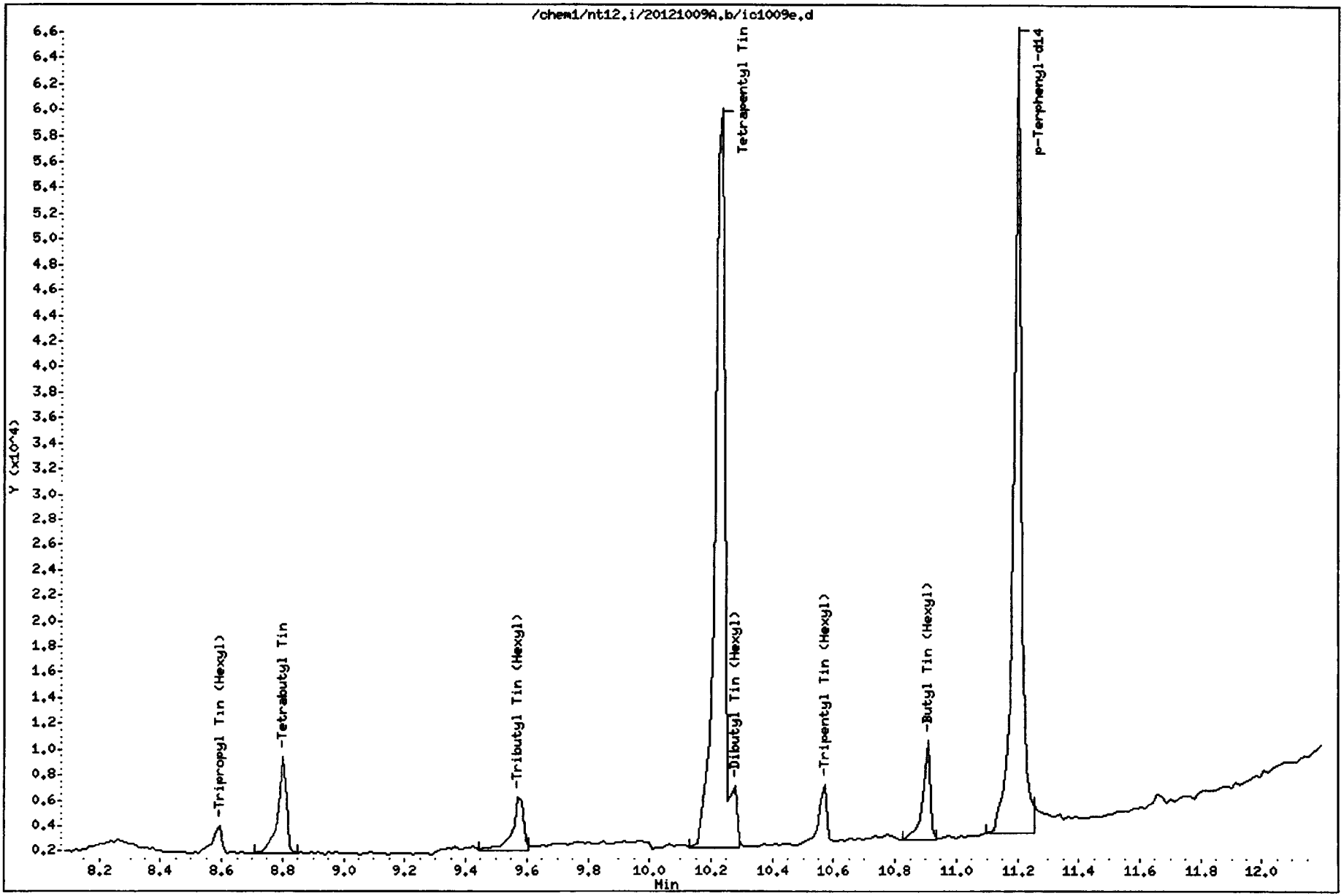
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20121009A.b/ic1009e.d
Date : 09-OCT-2012 18:06
Client ID:
Sample Info: PW 5

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25

Column phase: ZB-5msi



CO-ELUTION SUMMARY FOR FILE - ic1009e.d

Lab ID: PW 5, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009f.d
Lab Smp Id: PW 10
Inj Date : 09-OCT-2012 18:26
Operator : VTS Inst ID: nt12.i
Smp Info : PW 10
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 7 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
$	1 Tripropyl Tin (Hexyl)	291	8.594	8.594	(0.839)	4462	10.0000	9.920
	2 Tetrabutyl Tin	289	8.801	8.812	(0.860)	4869	10.0000	10.20
	3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.936)	4454	10.0000	10.32
*	4 Tetrapentyl Tin	333	10.237	10.237	(1.000)	124576	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	6007	20.0000	19.92
$	6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	8181	20.0000	19.84
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	10036	20.0000	21.00
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	121168	20.0000	

VJ
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009f.d
Lab Smp Id: PW 10
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

Calibration Date: 09-OCT-2012
Calibration Time: 16:43
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	124576	-0.22
8 p-Terphenyl-d14	121433	60716	242866	121168	-0.22

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

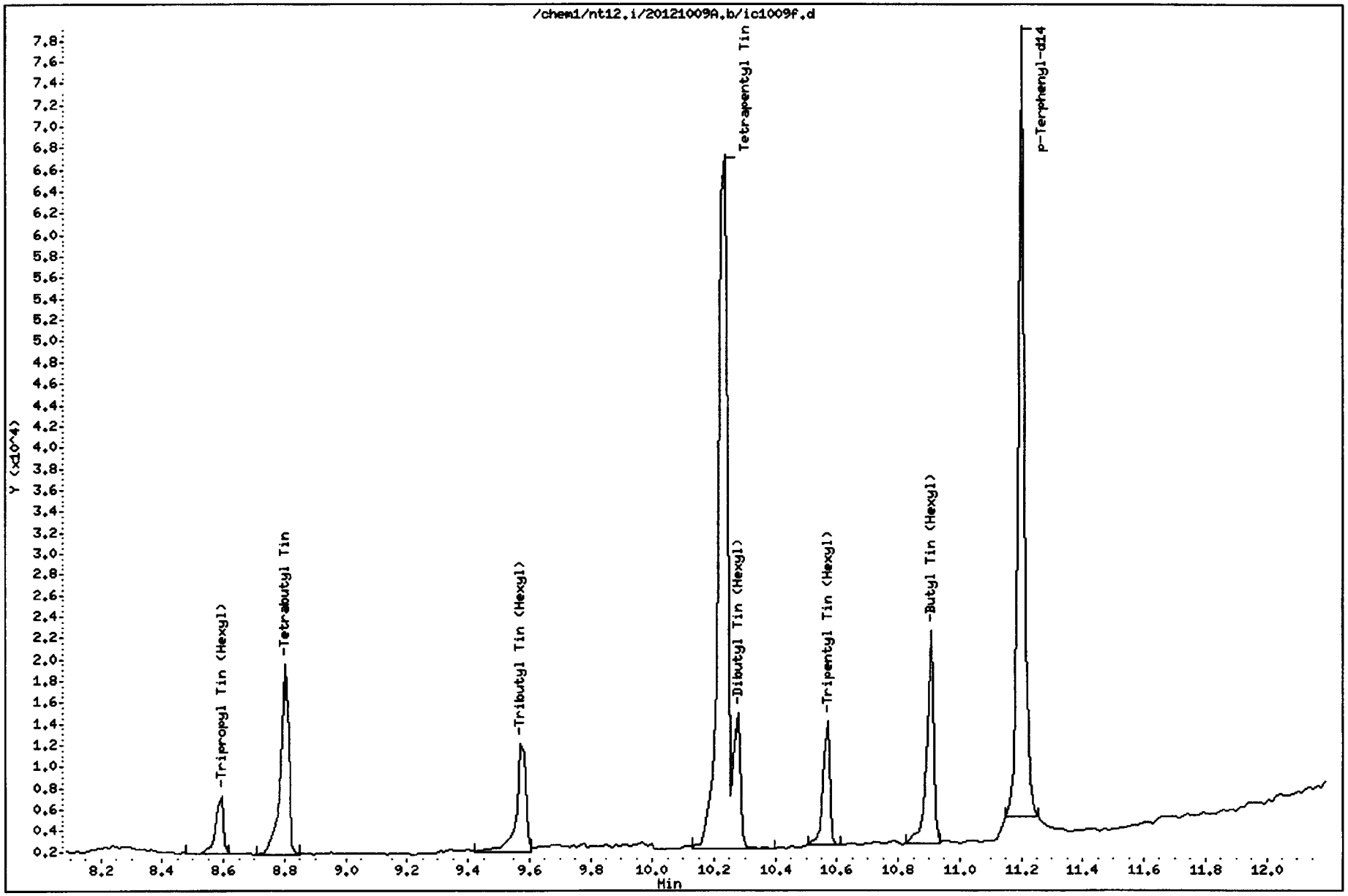
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20121009A.b/ic1009f.d
Date : 09-OCT-2012 18:26
Client ID:
Sample Info: PW 10

Instrument: nt12.i

Operator: VTS
Column diameter: 0.25

Column phase: ZB-5msi



CO-ELUTION SUMMARY FOR FILE - ic1009f.d

Lab ID: PW 10, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Butyl Tin Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: VS50

Analytical Resources, Incorporated
Analytical Chemists and Consultants

GC/MS SVOA Analyst Notes / Corrective Action Log

ARI Project ID: VSS0 Client ID: Anchor QEA

ARI SOP: **801S**(SIM-PNA) **802S**(Butyl Tins) PORE WATER **804S**(SVOA-8270D) **805S**(op-Pest)

Parameter(s): TBT in pore water

Instrument: NT-4 NT-6 NT-8 NT-10 NT11 (NT12)

Curve Date: 10.9.12 Analysis Start Date: 11.21.12

DFTPP Tune Meets Criteria?	(YES) / NO	Internal Standard Meets Criteria?	(YES) / NO
DDT Breakdown <20%?	(YES) / NO / NA	Method Blank In Control?	(YES) / NO
Peak Tailing Factor ≤2?	(1) (YES) / NO / NA	(LCS) / LCSD Recovery In Control?	(YES) / NO
ICal acceptable?	(YES) / NO	CCal acceptable?	(YES) / NO
Q flag applied?	YES / (NO)	Q flag applied?	YES / (NO)
Surrogate Recovery in Control?	(YES) / NO	Special Analysis Criteria Met?	(YES) / NO / NA
Manual Integrations for ICal?	YES / (NO)	Manual Integrations for Samples?	Yes / NO

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

(1) 2nd Queue for dilution run on B (5X),

PCP @ 2.7, Benzidine @ 3.39.

- B required a 5X dilution.
- level IV package.

Additional Details on Reverse: Yes / No

Analyst: ND **Date:** 11.23.12

Reviewer: MW **Date:** 11/23

Analytical Resources Inc.: Organics Instrument Log
NT-12 Serial No.:GC=US00032558, MS= US01180091

Date: 11.21.12 Analysis: pore water -TBT Analyst: VD

GC Program: porebts Column No: Z30930 Column Type: ZB-5ms

Instrument Tune (.U or .CT.): 120927.U EM Voltage: 2000

Calibration File: df1121 Curve Date: 10.9.12 Injection Vol.: 3 ul

IS/SS	Ical/Ccal	LCS/ICV
1961-2	1961-4	

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt

	Time	Filename	LabID	ClientId	DF				
1	1256	df1121.d	DFTPP 5		1	NO ISTDS FOUND			
2	1314	cc1121.d	PW 25		1	10.22	145461	11.20	140060
3	1337	vs50mb.d	VS50MBW1	VS50MBW1	1	10.22	135995	11.20	128917
4	1358	vs50sb.d	VS50LCSW1	VS50LCSW1	1	10.22	142227	11.20	136788
5	1418	vs50a.d	VS50A	SG-14-S-E-12	1	10.22	142924	11.20	136269
6	1439	vs50b.d	VS50B	SG-02-S-C-12	1	10.22	150080	11.20	141482
7	1459	vs50bms.d	VS50BMS	SG-02-S-C-12	1	10.22	151315	11.20	145669
8	1520	vs50bmsd.d	VS50BMSD	SG-02-S-C-12	1	10.22	152514	11.20	156826
9	1541	vs50c.d	VS50C	SG-03-S-C-12	1	10.22	154084	11.20	150801
10	1601	vs50d.d	VS50D	SG-04-S-C-12	1	10.22	151535	11.20	152904
11	1622	vs50e.d	VS50E	SG-05-S-C-12	1	10.22	155655	11.20	154149
12	1642	vs50f.d	VS50F	SG-06-S-C-12	1	10.22	153730	11.20	148002
13	1703	vs50g.d	VS50G	SG-07-S-C-12	1	10.22	157028	11.20	158915
14	1724	vs50h.d	VS50H	SG-07-S-C-Du	1	10.22	150301	11.20	154551
15	1744	vs50i.d	VS50I	SG-08-S-C-12	1	10.22	151700	11.20	150181
16	1805	vs50j.d	VS50J	SG-09-S-C-12	1	10.22	155389	11.20	149835

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

11.23.12 VD

Data File: /chem1/nt12.i/20121121.b/df1121.d

Date : 21-NOV-2012 12:56

Client ID:

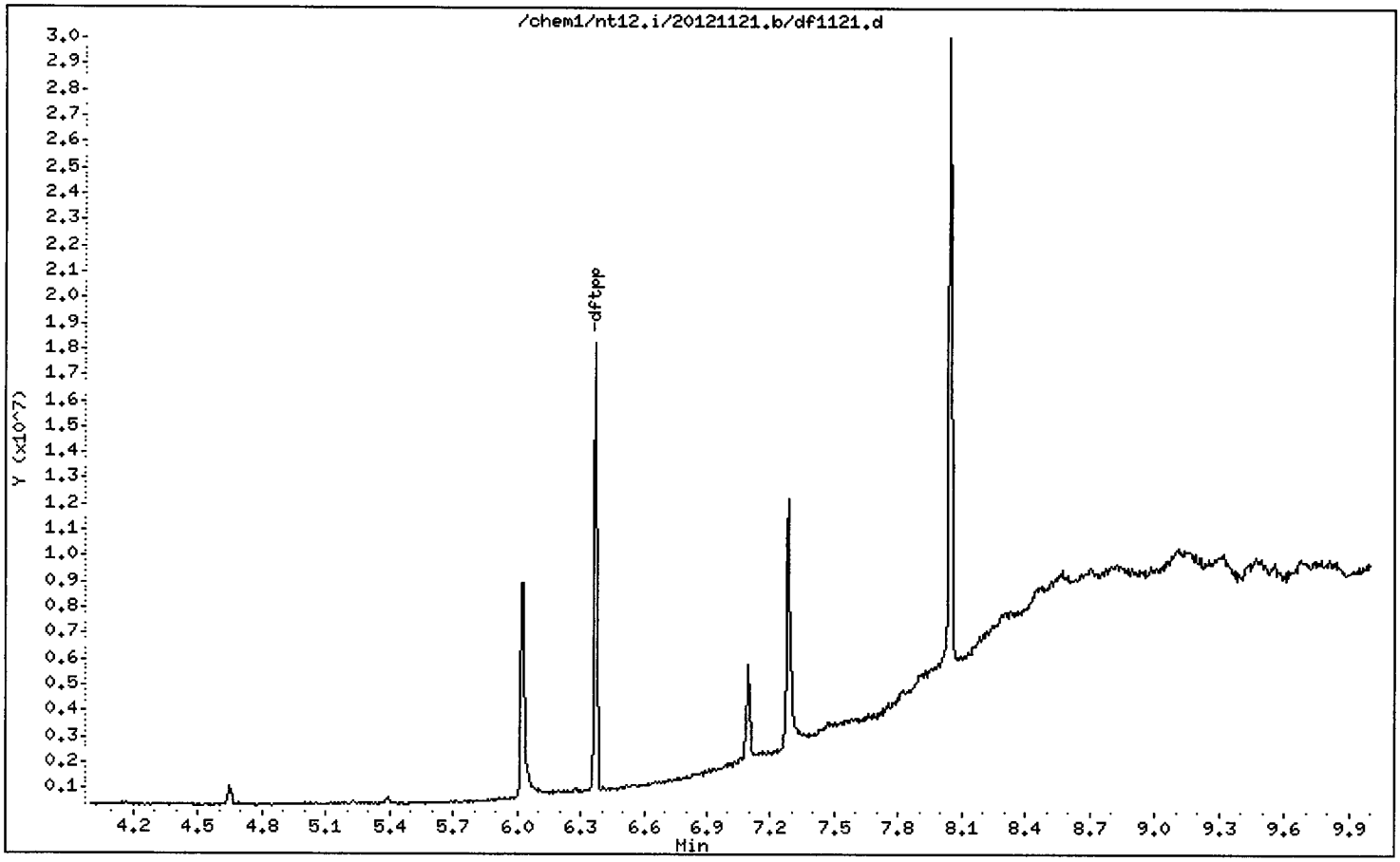
Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25



Data File: /chem1/nt12.i/20121121.b/df1121.d

Date : 21-NOV-2012 12:56

Client ID:

Instrument: nt12.i

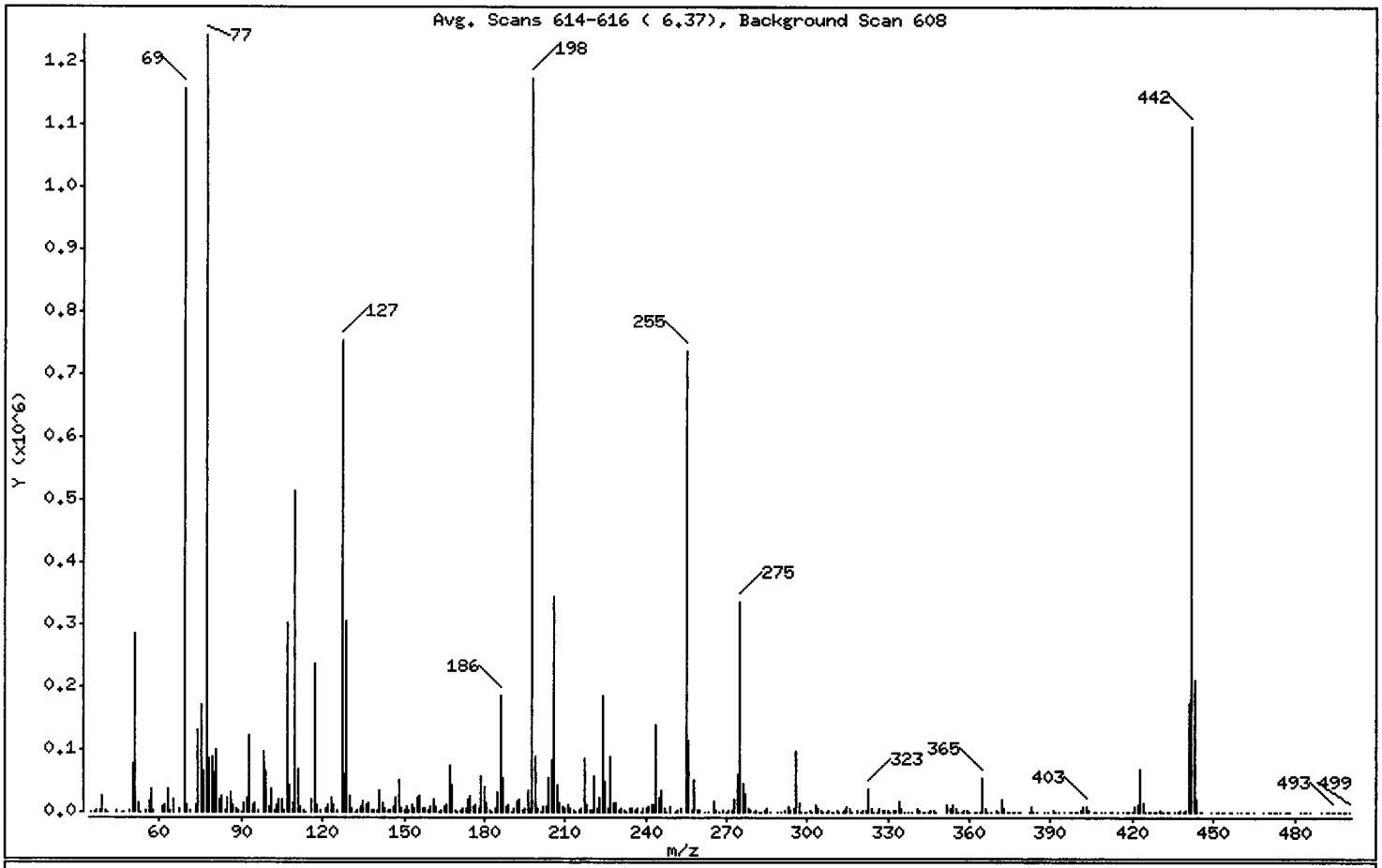
Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	24.37
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	98.59
70	Less than 2.00% of mass 69	0.97 (0.98)
127	10.00 - 80.00% of mass 198	64.34
197	Less than 2.00% of mass 198	0.49
199	5.00 - 9.00% of mass 198	7.54
275	10.00 - 60.00% of mass 198	28.70
365	Greater than 1.00% of mass 198	4.64
441	0.01 - 24.00% of mass 442	14.94 (15.97)
442	50.00 - 200.00% of mass 198	93.53
443	15.00 - 24.00% of mass 442	18.03 (19.27)

Date : 21-NOV-2012 12:56

Client ID: Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi Column diameter: 0.25

Data File: df1121.d
Spectrum: Avg. Scans 614-616 (6.37), Background Scan 608
Location of Maximum: 77.00
Number of points: 404

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	586	151.00	8530	255.00	738112	371.00	341
36.00	239	152.00	1457	256.00	114392	372.00	20008
37.00	2920	153.00	11981	257.00	3655	373.00	5195
38.00	2876	154.00	6983	258.00	50488	374.00	118
39.00	26320	155.00	23432	259.00	3924	375.00	286
40.00	1930	156.00	26776	260.00	1850	376.00	218
41.00	1326	157.00	4318	262.00	1125	377.00	664
44.00	2132	158.00	4398	263.00	48	378.00	563
46.00	997	159.00	4042	265.00	18128	379.00	186
47.00	1021	160.00	8908	266.00	2412	382.00	147
49.00	1579	161.00	18664	267.00	660	383.00	7581
50.00	78112	162.00	7298	269.00	1877	384.00	681
51.00	285952	163.00	825	270.00	1227	385.00	558
52.00	14980	164.00	3189	271.00	2560	388.00	89
53.00	562	165.00	9466	272.00	2962	389.00	281
55.00	2866	166.00	10443	273.00	21240	391.00	3030
56.00	16091	167.00	75624	274.00	59400	392.00	1192
57.00	37536	168.00	43408	275.00	336768	393.00	14
58.00	1461	169.00	3745	276.00	46704	395.00	551
61.00	8636	170.00	160	277.00	29208	397.00	716
62.00	12569	171.00	3358	278.00	6413	398.00	121
63.00	36112	172.00	5311	279.00	1926	399.00	567
64.00	4101	173.00	6880	280.00	704	400.00	241
65.00	20400	174.00	19424	281.00	3553	401.00	1518
67.00	6002	175.00	26216	282.00	405	402.00	8166
69.00	1156608	176.00	8196	283.00	1119	403.00	9089
70.00	11357	177.00	12833	284.00	3699	404.00	2593
71.00	3978	178.00	4962	285.00	5082	406.00	344
73.00	10693	179.00	56168	286.00	1232	407.00	17
74.00	132736	180.00	38968	289.00	363	409.00	258
75.00	172736	181.00	14737	290.00	92	410.00	394
76.00	66344	182.00	3360	292.00	1583	412.00	299
77.00	1243136	183.00	64	293.00	7691	413.00	144
78.00	86288	184.00	5979	294.00	2175	415.00	919
79.00	89448	185.00	30848	295.00	4954	417.00	350

Data File: /chem1/nt12.i/20121121.b/df1121.d

Date : 21-NOV-2012 12:56

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5ms1

Column diameter: 0.25

Data File: df1121.d
Spectrum: Avg. Scans 614-616 (6.37), Background Scan 608
Location of Maximum: 77.00
Number of points: 404

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	62016	186.00	186432	296.00	95776	418.00	1084
81.00	100120	187.00	54552	297.00	14541	419.00	597
82.00	20392	188.00	8097	298.00	935	420.00	127
83.00	25720	189.00	10746	299.00	526	421.00	8427
84.00	3832	190.00	817	300.00	368	422.00	10133
85.00	23944	191.00	6975	301.00	1818	423.00	67496
86.00	30160	192.00	17112	302.00	1239	424.00	15458
87.00	11743	193.00	20472	303.00	12320	425.00	1368
88.00	5362	194.00	3501	304.00	5809	426.00	451
89.00	3903	195.00	5720	305.00	1458	427.00	675
90.00	947	196.00	33224	306.00	722	428.00	477
91.00	14309	197.00	5802	307.00	670	429.00	642
92.00	21608	198.00	1173504	308.00	2250	430.00	1943
93.00	121808	199.00	88440	309.00	1130	431.00	791
94.00	11226	200.00	4965	310.00	395	432.00	231
95.00	14096	201.00	833	311.00	1513	433.00	369
96.00	3371	202.00	8616	312.00	66	434.00	446
98.00	97376	203.00	8059	313.00	1029	436.00	492
99.00	65816	204.00	53648	314.00	4116	437.00	930
100.00	8722	205.00	82056	315.00	9600	438.00	2707
101.00	37104	206.00	345920	316.00	4808	439.00	1192
102.00	2310	207.00	42784	317.00	13	440.00	2606
103.00	12794	208.00	13608	319.00	1835	441.00	175296
104.00	20784	209.00	8277	320.00	1233	442.00	1097216
105.00	20808	210.00	6316	321.00	2497	443.00	211520
106.00	2047	211.00	12271	322.00	1738	444.00	20688
107.00	302400	212.00	5053	323.00	37416	445.00	1337
108.00	44064	213.00	1807	324.00	5985	446.00	588
109.00	14009	214.00	713	325.00	1294	449.00	513
110.00	513472	215.00	3839	326.00	1046	451.00	400
111.00	69368	216.00	6956	327.00	6042	452.00	294
112.00	9651	217.00	84680	328.00	3009	453.00	341
113.00	2412	218.00	11394	329.00	1586	454.00	220
114.00	540	219.00	2777	330.00	1440	456.00	629
116.00	19072	220.00	3329	331.00	754	457.00	627

