



TRC
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Memorandum

To: Michelle Paul, LSP, City of New Bedford

From: David M. Sullivan, LSP, TRC Environmental Corporation

CC: Diane M. Silverman, Ph.D., TRC Environmental Corporation

Subject: Recommendations for Reopening of the Presently Closed Rooms
New Bedford High School, New Bedford, Massachusetts

Date: November 20, 2015

Introduction

This memorandum summarizes total polychlorinated biphenyl (PCB) air concentration results and recommendations for the reopening of rooms 1-110, 2-203 and 1-315, located in A-Block of New Bedford High School (NBHS) in New Bedford, Massachusetts. These rooms were closed for occupancy by mayoral request in 2011 in response to total PCB concentrations above site-specific acceptable air concentrations developed by the United States Environmental Protection Agency (EPA) to facilitate access for further investigation and remedial actions.

Summary

Following closure of three NBHS A-block rooms in early 2011 due to the elevated concentrations of PCBs in indoor air, risk-reduction measures for total PCBs were implemented and the rooms periodically monitored for total PCBs in air, recognizing that time is necessary for concentrations of PCBs in indoor air to drop once PCB sources in a room are removed. Total PCB air concentrations in each room have steadily declined since risk-reduction measures were implemented. Measured total PCB air concentrations have been below acceptable air concentrations developed for New Bedford schools (0.3 ug/m^3) in rooms 1-110 and 2-203 since August 2013 and July 2014, respectively. In September 2105, total PCB air concentrations in room 1-315 fell below the school-specific acceptable air concentration. Due to the consistently decreasing trend in total PCB concentrations displayed for each room with further reductions in total PCBs expected over time, TRC's

evaluations are complete and the rooms can be returned to service. It is recommended that the rooms be periodically cleaned, including the ducts and vents, to prevent the accumulation of PCB-containing dust and debris that may impact total PCB air concentrations consistent with EPA best management practices (e.g., use a wet or damp cloth or mop to clean surfaces, use vacuums with high efficiency particulate air (HEPA) filters, do not sweep with dry brooms or use dry cloths for dusting, etc.).

Indoor Air Quality Data for the Closed Rooms

In 2011, three A-Block rooms (1-110, 2-203 and 1-315) were closed to use by students and staff by the City of New Bedford in response to total PCB air concentrations in excess of 0.3 ug/m^3 , the site-specific Acceptable Long-Term Average Exposure Concentration (ALTAEC) indicative of the maximum acceptable air concentration that should not be exceeded for an extended time period. The ALTAEC is a site-specific clean-up level established by the EPA for this project in 2005. The room closure facilitated access for City personnel and consultants to perform evaluations and implement remedial actions.

At the time of the closure, the concentration of total PCBs in air in two of the three rooms also exceeded the Environmental Protection Agency (EPA) Exposure Levels (ELs; EPA, 2015) that were developed to be protective of indoor school air exposures for adult employees (0.5 ug/m^3) and 15 to <19 year-old students (0.6 ug/m^3). The ALTAEC has historically been used as the acceptable air concentration for indoor air PCB exposures for this site; however, the ELs factor in the most current science and supporting calculations regarding PCB exposures in school settings and are, therefore, the most defensible guidance values to apply for indoor air PCB exposures.

Subsequent to the room closures, risk-reduction measures for total PCBs were implemented and the indoor air in each of the rooms resampled multiple times. Risk reduction measures implemented in the rooms included: ventilation system improvements, replacement of fluorescent light fixtures, cleaning of ducts and vents, and removal of furniture and shelving with mastic adhesive. It is generally recognized that time is necessary for PCBs in air to drop once PCB sources in a room are removed.

Laboratory analytical reports for the total PCB air sampling that was performed between February 2011 and September 2015 are contained in Attachment 1. Data validation memoranda are provided in Attachment 2. The periodic sampling reveals a downward trend in PCB concentrations, with the indoor air concentrations between February 2011 and September 2015 for the three closed rooms tabulated below:

Location/Date of Sampling	Total PCB Result (ug/m ³)
Room 1-110	
February 2011	1.10
April 2011	0.851
August 2011	0.396*
August 2013	0.140*
July 2014	0.194
September 2015	0.0565*
Room 2-203	
February 2011	0.441
April 2011	0.343
August 2011	0.510*
April 2012	0.363*
July 2012	0.545*
July 2014	0.1845*
September 2015	0.0993*
Room 1-315	
February 2011	1.45
April 2011	1.25*
August 2011	0.549*
August 2013	0.488*
July 2014	0.490
September 2015	0.2125*

*Values represent the average of two samples collected on the same date.

EPA school staff value = 0.5 ug/m³; high school age student value = 0.6 ug/m³; ALTAEC = 0.3 ug/m³

Conclusions and Recommendations

Total PCB air concentrations for the three rooms have consistently decreased and are currently below both the ALTAEC and ELs. Total PCB air concentrations in room 1-110 have been below the ELs since August 2011 and the ALTAEC since August 2013. Room 2-203 air concentrations have fluctuated slightly over time, but fell below both the ALTAEC and ELs in July 2014. Room 1-315 air concentrations decreased below the ELs in August 2013 and fell below the ALTAEC in September 2015. Due to the consistently decreasing trend in total PCB concentrations displayed for each room with further reductions in total PCBs expected over time based on the trends, the rooms can be returned to service. It is recommended that the rooms be periodically cleaned, including the ducts and vents, to prevent the accumulation of PCB-containing dust and debris that may impact total PCB air concentrations per EPA-best management practices.

Attachments

Attachment 1 – Laboratory Analytical Reports
Attachment 2 – Data Validation Memoranda

References

EPA, 2015 *Exposure Levels for Evaluation of PCBs in Indoor School Air. July 30, 2015.*
http://www3.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/exposure_levels.htm

Attachment 1 – Laboratory Analytical Reports

Pace Analytical e-Report

Report prepared for:

TRC ENVIRONMENTAL
WANNALANCIT MILLS
650 SUFFOLK ST
LOWELL, MA 01854
CONTACT: DAVID SULLIVAN

Project ID: 115058

Sampling Date(s): September 04, 2015

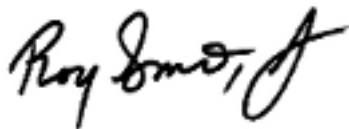
Lab Report ID: 15090196

Client Service Contact: Chelsea Farmer (518) 346-4592 ext. 3843

Analysis Included:

PCBs by GCMS

Test results meet all National Environmental Laboratory Accreditation Conference (NELAC) requirements unless noted in the case narrative. The results contained within this document relate only to the samples included in this report. Pace Analytical is responsible only for the certified testing and is not directly responsible for the integrity of the sample before laboratory receipt. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.



Roy Smith
Technical Director



Certifications: New York (EPA: NY00906, ELAP: 11078), New Jersey (NY026), Connecticut (PH-0337),
Massachusetts (M-NY906), Virginia (1884)

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Case Narrative

September 25, 2015

CASE NARRATIVE

This data package (SDG ID: 15090196) consists of 6 polyurethane foam samples received on 09/09/2015. The samples are from Project Name: 115058.

This sample delivery group consists of the following samples:

<u>Lab Sample ID</u>	<u>Client ID</u>	<u>Collection Date</u>
AS27372	1-110	09/04/2015
AS27373	1-110D	09/04/2015
AS27374	1-315	09/04/2015
AS27375	1-315D	09/04/2015
AS27376	2-203	09/04/2015
AS27377	2-203D	09/04/2015

Sample Delivery and Receipt Conditions

- (1.) All samples were delivered to the laboratory via FEDEX delivery service on 09/09/2015.
- (2.) All samples were received at the laboratory intact and within holding times.
- (3.) All samples were received at the laboratory properly preserved, if applicable.

PCB Homolog Analysis (TO-10A)

Analysis for PCB Homolog Distribution was performed by EPA Method 680. This is not a NYSDOH ELAP certified method. Samples were extracted by Method TO-10A. The following technical and administrative items were noted for the analysis:

- (1.) Sample (LAB ID: AS27375) including associated method blank sample (LAB ID: AS27354B) were re-analyzed due to low surrogate recoveries. Results for the re-analyses are provided with RR1 sample ID suffix.
- (2.) The percent recovery for the TCMX surrogate for sample (LAB ID: AS27375RR1) and associated method blank sample (LAB ID: AS27354BRR1) was outside quality acceptance limits. The alternate Deca-C13 surrogate was within limits. Please see associated form 2 for details.
- (3.) The percent recovery for the Deca-C13 surrogate for sample (LAB ID: AS27373, AS27374 and AS27376) and associated laboratory control spike duplicate sample (LAB ID: AS27354S) was outside quality acceptance limits. The alternate TCMX surrogate was within limits. Please see associated form 2 for details.
- (4.) The percent recoveries for both TCMX and Deca-C13surrogates for sample (LAB ID: AS27372) was outside quality acceptance limits. Sample was re-analyzed with similar results; original data was reported. No additional sample material was available for re-extractions. Please see associated form 2 for details.

Respectfully submitted,



Chelsea L. Farmer
Project Manager

Definitions

B - Denotes analyte observed in associated method blank or extraction blank. Analyte concentration should be considered as estimated.

D - Surrogate was diluted. The analysis of the sample required a dilution such that the surrogate concentration was diluted outside the laboratory acceptance criteria.

E - Denotes analyte concentration exceeded calibration range of instrument. Sample could not be reanalyzed at secondary dilution due to insufficient sample amount, quick turn-around request, sample matrix interference or hold time excursion. Concentration result should be considered as estimated.

J - Denotes an estimated concentration. The concentration result is greater than or equal to the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

MDL – Adjusted Method Detection Limit.

P - Indicates relative percent difference (RPD) between primary and secondary gas chromatograph (GC) column analysis exceeds 40 % or indicates percent difference (PD) between primary and secondary gas chromatograph (GC) column analysis exceeds 25 %.

PQL – Practical Quantitation Limit. PQLs are adjusted for sample weight/volume and dilution factors.

RL - Reporting Limit Denotes lowest analyte concentration reportable for the sample based on regulatory or project specific limits.

U - Denotes analyte not detected at concentration greater than the Practical Quantitation Limit (PQL) or the Reporting Limit (RL) or the Method Detection Limit (MDL) as applicable.

Z - Chromatographic interference due to polychlorinated biphenyl (PCB) co-elution.

* - Value not within control limits.

Sample Chain Of Custody

<15090196P1>



Project Name:	NBHS
Project No.:	115058
Sampling Date(s):	9/4/15
Laboratory:	Pace
Laboratory P.O.:	84583 please use this po#
Shipping Date(s):	09/08/15
Shipper's Name:	TRC

[illegible]

Relinquished by:	Date/Time:	9/8/15 15:00	Relinquished by:	[Signature]
Received by:	Date/Time:		Received by:	(via FED EX) → J. Butler (PACE) 9/9/15 09:22
Remarks (*): Normal TAT. Please send data to David Gill dgill@trcsolutions.com				
Temp: 3.6°C (IR) Cold seal (Y)				

TRC

<15090196P2>



150901962

Sample Condition Upon Receipt

CLIENT NAME: TRCPROJECT: NBHSCOURIER: FedEx ☒UPS ☐Client ☐Pace ☐Other ☐TRACKING # 6044 9266 1712CUSTODY SEAL PRESENT: Yes ☒No ☐INTACT: Yes ☒No ☐N/A ☐PACKING MATERIAL: Bubble Wrap ☒Bubble Bags ☒None ☐Other ☐ICE USED: Wet ☐Blue ☐None ☐THERMOMETER USED: #164 ☒IR Gun 03 ☒#122087967 ☐COOLER TEMPERATURE (°C): 6.7 (Temp blank) / 3.6 (IR Gun)BIOLOGICAL TISSUE IS FROZEN: Yes ☐No ☐N/A ☒

Temp should be above freezing to 6°C

COMMENTS:

Temperature is Acceptable?

Yes ☒No ☐

Chain of Custody Present:	☒ Yes	☐ No	1.
Chain of Custody Filled Out:	☒ Yes	☒ No	2.
Chain of Custody Relinquished:	☒ Yes	☐ No	3.
Sampler Name / Signature on COC:	☐ Yes	☒ No	4.
Samples Arrived within Hold Time:	☒ Yes	☐ No	5.
Short Hold Time Analysis (<72hr):	☐ Yes	☒ No	6.
Rush Turn Around Time Requested:	☐ Yes	☒ No	7.
Sufficient Volume:	☒ Yes	☐ No	8.
Correct Containers Used:	☒ Yes	☐ No	9.
- Pace Containers Used:	☒ Yes	☐ No	
Containers Intact:	☒ Yes	☐ No	10.
Filtered volume received for Dissolved tests:	☐ Yes	☐ No	☒ N/A
Sample Labels match COC:	☒ Yes	☐ No	12.
- Includes date/time/ID/Analysis			
All containers needing preservation have been checked:	☐ Yes	☐ No	☒ N/A
All containers needing preservation are in compliance with EPA recommendation:	☐ Yes	☐ No	☒ N/A
- Exceptions that are not checked: TOC, VOA, Subcontract Analyses			
Headspace in VOA Vials (>6mm):	☐ Yes	☐ No	☒ N/A
Trip Blank Present:	☐ Yes	☐ No	☒ N/A
Trip Blank Custody Seals Present:	☐ Yes	☐ No	☒ N/A
Pace Trip Blank Lot #:	<u>NA</u>		
Initial when completed: <u>NA</u>			Lot # of added preservative: <u>NA</u>
14.			
15.			

Sample Receipt form filled in: MW 9/9/15

Line-Out (Includes Copying Shipping Documents and verifying sample pH):

Log In (Includes notifying PM of any discrepancies and documenting in LIMS):

Labeling (Includes Scanning Bottles and entering LAB IDs into pH logbook):

MW 9-9-15
AW 9/9/15
MW 9-9-15

Sample Receipt



SAMPLE RECEIPT REPORT

15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

CLIENT: TRC ENVIRONMENTAL
PROJECT: 115058
LRF: 15090196
REPORT: CLP-LIKE FORMS
EDD: YES
LRF TAT: 1 WEEK

RECEIVED DATE: 09/09/2015 09:22
SHIPPED VIA: FEDEX
SHIPPING ID: 604492661712
NUMBER OF COOLERS: 1
CUSTODY SEAL INTACT: YES
COOLER STATUS: CHILLED
TEMPERATURE(S): 5.3.6 (IR) °C
SAMPLE SEALS INTACT: NA
SAMPLES PRESERVED PER METHOD GUIDANCE: YES
SAMPLES REC'D IN HOLDTIME: YES
DISPOSAL: BY LAB (45 DAYS)
COC DISCREPANCY: NO

COMMENTS:
NO COLLECTION TIME ON COC.

CLIENT ID (LAB ID)	TAT-DUE Date ⁴	DATE-TIME SAMPLED	MATRIX	METHOD	TEST DESCRIPTION	QC REQUEST
1-110 (AS27372)	1 WEEK 09-16-15	09/04/2015	PF10	EPA 680	PCBs by GCMS	
1-110D (AS27373)	1 WEEK 09-16-15	09/04/2015	PF10	EPA 680	PCBs by GCMS	
1-315 (AS27374)	1 WEEK 09-16-15	09/04/2015	PF10	EPA 680	PCBs by GCMS	
1-315D (AS27375)	1 WEEK 09-16-15	09/04/2015	PF10	EPA 680	PCBs by GCMS	
2-203 (AS27376)	1 WEEK 09-16-15	09/04/2015	PF10	EPA 680	PCBs by GCMS	
2-203D (AS27377)	1 WEEK 09-16-15	09/04/2015	PF10	EPA 680	PCBs by GCMS	

- ¹The pH preservation check of Oil and Grease (Method 1664) and Total Organic Carbon (Method 5310B) are performed as soon as possible after sample receipt and may not be included in this report.
- ²The pH preservation check of aqueous volatile samples is not performed until after the analysis of the sample to maintain zero headspace and is not included in this report.
- ³Samples received for pH analysis are not marked as a hold time exceedance here. SW-846 methods suggests analysis to be done within 15 minutes of sample collection. Because of transportation time it is not possible for the laboratory to perform the test in that time. Sample Certificates of Analysis reports are noted as such.
- ⁴Samples arriving at the laboratory after 4:00 pm are assigned a due date as if they arrived the following business day unless other arrangements have been made. The due date represents the date the lab report is expected to be completed on or before 5:00 pm (EST) for the date specified.
- ⁵All samples which require thermal preservation shall be considered acceptable when received greater than 6 degrees Celsius if they are collected on the same day as received and there is evidence that the chilling process has begun, such as arrival on ice. Control limits are between 0-6 Degrees Celsius. Control limits do not apply for metals analysis.
- ⁶Samples requesting analysis for Orthophosphate (SM 4500-P E-99,-11) require the samples to be filtered in the field within 15 minutes of the sampling event. Samples that are received unfiltered will be noted as not method compliant on the Certificates of Analysis.

