



January 7, 2015

Mr. Glenn Bailey
INSPECTORATE AMERICA
101 Widgeon Drive
St. Rose, LA 70087

Subject: Determination of Polycyclic Aromatic Hydrocarbons in Oil

Dear Mr. Bailey:

We are pleased to present our report on the determination of polycyclic aromatic hydrocarbons (PAH) in three oil samples submitted to us on January 5, 2015.

The samples were prepared in duplicate. Two 100 μ L aliquots of the oil were diluted to 1 mL with acetone and analyzed for PAHs by high performance liquid chromatography (HPLC) using the attached analytical parameters.

A 5-point calibration curve containing 17 PAHs, ranging from 0.08 μ g/mL – 8 μ g/mL, was used to quantitate the total PAH results. All compounds eluting between naphthalene through Indeno(1,2,3-cd)pyrene were added together to quantitate the final result. The results presented in the table below are based on the response of phenanthrene.

Sample Identification	PAH Concentration (μ g/mL)	
	Average	
20140032069 ShoreTank D6-2 Inventory Running	6.8	
1312983.06 ShoreTank E12.5-4 Inventory Running	5.5	
003-1400029-01-018 ShoreTank E12.5-9 Inventory Running	6.1	

Quality Control

A laboratory control spike (LCS) was prepared by spiking 5 μ L of a 2,000 μ g/mL solution of 17 PAH compounds into 2 mL of acetone for a final target of 5 μ g/mL. The recovery of the laboratory control spike was 103%.

It was a pleasure to be of assistance to Inspectorate America on this important project.

Sincerely,

Robert Lieckfield, Jr., CIH
Vice President
Division Director, HSE Laboratory Service

Bureau Veritas North America, Inc.
Health, Safety, and Environmental Services
22345 Ross Road Drive
Newport, NJ 08156

Phone: 201-344-1700
Fax: 201-344-2655
www.bv-bna.com/en-us



**Analytical Run Parameters
for
INSPECTORATE AMERICA**

Analytical Run Parameters

Instrument: Waters 2690 Separations Module

Column: Agilent Eclipse PAH, 5 μ m column 250 mm x 2.1 mm

Column Flow Rate: 0.35 mL/min

Column Temperature: 30 °C

Injection Volume: 5 μ L

Detector 1: Waters 486 UV detector

Detection Wavelength: 254 nm

Run Time: 35 minutes

Mobile Phase: using the following gradient

0 min- 50% acetonitrile/ 50% water

16.5 min- 100% acetonitrile

24.0 min- 100% acetonitrile

25.5 min- 50% acetonitrile/ 50% water

40.0 min- 50% acetonitrile/ 50% water

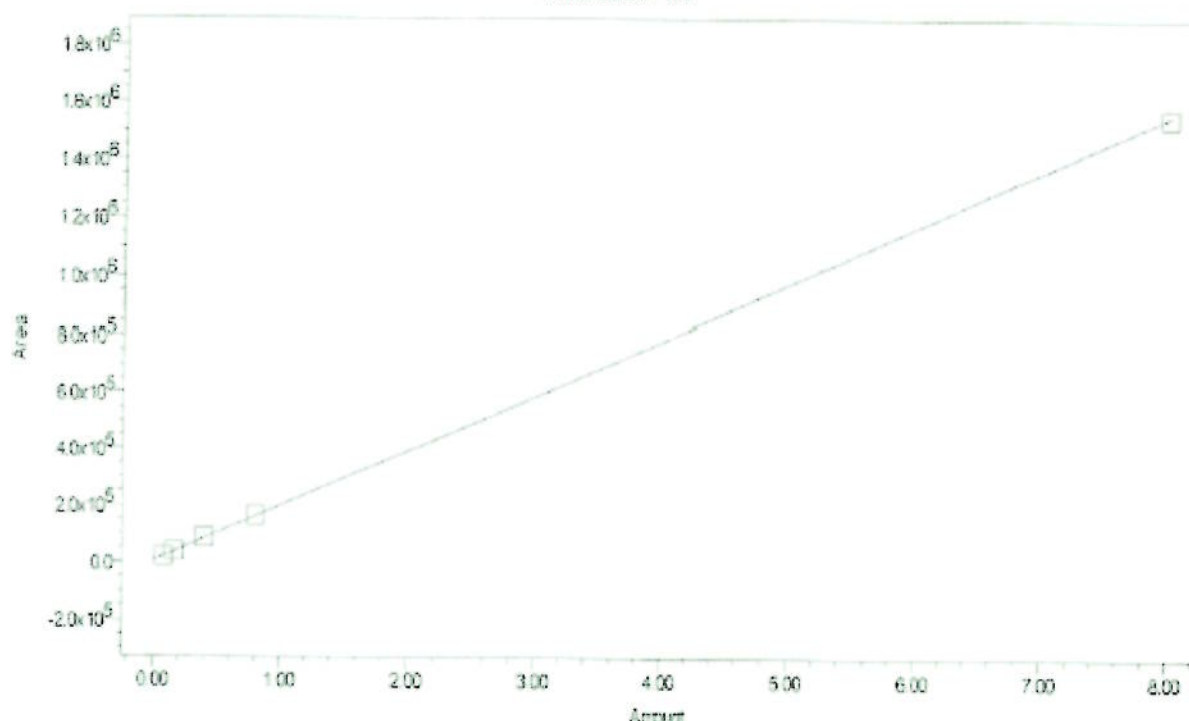
Reported by User System

Project Name: LC2B_15_01

Processing Method	PNA Eclipse	Project Name:	LC2B_15_01
Processing Method ID	67005	System	LCWA2B
Calibration ID	57113	Channel	486
Date Calibrated	1/7/2015 10:49:25 AM	Proc. Chnl. Descr:	none

A 4.584640e+003
B 1.942615e+005
C 0.000000e+000
D 0.000000e+000
R² 0.999668

Calibration Plot



Peak Phenanthrene

	Name	Level	X Value	Response	Calc. Value	% Deviation	Manual	Ignore
1	Phenanthrene		0.080000	18456.657303	0.071409	-10.739	No	No
2	Phenanthrene		0.160000	36960.000000	0.156144	3.940	No	No
3	Phenanthrene		0.400000	88250.000000	0.420080	5.067	No	No
4	Phenanthrene		0.800000	163492.000000	0.816008	2.261	No	No
5	Phenanthrene		8.000000	1551692.901217	7.994051	-0.449	No	No

Sample Information

SampleName 0.08 ppm

Date Acquired 1/6/2015 12:22:52 PM

Sample_Type

Acq Method Set PNA 17

Sample Type Standard

Processing Method PNA Eclipse

Vial 3

Date Processed 1/7/2015 10:48:26 AM

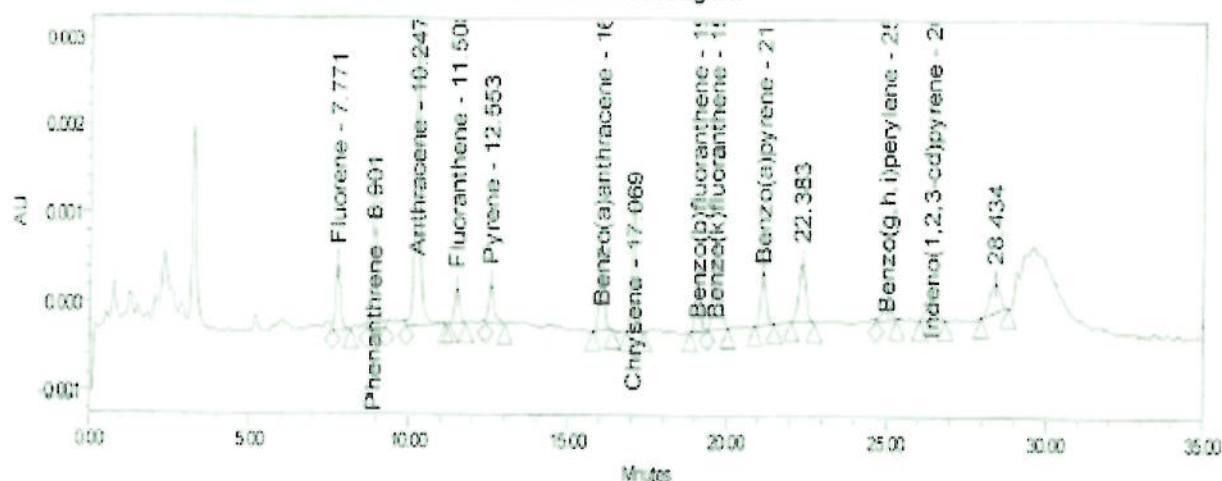
Injection 1

Channel Name 436

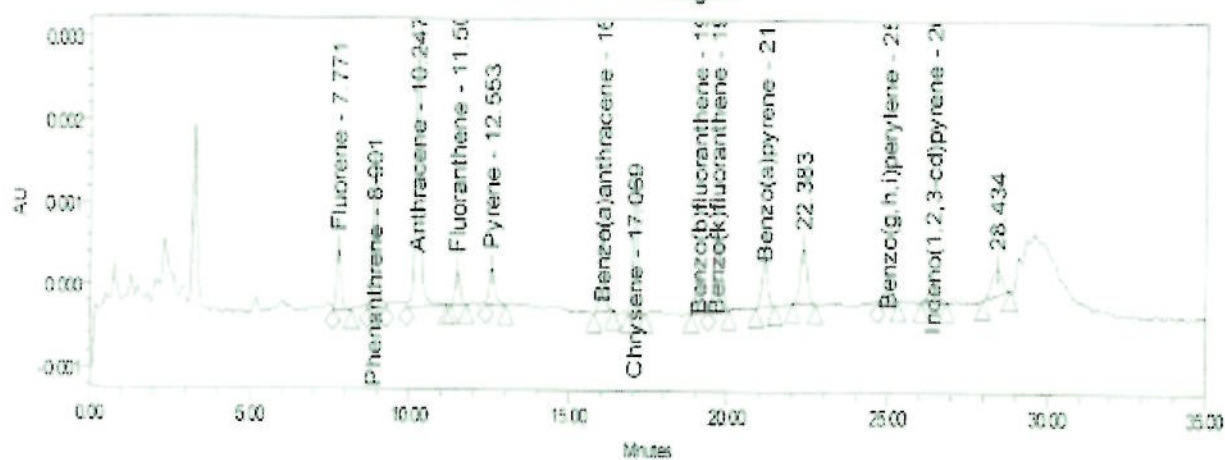
Injection Volume 5.00 uL

Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Anthracene	10.247	36382	3266		2.000				100	
Benzo(a)anthracene	16.069	10406	981		2.000				100	
Benzo(a)pyrene	21.174	7827	601		2.000				100	
Benzo(b)fluoranthene	19.100	6605	551		2.000				100	
Benzo(g,h,i)perylene	25.011	3587	175		2.000				100	