Date : 21-NOV-2012 12:56

Client ID: Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

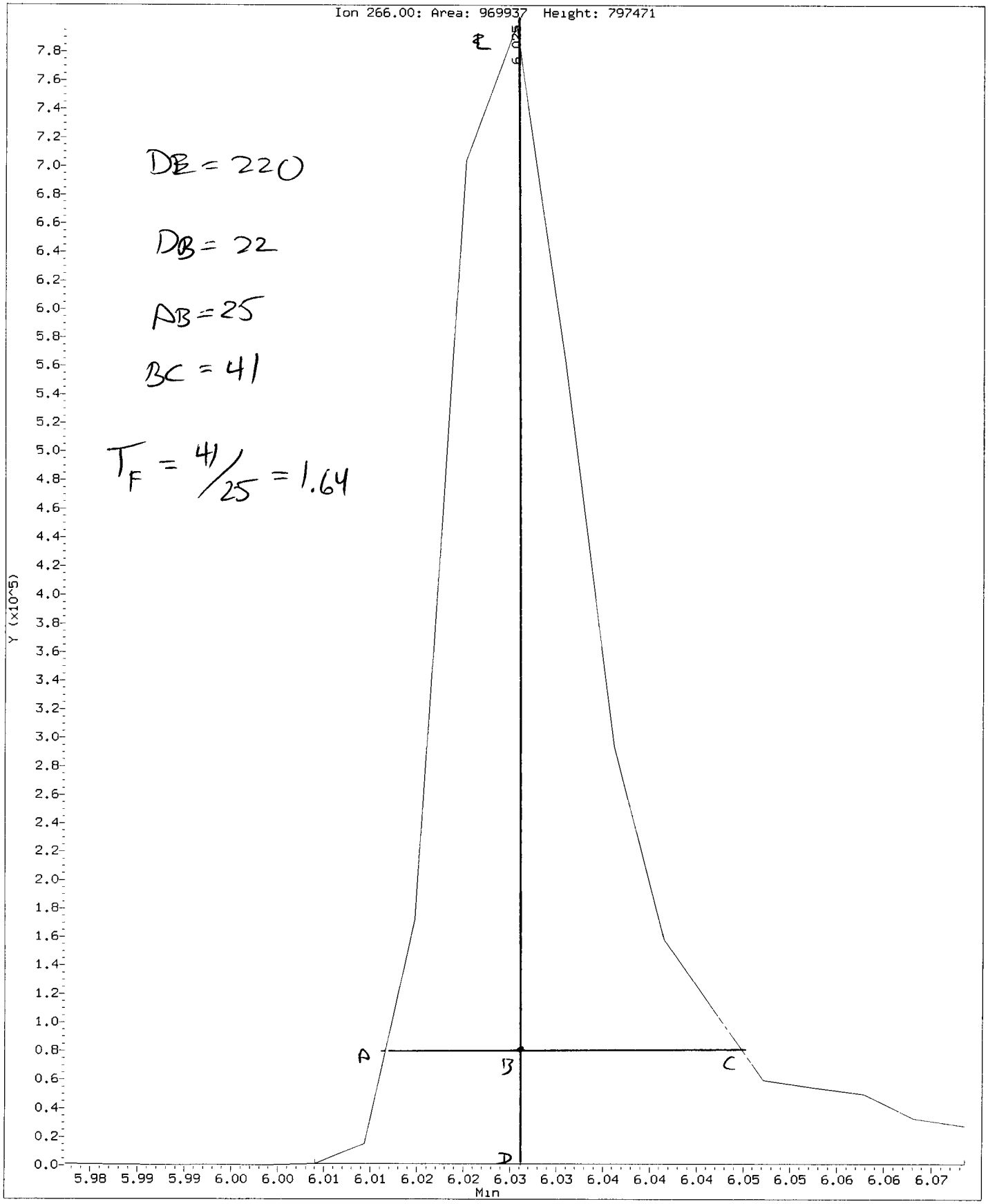
Column phase: ZB-5msi Column diameter: 0.25

Data File: df1121.d
Spectrum: Avg. Scans 614-616 (6.37), Background Scan 608
Location of Maximum: 77.00
Number of points: 404

m/z	Y	m/z	Y	m/z	Y	m/z	Y
117.00	235968	221.00	56568	332.00	3292	459.00	169
118.00	12322	222.00	4315	333.00	3198	460.00	389
119.00	2158	223.00	21440	334.00	16252	462.00	968
121.00	4828	224.00	185152	335.00	6115	463.00	87
122.00	12842	225.00	48176	336.00	140	465.00	556
123.00	23400	226.00	5311	338.00	291	468.00	306
124.00	12724	227.00	88080	339.00	975	470.00	287
125.00	3937	228.00	14815	341.00	4443	471.00	120
127.00	755072	229.00	15409	342.00	2437	472.00	312
128.00	59672	230.00	3033	343.00	561	473.00	188
129.00	306816	231.00	4907	344.00	407	474.00	232
130.00	24696	232.00	2144	345.00	511	476.00	53
131.00	7024	233.00	601	346.00	4226	477.00	73
132.00	1324	234.00	5044	347.00	1703	478.00	78
133.00	3387	235.00	4994	348.00	1325	482.00	92
134.00	7438	236.00	1604	352.00	11261	483.00	145
135.00	16373	237.00	6272	353.00	7025	484.00	92
136.00	12557	238.00	1188	354.00	11696	485.00	112
137.00	13957	239.00	5213	355.00	4327	489.00	375
138.00	1599	240.00	4514	356.00	1266	491.00	155
139.00	2015	241.00	7299	357.00	654	492.00	207
140.00	2009	242.00	11150	358.00	1817	493.00	1226
141.00	35312	243.00	10154	359.00	1568	494.00	75
142.00	15044	244.00	139904	360.00	840	495.00	292
143.00	7144	245.00	23160	362.00	446	496.00	483
144.00	1839	246.00	33880	363.00	231	497.00	426
145.00	2370	247.00	5885	364.00	418	498.00	134
146.00	8002	248.00	958	365.00	54416	499.00	213
147.00	23480	249.00	8587	366.00	7110		
148.00	51464	251.00	1308	367.00	333		
149.00	6440	252.00	3990	368.00	230		
150.00	3013	253.00	4510	370.00	2344		

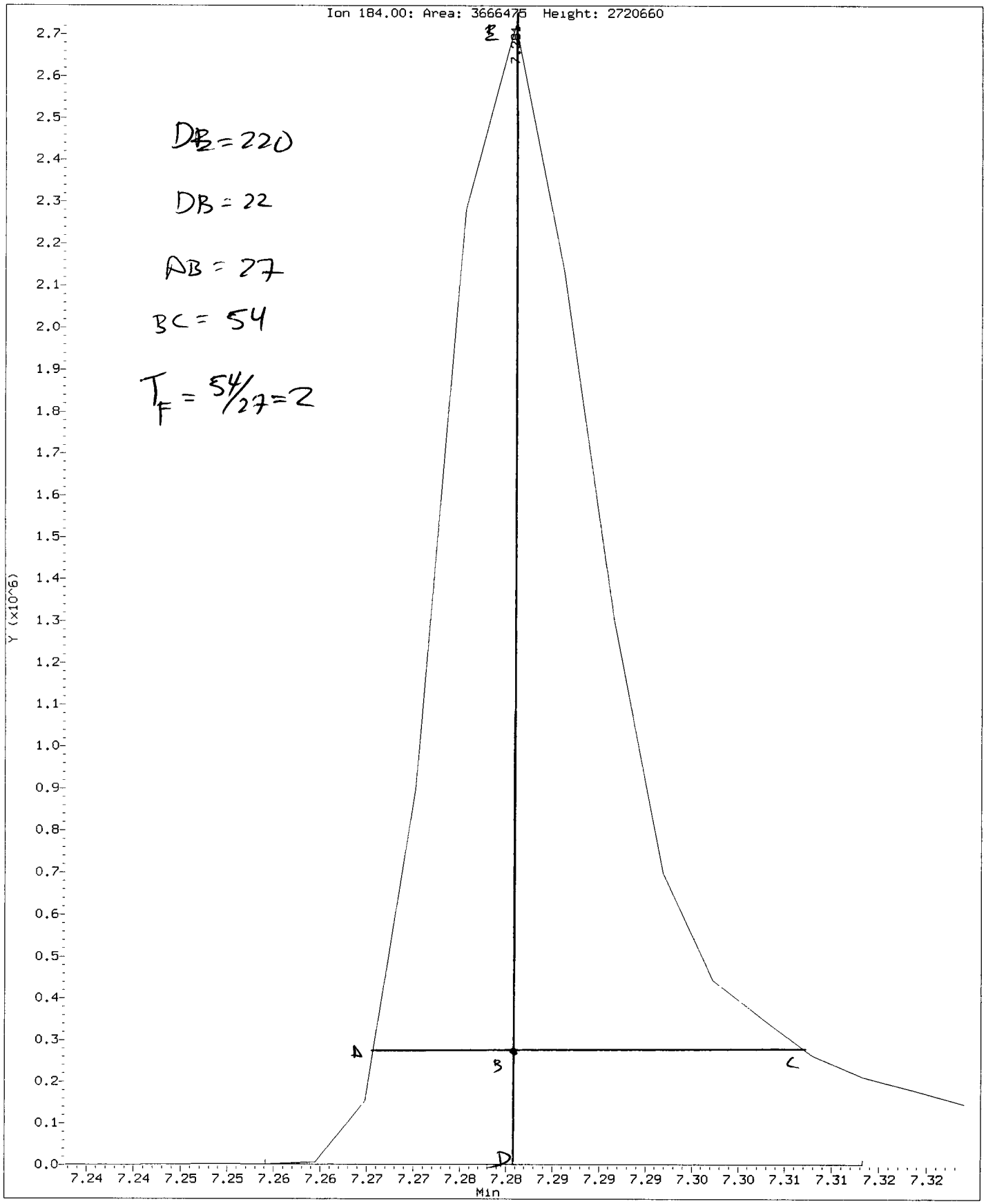
Data File: /chem1/nt12.i/20121121.b/ddt.b/df1121.d
Injection Date: 21-NOV-2012 12:56
Instrument: nt12.i
Client Sample ID:

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem1/nt12.i/20121121.b/ddt.b/df1121.d
Injection Date: 21-NOV-2012 12:56
Instrument: nt12.i
Client Sample ID:

Compound: Benzidine
CAS Number:



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem1/nt12.i/20121121.b/ddt.b/df1121.d
Method: /chem1/nt12.i/20121121.b/ddt.b/sw846ddt.m
Analysis Date: 21-NOV-2012 12:56

ARI ID: DFTPP 5
Misc:
Instrument: nt12.i

COMPOUND	RT	AREA
Pentachlorophenol	6.025	969937
Benzidine	7.281	3666475
4,4'-DDE	7.468	28154
4,4'-DDD	7.820	33647
4,4'-DDT	8.045	3262817

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

$$\text{DDT Percent Breakdown} = \frac{(\ 28154 + 33647) * 100}{(\ 28154 + 33647 + 3262817)}$$

DDT Percent Breakdown = 1.9 %

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/cc1121.d
Lab Smp Id: PW 25
Inj Date : 21-NOV-2012 13:14
Operator : VTS Inst ID: nt12.i
Smp Info : PW 25
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 21-Nov-2012 13:45 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
$	1 Tripropyl Tin (Hexyl)	291	8.582	8.582	(0.839)	12505	25.0000	23.81
	2 Tetrabutyl Tin	289	8.801	8.801	(0.861)	12680	25.0000	22.74
	3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	12392	25.0000	24.60
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	145461	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	16729	50.0000	47.98
$	6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	23033	50.0000	48.32
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	26838	50.0000	48.57
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	140060	20.0000	

VT
11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: cc1121.d
Lab Smp Id: PW 25
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info:

Calibration Date: 21-NOV-2012
Calibration Time: 12:12

Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	145461	16.50
8 p-Terphenyl-d14	121433	60716	242866	140060	15.34

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

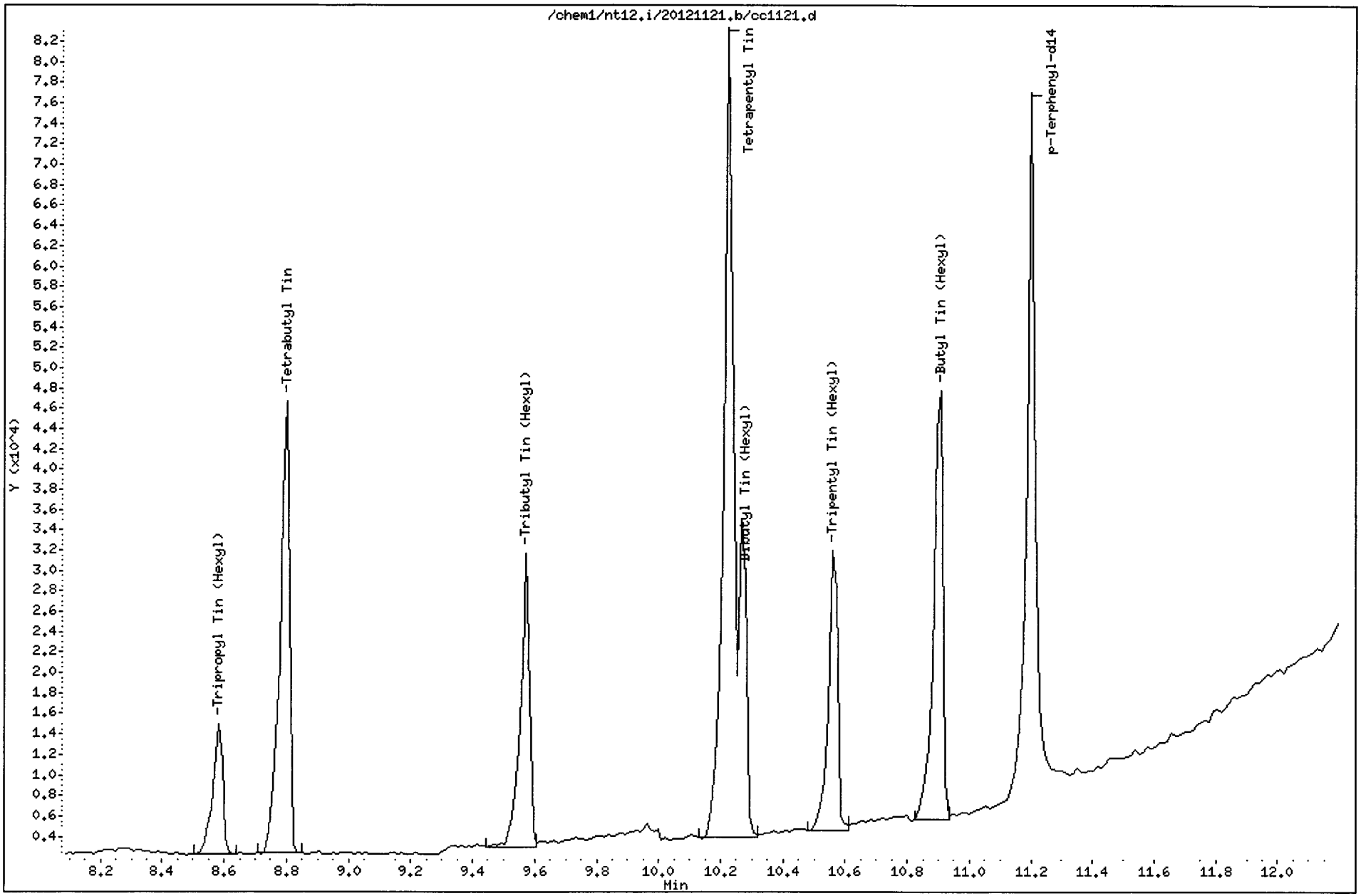
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/20121121.b/cc1121.d
Date : 21-NOV-2012 13:14
Client ID:
Sample Info: PW 25

Instrument: nt12.i

Operator: VTS
Column diameter: 0.25

Column phase: ZB-5msi



Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt12.i Injection Date: 21-NOV-2012 13:14
Lab File ID: cc1121.d Init. Cal. Date(s): 09-OCT-2012 09-OCT-2012
Analysis Type: Init. Cal. Times: 16:43 18:26
Lab Sample ID: PW 25 Quant Type: ISTD
Method: /chem1/nt12.i/20121121.b/pw3ul.m

COMPOUND	RRF / AMOUNT	RF25	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 1 Tripropyl Tin (Hexyl)	0.72212	0.68774	0.005	-4.76082	20.00000	Averaged
2 Tetrabutyl Tin	0.76668	0.69737	0.010	-9.04065	20.00000	Averaged
3 Tributyl Tin (Hexyl)	0.69269	0.68153	0.005	-1.61051	20.00000	Averaged
5 Dibutyl Tin (Hexyl)	0.04979	0.04778	0.005	-4.03731	20.00000	Averaged
$ 6 Tripentyl Tin (Hexyl)	0.06806	0.06578	0.010	-3.35261	20.00000	Averaged
7 Butyl Tin (Hexyl)	0.07890	0.07665	0.005	-2.85532	20.00000	Averaged

CO-ELUTION SUMMARY FOR FILE - cc1121.d

Lab ID: PW 25, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50mb.d
Lab Smp Id: VS50MBW1 Client Smp ID: VS50MBW1
Inj Date : 21-NOV-2012 13:37
Operator : VTS Inst ID: nt12.i
Smp Info : VS50MBW1
Misc Info : 12-22845
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 3 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ug/L)
$	1 Tripropyl Tin (Hexyl)	291	8.582	8.582	(0.839)	10780	21.9540	0.07318
	2 Tetrabutyl Tin	289	Compound Not Detected.					
	3 Tributyl Tin (Hexyl)	319	Compound Not Detected.					
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	135995	200.000	
	5 Dibutyl Tin (Hexyl)	347	Compound Not Detected.					
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	10338	23.5641	0.07855
	7 Butyl Tin (Hexyl)	347	Compound Not Detected.					
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	128917	20.0000	

11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50mb.d
Lab Smp Id: VS50MBW1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: VS50MBW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	135995	8.92
8 p-Terphenyl-d14	121433	60716	242866	128917	6.16

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

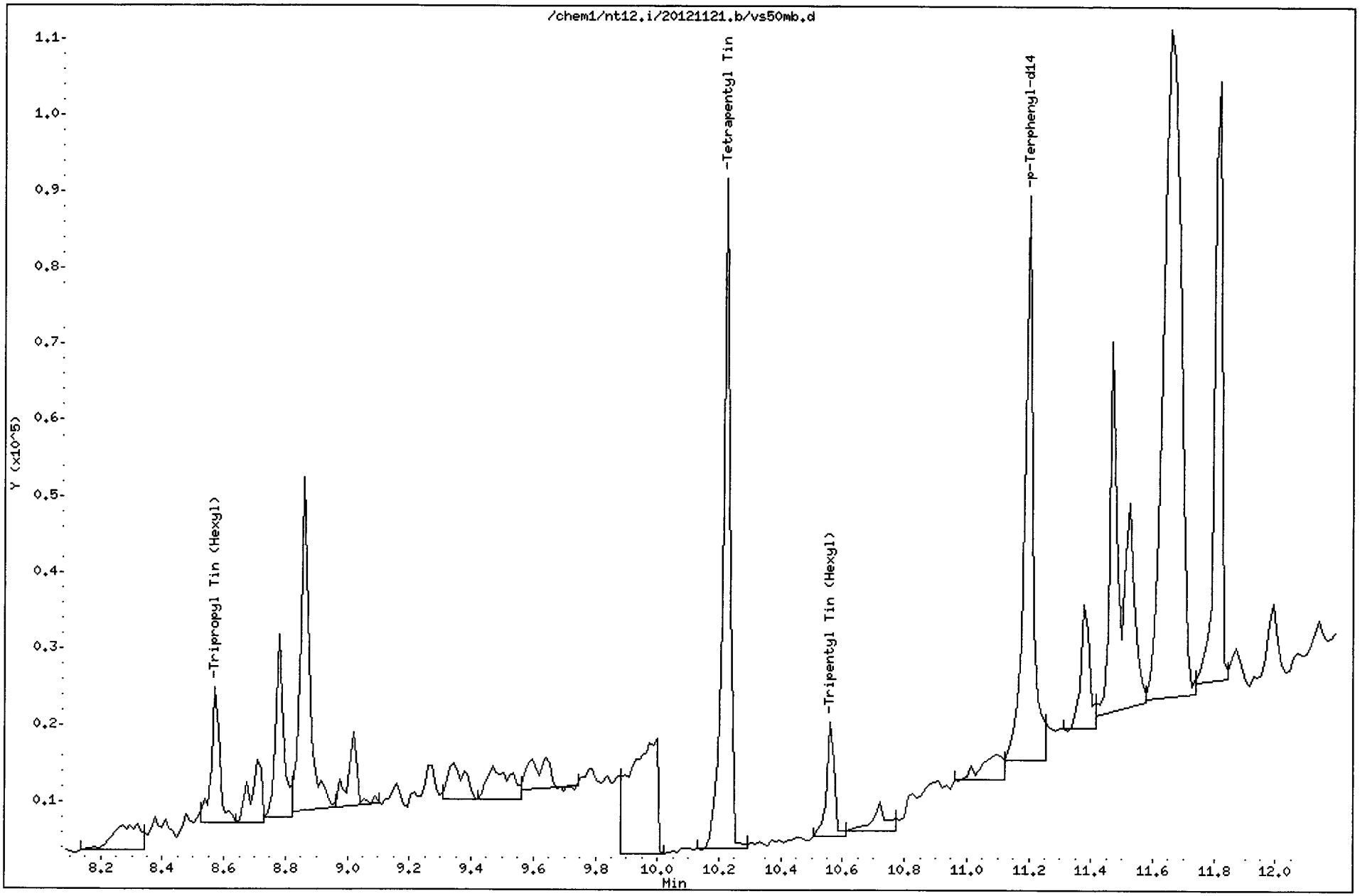
Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50MBW1 Client Smp ID: VS50MBW1
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: BLANK
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.07318	74.71	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.07855	83.03	30-135

Data File: /chem1/nt12.i/20121121.b/vs50mb.d
Date : 21-NOV-2012 13:37
Client ID: VS50MBW1
Sample Info: VS50MBW1
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25

VS50:00099



CO-ELUTION SUMMARY FOR FILE - vs50mb.d

Lab ID: VS50MBW1, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50sb.d
Lab Smp Id: VS50LCSW1 Client Smp ID: VS50LCSW1
Inj Date : 21-NOV-2012 13:58
Operator : VTS Inst ID: nt12.i
Smp Info : VS50LCSW1
Misc Info : 12-22845
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ug/L)
$	1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	10532	20.5091	0.06836
	2 Tetrabutyl Tin	289	Compound Not Detected.					
	3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	10130	20.5646	0.06855
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	142227	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.264	10.277	(0.916)	14964	43.9457	0.1465
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	9733	20.9085	0.06969
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	14396	26.6776	0.08893
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	136788	20.0000	

11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50sb.d
Lab Smp Id: VS50LCSW1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: VS50LCSW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	142227	13.91
8 p-Terphenyl-d14	121433	60716	242866	136788	12.64

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

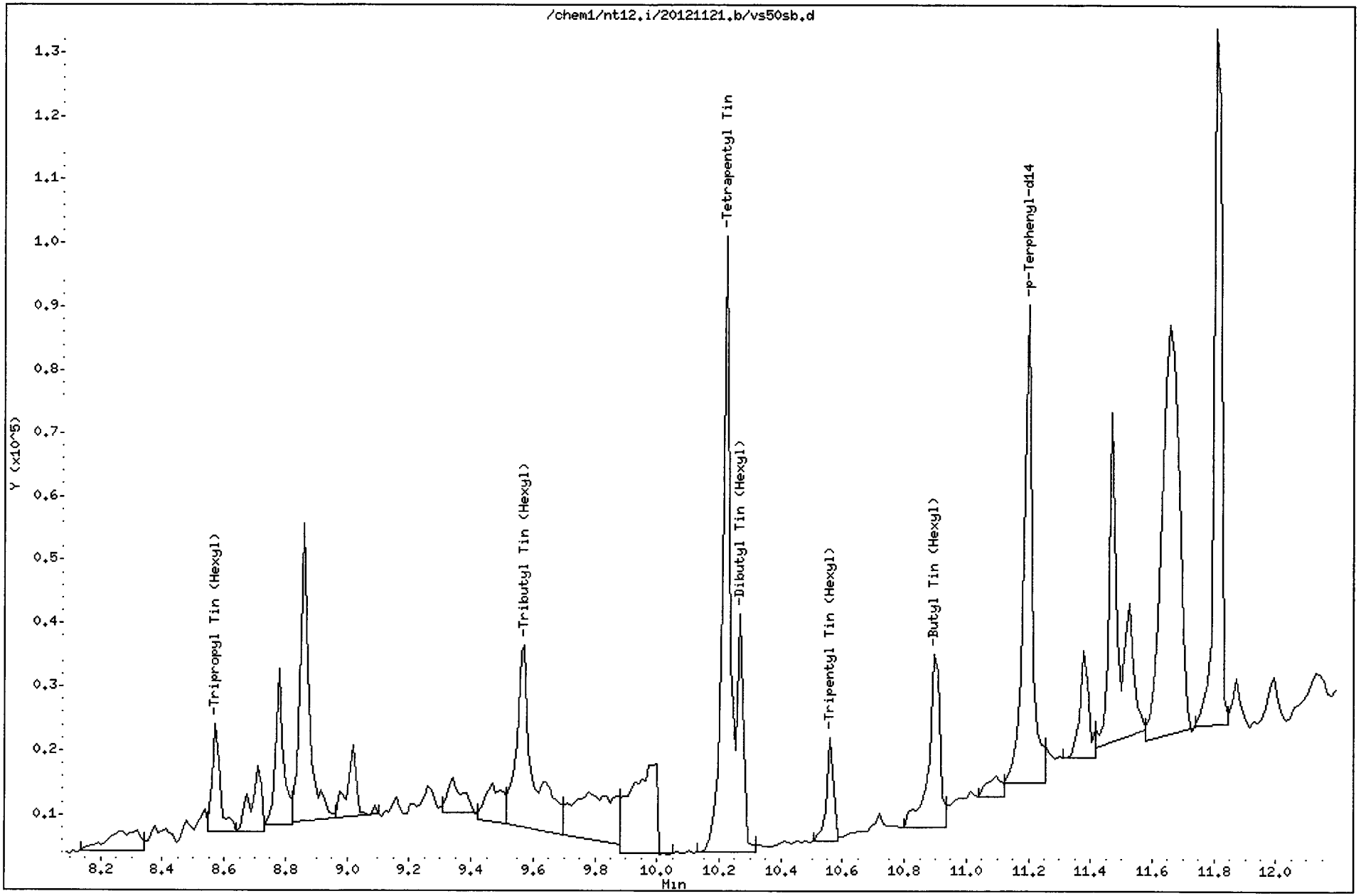
Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50LCSW1 Client Smp ID: VS50LCSW1
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: LCS
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Tributyl Tin (Hexy	0.09606	0.06855	71.36	23-133
5 Dibutyl Tin (Hexyl	0.2212	0.1465	66.22	30-118
7 Butyl Tin (Hexyl)	0.2548	0.08893	34.90	10-113

