



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 03-Sep-09

Cindy Arnold
Tronox, LLC.
PO Box 55
Henderson, NV 89009
(407) 859-3939

CASE NARRATIVE

Project: 2027.001/Tronox LLC. Henderson

Work Order: TRX09081353

Cooler Temp: 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
09081353-01A	FB080409-GW	Aqueous

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Walter Hinchmann, Project Manager, at (800) 283-1183.

Roger Scholl

Randy Gardner

Walter Hinchman

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Organic Acids by HPLC
Alpha Acids
QC Deliverables
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TRX09081353

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**Chain of Custody
Organic Acids by HPLC**

Billing Information :

Northgate Environmental Management, Inc
1100 Quail Street, Suite 102
Newport Beach, CA 92660

CHAIN-OF-CUSTODY RECORD

NV

Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

WorkOrder : TRX09081353

Report Due By : 5:00 PM On : 02-Sep-09

Client:

Tronox, LLC.
PO Box 55
Henderson, NV 89009

Report Attention	Phone Number	Email Address
Cindy Arnold	(407) 859-3939 x	carnold@ngem.com
Frank Hagar	(949) 498-7056 x	frank.hagar@ngem.com

EDD Required : Yes

Sampled by : DB

Cooler Temp 4 °C Samples Received 13-Aug-09 Date Printed 13-Aug-09

QC Level : 4 = Final Rpt, MBLK, LCS, MS/MSD, InitCall/Concal data

Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles Alpha Sub	TAT	Requested Tests	Sample Remarks
TRX09081353-01A	FB080409-GW	AQ 08/04/09 11:00	1	0	14	ACIDS_HPL C_W OrganicAcids

Comments: Security seals intact. Frozen ice. Level IV OC. Do not email PDF's or EDD- needs to be uploaded to an ftp site. Project requires reporting all samples down to TDL. Use TDL report format.

Logged in by: Maia Johnson Signature: [Signature] Print Name: Maia Johnson Company: Alpha Analytical, Inc. Date/Time: 8/13/09 12:00

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Sample Results
Organic Acids by HPLC



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

Tronox, LLC.
PO Box 55
Henderson, NV 89009
Job#: 2027.001/Tronox LLC. Henderson

Attn: Cindy Arnold
Phone: (407) 859-3939
Fax:

Alpha Analytical Number: TRX09081353-01A
Client I.D. Number: FB080409-GW

Sampled: 08/04/09
Received: 08/13/09
Analyzed: 08/16/09

Organic Acids by HPLC Alpha Acids

	Compound	Concentration	Reporting Limit	TDL
1	Dimethyl phosphorodithioic acid	ND	0.25 mg/L	0.13
2	Benzenesulfonic acid	ND	0.050 mg/L	0.025
3	Phthalic acid	ND	0.050 mg/L	0.025
4	Diethyl phosphorodithioic acid	ND	0.050 mg/L	0.025
5	4-Chlorobenzenesulfonic acid	ND	0.050 mg/L	0.025

Note : TDL's as defined in client Laboratory Manual for Analytical Services (March 2009).

Sample data was verified by spike addition confirmation.

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / info@alpha-analytical.com

Alpha Analytical, inc. currently holds appropriate and available NDEP certifications for the data reported - certification #NV16.

9/1/09

Report Date

Raw Data
Chromatograms and Quantitation Reports
Organic Acids by HPLC

METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *ok/ok*
 Peer/QC
 Report *08/18/09* Final *ok*

Data Reprocessed On 08/18/2009 16:17:48

Sample Name: SAMP TRX09091353-01A 2X Date: 08/16/2009 20:48:57
 Data File : C:\DX\DATA\081409\B4531001.D57
 Method : C:\DX\METHOD\ACID.MET
 ACI Address: 1 System: 2 Inject#: 57 Vial: Detector: OTHER
 Analyst : Column:

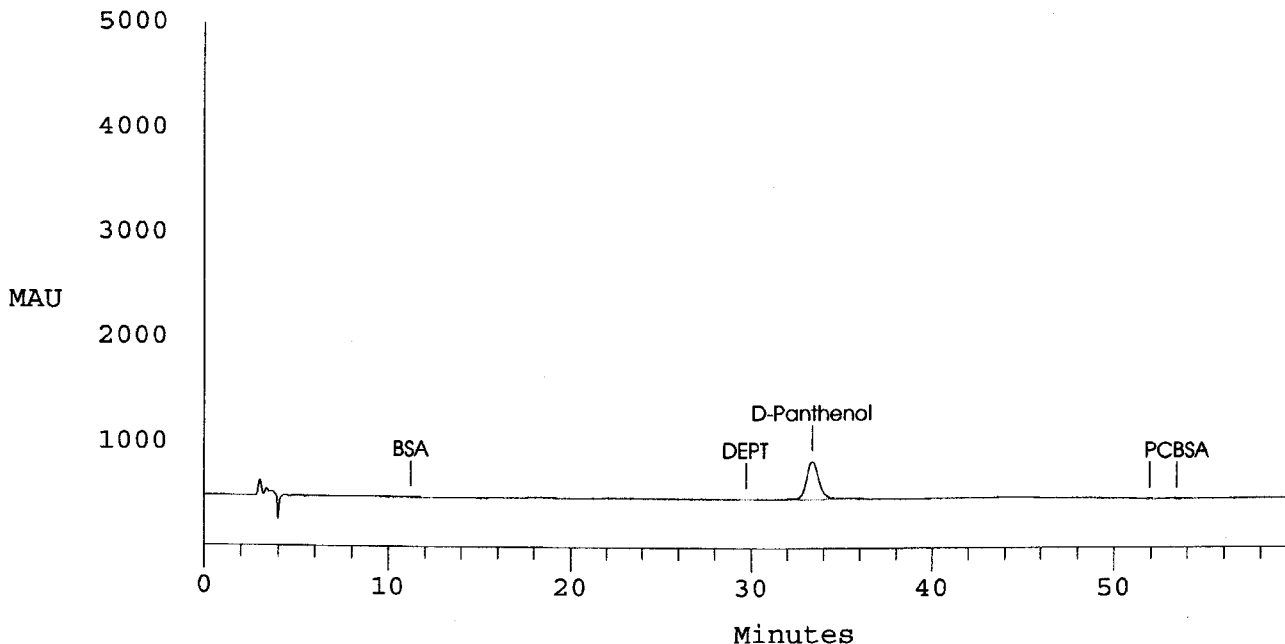
Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 2 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
11.23	3.287e-007	BSA	7327	0.004
29.70	6.615e-007	DEPT	2699	0.003
33.37	6.430e-006	D-Panthenol	1583799	20.021
53.43	2.254e-007	PCBSA	9913	-0.004
Totals			1603738	20.024

no fine e at 10.05 mg/L
DEPT: no fine e at 0.003 mg/L

File: B4531001.D57 Sample: SAMP TRX09091353-01A 2X



**Confirmation Raw Data
Chromatograms and Quantitation Reports
Organic Acids by HPLC**

METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *8/19/09*
 Peer/QC
 Report _____ Final _____

Data Reprocessed On 08/18/2009 16:17:52

```

=====
Sample Name: SAMP TRX09081353-01A 2X + 0.2 Date: 08/16/2009 21:51:39
Data File  : C:\DX\DATA\081409\B4532001.D58
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 58 Vial:          Detector:OTHER
Analyst    :          Column:
=====
  
```

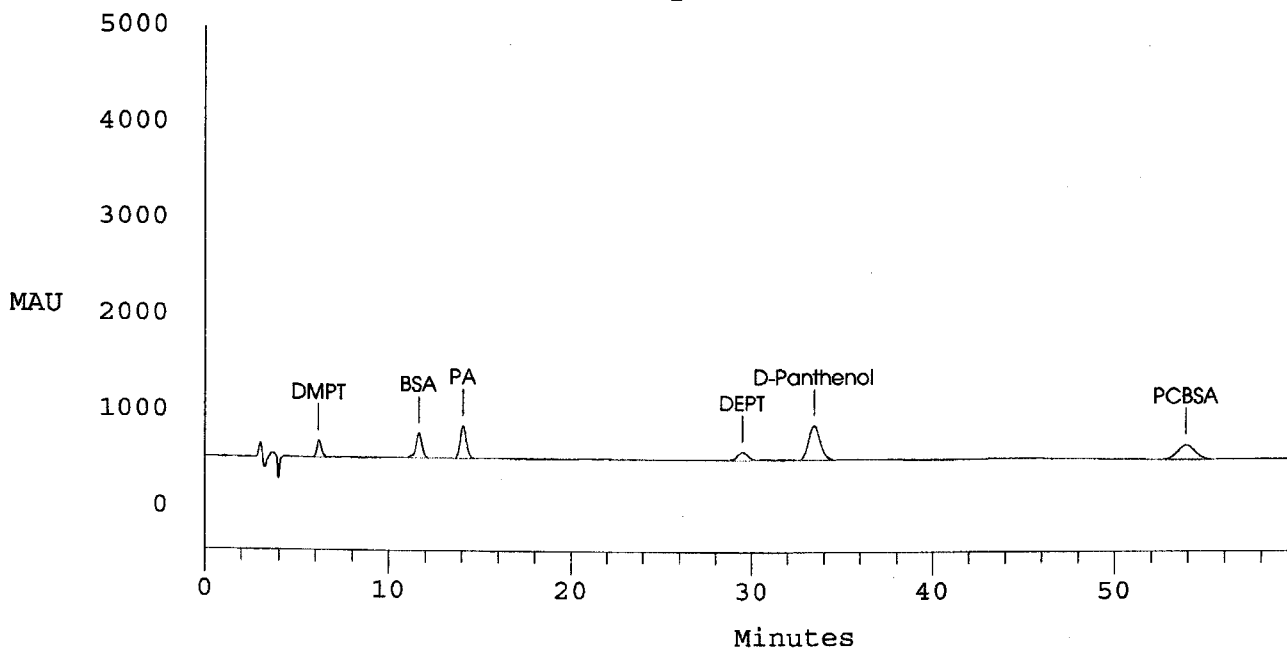
```

-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External           1           2 18000 5Hz  0.00 60.00    1000
  
```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.17	1.446e-006	DMPT	315392	0.891
11.63	3.287e-007	BSA	596652	0.392
14.07	2.720e-007	PA	807740	0.402
29.47	6.615e-007	DEPT	310711	0.410
33.43	6.430e-006	D-Panthenol	1547058	19.549
53.90	2.254e-007	PCBSA	981805	0.434
Totals			4559357	22.078

File: B4532001.D58 Sample: SAMP TRX09081353-01A 2X + 0.2



**Method Blank
Laboratory Control Spike (LCS)
Matrix Spike (MS) and Duplicate (MSD)**

Summary Data

Organic Acids by HPLC



Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:
28-Aug-09

QC Summary Report

Work Order:
09081353

Method Blank

Method Blank		Type	Test Code: Alpha Acids							
File ID:		MBLK	Batch ID: 22549		Analysis Date: 08/14/2009 12:22					
Sample ID:	MBLK-22549	Units : mg/L	Run ID: HPLC_3_090814B		Prep Date: 08/14/2009					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dimethyl phosphorodithioic acid	ND	0.25								
Benzenesulfonic acid	ND	0.05								
Phthalic acid	ND	0.05								
Diethyl phosphorodithioic acid	ND	0.05								
4-Chlorobenzenesulfonic acid	ND	0.05								

Laboratory Control Spike

Laboratory Control Spike		Type	Test Code: Alpha Acids							
File ID:		LCS	Batch ID: 22549		Analysis Date: 08/14/2009 15:31					
Sample ID:	LCS-22549	Units : mg/L	Run ID: HPLC_3_090814B		Prep Date: 08/14/2009					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dimethyl phosphorodithioic acid	1.04	0.25	1		104	50	150			
Benzenesulfonic acid	0.459	0.05	0.5		92	60	140			
Phthalic acid	0.503	0.05	0.5		101	60	140			
Diethyl phosphorodithioic acid	0.518	0.05	0.5		104	60	140			
4-Chlorobenzenesulfonic acid	0.5	0.05	0.5		100	60	140			

Sample Matrix Spike

Sample Matrix Spike		Type	Test Code: Alpha Acids							
File ID:		MS	Batch ID: 22549		Analysis Date: 08/14/2009 23:52					
Sample ID:	09081351-01AMS	Units : mg/L	Run ID: HPLC_3_090814B		Prep Date: 08/14/2009					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dimethyl phosphorodithioic acid	2.1	0.25	2	0	105	50	150			
Benzenesulfonic acid	0.924	0.05	1	0	92	60	140			
Phthalic acid	0.997	0.05	1	0	99.7	60	140			
Diethyl phosphorodithioic acid	0.991	0.05	1	0	99	60	140			
4-Chlorobenzenesulfonic acid	0.98	0.05	1	0	98	60	140			

Sample Matrix Spike Duplicate

Sample Matrix Spike Duplicate		Type	Test Code: Alpha Acids							
File ID:		MSD	Batch ID: 22549		Analysis Date: 08/15/2009 00:55					
Sample ID:	09081351-01AMSD	Units : mg/L	Run ID: HPLC_3_090814B		Prep Date: 08/14/2009					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dimethyl phosphorodithioic acid	2.07	0.25	2	0	103	50	150	2.104	1.7(20)	
Benzenesulfonic acid	0.892	0.05	1	0	89	60	140	0.924	3.5(20)	
Phthalic acid	0.973	0.05	1	0	97	60	140	0.997	2.4(20)	
Diethyl phosphorodithioic acid	0.986	0.05	1	0	99	60	140	0.991	0.5(20)	
4-Chlorobenzenesulfonic acid	0.966	0.05	1	0	97	60	140	0.98	1.4(20)	

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Sample data was verified by spike addition confirmation.

Method Blank
Laboratory Control Spike (LCS/LCSD)
Matrix Spike (MS) and Duplicate (MSD)

Raw Data
Organic Acids by HPLC

METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *8/18/09*
 Peer/QC
 Report _____ Final _____

Data Reprocessed On 08/18/2009 16:13:36

```

=====
Sample Name: MBLK ...MBLK-22549      Date: 08/14/2009 12:22:59
Data File  : C:\DX\DATA\081409\B4879001.D03
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 3   Vial:           Detector:OTHER
Analyst    :           Column:
=====
  
```

```

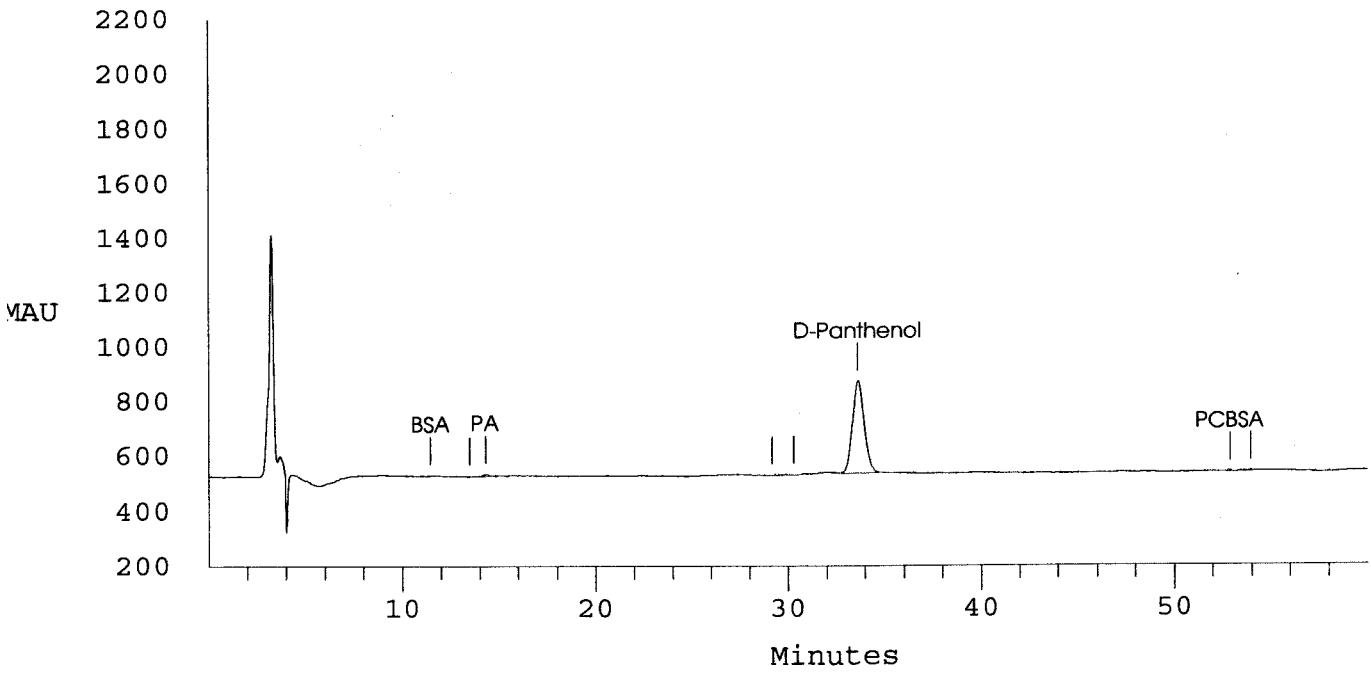
-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External           1           1 18000 5Hz  0.00 60.00      1000
  
```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
11.47	3.287e-007	BSA	2806	0.001
14.30	2.720e-007	PA	11186	-0.016
33.60	6.430e-006	D-Panthenol	1411360	8.902
52.90	2.254e-007	PCBSA	1088	-0.004
Totals			1426440	8.883

no f at 2.25/0.05 mg/L

File: B4879001.D03 Sample: MBLK ...MBLK-22549



METHOD HPLC ACIDS
HPLC #3 UV DETECTOR
Test Code: XXX_XX

Result *8/19/09*
Peer/QC
Report _____ Final _____

Data Reprocessed On 08/18/2009 16:13:43

```

=====
| Sample Name: LCS ...LCS-22549          Date: 08/14/2009 15:31:15
| Data File  : C:\DX\DATA\081409\B4882001.D06
| Method     : C:\DX\METHOD\ACID.MET
| ACI Address: 1 System: 2 Inject#: 6   Vial:          Detector:OTHER
| Analyst    :                               Column:
=====