Reporting Parameters and Lists

EPA 680 - PCBs by GCMS - (ug/m3)

Decachlorobiphenyl
Dichlorobiphenyl
Heptachlorobiphenyl
Hexachlorobiphenyl
Monochlorobiphenyl
Nonachlorobiphenyl
Octachlorobiphenyl
Pentachlorobiphenyl
Tetrachlorobiphenyl
Total PCB
Trichlorobiphenyl

Internal Sample Tracking Record

EXTRACTION LOG



Prep Date: 09/10/15

Batch ID: 32196

Method: EPA TO-10A

	Prep ID	LAB Sample ID	Alt Sample ID	Matrix	pH	Analysis Required	Extract Type / Unit	Percent Total Solids	Sample Amount (g or mL)	Extract Time On - 1	Extract Time Off - 1	Extract Time On - 2	Extract Time Off - 2	Final Ext. Vol (mL)	Date Conc (MM/DD)	Comments
1	322377	SBLK-11	AS27354B	PF10		E 680 A	SOX-PF10	N/A	1	17:30	09:30	NA	NA	1	09/14	Lot: 67183
2	322376	LCS-11	AS27354L	PF10		E 680 A	SOX-PF10	N/A	1	17:30	09:30	NA	NA	1	09/14	Lot: 67183
3	322375	LCSD-11	AS27354S	PF10		E 680 A	SOX-PF10	N/A	1	17:30	09:30	NA	NA	1	09/14	Lot: 67183
4	322363	15090194-01	AS27354	PF10		E 680 A	SOX-PF10	N/A	1260000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
5	322364	15090194-02	AS27355	PF10		E 680 A	SOX-PF10	N/A	1260000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
6	322365	15090194-03	AS27356	PF10		E 680 A	SOX-PF10	N/A	1300000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
7	322366	15090194-04	AS27357	PF10		E 680 A	SOX-PF10	N/A	1190000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
8	322367	15090194-05	AS27358	PF10		E 680 A	SOX-PF10	N/A	1190000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
9	322368	15090194-06	AS27359	PF10		E 680 A	SOX-PF10	N/A	1	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
10	322369	15090196-01	AS27372	PF10		E 680 A	SOX-PF10	N/A	7530000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
11	322370	15090196-02	AS27373	PF10		E 680 A	SOX-PF10	N/A	7550000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
12	322371	15090196-03	AS27374	PF10		E 680 A	SOX-PF10	N/A	7600000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
13	322372	15090196-04	AS27375	PF10		E 680 A	SOX-PF10	N/A	7690000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
14	322373	15090196-05	AS27376	PF10		E 680 A	SOX-PF10	N/A	7700000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)
15	322374	15090196-06	AS27377	PF10		E 680 A	SOX-PF10	N/A	7600000	17:30	09:30	NA	NA	1	09/14	Lot: 67183(15080723)

Solvent, Surrogate, Spike, and Acid Information

Item	Lot Number	Amount (uL)	Conc (ug/mL)	B	L	LD	S	D	M	K
Sulfuric Acid 50% v/v (18 N)	4100850	NA		p	p	p	p	..	..	..
680 Spike STD	022415P121C BXI	100		..	p	p	p	..	..	..
Copper CURRENT	147239	NA		p	p	p	p	..	..	..
Ethyl Ether (fisher) CURRENT	148446	NA		p	p	p	p	..	..	..
TCMX Surrogate STD	070215P126B BXI	100	0.20	p	p	p	p	..	..	..
DCBP-C13	070715P127A BXI	100	1.0	p	p	p	p	..	..	..
Hexane (Dewar)	DN397A	NA		p	p	p	p	..	..	..
10% Florisil	090515MLB3P114A	NA		p	p	p	p	..	..	..

Analyst Review:

Melissa Harris

Melissa Harris

Peer Review:

Tom Herold

Print Date: 9/21/2015

Lims Version : 5.0.8.9

Signal/Noise Report

Date : 13-Mar-2015 13:41
 Data File : ITS MS M03031219.MS, Ion 241.00
 Inj. Date : 13-MAR-2015 00:49

RMS Noise : 3.51635
 RMS Noise time window: 32.970 to 34.970 min.
 Number of peaks: 1

Time	Start Time	End Time	Area	Area%	Height	Height%	Peak Type	S/N
35.200	35.103	35.310	32324	100.00	7859	100.00	**	2235.0

Signal/Noise Report

Date : 13-Mar-2015 13:42
 Data File : ITS MS M03031219.MS, Ion 499.00
 Inj. Date : 13-MAR-2015 00:49

RMS Noise : 1.33534
 RMS Noise time window: 41.380 to 43.380 min.
 Number of peaks: 1

Time	Start Time	End Time	Area	Area%	Height	Height%	Peak Type	S/N
43.582	43.522	43.667	561	100.00	181	100.00	**	135.5

PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE:

EPA680-031215b 6

	Method #	PACE Sample ID	Saturn File ID	Date Analyzed	DIL	COMMENTS
1	1st	DFTPP-2	m03031211	3-12-15		
2	EPA 680	WDM3-0312B	12			
3		ICAL-7	13			
4		ICAL-6	14			
5		ICAL-5	15			
6		ICAL-4	16			
7		ICAL-3	17			
8		ICAL-2	18			
9		ICAL-1	19	3-13-15		
10		ICV3-0312B	20			
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
STD C30215P123B Bx			CCC STD	C30215P124A Bx	WDM STD	120814P111B Bx
STD C30615P124C Bx			Internal STD	C30215P123A Bx		

3-13-15

STANDARD CODES REFER TO STANDARD PREP BOOK

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PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: 91415-6806.6					DIL	COMMENTS
	Method #	PACE Sample ID	Saturn File ID	Date Analyzed		
1	dfp	DETPP-2	M03091416	9-14-15		
2	EPA 600	WDM3-0914B	17	6		
3		CCV3-0914C	18	9-15-15		
4		AS27354B	19			
5		AS27354C	20			
6		AS27354S	21			
7		AS27354	22			
8		AS27355	23			
9		AS27356	24			
10		AS27357	25			
11		AS27358	26			
12		AS27359	27			
13		AS27372	28			
14		AS27373	29			
15		CCV3-0914D	30			
16						
17						
18						
19						
20						
CAL STD 030215P123B BX			CCC STD. 070615P126C BX		WDM STD 060815P125B BX	
Tune STD 030615P124C BX			Internal STD 083115P127B BX			

STANDARD CODES REFER TO STANDARD PREP BOOK

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PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: 091515-680.5				DIL	COMMENTS
	Method #	PACE Sample ID	Saturn File ID		
1	dftpr	DFTPR-1	M03091501	9-15-15	
2	EPA 680	WDM3-0915A	02	↓	
3		CCV3-0915A	03		
4		AS27354BRI	04		
5		AS27354LRU	05		
6		AS27354SRI	06		
7		AS27946BRI	07		
8		AS27946RM	08		
9		AS27360LRU	09		
10		AS27363BRI	10		
11		AS27374	11		
12		AS27375	12		
13		AS27376	13		
14		AS27377	14		
15		CCV3-0915B	15		
16					9-16-15
17					
18					
19					
20					
CAL STD 030215P123B B#			CCC STD 070615P126C B#	WDM STD 060815P125B B#	
Tune STD 030615P144C B#			Internal STD 083115P127B B#		
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PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: 091615-680.5					DIL	COMMENTS
	Method #	PACE Sample ID	Saturn File ID	Date Analyzed		
1	dftpp	DFTPP-1	M03091601	9-16-15		
2	EPA 680	WDM3-0916A	02	↓		
3		CCV3-0916A	03			
4		AS27372RR1	04			
5		AS27375RR1	05			
6		AS27356RR1	06			
7		AS27357RR1	07			
8		AS27358RR1	08			
9		AS27359RR1	09			
10	↓	CCV3-0916B	10			
11						
12						
13						
14						
15						9-17-15
16						
17						
18						
19						
20						
CAL STD 030215P123B B#			CCC STD: 070615P126C B#		WDM STD 060515P125B B#	
Tune STD 030615P124C B#			Internal STD 083115P127B B#			

STANDARD CODES REFER TO STANDARD PREP BOOK

BOOK: 25

PAGE: 35

Surrogate Recovery Summary

2D-1 SURROGATE RECOVERY

Laboratory Name: Pace Analytical Services, Inc.

SDG: 15090196

ELAP ID No: 11078

GC Column (1): Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm

GC Column (2): NA

LRF ID	LAB SAMPLE ID	LAB FILE ID	SURR 1 (Col 1) % REC #	SURR 2 (Col 1) % REC #	OTHER (1)	OTHER (2)	TOTAL OUT
SBLK-11RR1	AS27354BRR1	MS03-522-4	36.0 *	74.3			1
LCS-11	AS27354L	MS03-521-20	45.7	81.2			0
LCSD-11	AS27354S	MS03-521-21	47.5	63.6 *			1
15090196-01	AS27372	MS03-521-28	41.4 *	51.5 *			2
15090196-02	AS27373	MS03-521-29	62.2	62.6 *			1
15090196-03	AS27374	MS03-522-11	54.3	59.6 *			1
15090196-04RR1	AS27375RR1	MS03-523-5	32.6 *	72.2			1
15090196-05	AS27376	MS03-522-13	59.9	66.8 *			1
15090196-06	AS27377	MS03-522-14	46.3	70.9			0

Column to be used to flag recovery values

* Values outside of QC limits

D Surrogate diluted out

Advisory QC Limits.

SURR1 = TETRACHLORO-META-XYLENE (44.4-104)

SURR2 = DECACHLORO[13C12]BIPHENYL (70.1-116)

Laboratory Control Summary

FORM 3

EPA 680 LAB CONTROL SAMPLE (LCS) / LAB CONTROL SAMPLE DUPLICATE (LCSD) RECOVERY

Laboratory Name: Pace Analytical Services, Inc.

ELAP ID No: 11078

SDG No: 15090196

LCS LRF ID: LCS-11

LCSD LRF ID: LCSD-11

LCS Lab File ID: MS03-521-20

LCSD Lab File ID: MS03-521-21

LCS Sample Inj Date: 09/15/2015 02:16:00

LCSD Sample Inj Date: 09/15/2015 03:04:00

LCS Lab Sample ID: AS27354L

LCSD Lab Sample ID: AS27354S

COMPOUND	SPIKE ADDED (ug)	LCS CONCENTRATION (ug)	LCS PERCENT RECOVERY #	QC LIMITS ¹ PERCENT RECOVERY
2-Chlorobiphenyl	1.00	0.557	55.7	(28.7-78.9)
2,3-Dichlorobiphenyl	1.00	0.608	60.8	(30.8-82.6)
2,4,5-Trichlorobiphenyl	1.00	0.608	60.8	(34.4-86.8)
2,2',4,6-Tetrachlorobiphenyl	2.00	1.15	57.5	(34.6-86.9)
2,2'3,4,5'-Pentachlorobiphenyl	2.00	1.36	67.9	(37.8-91.9)
2,2'4,4',5,6'-Hexachlorobiphenyl	2.00	1.32	66.0	(40.9-94.8)
2,2',3,4',5,6,6'-Heptachlorobiphenyl	3.00	2.09	69.6	(41.7-98.0)
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	3.00	1.85	61.6	(43.2-102)
Decachlorobiphenyl	5.00	3.28	65.5	(46.4-102)

COMPOUND	SPIKE ADDED (ug)	LCSD CONCENTRATION (ug)	LCSD PERCENT RECOVERY #	RPD #	QC LIMITS ¹ RPD REC
2-Chlorobiphenyl	1.00	0.622	62.2	11.0	40 (28.7-78.9)
2,3-Dichlorobiphenyl	1.00	0.627	62.7	3.08	40 (30.8-82.6)
2,4,5-Trichlorobiphenyl	1.00	0.647	64.7	6.22	40 (34.4-86.8)
2,2',4,6-Tetrachlorobiphenyl	2.00	1.34	66.9	15.1	40 (34.6-86.9)
2,2'3,4,5'-Pentachlorobiphenyl	2.00	1.48	74.1	8.73	40 (37.8-91.9)
2,2'4,4',5,6'-Hexachlorobiphenyl	2.00	1.46	72.8	9.80	40 (40.9-94.8)
2,2',3,4',5,6,6'-Heptachlorobiphenyl	3.00	2.27	75.8	8.53	40 (41.7-98.0)
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	3.00	1.98	66.0	6.90	40 (43.2-102)
Decachlorobiphenyl	5.00	3.54	70.9	7.92	40 (46.4-102)

Column to be used to flag recovery values

* Values outside of QC limits

¹ QC Limits based upon laboratory defaults.

Spike Recovery: 0 out of 18 outside limits.

RPD: 0 out of 9 outside limits.

COMMENTS:

Method Blank Summary

FORM 4
EPA 680 METHOD BLANK SUMMARY

Laboratory Name: Pace Analytical Services, Inc.

SDG No: 15090196

ELAP ID No: 11078

Blank Sample ID: SBLK-11RR1

Matrix: Polyurethane Foam (PF10)

Method Blank ID: AS27354BRR1

Instrument ID: MS03

Lab File ID: MS03-522-4

Extraction Type: TO-10A

Date Extracted: 09/10/2015

GC Column (1): Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm

Date Analyzed: 09/15/2015

Time Analyzed: 14:31:00

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE / TIME ANALYZED
LCS-11(LAB CONTROL SPIKE)	AS27354L	MS03-521-20	09/15/2015 02:16:00
LCSD-11(LAB CONTROL SPIKE DUPLICATE)	AS27354S	MS03-521-21	09/15/2015 03:04:00
1-110	AS27372	MS03-521-28	09/15/2015 08:47:00
1-110D	AS27373	MS03-521-29	09/15/2015 09:36:00
1-315	AS27374	MS03-522-11	09/15/2015 20:14:00
1-315D	AS27375	MS03-522-12	09/15/2015 21:03:00
2-203	AS27376	MS03-522-13	09/15/2015 21:52:00
2-203D	AS27377	MS03-522-14	09/15/2015 22:40:00
1-315D	AS27375RR1	MS03-523-5	09/16/2015 16:01:00

Instrument Performance Check

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: PACE ANALYTICAL - NY LAB Contract:

Lab Code: 11078 Case No.: SAS No.: SDG No.: EPA680-031215B.B

Lab File ID: M03031211 DFTPP Injection Date: 03/12/15

Instrument ID: GCMS03 DFTPP Injection Time: 1836

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	46.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	25.9
365	Greater than 1.0% of mass 198	6.23
441	Present, but less than mass 443	17.4
442	40.0 - 110.0% of mass 198	86.6
443	17.0 - 23.0% of mass 442	18.4 (21.2)1

1-Value is % mass 442

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	WDM3-0312B	WDM3-0312B	M03031212	03/12/15	1903
02	ICAL-7	ICAL-7	M03031213	03/12/15	1952
03	ICAL-6	ICAL-6	M03031214	03/12/15	2041
04	ICAL-5	ICAL-5	M03031215	03/12/15	2130
05	ICAL-4	ICAL-4	M03031216	03/12/15	2219
06	ICAL-3	ICAL-3	M03031217	03/12/15	2308
07	ICAL-2	ICAL-2	M03031218	03/12/15	2358
08	ICAL-1	ICAL-1	M03031219	03/13/15	0049
09	ICV3-0312B	ICV3-0312B	M03031220	03/13/15	0140
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Date : 12-MAR-2015 18:36