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.06836	69.80	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.06969	73.67	30-135

Data File: /chem1/nt12.i/20121121.b/vs50sb.d
Date : 21-NOV-2012 13:58
Client ID: VS50LCSW1
Sample Info: VS50LCSW1
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - vs50sb.d

Lab ID: VS50LCSW1, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50a.d
Lab Smp Id: VS50A Client Smp ID: SG-14-S-E-121107
Inj Date : 21-NOV-2012 14:18
Operator : VTS Inst ID: nt12.i
Smp Info : VS50A
Misc Info : 12-22844
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ug/L)
$ 1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	10292	19.9440	0.06648
2 Tetrabutyl Tin	289	Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	1927	3.89287	0.01298
* 4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	142924	200.000	
5 Dibutyl Tin (Hexyl)	347	Compound Not Detected.					
$ 6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	9570	20.6366	0.06879
7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	3083	5.73495	0.01912
* 8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	136269	20.0000	

11-23-12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50a.d
Lab Smp Id: VS50A
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22844

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-14-S-E-121107
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	142924	14.47
8 p-Terphenyl-d14	121433	60716	242866	136269	12.22

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50A Client Smp ID: SG-14-S-E-121107
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22844

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.06648	67.87	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.06879	72.72	30-135

Data File: /chem1/nt12.i/20121121.b/vs50a.d

Date : 21-NOV-2012 14:18

Client ID: SG-14-S-E-121107

Instrument: nt12.i

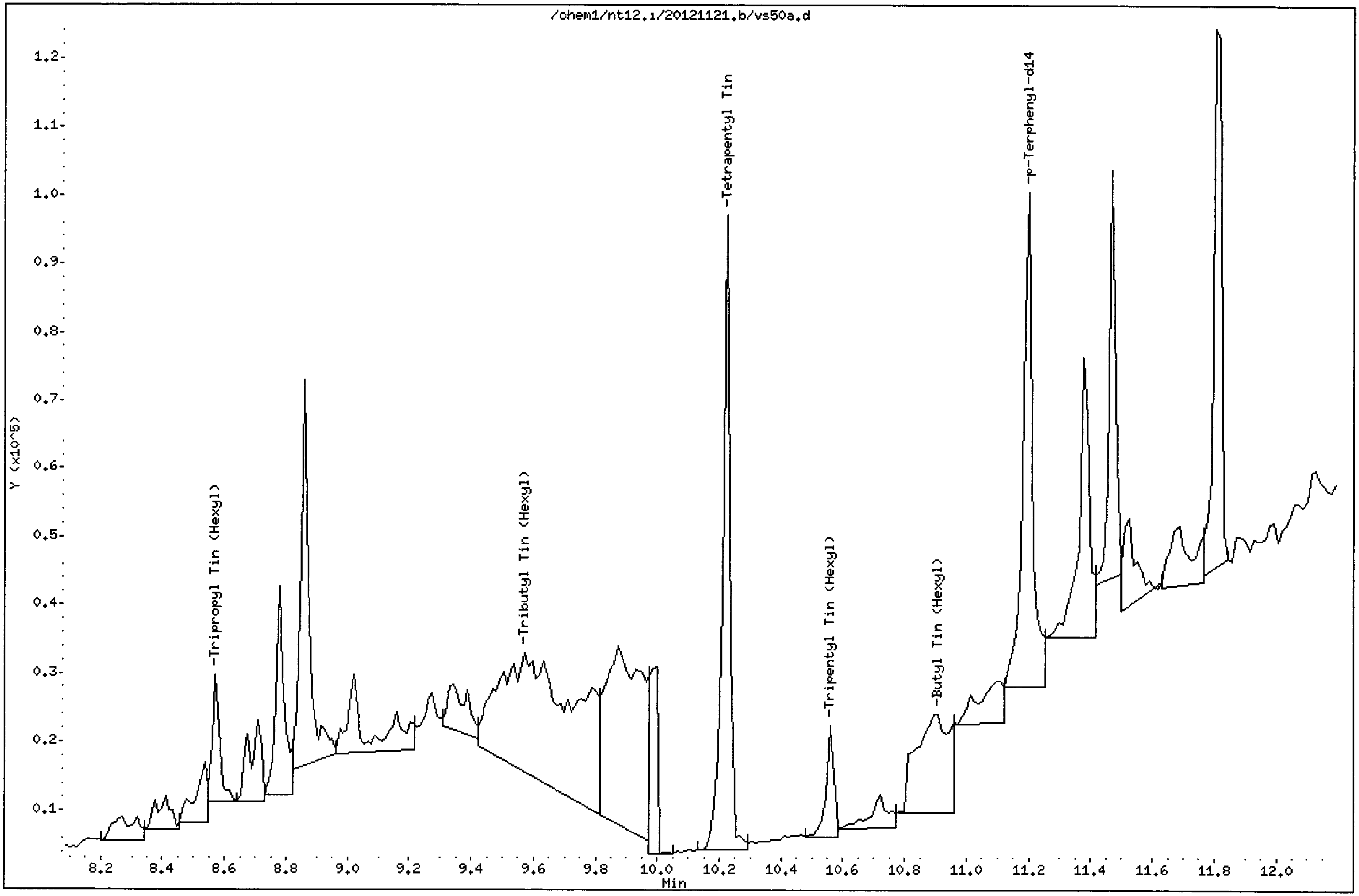
Sample Info: VS50A

Purge Volume: 150.0

Operator: VTS

Column phase: ZB-5msi

Column diameter: 0.25



Data File: /chem1/nt12.i/20121121.b/vs50a.d

Date : 21-NOV-2012 14:18

Client ID: SG-14-S-E-121107

Instrument: nt12.i

Sample Info: VS50A

Purge Volume: 150.0

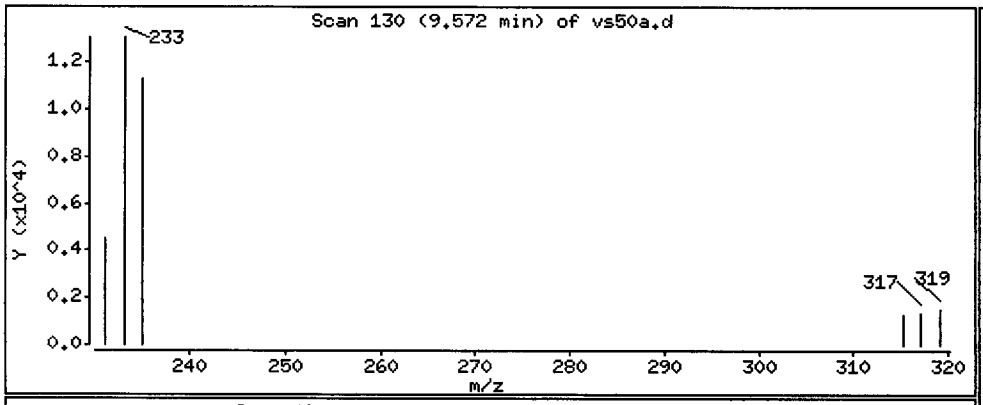
Operator: VTS

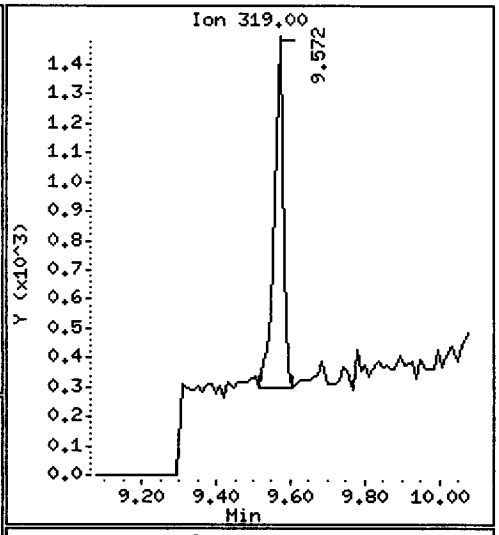
Column phase: ZB-5msi

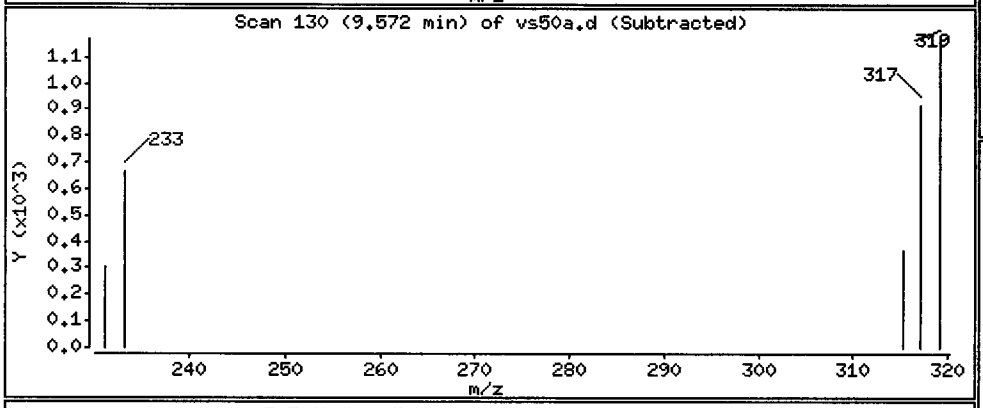
Column diameter: 0.25

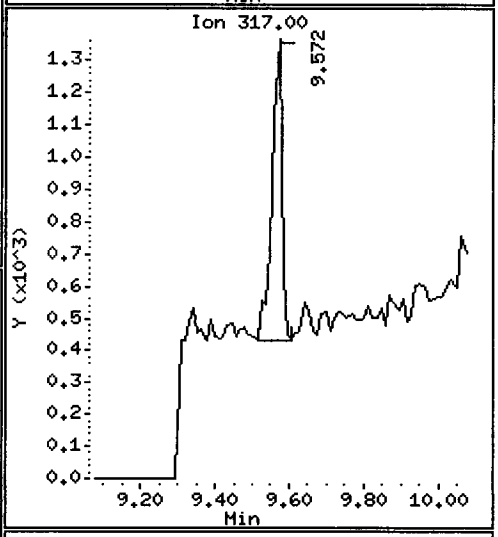
3 Tributyl Tin (Hexyl)

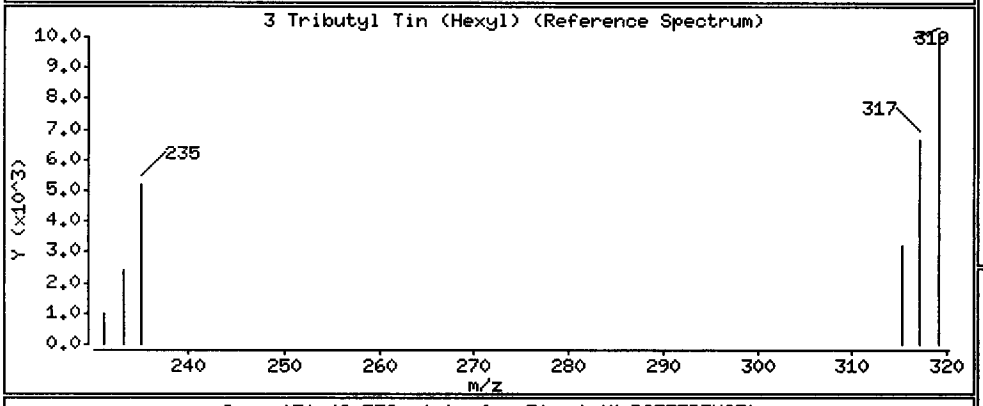
Concentration: 0.01298 ug/L

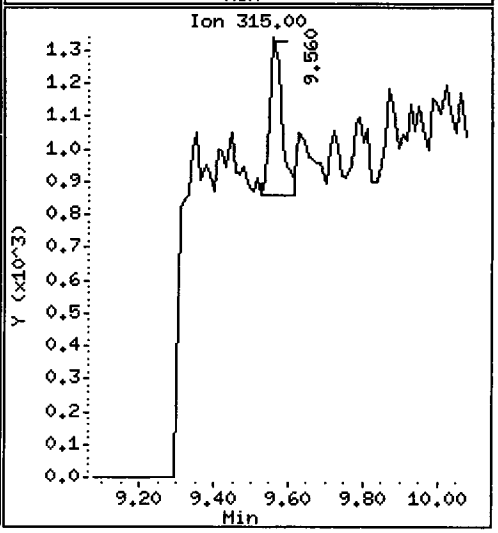


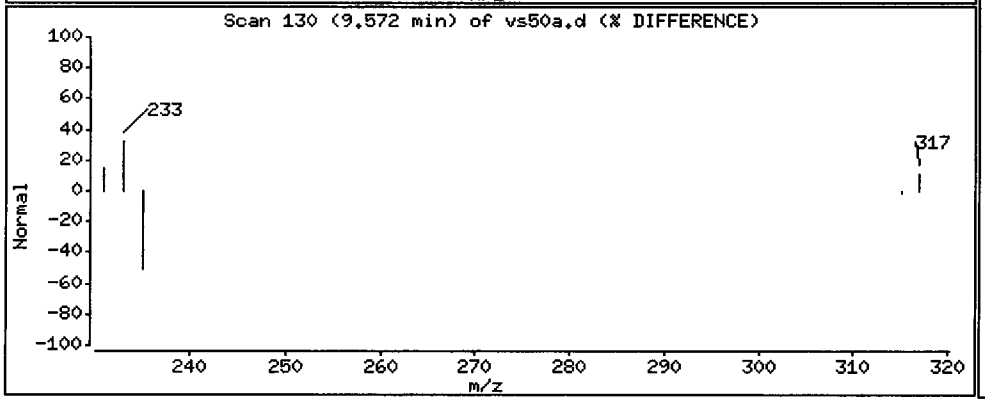












CO-ELUTION SUMMARY FOR FILE - vs50a.d

Lab ID: VS50A, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50b.d
Lab Smp Id: VS50B Client Smp ID: SG-02-S-C-1211
Inj Date : 21-NOV-2012 14:39
Operator : VTS Inst ID: nt12.i
Smp Info : VS50B
Misc Info : 12-22845
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ug/L)
$ 1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	11170	20.6134	0.06871
2 Tetrabutyl Tin	289	Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	138843	267.113	0.8904 E
* 4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	150080	200.000	
5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	22830	64.8218	0.2161
$ 6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	11274	23.4153	0.07805
7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	15454	27.6881	0.09229
* 8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	141482	20.0000	

11.23.12 MJ

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50b.d
Lab Smp Id: VS50B
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-02-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	150080	20.20
8 p-Terphenyl-d14	121433	60716	242866	141482	16.51

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

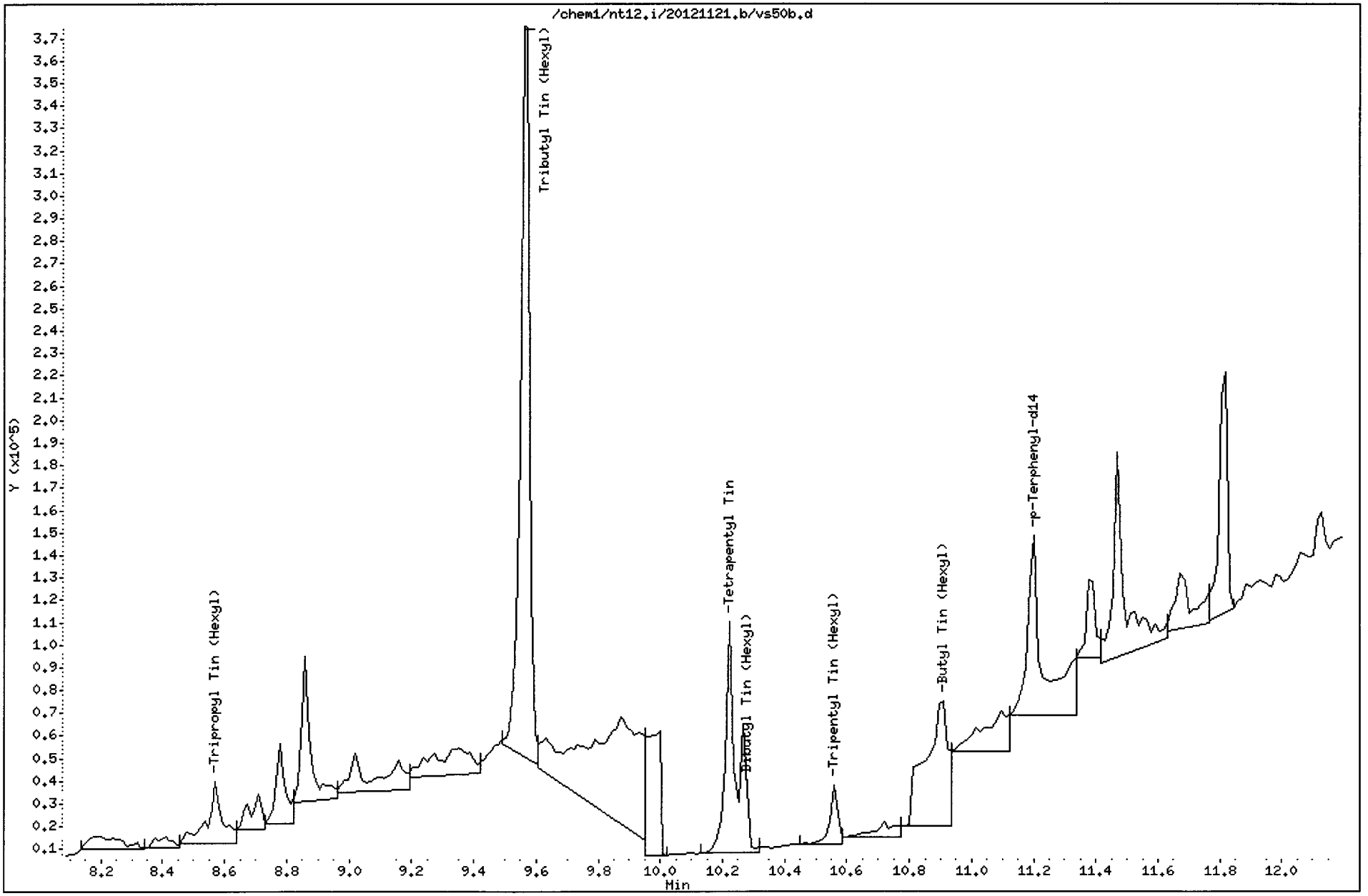
RECOVERY REPORT

Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50B Client Smp ID: SG-02-S-C-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.06871	70.15	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.07805	82.51	30-135

Data File: /chem1/nt12.i/20121121.b/vs50b.d
Date : 21-NOV-2012 14:39
Client ID: SG-02-S-C-1211
Sample Info: VS50B
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



Data File: /chem1/nt12.i/20121121.b/vs50b.d

Date : 21-NOV-2012 14:39

Client ID: SG-02-S-C-1211

Instrument: nt12.i

Sample Info: VS50B

Purge Volume: 150.0

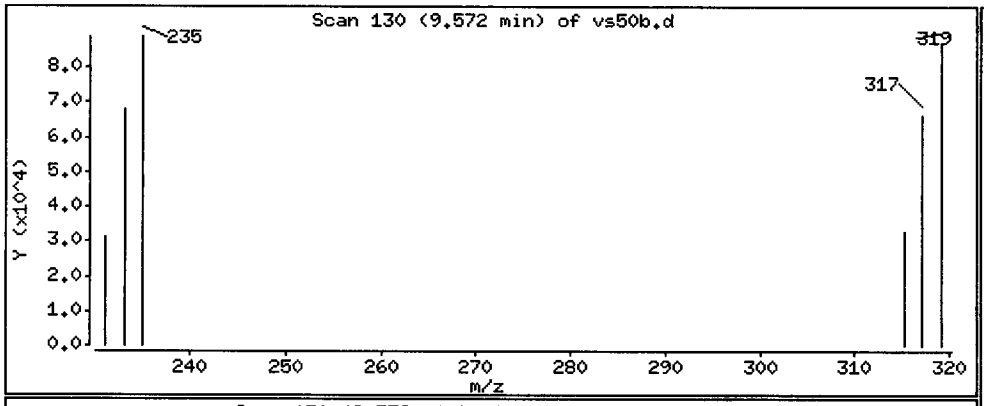
Operator: VTS

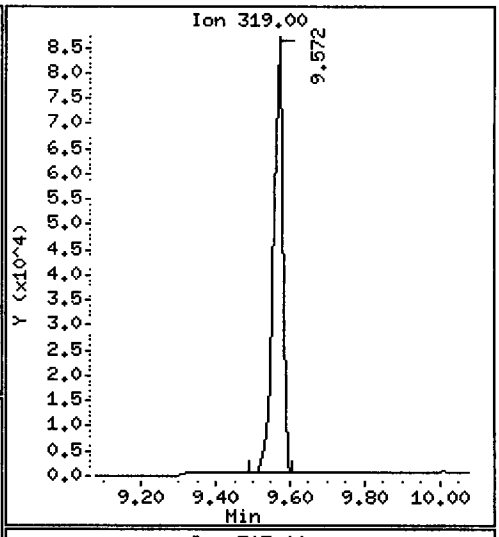
Column phase: ZB-5msi

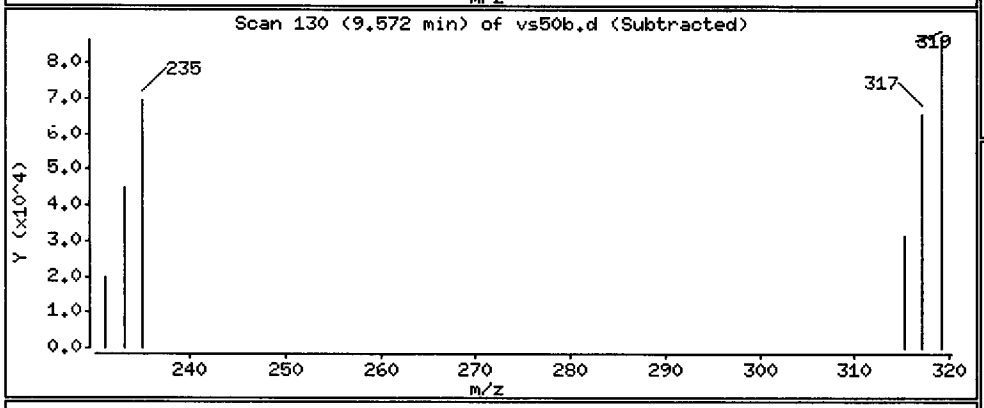
Column diameter: 0.25

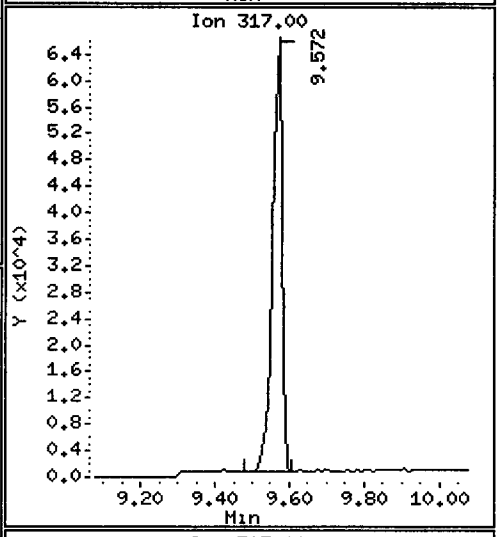
3 Tributyl Tin (Hexyl)

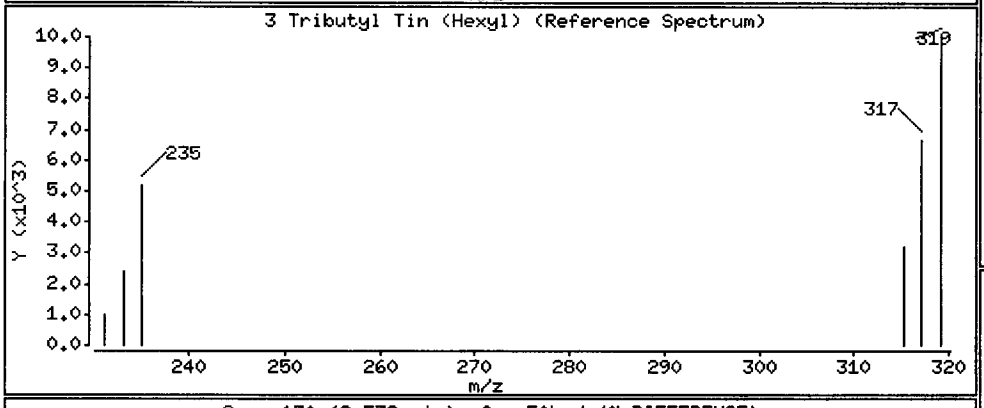
Concentration: 0.8904 ug/L

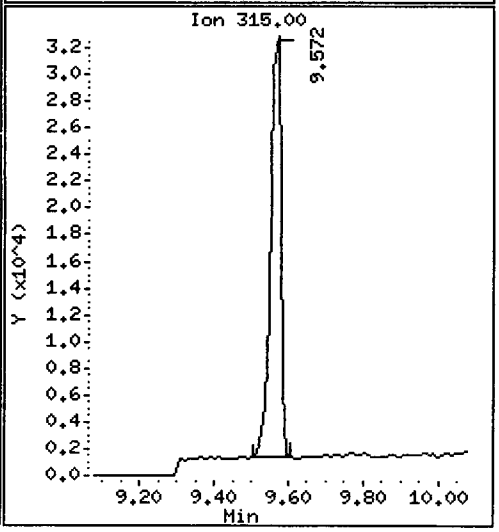


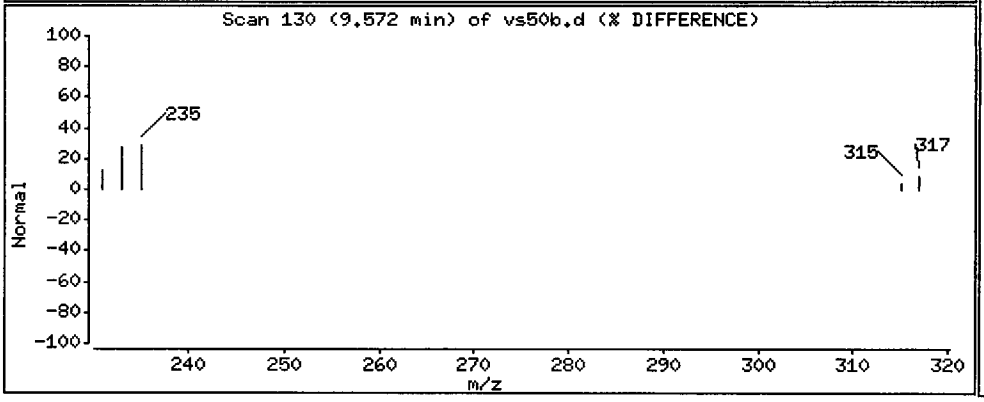












CO-ELUTION SUMMARY FOR FILE - vs50b.d

Lab ID: VS50B, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50bms.d
Lab Smp Id: VS50BMS Client Smp ID: SG-02-S-C-1211 MS
Inj Date : 21-NOV-2012 14:59
Operator : VTS Inst ID: nt12.i
Smp Info : VS50BMS
Misc Info : 12-22845
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 7 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ug/L)
$	1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	12034	22.0266	0.07342
	2 Tetrabutyl Tin	289	Compound Not Detected.					
	3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	149848	285.932	0.9531(R) E
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	151315	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	40850	112.653	0.3755(R)
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	11773	23.7489	0.07916
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	35162	61.1870	0.2040
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	145669	20.0000	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