```

```

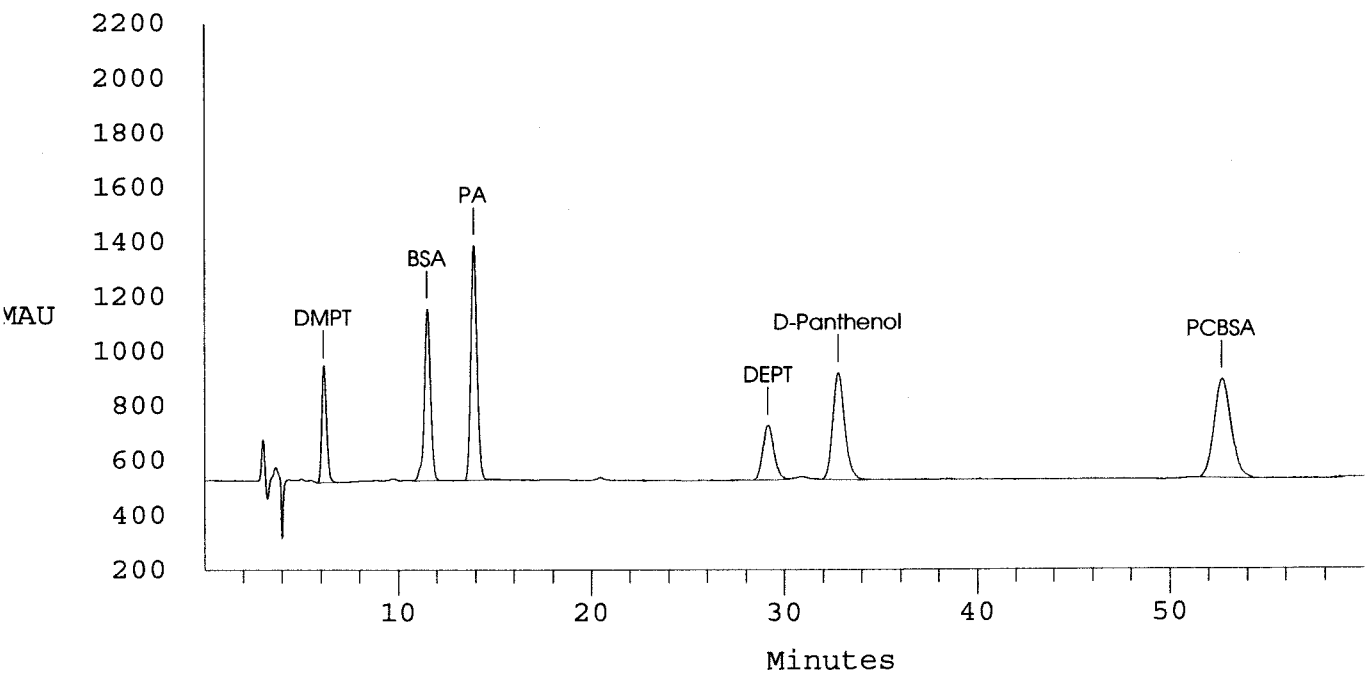
-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1           1 18000 5Hz  0.00 60.00      1000
-----

```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.13	1.446e-006	DMPT	729143	1.044
11.50	3.287e-007	BSA	1395913	0.459
13.90	2.720e-007	PA	1918066	0.503
29.13	6.615e-007	DEPT	783604	0.518
32.77	6.430e-006	D-Panthenol	1684848	10.660
52.67	2.254e-007	PCBSA	2236456	0.500
Totals			8748029	13.683

File: B4882001.D06 Sample: LCS ...LCS-22549



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

8/14/09

Result _____
 Peer/QC _____
 Report _____ Final _____

Data Reprocessed On 08/18/2009 16:14:00

```

=====
Sample Name: SAMP TRX09081621-01A 2X      Date: 08/14/2009 22:50:18
Data File  : C:\DX\DATA\081409\B4889001.D13
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 13 Vial:      Detector: OTHER
Analyst    :                               Column:
=====
  
```

```

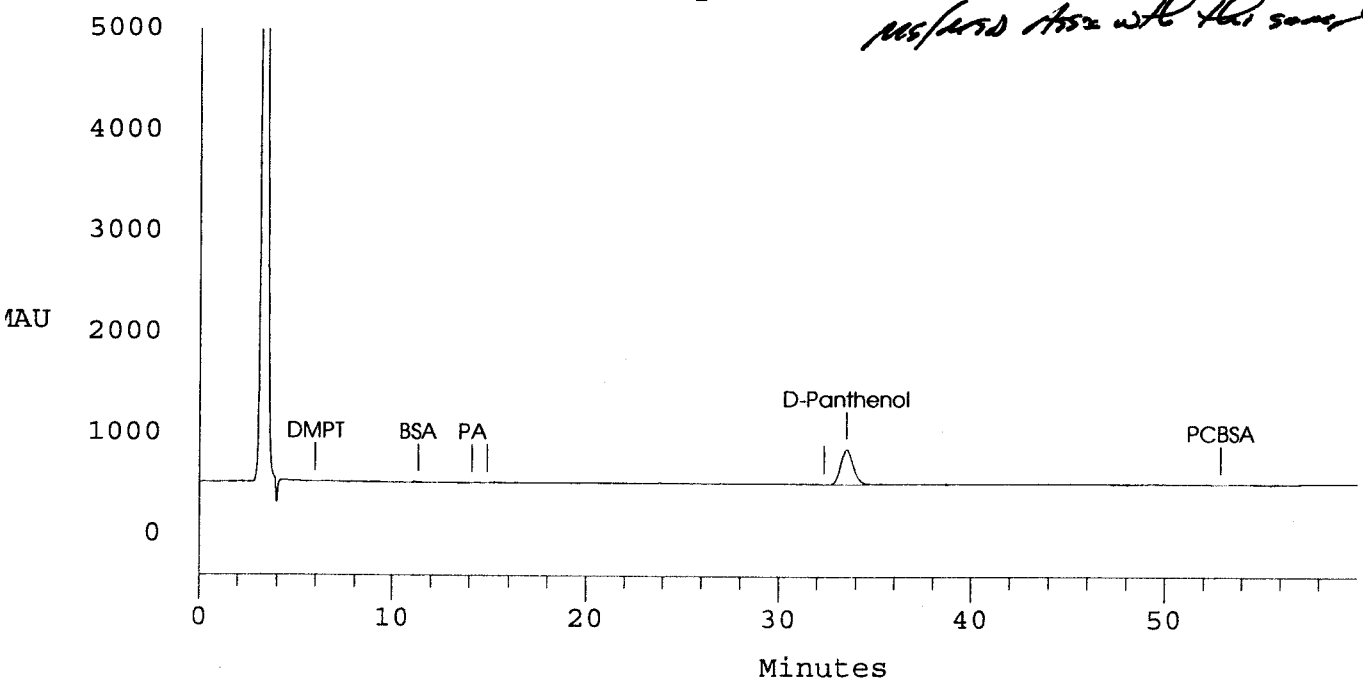
-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External           1           2 18000 5Hz  0.00 60.00      1000
  
```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
5.97	1.446e-006	DMPT	4848	-0.007
11.30	3.287e-007	BSA	22932	0.014
14.13	2.720e-007	PA	4939	-0.035
33.47	6.430e-006	D-Panthenol	1484972	18.751
52.83	2.254e-007	PCBSA	6642	-0.005
Totals			1524332	18.718

no peak at 0.05 mg/L
5.97: no peak
0.025 mg/L

File: B4889001.D13 Sample: SAMP TRX09081621-01A 2X



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *5/18/09 ✓*
 Peer/QC
 Report _____ Final _____

Data Reprocessed On 08/18/2009 16:14:03

```

=====
Sample Name: MS TRX09081621-01AMS 2X      Date: 08/14/2009 23:52:59
Data File  : C:\DX\DATA\081409\B4890001.D14
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 14 Vial:      Detector:OTHER
Analyst    :                               Column:
=====
  
```

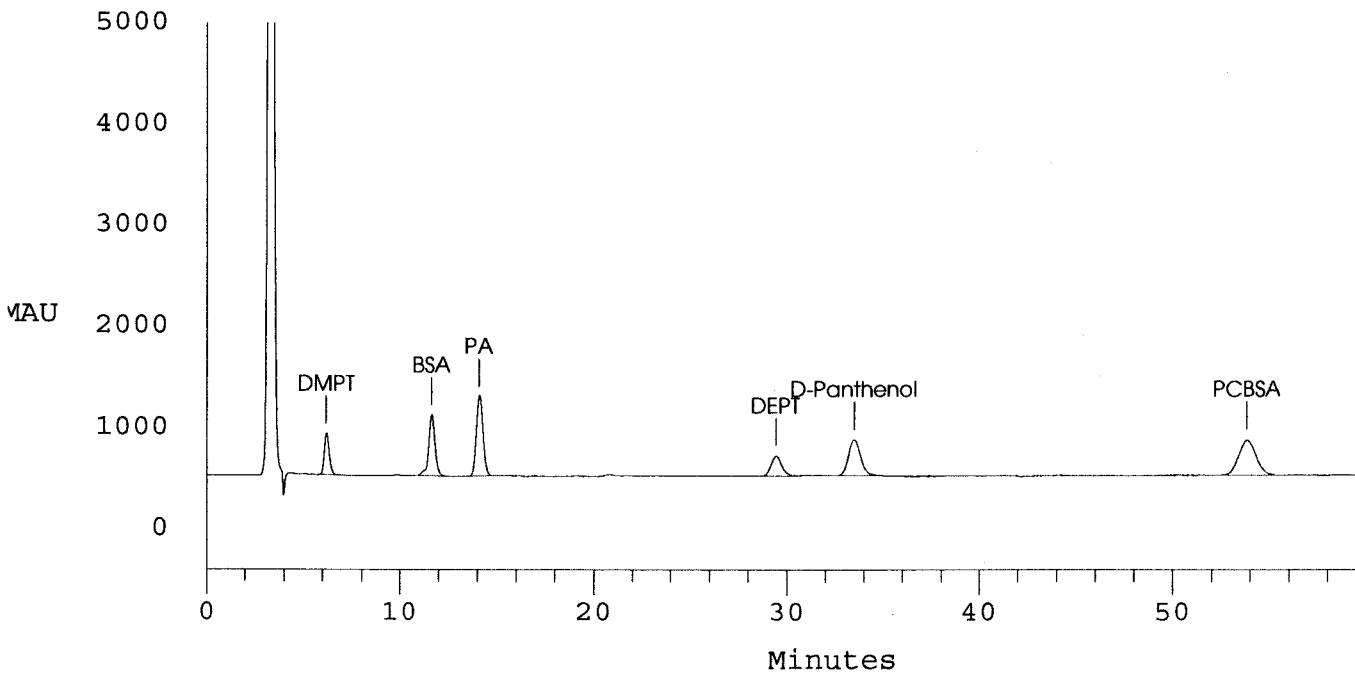
```

-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External           1           2 18000 5Hz  0.00 60.00      1000
  
```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.17	1.446e-006	DMPT	735063	2.104
11.63	3.287e-007	BSA	1406217	0.924
14.07	2.720e-007	PA	1900978	0.997
29.40	6.615e-007	DEPT	749719	0.991
33.47	6.430e-006	D-Panthenol	1535775	19.404
53.80	2.254e-007	PCBSA	2192010	0.980
Totals			8519762	25.400

File: B4890001.D14 Sample: MS TRX09081621-01AMS 2X



METHOD HPLC ACIDS
HPLC #3 UV DETECTOR
Test Code: XXX_XX

Result *8/19/09*
Peer/QC
Report _____ Final _____

Data Reprocessed On 08/18/2009 16:14:05

```

=====
Sample Name: MSD TRX09081621-01AMSD 12X   Date: 08/15/2009 00:55:41
Data File  : C:\DX\DATA\081409\B4891001.D15
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 15 Vial:      Detector: OTHER
Analyst    :                               Column:
=====

```

```

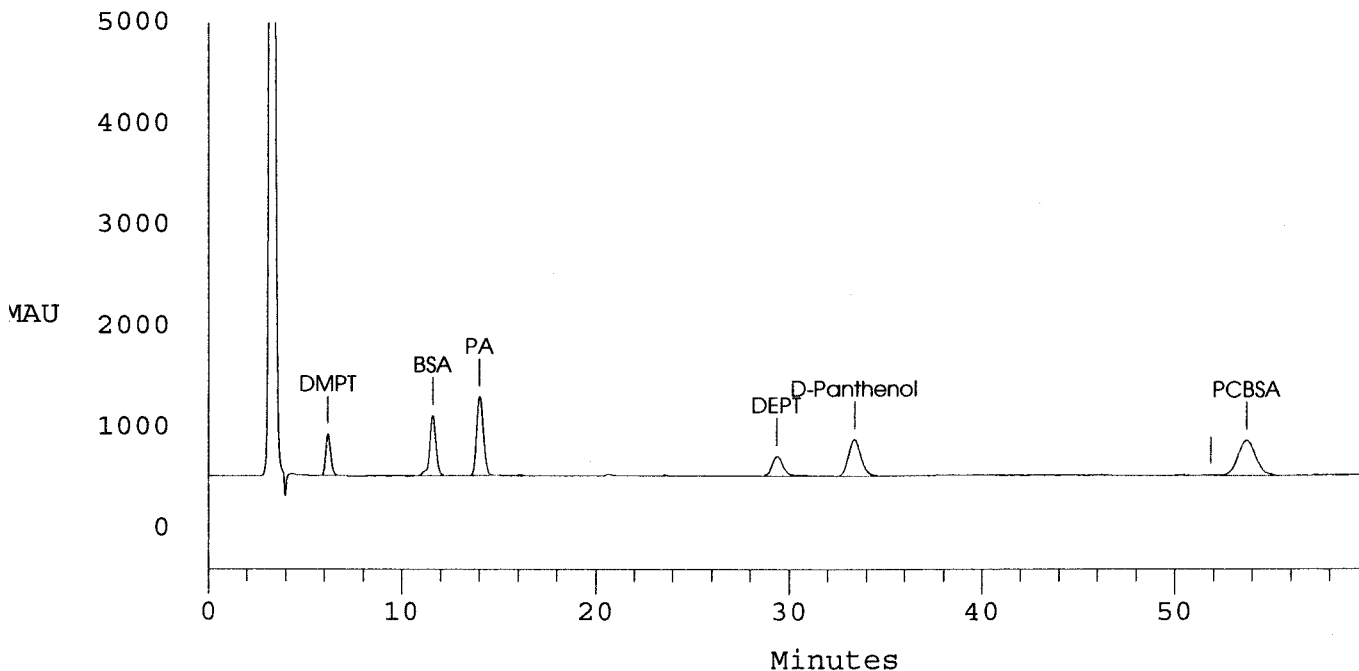
-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External           1           2 18000 5Hz  0.00 60.00      1000
-----

```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.17	1.446e-006	DMPT	722804	2.069
11.60	3.287e-007	BSA	1358526	0.892
14.00	2.720e-007	PA	1857543	0.973
29.33	6.615e-007	DEPT	745958	0.986
33.37	6.430e-006	D-Panthenol	1559967	19.715
53.70	2.254e-007	PCBSA	2161205	0.966
Totals			8406003	25.601

File: B4891001.D15 Sample: MSD TRX09081621-01AMSD 12X



**Initial Calibration
Summary Data
Organic Acids by HPLC**

Organic Acids Initial Calibration (IC)
Summary Table
Proprietary In-house Procedure

Lab Name: Alpha Analytical, Inc.
Instrument ID: HPLC #3
Analyst Initials: JV
QC Rev Initials: WH

Batch: 22549
Date: 8/14/2009

		Concentration (mg/L)							
		IC-1	IC-2	IC-3	IC-4	IC-5	IC-6	IC-7	IC-8
Date Analyzed	4411001.d08	4412001.d09	4413001.d10	4414001.d11	4415001.d12	4416001.d13	4417001.d14	4418001.d15	
Time Analyzed	6/2/2009 5:24:20 PM	6/2/2009 6:32:55 PM	6/2/2009 7:41:30 PM	6/2/2009 8:50:10 PM	6/2/2009 9:58:46 PM	6/2/2009 11:07:22 PM	6/3/2009 12:16:05 AM	6/3/2009 1:24:37 AM	
DMP	0.0625	0.1250	0.2500	0.6250	1.2500	2.5000	3.7500	5.0000	
BSA	0.0250	0.0500	0.1000	0.2500	0.5000	1.0000	1.5000	2.0000	
PA	0.0250	0.0500	0.1000	0.2500	0.5000	1.0000	1.5000	2.0000	
DEPT	0.0250	0.0500	0.1000	0.2500	0.5000	1.0000	1.5000	2.0000	
PCBSA	0.0250	0.0500	0.1000	0.2500	0.5000	1.0000	1.5000	2.0000	

		Response							
		IC-1	IC-2	IC-3	IC-4	IC-5	IC-6	IC-7	IC-8
Date Analyzed	4411001.d08	4412001.d09	4413001.d10	4414001.d11	4415001.d12	4416001.d13	4417001.d14	4418001.d15	
Time Analyzed	6/2/2009 5:24:20 PM	6/2/2009 6:32:55 PM	6/2/2009 7:41:30 PM	6/2/2009 8:50:10 PM	6/2/2009 9:58:46 PM	6/2/2009 11:07:22 PM	6/3/2009 12:16:05 AM	6/3/2009 1:24:37 AM	
DMP	46797	87948	168367	449022	889036	1730732	2610389	3456889	
BSA	61771	137858	284793	784576	1547455	3057536	4581387	6056782	
PA	121982	196509	435976	1047983	1941613	3745198	5624396	7372870	
DEPT	34682	61428	160275	406470	751885	1494805	2284394	3018277	
PCBSA	105332	201649	464100	1152183	2262016	4485504	6696299	8851547	

		Calibration Factor (CF) = [Response/Concentration (mg/L)]								Average Calibration Factor (CF)	Standard Deviation	Relative Standard Deviation (RSD%)
		IC-1	IC-2	IC-3	IC-4	IC-5	IC-6	IC-7	IC-8			
Date Analyzed	4411001.d08	4412001.d09	4413001.d10	4414001.d11	4415001.d12	4416001.d13	4417001.d14	4418001.d15				
Time Analyzed	6/2/2009 5:24:20 PM	6/2/2009 6:32:55 PM	6/2/2009 7:41:30 PM	6/2/2009 8:50:10 PM	6/2/2009 9:58:46 PM	6/2/2009 11:07:22 PM	6/3/2009 12:16:05 AM	6/3/2009 1:24:37 AM				
DMP	748752	703584	673468	718435	711229	692293	696104	691378		704405	22530	3.20
BSA	2470840	2757160	2847930	3138304	3094910	3057536	3054258	3028391		2931166	226589	7.73
PA	4879280	3930180	4359760	4191932	3883226	3745198	3749597	3686435		4053201	407293	10.05
DEPT	1387280	1228560	1602750	1625880	1503770	1494805	1522929	1509139		1484389	126203	8.50
PCBSA	4213280	4032980	4641000	4608732	4524032	4485504	4464199	4425774		4424438	204912	4.63