SampleName 0.08 ppm

System Name LCNA28

Sample Set Name 16010029_PNA17

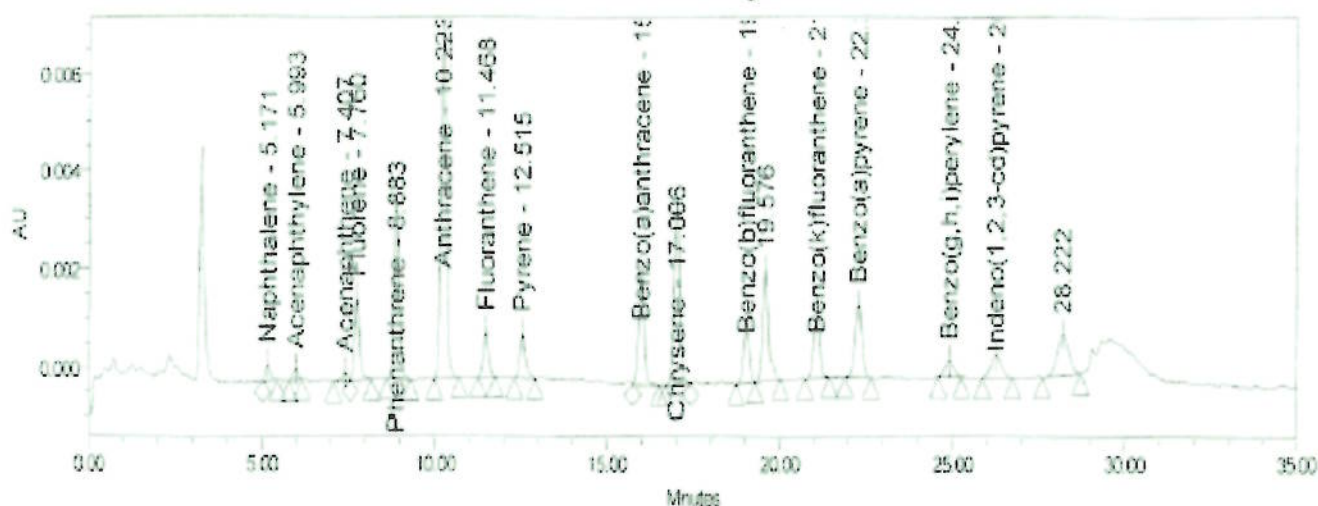
	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Benzo(k)fluoranthene	19.655	14544	1006		2.000				1.00	
1	Chrysene	17.098	17935	1026		2.000				1.00	
1	Fluoranthene	11.508	4166	401		2.000				1.00	
1	Fluorene	7.771	7588	741		2.000				1.00	
2	Indeno(1,2,3-cd)pyrene	29.418	5155	247		2.000				1.00	
1	Phenanthrene	8.901	18457	1893	0.0900	2.000	0.1800			1.00	67118
2	Pyrene	12.583	5505	446		2.000				1.00	
3	Total PAH	7.771	155479	12748		2.000				1.00	
4		28.434	7264	318		2.000				1.00	
5		22.383	10157	669		2.000				1.00	

Sample Information

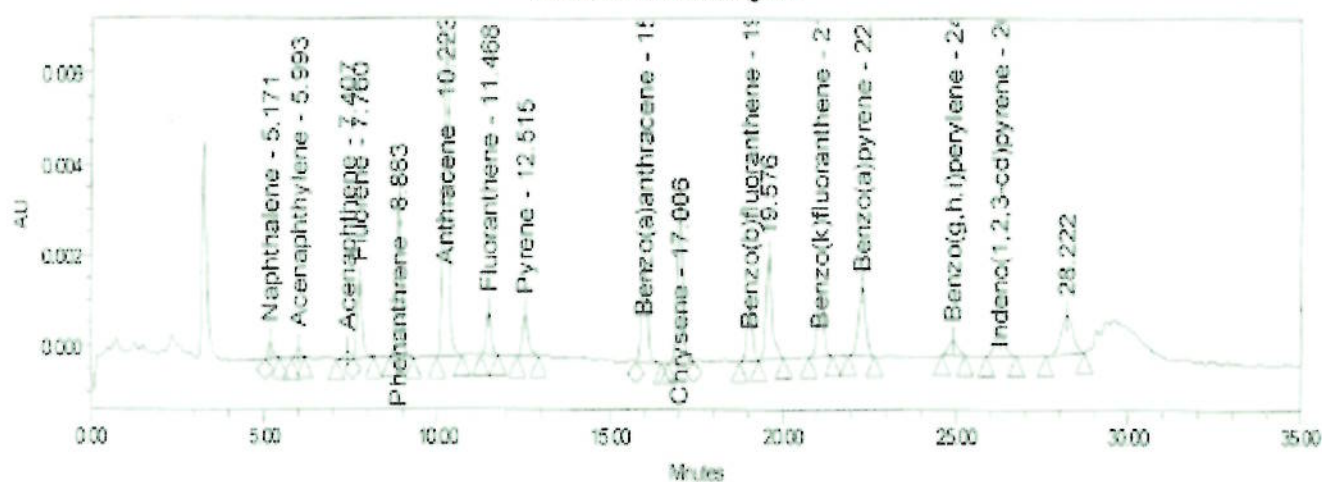
SampleName 0.16 ppm
 Sample_Type
 Sample Type Standard
 Vial 4
 Injection 1
 Injection Volume 5.00 ul

Date Acquired 1/9/2015 12:59:05 PM
 Acq Method Set PNA 17
 Processing Method PNA Eclipse
 Date Processed 1/7/2015 10:49:17 AM
 Channel Name 486
 Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Acenaphthene	7.407	2276	173		2.000				1.00	
Acenaphthylene	5.993	2314	222		2.000				1.00	
Anthracene	10.223	71599	7067		2.000				1.00	
Benzo(a)anthracene	15.589	24830	2246		2.000				1.00	
Benzo(a)pyrene	22.208	21905	1467		2.000				1.00	

Sample Name 0.16 ppm

System Name LC/MS2B

Sample Set Name 16010029_PNA17

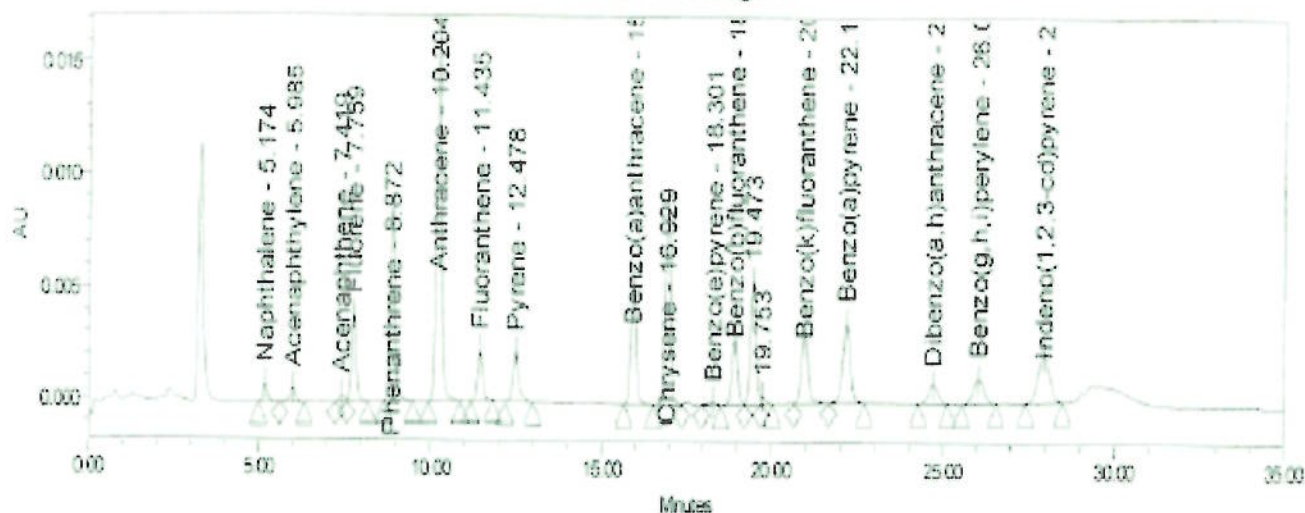
	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Benzo(b)fluoranthene	19.025	13693	1223		2.000				1.00	
2	Benzo(g,h,i)perylene	24.898	6166	324		2.000				1.00	
3	Benzo(k)fluoranthene	21.073	17262	1345		2.000				1.00	
4	Chrysene	17.006	41853	3708		2.000				1.00	
5	Fluoranthene	11.468	9491	923		2.000				1.00	
6	Fluorene	7.750	17236	1656		2.000				1.00	
7	Indeno(1,2,3-cd)pyrene	26.256	10072	464		2.000				1.00	
8	Naphthalene	5.171	3406	357		2.000				1.00	
9	Phenanthrene	8.683	36690	3651	0.1600	2.000	0.3200			1.00	57118
10	Pyrene	12.516	10606	925		2.000				1.00	
11	Total PAH	5.171	338560	26096		2.000				1.00	
12		20.222	20406	833		2.000				1.00	
13		19.576	26366	2272		2.000				1.00	

Sample Information

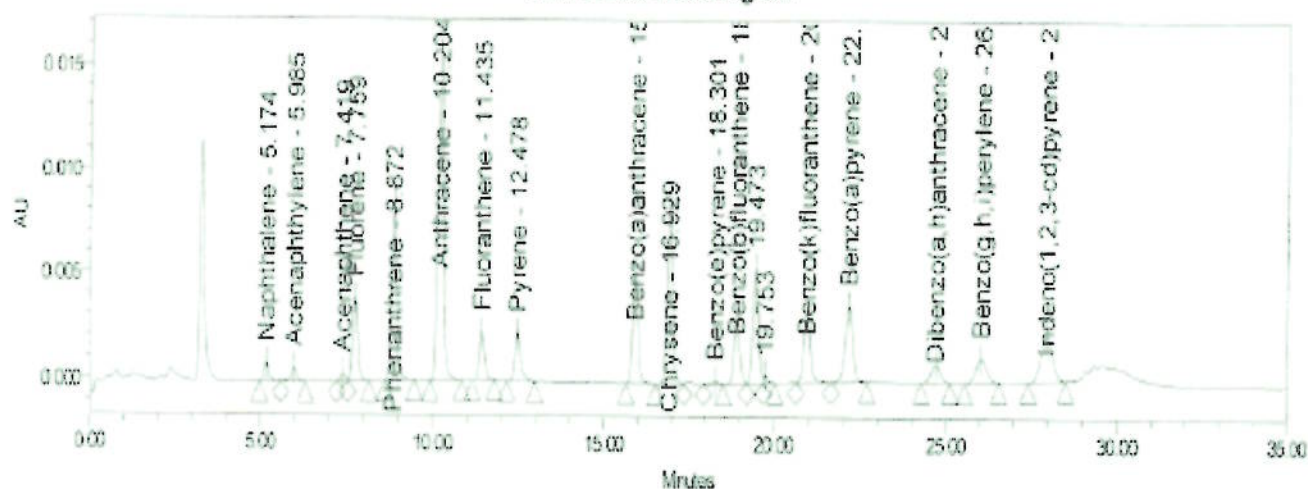
SampleName 04 ppm
 Sample_Type
 Sample Type Standard
 Vial 5
 Injection 1
 Injection Volume 500 ul

Date Acquired 1/6/2015 1:35:17 PM
 Acq Method Set PNA 17
 Processing Method PNA Eclipse
 Date Processed 1/7/2015 10:48:57 AM
 Channel Name 466
 Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Acenaphthene	7.419	3515	363		2.000				1.00	
Acenaphthylene	5.985	7823	642		2.000				1.00	
Anthracene	10.204	168516	16386		2.000				1.00	
Benzo(a)anthracene	15.929	58218	5337		2.000				1.00	
Benzo(a)pyrene	22.189	63608	3575		2.000				1.00	