11.23.12 LD

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50bms.d
Lab Smp Id: VS50BMS
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-02-S-C-1211 M
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	151315	21.19
8 p-Terphenyl-d14	121433	60716	242866	145669	19.96

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA
Sample Matrix: LIQUID
Lab Smp Id: VS50BMS
Level: LOW
Data Type: MS DATA
SpikeList File: PW.spk
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

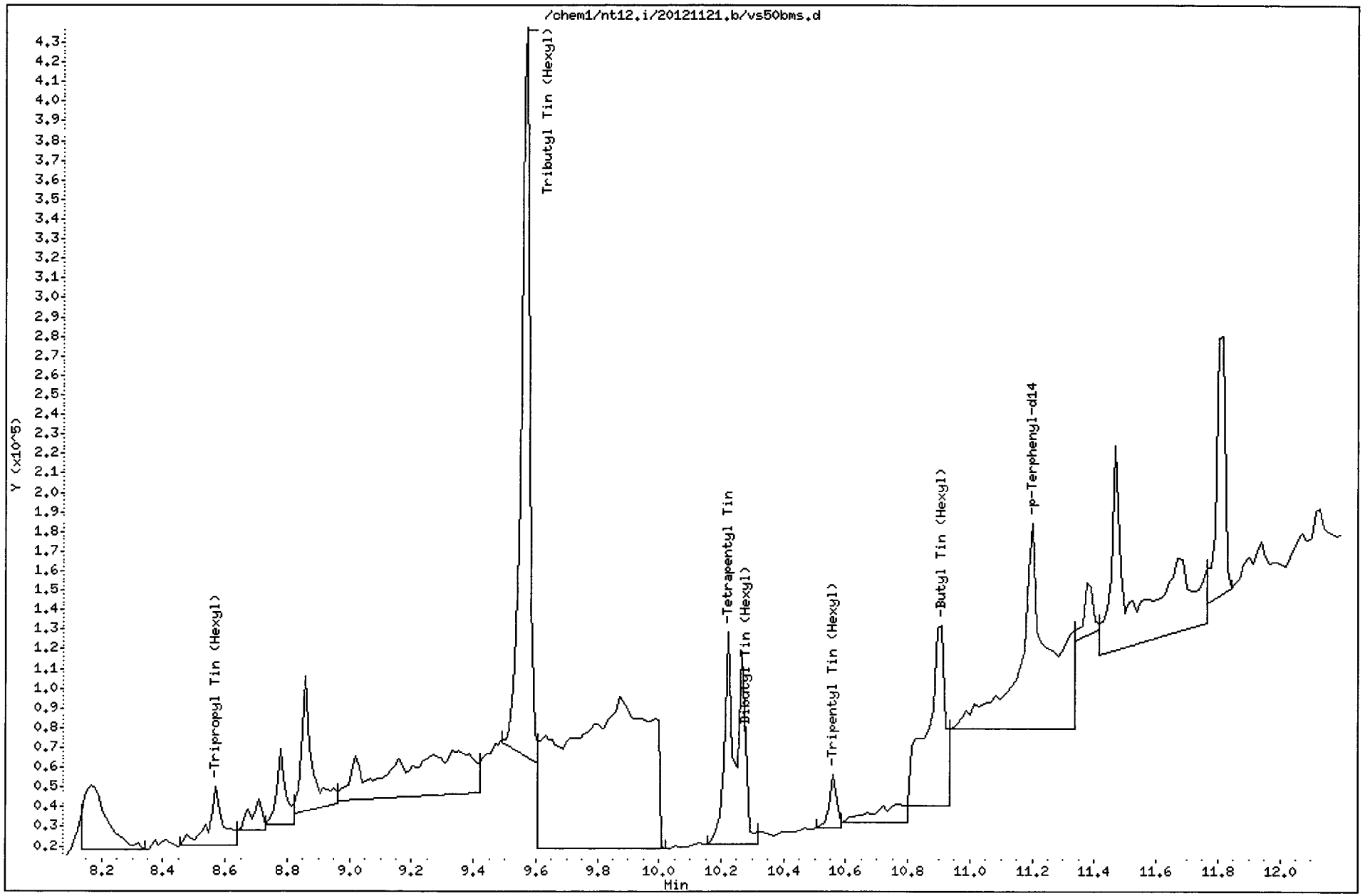
Client SDG: VS50
Fraction: SV
Client Smp ID: SG-02-S-C-1211 MS
Operator: VTS
SampleType: MS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Tributyl Tin (Hexy	0.09606	0.9531	992.20*	23-133
5 Dibutyl Tin (Hexyl	0.2212	0.3755	169.75*	30-118
7 Butyl Tin (Hexyl)	0.2548	0.2040	80.05	10-113

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.07342	74.96	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.07916	83.68	30-135

Data File: /chem1/nt12.i/20121121.b/vs50bms.d
Date : 21-NOV-2012 14:59
Client ID: SG-02-S-C-1211 MS
Sample Info: VS50BMS
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - vs50bms.d

Lab ID: VS50BMS, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50bmsd.d
Lab Smp Id: VS50BMSD Client Smp ID: SG-02-S-C-1211 MSD
Inj Date : 21-NOV-2012 15:20
Operator : VTS Inst ID: nt12.i
Smp Info : VS50BMSD
Misc Info : 12-22845
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 8 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ug/L)
$	1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	11478	20.8437	0.06948
	2 Tetrabutyl Tin	289	Compound Not Detected.					
	3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	128640	243.534	0.8118(R)
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	152514	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	34841	89.2461	0.2975(R)
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	9651	18.0833	0.06028
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	34649	56.0049	0.1867
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	156826	20.0000	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50bmsd.d
Lab Smp Id: VS50BMSD
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-02-S-C-1211 M
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	152514	22.15
8 p-Terphenyl-d14	121433	60716	242866	156826	29.15

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA
Sample Matrix: LIQUID
Lab Smp Id: VS50BMSD
Level: LOW
Data Type: MS DATA
SpikeList File: PW.spk
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

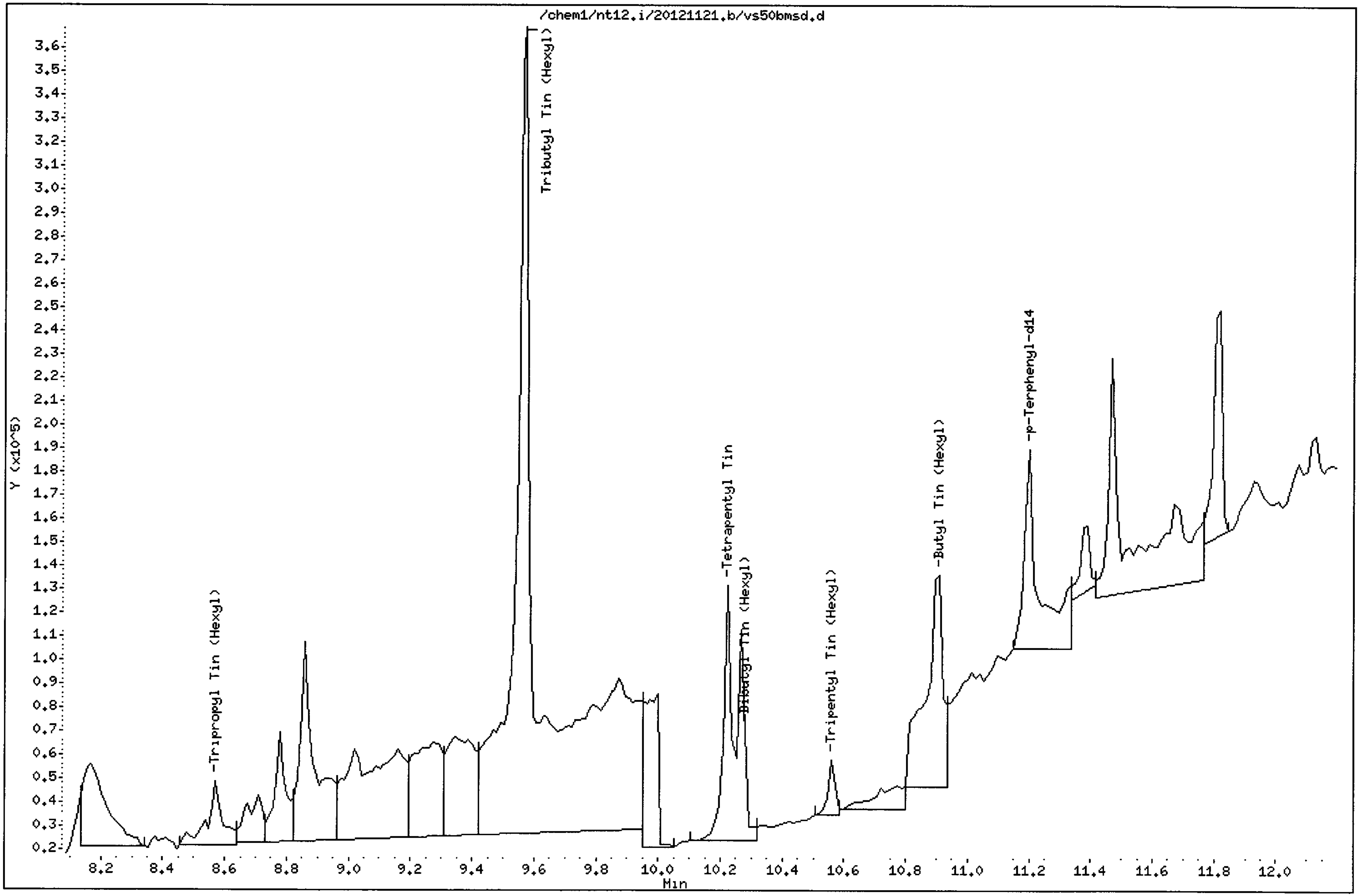
Client SDG: VS50
Fraction: SV
Client Smp ID: SG-02-S-C-1211 MSD
Operator: VTS
SampleType: MSD
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Tributyl Tin (Hexy	0.09606	0.8118	845.08*	23-133
5 Dibutyl Tin (Hexyl	0.2212	0.2975	134.48*	30-118
7 Butyl Tin (Hexyl)	0.2548	0.1867	73.27	10-113

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.06948	70.94	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.06028	63.72	30-135

Data File: /chem1/nt12.i/20121121.b/vs50bmsd.d
Date : 21-NOV-2012 15:20
Client ID: SG-02-S-C-1211 MSD
Sample Info: VS50BMSD
Purge Volume: 150.0
Column phase: ZB-5ms1

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - vs50bmsd.d

Lab ID: VS50BMSD, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50c.d
Lab Smp Id: VS50C Client Smp ID: SG-03-S-C-1211
Inj Date : 21-NOV-2012 15:41
Operator : VTS Inst ID: nt12.i
Smp Info : VS50C
Misc Info : 12-22846
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ug/L)
$	1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	10808	19.4270	0.06476
	2 Tetrabutyl Tin	289	Compound Not Detected.					
	3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	12059	22.5968	0.07532
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	154084	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	3524	9.38746	0.03129
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	9668	18.8389	0.06280
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	6765	11.3715	0.03790
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	150801	20.0000	

11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50c.d
Lab Smp Id: VS50C
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22846

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-03-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	154084	23.41
8 p-Terphenyl-d14	121433	60716	242866	150801	24.18

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

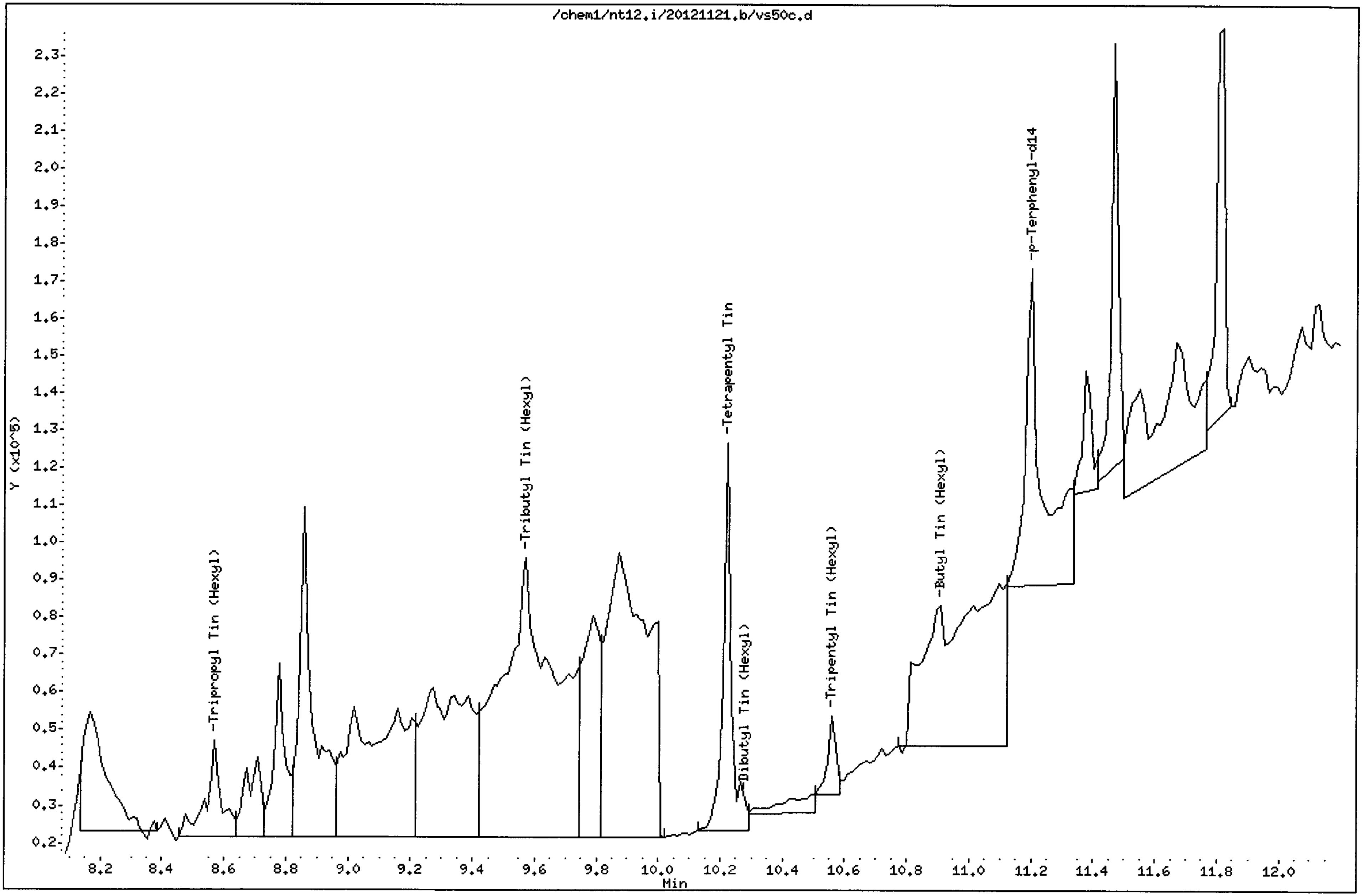
Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50C Client Smp ID: SG-03-S-C-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22846

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.06476	66.11	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.06280	66.38	30-135

Data File: /chem1/nt12.i/20121121.b/vs50c.d
Date : 21-NOV-2012 15:41
Client ID: SG-03-S-C-1211
Sample Info: VS50C
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i

Operator: VTS
Column diameter: 0.25



Data File: /chem1/nt12.i/20121121.b/vs50c.d

Date : 21-NOV-2012 15:41

Client ID: SG-03-S-C-1211

Instrument: nt12.i

Sample Info: VS50C

Purge Volume: 150.0

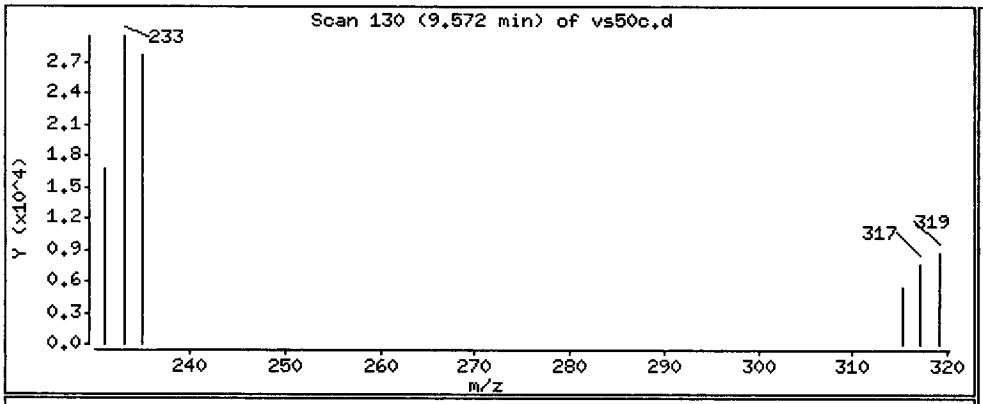
Operator: VTS

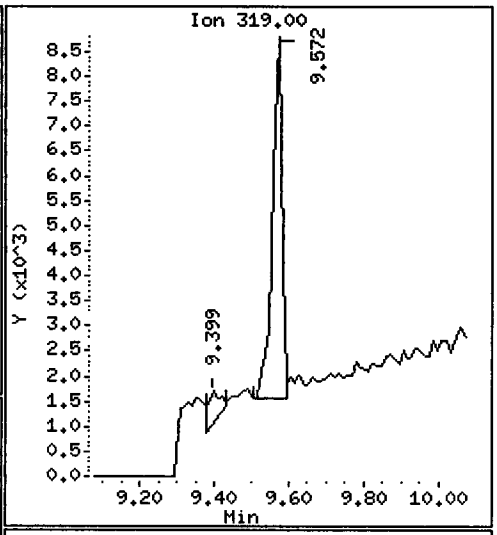
Column phase: ZB-5msi

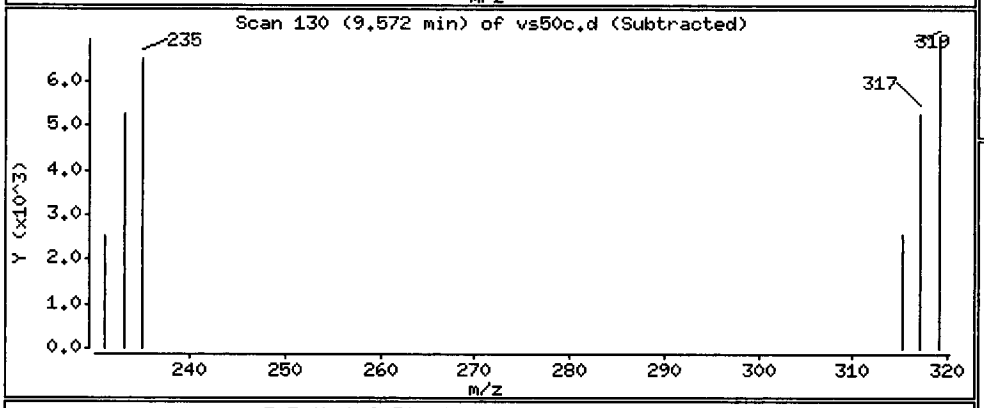
Column diameter: 0.25

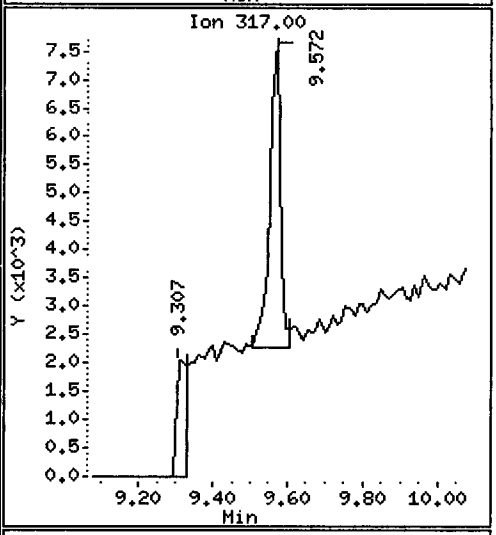
3 Tributyl Tin (Hexyl)

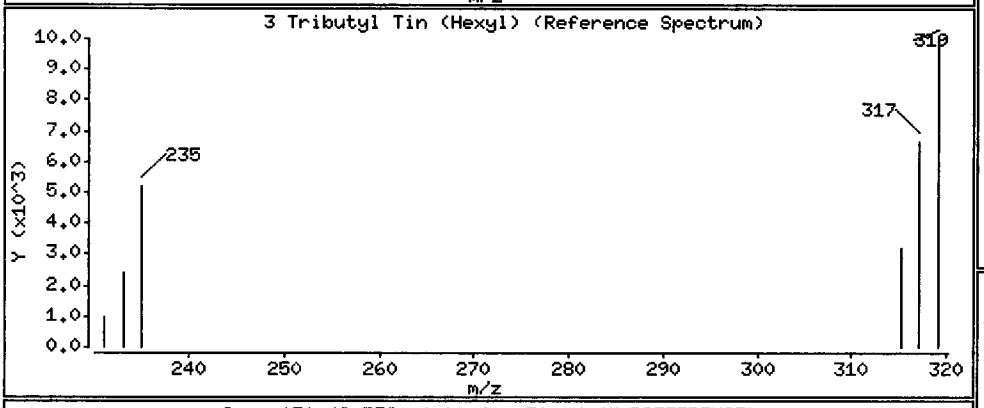
Concentration: 0.07532 ug/L

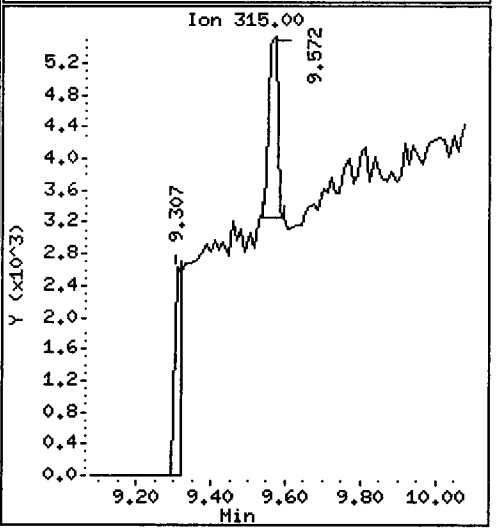


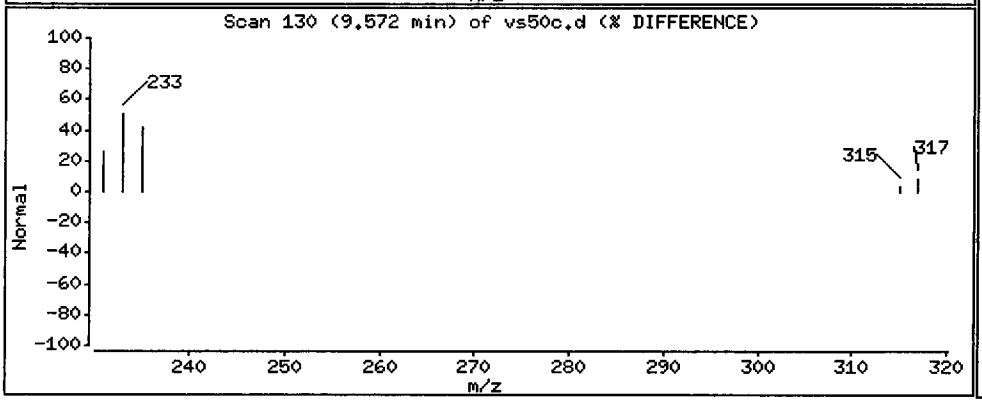












CO-ELUTION SUMMARY FOR FILE - vs50c.d

Lab ID: VS50C, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50d.d
Lab Smp Id: VS50D Client Smp ID: SG-04-S-C-1211
Inj Date : 21-NOV-2012 16:01
Operator : VTS Inst ID: nt12.i
Smp Info : VS50D
Misc Info : 12-22847
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	46.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ug/L)
$ 1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	11058	20.2107	0.2197
2 Tetrabutyl Tin	289	Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	3052	5.81521	0.06321
* 4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	151535	200.000	
5 Dibutyl Tin (Hexyl)	347	Compound Not Detected.					
$ 6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	10069	19.3505	0.2103
7 Butyl Tin (Hexyl)	347	Compound Not Detected.					
* 8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	152904	20.0000	

11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50d.d
Lab Smp Id: VS50D
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22847

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-04-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	151535	21.37
8 p-Terphenyl-d14	121433	60716	242866	152904	25.92