**Initial Calibration
Raw Data
Organic Acids by HPLC**

METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XI

Result *4/3/09*
 Peer/QC
 Report _____ Final _____

Data Reprocessed On 06/03/2009 07:06:17

 Sample Name: .25/.0625/.025 ug/mL LC090531-3 Date: 06/02/2009 17:24:20
 Data File : C:\DX\DATA\060209\B4411001.D08
 Method : C:\DX\METHOD\ACID.MET
 ACI Address: 1 System: 2 Inject#: 8 Vial: Detector: OTHER
 Analyst : Column: -----

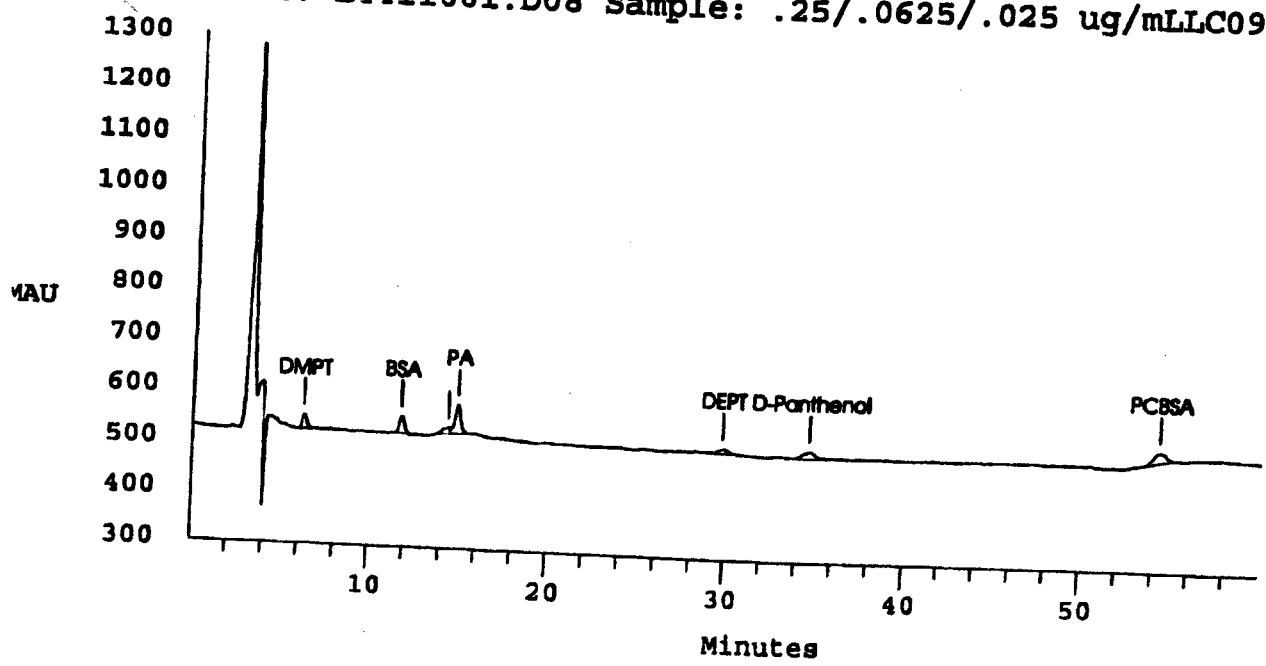
 Calibration Volume Dilution Points Rate Start Stop Area Reject

 External 1 1 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.20	1.446e-006	DMPT		
11.73	3.287e-007	BSA	46797	0.057
14.87	2.720e-007	PA	61771	0.020
29.73	6.615e-007	DEPT	121982	0.014
34.67	6.430e-006	D-Panthenol	34682	0.022
54.30	2.254e-007	PCBSA	65700	0.250
			105332	0.020
Totals			436264	0.384

File: B4411001.D08 Sample: .25/.0625/.025 ug/mL LC090531-3



METHOD HPLC ACIDS
HPLC #3 UV DETECTOR
Test Code: XXX_XX

Result *4/2/09*
Peer/QC
Report Final

Data Reprocessed On 06/03/2009 07:06:19

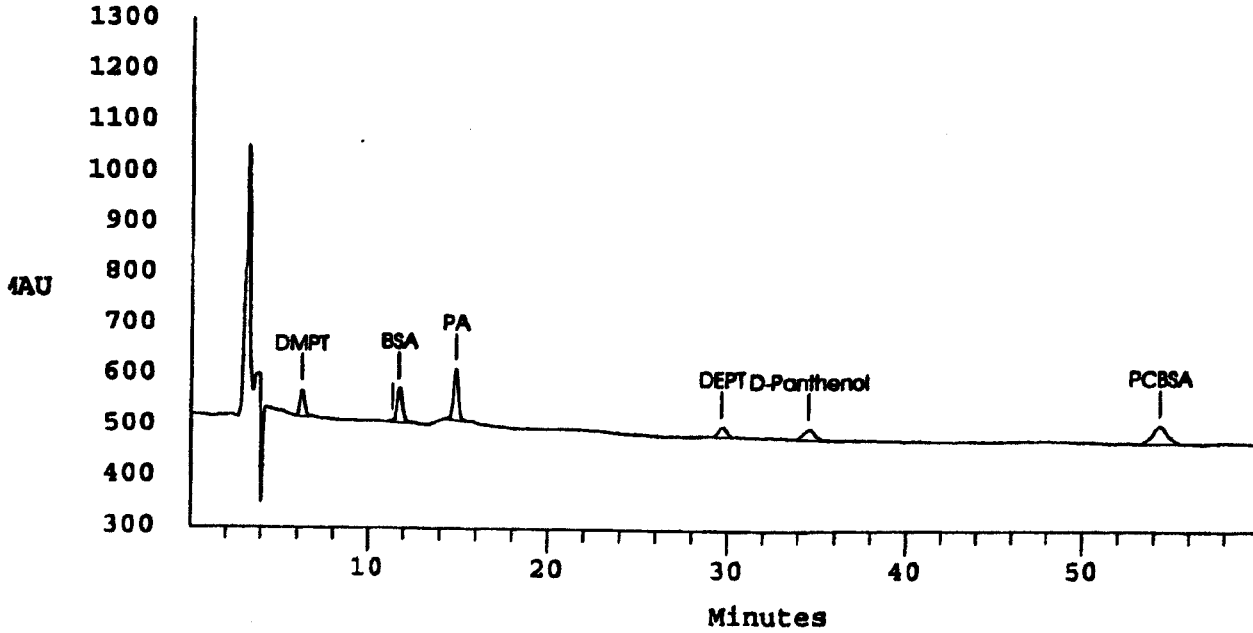
Sample Name: .5/.125/.05 ug/mL LC090531-04 Date: 06/02/2009 18:32:55
Data File : C:\DX\DATA\060209\B4412001.D09
Method : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 9 Vial: Detector: OTHER
Analyst : Column:

Calibration Volume Dilution Points Rate Start Stop Area Reject
External 1 1 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.20	1.446e-006	DMPT	87948	0.117
11.70	3.287e-007	BSA	137877	0.045
14.83	2.720e-007	PA	196509	0.035
29.60	6.615e-007	DEPT	61428	0.040
34.50	6.430e-006	D-Panthenol	93929	0.431
54.23	2.254e-007	PCBSA	201649	0.041
Totals			779340	0.709

File: B4412001.D09 Sample: .5/.125/.05 ug/mL LC090531-04



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *U/SPT*
 Peer/QC
 Report Final

Data Reprocessed On 06/03/2009 07:06:22

 Sample Name: 1.0/.25/.1 ug/mL LC090531-05 Date: 06/02/2009 19:41:30
 Data File : C:\DX\DATA\060209\B4413001.D10
 Method : C:\DX\METHOD\ACID.MET
 ACI Address: 1 System: 2 Inject#: 10 Vial: Detector: OTHER
 Analyst : Column:

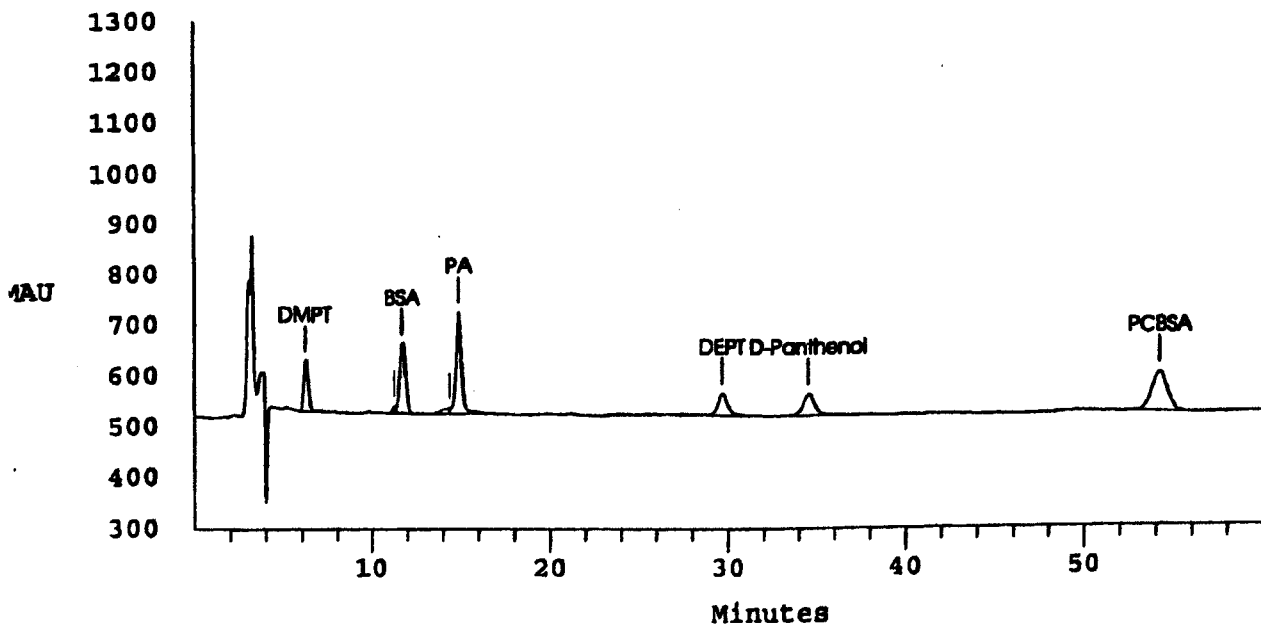
 alibration Volume Dilution Points Rate Start Stop Area Reject

 xternal 1 1 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.17	1.446e-006	DMPT	168367	0.233
11.70	3.287e-007	BSA	284793	0.093
14.83	2.720e-007	PA	435976	0.100
29.60	6.615e-007	DEPT	160275	0.106
34.47	6.430e-006	D-Panthenol	178457	0.975
54.13	2.254e-007	PCBSA	464100	0.100
Totals			1691969	1.607

File: B4413001.D10 Sample: 1.0/.25/.1 ug/mL LC090531-05



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *UPLC*
 Peer/QC
 Report Final

Data Reprocessed On 06/03/2009 07:06:24

 Sample Name: 2.5/.625/.25 ug/mL C090531-06 Date: 06/02/2009 20:50:10
 Data File : C:\DX\DATA\060209\B4414001.D11
 Method : C:\DX\METHOD\ACID.MET
 ACI Address: 1 System: 2 Inject#: 11 Vial: Detector: OTHER
 Analyst : Column:

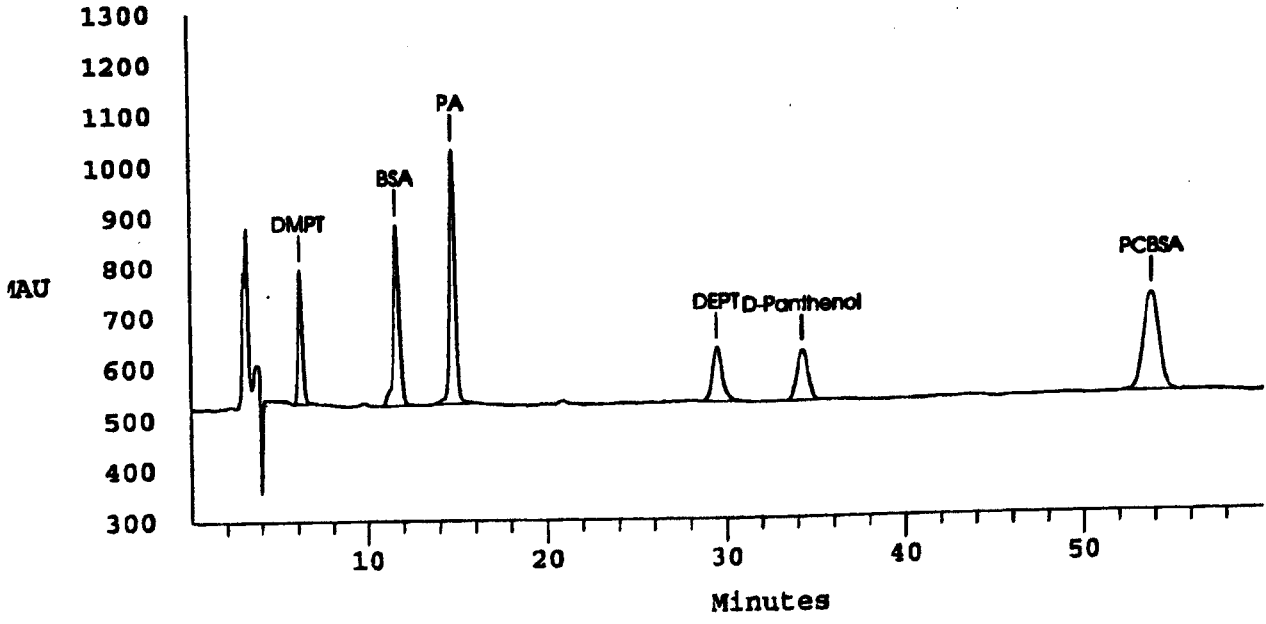
 Calibration Volume Dilution Points Rate Start Stop Area Reject

 External 1 1 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

Ret Time	Response Factor Name	Component	Area	Concentration mg/L
6.17	1.446e-006	DMPT	449022	0.639
11.67	3.287e-007	BSA	784576	0.258
14.77	2.720e-007	PA	1047983	0.266
29.43	6.615e-007	DEPT	406470	0.268
34.23	6.430e-006	D-Panthenol	403888	2.424
53.77	2.254e-007	PCBSA	1152183	0.255
Totals			4244121	4.111

File: B4414001.D11 Sample: 2.5/.625/.25 ug/mL C090531-06



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *493/97*
 Peer/QC
 Report Final

Data Reprocessed On 06/03/2009 07:06:27

 Sample Name: 5.0/1.25/.5 ug/mL LC090531-07 Date: 06/02/2009 21:58:46
 Data File : C:\DX\DATA\060209\B4415001.D12
 Method : C:\DX\METHOD\ACID.MBT
 ACI Address: 1 System: 2 Inject#: 12 Vial: Detector: OTHER
 Analyst : Column:

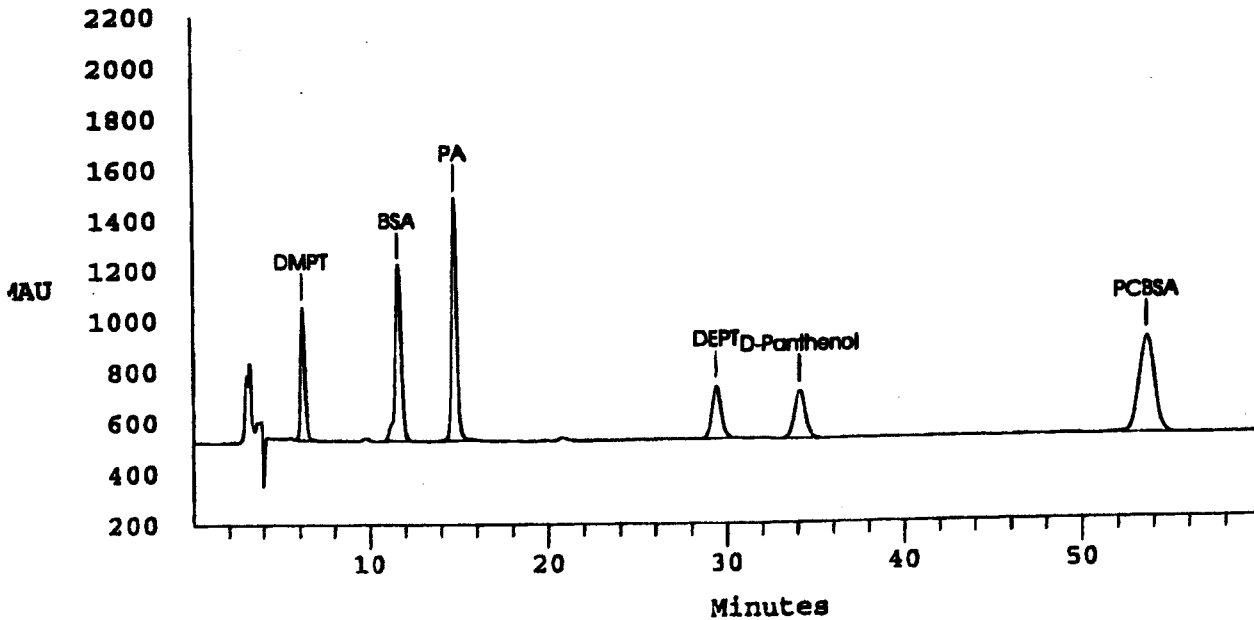
 Calibration Volume Dilution Points Rate Start Stop Area Reject

 External 1 1 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.13	1.446e-006	DMPT	889036	1.275
11.60	3.287e-007	BSA	1547455	0.508
14.70	2.720e-007	PA	1941613	0.509
29.37	6.615e-007	DEPT	751885	0.497
34.07	6.430e-006	D-Panthenol	821858	5.112
53.53	2.254e-007	PCBSA	2262016	0.506
Totals			8213862	8.407