Client ID: 20ng DFTPP-2

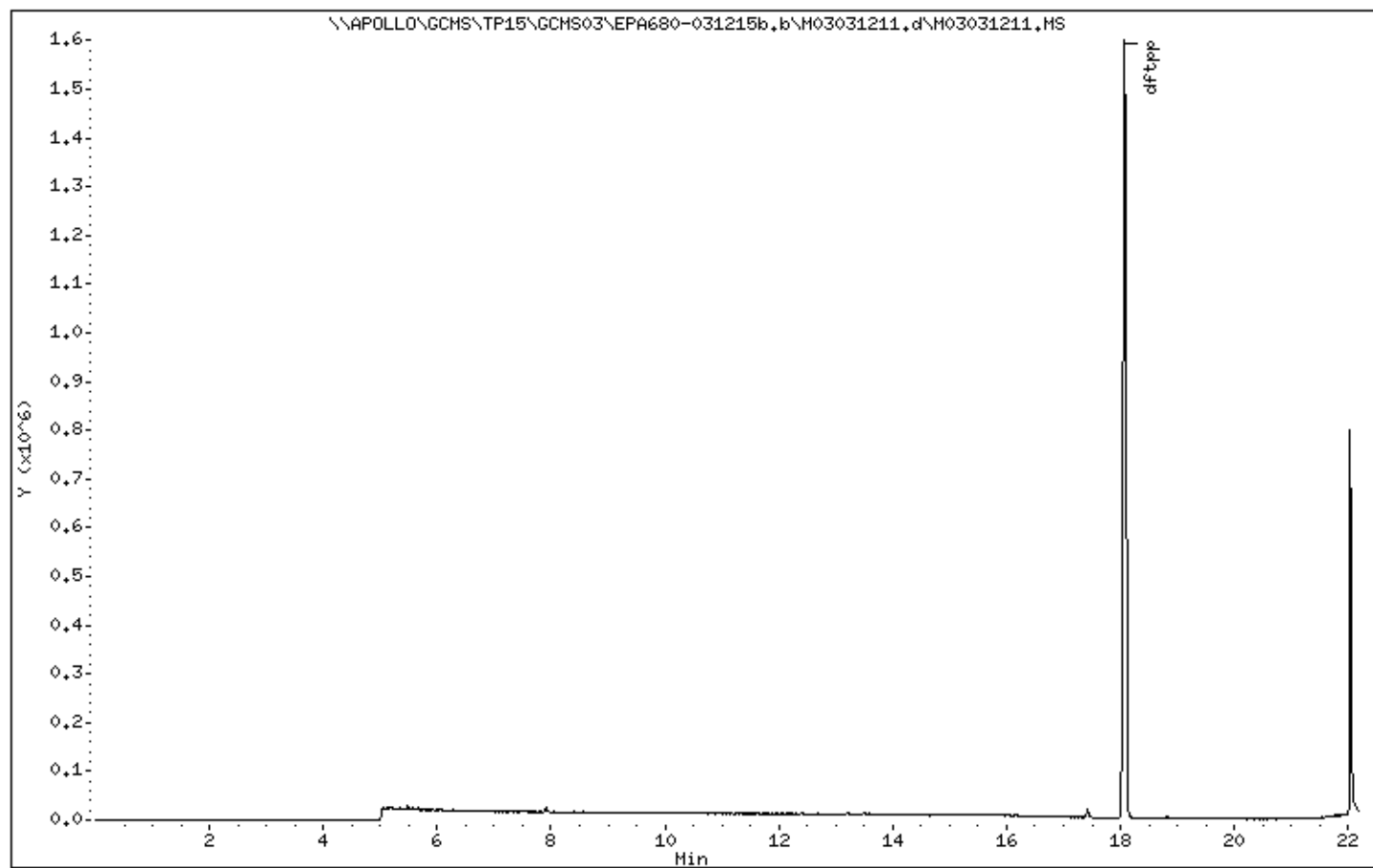
Instrument: GCMS03.i

Sample Info: 20ng DFTPP-2

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25



Date : 12-MAR-2015 18:36

Client ID: 20ng DFTPP-2

Instrument: GCMS03.i

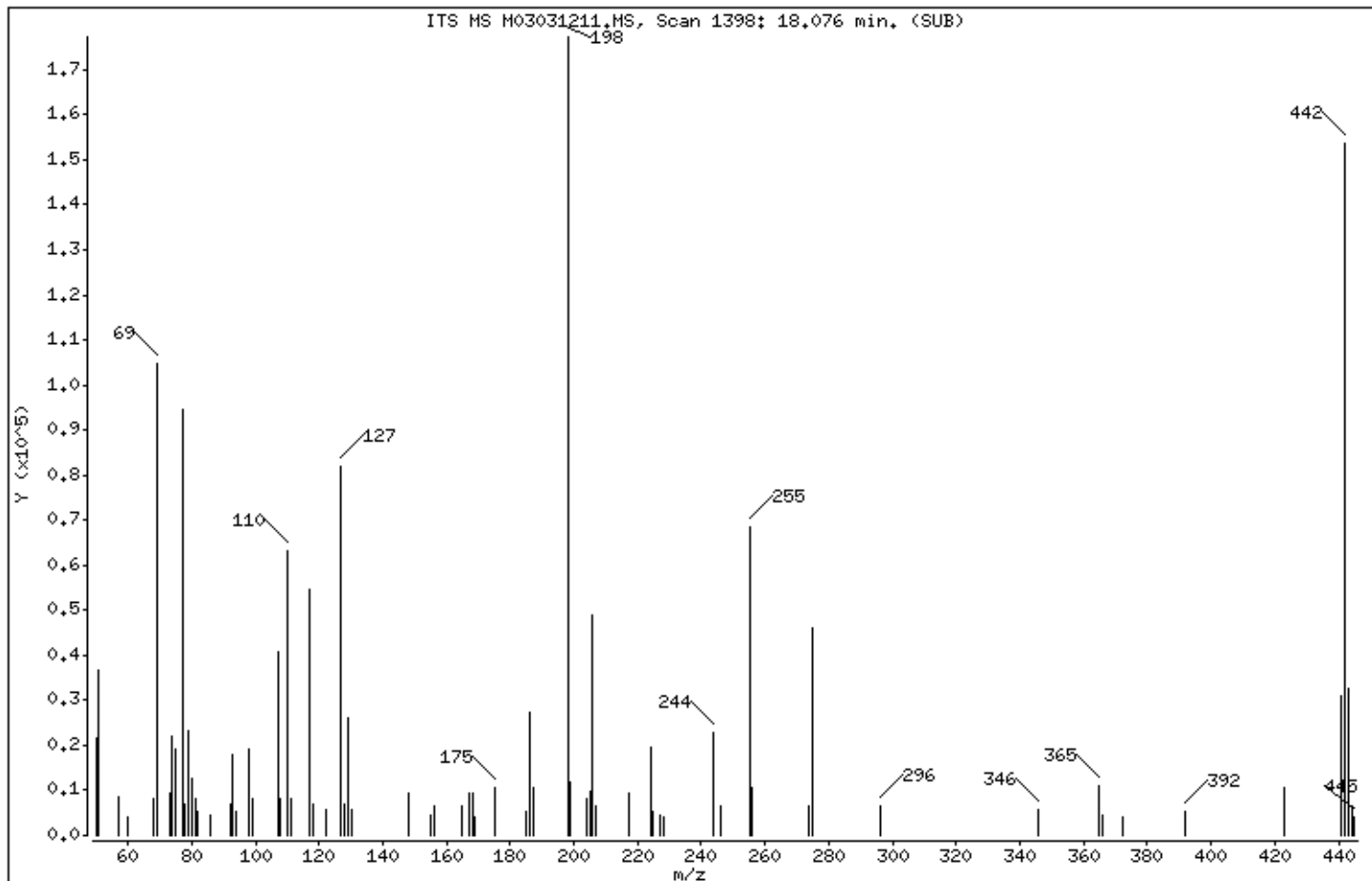
Sample Info: 20ng DFTPP-2

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
127	40.00 - 60.00% of mass 198	46.23
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.56
275	10.00 - 30.00% of mass 198	25.90
365	Greater than 1.00% of mass 198	6.23
441	Present, but less than mass 443	17.38
442	40.00 - 110.00% of mass 198	86.56
443	17.00 - 23.00% of mass 442	18.36 < 21.21

Date : 12-MAR-2015 18:36

Client ID: 20ng DFTPP-2

Instrument: GCMS03.i

Sample Info: 20ng DFTPP-2

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25

Data File: M03031211.d

Spectrum: ITS MS M03031211.MS, Scan 1398: 18.076 min. (SUB)

Location of Maximum: 198.00

Number of points: 72

m/z	Y	m/z	Y	m/z	Y	m/z	Y
50.00	21424	98.00	19160	169.00	4069	256.00	10465
51.00	36568	99.00	8139	175.00	10465	274.00	6395
57.00	8618	107.00	40696	185.00	5232	275.00	45928
60.00	4069	108.00	8139	186.00	27320	296.00	6395
68.00	8076	110.00	63368	187.00	10465	346.00	5813
69.00	104824	111.00	8101	198.00	177280	365.00	11046
73.00	9278	117.00	54648	199.00	11627	366.00	4651
74.00	22056	118.00	6976	204.00	8139	372.00	4069
75.00	19184	122.00	5813	205.00	9883	392.00	5232
77.00	94696	127.00	81976	206.00	48832	423.00	10465
78.00	6945	128.00	6976	207.00	6371	441.00	30808
79.00	23216	129.00	26136	217.00	9302	442.00	153472
80.00	12770	130.00	5813	224.00	19752	443.00	32552
81.00	8094	148.00	9302	225.00	5232	444.00	6395
82.00	5212	155.00	4651	227.00	4651	445.00	4069
86.00	4633	156.00	6395	228.00	4069		
92.00	6976	165.00	6395	244.00	22672		
93.00	17984	167.00	9278	246.00	6395		
94.00	5232	168.00	9302	255.00	68600		

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: PACE ANALYTICAL - NY LAB Contract:

Lab Code: 11078 Case No.: SAS No.: SDG No.: 15090196TRC-DS

Lab File ID: M03091416 DFTPP Injection Date: 09/14/15

Instrument ID: GCMS03 DFTPP Injection Time: 2323

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	41.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 30.0% of mass 198	19.5
365	Greater than 1.0% of mass 198	4.94
441	Present, but less than mass 443	11.1
442	40.0 - 110.0% of mass 198	59.8
443	17.0 - 23.0% of mass 442	12.7 (21.2)1

1-Value is % mass 442

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	WDM3-0914B	WDM3-0914B	M03091417	09/14/15	2349
02	CCV3-0914C	CCV3-0914C	M03091418	09/15/15	0038
03	AS27354LCS	AS27354L	M03091420	09/15/15	0216
04	AS27354S	AS27354S	M03091421	09/15/15	0304
05	CCV3-0914D	CCV3-0914D	M03091430	09/15/15	1025
06					
07					
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09					
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19					
20					
21					
22					

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: PACE ANALYTICAL - NY LAB Contract:

Lab Code: 11078 Case No.: SAS No.: SDG No.: 15090196TRC-DS

Lab File ID: M03091416 DFTPP Injection Date: 09/14/15

Instrument ID: GCMS03 DFTPP Injection Time: 2323

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	41.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 30.0% of mass 198	19.5
365	Greater than 1.0% of mass 198	4.94
441	Present, but less than mass 443	11.1
442	40.0 - 110.0% of mass 198	59.8
443	17.0 - 23.0% of mass 442	12.7 (21.2)1

1-Value is % mass 442

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	WDM3-0914B	WDM3-0914B	M03091417	09/14/15	2349
02	CCV3-0914C	CCV3-0914C	M03091418	09/15/15	0038
03	1-110	AS27372	M03091428	09/15/15	0847
04	1-110D	AS27373	M03091429	09/15/15	0936
05	CCV3-0914D	CCV3-0914D	M03091430	09/15/15	1025
06					
07					
08					
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18					
19					
20					
21					
22					

Date : 14-SEP-2015 23:23

Client ID: 20ng DFTPP-2

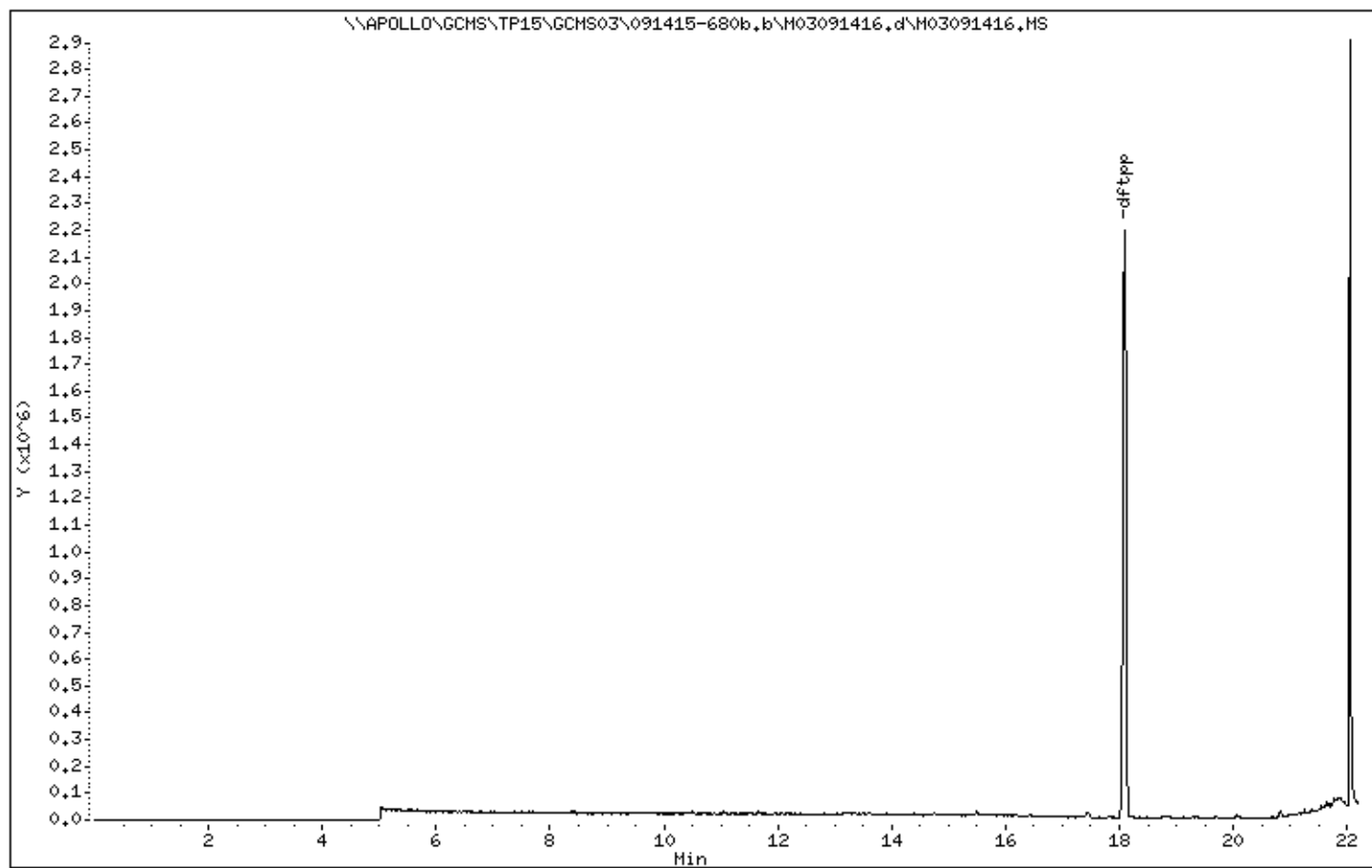
Instrument: GCMS03.i

Sample Info: 20ng DFTPP-2

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25



Date : 14-SEP-2015 23:23

Client ID: 20ng DFTPP-2

Instrument: GCMS03.i

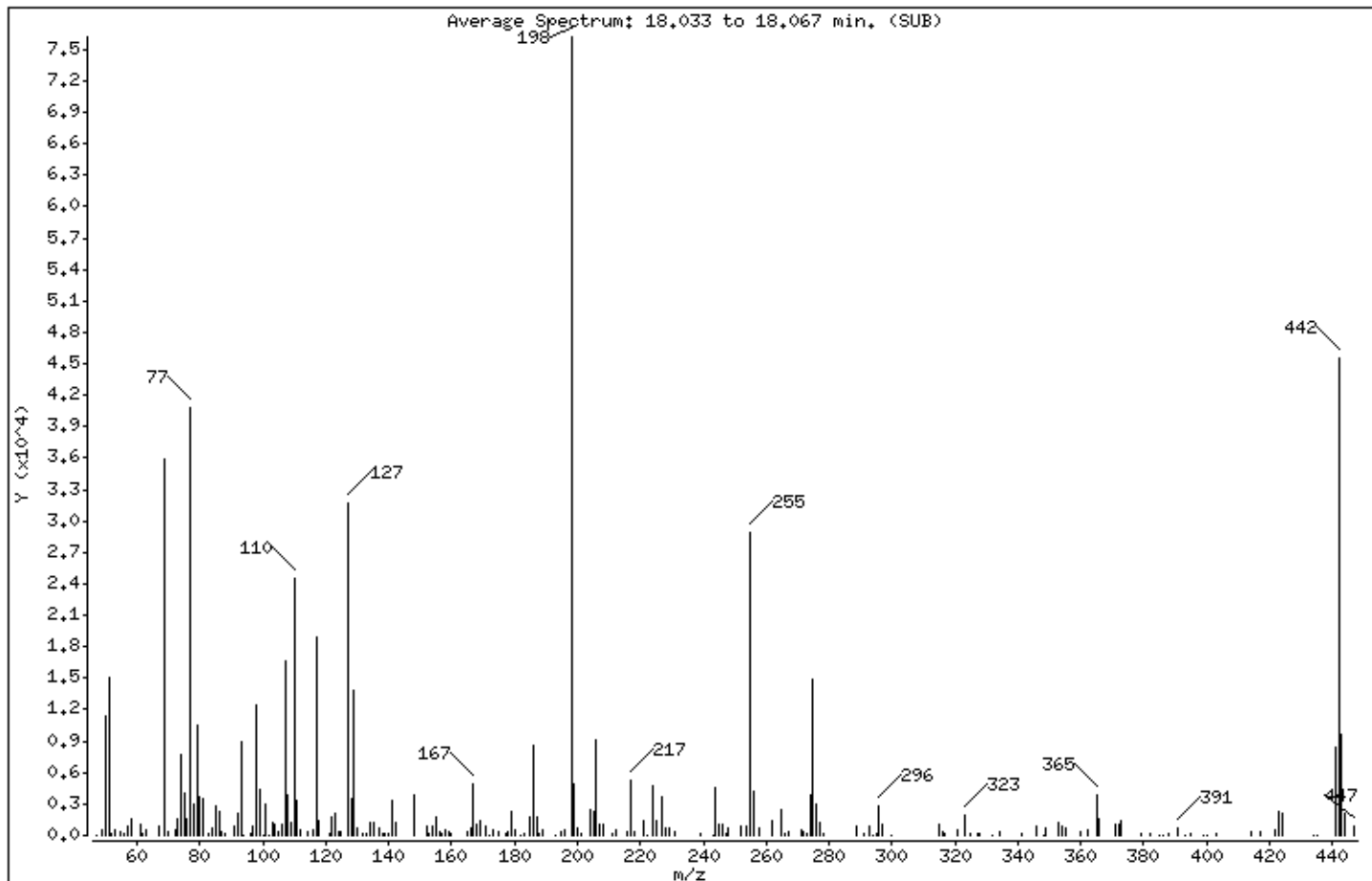
Sample Info: 20ng DFTPP-2

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
127	40.00 - 60.00% of mass 198	41.68
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.36
275	10.00 - 30.00% of mass 198	19.46
365	Greater than 1.00% of mass 198	4.94
441	Present, but less than mass 443	11.06
442	40.00 - 110.00% of mass 198	59.77
443	17.00 - 23.00% of mass 442	12.67 (21.19)