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

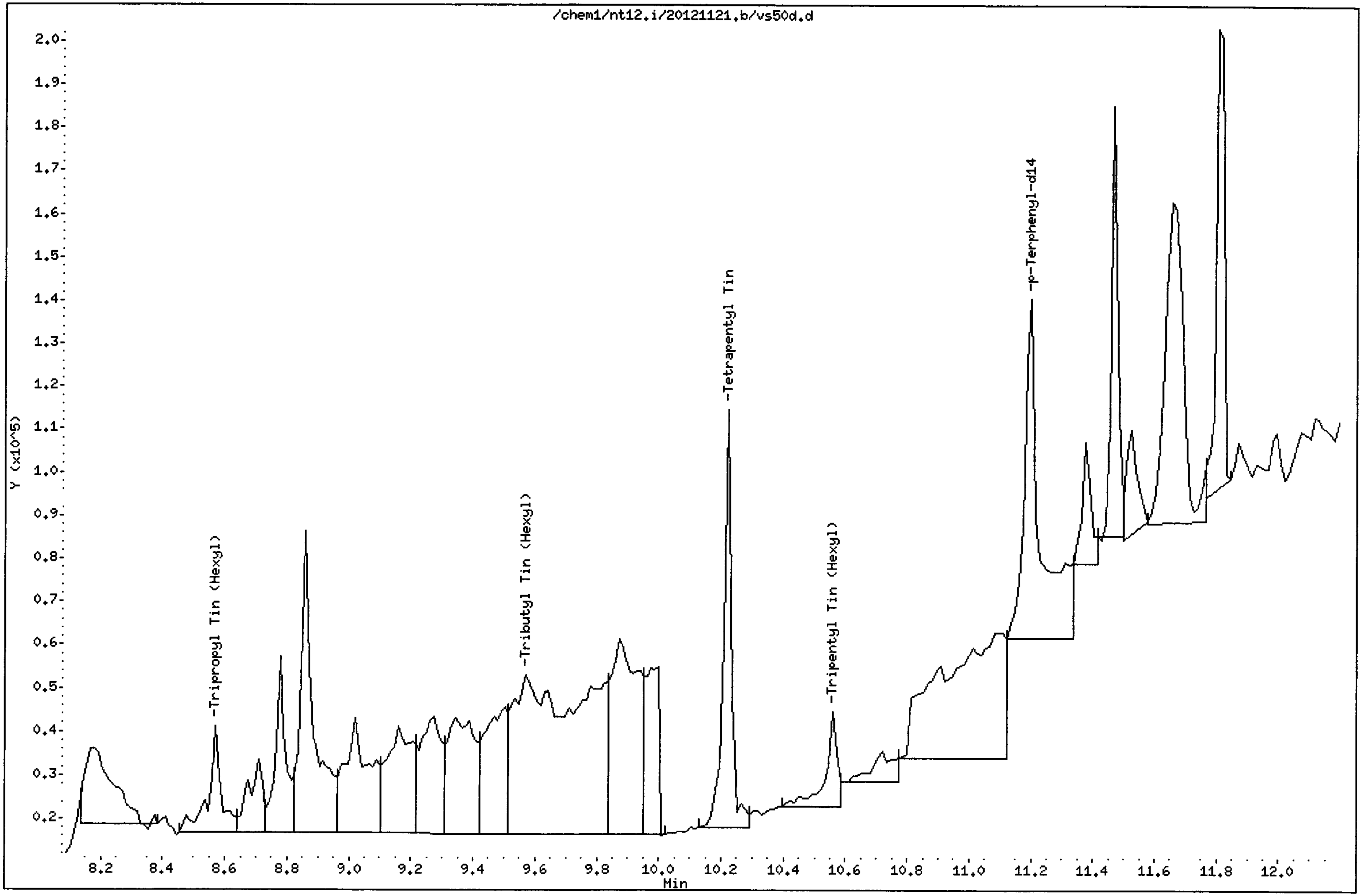
Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50D Client Smp ID: SG-04-S-C-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22847

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.3194	0.2197	68.78	28-100
$ 6 Tripentyl Tin (Hex	0.3085	0.2103	68.18	30-135

Data File: /chem1/nt12.i/20121121.b/vs50d.d
Date : 21-NOV-2012 16:01
Client ID: SG-04-S-C-1211
Sample Info: VS50D
Purge Volume: 46.0
Column phase: ZB-5msi

Instrument: nt12.i

Operator: VTS
Column diameter: 0.25



Data File: /chem1/nt12.i/20121121.b/vs50d.d

Date : 21-NOV-2012 16:01

Client ID: SG-04-S-C-1211

Instrument: nt12.i

Sample Info: VS50D

Purge Volume: 46.0

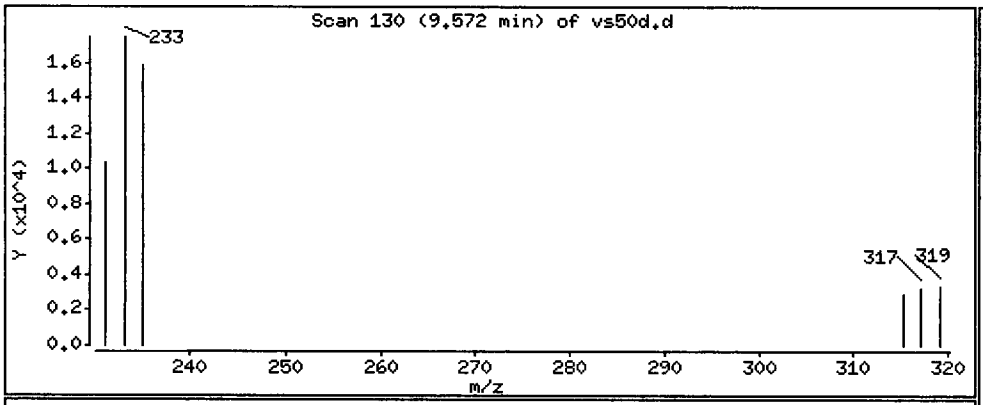
Operator: VTS

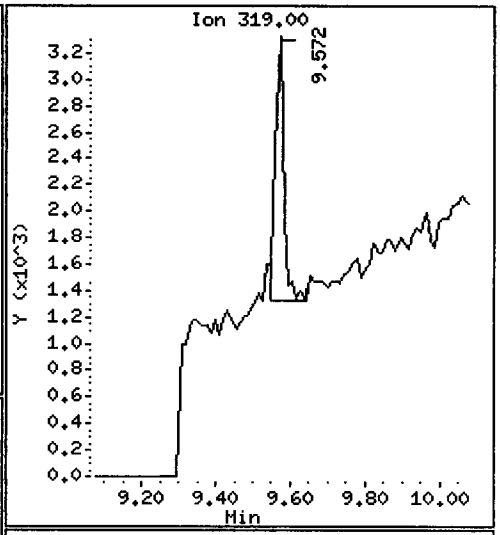
Column phase: ZB-5ms1

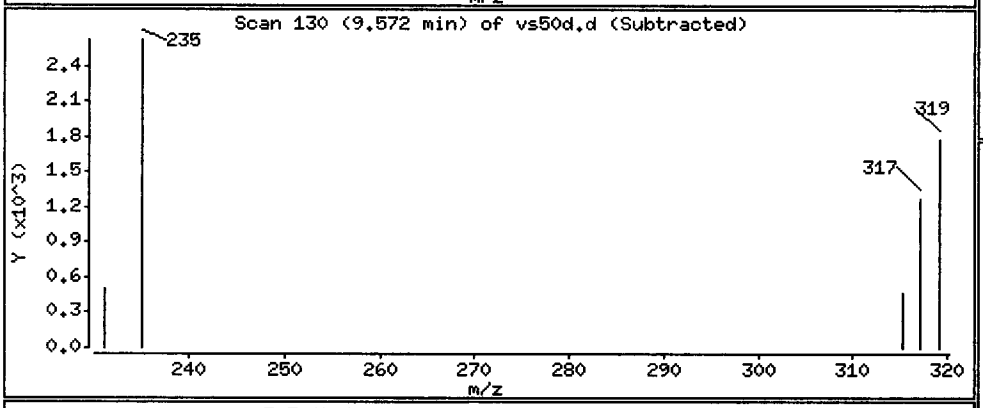
Column diameter: 0.25

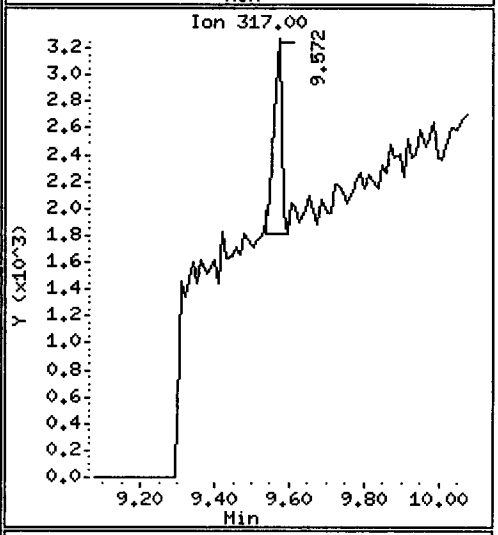
3 Tributyl Tin (Hexyl)

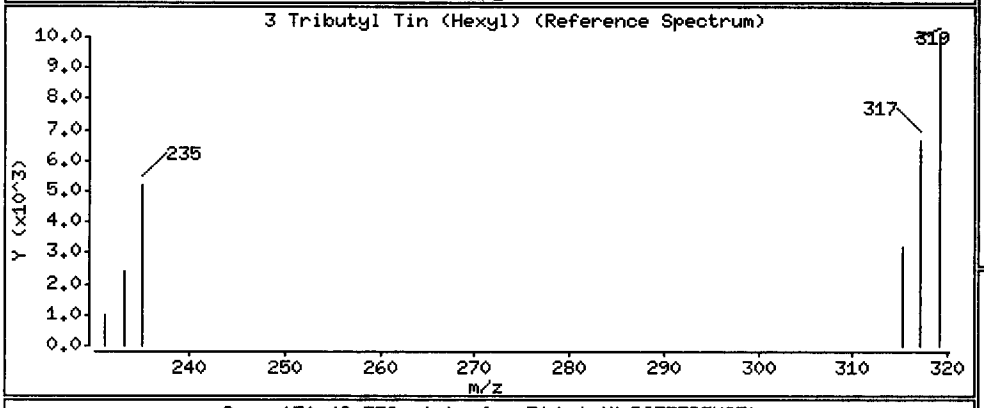
Concentration: 0.06321 ug/L

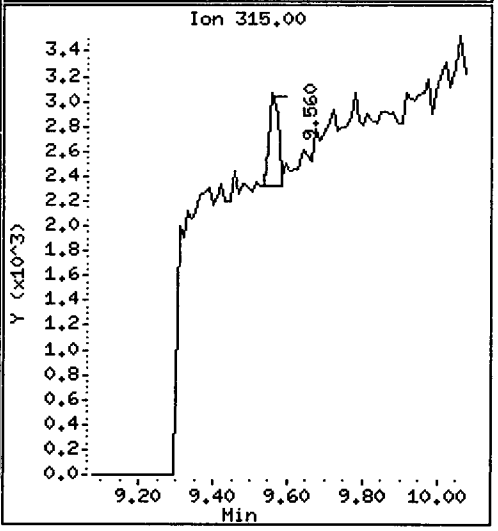


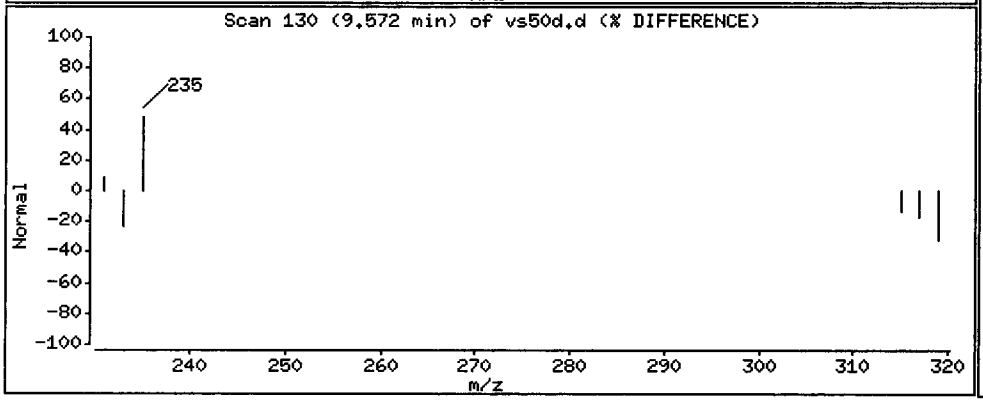












CO-ELUTION SUMMARY FOR FILE - vs50d.d

Lab ID: VS50D, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50e.d
Lab Smp Id: VS50E Client Smp ID: SG-05-S-C-1211
Inj Date : 21-NOV-2012 16:22
Operator : VTS Inst ID: nt12.i
Smp Info : VS50E
Misc Info : 12-22848
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ug/L)
$	1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	9079	16.1545	0.05385
	2 Tetrabutyl Tin	289	Compound Not Detected.					
	3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	1712	3.17566	0.01059
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	155655	200.000	
	5 Dibutyl Tin (Hexyl)	347	Compound Not Detected.					
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	11792	22.4787	0.07493
	7 Butyl Tin (Hexyl)	347	10.908	10.907	(0.974)	2901	4.77046	0.01590
*	8 p-Terphenyl-d14	244	11.203	11.202	(1.000)	154149	20.0000	

11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50e.d
Lab Smp Id: VS50E
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22848

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-05-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	155655	24.67
8 p-Terphenyl-d14	121433	60716	242866	154149	26.94

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

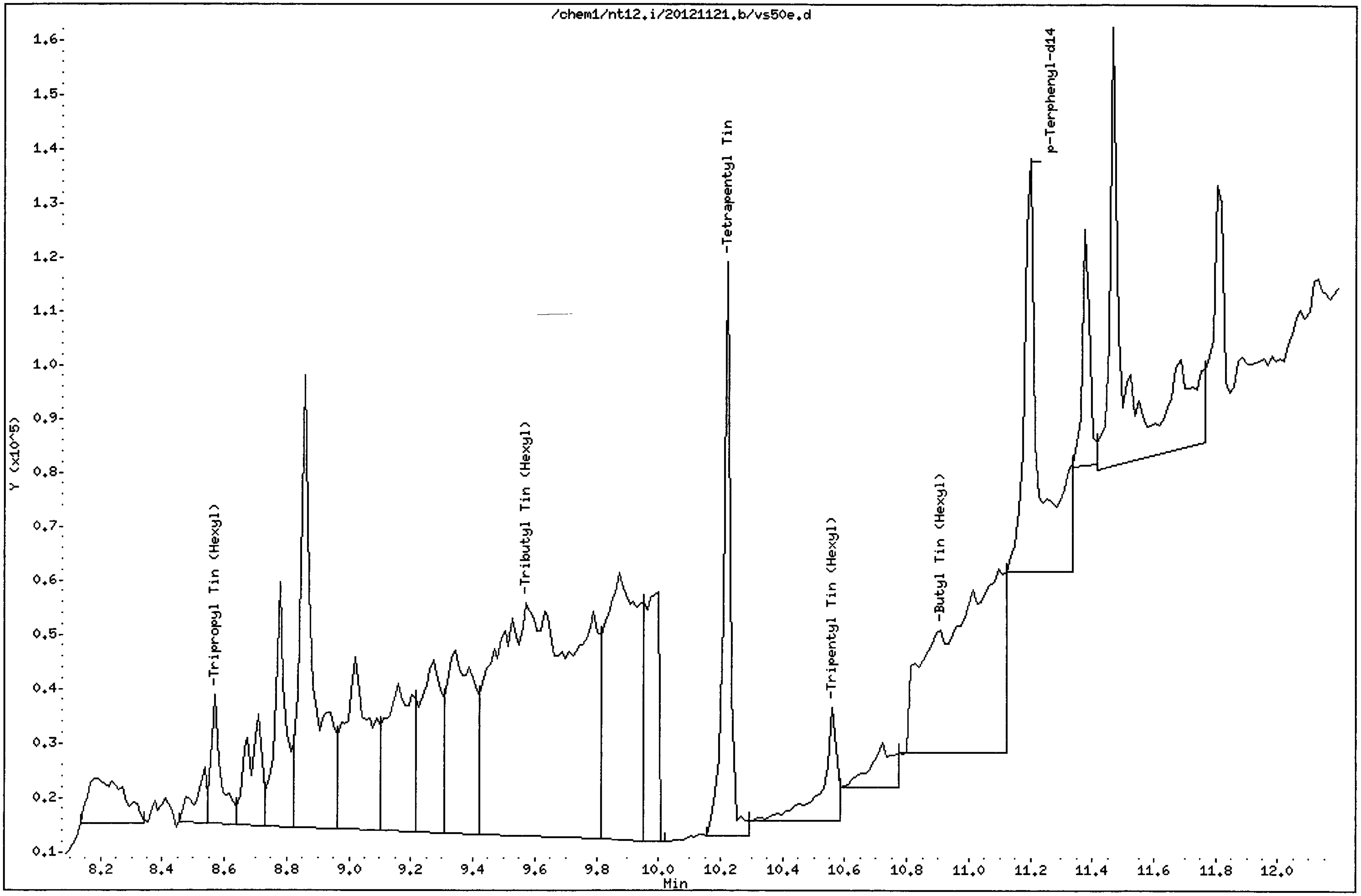
Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50E Client Smp ID: SG-05-S-C-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22848

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.05385	54.98	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.07493	79.21	30-135

Data File: /chem1/nt12.i/20121121.b/vs50e.d
Date : 21-NOV-2012 16:22
Client ID: SG-05-S-C-1211
Sample Info: VS50E
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i

Operator: VTS
Column diameter: 0.25



Data File: /chem1/nt12.i/20121121.b/vs50e.d

Date : 21-NOV-2012 16:22

Client ID: SG-05-S-C-1211

Instrument: nt12.i

Sample Info: VS50E

Purge Volume: 150.0

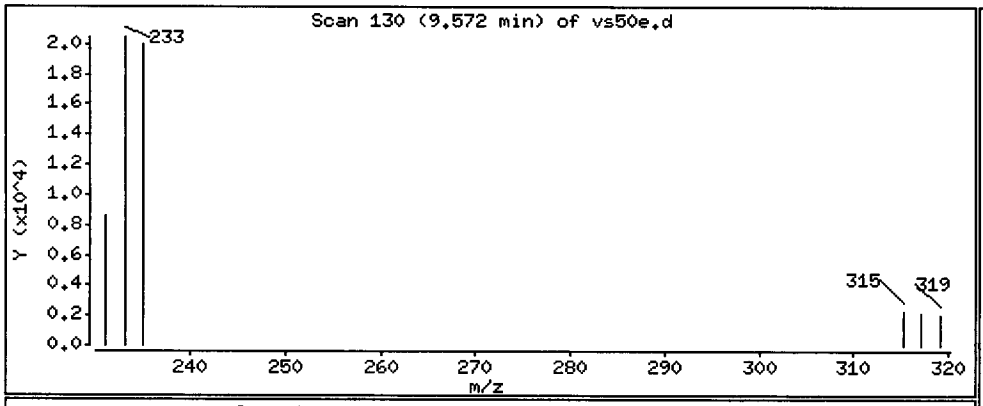
Operator: VTS

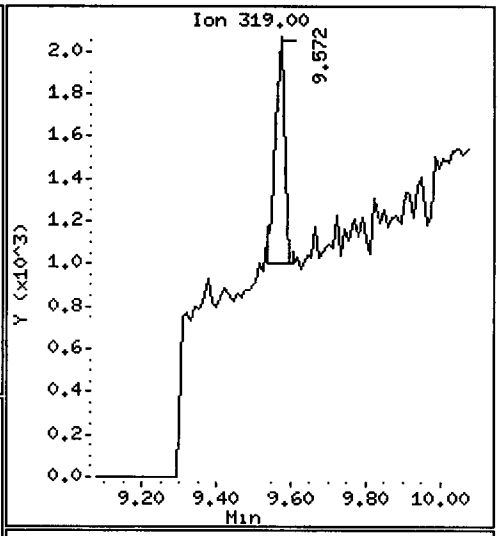
Column phase: ZB-5msi

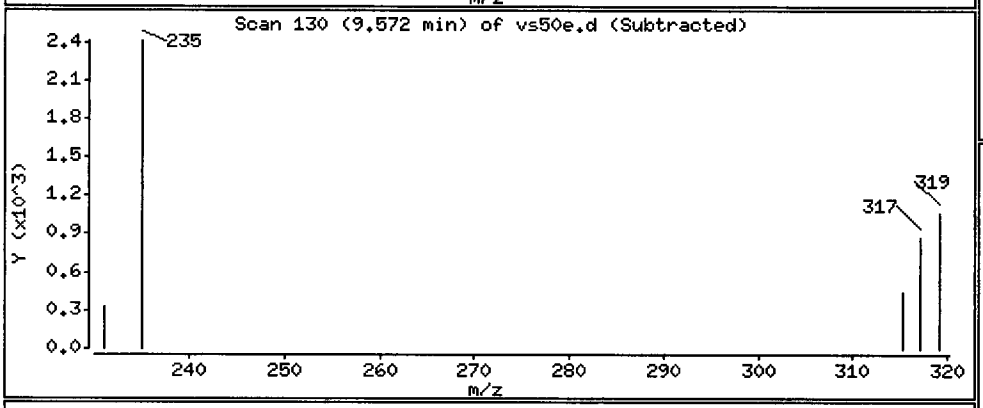
Column diameter: 0.25

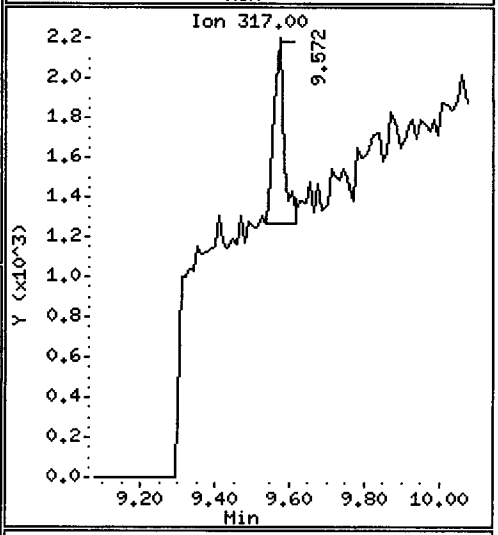
3 Tributyl Tin (Hexyl)

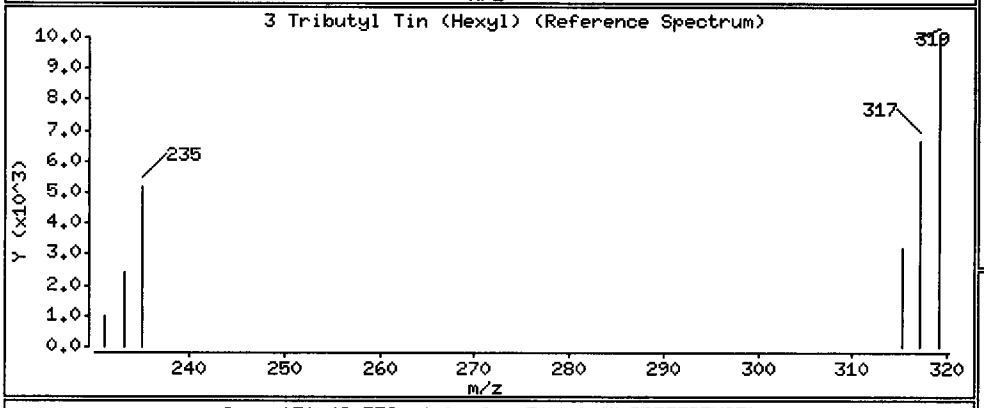
Concentration: 0.01059 ug/L

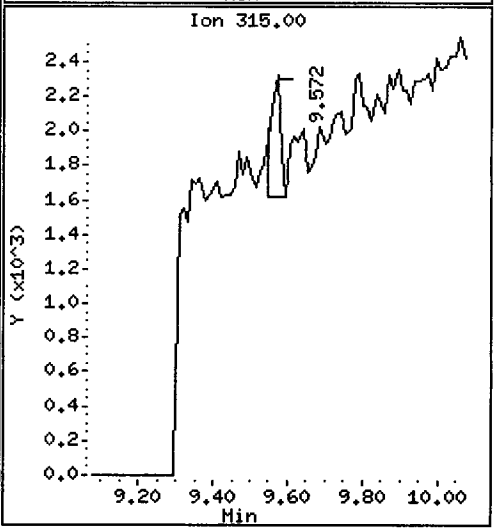


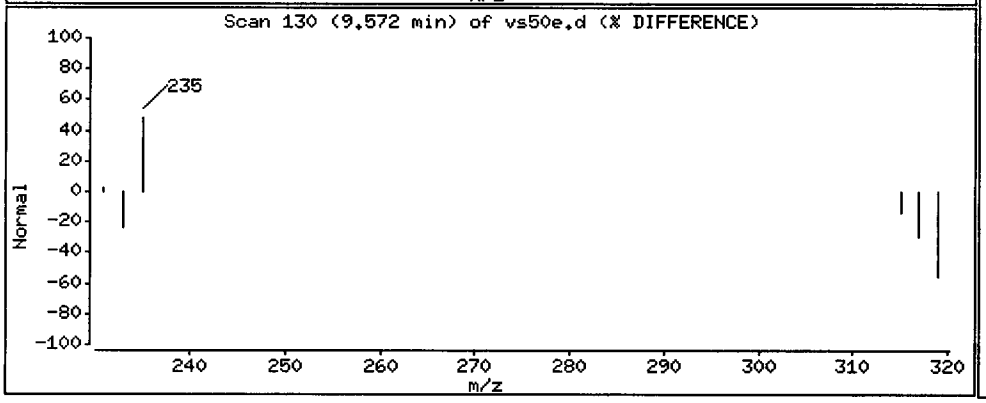












CO-ELUTION SUMMARY FOR FILE - vs50e.d

Lab ID: VS50E, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50f.d
Lab Smp Id: VS50F Client Smp ID: SG-06-S-C-1211
Inj Date : 21-NOV-2012 16:42
Operator : VTS Inst ID: nt12.i
Smp Info : VS50F
Misc Info : 12-22849
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ug/L)
$ 1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	8127	14.6417	0.04881
2 Tetrabutyl Tin	289	Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	4736	8.89502	0.02965
* 4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	153730	200.000	
5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	1841	~~4.99692~~	0.01666
$ 6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	7987	15.8577	0.05286
7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	4239	~~7.26020~~	0.02420
* 8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	148002	20.0000	

11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50f.d
Lab Smp Id: VS50F
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22849

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-06-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	153730	23.13
8 p-Terphenyl-d14	121433	60716	242866	148002	21.88