File: B4415001.D12 Sample: 5.0/1.25/.5 ug/mL LC090531-07



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *0/3/09*
 Peer/QC
 Report _____ Final _____

Data Reprocessed On 06/03/2009 07:06:29

 Sample Name: 10/2.5/1.0 ug/mL LC090531-08 Date: 06/02/2009 23:07:22
 Data File : C:\DX\DATA\060209\B4416001.D13
 Method : C:\DX\METHOD\ACID.MET
 ACI Address: 1 System: 2 Inject#: 13 Vial: Detector: OTHER
 Analyst : Column:

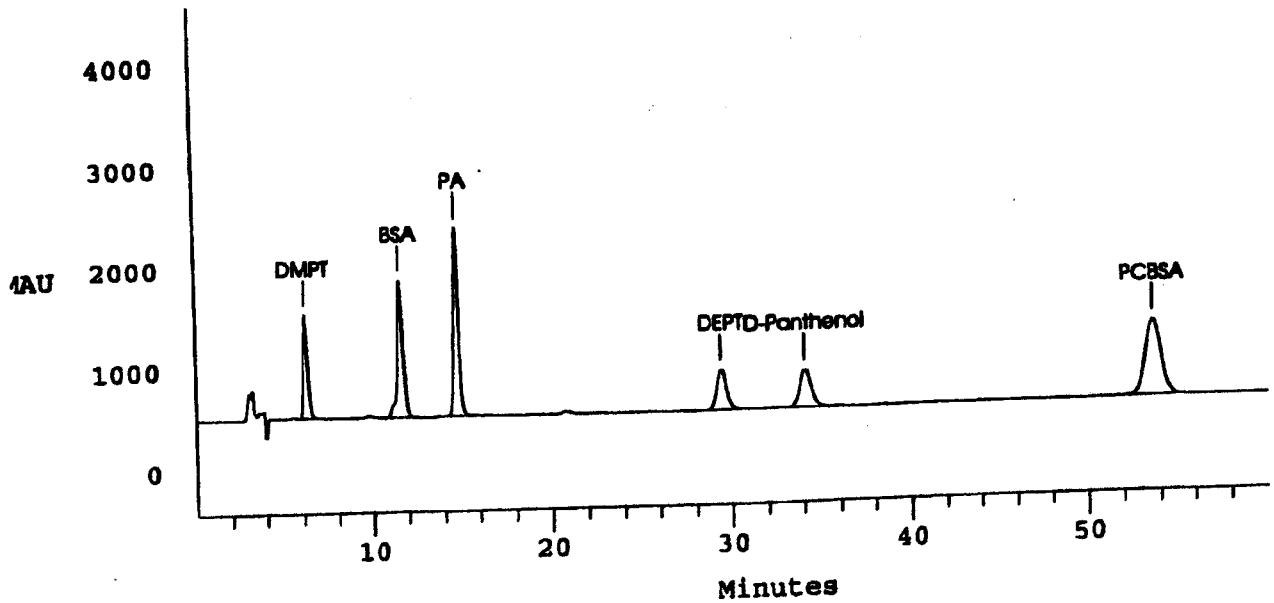
 elution Volume Dilution Points Rate Start Stop Area Reject

 Internal 1 1 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.13	1.446e-006	DMPT	1730732	2.492
11.60	3.287e-007	BSA	3057536	1.005
14.70	2.720e-007	PA	3745198	1.000
29.40	6.615e-007	DEPTD	1494805	0.988
34.07	6.430e-006	Panthenol	1593392	10.072
53.57	2.254e-007	PCBSA	4485504	1.007
Totals			16107168	16.564

File: B4416001.D13 Sample: 10/2.5/1.0 ug/mL LC090531-08



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *u/s*
 Peer/QC
 Report Final

Data Reprocessed On 06/03/2009 07:06:31

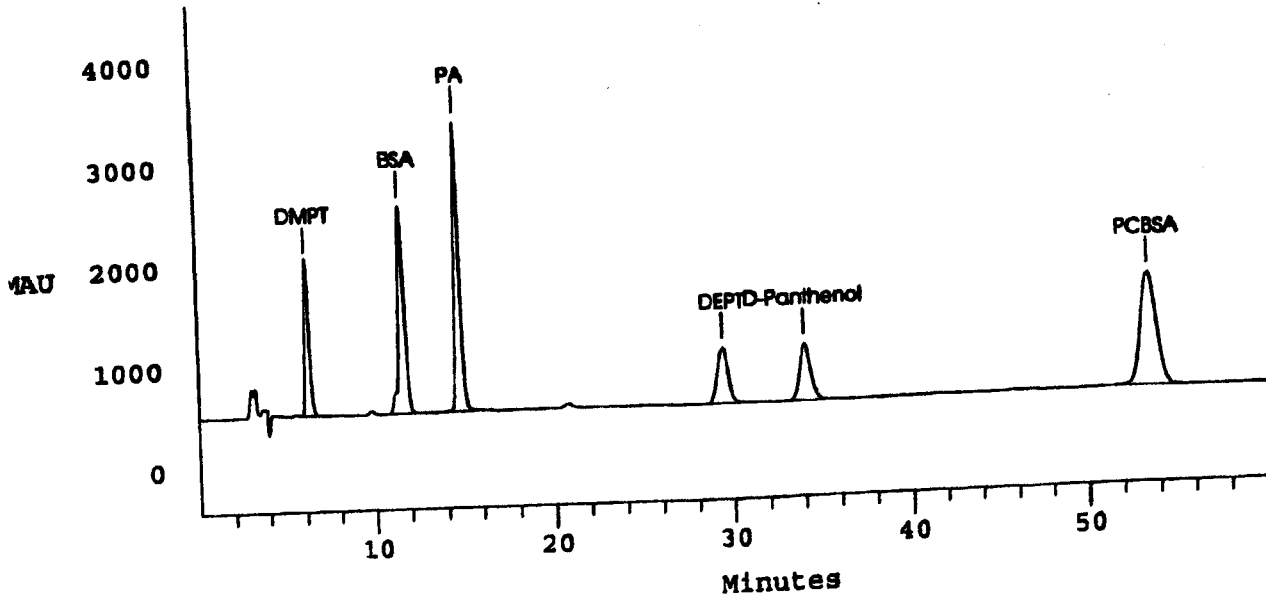
 Sample Name: 15/3.75/1.5 ug/mL LC090531-09 Date: 06/03/2009 00:16:05
 Data File : C:\DX\DATA\060209\B4417001.D14
 Method : C:\DX\METHOD\ACID.MET Detector: OTHER
 ACI Address: 1 System: 2 Inject#: 14 Vial:
 Analyst : Column:

 Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 1 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.13	1.446e-006	DMPT	2610389	3.763
11.60	3.287e-007	BSA	4581387	1.506
14.70	2.720e-007	PA	5624396	1.511
29.40	6.615e-007	DEPT	2284394	1.511
33.97	6.430e-006	D-Panthenol	2385431	15.165
53.37	2.254e-007	PCBSA	6696299	1.505
Totals			24182296	24.961

File: B4417001.D14 Sample: 15/3.75/1.5 ug/mL LC090531-09



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result ^{7/2/09}
 Peer/QC ✓
 Report _____ Final _____

Data Reprocessed On 06/03/2009 07:06:34

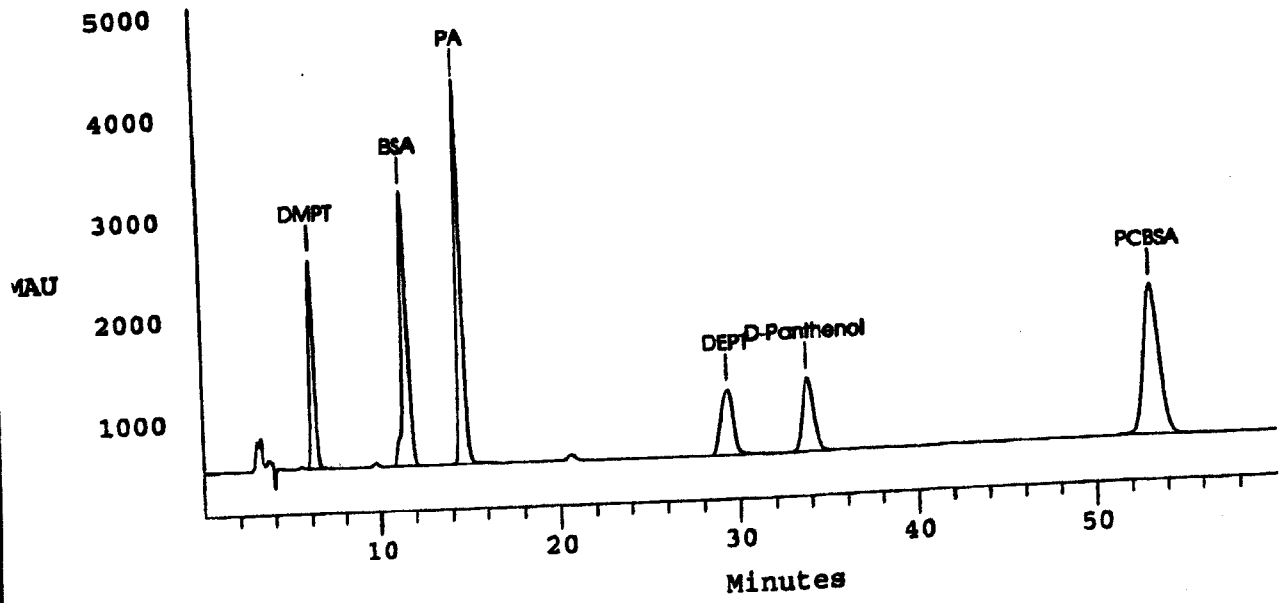
Sample Name: 20/5.0/2.0 ug/mL LC090531-10 Date: 06/03/2009 01:24:37
 Data File : C:\DX\DATA\060209\B4418001.D15
 Method : C:\DX\METHOD\ACID.MET Detector: OTHER
 ACI Address: 1 System: 2 Inject#: 15 Vial:
 Analyst : Column:

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 1 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.13	1.446e-006	DMPT	3456889	4.987
11.53	3.287e-007	BSA	6056782	1.991
14.60	2.720e-007	PA	7372870	1.987
29.37	6.615e-007	DEPT	3018277	1.996
33.80	6.430e-006	D-Panthenol	3109486	19.820
53.10	2.254e-007	PCBSA	8851547	1.991
Totals			31865852	32.772

File: B4418001.D15 Sample: 20/5.0/2.0 ug/mL LC090531-10



METHOD HPLC ACIDS
 PLC #3 UV DETECTOR
 est Code: XXX_XX

Result *4/3/08*
 Peer/QC
 Report _____ Final _____

Data Reprocessed On 06/03/2009 07:06:36

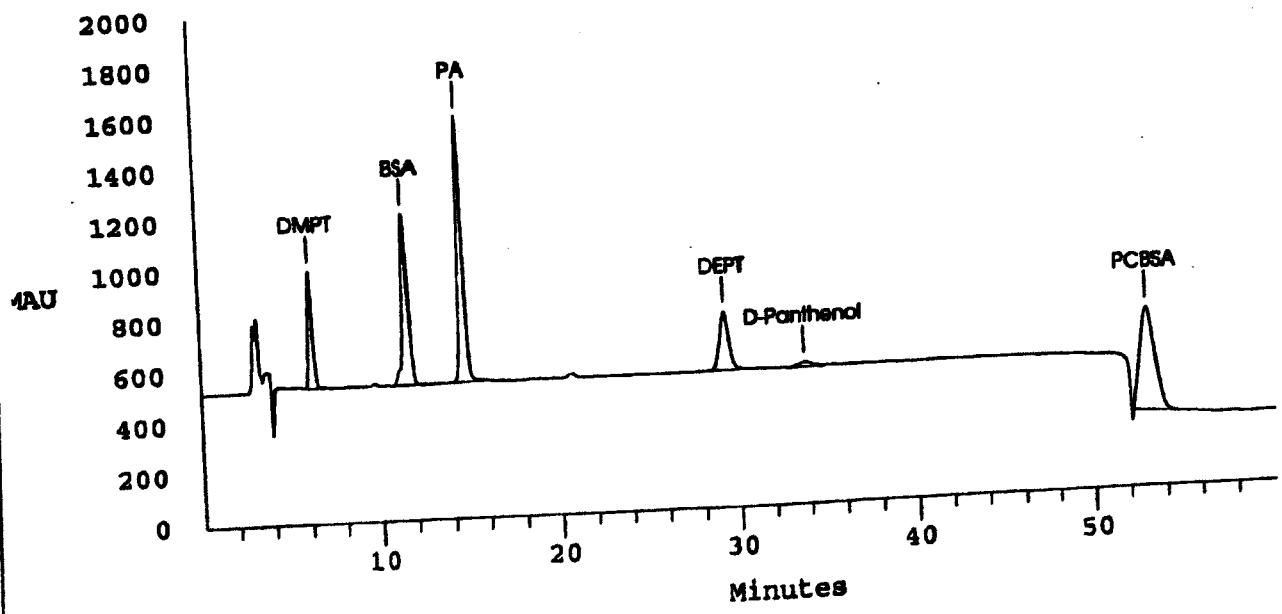
Sample Name: 1.0/0.5 ug/m ICV LC090531-11 Date: 06/03/2009 02:33:11
 Data File : C:\DX\DATA\060209\B4419001.D16
 Method : C:\DX\METHOD\ACID.MET Detector: OTHER
 ACI Address: 1 System: 2 Inject#: 16 Vial:
 Analyst : Column:

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 1 18000 5Hz 0.00 60.00 1000

***** Component Report: Components Found *****

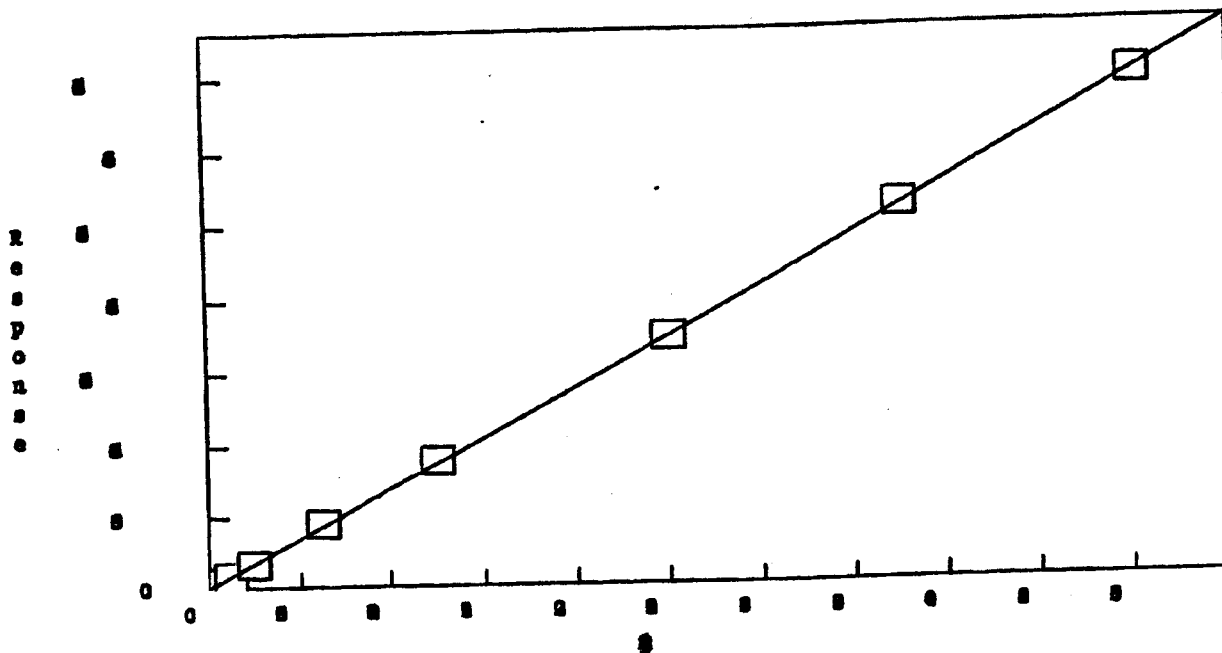
Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.13	1.446e-006	DMPT	777622	1.114
11.57	3.287e-007	BSA	1478334	0.486
14.63	2.720e-007	PA	2101892	0.553
29.20	6.615e-007	DEPT	820385	0.542
33.70	6.430e-006	D-Panthenol	96669	0.449
52.97	2.254e-007	PCBSA	2305943	0.516
Totals			7580846	3.659

File: B4419001.D16 Sample: 1.0/0.5 ug/m ICV LC090531-11



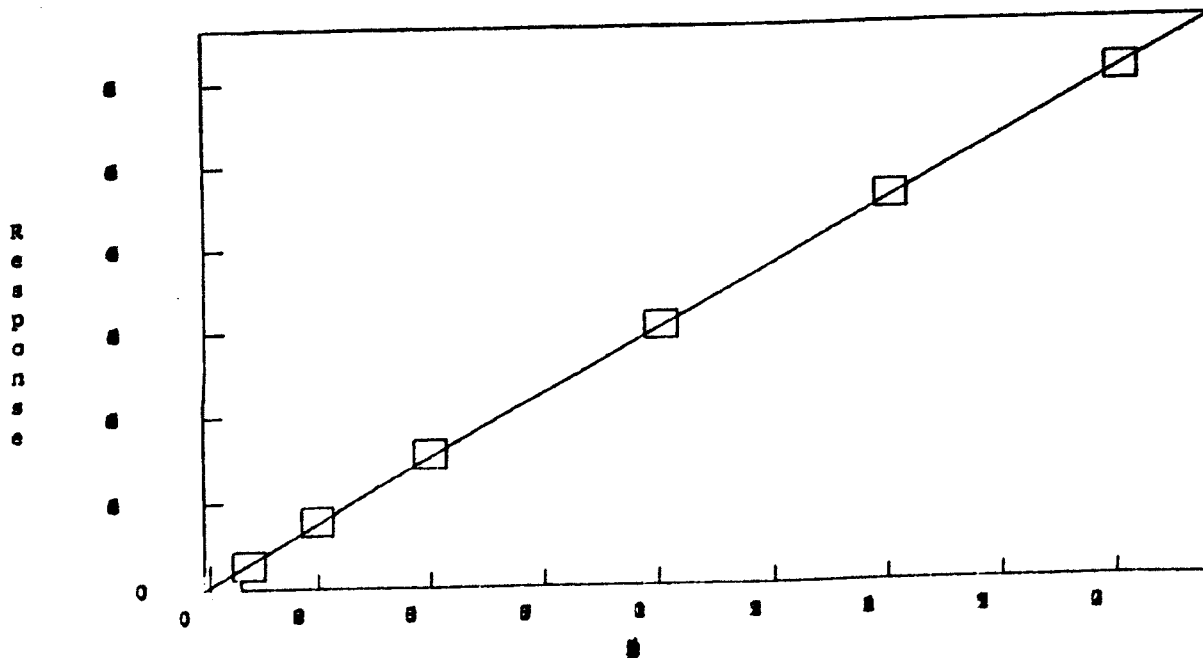
-Method Updated: 06:48 on Wed, 03 Jun 2009