Date : 14-SEP-2015 23:23

Client ID: 20ng DFTPP-2

Instrument: GCMS03.i

Sample Info: 20ng DFTPP-2

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25

Data File: H03091416.d

Spectrum: Average Spectrum: 18.033 to 18.067 min. (SUB)

Location of Maximum: 198.00

Number of points: 210

m/z	Y	m/z	Y	m/z	Y	m/z	Y

47.00	65	114.00	354	193.00	5	295.00	177
49.00	532	116.00	439	195.00	345	296.00	2737
50.00	11421	117.00	18872	196.00	492	297.00	1128
51.00	15131	118.00	1399	198.00	76200	300.00	63
52.00	100	121.00	140	199.00	4846	315.00	1077

53.00	477	122.00	1818	200.00	698	316.00	328
55.00	411	123.00	2077	201.00	221	317.00	91
56.00	163	124.00	320	204.00	2436	321.00	607
57.00	848	125.00	418	205.00	2298	323.00	1854
58.00	1565	127.00	31760	206.00	9182	325.00	235

61.00	1076	128.00	3458	207.00	1056	327.00	136
62.00	243	129.00	13845	208.00	1132	328.00	199
63.00	594	130.00	713	211.00	127	332.00	82
67.00	905	132.00	100	212.00	607	334.00	410
69.00	35968	133.00	125	216.00	332	341.00	109

70.00	411	134.00	1215	217.00	5264	346.00	829
72.00	470	135.00	1299	218.00	340	348.00	63
73.00	1553	137.00	764	221.00	1385	349.00	694
74.00	7654	138.00	191	222.00	72	353.00	1215
75.00	4083	139.00	103	224.00	4656	354.00	939

76.00	1615	140.00	206	225.00	1412	355.00	657
77.00	40880	141.00	3273	227.00	3619	360.00	375
78.00	3015	142.00	1167	228.00	781	362.00	469
79.00	10533	148.00	3880	229.00	619	365.00	3767
80.00	3703	152.00	842	231.00	281	366.00	1638

81.00	3448	153.00	91	239.00	177	371.00	1041
83.00	177	154.00	868	243.00	82	372.00	987
84.00	688	155.00	1714	244.00	4514	373.00	1475
85.00	2854	156.00	288	245.00	983	379.00	243
86.00	2299	157.00	145	246.00	1064	382.00	155

87.00	265	158.00	469	247.00	177	385.00	63
88.00	177	159.00	436	248.00	694	386.00	54
91.00	795	160.00	140	252.00	954	388.00	177
92.00	2024	165.00	281	254.00	803	391.00	694
93.00	8896	166.00	664	255.00	28872	393.00	72

Date : 14-SEP-2015 23:23

Client ID: 20ng DFTPP-2

Instrument: GCMS03.i

Sample Info: 20ng DFTPP-2

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25

Data File: M03091416.d

Spectrum: Average Spectrum: 18.033 to 18.067 min. (SUB)

Location of Maximum: 198.00

Number of points: 210

m/z	Y	m/z	Y	m/z	Y	m/z	Y
94.00	39	167.00	4841	256.00	4212	395.00	155
96.00	120	168.00	970	258.00	781	399.00	63
97.00	842	169.00	1388	262.00	1388	400.00	72
98.00	12472	171.00	868	265.00	2498	403.00	213
99.00	4303	172.00	30	266.00	173	414.00	375
100.00	82	173.00	447	267.00	375	417.00	422
101.00	2904	175.00	310	271.00	607	422.00	607
102.00	63	177.00	117	272.00	375	423.00	2361
103.00	1215	178.00	385	273.00	221	424.00	2037
104.00	1081	179.00	2355	274.00	3875	434.00	63
105.00	349	180.00	477	275.00	14827	435.00	63
106.00	986	182.00	82	276.00	3033	441.00	8427
107.00	16632	183.00	132	277.00	1310	442.00	45544
108.00	3791	185.00	1743	278.00	243	443.00	9652
109.00	1301	186.00	8533	289.00	954	444.00	2018
110.00	24552	187.00	1667	291.00	199	447.00	954
111.00	3315	188.00	177	293.00	960		
112.00	442	189.00	585	294.00	82		

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: PACE ANALYTICAL - NY LAB Contract:

Lab Code: 11078 Case No.: SAS No.: SDG No.: 15090196TRC-DS

Lab File ID: M03091501 DFTPP Injection Date: 09/15/15

Instrument ID: GCMS03 DFTPP Injection Time: 1207

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	46.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.1
275	10.0 - 30.0% of mass 198	24.3
365	Greater than 1.0% of mass 198	10.54
441	Present, but less than mass 443	11.8
442	40.0 - 110.0% of mass 198	52.1
443	17.0 - 23.0% of mass 442	11.9 (22.8)1

1-Value is % mass 442

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	WDM3-0915A	WDM3-0915A	M03091502	09/15/15	1254
02	CCV3-0915A	CCV3-0915A	M03091503	09/15/15	1342
03	AS27354BLANK	AS27354BRR1	M03091504	09/15/15	1431
04	1-315	AS27374	M03091511	09/15/15	2014
05	2-203	AS27376	M03091513	09/15/15	2152
06	2-203D	AS27377	M03091514	09/15/15	2240
07	CCV3-0915B	CCV3-0915B	M03091515	09/15/15	2329
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Date : 15-SEP-2015 12:07

Client ID: 20ng DFTPP-1

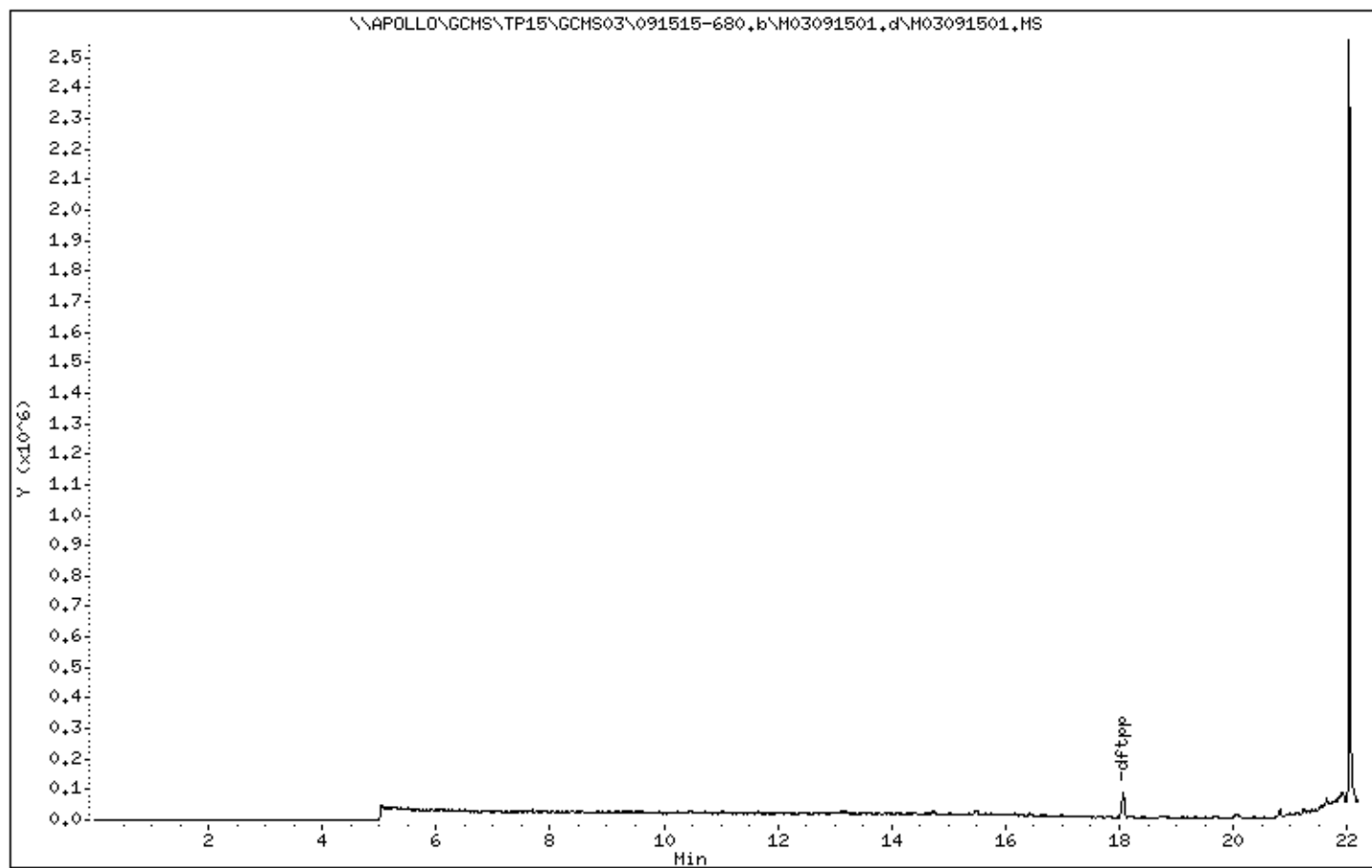
Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25



Date : 15-SEP-2015 12:07

Client ID: 20ng DFTPP-1

Instrument: GCMS03.i

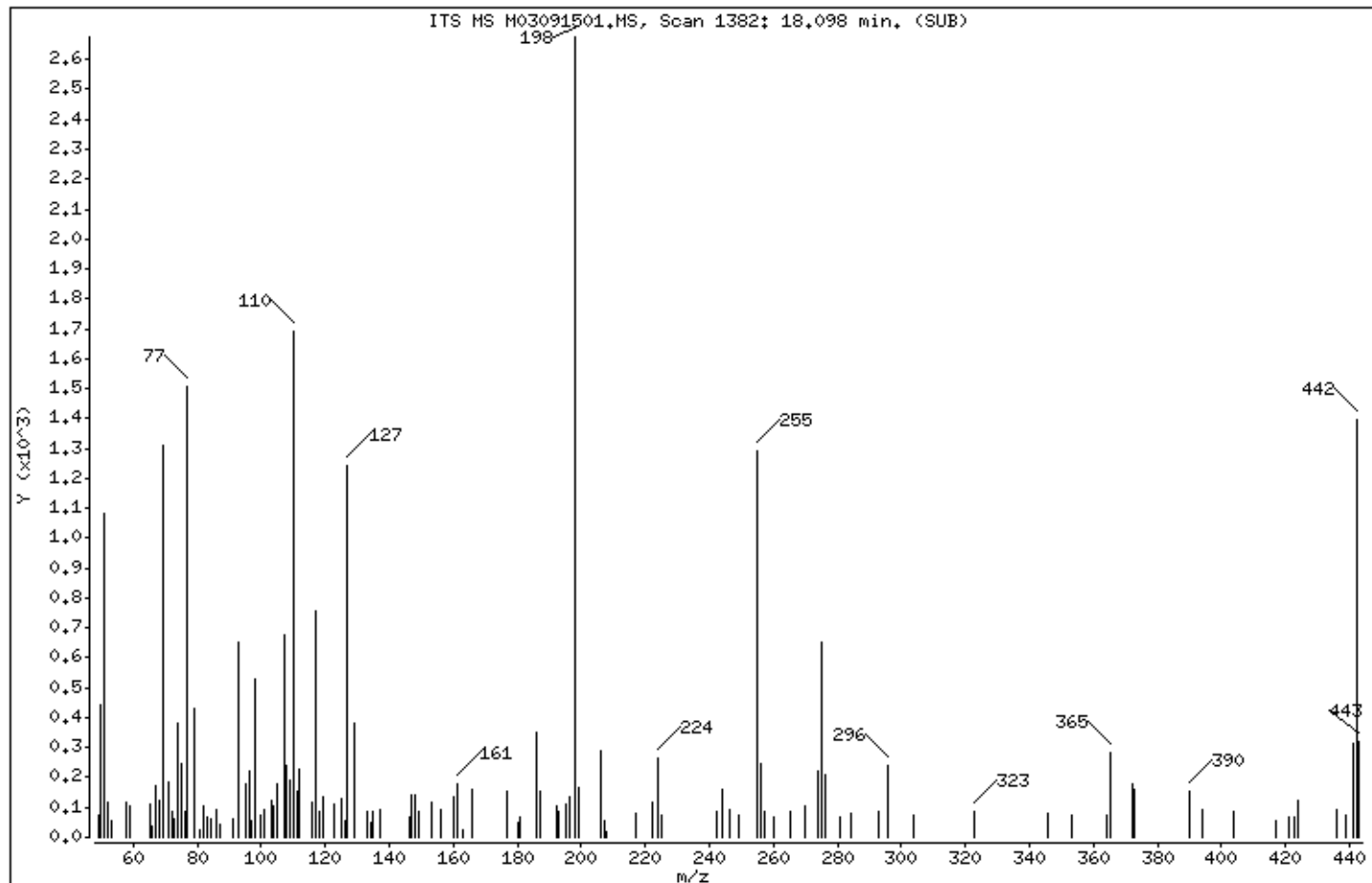
Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
127	40.00 - 60.00% of mass 198	46.47
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.09
275	10.00 - 30.00% of mass 198	24.26
365	Greater than 1.00% of mass 198	10.54
441	Present, but less than mass 443	11.78
442	40.00 - 110.00% of mass 198	52.15
443	17.00 - 23.00% of mass 442	11.89 < 22.80

Date : 15-SEP-2015 12:07

Client ID: 20ng DFTPP-1

Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25

Data File: M03091501.d

Spectrum: ITS MS M03091501.MS, Scan 1382: 18.098 min. (SUB)