SampleName 0.4 ppm

System Name LOVA2B

Sample Set Name 16010029_PNA17

	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Benzo(b)fluoranthene	18.932	34513	2941		2.000				1.00	
2	Benzo(e)pyrene	18.301	2144	112		2.000				1.00	
3	Benzo(g,h)perylene	25.051	23825	1110		2.000				1.00	
4	Benzo(k)fluoranthene	20.959	42935	3233		2.000				1.00	
5	Chrysene	16.920	97478	8840		2.000				1.00	
6	Benzo(a,h)anthracene	24.702	16065	857		2.000				1.00	
7	Fluoranthene	11.435	23293	2263		2.000				1.00	
8	Fluorene	7.759	39045	3944		2.000				1.00	
9	Indeno(1,2,3-cd)pyrene	27.959	49843	2075		2.000				1.00	
10	Naphthalene	5.174	8779	865		2.000				1.00	
11	Phenanthrene	8.872	86250	8505	0.4000	2.000	0.8000			1.00	57118
12	Pyrene	12.478	25161	2234		2.000				1.00	
13	Total PAH	5.174	805095	69221		2.000				1.00	
14		19.473	51799	5471		2.000				1.00	
15		19.753	3189	353		2.000				1.00	

Sample Information

SampleName 0.8 ppm

Date Acquired 1/8/2016 2:11:29 PM

Sample_Type

Acq Method Set PNA 17

Sample Type Standard

Processing Method PNA Eclipse

Vial 6

Date Processed 1/7/2016 10:48:06 AM

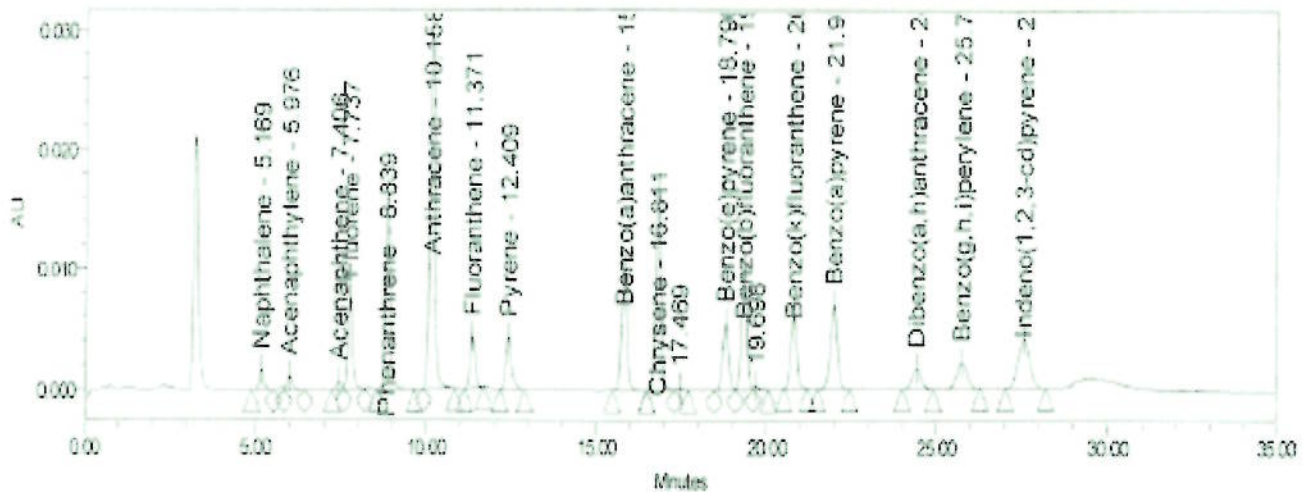
Injection 1

Channel Name 486

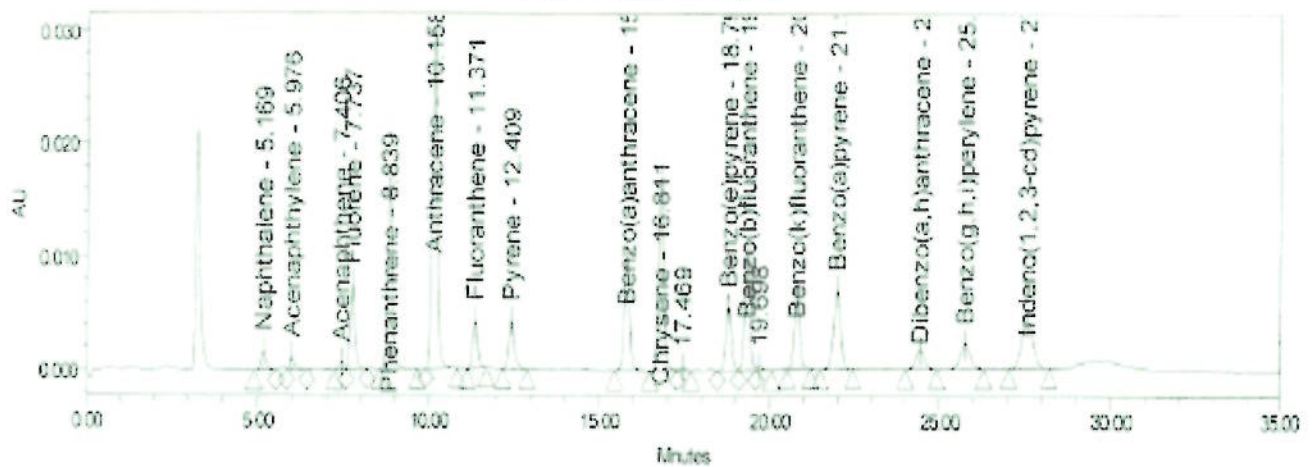
Injection Volume 5.00 uL

Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Acenaphthene	7.406	6651	703		2.000				1.00	
Acenaphthylene	5.976	12571	1130		2.000				1.00	
Anthracene	10.158	304736	30195		2.000				1.00	
Benzo(a)anthracene	15.811	103041	10152		2.000				1.00	
Benzo(a)pyrene	21.970	98793	9802		2.000				1.00	

Sample Name 0.8 ppm

System Name LC/V42B

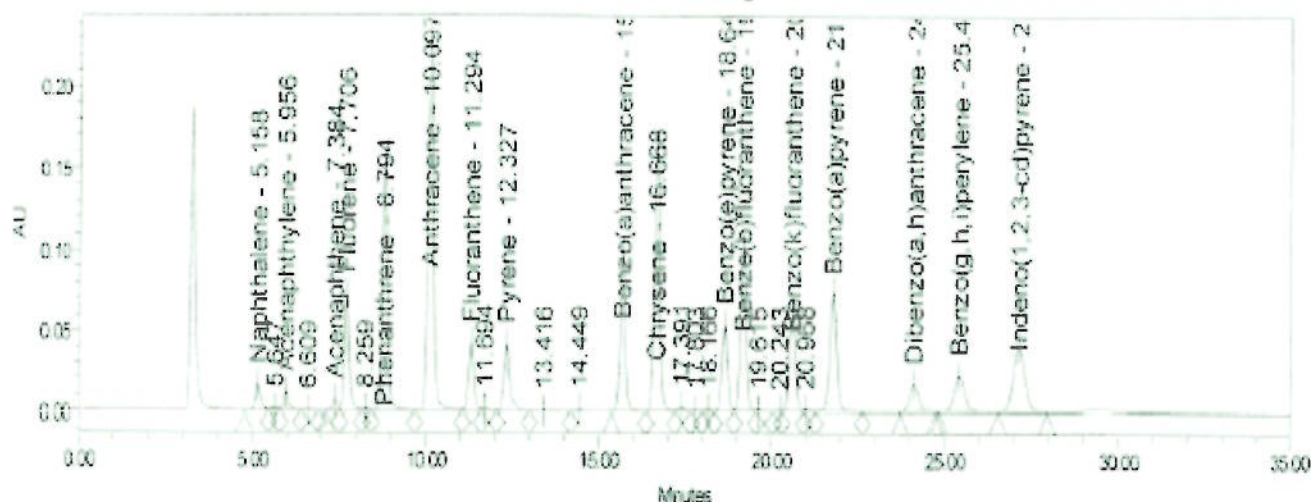
Sample Set Name 16010029_PNA17

	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Benzo(b)fluoranthene	19.328	117002	10434		2.000				1.00	
1	Benzo(e)pyrene	18.796	63076	5566		2.000				1.00	
1	Benzo(g,h)perylene	25.750	45637	2170		2.000				1.00	
1	Benzo(k)fluoranthene	20.784	74712	6110		2.000				1.00	
2	Chrysene	16.811	186756	17027		2.000				1.00	
1	Benzo(a)anthracene	24.421	30286	1690		2.000				1.00	
2	Fluoranthene	11.371	43362	4304		2.000				1.00	
3	Fluorene	7.737	75034	7568		2.000				1.00	
1	Indeno(1,2,3-cd)pyrene	27.566	56276	4081		2.000				1.00	
5	Naphthalene	5.160	16163	1663		2.000				1.00	
5	Phenanthrene	8.636	163492	16365	0.8000	2.000	1.6000			1.00	67118
7	Pyrene	12.403	46020	4306		2.000				1.00	
3	Total PAH	5.169	1496283	130927		2.000				1.00	
3		17.460	2285	215		2.000				1.00	
3		19.698	3246	312		2.000				1.00	

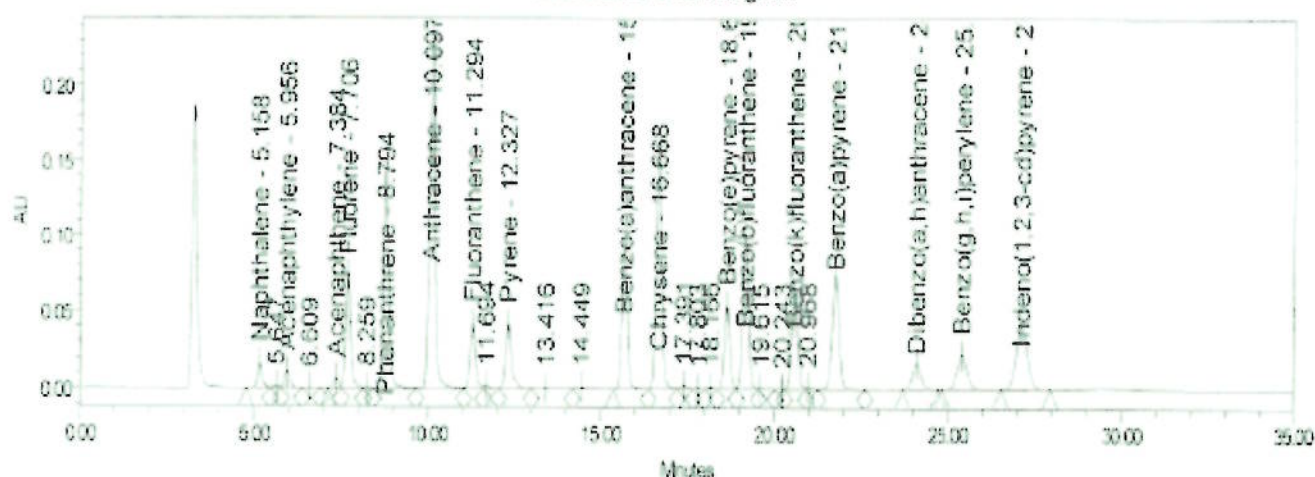
Sample Information

Sample Name	8 ppm	Date Acquired	1/6/2015 2:48:03 PM
Sample Type		Acq Method Set	PNA 17
Sample Type	Standard	Processing Method	PNA Eclipse
Vial	1	Date Processed	1/7/2015 10:45:39 AM
Injection	1	Channel Name	486
Injection Volume	5.00 ul	Run Time	35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Acenaphthene	7.384	62244	6756		2.000				1.00	
Acenaphthylene	5.956	107938	10921		2.000				1.00	
Anthracene	10.097	2025654	232716		2.000				1.00	
Benzo(a)anthracene	15.668	1049306	98283		2.000				1.00	
Benzo(a)pyrene	21.756	1043347	74712		2.000				1.00	