Component: DMPT
Fit Type: Linear
 $r^2 = 0.999934$
 $\text{Amt} = \text{Resp} * 1.446e-006 + -0.01042$
 $\text{Resp} = \text{Amt} * 6.917e+005 + 7209$
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\ACID.MET

Component: BSA
Fit Type: Linear
 $r^2 = 0.999906$
 $\text{Amt} = \text{Resp} * 3.287e-007 + -0.0003636$
 $\text{Resp} = \text{Amt} * 3.042e+006 + 1106$
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\ACID.MET

Component: PA

Fit Type: Linear

$r^2 = 0.999743$

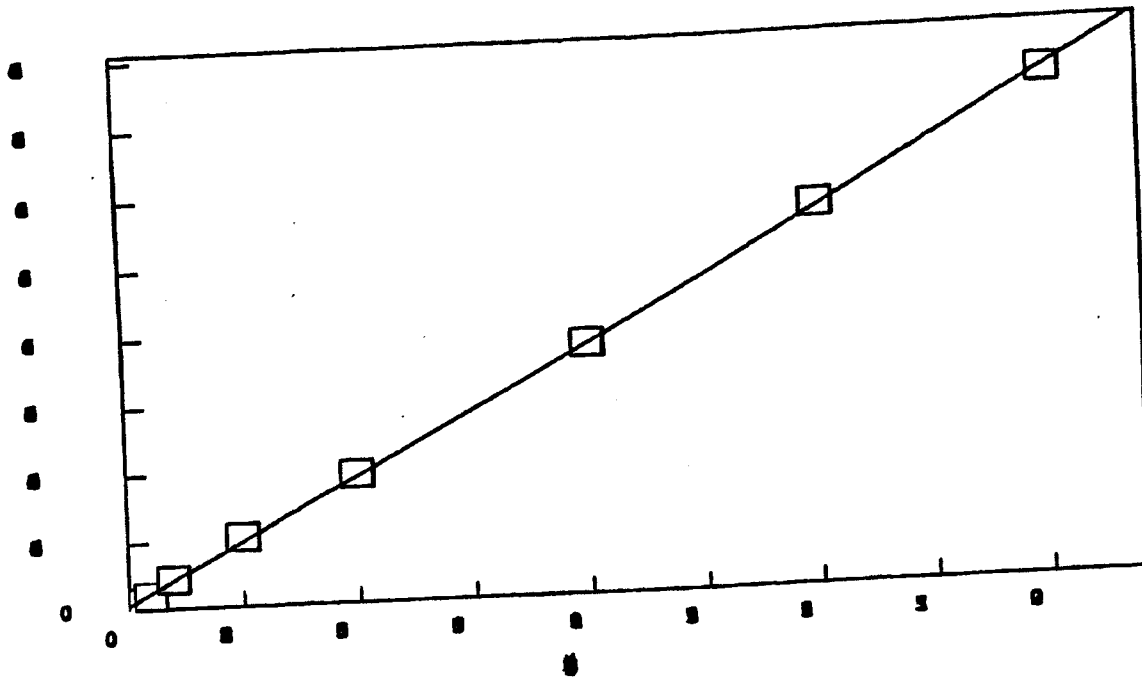
$\text{Amt} = \text{Resp} * 2.72e-007 + -0.01876$

$\text{Resp} = \text{Amt} * 3.676e+006 + 6.887e+004$

Standardization: External

Calibration: Area

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Method: C:\DX\METHOD\ACID.MET

Component: DEPT

Fit Type: Linear

$r^2 = 0.999815$

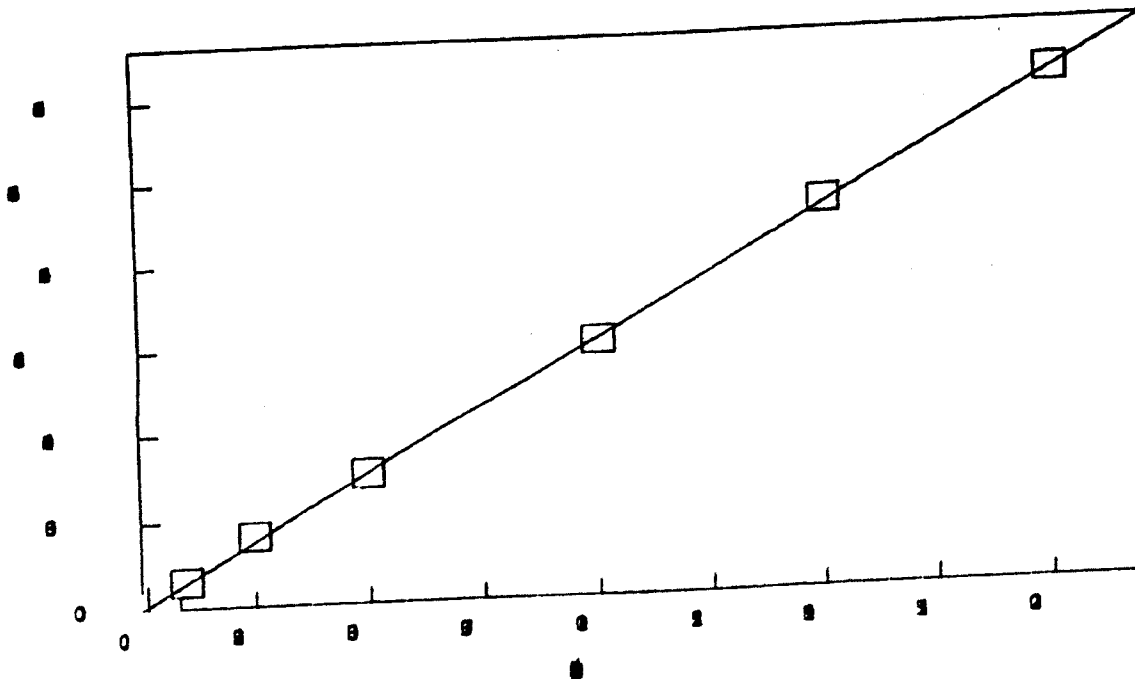
$\text{Amt} = \text{Resp} * 6.615e-007 + -0.0004692$

$\text{Resp} = \text{Amt} * 1.512e+006 + 709.3$

Standardization: External

Calibration: Area

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Method: C:\DX\METHOD\ACID.MET

Component: D-Panthenol

Fit Type: Linear

$r^2 = 0.999773$

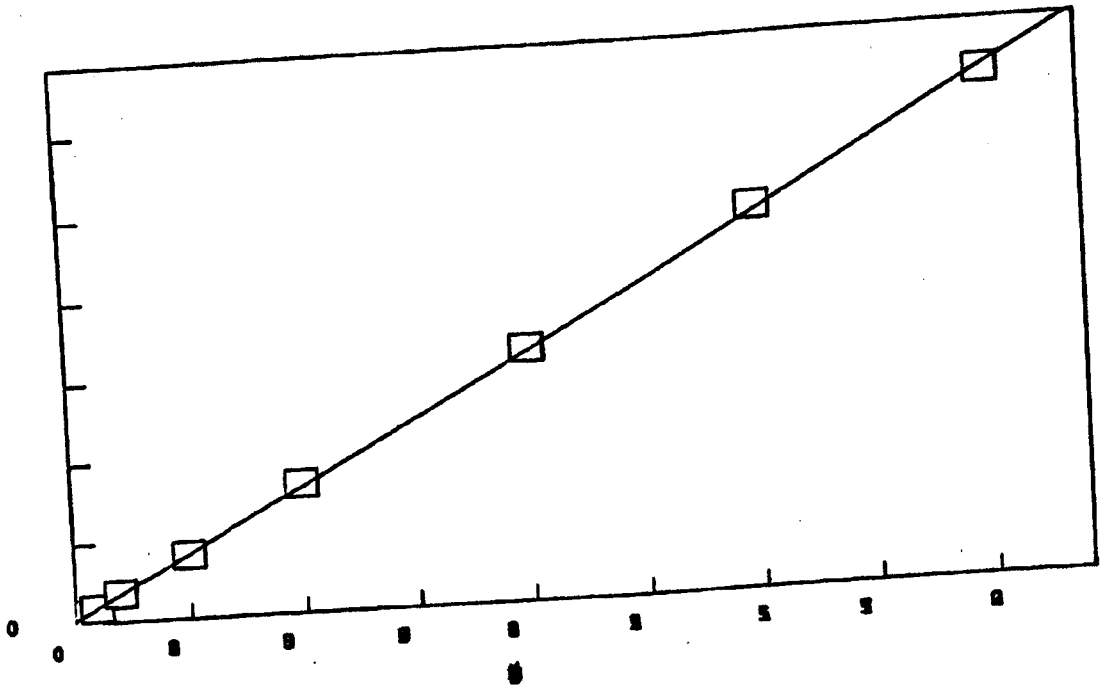
Ant = Resp * $6.43e-006$ + -0.1725

Resp = Ant * $1.555e+005$ + $2.682e+004$

Standardization: External

Calibration: Area

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Method: C:\DX\METHOD\ACID.MET

Component: FCBSA

Fit Type: Linear

$r^2 = 0.999917$

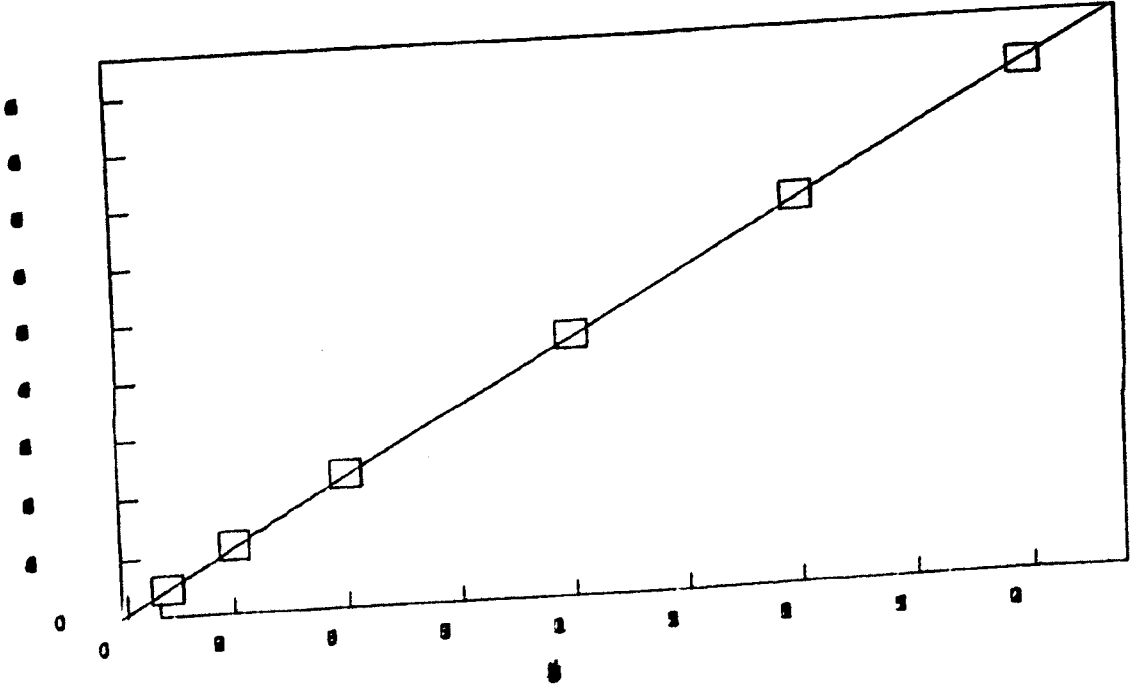
Ant = Resp * $2.254e-007$ + -0.004194

Resp = Ant * $4.437e+006$ + $1.861e+004$

Standardization: External

Calibration: Area

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**Continuing Calibration
Summary Data
Organic Acids by HPLC**

Organic Acids Calibration Verification (CV)
Summary Table
Proprietary in-house Procedure

Lab Name: Alpha Analytical, Inc.
Instrument ID: HPLC #3
Analyst Initials: JV
QC Rev Initials: WH

Batch: 22549
Date: 8/14/2009

ICV						
Date Analyzed	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	IPC Evaluation	Range of Acceptability	Data Flags
6/3/2009						
Time Analyzed						
2:33:11 AM						
DMPT	1.000	1.114	111.4	Acceptable	70-130%	
BSA	0.500	0.486	97.1	Acceptable	70-130%	
PA	0.500	0.553	110.6	Acceptable	70-130%	
DEPT	0.500	0.542	108.4	Acceptable	70-130%	
pCBSA	0.500	0.516	103.1	Acceptable	70-130%	

IPC						
Date Analyzed	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	IPC Evaluation	Range of Acceptability	Data Flags
8/14/2009						
Time Analyzed						
11:20:16 AM						
DMPT	1.250	1.288	103.0	Acceptable	80-120%	
BSA	0.500	0.507	101.5	Acceptable	80-120%	
PA	0.500	0.483	96.6	Acceptable	80-120%	
DEPT	0.500	0.469	93.8	Acceptable	80-120%	
pCBSA	0.500	0.491	98.2	Acceptable	80-120%	

CV-1 10/2.5/1.0 UG/ML LC090814-04				CV-2 10/2.5/1.0 UG/ML LC090814-04			CV-2 Evaluation	Range of Acceptability	Data Flags	
Date Analyzed	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	CV-1 Evaluation	Concentration (mg/L)	Recovered Amount (mg/L)				Recovered Amount (%)
8/14/2009										
Time Analyzed										
8:44:54 PM										
DMPT	2.500	2.521	100.9	Acceptable	2.500	2.525	101.0	Acceptable	80-120%	
BSA	1.000	1.004	100.4	Acceptable	1.000	1.011	101.1	Acceptable	80-120%	
PA	1.000	0.982	98.2	Acceptable	1.000	0.982	98.2	Acceptable	80-120%	
DEPT	1.000	0.954	95.4	Acceptable	1.000	0.932	93.2	Acceptable	80-120%	
pCBSA	1.000	1.014	101.4	Acceptable	1.000	1.007	100.7	Acceptable	80-120%	

CV-3 5.0/1.25/0.5 UG/ML LC090814-03				CV-4 5.0/1.25/0.5 UG/ML LC090814-03			CV-4 Evaluation	Range of Acceptability	Data Flags	
Date Analyzed	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	CV-3 Evaluation	Concentration (mg/L)	Recovered Amount (mg/L)				Recovered Amount (%)
8/15/2009										
Time Analyzed										
9:17:27 AM										
DMPT	1.250	1.296	103.7	Acceptable	1.250	1.274	101.9	Acceptable	80-120%	
BSA	0.500	0.517	103.4	Acceptable	0.500	0.520	104.0	Acceptable	80-120%	
PA	0.500	0.492	98.5	Acceptable	0.500	0.496	99.2	Acceptable	80-120%	
DEPT	0.500	0.481	96.3	Acceptable	0.500	0.458	91.6	Acceptable	80-120%	
pCBSA	0.500	0.517	103.3	Acceptable	0.500	0.505	101.0	Acceptable	80-120%	

CV-5 10/2.5/1.0 UG/ML LC090814-04				CV-6 10/2.5/1.0 UG/ML LC090814-04			CV-6 Evaluation	Range of Acceptability	Data Flags	
Date Analyzed	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	CV-5 Evaluation	Concentration (mg/L)	Recovered Amount (mg/L)				Recovered Amount (%)
8/15/2009										
Time Analyzed										
9:49:46 PM										
DMPT	2.500	2.500	100.0	Acceptable	2.500	2.519	100.8	Acceptable	80-120%	
BSA	1.000	1.001	100.1	Acceptable	1.000	1.013	101.3	Acceptable	80-120%	
PA	1.000	0.975	97.5	Acceptable	1.000	0.992	99.2	Acceptable	80-120%	
DEPT	1.000	0.967	96.7	Acceptable	1.000	0.953	95.3	Acceptable	80-120%	
pCBSA	1.000	1.028	102.8	Acceptable	1.000	1.003	100.3	Acceptable	80-120%	

SOP Criteria:

- 1) The IPC and CV is acceptable if the response is within 20% of its true value.
- 2) If the standard analyzed after a group of samples exhibits a response for an analyte that is >20%, and the analyte was not detected in any of the previous samples during the analytical shift, then the samples do not need to be re-analyzed, as the standard has demonstrated that the analyte would have been detected were it present.
- 3) If the calibration cannot be verified after the analysis of a single standard, analyze a second verification standard. If the CV is acceptable on the second CV, then the data is acceptable. If not recalibrate.

Organic Acids Calibration Verification (CV)
Summary Table
Proprietary in-house Procedure

Lab Name: Alpha Analytical, Inc.
Instrument ID: HPLC #3
Analyst Initials: JV *JV*
QC Rev Initials: WH

Batch: 22549
Date: 8/14/2009

ICV						
Date Analyzed	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	IPC Evaluation	Range of Acceptability	Data Flags
6/3/2009						
Time Analyzed						
2:33:11 AM						
DMPT	1.000	1.114	111.4	Acceptable	70-130%	
BSA	0.500	0.486	97.1	Acceptable	70-130%	
PA	0.500	0.553	110.6	Acceptable	70-130%	
DEPT	0.500	0.542	108.4	Acceptable	70-130%	
pCBSA	0.500	0.516	103.1	Acceptable	70-130%	

IPC						
Date Analyzed	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	IPC Evaluation	Range of Acceptability	Data Flags
6/3/2009						
Time Analyzed						
DMPT	1.250		#VALUE!	#VALUE!	80-120%	#VALUE!
BSA	0.500		#VALUE!	#VALUE!	80-120%	#VALUE!
PA	0.500		#VALUE!	#VALUE!	80-120%	#VALUE!
DEPT	0.500		#VALUE!	#VALUE!	80-120%	#VALUE!
pCBSA	0.500		#VALUE!	#VALUE!	80-120%	#VALUE!