Location of Maximum: 198.00

Number of points: 121

m/z	Y	m/z	Y	m/z	Y	m/z	Y
49.00	76	98.00	528	160.00	133	270.00	105
50.00	444	100.00	76	161.00	181	274.00	219
51.00	1084	101.00	95	163.00	26	275.00	649
52.00	114	103.00	124	166.00	162	276.00	210
53.00	54	104.00	105	177.00	152	281.00	66
58.00	114	105.00	179	180.00	50	284.00	77
59.00	105	107.00	678	181.00	66	293.00	86
65.00	108	108.00	237	186.00	353	296.00	238
66.00	38	109.00	192	187.00	151	304.00	76
67.00	170	110.00	1694	192.00	105	323.00	86
68.00	124	111.00	152	193.00	86	346.00	77
69.00	1312	112.00	229	195.00	110	353.00	76
71.00	186	116.00	114	196.00	133	364.00	76
72.00	87	117.00	759	198.00	2675	365.00	282
73.00	62	118.00	86	199.00	163	372.00	181
74.00	382	119.00	134	206.00	286	373.00	162
75.00	246	123.00	109	207.00	57	390.00	152
76.00	88	125.00	130	208.00	20	394.00	95
77.00	1508	126.00	57	217.00	77	404.00	86
79.00	428	127.00	1243	222.00	114	417.00	58
81.00	22	129.00	382	224.00	267	421.00	66
82.00	105	133.00	86	225.00	76	423.00	65
83.00	65	134.00	47	242.00	86	424.00	124
84.00	61	135.00	84	244.00	162	436.00	95
86.00	90	137.00	91	246.00	95	439.00	76
87.00	43	146.00	66	249.00	76	441.00	315
91.00	63	147.00	139	255.00	1290	442.00	1395
93.00	649	148.00	143	256.00	248	443.00	318
95.00	178	149.00	86	257.00	86		
96.00	221	153.00	114	260.00	66		
97.00	55	156.00	95	265.00	86		

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: PACE ANALYTICAL - NY LAB Contract:

Lab Code: 11078 Case No.: SAS No.: SDG No.: 15090196TRC-DS

Lab File ID: M03091601 DFTPP Injection Date: 09/16/15

Instrument ID: GCMS03 DFTPP Injection Time: 1306

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	54.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.0
275	10.0 - 30.0% of mass 198	24.4
365	Greater than 1.0% of mass 198	7.10
441	Present, but less than mass 443	6.5
442	40.0 - 110.0% of mass 198	73.7
443	17.0 - 23.0% of mass 442	16.9 (22.9)1

1-Value is % mass 442

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	WDM3-0916A	WDM3-0916A	M03091602	09/16/15	1334
02	CCV3-0916A	CCV3-0916A	M03091603	09/16/15	1423
03	1-315D	AS27375RR1	M03091605	09/16/15	1601
04	CCV3-0916B	CCV3-0916B	M03091610	09/16/15	2006
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Date : 16-SEP-2015 13:06

Client ID: 20ng DFTPP-1

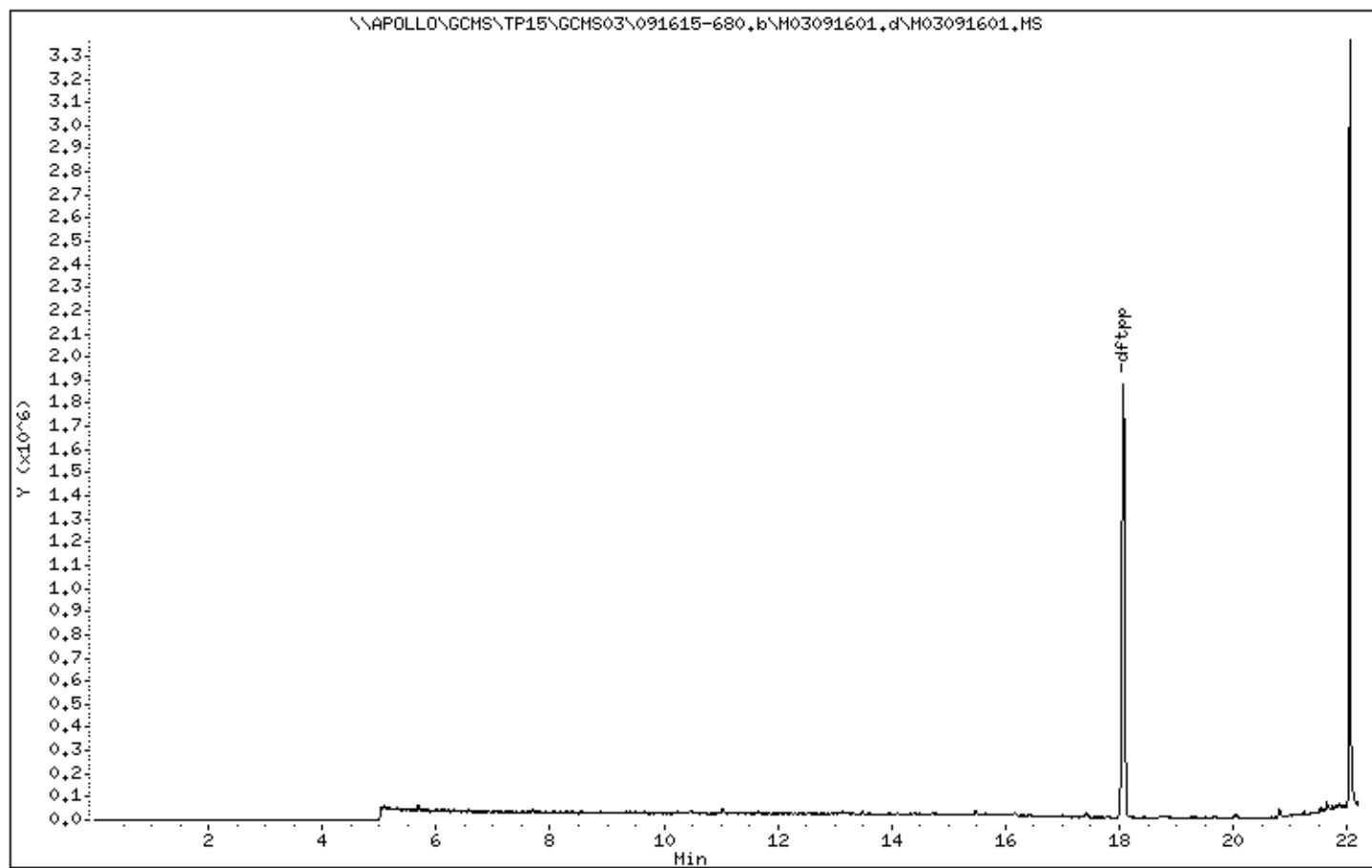
Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25



Date : 16-SEP-2015 13:06

Client ID: 20ng DFTPP-1

Instrument: GCMS03.i

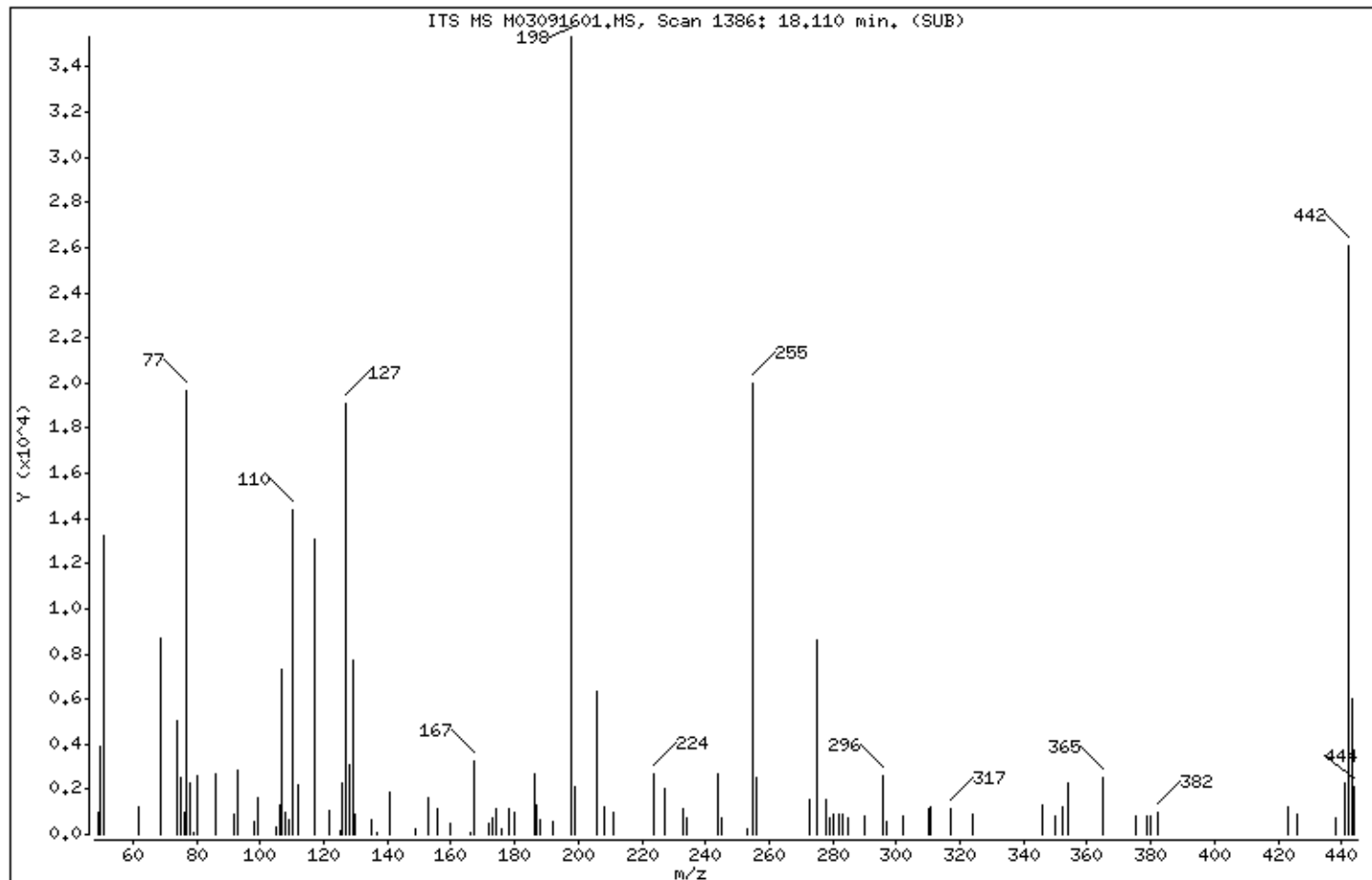
Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
127	40.00 - 60.00% of mass 198	54.03
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	5.96
275	10.00 - 30.00% of mass 198	24.43
365	Greater than 1.00% of mass 198	7.10
441	Present, but less than mass 443	6.53
442	40.00 - 110.00% of mass 198	73.74
443	17.00 - 23.00% of mass 442	16.91 < 22.93

Date : 16-SEP-2015 13:06

Client ID: 20ng DFTPP-1

Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25

Data File: M03091601.d

Spectrum: ITS MS M03091601.MS, Scan 1386: 18.110 min. (SUB)

Location of Maximum: 198.00

Number of points: 97

m/z	Y	m/z	Y	m/z	Y	m/z	Y
49.00	1004	122.00	1084	192.00	554	297.00	602
50.00	3880	125.00	173	198.00	35336	302.00	803
51.00	13267	126.00	2309	199.00	2108	310.00	1104
62.00	1204	127.00	19088	206.00	6325	311.00	1204
69.00	8731	128.00	3112	208.00	1257	317.00	1104
74.00	5020	129.00	7730	211.00	987	324.00	903
75.00	2548	130.00	903	224.00	2710	346.00	1305
76.00	942	135.00	685	227.00	2008	350.00	803
77.00	19664	137.00	69	233.00	1104	352.00	1204
78.00	2309	141.00	1907	234.00	702	354.00	2309
79.00	78	149.00	280	244.00	2710	365.00	2510
80.00	2610	153.00	1606	245.00	702	375.00	803
86.00	2710	156.00	1104	253.00	212	379.00	803
92.00	903	160.00	513	255.00	19976	380.00	803
93.00	2803	166.00	82	256.00	2510	382.00	1004
98.00	581	167.00	3230	273.00	1524	423.00	1216
99.00	1624	172.00	488	275.00	8634	426.00	903
105.00	356	173.00	702	278.00	1506	438.00	702
106.00	1305	174.00	1104	279.00	702	441.00	2309
107.00	7343	176.00	256	280.00	903	442.00	26056
108.00	1004	178.00	1115	282.00	903	443.00	5976
109.00	650	180.00	1004	283.00	903	444.00	2108
110.00	14361	186.00	2710	285.00	702		
112.00	2208	187.00	1305	290.00	803		
117.00	13070	188.00	686	296.00	2610		

Sample Analysis Data



Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL

Project: 115058

Client Sample ID: 1-110

Lab Sample ID: 15090196-01 (AS27372)

Collection Date: 09/04/2015

Sample Matrix: POLYURETHANE FOAM

Received Date: 09/09/2015 09:22

Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-521-28	PCBs by EPA Method TO-10A/680	09/15/2015 08:47	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	7.53m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.000664	1.00	U	MS03-521-28
Dichlorobiphenyl	25512-42-9	0.0119	0.000664	1.00		MS03-521-28
Trichlorobiphenyl	25323-68-6	0.0303	0.000664	1.00		MS03-521-28
Tetrachlorobiphenyl	26914-33-0	0.00707	0.00133	1.00		MS03-521-28
Pentachlorobiphenyl	25429-29-2	ND	0.00133	1.00	U	MS03-521-28
Hexachlorobiphenyl	26601-64-9	ND	0.00133	1.00	U	MS03-521-28
Heptachlorobiphenyl	28655-71-2	ND	0.00199	1.00	U	MS03-521-28
Octachlorobiphenyl	55722-26-4	ND	0.00199	1.00	U	MS03-521-28
Nonachlorobiphenyl	53742-07-7	ND	0.00332	1.00	U	MS03-521-28
Decachlorobiphenyl	2051-24-3	ND	0.00332	1.00	U	MS03-521-28
Total PCB	1336-36-3	0.0492		1.00		MS03-521-28

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	51.5	70.1-116	*	MS03-521-28
Tetrachloro-meta-xylene	877-09-8	41.4	44.4-104	*	MS03-521-28

¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

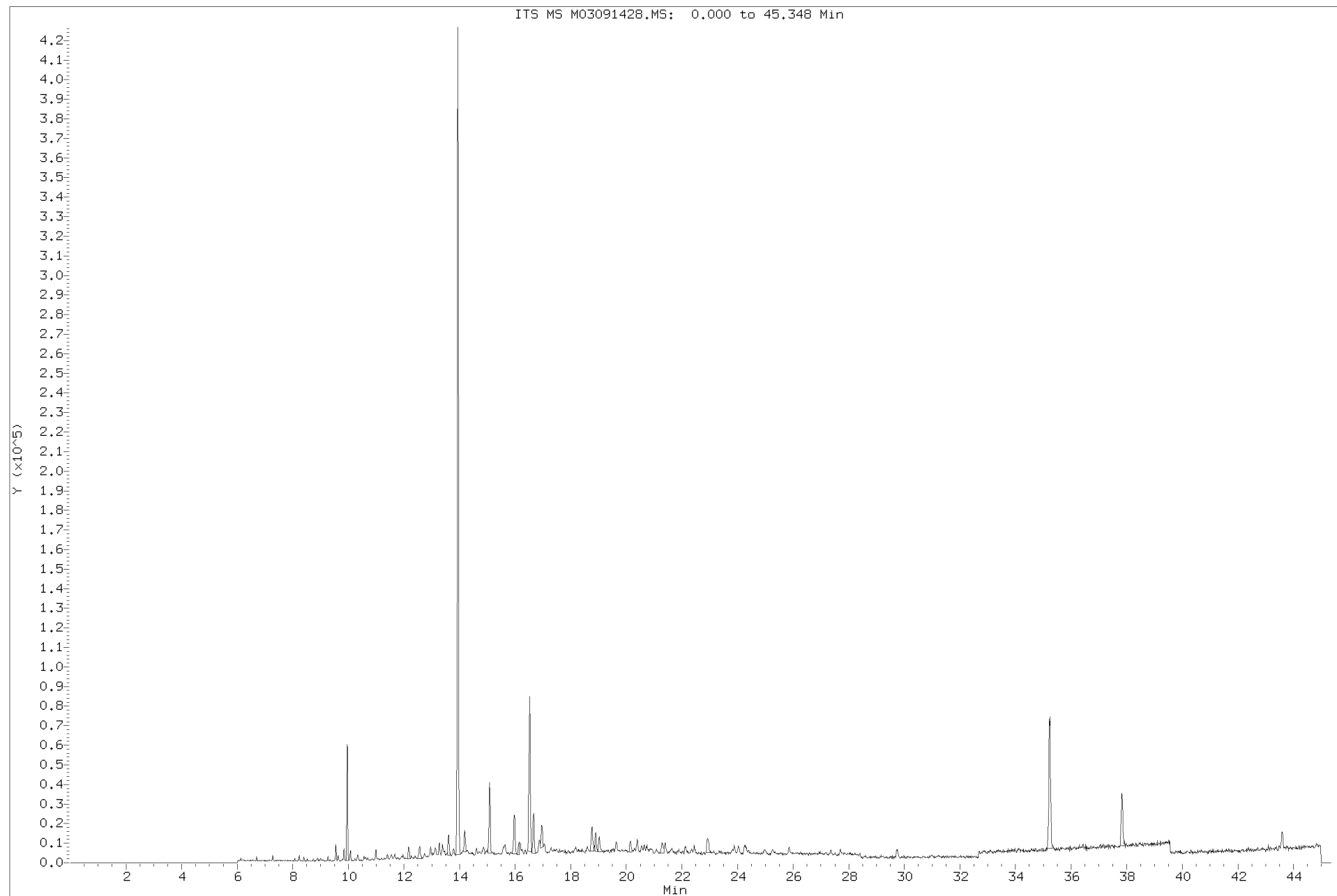
NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

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2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\M03091428.MS
Injection Date: 15-SEP-2015 08:47
Instrument: GCMS03.i
Client Sample ID: 1-110



Form 1

PCB Homolog Report

Pace Analytical Services, Inc.