Sample Name 8 ppm

System Name LOWA2B

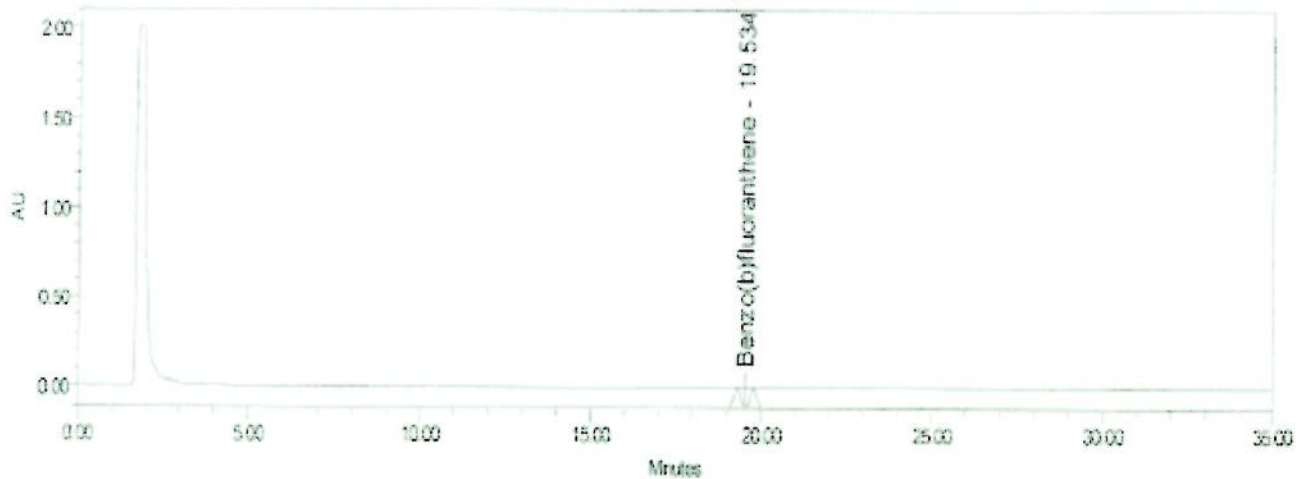
Sample Set Name 18010029_PNA17

	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Benzo(b)fluoranthene	19.163	1127370	100966		2.000				1.00	
1	Benzo(e)pyrene	19.640	612812	54156		2.000				1.00	
1	Benzo(g,h)perylene	25.411	448623	21959		2.000				1.00	
1	Benzo(k)fluoranthene	20.585	725580	59988		2.000				1.00	
0	Chrysene	16.668	1782148	163379		2.000				1.00	
1	Dibenz(a,h)anthracene	24.100	262641	16706		2.000				1.00	
2	Fluoranthene	11.294	445405	42417		2.000				1.00	
3	Fluorene	7.706	723060	73772		2.000				1.00	
1	Indeno(1,2,3-cd)pyrene	27.132	607108	40104		2.000				1.00	
3	Naphthalene	5.158	158485	16360		2.000				1.00	
3	Phenanthrene	8.794	1551653	154081	8.0000	2.000	16.0000			1.00	67118
7	Pyrene	12.327	460135	41963		2.000				1.00	
3	Total PAH	5.158	14201301	1220332		2.000				1.00	
3		17.391	29364	2370		2.000				1.00	
3		8.250	10781	928		2.000				1.00	
1		14.449	14146	917		2.000				1.00	
2		17.803	5432	389		2.000				1.00	
3		20.968	11483	973		2.000				1.00	
4		19.615	7571	623		2.000				1.00	
3		18.106	12574	1220		2.000				1.00	
3		20.243	3361	361		2.000				1.00	
7		6.609	4734	330		2.000				1.00	
3		5.647	14938	1106		2.000				1.00	
3		13.416	12947	360		2.000				1.00	
2		11.694	19864	1491		2.000				1.00	

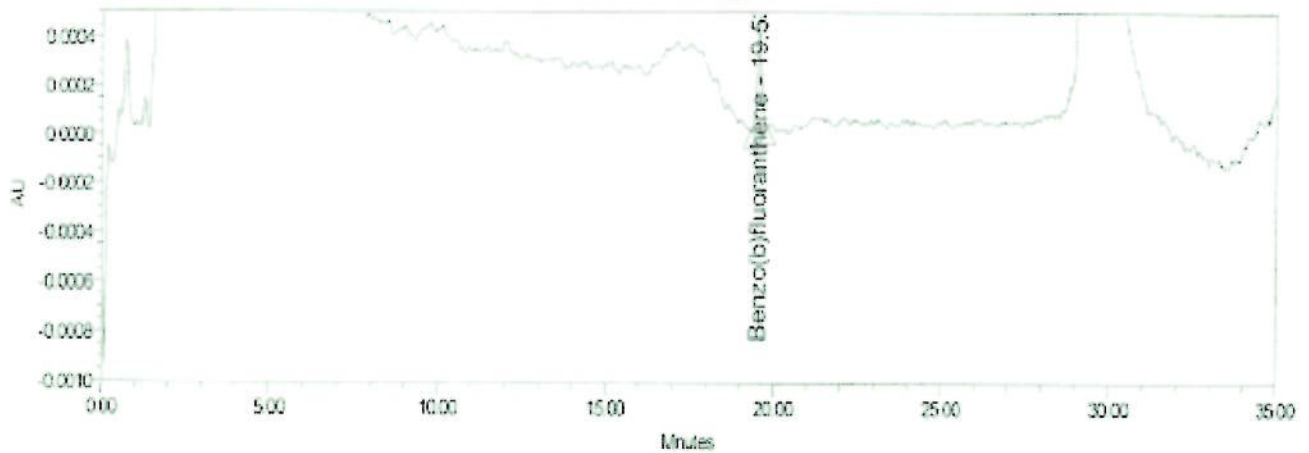
Sample Information

SampleName	Solvent Blank (Acetone)	Date Acquired	1/6/2015 4:17:04 PM
Sample_Type		Acq Method Set	PNA 17
Sample Type	Unknown	Processing Method	PNA Eclipse
Vial	7	Date Processed	1/7/2015 10:50:00 AM
Injection	1	Channel Name	486
Injection Volume	5.00 ul	Run Time	35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram

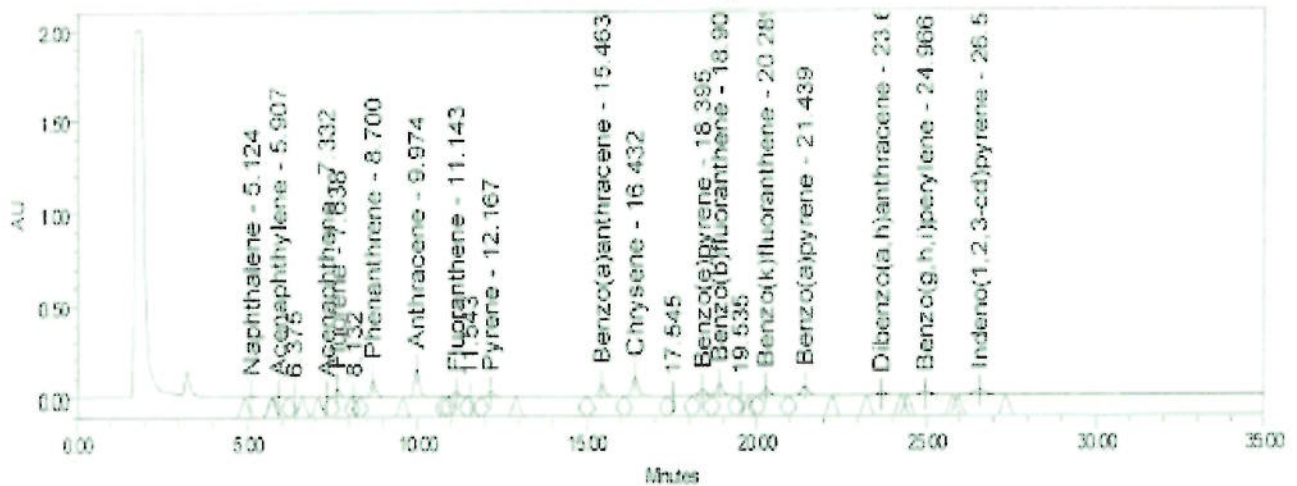


Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Benzo(b)fluoranthene	19.534	3545	403		2.000				1.00	67125
Total PAH	19.534	3545	403		2.000				1.00	67119

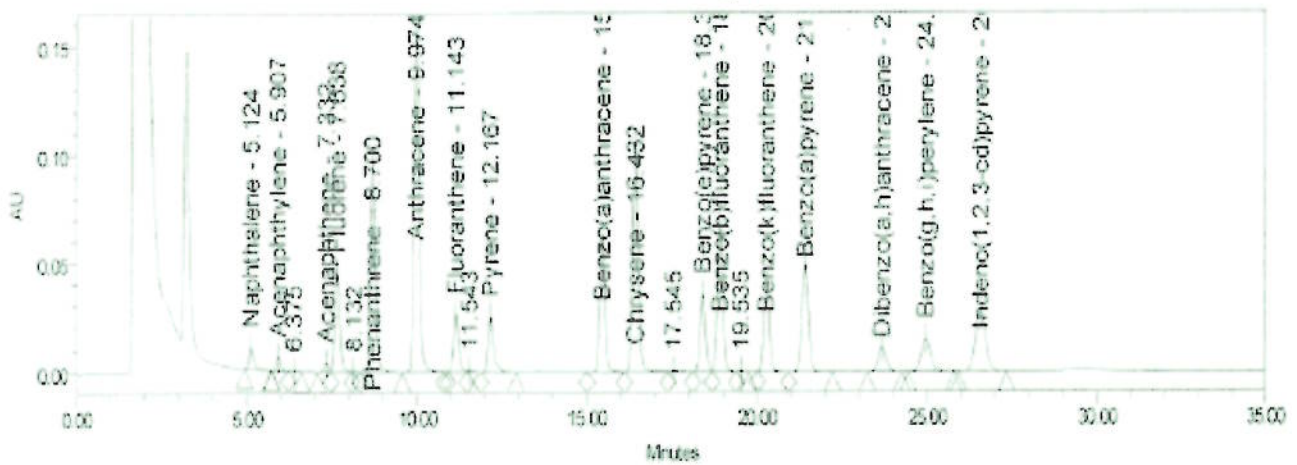
Sample Information

Sample Name: LCS	Date Acquired: 1/6/2015 4:53:17 PM
Sample Type: Unknown	Acq Method Set: PNA 17
Vial: 6	Processing Method: PNA Eclipse
Injection: 1	Date Processed: 1/7/2015 10:50:00 AM
Injection Volume: 5.00 ul	Channel Name: 486
	Run Time: 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/L)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Acenaphthene	7.332	36597	4177		2.000		10.0000		1.00	67116
Acenaphthylene	5.907	61798	8189		2.000		10.0000		1.00	67115
Anthracene	9.974	1693715	157217		2.000		10.0000		1.00	67119
Benzo(a)anthracene	15.463	606963	63816		2.000		10.0000		1.00	67122
Benzo(a)pyrene	21.439	662916	49547		2.000		10.0000		1.00	67127