Date Analyzed	CV-1				CV-2			CV-2 Evaluation	Range of Acceptability	Data Flags
	5.0/1.25/0.5 UG/ML LC090814-03				5.0/1.25/0.5 UG/ML LC090814-03					
	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	CV-1 Evaluation	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)			
8/16/2009										
Time Analyzed										
10:22:04 AM										
DMPT	1.250	1.320	105.6	Acceptable	1.250	1.299	103.9	Acceptable	80-120%	
BSA	0.500	0.525	105.0	Acceptable	0.500	0.517	103.4	Acceptable	80-120%	
PA	0.500	0.497	99.5	Acceptable	0.500	0.498	99.5	Acceptable	80-120%	
DEPT	0.500	0.471	94.1	Acceptable	0.500	0.490	97.9	Acceptable	80-120%	
pCBSA	0.500	0.511	102.2	Acceptable	0.500	0.520	104.1	Acceptable	80-120%	

Date Analyzed	CV-3				CV-4			CV-4 Evaluation	Range of Acceptability	Data Flags
	10/2.5/1.0 UG/ML LC090814-04				10/2.5/1.0 UG/ML LC090814-04					
	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	CV-3 Evaluation	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)			
8/16/2009										
Time Analyzed										
10:54:14 PM										
DMPT	2.500	2.536	101.4	Acceptable	2.500	2.488	99.5	Acceptable	80-120%	
BSA	1.000	1.017	101.7	Acceptable	1.000	0.999	99.9	Acceptable	80-120%	
PA	1.000	0.988	98.8	Acceptable	1.000	0.974	97.4	Acceptable	80-120%	
DEPT	1.000	0.949	94.9	Acceptable	1.000	0.978	97.8	Acceptable	80-120%	
pCBSA	1.000	0.995	99.5	Acceptable	1.000	1.003	100.3	Acceptable	80-120%	

Date Analyzed	CV-5				CV-6			CV-6 Evaluation	Range of Acceptability	Data Flags
	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)	CV-5 Evaluation	Concentration (mg/L)	Recovered Amount (mg/L)	Recovered Amount (%)			
8/16/2009										
Time Analyzed										
DMPT	1.250				1.250				80-120%	
BSA	0.500				0.500				80-120%	
PA	0.500				0.500				80-120%	
DEPT	0.500				0.500				80-120%	
pCBSA	0.500				0.500				80-120%	

SOP Criteria:

- 1) The IPC and CV is acceptable if the response is within 20% of its true value.
- 2) If the standard analyzed after a group of samples exhibits a response for an analyte that is >20%, and the analyte was not detected in any of the previous samples during the analytical shift, then the samples do not need to be re-analyzed, as the standard has demonstrated that the analyte would have been detected were it present.
- 3) If the calibration cannot be verified after the analysis of a single standard, analyze a second verification standard. If the CV is acceptable on the second CV, then the data is acceptable. If not, recalibrate.

**Continuing Calibration
Raw Data
Organic Acids by HPLC**

Data Reprocessed On 08/18/2009 16:13:32

```

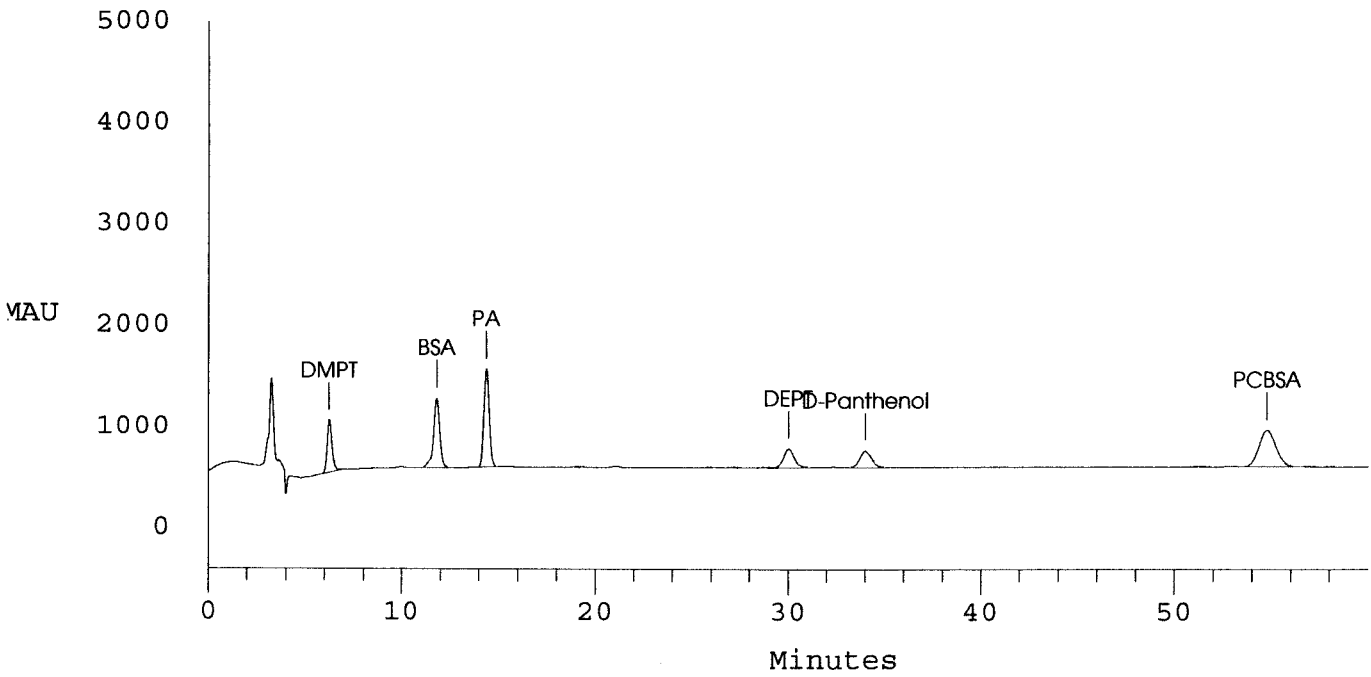
=====
Sample Name: 5.0/1.25/0.5 IPC LC090814-03   Date: 08/14/2009 11:20:16
Data File  : C:\DX\DATA\081409\B4878001.D02
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 2   Vial:           Detector:OTHER
Analyst    :                               Column:
=====
  
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	18000	5Hz	0.00	60.00		1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.23	1.446e-006	DMPT	898225	1.288
11.80	3.287e-007	BSA	1544514	0.507
14.37	2.720e-007	PA	1844642	0.483
30.00	6.615e-007	DEPT	709444	0.469
34.00	6.430e-006	D-Panthenol	672251	4.150
54.77	2.254e-007	PCBSA	2197147	0.491
Totals			7866224	7.388

File: B4878001.D02 Sample: 5.0/1.25/0.5 IPC LC090814-03



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *Shafiq*
 Peer/QC
 Report _____ Final _____

Data Reprocessed On 08/18/2009 16:13:55

```

=====
Sample Name: 10/2.5/1.0 UG/ML LC090814-04   Date: 08/14/2009 20:44:54
Data File  : C:\DX\DATA\081409\B4887001.D11
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 11 Vial:      Detector: OTHER
Analyst    :                               Column:
=====
  
```

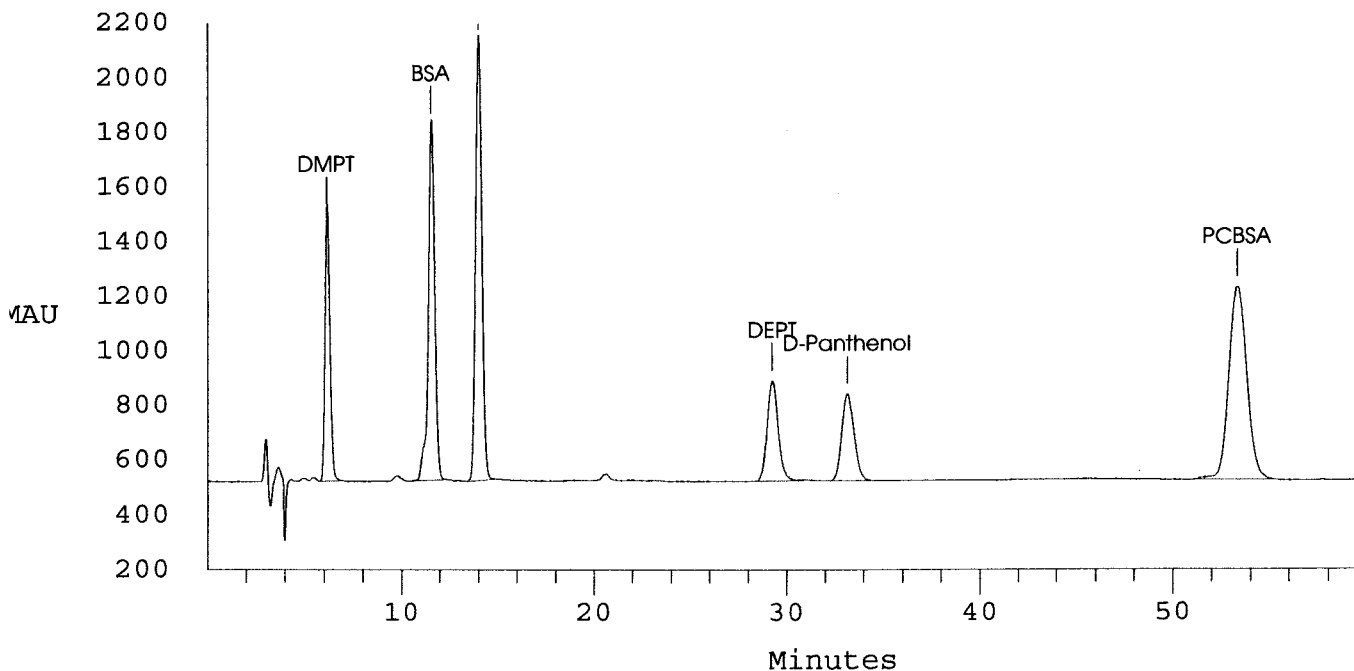
```

-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1           1 18000 5Hz  0.00 60.00      1000
  
```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.13	1.446e-006	DMPT	1751363	2.521
11.53	3.287e-007	BSA	3055039	1.004
13.97	2.720e-007	PA	3678959	0.982
29.23	6.615e-007	DEPT	1443084	0.954
33.13	6.430e-006	D-Panthenol	1372411	8.652
53.27	2.254e-007	PCBSA	4518941	1.014
Totals			15819797	15.127

File: B4887001.D11 Sample: 10/2.5/1.0 UG/ML LC090814-04



METHOD HPLC ACIDS
HPLC #3 UV DETECTOR
Test Code: XXX_XX

Result *8/19/09*
Peer/QC
Report _____ Final _____

Data Reprocessed On 08/18/2009 16:13:57

```

=====
Sample Name: 10/2.5/1.0 UG/ML LC090814-04   Date: 08/14/2009 21:47:37
Data File  : C:\DX\DATA\081409\B4888001.D12
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 12 Vial:      Detector: OTHER
Analyst    :                               Column:
=====
  
```

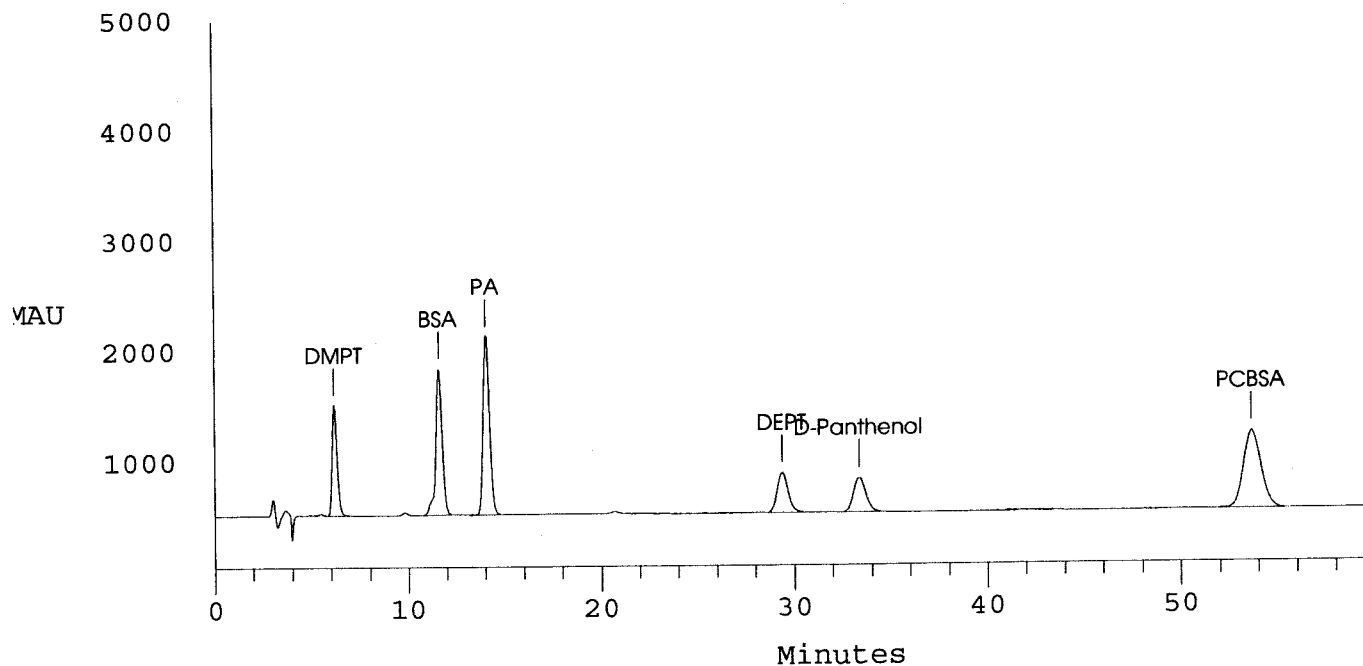
```

-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1           1 18000 5Hz  0.00 60.00      1000
  
```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.17	1.446e-006	DMPT	1753994	2.525
11.60	3.287e-007	BSA	3077378	1.011
14.03	2.720e-007	PA	3678702	0.982
29.37	6.615e-007	DEPT	1409894	0.932
33.33	6.430e-006	D-Panthenol	1367116	8.618
53.63	2.254e-007	PCBSA	4487658	1.007
Totals			15774744	15.076

File: B4888001.D12 Sample: 10/2.5/1.0 UG/ML LC090814-04



METHOD HPLC ACIDS
HPLC #3 UV DETECTOR
Test Code: XXX_XX

Result *2/9/09*
Peer/QC
Report _____ Final _____

Data Reprocessed On 08/18/2009 16:15:01

```

=====
Sample Name: 5.0/1.25/0.5 UG/ML LC090814-03 Date: 08/15/2009 09:17:27
Data File  : C:\DX\DATA\081409\B4899001.D23
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 23 Vial:          Detector:OTHER
Analyst    :          Column:
=====
  
```

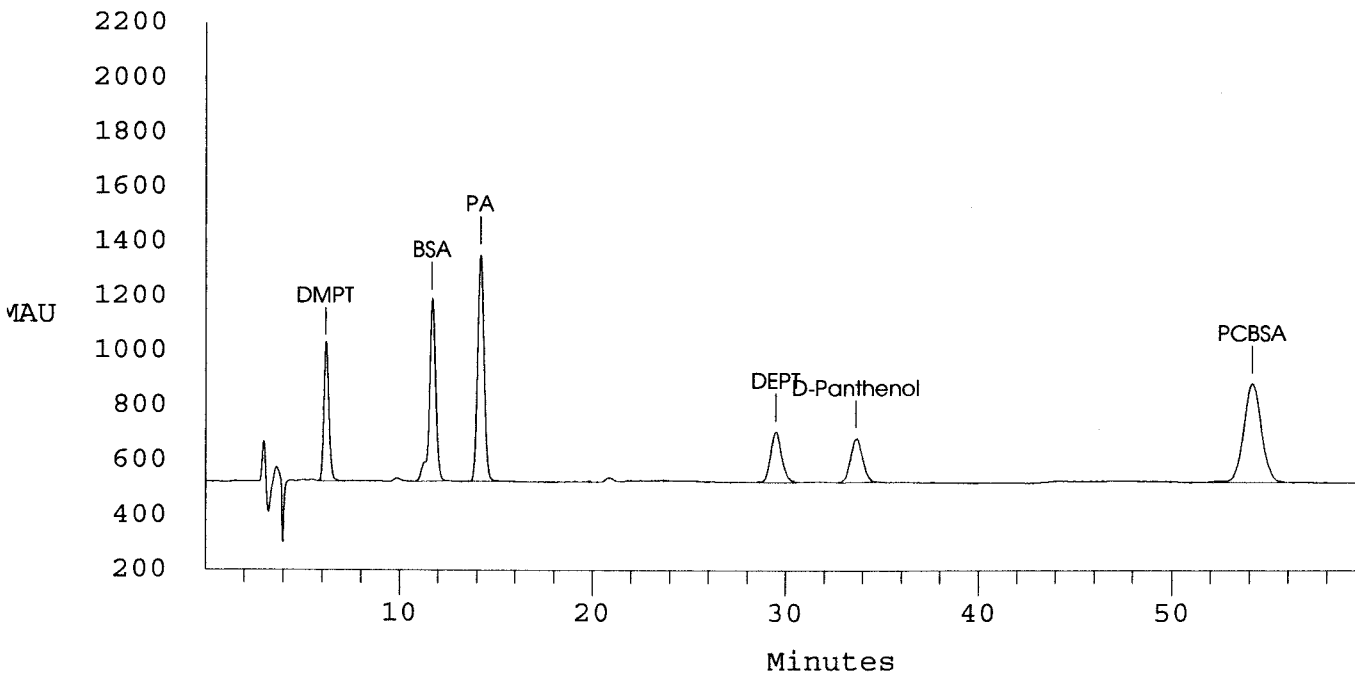
```

-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1           1 18000 5Hz  0.00 60.00    1000
  
```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.17	1.446e-006	DMPT	903509	1.296
11.67	3.287e-007	BSA	1573182	0.517
14.17	2.720e-007	PA	1878559	0.492
29.47	6.615e-007	DEPT	728562	0.481
33.63	6.430e-006	D-Panthenol	684519	4.229
54.10	2.254e-007	PCBSA	2311293	0.517
Totals			8079624	7.532

File: B4899001.D23 Sample: 5.0/1.25/0.5 UG/ML LC090814-03



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

8/19/09

Result
 Peer/QC
 Report _____ Final _____

Data Reprocessed On 08/18/2009 16:15:09