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

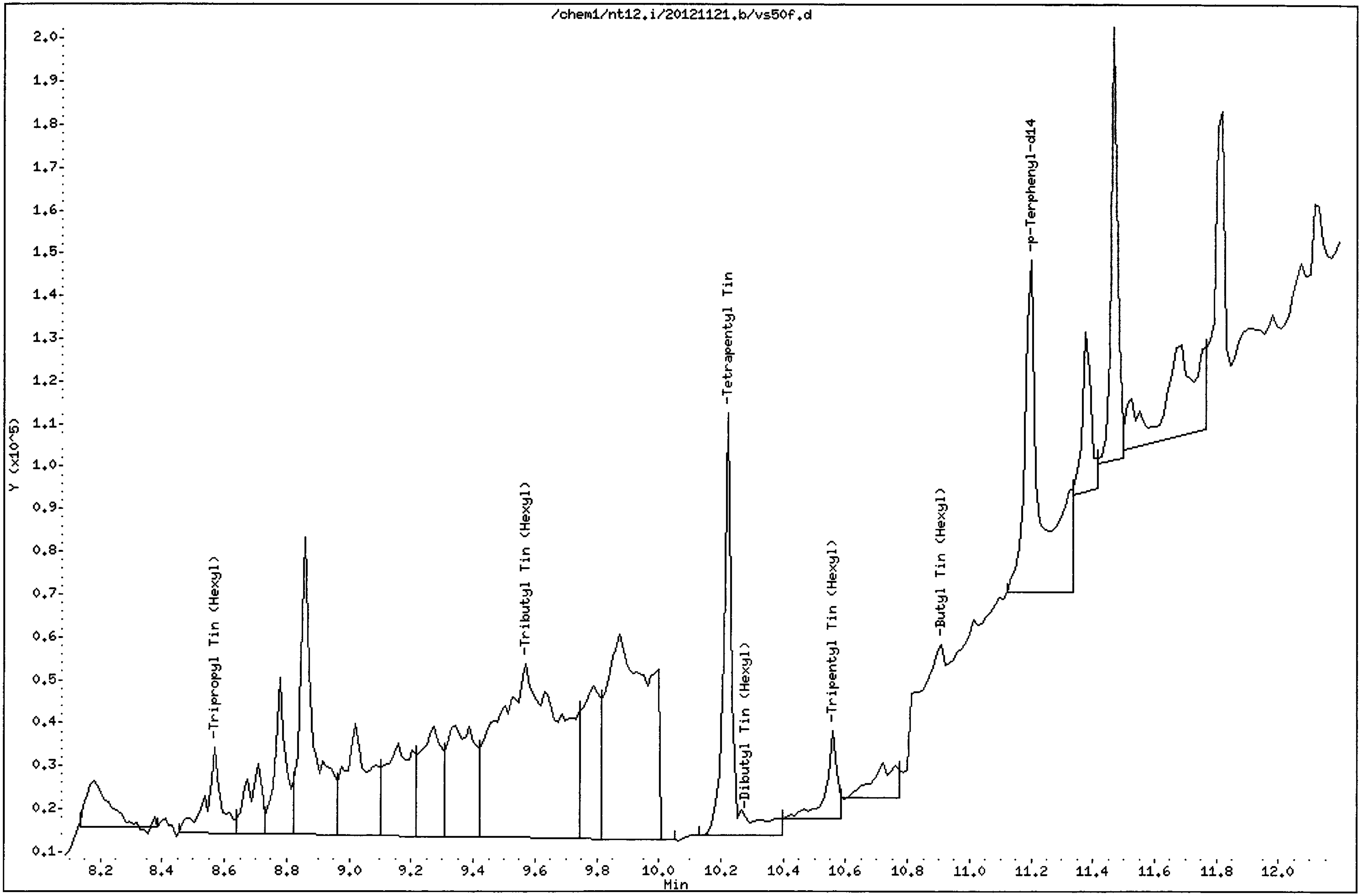
RECOVERY REPORT

Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50F Client Smp ID: SG-06-S-C-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22849

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.04881	49.83	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.05286	55.88	30-135

Data File: /chem1/nt12.i/20121121.b/vs50f.d
Date : 21-NOV-2012 16:42
Client ID: SG-06-S-C-1211
Sample Info: VS50F
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



Data File: /chem1/nt12.i/20121121.b/vs50f.d

Date : 21-NOV-2012 16:42

Client ID: SG-06-S-C-1211

Instrument: nt12.i

Sample Info: VS50F

Purge Volume: 150.0

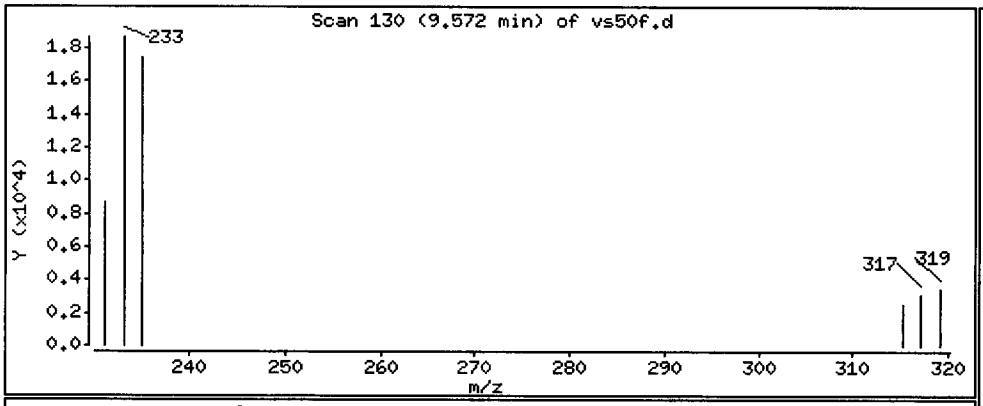
Operator: VTS

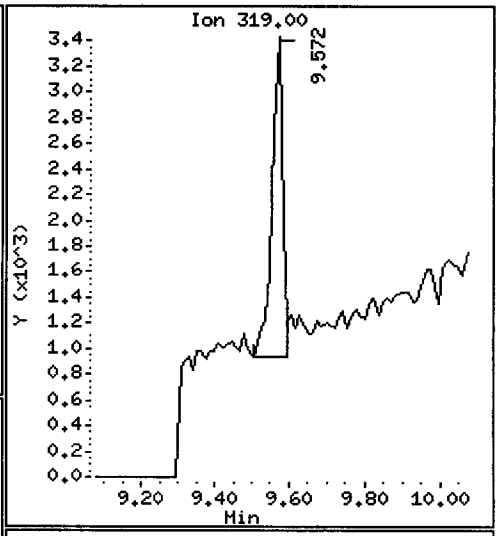
Column phase: ZB-5msi

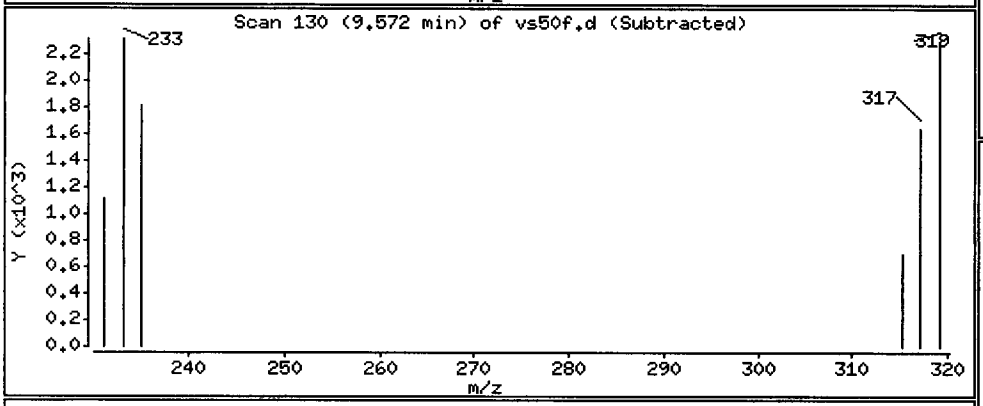
Column diameter: 0.25

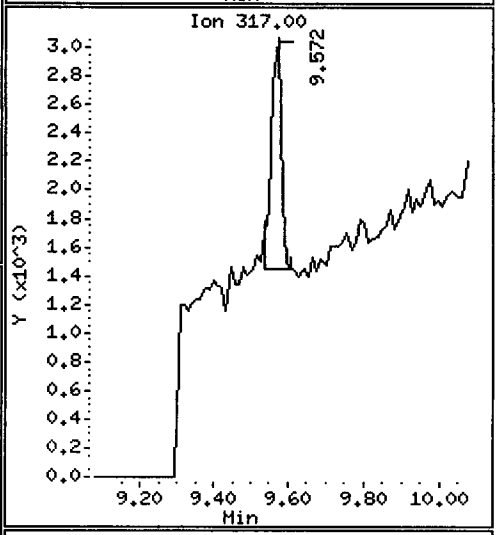
3 Tributyl Tin (Hexyl)

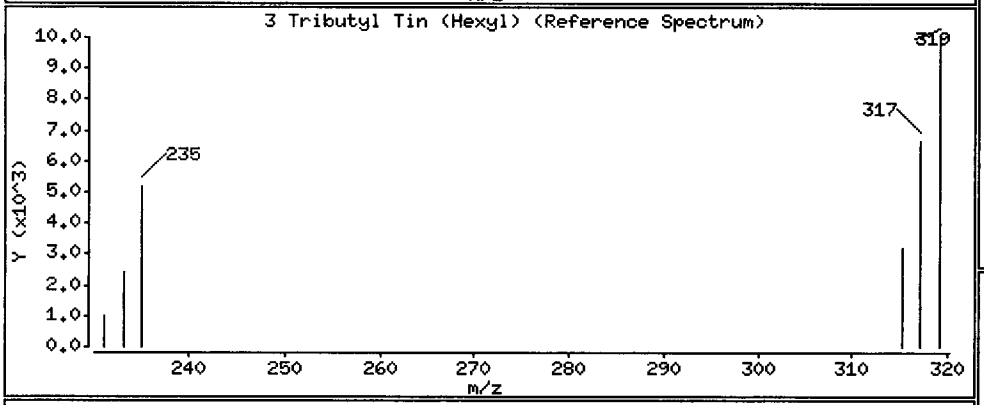
Concentration: 0.02965 ug/L

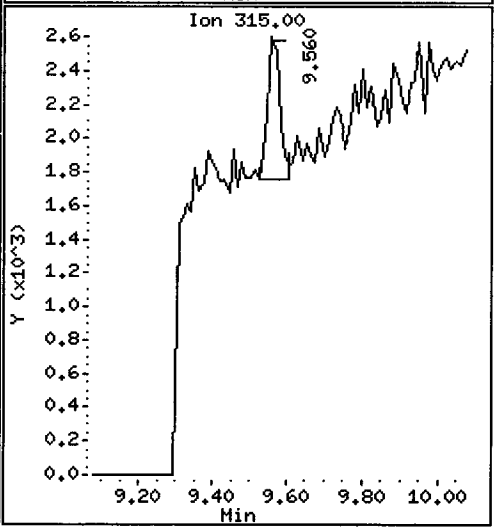


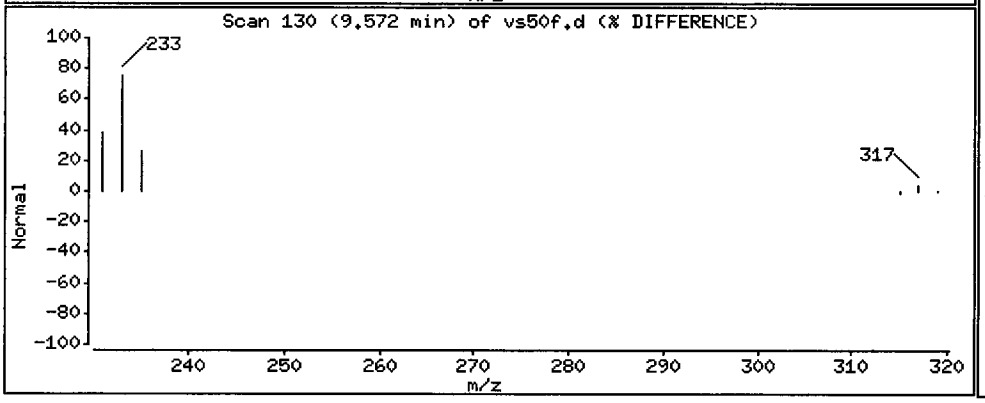












CO-ELUTION SUMMARY FOR FILE - vs50f.d

Lab ID: VS50F, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50g.d
Lab Smp Id: VS50G Client Smp ID: SG-07-S-C-1211
Inj Date : 21-NOV-2012 17:03
Operator : VTS Inst ID: nt12.i
Smp Info : VS50G
Misc Info : 12-22850
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ug/L)
$	1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	11240	19.8248	0.06608
	2 Tetrabutyl Tin	289	Compound Not Detected.					
	3 Tributyl Tin (Hexyl)	319	Compound Not Detected.					
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	157028	200.000	
	5 Dibutyl Tin (Hexyl)	347	Compound Not Detected.					
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	12955	23.9550	0.07985
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	3622	~~5.77~~746	0.01926
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	158915	20.0000	

11/23/12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50g.d
Lab Smp Id: VS50G
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22850

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-07-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	157028	25.77
8 p-Terphenyl-d14	121433	60716	242866	158915	30.87

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

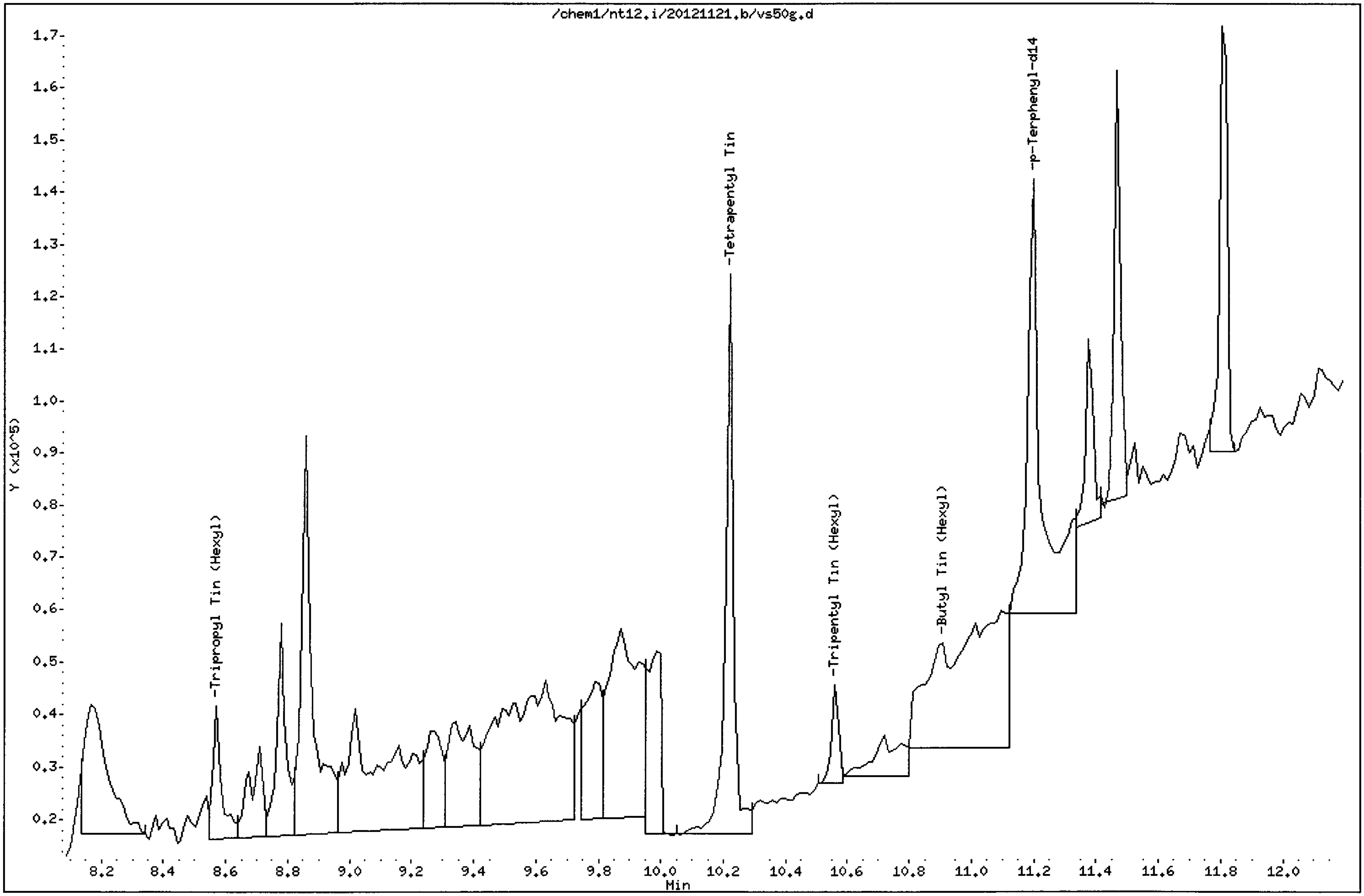
Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50G Client Smp ID: SG-07-S-C-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22850

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.06608	67.47	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.07985	84.41	30-135

Data File: /chem1/nt12.i/20121121.b/vs50g.d
Date : 21-NOV-2012 17:03
Client ID: SG-07-S-C-1211 Instrument: nt12.i
Sample Info: VS50G
Purge Volume: 150.0 Operator: VTS
Column phase: ZB-5msi Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - vs50g.d

Lab ID: VS50G, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50h.d
Lab Smp Id: VS50H Client Smp ID: SG-07-S-C-Dup-1211
Inj Date : 21-NOV-2012 17:24
Operator : VTS Inst ID: nt12.i
Smp Info : VS50H
Misc Info : 12-22851
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ug/L)
$	1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	10974	20.2219	0.06741
	2 Tetrabutyl Tin	289	Compound Not Detected.					
	3 Tributyl Tin (Hexyl)	319	Compound Not Detected.					
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	150301	200.000	
	5 Dibutyl Tin (Hexyl)	347	Compound Not Detected.					
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	11255	21.3992	0.07133
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	2794	4.58255	0.01528
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	154551	20.0000	

VD 11-23-12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50h.d
Lab Smp Id: VS50H
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22851

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-07-S-C-Dup-12
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	150301	20.38
8 p-Terphenyl-d14	121433	60716	242866	154551	27.27

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

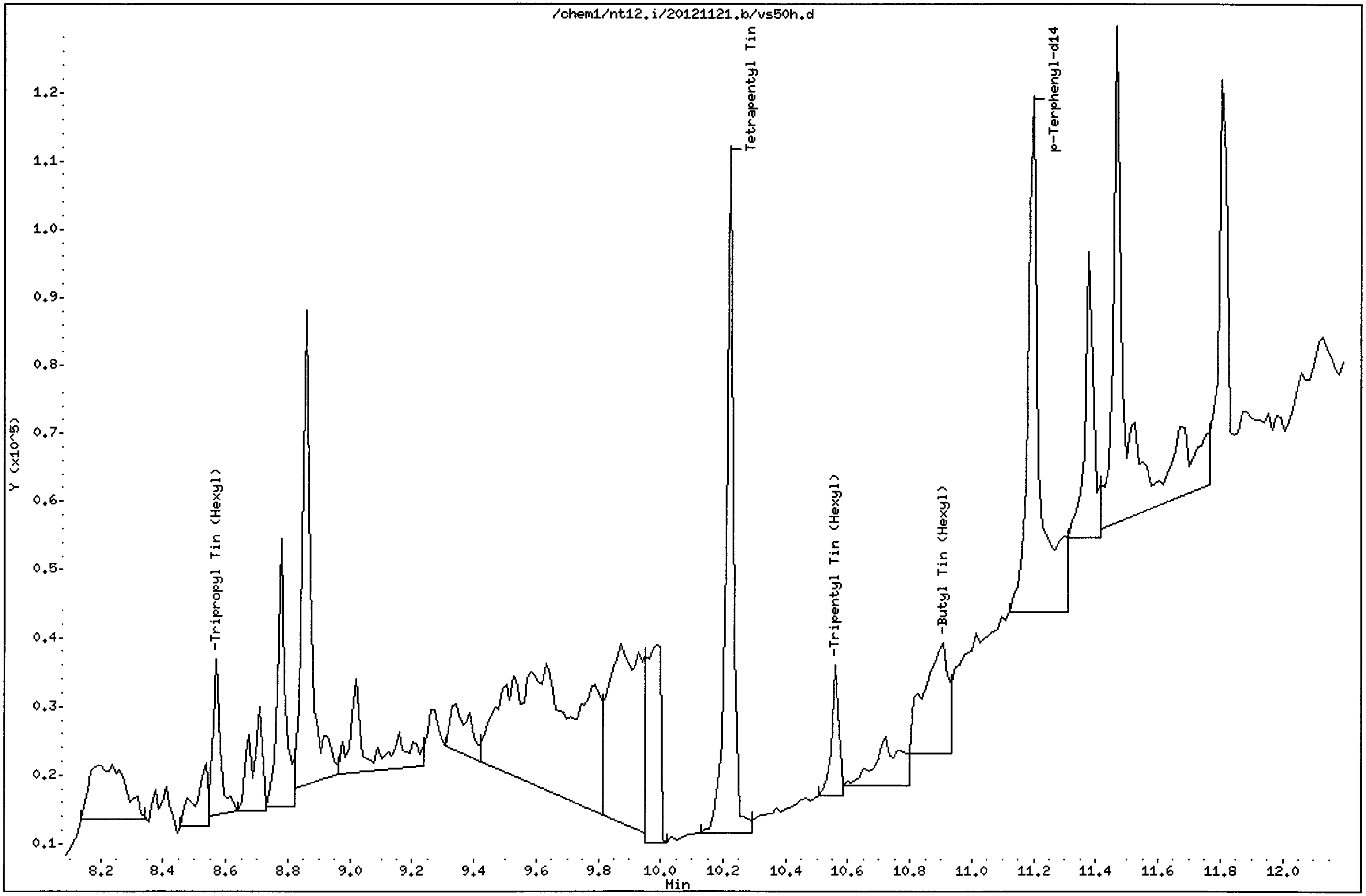
Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50H Client Smp ID: SG-07-S-C-Dup-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22851

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.06741	68.82	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.07133	75.40	30-135

Data File: /chem1/nt12.i/20121121.b/vs50h.d
Date : 21-NOV-2012 17:24
Client ID: SG-07-S-C-Dup-1211
Sample Info: VS50H
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i

Operator: VTS
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - vs50h.d

Lab ID: VS50H, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50i.d
Lab Smp Id: VS50I Client Smp ID: SG-08-S-C-1211
Inj Date : 21-NOV-2012 17:44
Operator : VTS Inst ID: nt12.i
Smp Info : VS50I
Misc Info : 12-22852
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ug/L)
$	1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	8416	15.3652	0.05122
	2 Tetrabutyl Tin	289	Compound Not Detected.					
	3 Tributyl Tin (Hexyl)	319	Compound Not Detected.					
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	151700	200.000	
	5 Dibutyl Tin (Hexyl)	347	Compound Not Detected.					
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	8633	16.8916	0.05631
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	3155	~~5.32522~~	0.01775
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	150181	20.0000	

11/23/12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50i.d
Lab Smp Id: VS50I
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22852

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-08-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	151700	21.50
8 p-Terphenyl-d14	121433	60716	242866	150181	23.67

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

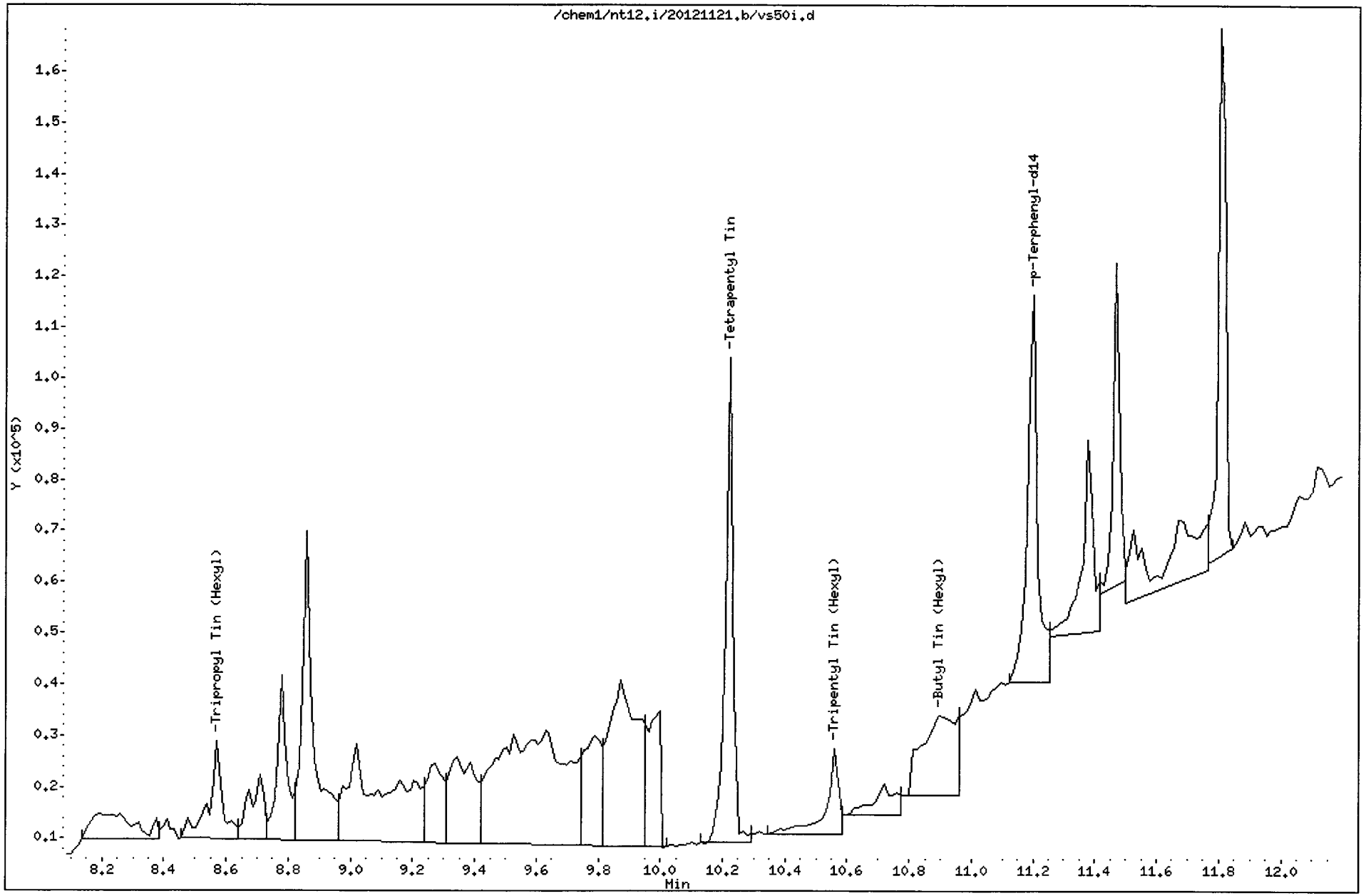
RECOVERY REPORT

Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50I Client Smp ID: SG-08-S-C-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22852