SampleName LCS

System Name LCW42B

Sample Set Name 16010029_PNA17

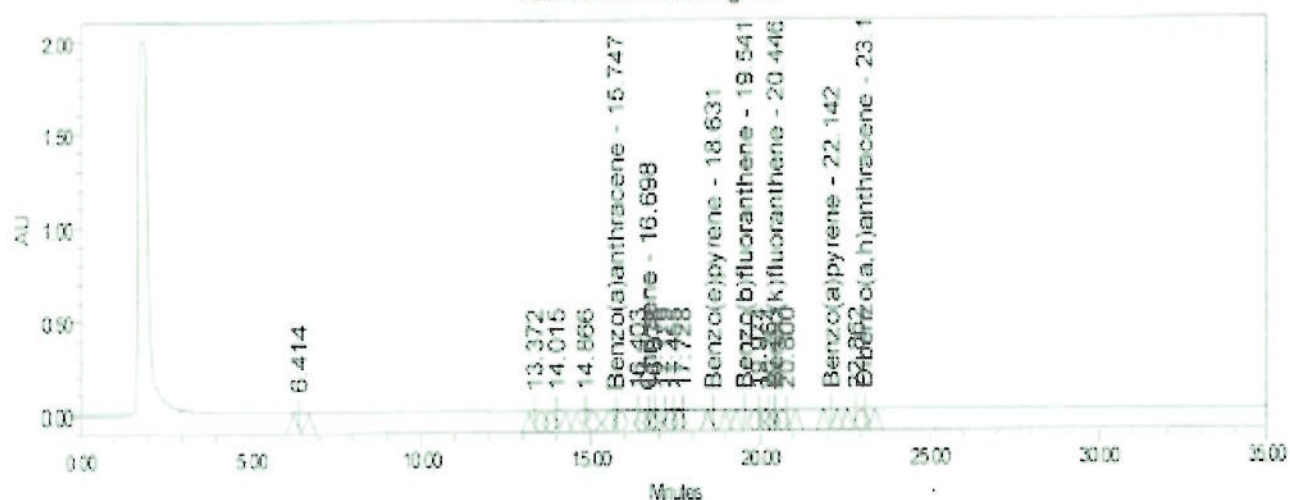
	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Benzofluoranthene	18.905	770038	69437		2.000		10.0000		1.00	67125
1	Benzofluoranthene	18.395	400511	35855		2.000		10.0000		1.00	67124
1	Benzofluoranthene	24.906	290057	14723		2.000		10.0000		1.00	67123
1	Benzofluoranthene	20.289	489887	41352		2.000		10.0000		1.00	67126
0	Chrysene	15.432	1173536	106055		2.000		10.0000		1.00	67123
1	Dibenzofluoranthene	23.602	163582	10540		2.000		10.0000		1.00	67128
2	Fluoranthene	11.140	262545	26547		2.000		10.0000		1.00	67120
3	Fluorene	7.608	465045	45933		2.000		10.0000		1.00	67117
6	Indeno(1,2,3-cd)pyrene	25.575	587962	27275		2.000		10.0000		1.00	67130
5	Naphthalene	5.124	106606	9063		2.000		10.0000		1.00	67114
6	Phenanthrene	8.700	1004908	97581	5.1489	2.000	10.2977	10.0000	102.98	1.00	67118
7	Pyrene	12.167	262306	25102		2.000		10.0000		1.00	67121
3	Total PAH	5.124	9224168	793650	47.4597	2.000	94.9193	10.0000	949.19	1.00	67116
0		17.545	13512	491		2.000		10.0000		1.00	
0		6.375	2300	169		2.000		10.0000		1.00	
1		8.132	2969	274		2.000		10.0000		1.00	
2		19.535	3670	386		2.000		10.0000		1.00	
3		11.543	7391	623		2.000		10.0000		1.00	

Sample Information

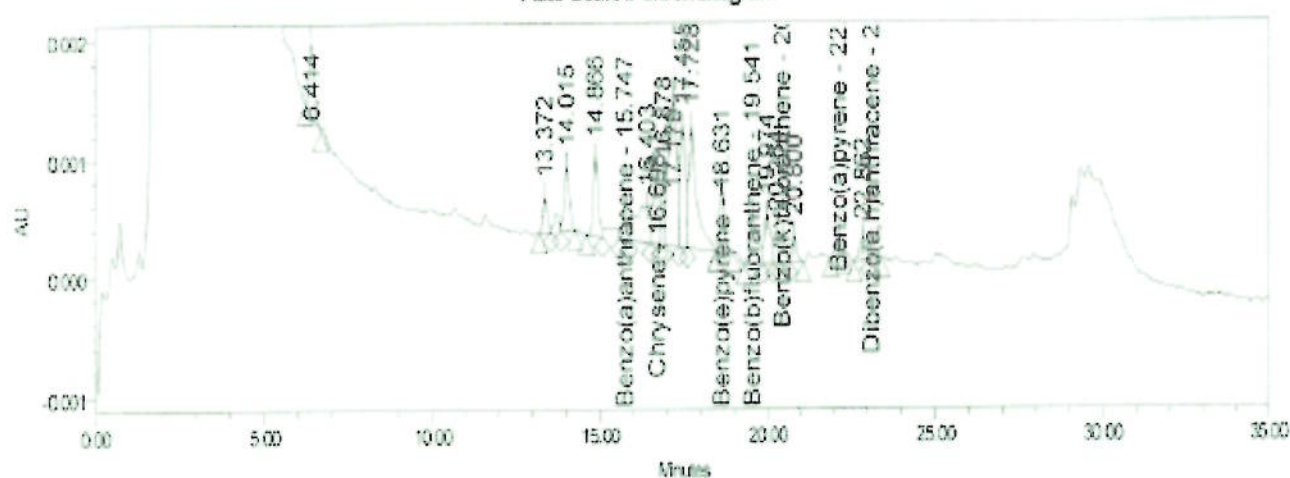
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Vial 9
Injection 1
Injection Volume 5.00 ul

Date Acquired 1/6/2015 5:29:27 PM
Acq Method Set PNA 17
Processing Method PNA Eclipse
Date Processed 1/7/2015 10:54:00 AM
Channel Name 486
Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Concn	Curve ID
Benzo(a)anthracene	15.747	4043	316		2.000				1.00	67122
Benzo(a)pyrene	22.142	1405	148		2.000				1.00	67127
Benzo(b)fluoranthene	19.541	7031	488		2.000				1.00	67125
Benzo(e)pyrene	18.631	5319	604		2.000				1.00	67124
Benzo(k)fluoranthene	20.446	2863	245		2.000				1.00	67126

SampleName 16010028-1

System Name LOVA2B

Sample Set Name 16010029_PNA17

Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Chrysene	16.696	7952	618		2.000				1.00	67123
Dibenz[a,h]anthracene	23.116	1973	142		2.000				1.00	67128
Total PAH	6.414	132048	9993	0.6551	2.000	1.3102			1.00	67118
	20.800	2266	228		2.000				1.00	
	6.414	5693	590		2.000				1.00	
	16.403	5963	316		2.000				1.00	
	14.666	6696	670		2.000				1.00	
	14.015	6296	545		2.000				1.00	
	13.372	3008	305		2.000				1.00	
	17.455	12066	1036		2.000				1.00	
	17.728	17566	1038		2.000				1.00	
	17.179	22470	1216		2.000				1.00	
	22.662	2664	185		2.000				1.00	
	19.974	5437	419		2.000				1.00	
	16.678	4874	569		2.000				1.00	
	20.264	2617	276		2.000				1.00	

ES volume = 10 mL

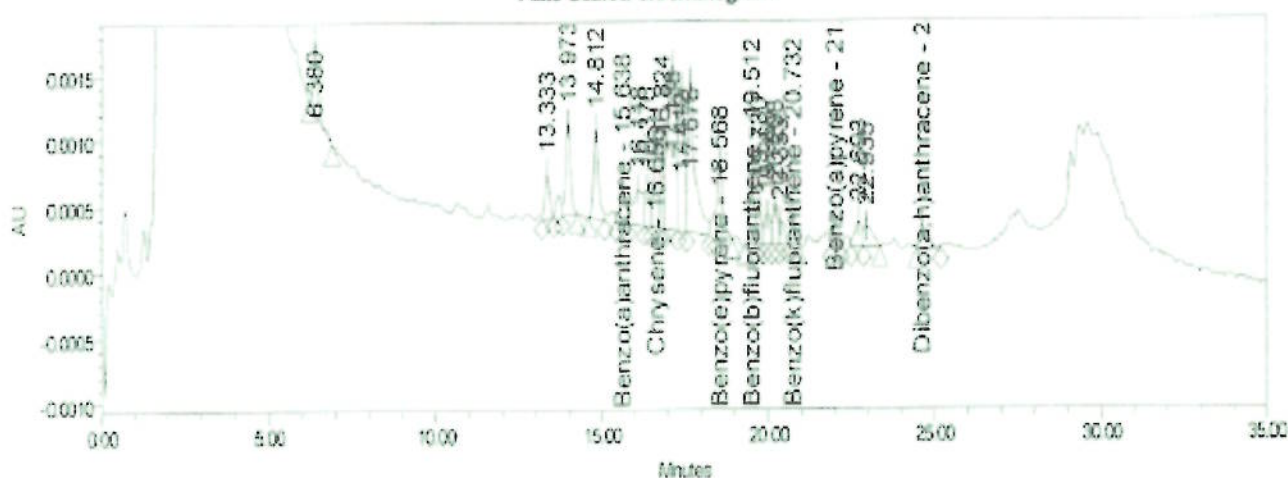
Sample Information

SampleName 16010029-1 REP	Date Acquired 1/6/2015 6:05:40 PM
Sample_Type	Acq Method Set PNA 17
Sample Type Unknown	Processing Method PNA Eclipse
Vial 10	Date Processed 1/7/2015 10:54:18 AM
Injection 1	Channel Name 406
Injection Volume 5.00 uL	Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Benzo(a)anthracene	15.638	4034	325		2.000				1.00	67122
Benzo(a)pyrene	21.990	2307	225		2.000				1.00	67127
Benzo(b)fluoranthene	19.512	4448	447		2.000				1.00	67125
Benzo(e)pyrene	18.568	6692	565		2.000				1.00	67124
Benzo(k)fluoranthene	20.732	1935	237		2.000				1.00	67126

SampleName 16010029.1 REP

System Name LC/MS2B

Sample Set Name 16010029_PNA17

	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Chrysene	16.656	7140	626		2.000				1.00	67123
1	Dibenzofluanthracene	24.632	2594	190		2.000				1.00	67128
1	Total PAH	6.360	136649	10036	0.6798	2.000	1.3597			1.00	67118
1		16.824	4205	544		2.000				1.00	
2		17.138	22936	1266		2.000				1.00	
1		13.973	7403	701		2.000				1.00	
2		22.935	2532	161		2.000				1.00	
3		22.690	2996	188		2.000				1.00	
4		20.363	1860	180		2.000				1.00	
3		20.208	3099	322		2.000				1.00	
5		19.966	2930	230		2.000				1.00	
7		19.730	3363	344		2.000				1.00	
3		6.380	5420	545		2.000				1.00	
2		13.333	3394	342		2.000				1.00	
2		14.812	6940	684		2.000				1.00	
1		16.376	3195	280		2.000				1.00	
2		15.118	6187	272		2.000				1.00	
3		17.412	13629	1114		2.000				1.00	
4		17.676	17982	1157		2.000				1.00	