```

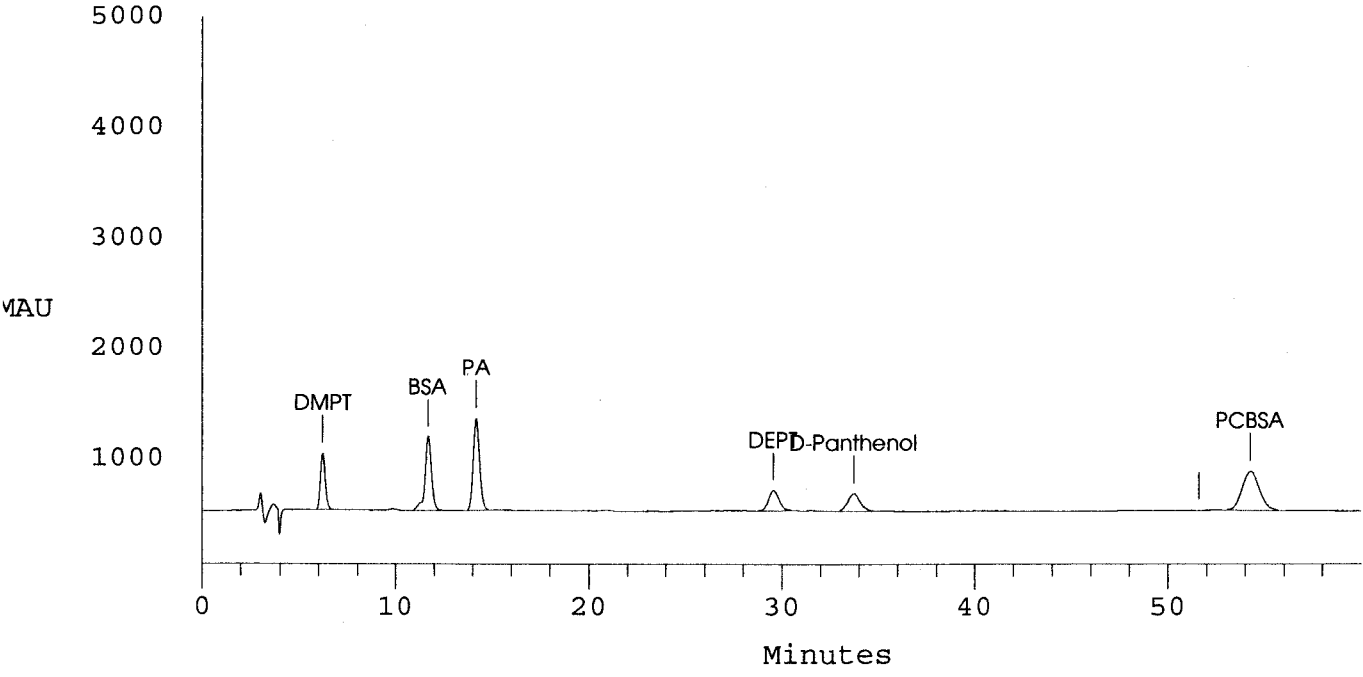
=====
Sample Name: 5.0/1.25/0.5 UG/ML LC090814-03 Date: 08/15/2009 10:20:09
Data File  : C:\DX\DATA\081409\B4500001.D24
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 24 Vial:      Detector: OTHER
Analyst    :           Column:
=====
  
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	18000	5Hz	0.00	60.00		1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration	mg/L
6.20	1.446e-006	DMPT	888594	<i>1.25</i>	1.274
11.67	3.287e-007	BSA	1582236	<i>0.5</i>	0.520
14.17	2.720e-007	PA	1891341	<i>1</i>	0.496
29.53	6.615e-007	DEPT	692862	<i>1</i>	0.458
33.70	6.430e-006	D-Panthenol	696610	<i>5.0</i>	4.306
54.23	2.254e-007	PCBSA	2260026	<i>0.5</i>	0.505
Totals			8011670		7.559

File: B4500001.D24 Sample: 5.0/1.25/0.5 UG/ML LC090814-03



Data Reprocessed On 08/18/2009 16:16:08

```

=====
Sample Name: 10/2.5/1.0 UG/ML LC090814-04   Date: 08/15/2009 21:49:46
Data File  : C:\DX\DATA\081409\B4511001.D35
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 35 Vial:
Analyst    :                               Column:
Detector: OTHER
=====

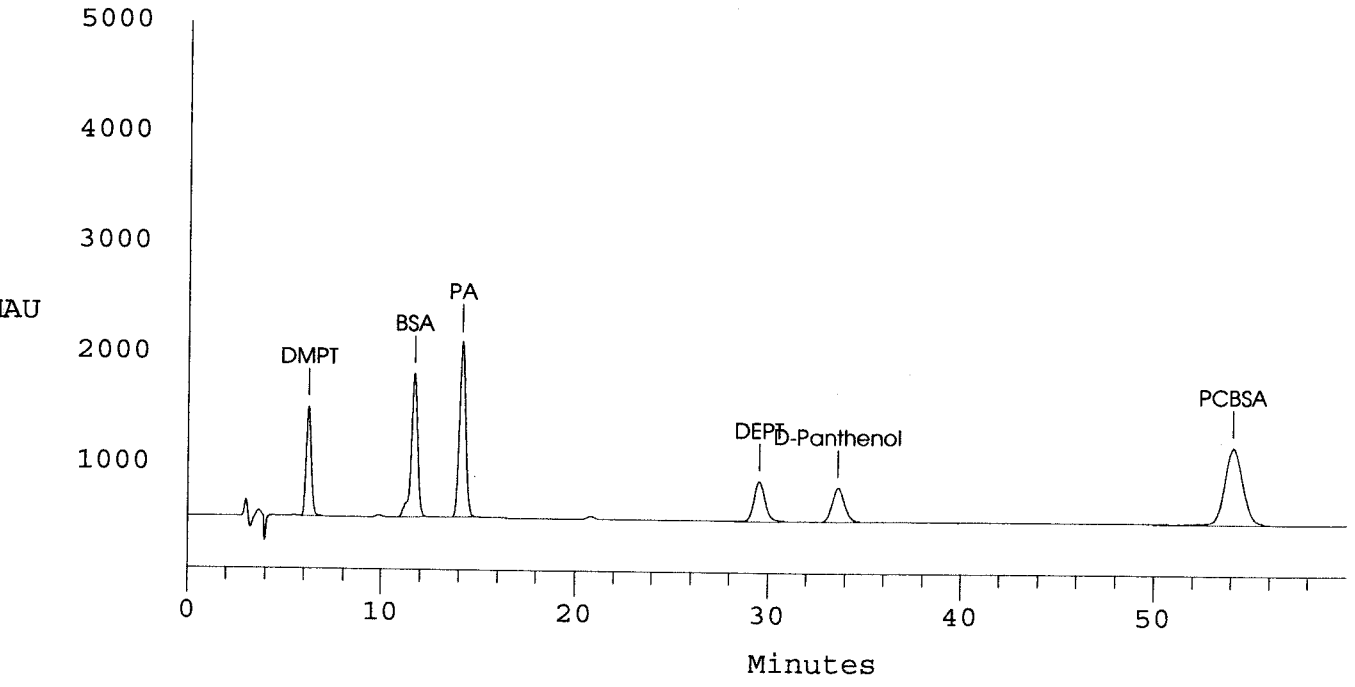
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	18000	5Hz	0.00	60.00		1000

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.20	1.446e-006	DMPT	1736352	2.500
11.67	3.287e-007	BSA	3045168	1.001
14.13	2.720e-007	PA	3651531	0.975
29.53	6.615e-007	DEPT	1462796	0.967
33.60	6.430e-006	D-Panthenol	1363695	8.596
54.07	2.254e-007	PCBSA	4581038	1.028
Totals			15840581	15.066

File: B4511001.D35 Sample: 10/2.5/1.0 UG/ML LC090814-04



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result
 Peer/QC
 Report _____ Final _____

8/19/09

Data Reprocessed On 08/18/2009 16:16:10

```

=====
Sample Name: 10/2.5/1.0 UG/ML LC090814-04   Date: 08/15/2009 22:52:36
Data File  : C:\DX\DATA\081409\B4512001.D36
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 36 Vial:      Detector:OTHER
Analyst    :                               Column:
=====
  
```

```

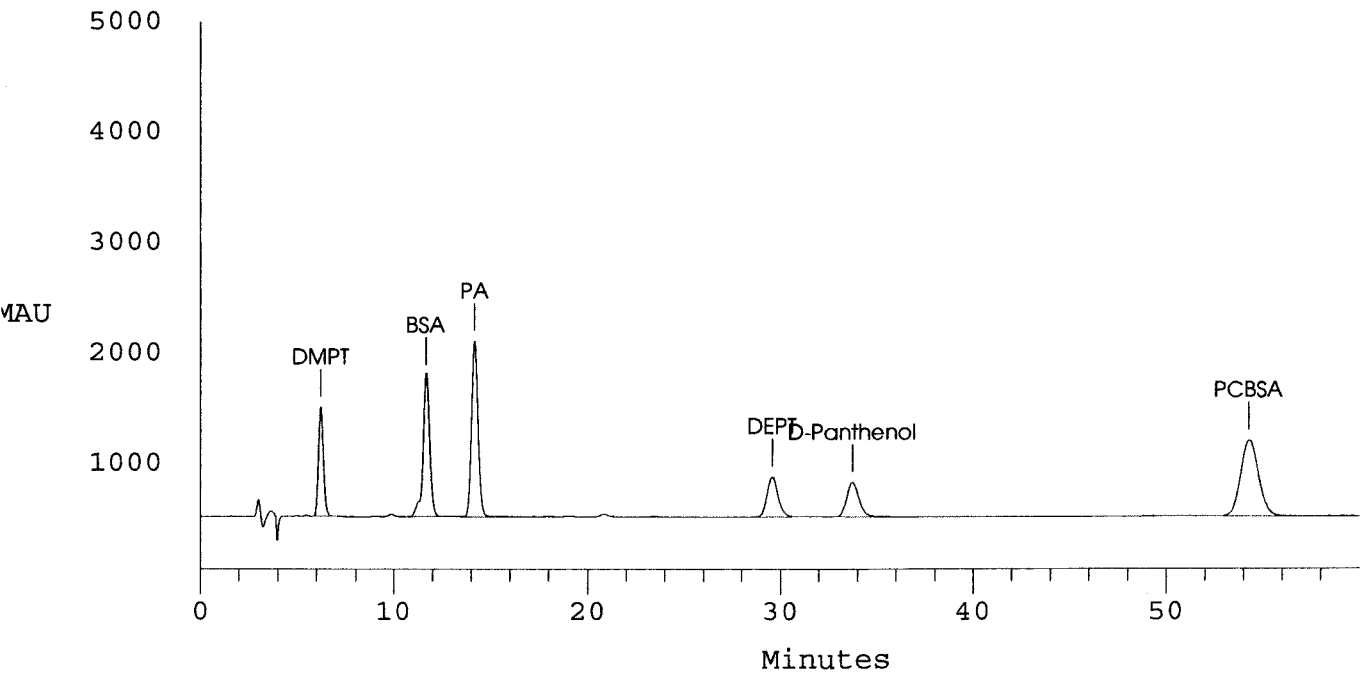
-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1           1 18000 5Hz  0.00 60.00      1000
  
```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.20	1.446e-006	DMPT	1749787	2.519
11.67	3.287e-007	BSA	3082386	1.013
14.17	2.720e-007	PA	3716121	0.992
29.57	6.615e-007	DEPT	1441339	0.953
33.73	6.430e-006	D-Panthenol	1401534	8.839
54.27	2.254e-007	PCBSA	4466673	1.003
Totals			15857841	15.319

2.5
1.0
↓
10
1.0

File: B4512001.D36 Sample: 10/2.5/1.0 UG/ML LC090814-04



METHOD HPLC ACIDS
 HPLC #3 UV DETECTOR
 Test Code: XXX_XX

Result *8/17/09 ✓*
 Peer/QC
 Report _____ Final _____

Data Reprocessed On 08/18/2009 16:17:09

```

=====
| Sample Name: 5.0/1.25/0.5 UG/ML LC090814-03 Date: 08/16/2009 10:22:04
| Data File   : C:\DX\DATA\081409\B4523001.D47
| Method      : C:\DX\METHOD\ACID.MET
| ACI Address: 1 System: 2 Inject#: 47 Vial:           Detector: OTHER
| Analyst     :           Column:
=====
  
```

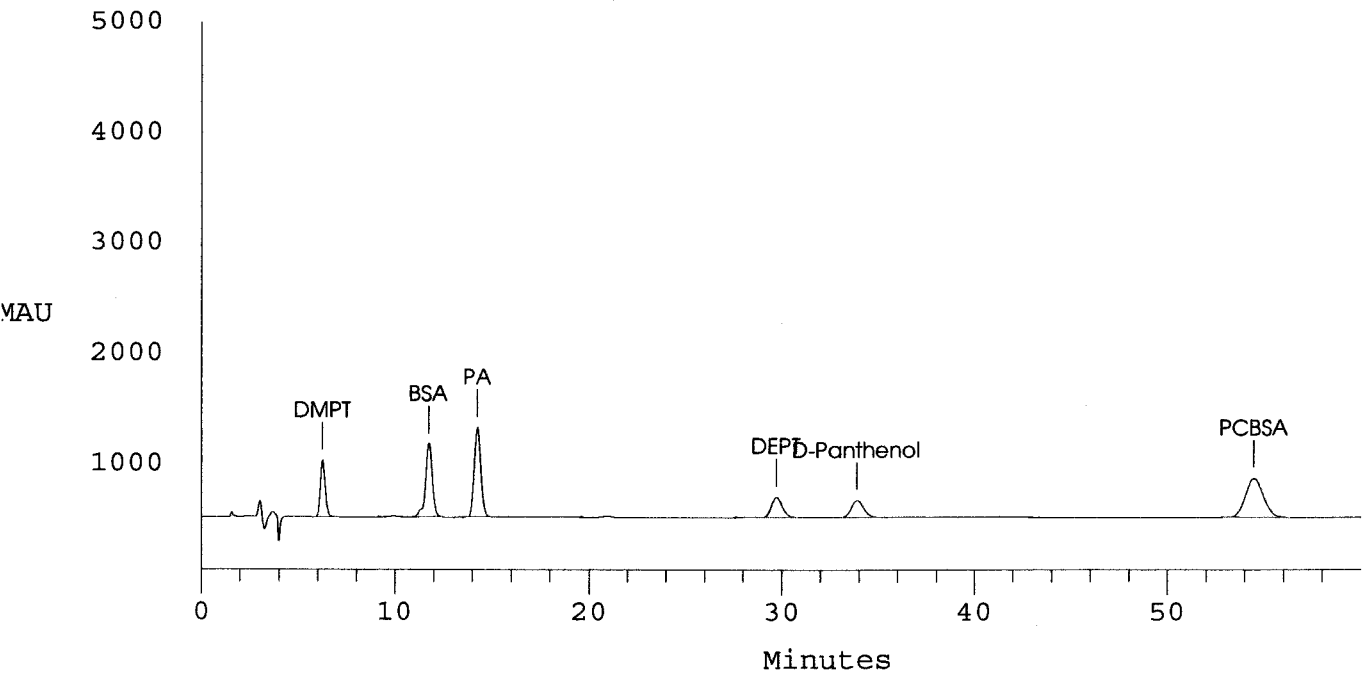
```

-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External           1             1 18000 5Hz  0.00 60.00      1000
-----
  
```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.23	1.446e-006	DMPT	920000	1.320
11.73	3.287e-007	BSA	1597768	0.525
14.23	2.720e-007	PA	1897138	0.497
29.70	6.615e-007	DEPT	712058	0.471
33.87	6.430e-006	D-Panthenol	688943	4.257
54.47	2.254e-007	PCBSA	2285265	0.511
Totals			8101172	7.580

File: B4523001.D47 Sample: 5.0/1.25/0.5 UG/ML LC090814-03



METHOD HPLC ACIDS
HPLC #3 UV DETECTOR
Test Code: XXX_XX

Shelton

Result _____
Peer/QC _____
Report _____ Final _____

Data Reprocessed On 08/19/2009 14:36:10

```

=====
| Sample Name: 5.0/1.25/0.5 UG/ML LC090814-03 Date: 08/16/2009 11:24:44 |
| Data File   : C:\DX\DATA\081409\B4524001.D48                       |
| Method      : C:\DX\METHOD\ACID.MET                               |
| ACI Address: 1 System: 2 Inject#: 48 Vial:                          |
| Analyst     : Column:                                             |
| Detector: OTHER                                                    |
=====

```