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.05122	52.29	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.05631	59.52	30-135

Data File: /chem1/nt12.i/20121121.b/vs50i.d
Date : 21-NOV-2012 17:44
Client ID: SG-08-S-C-1211
Sample Info: VS50I
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



VS50-091455

CO-ELUTION SUMMARY FOR FILE - vs50i.d

Lab ID: VS50I, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50j.d
Lab Smp Id: VS50J Client Smp ID: SG-09-S-C-1211
Inj Date : 21-NOV-2012 18:05
Operator : VTS Inst ID: nt12.i
Smp Info : VS50J
Misc Info : 12-22853
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ug/L)
$ 1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	8271	14.7420	0.04914
2 Tetrabutyl Tin	289	Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319	Compound Not Detected.					
* 4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	155389	200.000	
5 Dibutyl Tin (Hexyl)	347	Compound Not Detected.					
$ 6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	9795	19.2095	0.06403
7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	4319	7.30673	0.02436
* 8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	149835	20.0000	

11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50j.d
Lab Smp Id: VS50J
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22853

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-09-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	155389	24.46
8 p-Terphenyl-d14	121433	60716	242866	149835	23.39

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

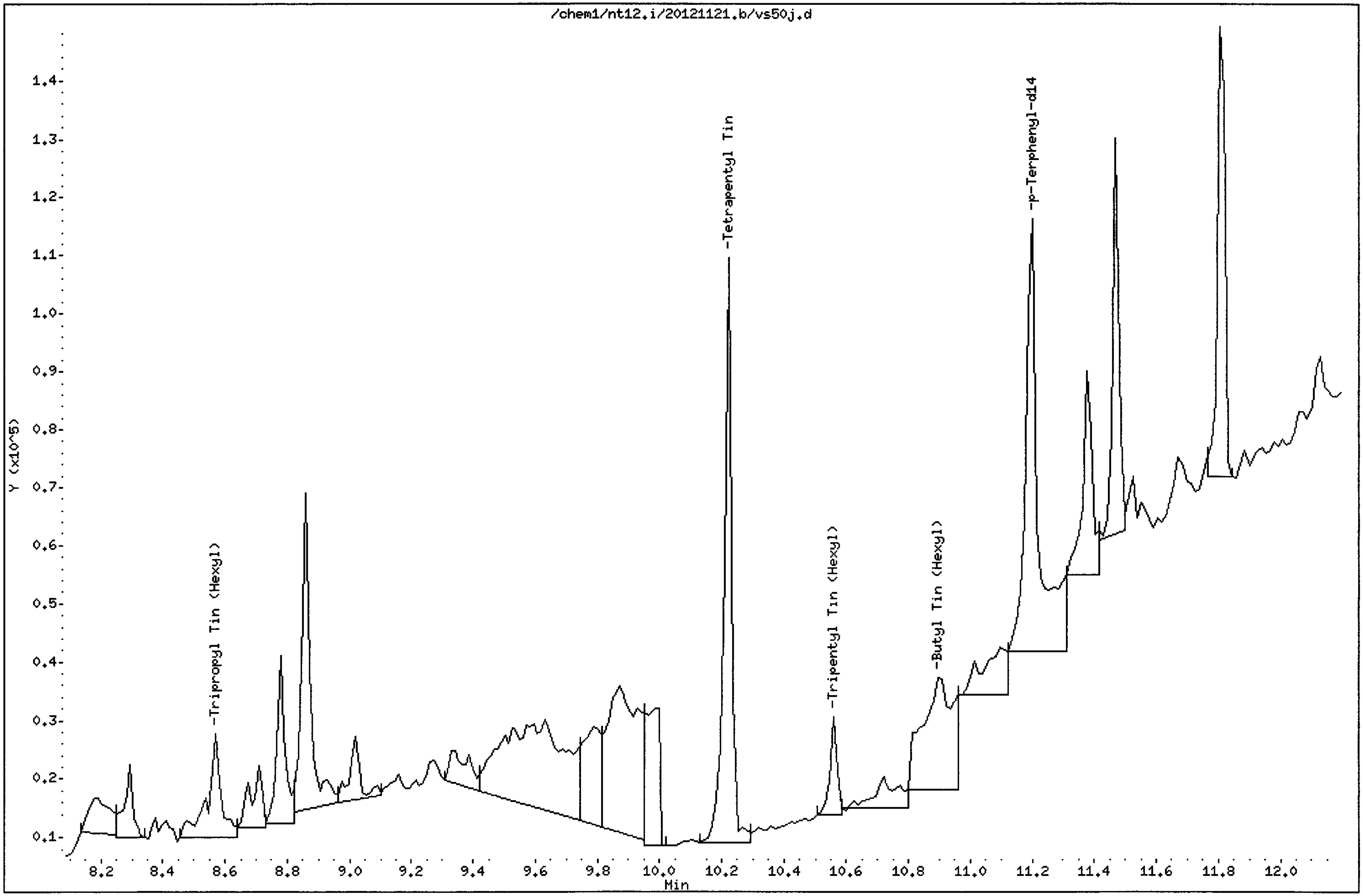
RECOVERY REPORT

Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50J Client Smp ID: SG-09-S-C-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22853

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.04914	50.17	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.06403	67.69	30-135

Data File: /chem1/nt12.i/20121121.b/vs50j.d
Date : 21-NOV-2012 18:05
Client ID: SG-09-S-C-1211
Sample Info: VS50J
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - vs50j.d

Lab ID: VS50J, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt12.i/20121121.b

ARI Job No.: PW 2 Method: pw3ul.m Instrument: nt12.i Date: 21-NOV-2012

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1314	cc1121.d	PW 25		1	NO MANUAL INTEGRATION
1256	df1121.d	DFTPP 5		1	NO MANUAL INTEGRATION
1418	vs50a.d	VS50A	SG-14-S-E-	1	NO MANUAL INTEGRATION
1439	vs50b.d	VS50B	SG-02-S-C-	1	NO MANUAL INTEGRATION
1459	vs50bms.d	VS50BMS	SG-02-S-C-	1	NO MANUAL INTEGRATION
1520	vs50bmsd.d	VS50BMSD	SG-02-S-C-	1	NO MANUAL INTEGRATION
1541	vs50c.d	VS50C	SG-03-S-C-	1	NO MANUAL INTEGRATION
1601	vs50d.d	VS50D	SG-04-S-C-	1	NO MANUAL INTEGRATION
1622	vs50e.d	VS50E	SG-05-S-C-	1	NO MANUAL INTEGRATION
1642	vs50f.d	VS50F	SG-06-S-C-	1	NO MANUAL INTEGRATION
1703	vs50g.d	VS50G	SG-07-S-C-	1	NO MANUAL INTEGRATION
1724	vs50h.d	VS50H	SG-07-S-C-	1	NO MANUAL INTEGRATION
1744	vs50i.d	VS50I	SG-08-S-C-	1	NO MANUAL INTEGRATION
1805	vs50j.d	VS50J	SG-09-S-C-	1	NO MANUAL INTEGRATION
1337	vs50mb.d	VS50MBW1	VS50MBW1	1	NO MANUAL INTEGRATION
1358	vs50sb.d	VS50LCSW1	VS50LCSW1	1	NO MANUAL INTEGRATION

Analytical Resources Inc.: Organics Instrument Log

NT-12 Serial No.:GC=US00032558, MS= US01180091

Date: 11.23.12 Analysis: porewater -TBT Analyst: VB

GC Program: porebts Column No: 230930 Column Type: ZB-5ms

Instrument Tune (.U or .CT.): 120927.U EM Voltage: 2000

Calibration File: df1123 Curve Date: 10.9.12 Injection Vol.: 3 ul

IS/SS	Ical/Ccal	LCS/ICV
1961-2	1961-4	

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt

	Time	Filename	LabID	ClientId	DF				
1	0847	df1123.d	DFTPP 5		1	NO ISTDS FOUND			
2	0908	cc1123.d	PW 25		1	10.22	146285	11.20	140914
3	0939	vs50bdl.d	VS50B	SG-02-S-C-12	5	10.22	148160	11.20	147905

VB 11.23.12

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

Data File: /chem1/nt12.i/20121123.b/df1123.d

Date : 23-NOV-2012 08:47

Client ID:

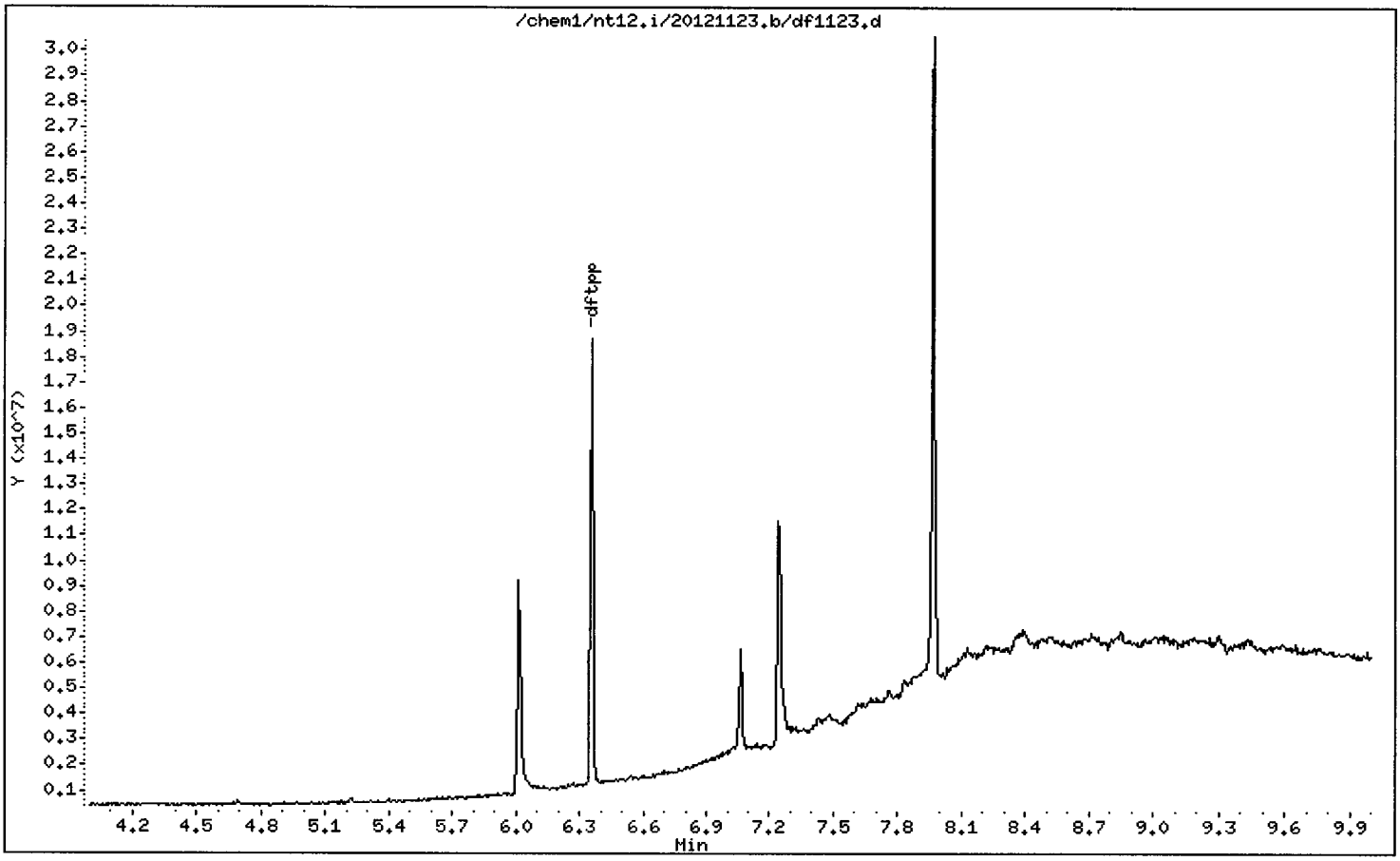
Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25



Data File: /chem1/nt12.i/20121123.b/df1123.d

Date : 23-NOV-2012 08:47

Client ID:

Instrument: nt12.i

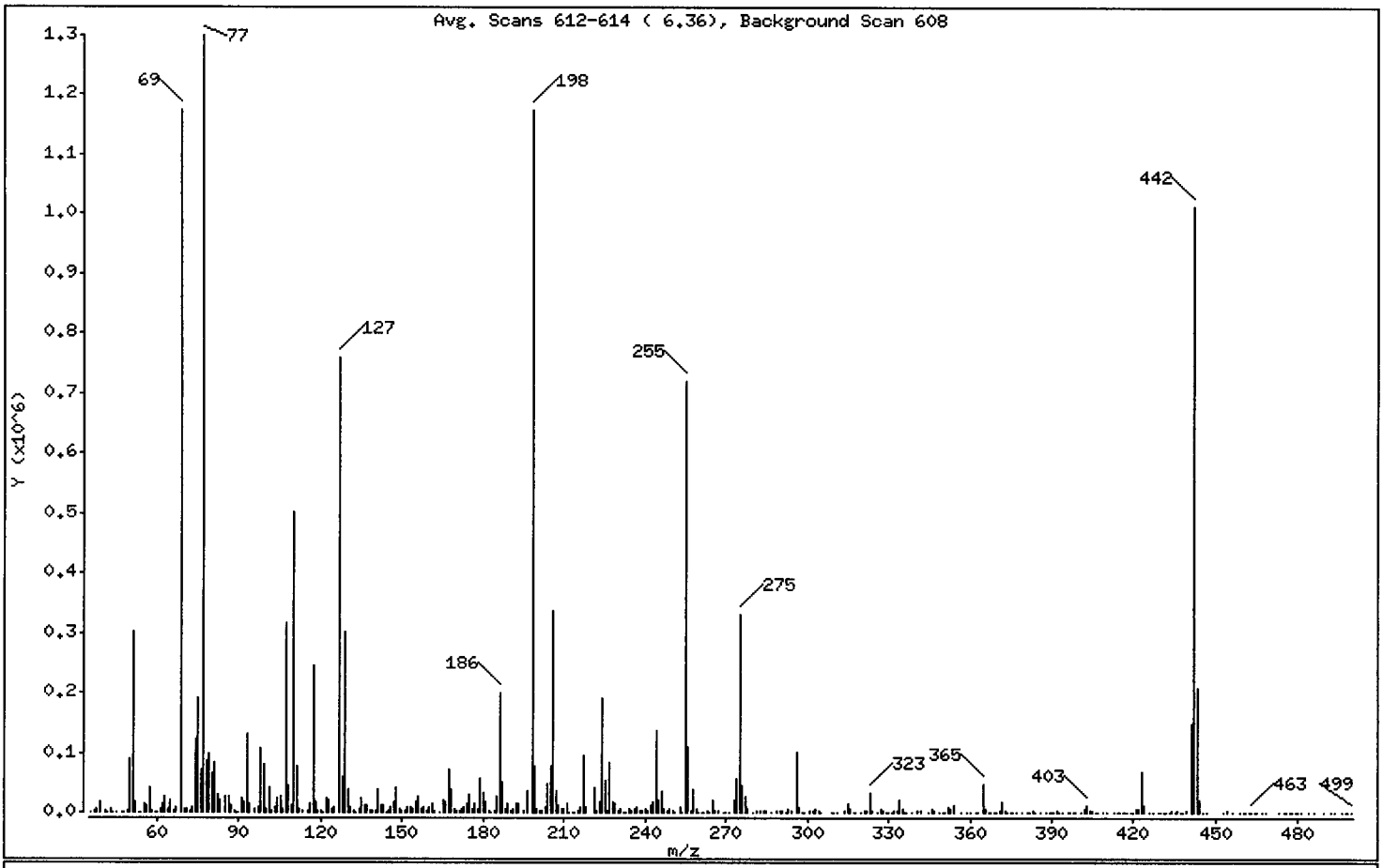
Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	25.70
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	99.96
70	Less than 2.00% of mass 69	0.51 (0.51)
127	10.00 - 80.00% of mass 198	64.54
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.73
275	10.00 - 60.00% of mass 198	28.16
365	Greater than 1.00% of mass 198	4.17
441	0.01 - 24.00% of mass 442	12.65 (14.67)
442	50.00 - 200.00% of mass 198	86.18
443	15.00 - 24.00% of mass 442	17.90 (20.77)

Date : 23-NOV-2012 08:47

Client ID: Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi Column diameter: 0.25

Data File: df1123.d
Spectrum: Avg. Scans 612-614 (6.36), Background Scan 608
Location of Maximum: 77.00
Number of points: 390

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	549	141.00	39720	244.00	136896	368.00	303
37.00	1655	142.00	11388	245.00	20736	369.00	639
38.00	6523	143.00	10482	246.00	36256	370.00	98
39.00	18672	144.00	1137	247.00	7004	371.00	3499
41.00	2965	145.00	2533	248.00	2151	372.00	18224
42.00	1132	146.00	9009	249.00	4780	373.00	3415
43.00	5279	147.00	19360	250.00	2162	374.00	82
44.00	268	148.00	42824	251.00	1253	375.00	1247
45.00	1371	149.00	6884	253.00	9729	376.00	202
47.00	28	150.00	2348	254.00	525	377.00	680
48.00	927	151.00	2082	255.00	720256	379.00	711
49.00	2136	152.00	7537	256.00	112016	381.00	48
50.00	89456	153.00	8391	257.00	4238	382.00	241
51.00	302016	154.00	4622	258.00	39504	383.00	2899
52.00	16864	155.00	18384	259.00	5536	384.00	762
53.00	773	156.00	26496	260.00	1336	386.00	537
54.00	376	157.00	6204	261.00	1008	388.00	396
55.00	15882	158.00	8394	262.00	747	389.00	297
56.00	11248	159.00	4146	263.00	1871	390.00	1038
57.00	41232	160.00	9072	264.00	368	391.00	1300
58.00	2867	161.00	15580	265.00	19768	392.00	1787
59.00	1191	162.00	4103	266.00	1629	393.00	866
60.00	236	164.00	879	267.00	2561	394.00	530
61.00	7463	165.00	19560	269.00	652	396.00	571
62.00	13843	166.00	16528	270.00	724	397.00	740
63.00	27784	167.00	71568	271.00	1197	398.00	918
64.00	6825	168.00	37392	273.00	20928	399.00	205
65.00	19832	169.00	5832	274.00	55664	401.00	1051
66.00	1714	170.00	2877	275.00	330944	402.00	7389
67.00	7541	171.00	1968	276.00	45216	403.00	11680
69.00	1174528	172.00	6186	277.00	25616	404.00	3600
70.00	5981	173.00	8356	278.00	5490	405.00	1795
71.00	6208	174.00	14508	280.00	1126	406.00	334
72.00	2402	175.00	29680	281.00	2329	407.00	291
73.00	9400	176.00	5592	283.00	3651	409.00	1115

Data File: /chem1/nt12.i/20121123.b/df1123.d

Date : 23-NOV-2012 08:47

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25

Data File: df1123.d
Spectrum: Avg. Scans 612-614 (6.36), Background Scan 608
Location of Maximum: 77.00
Number of points: 390

m/z	Y	m/z	Y	m/z	Y	m/z	Y
74.00	122432	177.00	13459	284.00	4179	410.00	137
75.00	190784	178.00	5691	285.00	3470	413.00	789
76.00	72976	179.00	57160	287.00	834	414.00	460
77.00	1299968	180.00	33256	289.00	2918	415.00	794
78.00	87008	181.00	18672	290.00	3659	416.00	880
79.00	98560	182.00	2607	291.00	1962	417.00	885
80.00	66184	183.00	783	292.00	1178	418.00	839
81.00	83472	184.00	3190	293.00	6385	419.00	530
82.00	28480	185.00	27704	294.00	1806	420.00	10
83.00	20456	186.00	201664	296.00	102080	421.00	6432
85.00	26896	187.00	49672	297.00	8830	422.00	7116
86.00	26104	188.00	6967	298.00	529	423.00	68032
87.00	11564	189.00	13661	299.00	23	424.00	10942
88.00	3735	190.00	2404	301.00	1672	426.00	676
89.00	76	191.00	6925	302.00	1519	427.00	768
90.00	1050	192.00	13489	303.00	5910	429.00	1038
91.00	22904	193.00	14473	304.00	3266	430.00	1075
92.00	18960	195.00	1522	305.00	617	431.00	522
93.00	132224	196.00	35256	309.00	1337	432.00	1329
94.00	13707	198.00	1175040	310.00	285	433.00	387
96.00	5635	199.00	79136	311.00	193	434.00	2339
97.00	9096	200.00	6876	314.00	3619	435.00	821
98.00	107024	201.00	2182	315.00	14056	436.00	2146
99.00	79616	202.00	2157	316.00	6305	437.00	1359
100.00	5682	203.00	8890	317.00	1332	438.00	253
101.00	41928	204.00	47600	318.00	91	439.00	2603
102.00	1741	205.00	76976	320.00	1033	441.00	148608
103.00	9756	206.00	337088	321.00	2380	442.00	1012672
104.00	24728	207.00	37232	322.00	2587	443.00	210368
105.00	27200	208.00	10837	323.00	32904	444.00	20224
106.00	5440	209.00	5292	324.00	2970	445.00	989
107.00	315904	210.00	6477	326.00	752	447.00	805
108.00	43856	211.00	14394	327.00	6324	453.00	609
109.00	12981	212.00	267	328.00	1645	454.00	1520
110.00	503104	213.00	618	329.00	182	456.00	476

Data File: /chem1/nt12.i/20121123.b/df1123.d

Date : 23-NOV-2012 08:47

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

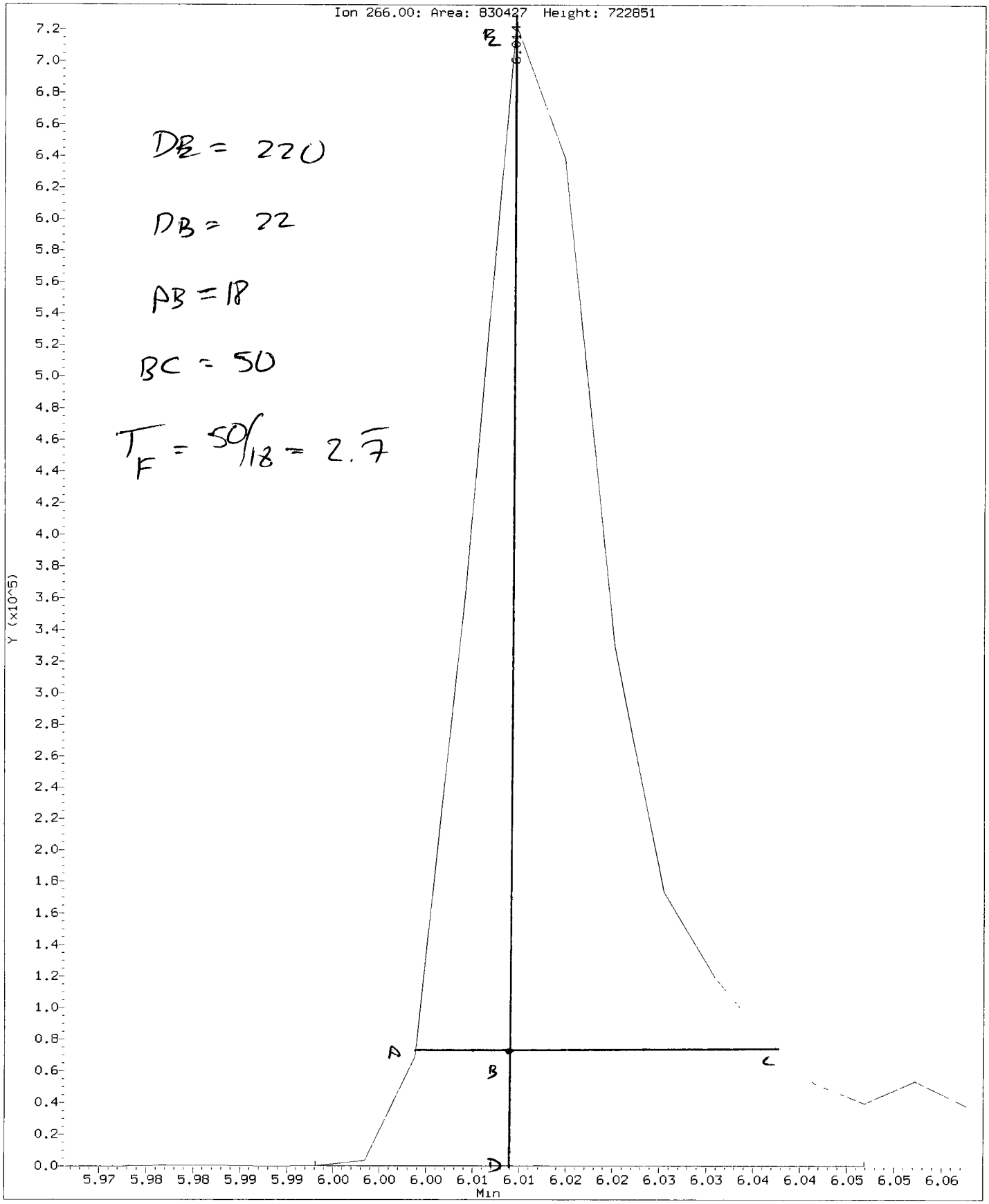
Column diameter: 0.25

Data File: df1123.d
Spectrum: Avg. Scans 612-614 (6.36), Background Scan 608
Location of Maximum: 77.00
Number of points: 390

m/z	Y	m/z	Y	m/z	Y	m/z	Y
111.00	76496	214.00	889	330.00	388	459.00	1165
112.00	5620	215.00	2808	331.00	1377	460.00	950
113.00	3271	216.00	9767	332.00	2678	461.00	382
115.00	1835	217.00	96920	333.00	3943	462.00	91
116.00	14002	218.00	10046	334.00	19480	463.00	775
117.00	245184	221.00	42736	335.00	6774	464.00	233
118.00	17296	222.00	2454	336.00	1140	465.00	376
119.00	3208	223.00	17600	337.00	520	467.00	219
120.00	2425	224.00	192576	339.00	395	468.00	390
121.00	680	225.00	54512	341.00	3284	473.00	621
122.00	22688	226.00	4185	342.00	2413	475.00	377
123.00	20968	227.00	82408	345.00	759	476.00	150
124.00	6131	228.00	17296	346.00	7281	477.00	230
125.00	8168	229.00	14559	347.00	2298	478.00	685
127.00	758336	230.00	4253	349.00	521	479.00	288
128.00	58912	231.00	4634	350.00	147	480.00	419
129.00	302080	232.00	237	351.00	585	481.00	388
130.00	37608	233.00	41	352.00	8813	484.00	162
131.00	8272	234.00	5074	353.00	4685	486.00	91
132.00	1501	235.00	3611	354.00	12555	489.00	764
133.00	142	236.00	5979	357.00	1247	492.00	619
134.00	5434	237.00	7685	359.00	342	493.00	720
135.00	24144	238.00	1653	360.00	256	496.00	98
136.00	13397	239.00	2962	362.00	455	497.00	640
137.00	11915	240.00	4808	363.00	427	498.00	294
138.00	1543	241.00	3445	365.00	49008	499.00	832
139.00	3760	242.00	10907	366.00	5171		
140.00	2826	243.00	16488	367.00	705		