ELAP ID No.: 11078
 Matrix: TO-10A PUF
 Sample weight: 7.53 cubic m
 % Moisture: 0 %
 Method: EPA 680 (GC/MS)
 Dilution Factor: 1
 GC Column: J&W, DB-XLB, 30m length, 0.25mm ID, 0.25µm Film

SDG No.: 15090196
 Client ID: 1-110
 Lab Sample ID: AS27372
 Date Received: 9/9/2015
 Date Extracted: 9/10/2015
 Date Analyzed: 9/15/2015
 Time Analyzed: 8:47

Monochlorobiphenyls									
Quant Ion RT m/z 188	Quant Ion Area	Confirm Ion RT m/z 190	Confirm Ion Area	Ratio 2.5 to 3.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Mono Total:						0.000664	0.000664	ND	

Dichlorobiphenyls									
Quant Ion RT m/z 222	Quant Ion Area	Confirm Ion RT m/z 224	Confirm Ion Area	Ratio 1.3 to 1.7	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
12.164	2705	12.170	1949	1.4	0.9128	0.000664	0.000664	0.00190	
13.779	2423	13.777	1584	1.5	0.9128	0.000664	0.000664	0.00171	
14.185	11728	14.184	7072	1.7	0.9128	0.000664	0.000664	0.00826	
Di Total:						0.000664	0.000664	0.0119	

Trichlorobiphenyls									
Quant Ion RT m/z 256	Quant Ion Area	Confirm Ion RT m/z 258	Confirm Ion Area	Ratio 0.8 to 1.2	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
15.979	6567	15.975	6652	1.0	0.7325	0.000664	0.000664	0.00576	
16.871	2106	16.873	2283	0.9	0.7325	0.000664	0.000664	0.00185	
17.043	2130	17.036	1810	1.2	0.7325	0.000664	0.000664	0.00187	
18.762	7504	18.763	8323	0.9	0.7325	0.000664	0.000664	0.00658	
18.898	7066	18.901	8334	0.8	0.7325	0.000664	0.000664	0.00620	
19.019	6641	19.018	6748	1.0	0.7325	0.000664	0.000664	0.00583	
19.636	2469	19.638	2978	0.8	0.7325	0.000664	0.000664	0.00217	
Tri Total:						0.000664	0.000664	0.0303	

Tetrachlorobiphenyls									
Quant Ion RT m/z 292	Quant Ion Area	Confirm Ion RT m/z 290	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
20.644	2733	20.645	1962	1.4	0.5577	0.00133	0.00133	0.00315	
24.259	3404	24.249	2622	1.3	0.5577	0.00133	0.00133	0.00392	
Tetra Total:						0.00133	0.00133	0.00707	

Pentachlorobiphenyls									
Quant Ion RT m/z 326	Quant Ion Area	Confirm Ion RT m/z 324	Confirm Ion Area	Ratio 1.4 to 1.8	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Penta Total: 0.00133 0.00133 ND

Hexachlorobiphenyls									
Quant Ion RT m/z 360	Quant Ion Area	Confirm Ion RT m/z 362	Confirm Ion Area	Ratio 1.0 to 1.4	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Hexa Total: 0.00133 0.00133 ND

Heptachlorobiphenyls									
Quant Ion RT m/z 394	Quant Ion Area	Confirm Ion RT m/z 396	Confirm Ion Area	Ratio 0.9 to 1.2	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Hepta Total: 0.00199 0.00199 ND

Octachlorobiphenyls									
Quant Ion RT m/z 430	Quant Ion Area	Confirm Ion RT m/z 428	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Octa Total: 0.00199 0.00199 ND

Nonachlorobiphenyls									
Quant Ion RT m/z 464	Quant Ion Area	Confirm Ion RT m/z 466	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Nona Total: 0.00332 0.00332 ND

Decachlorobiphenyl									
Quant Ion RT m/z 498	Quant Ion Area	Confirm Ion RT m/z 500	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Deca Total: 0.00332 0.00332 ND

Tetrachloro-meta-xylene: Surrogate Analyte								
Quant Ion RT m/z 244	Quant Ion Area	Confirm Ion RT m/z 242	Confirm Ion Area	Ratio 1.1 - 1.5	Response Factor		Solution Concentration ug/mL	Flag

12.547 470 12.545 341 1.4 0.2749 0.00827

TCMX Total: 0.00827

Decachloro ¹³ C Biphenyl: Surrogate Analyte								
Quant Ion RT m/z 510	Quant Ion Area	Confirm Ion RT m/z 512	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor		Solution Concentration ug/mL	Flag
43.607	6299	43.589	5799	1.1	0.5916		0.0515	
Deca Total:							0.0515	

TCMX Recovery % 41.4 %

Deca Recovery 51.5 %

Chrysene-d ₁₂ Internal Standard								
Quant Ion RT m/z 240	Quant Ion Area	Confirm Ion RT m/z 241	Confirm Ion Area	Ratio 4.3 - 5.9	Response Factor		Solution Concentration ug/mL	Flag
35.236	165318	35.220	33738	4.9	1.0000		0.800	
Chrysene-d ₁₂ :							0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091428"		"M03091428"		"M03091428"		"M03091428"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.984	2341	13.917	2992	9.845	3907	9.846	2739
16.520	134001	13.941	8476	10.072	2781	10.073	2540
18.760	1664	16.510	1315	11.667	1264	13.462	1467
18.910	1819			11.966	1663	13.921	1746
				12.162	3535	13.961	2678
				13.775	2076	14.197	1315
				13.947	11005	15.091	1435
				14.092	1453	16.956	1697
				14.185	6315		
				15.077	4051		
				15.958	2461		
				16.179	3137		
				16.656	3350		
				16.932	1256		
				16.966	2201		

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091428"		"M03091428"		"M03091428"		"M03091428"		"M03091428"		"M03091428"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
12.164	2705	12.170	1949	9.845	3907	9.846	2739	15.979	7285	15.984	2341
13.381	2080	13.777	1584	10.072	2781	10.073	2540	16.137	2365	16.520	134001
13.604	7735	14.184	7072	11.667	1264	13.462	1467	16.520	12689	18.760	1664
13.779	2423	16.949	1650	11.966	1663	13.921	1746	16.865	3307	18.910	1819
13.932	143310			12.162	3535	13.961	2678	17.052	1734		
14.185	11728			13.775	2076	14.197	1315	18.759	4816		
15.080	11406			13.947	11005	15.091	1435	18.902	4629		
15.976	2665			14.092	1453	16.956	1697	19.015	1882		
16.645	1425			14.185	6315			19.032	1919		
16.670	2325			15.077	4051			19.632	1702		
16.961	3888			15.958	2461						
20.391	1475			16.179	3137						
				16.656	3350						
				16.932	1256						
				16.966	2201						

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091428"		"M03091428"		"M03091428"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
15.979	6567	15.975	6652	13.381	5300
16.128	2671	16.136	1664	13.588	2114
16.871	2106	16.873	2283	13.938	773181
17.043	2130	17.036	1810	14.872	3122
18.762	7504	18.763	8323	15.077	57632
18.898	7066	18.901	8334	15.976	6250
19.019	6641	19.018	6748	16.132	2571
19.636	2469	19.638	2978	16.362	2891
21.279	1279	22.455	1293	16.664	22919
21.301	1469			16.863	3378

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091428"		"M03091428"		"M03091428"		"M03091428"		"M03091428"		"M03091428"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
15.979	6567	15.975	6652	15.979	7285	15.984	2341				
16.128	2671	16.136	1664	16.137	2365	16.520	134001				
16.871	2106	16.873	2283	16.520	12689	18.760	1664				
17.043	2130	17.036	1810	16.865	3307	18.910	1819				
18.762	7504	18.763	8323	17.052	1734						
18.898	7066	18.901	8334	18.759	4816						
19.019	6641	19.018	6748	18.902	4629						
19.636	2469	19.638	2978	19.015	1882						
21.279	1279	22.455	1293	19.032	1919						
21.301	1469			19.632	1702						

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091428"		"M03091428"		"M03091428"		"M03091428"		"M03091428"		"M03091428"	
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				20.404	1255	20.388	3138	21.403	1266	20.390	1641
				20.645	1962	20.644	2733	24.029	2244		
				22.348	1800	21.398	2574				
				24.031	2966	24.015	1656				
				24.249	2622	24.047	2233				
						24.259	3404				

Extracted Ion Current Profiles

Tetrachlorobiphenyls							
"M03091428"		"M03091428"		"M03091428"		"M03091428"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>	
20.388	3138	20.404	1255	9.629	1652	12.164	2705
20.644	2733	20.645	1962	13.940	6277	13.381	2080
21.398	2574	22.348	1800	15.009	1493	13.604	7735
24.015	1656	24.031	2966	20.392	2460	13.779	2423
24.047	2233	24.249	2622	20.638	1504	13.932	143310
24.259	3404			21.397	2276	14.185	11728
				24.030	2058	15.080	11406
				24.260	1461	15.976	2665
						16.645	1425
						16.670	2325
						16.961	3888
						20.391	1475

Extracted Ion Current Profiles

Pentachlorobiphenyls					
"M03091428"	"M03091428"	"M03091428"	"M03091428"		"M03091428"
m/z 326	m/z 324	m/z 254	m/z 256	m/z 258	m/z 392
			15.979	6567	15.975 6652
			16.128	2671	16.136 1664
			16.871	2106	16.873 2283
			17.043	2130	17.036 1810
			18.762	7504	18.763 8323
			18.898	7066	18.901 8334
			19.019	6641	19.018 6748
			19.636	2469	19.638 2978
			21.279	1279	22.455 1293
			21.301	1469	

Extracted Ion Current Profiles

Hexachlorobiphenyls					
"M03091428"	"M03091428"	"M03091428"	"M03091428"	"M03091428"	"M03091428"
m/z 360	m/z 362	m/z 288	m/z 290	m/z 426	m/z 428

20.404	1255
20.645	1962
22.348	1800
24.031	2966
24.249	2622

Extracted Ion Current Profiles

TCMX			
"M03091428"		"M03091428"	
m/z 244		m/z 242	

10.987	658	10.993	885
12.547	470	12.545	341(M)
14.631	103	14.811	114
15.610	110	15.061	100
15.788	134	15.754	102
16.272	123	16.011	116
16.449	132	16.267	194
16.839	247	16.344	310
16.940	1304	16.567	179
16.958	2349	16.666	297
17.065	129	16.733	100
17.128	116	16.808	175
17.214	158	16.872	161
17.251	186	16.898	102
17.287	428	16.964	521
17.312	365	17.029	134
17.372	125	17.127	137
17.434	130	17.169	192
17.474	149	17.212	160
17.554	182	17.266	171
17.661	172	17.299	202
17.724	219	17.324	142
18.134	194	17.383	175
18.253	128	17.408	111
18.424	115	17.522	309
18.535	200	17.578	113
18.578	389	17.641	140
18.631	114	17.794	193
18.745	253	17.868	266
18.793	232	17.929	130
18.829	255	18.025	112
18.850	211	18.103	201
19.030	199	18.245	259
19.173	198	18.306	247
19.253	313	18.406	145
19.365	166	18.449	199
19.455	239	18.550	321
19.521	111	18.603	250
19.612	337	18.738	159
19.644	545	18.803	117
19.761	107	18.838	206
19.845	119	19.043	178

TCMX

chrysene -
d₁₂

Chrysene-d12			
"M03091428"		"M03091428"	
m/z 240		m/z 241	

35.236	165318	35.220	17169
		35.239	33738(M)

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091428"		"M03091428"	
m/z 188		m/z 189	

15.984	2341	10.339	2180
16.520	134001	13.929	17323
18.760	1664	16.519	22352
18.910	1819	16.653	1483
		21.219	1335

Extracted Ion Current Profiles

20.151	1511	19.080	134
20.257	195	19.240	101
20.318	119	19.313	152
28.885	131	19.607	134
29.125	105	19.894	186
30.190	109	20.133	110
31.505	107	20.174	210
31.678	103	20.305	140
32.041	104	20.348	106
32.164	108	20.474	128
32.664	104	20.536	167
34.519	177	32.030	134
34.602	191	33.438	124
34.721	122	33.699	108
35.170	188	34.899	106
35.203	145	35.179	366
36.404	127	35.213	1156
36.523	103	35.243	1784
36.648	159	35.405	129
36.953	114	36.491	113
37.801	204	37.019	109
38.017	117	37.712	109
38.339	157	37.848	104

Extracted Ion Current Profiles

Deca C13				
Deca C13	m/z 510		m/z 512	
510	35.613	127	35.259	237
512	39.011	136	39.164	107
	39.458	117	40.069	100
	39.835	108	41.660	121
	41.384	163	42.535	117
	42.236	158	43.267	140
	43.016	181	43.525	209
	43.107	101	43.589	5799
	43.607	6299	44.120	125
	43.792	101	44.382	121
	43.853	115		
	44.908	123		



Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL

Project: 115058

Client Sample ID: 1-110D

Lab Sample ID: 15090196-02 (AS27373)

Collection Date: 09/04/2015

Sample Matrix: POLYURETHANE FOAM

Received Date: 09/09/2015 09:22

Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-521-29	PCBs by EPA Method TO-10A/680	09/15/2015 09:36	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	7.55m ³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m ³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.000662	1.00	U	MS03-521-29
Dichlorobiphenyl	25512-42-9	0.0138	0.000662	1.00		MS03-521-29
Trichlorobiphenyl	25323-68-6	0.0408	0.000662	1.00		MS03-521-29
Tetrachlorobiphenyl	26914-33-0	0.00924	0.00133	1.00		MS03-521-29
Pentachlorobiphenyl	25429-29-2	ND	0.00133	1.00	U	MS03-521-29
Hexachlorobiphenyl	26601-64-9	ND	0.00133	1.00	U	MS03-521-29
Heptachlorobiphenyl	28655-71-2	ND	0.00199	1.00	U	MS03-521-29
Octachlorobiphenyl	55722-26-4	ND	0.00199	1.00	U	MS03-521-29
Nonachlorobiphenyl	53742-07-7	ND	0.00331	1.00	U	MS03-521-29
Decachlorobiphenyl	2051-24-3	ND	0.00331	1.00	U	MS03-521-29
Total PCB	1336-36-3	0.0638		1.00		MS03-521-29

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	62.6	70.1-116	*	MS03-521-29
Tetrachloro-meta-xylene	877-09-8	62.2	44.4-104		MS03-521-29

¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

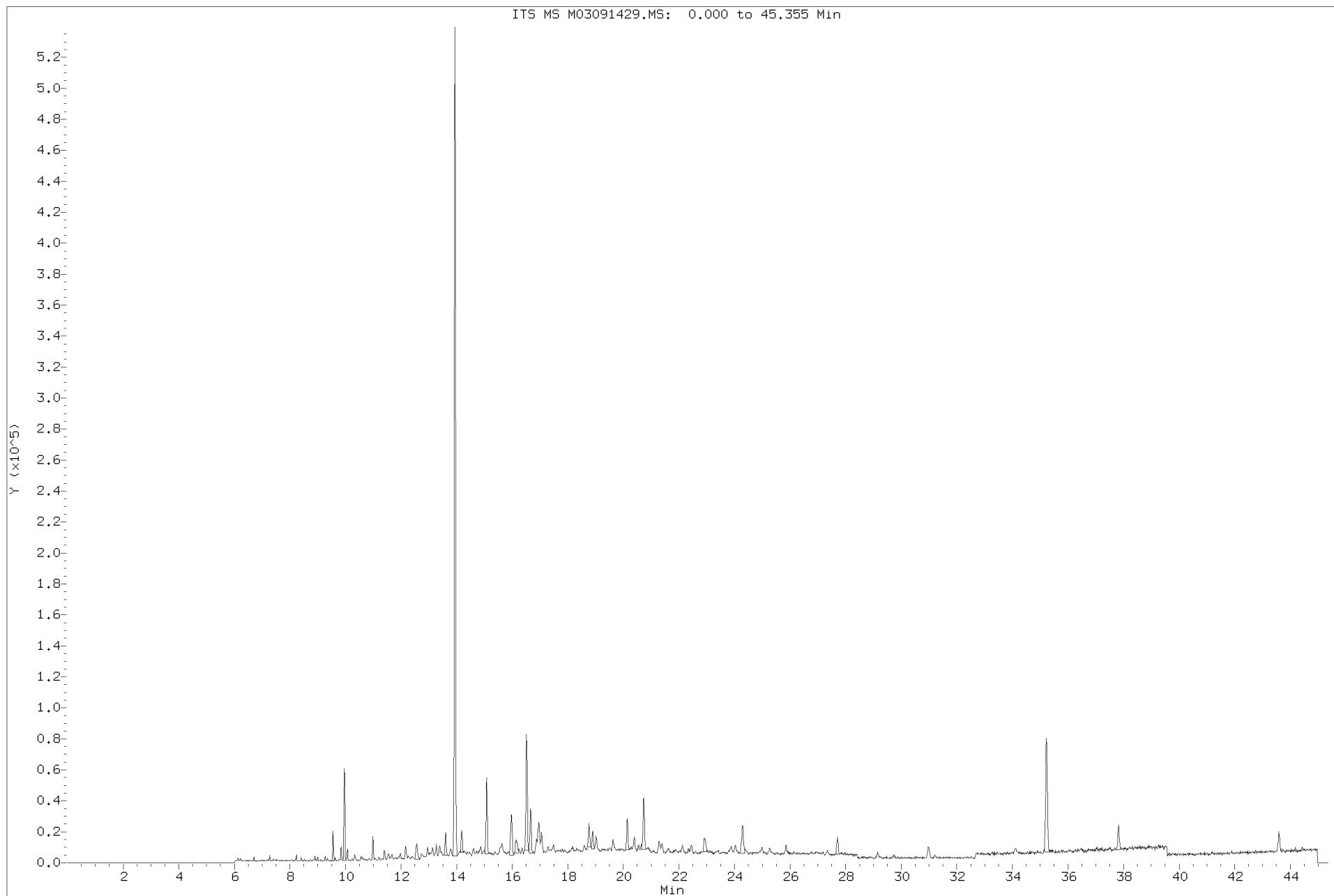
ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

Data File: \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\M03091429.d\M03091429.MS
Injection Date: 15-SEP-2015 09:36
Instrument: GCMS03.i
Client Sample ID: 1-110D



Form 1

PCB Homolog Report

Pace Analytical Services, Inc.

ELAP ID No.: 11078
 Matrix: TO-10A PUF
 Sample weight: 7.55 cubic m
 % Moisture: 0 %
 Method: EPA 680 (GC/MS)
 Dilution Factor: 1
 GC Column: J&W, DB-XLB, 30m length, 0.25mm ID, 0.25µm Film

SDG No.: 15090196
 Client ID: 1-110D
 Lab Sample ID: AS27373
 Date Received: 9/9/2015
 Date Extracted: 9/10/2015
 Date Analyzed: 9/15/2015
 Time Analyzed: 9:36

Monochlorobiphenyls									
Quant Ion RT m/z 188	Quant Ion Area	Confirm Ion RT m/z 190	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Mono Total:						0.000662	0.000662	ND	

Dichlorobiphenyls									
Quant Ion RT m/z 222	Quant Ion Area	Confirm Ion RT m/z 224	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
12.164	3319	12.161	2280	1.5	0.9128	0.000662	0.000662	0.00228	
13.770	3137	13.771	2420	1.3	0.9128	0.000662	0.000662	0.00216	
14.184	13596	14.182	9140	1.5	0.9128	0.000662	0.000662	0.00935	
Di Total:						0.000662	0.000662	0.0138	

Trichlorobiphenyls									
Quant Ion RT m/z 256	Quant Ion Area	Confirm Ion RT m/z 258	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
15.976	7945	15.982	8706	0.9	0.7325	0.000662	0.000662	0.00681	
17.052	3029	17.048	3114	1.0	0.7325	0.000662	0.000662	0.00260	
18.170	2010	18.179	2378	0.8	0.7325	0.000662	0.000662	0.00172	
18.760	11538	18.757	10662	1.1	0.7325	0.000662	0.000662	0.00989	
18.900	10479	18.897	9888	1.1	0.7325	0.000662	0.000662	0.00898	
19.022	7930	19.016	7570	1.0	0.7325	0.000662	0.000662	0.00679	
19.626	4675	19.626	4699	1.0	0.7325	0.000662	0.000662	0.00401	
Tri Total:						0.000662	0.000662	0.0408	

Tetrachlorobiphenyls									
Quant Ion RT m/z 292	Quant Ion Area	Confirm Ion RT m/z 290	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
20.393	3889	20.386	3077	1.3	0.5577	0.00132	0.00132	0.00438	
24.034	4325	24.034	3767	1.1	0.5577	0.00132	0.00132	0.00487	
Tetra Total:						0.00132	0.00132	0.00924	

Pentachlorobiphenyls									
Quant Ion RT m/z 326	Quant Ion Area	Confirm Ion RT m/z 324	Confirm Ion Area	Ratio 1.4 to 1.8	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Penta Total: 0.00132 0.00132 ND

Hexachlorobiphenyls									
Quant Ion RT m/z 360	Quant Ion Area	Confirm Ion RT m/z 362	Confirm Ion Area	Ratio 1.0 to 1.4	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Hexa Total: 0.00132 0.00132 ND

Heptachlorobiphenyls									
Quant Ion RT m/z 394	Quant Ion Area	Confirm Ion RT m/z 396	Confirm Ion Area	Ratio 0.9 to 1.2	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Hepta Total: 0.00199 0.00199 ND

Octachlorobiphenyls									
Quant Ion RT m/z 430	Quant Ion Area	Confirm Ion RT m/z 428	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Octa Total: 0.00199 0.00199 ND

Nonachlorobiphenyls									
Quant Ion RT m/z 464	Quant Ion Area	Confirm Ion RT m/z 466	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Nona Total: 0.00331 0.00331 ND

Decachlorobiphenyl									
Quant Ion RT m/z 498	Quant Ion Area	Confirm Ion RT m/z 500	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Deca Total: 0.00331 0.00331 ND

Tetrachloro-meta-xylene: Surrogate Analyte								
Quant Ion RT m/z 244	Quant Ion Area	Confirm Ion RT m/z 242	Confirm Ion Area	Ratio 1.1 - 1.5	Response Factor		Solution Concentration ug/mL	Flag

12.542 722 12.541 487 1.5 0.2749 0.0124
TCMX Total: 0.0124

Decachloro ¹³ C Biphenyl: Surrogate Analyte								
Quant Ion RT m/z 510	Quant Ion Area	Confirm Ion RT m/z 512	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor		Solution Concentration ug/mL	Flag
43.589	7817	43.592	7486	1.0	0.5916		0.0626	
Deca Total:							0.0626	

TCMX Recovery % 62.2 %

Deca Recovery 62.6 %

Chrysene-d ₁₂ Internal Standard								
Quant Ion RT m/z 240	Quant Ion Area	Confirm Ion RT m/z 241	Confirm Ion Area	Ratio 4.3 - 5.9	Response Factor		Solution Concentration ug/mL	Flag
35.227	168830	35.225	36410	4.6	1.0000		0.800	
Chrysene-d ₁₂ :							0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091429"		"M03091429"		"M03091429"		"M03091429"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
13.938	1529	13.948	14930	9.845	5166	9.845	3692
15.980	2114	16.511	2313	10.074	4505	10.072	3816
16.140	1557			12.165	4316	13.455	1859
16.516	138184			12.578	1938	13.932	4193
18.763	2372			13.390	1534	13.959	2809
18.890	2871			13.613	1451	14.190	1897
19.017	1938			13.771	2926	15.087	2288
				13.940	15463	16.959	2881
				14.093	1701		
				14.184	8895		
				14.603	2318		
				15.082	3981		
				15.190	1274		
				15.658	1287		
				15.960	2468		
				16.179	3718		
				16.653	4537		
				16.964	5930		

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091429"		"M03091429"		"M03091429"		"M03091429"		"M03091429"		"M03091429"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
12.164	3319	12.161	2280	9.845	5166	9.845	3692	14.175	1372	13.938	1529
13.603	8029	13.771	2420	10.074	4505	10.072	3816	15.979	8979	15.980	2114
13.770	3137	14.182	9140	12.165	4316	13.455	1859	16.136	3777	16.140	1557
13.936	182582	15.628	1749	12.578	1938	13.932	4193	16.518	12955	16.516	138184
14.184	13596	15.960	1259	13.390	1534	13.959	2809	16.866	4118	18.763	2372
15.073	13352	15.981	1271	13.613	1451	14.190	1897	17.040	1682	18.890	2871
15.960	3285	16.953	2213	13.771	2926	15.087	2288	18.168	1636	19.017	1938
16.665	6504	16.979	1321	13.940	15463	16.959	2881	18.761	6299		
16.947	5114			14.093	1701			18.891	6442		
20.383	1993			14.184	8895			19.019	5331		
20.731	2737			14.603	2318			19.632	2882		
24.277	1532			15.082	3981						
				15.190	1274						
				15.658	1287						
				15.960	2468						
				16.179	3718						
				16.653	4537						
				16.964	5930						

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091429"		"M03091429"		"M03091429"	
<u>m/z 256</u>		<u>m/z 258</u>		<u>m/z 221</u>	
RT	Area	RT	Area	RT	Area
15.976	7945	15.982	8706	7.280	1533
16.130	3441	16.118	1504	9.000	1504
16.859	1873	16.137	1993	11.552	1896
16.882	1385	16.874	3097	12.547	1748
17.032	1420	17.048	3114	13.378	6202
17.052	1609	18.179	2378	13.939	946139
18.170	2010	18.757	10662	14.860	4655
18.326	1459	18.897	9888	15.078	73621
18.760	11538	19.016	7570	15.508	1335
18.900	10479	19.626	4699	15.749	1478
19.022	7930	22.453	1941	15.981	7312
19.626	4675			16.129	4007
21.273	6958			16.356	4352
22.434	3075			16.667	30126
				16.865	4331
				17.064	5335
				18.618	2618
				20.403	1270
				20.734	11318
				23.013	2246
				24.299	6829
				27.711	3480

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091429"		"M03091429"		"M03091429"		"M03091429"		"M03091429"		"M03091429"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
15.976	7945	15.982	8706	14.175	1372	13.938	1529				
16.130	3441	16.118	1504	15.979	8979	15.980	2114				
16.859	1873	16.137	1993	16.136	3777	16.140	1557				
16.882	1385	16.874	3097	16.518	12955	16.516	138184				
17.032	1420	17.048	3114	16.866	4118	18.763	2372				
17.052	3029(M)	18.179	2378	17.040	1682	18.890	2871				
18.170	2010	18.757	10662	18.168	1636	19.017	1938				
18.326	1459	18.897	9888	18.761	6299						
18.760	11538	19.016	7570	18.891	6442						
18.900	10479	19.626	4699	19.019	5331						
19.022	7930	22.453	1941	19.632	2882						
19.626	4675										
21.273	6958										
22.434	3075										

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091429"		"M03091429"		"M03091429"		"M03091429"		"M03091429"		"M03091429"	
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				20.386	3077	20.393	3889	20.389	1355	20.393	1300
				20.641	1384	20.650	3180	21.392	1819	21.395	2611
				21.394	2754	20.868	1315	24.036	2394		
				24.034	3767	21.380	1403				
				24.230	1822	21.408	1789				
				25.283	1662	21.637	1430				
						22.343	1300				
						23.887	1854				
						24.034	4325				
						24.241	4949				
						24.967	2155				
						25.276	1302				

Extracted Ion Current Profiles

Tetrachlorobiphenyls							
"M03091429"		"M03091429"		"M03091429"		"M03091429"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>	
20.393	3889	20.386	3077	9.633	1270	12.164	3319
20.650	3180	20.641	1384	13.940	12594	13.603	8029
20.868	1315	21.394	2754	15.008	2350	13.770	3137
21.380	1403	24.034	3767	20.385	3291	13.936	182582
21.408	1789	24.230	1822	20.646	1691	14.184	13596
21.637	1430	25.283	1662	21.389	3005	15.073	13352
22.343	1300			24.249	1791	15.960	3285
23.887	1854					16.665	6504
24.034	4325					16.947	5114
24.241	4949					20.383	1993
24.967	2155					20.731	2737
25.276	1302					24.277	1532

Extracted Ion Current Profiles

Pentachlorobiphenyls						
"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"	
m/z 326	m/z 324	m/z 254	m/z 256	m/z 258	m/z 392	
			15.976	7945	15.982	8706
			16.130	3441	16.118	1504
			16.859	1873	16.137	1993
			16.882	1385	16.874	3097
			17.032	1420	17.048	3114
			17.052	1609	18.179	2378
			18.170	2010	18.757	10662
			18.326	1459	18.897	9888
			18.760	11538	19.016	7570
			18.900	10479	19.626	4699
			19.022	7930	22.453	1941
			19.626	4675		
			21.273	6958		
			22.434	3075		

Extracted Ion Current Profiles

Hexachlorobiphenyls					
"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"
m/z 360	m/z 362	m/z 288	m/z 290	m/z 426	m/z 428

20.386	3077
20.641	1384
21.394	2754
24.034	3767
24.230	1822
25.283	1662

Extracted Ion Current Profiles

Hexachlorobiphenyls								
"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"	
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357	
		20.736	12383				20.732	8245
		24.302	4666				24.293	3276
		27.699	2513				30.982	1336
		30.979	3257					

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"	"M03091429"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
		20.736 12383	20.729 1881		
		24.302 4666			
		27.699 2513			
		30.979 3257			

Extracted Ion Current Profiles

TCMX			
"M03091429"		"M03091429"	
m/z 244		m/z 242	

10.993	1664	10.994	2451
12.542	722	12.541	487
13.603	280	13.671	214
13.903	101	13.886	110
13.953	469	14.063	162
14.647	111	14.253	113
14.717	181	14.691	101
14.763	150	15.202	111
15.260	104	15.574	106
15.368	152	15.639	206
15.403	102	15.764	171
15.665	121	15.840	199
15.707	120	15.900	121
15.892	157	15.943	180
16.010	161	15.989	155
16.041	111	16.040	102
16.111	164	16.081	111
16.186	167	16.218	124
16.245	211	16.273	276
16.281	144	16.309	227
16.324	227	16.354	215
16.361	164	16.381	147
16.438	157	16.405	136
16.490	109	16.443	240
16.542	278	16.557	261
16.576	120	16.610	151
16.661	369	16.647	146
16.682	148	16.697	141
16.724	140	16.747	179
16.792	112	16.812	113
16.858	140	16.832	103
16.934	1964	16.869	158
16.958	2688	16.898	238
17.003	635	16.937	324
17.040	142	16.988	312
17.077	178	17.027	124
17.102	110	17.077	314
17.135	155	17.152	164
17.161	147	17.234	217
17.207	174	17.297	110
17.270	473	17.319	134

TCMX

chrysene -
d₁₂

Chrysene-d12			
"M03091429"		"M03091429"	
m/z 240		m/z 241	

35.227	168830	16.366	2021
		18.401	1898
		35.225	36410

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091429"		"M03091429"	
m/z 188		m/z 189	

13.938	1529	8.204	1404
15.980	2114	10.342	3503
16.140	1557	12.169	1478
16.516	138184	13.601	1712
18.763	2372	13.936	21350
18.890	2871	16.522	22677
19.017	1938	18.913	1388
		21.181	1500

Extracted Ion Current Profiles

Deca C13				
Deca C13	<u>m/z 510</u>		<u>m/z 512</u>	
510	35.818	103	35.266	141
512	36.595	126	40.979	105
	38.248	107	41.307	100
	38.760	103	43.476	130
	40.036	112	43.592	7486
	40.639	133	43.747	115
	41.265	102	44.902	104
	42.184	105		
	42.542	118		
	42.732	114		
	43.005	121		
	43.405	101		
	43.589	7817		
	44.350	130		
	44.430	213		



Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL

Project: 115058

Client Sample ID: 1-315

Lab Sample ID: 15090196-03 (AS27374)