```

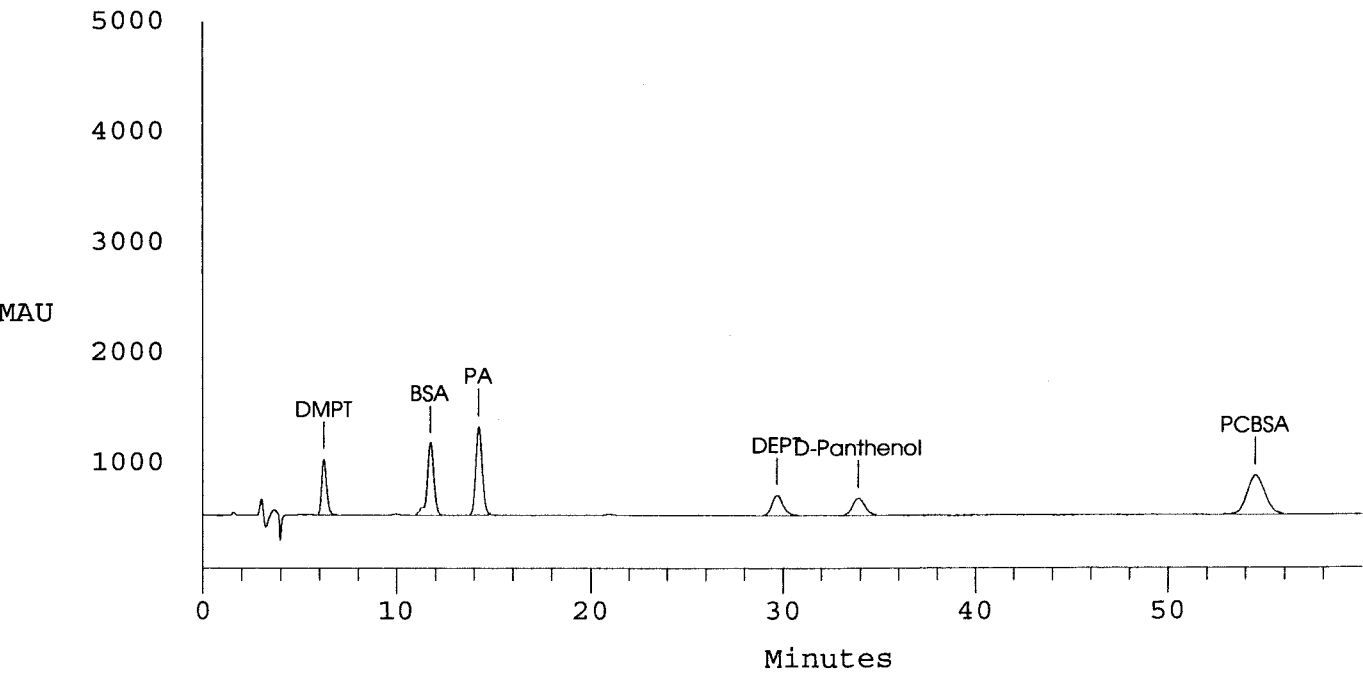
-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1           1 18000 5Hz  0.00 60.00      1000
-----

```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.23	1.446e-006	DMPT	905987	1.299
11.73	3.287e-007	BSA	1574082	0.517
14.23	2.720e-007	PA	1897819	0.498
29.67	6.615e-007	DEPT	741031	0.490
33.90	6.430e-006	D-Panthenol	708468	4.383
54.50	2.254e-007	PCBSA	2327558	0.520
Totals			8154945	7.707

File: B4524001.D48 Sample: 5.0/1.25/0.5 UG/ML LC090814-03



Data Reprocessed On 08/18/2009 16:17:55

```

=====
Sample Name: 10/2.5/1.0 UG/ML LC090814-04   Date: 08/16/2009 22:54:14
Data File  : C:\DX\DATA\081409\B4533001.D59
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 59 Vial:
Analyst    :                               Column:
Detector: OTHER
=====

```

```

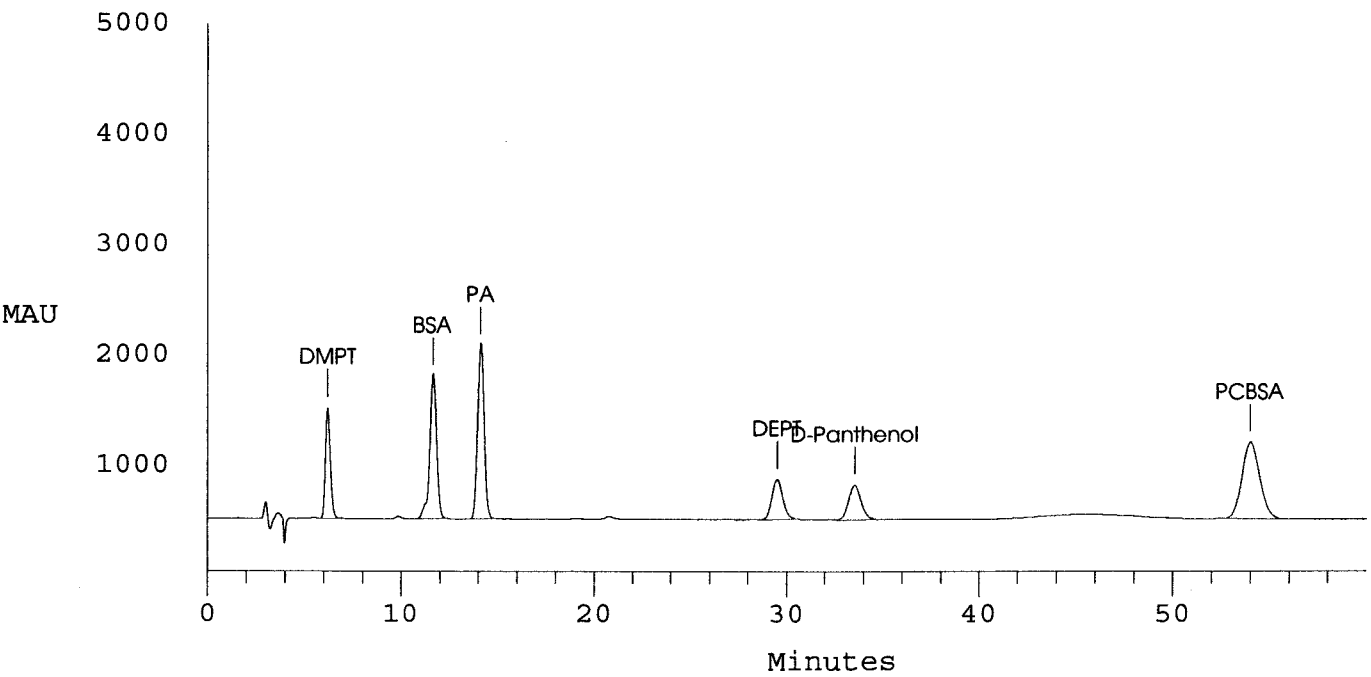
-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1           1 18000 5Hz  0.00 60.00      1000
-----

```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.20	1.446e-006	DMPT	1761463	2.536
11.63	3.287e-007	BSA	3094441	1.017
14.10	2.720e-007	PA	3701333	0.988
29.50	6.615e-007	DEPT	1435478	0.949
33.53	6.430e-006	D-Panthenol	1390144	8.766
53.97	2.254e-007	PCBSA	4432892	0.995
Totals			15815751	15.251

File: B4533001.D59 Sample: 10/2.5/1.0 UG/ML LC090814-04



METHOD HPLC ACIDS
HPLC #3 UV DETECTOR
Test Code: XXX_XX

Result *8/18/09*
Peer/QC
Report _____ Final _____

Data Reprocessed On 08/18/2009 16:17:57

```

=====
Sample Name: 10/2.5/1.0 UG/ML LC090814-04   Date: 08/16/2009 23:56:56
Data File  : C:\DX\DATA\081409\B4534001.D60
Method     : C:\DX\METHOD\ACID.MET
ACI Address: 1 System: 2 Inject#: 60 Vial:      Detector:OTHER
Analyst    :           Column:
=====

```

```

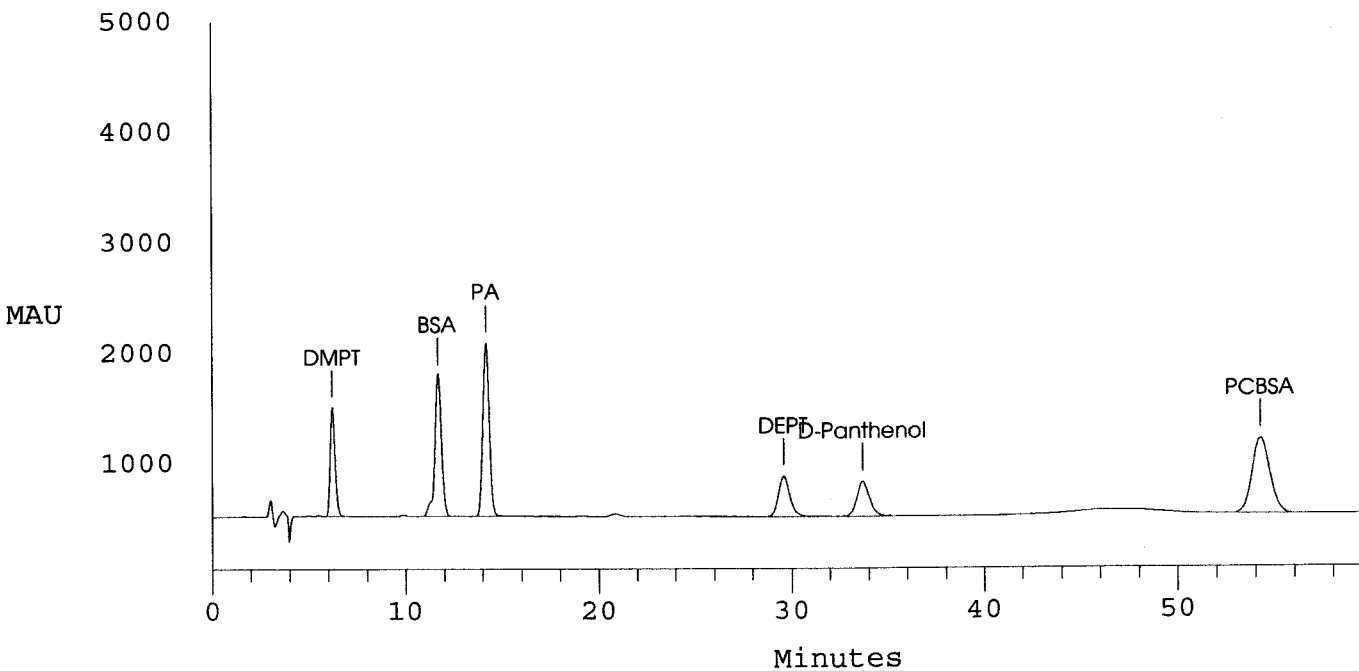
-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1           1 18000 5Hz  0.00 60.00      1000
-----

```

***** Component Report: Components Found *****

Ret Time	Response Factor	Component Name	Area	Concentration mg/L
6.20	1.446e-006	DMPT	1728447	2.488
11.67	3.287e-007	BSA	3041121	0.999
14.17	2.720e-007	PA	3647505	0.974
29.57	6.615e-007	DEPT	1479628	0.978
33.67	6.430e-006	D-Panthenol	1408210	8.882
54.23	2.254e-007	PCBSA	4468985	1.003
Totals			15773897	15.324

File: B4534001.D60 Sample: 10/2.5/1.0 UG/ML LC090814-04



Instrument Sequence Logs
Organic Acids by HPLC

DIONEX SCHEDULE - C:\DX\SCHEDULE\B081409.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	Instrument Primer	..\ACID.MET	..\b4877001	1	1	1
2	5.0/1.25/0.5 IPC LC0908	..\ACID.MET	..\b4878001	1	1	1
3	MBLK ...MBLK-22549	..\ACID.MET	..\b4879001	1	1	1
4	LCS ...LCS-22549	..\ACID.MET	..\b4880001	1	1	1
5	LCSD ...LCSD-22549	..\ACID.MET	..\b4881001	1	1	1
6	LCS ...LCS-22549	..\ACID.MET	..\b4882001	1	1	1
7	LCSD ...LCSD-22549	..\ACID.MET	..\b4883001	1	1	1
8	MBLK ...MBLK-22548	..\ACID.MET	..\B4884001	10	20	1
9	LCS ...LCS-22548	..\ACID.MET	..\B4885001	10	20	1
10	LCSD ...LCSD-22548	..\ACID.MET	..\B4886001	10	20	1
11	10/2.5/1.0 ug/mL LC0908	..\ACID.MET	..\B4887001	1	1	1
12	10/2.5/1.0 ug/mL LC0908	..\ACID.MET	..\B4888001	1	1	1
13	SAMP TRX09081621-01A 2X	..\ACID.MET	..\B4889001	1	2	1
14	MS TRX09081621-01AMS	..\ACID.MET	..\B4890001	1	2	1
15	MSD TRX09081621-01AMSD	..\ACID.MET	..\B4891001	1	2	1
16	SAMP TRX09081621-02A 5X	..\ACID.MET	..\B4892001	10	100	1
17	MS TRX09081621-02AMS	..\ACID.MET	..\B4893001	10	100	1
18	MSD TRX09081621-02AMSD	..\ACID.MET	..\B4894001	10	100	1
19	SAMP TRX09081621-03A 5X	..\ACID.MET	..\B4895001	10	100	1
20	SAMP TRX09081621-03A 5X	..\ACID.MET	..\B4896001	10	100	1
21	SAMP TRX09081621-04A 5X	..\ACID.MET	..\B4897001	10	100	1
22	SAMP TRX09081621-04A 5X	..\ACID.MET	..\B4898001	10	100	1
23	5.0/1.25/0.5 ug/mL LC09	..\ACID.MET	..\B4899001	1	1	1
24	5.0/1.25/0.5 ug/mL LC09	..\ACID.MET	..\B4500001	1	1	1
25	SAMP TRX09081621-05A 5X	..\ACID.MET	..\B4501001	10	100	1
26	SAMP TRX09081621-05A 5X	..\ACID.MET	..\B4502001	10	100	1
27	SAMP TRX09081621-06A 5X	..\ACID.MET	..\B4503001	10	100	1
28	SAMP TRX09081621-06A 5X	..\ACID.MET	..\B4504001	10	100	1
29	SAMP TRX09081621-07A 2X	..\ACID.MET	..\B4505001	1	2	1
30	SAMP TRX09081621-07A 2X	..\ACID.MET	..\B4506001	1	2	1
31	SAMP TRX09081621-08A 5X	..\ACID.MET	..\B4507001	10	100	1
32	SAMP TRX09081621-08A 5X	..\ACID.MET	..\B4508001	10	100	1
33	SAMP TRX09081621-09A 5X	..\ACID.MET	..\B4509001	10	100	1
34	SAMP TRX09081621-09A 5X	..\ACID.MET	..\B4510001	10	100	1
35	10/2.5/1.0 ug/mL LC0908	..\ACID.MET	..\B4511001	1	1	1
36	10/2.5/1.0 ug/mL LC0908	..\ACID.MET	..\B4512001	1	1	1
37	SAMP TRX09081621-10A 5X	..\ACID.MET	..\B4513001	10	100	1
38	SAMP TRX09081621-10A 5X	..\ACID.MET	..\B4514001	10	100	1
39	SAMP TRX09081621-11A 5X	..\ACID.MET	..\B4515001	10	100	1
40	SAMP TRX09081621-11A 5X	..\ACID.MET	..\B4516001	10	100	1
41	SAMP TRX09081621-12A 5X	..\ACID.MET	..\B4517001	10	100	1
42	SAMP TRX09081621-12A 5X	..\ACID.MET	..\B4518001	10	100	1
43	SAMP TRX09081621-13A 5X	..\ACID.MET	..\B4519001	10	100	1
44	SAMP TRX09081621-13A 5X	..\ACID.MET	..\B4520001	10	100	1
45	SAMP TRX09081621-14A 5X	..\ACID.MET	..\B4521001	10	100	1
46	SAMP TRX09081621-14A 5X	..\ACID.MET	..\B4522001	10	100	1
47	5.0/1.25/0.5 ug/mL LC09	..\ACID.MET	..\B4523	1	1	1
48	5.0/1.25/0.5 ug/mL LC09	..\ACID.MET	..\B4524	1	1	1
49	SPLP DI EXTRACTION FLUI	..\ACID.MET	..\B4523	1	1	1
50	SAMP TRX09081352-01A 2X	..\ACID.MET	..\B4524	1	2	1
51	SAMP TRX09081352-01A 2X	..\ACID.MET	..\B4525	1	2	1
52	SPLP pH EXTRACTON FLUID	..\ACID.MET	..\B4526	1	1	1
53	SAMP TRX09081352-01A 2X	..\ACID.MET	..\B4527	1	2	1
54	SAMP TRX09081352-01A 2X	..\ACID.MET	..\B4528	1	2	1
55	SAMP TRX09081352-01A 5X	..\ACID.MET	..\B4529	10	100	1
56	SAMP TRX09081352-01A 5X	..\ACID.MET	..\B4530	10	100	1
57	SAMP TRX09091353-01A 2X	..\ACID.MET	..\B4531	1	2	1
58	SAMP TRX09081353-01A 2X	..\ACID.MET	..\B4532	1	2	1
59	10/2.5/1.0 ug/mL LC0908	..\ACID.MET	..\B4533	1	1	1
60	10/2.5/1.0 ug/mL LC0908	..\ACID.MET	..\B4534	1	1	1
61	SAMP TRX09081621-02A 5X	..\ACID.MET	..\B4535	10	100	1
62	MS TRX09081621-02AMS	..\ACID.MET	..\B4536	10	100	1
63	MSD TRX09081621-02AMSD	..\ACID.MET	..\B4537	10	100	1
64	5.0/1.25/0.5 ug/mL LC09	..\ACID.MET	..\B4538	1	1	1
65	5.0/1.25/0.5 ug/mL LC09	..\ACID.MET	..\B4539	1	1	1

Comment :

**Extraction /Preparation Logs
Organic Acids by HPLC**

Technician: John Vasquez
 Prep Batch 22549 Prep Code: ACIDS_HPLC_

Prep Start Date: 8/14/2009 8:18:32 AM
 Prep End Date: 8/14/2009 1:01:16 PM

#	Laboratory Sample ID	Bottle #	Client Sample ID	Matrix	Initial pH	Final pH	Base pH	Acid pH	Int wt (g)	Int vol (mL)	Spike Added	Fin Vol (mL)	factor
1	MBLK-22549	1								0.1	1	0.1	1.0
2	LCS-22549	1								0.1	1.2	0.1	1.0
3	LCSD-22549	1								0.1	1.2	0.1	1.0
4	TRX09081351-01A	1	EB081009-SO2	Aqueous						0.1	1	0.1	1.0
5	TRX09081351-01AMS	1	EB081009-SO2	Aqueous						0.1	1.2	0.1	1.0
6	TRX09081351-01AMSD	1	EB081009-SO2	Aqueous						0.1	1.2	0.1	1.0
7	TRX09081351-07A	1	EB081109-SO	Aqueous						0.1	1	0.1	1.0
8	TRX09081353-01A	1	FB080409-GW	Aqueous						0.1	1	0.1	1.0
9	SPLP DI H2O EXTRACTION FL	1								0.1	1	0.1	1.0
10	TRX09081352-01A DI	1	RSAU5-0.5BSPLP	Soil						0.1	1	0.1	1.0
11	SPLP pH EXTRACTION FLUID	1								0.1	1	0.1	1.0
12	TRX09081352-01A pH	1	RSAU5-0.5BSPLP	Soil						0.1	1	0.1	1.0

#	Reagent ID	Reagent Name
1	NanoPure	NanoPure Water

#	Spike ID	Spike Name and Concentration	AmfAdd (µl)
1	HPLC_SPIKE	OA Surr. Spike LC090529-06 (1000ug/mL)	10
2	HPLC_SPIKE	OA QC Spike LC090529-15 (200/100ug/mL)	5