ES volume = 10 mL

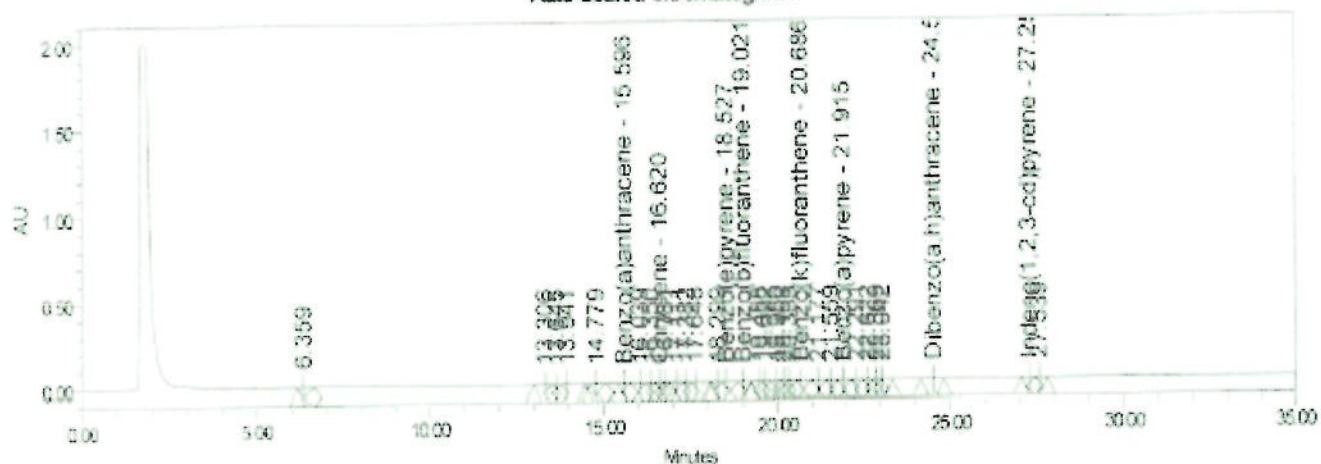
System Name LCW42B

Sample Information

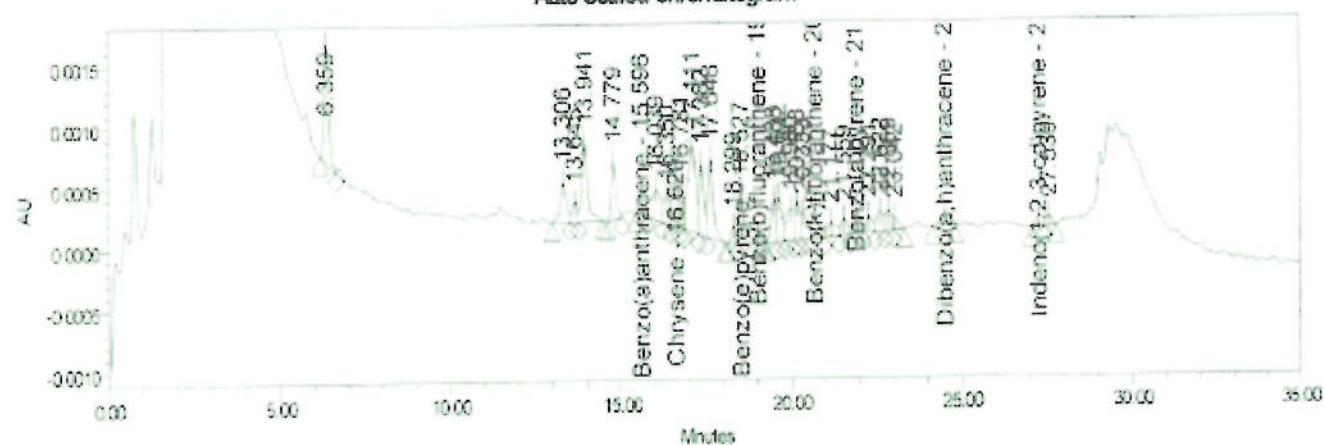
SampleName 160100292
 Sample_Type
 Sample Type Unknown
 Vial 11
 Injection 1
 Injection Volume 5.00 ul

Date Acquired 1/6/2015 6:41:51 PM
 Acq Method Set PNA 17
 Processing Method PNA Eclipse
 Date Processed 1/7/2015 11:16:14 AM
 Channel Name 486
 Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Injection Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve D
Benzo(a)anthracene	15.596	2278	202		2.000				1.00	67122
Benzo(a)pyrene	21.915	2762	210		2.000				1.00	67127
Benzo(b)fluoranthene	19.021	708	60		2.000				1.00	67126
Benzo(e)pyrene	18.527	4668	449		2.000				1.00	67124
Benzo(k)fluoranthene	20.696	3153	257		2.000				1.00	67125

Sample Name 16010029-2

System Name LC/MS2B

Sample Set Name 16010029_PNA17

	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Chrysene	16.620	4718	428		2.000				1.00	67123
2	Dibenz[a,h]anthracene	24.514	2112	123		2.000				1.00	67128
3	Indeno[1,2,3-cd]pyrene	27.254	1449	91		2.000				1.00	67130
4	Total PAH	6.389	115297	9770	0.5699	2.000	1.1286			1.00	67118
5		27.530	1191	85		2.000				1.00	
6		22.291	1938	136		2.000				1.00	
7		20.168	3141	311		2.000				1.00	
8		16.781	2735	306		2.000				1.00	
9		16.360	3135	205		2.000				1.00	
10		15.039	5051	255		2.000				1.00	
11		14.779	4708	491		2.000				1.00	
12		13.941	7581	646		2.000				1.00	
13		13.645	1616	166		2.000				1.00	
14		13.306	4240	345		2.000				1.00	
15		6.389	9499	974		2.000				1.00	
16		18.290	1222	145		2.000				1.00	
17		17.648	6650	658		2.000				1.00	
18		17.362	5728	600		2.000				1.00	
19		17.111	11643	716		2.000				1.00	
20		19.632	4051	365		2.000				1.00	
21		19.488	3010	349		2.000				1.00	
22		20.333	2708	226		2.000				1.00	
23		19.960	3767	255		2.000				1.00	
24		21.559	1631	135		2.000				1.00	
25		21.177	2053	120		2.000				1.00	
26		22.622	2454	167		2.000				1.00	
27		22.860	1959	159		2.000				1.00	
28		23.042	1294	111		2.000				1.00	

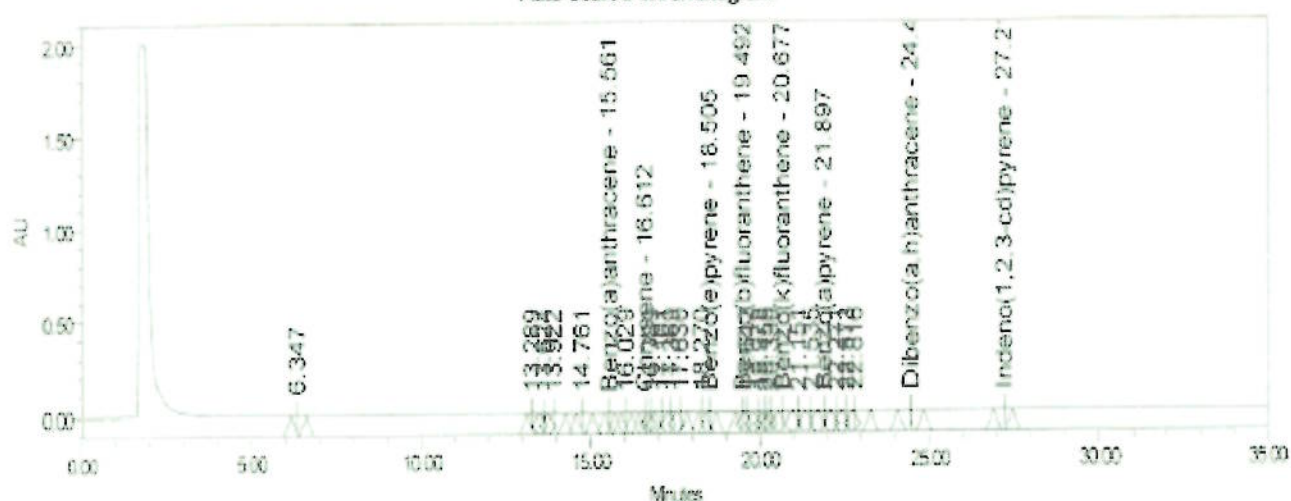
EJ volume = 10 mL

Sample Information

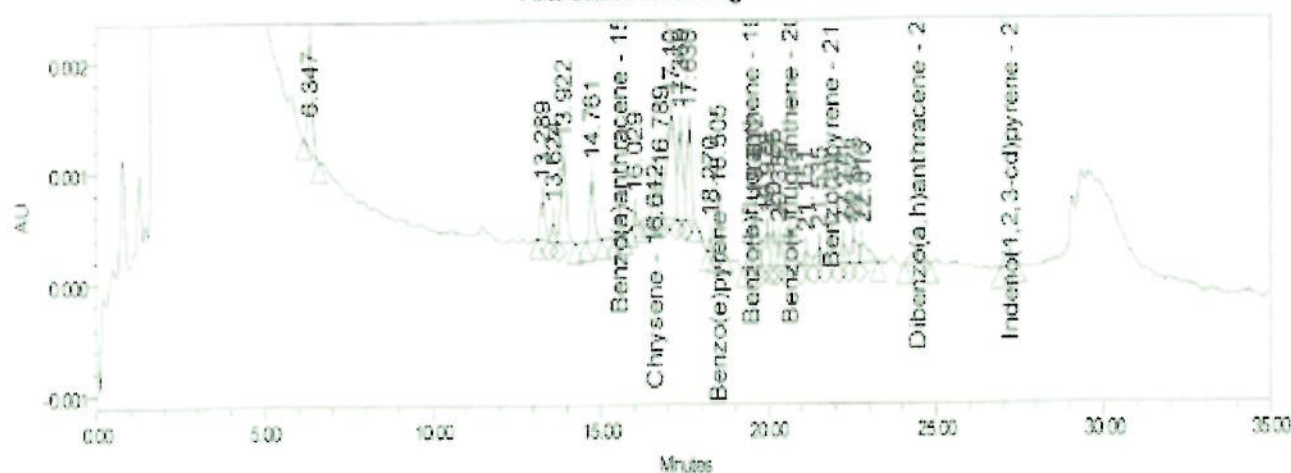
SampleName 16010029-2 REP
 Sample_Type
 Sample Type Unknown
 Vial 12
 Injection 1
 Injection Volume 5.00 uL

Date Acquired 1/6/2015 7:18:03 PM
 Acq Method Set PNA 17
 Processing Method PNA Eclipse
 Date Processed 1/7/2015 11:14:40 AM
 Channel Name 486
 Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (uL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve D
Benzofluoranthene	15.561	1453	178		2000				1.00	67122
Benzofluoranthene	21.897	3253	246		2000				1.00	67123
Benzofluoranthene	19.492	2533	344		2000				1.00	67125
Benzofluoranthene	18.505	3503	462		2000				1.00	67124
Benzofluoranthene	20.677	3045	254		2000				1.00	67126