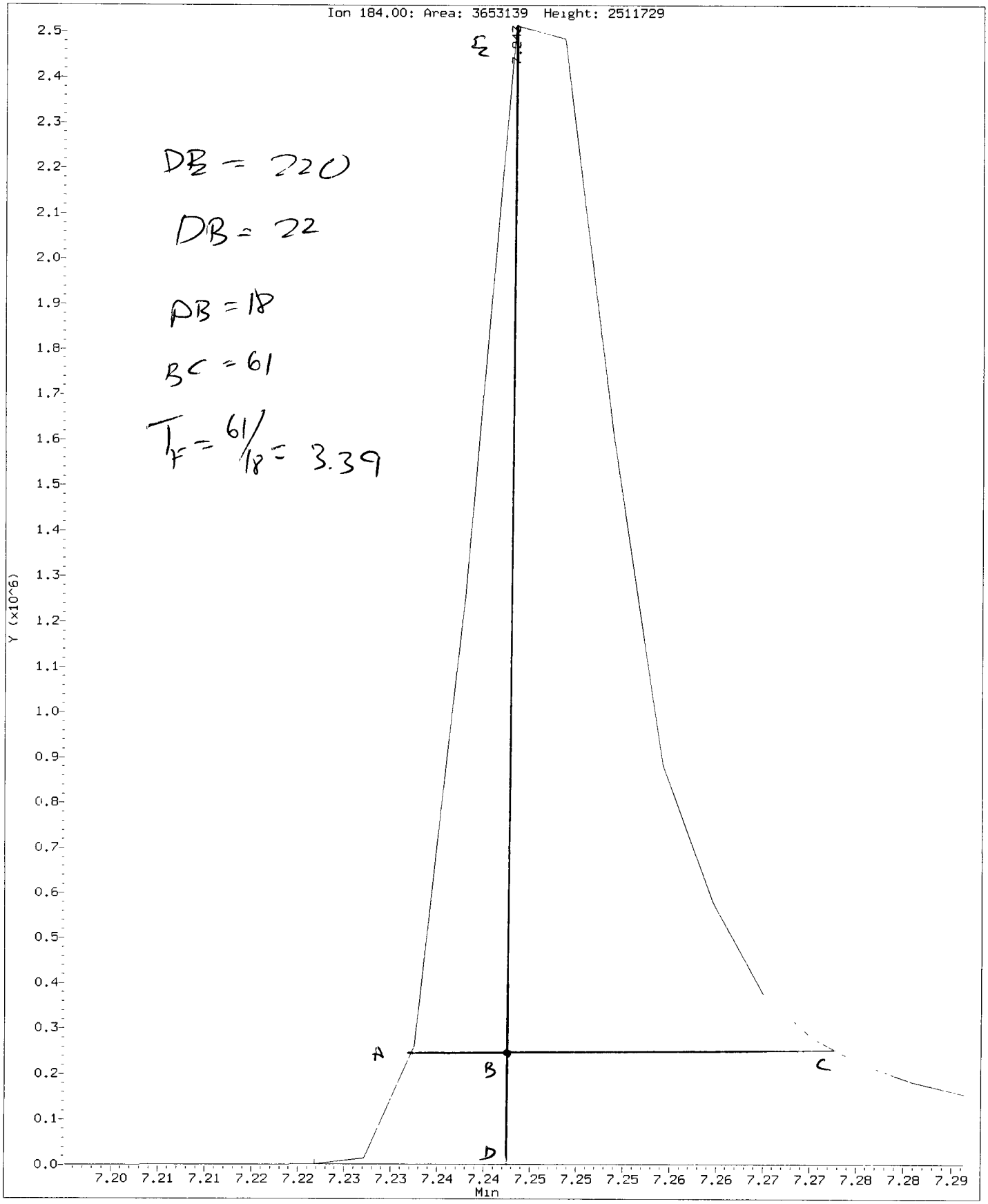
Data File: /chem1/nt12.i/20121123.b/ddt.b/df1123.d
Injection Date: 23-NOV-2012 08:47
Instrument: nt12.i
Client Sample ID:

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem1/nt12.1/20121123.b/ddt.b/df1123.d
Injection Date: 23-NOV-2012 08:47
Instrument: nt12.1
Client Sample ID:

Compound: Benzidine
CAS Number:



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem1/nt12.i/20121123.b/ddt.b/df1123.d
Method: /chem1/nt12.i/20121123.b/ddt.b/sw846ddt.m
Analysis Date: 23-NOV-2012 08:47

ARI ID: DFTPP 5
Misc:
Instrument: nt12.i

COMPOUND	RT	AREA
Pentachlorophenol	6.014	830427
Benzidine	7.243	3653139
4,4'-DDE	7.430	37843
4,4'-DDD	7.756	37539
4,4'-DDT	7.970	3220511

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

$$\text{DDT Percent Breakdown} = \frac{(\ 37843 + 37539) * 100}{(\ 37843 + 37539 + 3220511)}$$

DDT Percent Breakdown = 2.3 %

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121123.b/cc1123.d
Lab Smp Id: PW 25
Inj Date : 23-NOV-2012 09:08
Operator : VTS Inst ID: nt12.i
Smp Info : PW 25
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121123.b/pw3ul.m
Meth Date : 23-Nov-2012 09:45 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
$	1 Tripropyl Tin (Hexyl)	291	8.582	8.582	(0.839)	12968	25.0000	24.55
	2 Tetrabutyl Tin	289	8.801	8.801	(0.861)	12826	25.0000	22.87
	3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.937)	12485	25.0000	24.64
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	146285	200.000	
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	16717	50.0000	47.66
$	6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	22600	50.0000	47.13
	7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	27259	50.0000	49.04
*	8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	140914	20.0000	

11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: cc1123.d
Lab Smp Id: PW 25
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121123.b/pw3ul.m
Misc Info:

Calibration Date: 23-NOV-2012
Calibration Time: 08:31

Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	146285	17.16
8 p-Terphenyl-d14	121433	60716	242866	140914	16.04

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt12.i
Lab File ID: cc1123.d
Analysis Type:
Lab Sample ID: PW 25
Method: /chem1/nt12.i/20121123.b/pw3ul.m

Injection Date: 23-NOV-2012 09:08
Init. Cal. Date(s): 09-OCT-2012 09-OCT-2012
Init. Cal. Times: 16:43 18:26
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF25	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 1 Tripropyl Tin (Hexyl)	0.72212	0.70922	0.005	-1.78623	20.00000	Averaged
2 Tetrabutyl Tin	0.76668	0.70144	0.010	-8.50979	20.00000	Averaged
3 Tributyl Tin (Hexyl)	0.69269	0.68279	0.005	-1.42806	20.00000	Averaged
5 Dibutyl Tin (Hexyl)	0.04979	0.04745	0.005	-4.68621	20.00000	Averaged
$ 6 Tripentyl Tin (Hexyl)	0.06806	0.06415	0.010	-5.74243	20.00000	Averaged
7 Butyl Tin (Hexyl)	0.07890	0.07738	0.005	-1.92678	20.00000	Averaged

Data File: /chem1/nt12.i/20121123.b/cc1123.d

Date : 23-NOV-2012 09:08

Client ID:

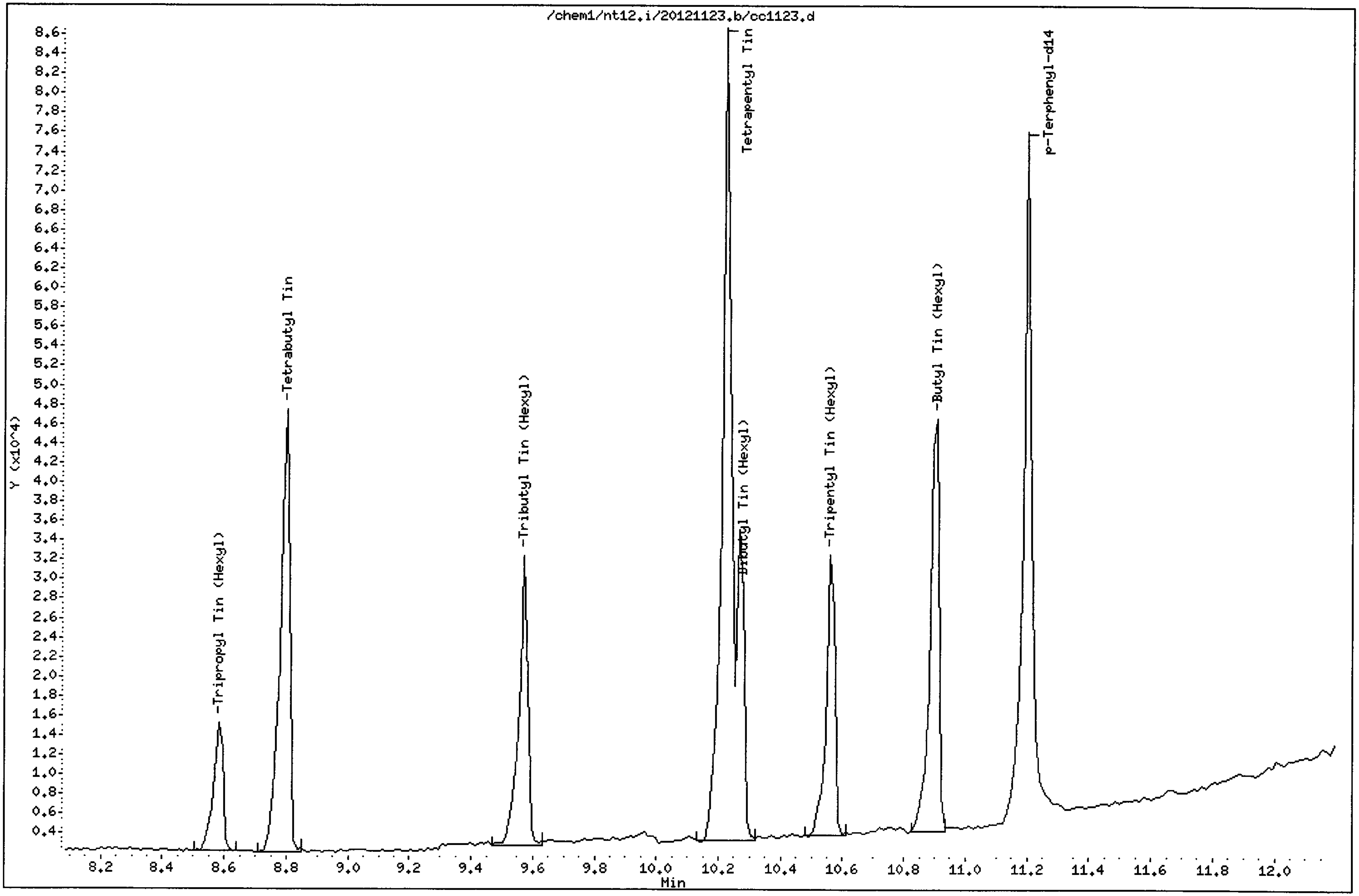
Sample Info: PW 25

Column phase: ZB-5msi

Instrument: nt12.i

Operator: VTS

Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - cc1123.d

Lab ID: PW 25, Method: pw3ul.m, Instrument: nt12.i, Date: 23-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121123.b/vs50bdl.d
Lab Smp Id: VS50B Client Smp ID: SG-02-S-C-1211
Inj Date : 23-NOV-2012 09:39
Operator : VTS Inst ID: nt12.i
Smp Info : VS50B,5
Misc Info : 12-22845
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121123.b/pw3ul.m
Meth Date : 23-Nov-2012 09:45 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 3
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: eserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	5.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ug/L)	
$	1 Tripropyl Tin (Hexyl)	291	8.582	8.582	(0.839)	2214	4.13871	0.06898	
	2 Tetrabutyl Tin	289	Compound Not Detected.						
	3 Tributyl Tin (Hexyl)	319	9.572	9.583	(0.936)	26709	52.0500	0.8675	
*	4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	148160	200.000		
	5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	4274	~~11.6083~~	0.1935	NR
$	6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	2483	4.93307	0.08222	
	7 Butyl Tin (Hexyl)	347	10.908	10.907	(0.974)	3100	~~5.31~~290	0.08855	NR
*	8 p-Terphenyl-d14	244	11.203	11.202	(1.000)	147905	20.0000		

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11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50bdl.d
Lab Smp Id: VS50B
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121123.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 23-NOV-2012
Calibration Time: 09:08
Client Smp ID: SG-02-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	124855	62428	249710	148160	18.67
8 p-Terphenyl-d14	121433	60716	242866	147905	21.80

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

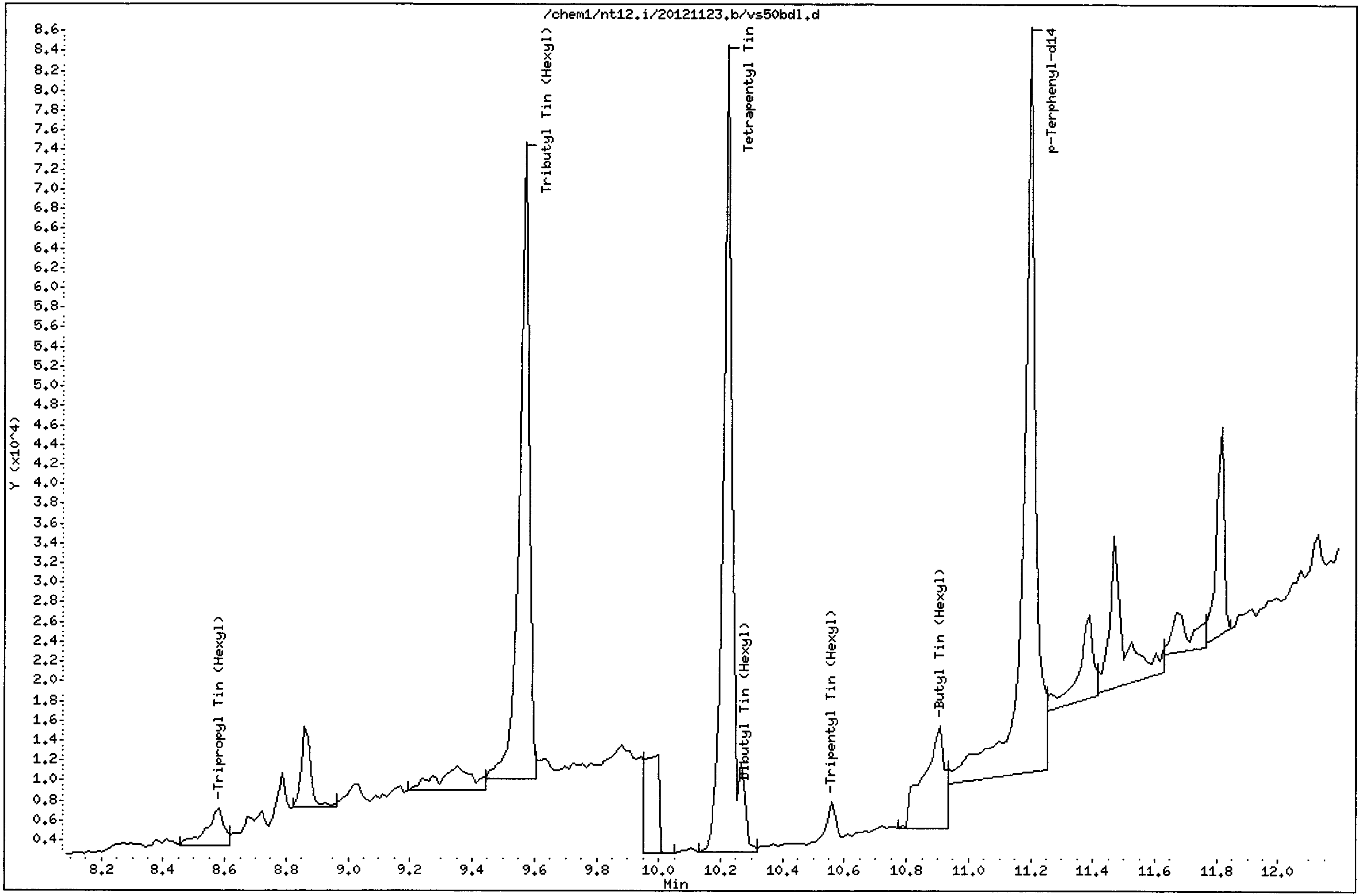
RECOVERY REPORT

Client Name: Anchor QEA, LLC. Client SDG: VS50
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: VS50B Client Smp ID: SG-02-S-C-1211
Level: LOW Operator: VTS
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PW.spk Quant Type: ISTD
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121123.b/pw3ul.m
Misc Info: 12-22845

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tripropyl Tin (Hex	0.09795	0.06898	70.42	28-100
$ 6 Tripentyl Tin (Hex	0.09460	0.08222	86.91	30-135

Data File: /chem1/nt12.i/20121123.b/vs50bdl.d
Date : 23-NOV-2012 09:39
Client ID: SG-02-S-C-1211
Sample Info: VS50B,5
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



Data File: /chem1/nt12.i/20121123.b/vs50bdl.d

Date : 23-NOV-2012 09:39

Client ID: SG-02-S-C-1211

Instrument: nt12.i

Sample Info: VS50B,5

Purge Volume: 150.0

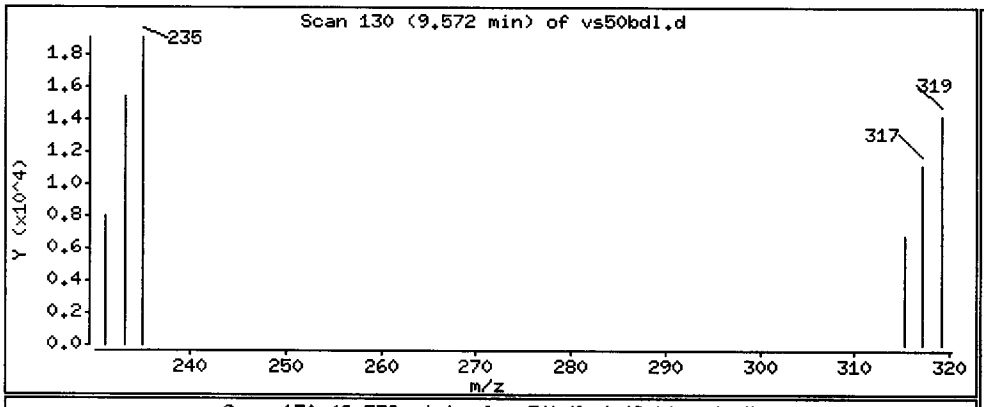
Operator: VTS

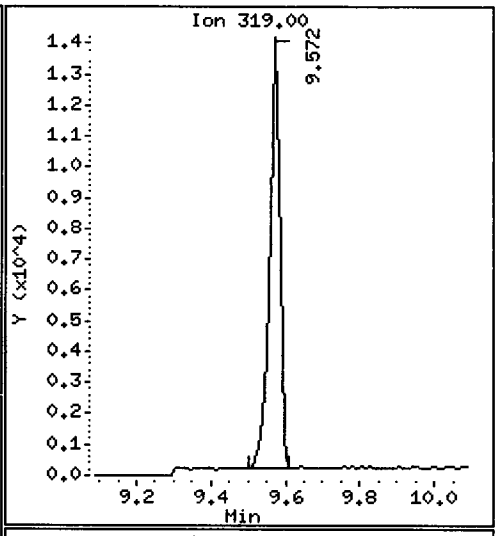
Column phase: ZB-5msi

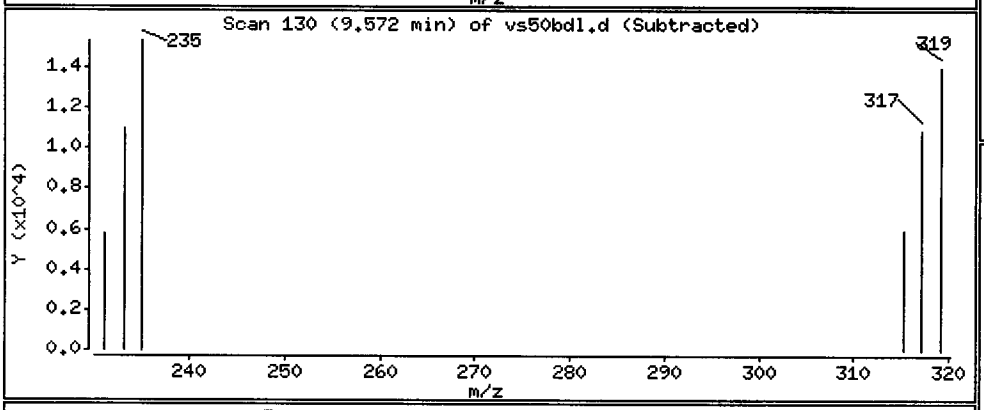
Column diameter: 0.25

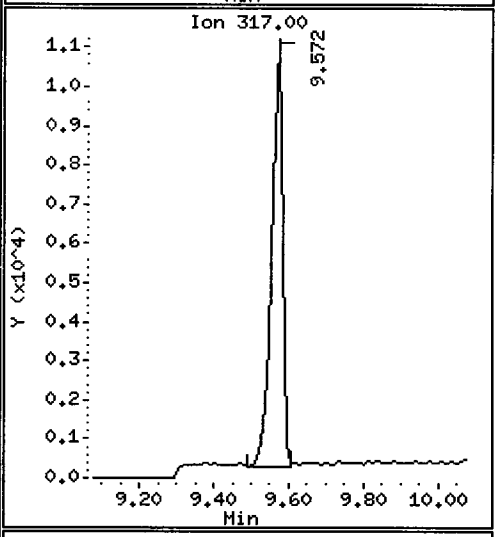
3 Tributyl Tin (Hexyl)

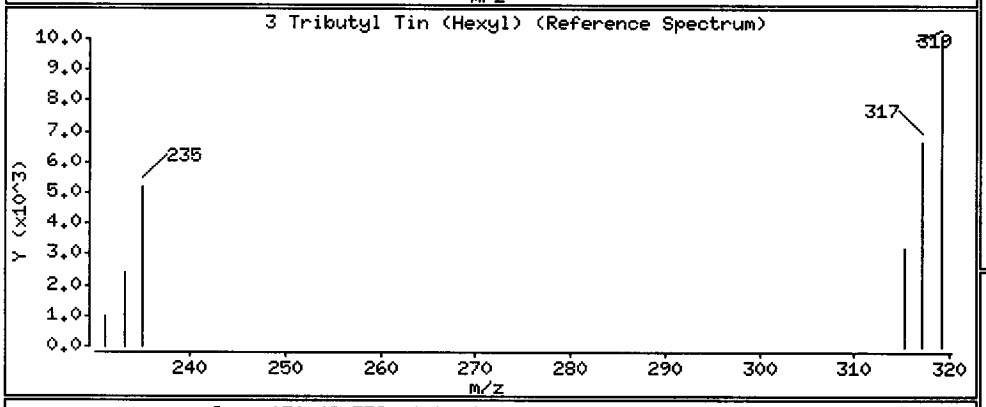
Concentration: 0.8675 ug/L

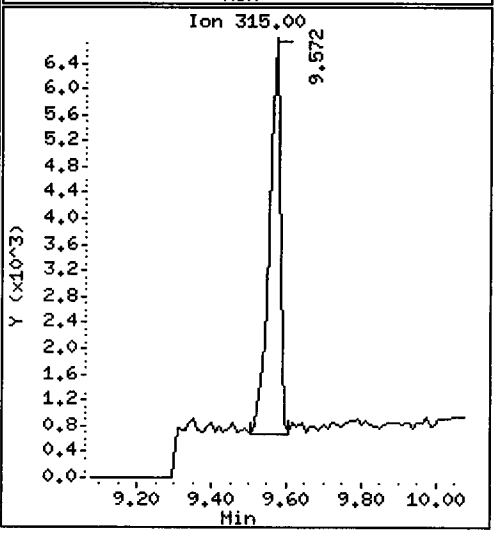


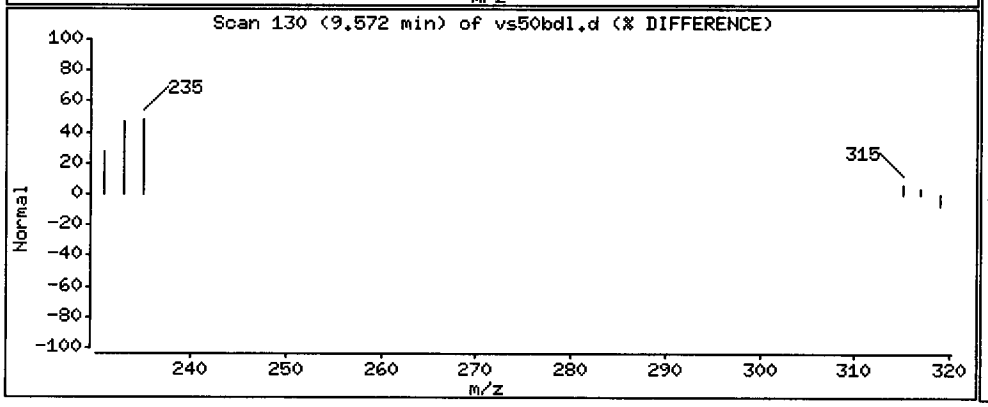












CO-ELUTION SUMMARY FOR FILE - vs50bdl.d

Lab ID: VS50B, Method: pw3ul.m, Instrument: nt12.i, Date: 23-NOV-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt12.i/20121123.b

ARI Job No.: PW 2 Method: pw3ul.m Instrument: nt12.i Date: 23-NOV-2012

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0908	cc1123.d	PW 25		1	NO MANUAL INTEGRATION
0847	df1123.d	DFTPP 5		1	NO MANUAL INTEGRATION
0939	vs50bdl.d	VS50B	SG-02-S-C-	5	NO MANUAL INTEGRATION