SampleName 16010029-2 REP

System Name LONA2B

Sample Set Name 16010029_PNA17

	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Chrysene	16.612	2806	328		2.000				1.00	57123
2	Dibenz(a,h)anthracene	24.452	3644	166		2.000				1.00	57128
3	Indeno(1,2,3-cd)pyrene	27.212	2370	135		2.000				1.00	57130
4	Total PAH	6.347	112056	10124	0.5532	3460	1.1064			1.00	57118
5		20.330	2557	217		2.000				1.00	
6		19.612	5117	457		2.000				1.00	
7		20.156	2912	312		2.000				1.00	
8		17.360	8244	821		2.000				1.00	
9		18.029	973	111		2.000				1.00	
10		22.816	3154	168		2.000				1.00	
11		22.573	3058	213		2.000				1.00	
12		22.271	2332	168		2.000				1.00	
13		6.347	9142	982		2.000				1.00	
14		13.922	7880	746		2.000				1.00	
15		13.624	1631	170		2.000				1.00	
16		13.289	3662	348		2.000				1.00	
17		16.799	2252	277		2.000				1.00	
18		14.761	5111	546		2.000				1.00	
19		18.270	833	126		2.000				1.00	
20		17.630	7544	824		2.000				1.00	
21		17.101	15498	839		2.000				1.00	
22		19.978	4052	287		2.000				1.00	
23		21.151	1654	118		2.000				1.00	
24		21.635	1831	141		2.000				1.00	

ES volume = 10-6

Sample Information

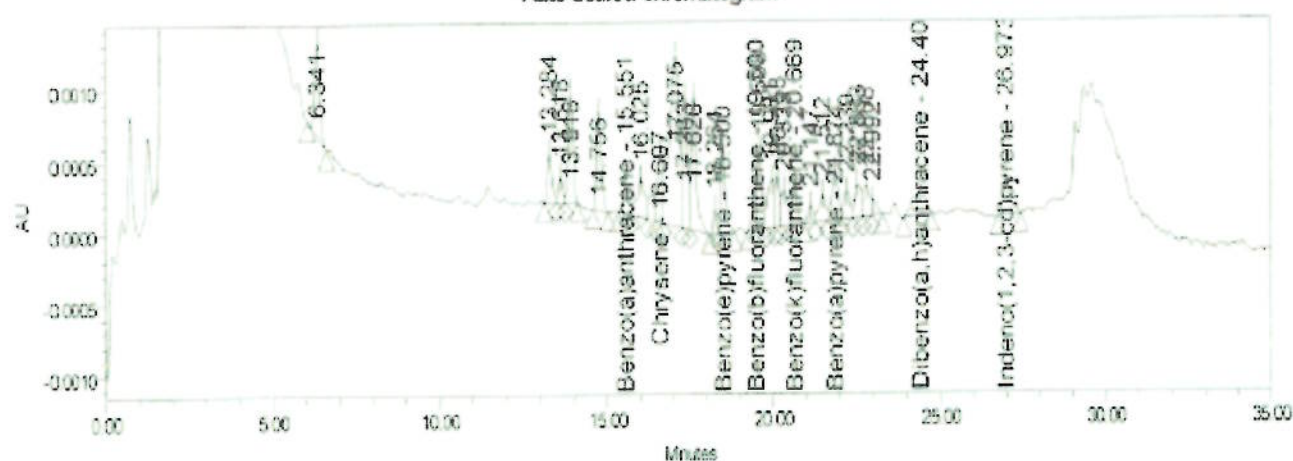
SampleName 16010029-3
 Sample_Type
 Sample Type Unknown
 Vial 13
 Injection 1
 Injection Volume 5.00 µl

Date Acquired 1/9/2015 7:54:16 PM
 Acq Method Set PNA 17
 Processing Method PNA Eclipse
 Date Processed 1/7/2015 11:08:13 AM
 Channel Name 486
 Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (µL)	Anal Amount (µg)	Target Recovery (ug)	Recovery (%)	Gluton	Curve ID
Benzo(a)anthracene	15.551	3268	293		2.000				1.00	67122
Benzo(a)pyrene	21.874	4430	346		2.000				1.00	67127
Benzo(b)fluoranthene	19.500	2314	375		2.000				1.00	67125
Benzo(e)pyrene	18.500	5711	625		2.000				1.00	67124
Benzo(k)fluoranthene	20.669	2874	313		2.000				1.00	67126

SampleName 16010029-3

System Name LCW42B

Sample Set Name 16010029_PNA17

	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Chrysene	16.607	5390	520		2.000				1.00	67123
2	Dibenz[a,h]anthracene	24.400	4403	183		2.000				1.00	67126
3	Indeno[1,2,3-cd]pyrene	26.973	3776	250		2.000				1.00	67130
4	Total PAH	6.341	138514	11560	0.6604	2.000	1.3208			1.00	67118
5		22.238	2883	180		2.000				1.00	
6		19.981	4598	334		2.000				1.00	
7		20.353	2688	250		2.000				1.00	
8		14.790	6032	664		2.000				1.00	
9		13.918	7961	755		2.000				1.00	
10		13.618	1550	170		2.000				1.00	
11		13.284	3290	339		2.000				1.00	
12		6.341	6280	645		2.000				1.00	
13		17.363	9082	920		2.000				1.00	
14		17.075	25143	1182		2.000				1.00	
15		16.025	4720	266		2.000				1.00	
16		17.626	16114	938		2.000				1.00	
17		18.264	1279	175		2.000				1.00	
18		20.153	3300	363		2.000				1.00	
19		19.598	6094	560		2.000				1.00	
20		21.512	2609	187		2.000				1.00	
21		22.563	3026	239		2.000				1.00	
22		22.808	2897	219		2.000				1.00	
23		21.147	1406	119		2.000				1.00	
24		22.562	1226	111		2.000				1.00	

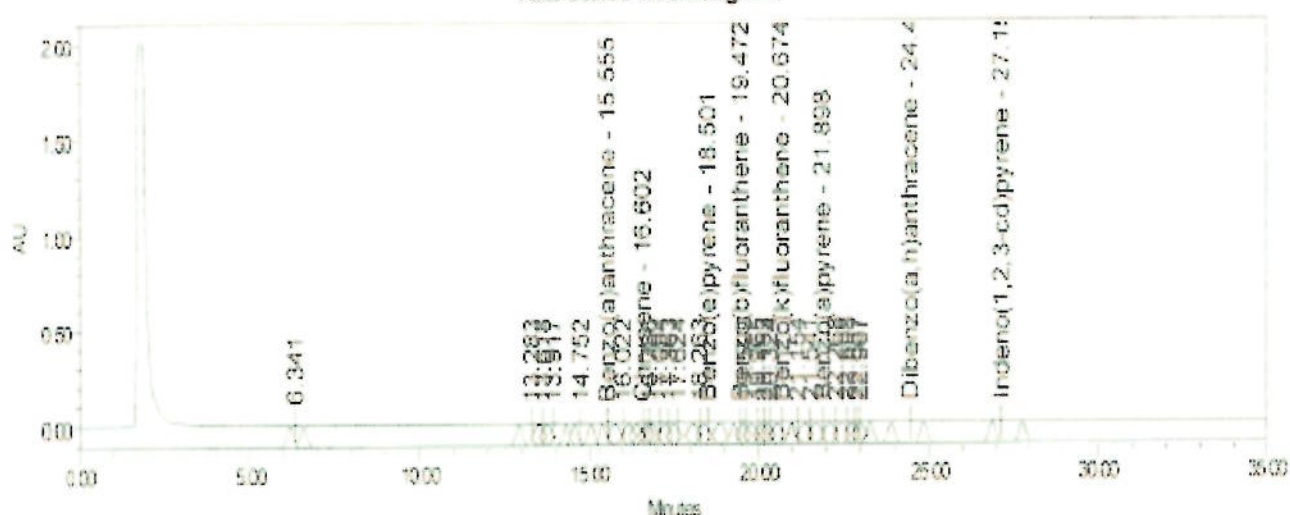
ES volume = 10 mL

Sample Information

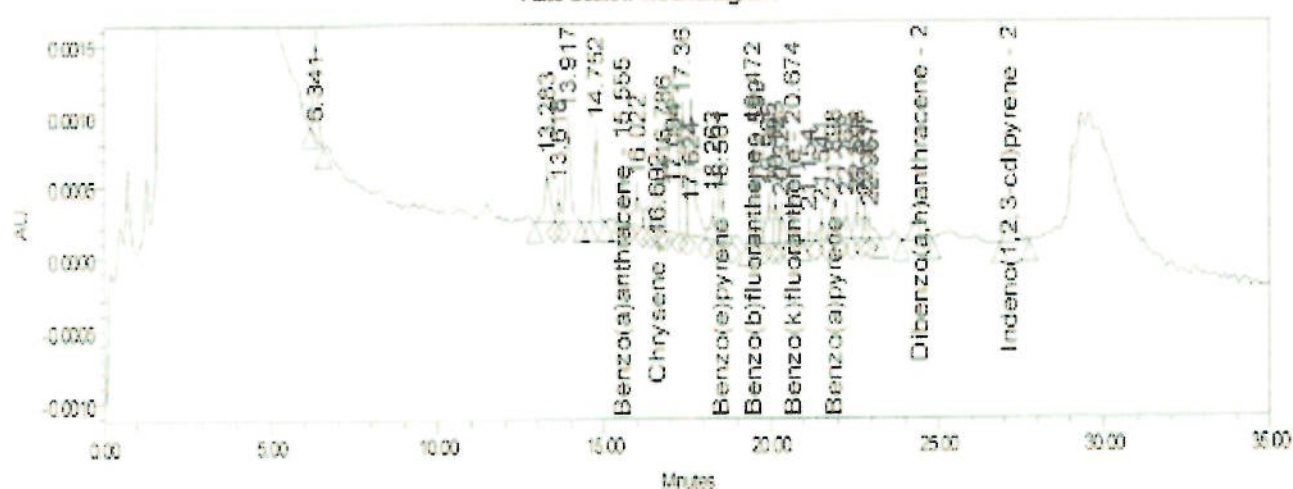
SampleName 10010029-3 REP
 Sample_Type
 Sample Type Unknown
 Vial 14
 Injection 1
 Injection Volume 5.00 ul

Date Acquired 1/8/2016 8:30:29 PM
 Acq Method Set PNA 17
 Processing Method PNA Eclipse
 Date Processed 1/7/2016 11:06:34 AM
 Channel Name 466
 Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Benz(a)anthracene	15.555	2368	228		2.000				1.00	67122
Benz(a)pyrene	21.898	3431	288		2.000				1.00	67127
Benz(b)fluoranthene	19.472	4794	504		2.000				1.00	67125
benz(e)pyrene	18.501	5236	497		2.000				1.00	67124
Benz(k)fluoranthene	20.674	2155	227		2.000				1.00	67126

SampleName 16010029-3 REP

System Name: LONA2B

Sample Set Name: 16010029_PNA17

	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Concn	Curve ID
1	Chrysene	16.602	4713	419		2.000				1.00	67123
2	Dibenz(a,h)anthracene	24.424	3969	147		2.000				1.00	67126
3	Indeno(1,2,3-cd)pyrene	27.154	3634	124		2.000				1.00	67130
4	Total PNA	6.341	122475	10170	0.6039	2.000	12437			1.00	67118
5		21.541	1000	122		2.000				1.00	
6		18.966	3763	262		2.000				1.00	
7		17.363	8744	637		2.000				1.00	
8		6.341	6260	648		2.000				1.00	
9		13.917	7182	696		2.000				1.00	
10		13.818	1420	148		2.000				1.00	
11		10.280	4050	336		2.000				1.00	
12		16.766	3112	386		2.000				1.00	
13		16.027	3164	202		2.000				1.00	
14		14.752	5367	596		2.000				1.00	
15		16.293	2021	166		2.000				1.00	
16		17.624	11310	990		2.000				1.00	
17		22.967	892	81		2.000				1.00	
18		22.637	1727	165		2.000				1.00	
19		17.094	17178	965		2.000				1.00	
20		19.599	4068	434		2.000				1.00	
21		20.324	2260	160		2.000				1.00	
22		21.154	512	65		2.000				1.00	
23		22.206	2273	155		2.000				1.00	
24		22.506	2630	184		2.000				1.00	
25		20.153	2263	272		2.000				1.00	

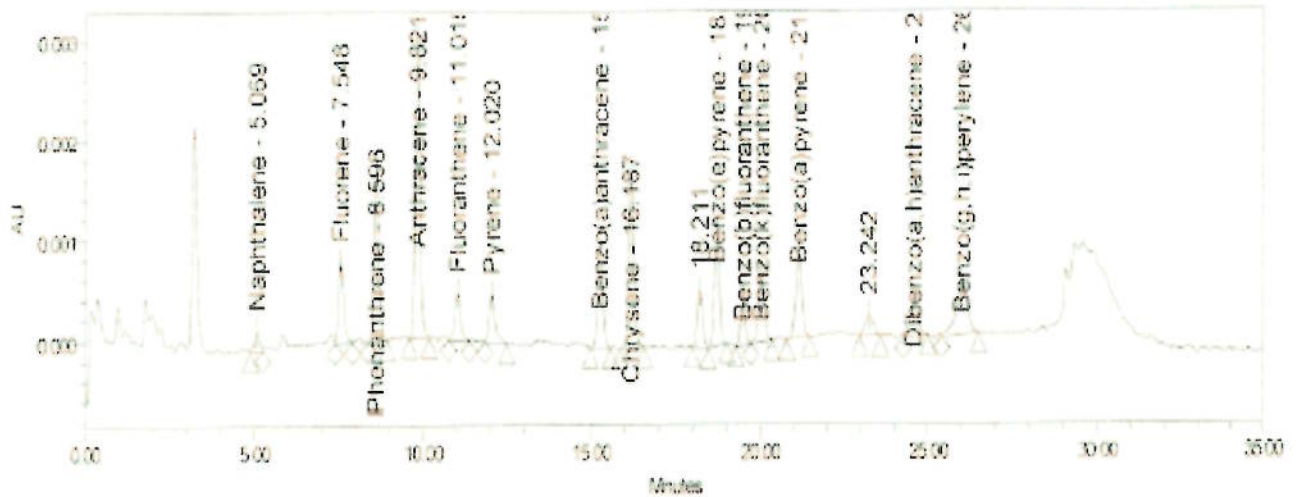
E3 volume = 10 mL

Sample Information

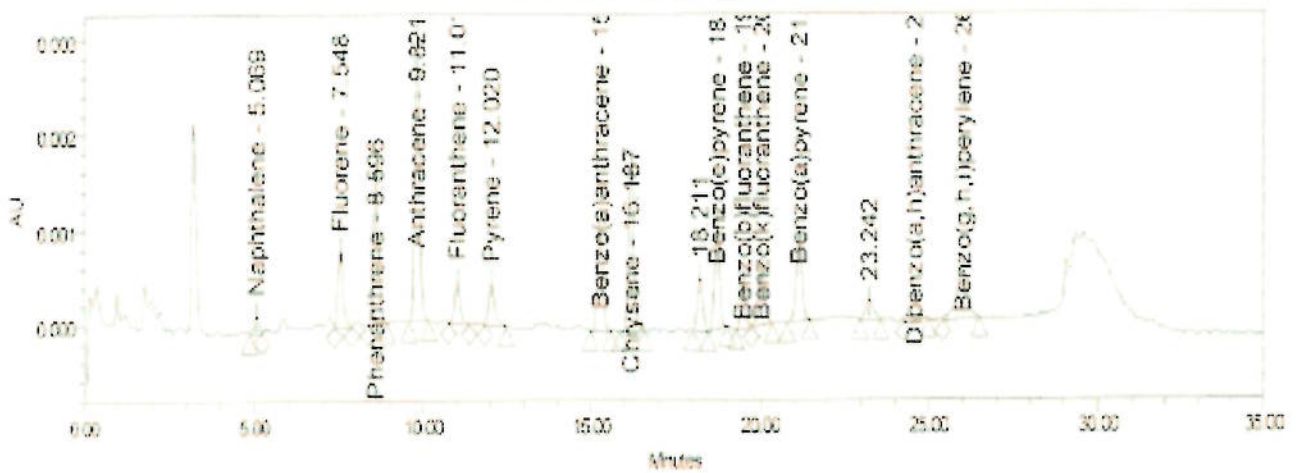
SampleName 0.06 ppm
 Sample_Type
 Sample Type Unknown
 Val 3
 Injection 1
 Injection Volume 5.00 µl

Date Acquired 1/6/2015 9:07:03 PM
 Acq Method Set PNA 17
 Processing Method PNA Eclipse
 Date Processed 1/7/2015 10:50:53 AM
 Channel Name 466
 Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Raw Amount (ng/mL)	Extraction Volume (mL)	Final Amount (µg)	Target Recovery (µg)	Recovery (%)	Dilution	Qrte ID
Anthracene	9.821	26653	3051		2000		0.1600		1.00	67110
Benzo(a)anthracene	15.259	11212	1261		2000		0.1600		1.00	67122
Benzo(a)pyrene	21.155	10269	917		2000		0.1600		1.00	67127
Benzo(b)fluoranthene	18.451	4232	440		2000		0.1600		1.00	67126
Benzo(e)pyrene	18.717	12054	1100		2000		0.1600		1.00	67124

SampleName 0.08.pcm

System Name LCMA2B

Sample Set Name 16010029_FNA17

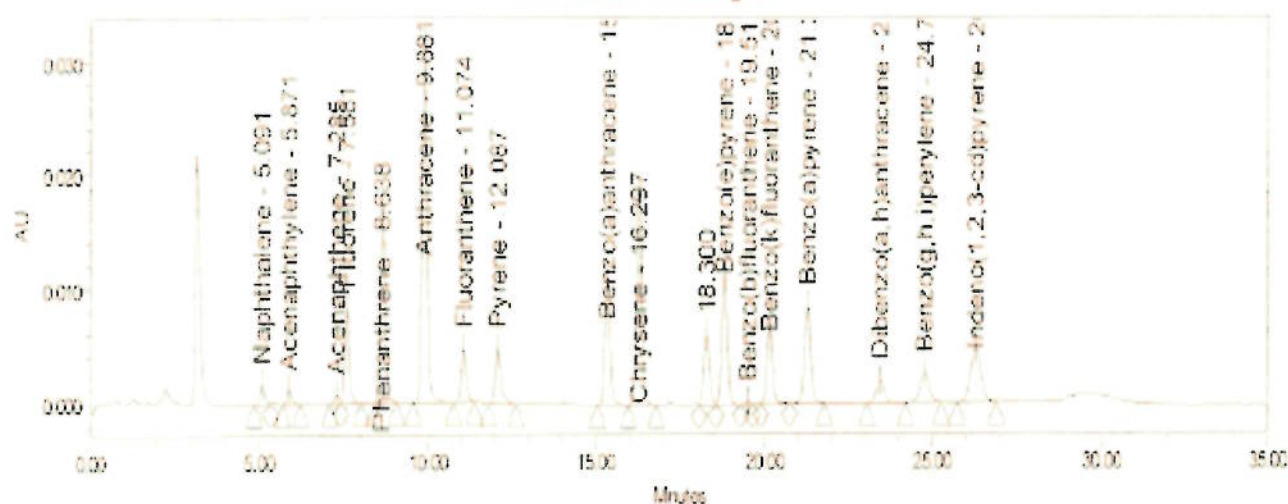
	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Benzophenanthrene	26.010	11943	500		2.000		0.1600		1.00	67125
	Benzokifluoranthene	20.037	7902	647		2.000		0.1600		1.00	67126
1	Chrysene	16.187	19426	1749		2.000		0.1600		1.00	67123
1	Dibenz(a,h)anthracene	24.998	5561	302		2.000		0.1600		1.00	67128
0	Fluoranthene	11.015	5039	495		2.000		0.1600		1.00	67120
1	Fluorene	7.548	8008	799		2.000		0.1600		1.00	67117
2	Naphthalene	5.059	2010	190		2.000		0.1600		1.00	67114
3	Phenanthrene	8.506	17036	1683	0.0041	2.000	0.1282	0.1600	80.12	1.00	67119
4	Pyrene	12.020	5029	402		2.000		0.1600		1.00	67121
5	Total PAH	6.089	160782	14046	0.0041	2.000	1.6081	0.1600	1006.09	1.00	67118
6		23.242	3296	200		2.000		0.1600		1.00	
7		18.211	6342	567		2.000		0.1600		1.00	

Sample Information

SampleName 0.8 ppm
 Sample_Type
 Sample Type Unknown
 Vial 6
 Injection 1
 Injection Volume 5.00 ul

Date Acquired 1/6/2015 9:43:15 PM
 Acq Method Set PNA 17
 Processing Method PNA Eclipse
 Date Processed 1/7/2015 10:51:10 AM
 Channel Name 486
 Run Time 35.0 Minutes

Auto-Scaled Chromatogram



Auto-Scaled Chromatogram



Component Name	RT	Area	Height	Ref Amount (ug/L)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
Acenaphthene	7.285	7190	778		2.000		16000		1.00	67/116
Acenaphthylene	5.871	11854	1207		2.000		16000		1.00	67/116
Anthracene	9.881	325574	32281		2.000		16000		1.00	67/122
Benzo(a)anthracene	15.360	127896	11253		2.000		16000		1.00	67/127
Benzo(a)pyrene	21.261	110400	9620		2.000		16000		1.00	67/127

Sample Name 0.8 ppm

System Name LCMA2B

Sample Set Name 16010029_PNA17

	Component Name	RT	Area	Height	Raw Amount (ug/mL)	Extraction Volume (mL)	Final Amount (ug)	Target Recovery (ug)	Recovery (%)	Dilution	Curve ID
1	Benzo(a)fluoranthene	19.511	2493	251		2.000		1.6000		1.00	67125
	Benzo(e)pyrene	18.612	125605	11934		2.000		1.6000		1.00	67134
1	Benzo(g,h)perylene	24.775	49765	2502		2.000		1.6000		1.00	67129
1	Benzo(k)fluoranthene	20.162	85165	7000		2.000		1.6000		1.00	67126
3	Chrysene	16.297	290741	18550		2.000		1.6000		1.00	67122
1	Dibenz(a,h)anthracene	23.449	34055	2034		2.000		1.6000		1.00	67128
2	Fluoranthene	11.074	48255	4750		2.000		1.6000		1.00	67120
3	Fluorene	7.581	52051	5256		2.000		1.6000		1.00	67117
1	Indeno(1,2,3-cd)pyrene	26.295	104141	4553		2.000		1.6000		1.00	67130
3	Naphthalene	5.001	17340	1016		2.000		1.6000		1.00	67114
3	Benanthrene	8.638	175345	17785	0.5750	2.000	1.1581	1.6000	109.85	1.00	67115
7	Pyrene	12.067	56535	4951		2.000		1.6000		1.00	67121
3	Total PAH	5.001	1047527	145463	5.4554	2.000	15.9185	1.6000	1057.42	1.00	67118
3		19.300	70336	5327		2.000		1.6000		1.00	