Collection Date: 09/04/2015

Sample Matrix: POLYURETHANE FOAM

Received Date: 09/09/2015 09:22

Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-522-11	PCBs by EPA Method TO-10A/680	09/15/2015 20:14	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	7.60m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.000658	1.00	U	MS03-522-11
Dichlorobiphenyl	25512-42-9	0.0194	0.000658	1.00		MS03-522-11
Trichlorobiphenyl	25323-68-6	0.0943	0.000658	1.00		MS03-522-11
Tetrachlorobiphenyl	26914-33-0	0.0956	0.00132	1.00		MS03-522-11
Pentachlorobiphenyl	25429-29-2	ND	0.00132	1.00	U	MS03-522-11
Hexachlorobiphenyl	26601-64-9	ND	0.00132	1.00	U	MS03-522-11
Heptachlorobiphenyl	28655-71-2	ND	0.00197	1.00	U	MS03-522-11
Octachlorobiphenyl	55722-26-4	ND	0.00197	1.00	U	MS03-522-11
Nonachlorobiphenyl	53742-07-7	ND	0.00329	1.00	U	MS03-522-11
Decachlorobiphenyl	2051-24-3	ND	0.00329	1.00	U	MS03-522-11
Total PCB	1336-36-3	0.209		1.00		MS03-522-11

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	59.6	70.1-116	*	MS03-522-11
Tetrachloro-meta-xylene	877-09-8	54.3	44.4-104		MS03-522-11

¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

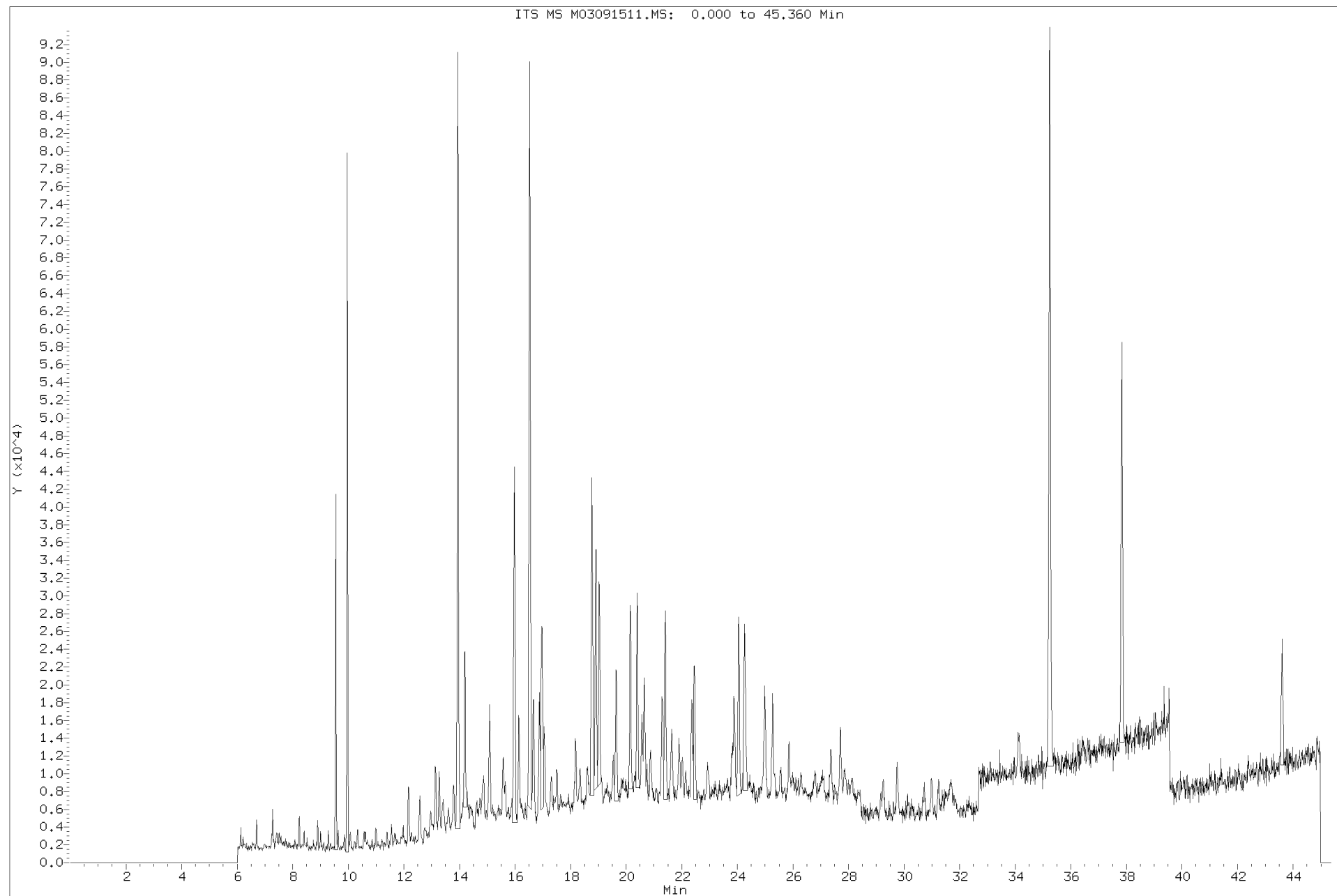
ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

Data File: \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\M03091511.d\M03091511.MS
Injection Date: 15-SEP-2015 20:14
Instrument: GCMS03.i
Client Sample ID: 1-315



Form 1

PCB Homolog Report

Pace Analytical Services, Inc.

ELAP ID No.: 11078
 Matrix: TO-10A PUF
 Sample weight: 7.6 cubic m
 % Moisture: 0 %
 Method: EPA 680 (GC/MS)
 Dilution Factor: 1
 GC Column: J&W, DB-XLB, 30m length, 0.25mm ID, 0.25µm Film

SDG No.: 15090196
 Client ID: 1-315
 Lab Sample ID: AS27374
 Date Received: 9/9/2015
 Date Extracted: 9/10/2015
 Date Analyzed: 9/15/2015
 Time Analyzed: 20:14

Monochlorobiphenyls									
Quant Ion RT m/z 188	Quant Ion Area	Confirm Ion RT m/z 190	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Mono Total:						0.000658	0.000658	ND	

Dichlorobiphenyls									
Quant Ion RT m/z 222	Quant Ion Area	Confirm Ion RT m/z 224	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
12.168	2999	12.167	2198	1.4	0.9128	0.000658	0.000658	0.00189	
13.780	3890	13.773	2571	1.5	0.9128	0.000658	0.000658	0.00245	
14.192	17368	14.194	11788	1.5	0.9128	0.000658	0.000658	0.0109	
16.962	7591	16.964	5130	1.5	0.9128	0.000658	0.000658	0.00418	
Di Total:						0.000658	0.000658	0.0194	

Trichlorobiphenyls									
Quant Ion RT m/z 256	Quant Ion Area	Confirm Ion RT m/z 258	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
15.985	12781	15.979	12911	1.0	0.7325	0.000658	0.000658	0.0100	
16.139	5592	16.140	5358	1.0	0.7325	0.000658	0.000658	0.00439	
16.873	4935	16.866	5172	1.0	0.7325	0.000658	0.000658	0.00387	
17.047	6002	17.052	5501	1.1	0.7325	0.000658	0.000658	0.00471	
18.176	4604	18.182	4517	1.0	0.7325	0.000658	0.000658	0.00361	
18.766	23342	18.768	26427	0.9	0.7325	0.000658	0.000658	0.0183	
18.907	22894	18.906	22613	1.0	0.7325	0.000658	0.000658	0.0180	
19.031	19785	19.028	20235	1.0	0.7325	0.000658	0.000658	0.0155	
19.634	11330	19.633	10823	1.0	0.7325	0.000658	0.000658	0.00889	
22.449	9284	22.464	8572	1.1	0.7325	0.000658	0.000658	0.00702	
Tri Total:						0.000658	0.000658	0.0943	

Tetrachlorobiphenyls									
Quant Ion RT m/z 292	Quant Ion Area	Confirm Ion RT m/z 290	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
20.399	10906	20.406	8734	1.2	0.5577	0.00132	0.00132	0.0112	
20.567	3478	20.575	2818	1.2	0.5577	0.00132	0.00132	0.00358	
20.875	3408	20.876	2903	1.2	0.5577	0.00132	0.00132	0.00351	
21.407	11513	21.406	8079	1.4	0.5577	0.00132	0.00132	0.0119	
21.662	3599	21.656	3121	1.2	0.5577	0.00132	0.00132	0.00371	
21.910	5672	21.902	4610	1.2	0.5577	0.00132	0.00132	0.00585	
22.360	9678	22.356	8615	1.1	0.5577	0.00132	0.00132	0.00997	
23.890	10236	23.881	6888	1.5	0.5577	0.00132	0.00132	0.0105	
24.042	18517	24.042	14784	1.3	0.5577	0.00132	0.00132	0.0191	
24.259	15760	24.251	13557	1.2	0.5577	0.00132	0.00132	0.0162	
Tetra Total:						0.00132	0.00132	0.0956	

Pentachlorobiphenyls									
Quant Ion RT m/z 326	Quant Ion Area	Confirm Ion RT m/z 324	Confirm Ion Area	Ratio 1.4 to 1.8	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Penta Total:						0.00132	0.00132	ND	

Hexachlorobiphenyls									
Quant Ion RT m/z 360	Quant Ion Area	Confirm Ion RT m/z 362	Confirm Ion Area	Ratio 1.0 to 1.4	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Hexa Total:						0.00132	0.00132	ND	

Heptachlorobiphenyls									
Quant Ion RT m/z 394	Quant Ion Area	Confirm Ion RT m/z 396	Confirm Ion Area	Ratio 0.9 to 1.2	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Hepta Total:						0.00197	0.00197	ND	

Octachlorobiphenyls									
Quant Ion RT m/z 430	Quant Ion Area	Confirm Ion RT m/z 428	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Octa Total:						0.00197	0.00197	ND	

Nonachlorobiphenyls									
Quant Ion RT m/z 464	Quant Ion Area	Confirm Ion RT m/z 466	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Nona Total:						0.00329	0.00329	ND	

Decachlorobiphenyl									
Quant Ion RT m/z 498	Quant Ion Area	Confirm Ion RT m/z 500	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Deca Total: 0.00329 0.00329 ND

Tetrachloro-meta-xylene: Surrogate Analyte									
Quant Ion RT m/z 244	Quant Ion Area	Confirm Ion RT m/z 242	Confirm Ion Area	Ratio 1.1 - 1.5	Response Factor		Solution Concentration ug/mL		Flag

12.536 684 12.537 530 1.3 0.2749 0.0109
TCMX Total: 0.0109

Decachloro ¹³ C Biphenyl: Surrogate Analyte									
Quant Ion RT m/z 510	Quant Ion Area	Confirm Ion RT m/z 512	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor		Solution Concentration ug/mL		Flag

43.599 8079 43.621 7562 1.1 0.5916 0.0596
Deca Total: 0.0596

TCMX Recovery % 54.3 %

Deca Recovery 59.6 %

Chrysene-d ₁₂ Internal Standard									
Quant Ion RT m/z 240	Quant Ion Area	Confirm Ion RT m/z 241	Confirm Ion Area	Ratio 4.3 - 5.9	Response Factor		Solution Concentration ug/mL		Flag

35.234 183154 35.235 37782 4.8 1.0000 0.800
Chrysene-d₁₂: 0.800

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091511"		"M03091511"		"M03091511"		"M03091511"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.969	5092	13.942	2767	12.171	3439	10.071	1683
16.134	1832			13.407	1591	13.950	1445
16.524	154539			13.785	2821	14.190	2452
16.876	2861			13.948	4177	16.955	1682
18.776	4452			14.192	10931		
18.913	4969			15.056	1510		
19.033	4647			15.090	1586		
19.650	2473			15.586	1633		
22.442	2149			15.974	2141		
				16.660	5008		
				16.959	5513		
				18.906	1692		

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091511"		"M03091511"		"M03091511"		"M03091511"		"M03091511"		"M03091511"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
12.168	2999	12.167	2198	12.171	3439	10.071	1683	14.184	1444	15.969	5092
13.780	3890	13.773	2571	13.407	1591	13.950	1445	15.984	15035	16.134	1832
13.941	27170	14.194	11788	13.785	2821	14.190	2452	16.135	5786	16.524	154539
14.192	17368	15.976	2784	13.948	4177	16.955	1682	16.523	14294	16.876	2861
15.079	2943	16.964	5130	14.192	10931			16.873	6680	18.776	4452
15.991	3434			15.056	1510			16.951	1584	18.913	4969
16.962	7591			15.090	1586			17.052	3638	19.033	4647
18.196	2034			15.586	1633			18.183	3298	19.650	2473
20.390	6083			15.974	2141			18.768	13782	22.442	2149
20.653	4492			16.660	5008			18.911	13341		
20.885	2016			16.959	5513			19.036	11736		
21.405	6150			18.906	1692			19.643	6619		
22.351	1453							22.454	4797		
22.368	1322										
23.887	2290										
24.054	5708										
24.265	4690										
24.985	2814										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091511"		"M03091511"		"M03091511"	
<u>m/z 256</u>		<u>m/z 258</u>		<u>m/z 221</u>	
RT	Area	RT	Area	RT	Area
15.985	12781	15.979	12911	7.279	1819
16.139	5592	16.140	5358	9.002	1354
16.873	4935	16.866	5172	10.567	1340
17.047	6002	17.052	5501	11.559	1785
18.176	4604	18.182	4517	13.391	1430
18.331	2793	18.338	2638	13.942	148359
18.766	23342	18.768	26427	14.868	3382
18.907	22894	18.906	22613	15.084	14617
19.031	19785	19.028	20235	15.986	11791
19.634	11330	19.633	10823	16.135	4446
21.276	11003	20.399	1255	16.674	6192
22.449	9284	22.464	8572	16.874	7098
23.816	1364	22.893	2857	17.065	1729
25.269	1521			18.329	1938
27.367	1593			18.626	3477
34.128	5116			18.766	2099
				18.914	1303
				19.049	1766
				20.402	2448
				20.728	1505
				24.282	3025
				27.710	1807
				27.733	1748

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091511"		"M03091511"		"M03091511"		"M03091511"		"M03091511"		"M03091511"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
15.985	12781	15.979	12911	14.184	1444	15.969	5092	23.816	1492	23.804	1732
16.139	5592	16.140	5358	15.984	15035	16.134	1832	25.256	2251	25.262	3230
16.873	4935	16.866	5172	16.135	5786	16.524	154539	27.344	1380	26.302	1309
17.047	6002	17.052	5501	16.523	14294	16.876	2861	27.372	1428	26.797	1531
18.176	4604	18.182	4517	16.873	6680	18.776	4452			27.368	4083
18.331	2793	18.338	2638	16.951	1584	18.913	4969			29.257	3536
18.766	23342	18.768	26427	17.052	3638	19.033	4647				
18.907	22894	18.906	22613	18.183	3298	19.650	2473				
19.031	19785	19.028	20235	18.768	13782	22.442	2149				
19.634	11330	19.633	10823	18.911	13341						
21.276	11003	20.399	1255	19.036	11736						
22.449	9284	22.464	8572	19.643	6619						
23.816	1364	22.893	2857	22.454	4797						
25.269	1521										
27.367	1593										
34.128	5116										

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091511"		"M03091511"		"M03091511"		"M03091511"		"M03091511"		"M03091511"	
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
24.945	1285	27.357	1363	18.784	1490	19.526	1301	20.400	5419	20.399	5903
27.358	2500			20.406	8734	20.399	10906	20.559	1982	20.565	1359
30.708	1724			20.575	2818	20.567	3478	20.647	2883	20.642	1559
				20.641	2868	20.653	8369	20.674	1628	20.661	1813
				20.660	4028	20.875	3408	20.864	1533	21.404	8803
				20.876	2903	21.407	11513	21.406	5942	21.635	2105
				21.406	8079	21.613	2076	21.633	3127	22.446	2463
				21.613	2168	21.635	1425	21.901	1575	24.249	1294
				21.656	3121	21.662	2174	21.924	1306		
				21.902	4610	21.910	5672	22.353	2284		
				22.004	1496	22.023	1273	22.382	1662		
				22.356	8615	22.360	9678	23.880	4227		
				22.449	2460	22.465	1564	24.045	8740		
				23.881	6888	23.890	10236	24.263	8048		
				24.042	14784	24.042	18517	24.985	4703		
				24.251	13557	24.259	15760	25.290	2324		
				24.989	7441	24.986	4581				
				25.275	2025	25.007	3431				
				25.293	2456	25.283	5221				

Extracted Ion Current Profiles

Tetrachlorobiphenyls							
"M03091511"		"M03091511"		"M03091511"		"M03091511"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>	
<u>m/z 360</u>		<u>m/z 362</u>					
19.526	1301	18.784	1490	13.941	2719	12.168	2999
20.399	10906	20.406	8734	18.775	2685	13.780	3890
20.567	3478	20.575	2818	20.391	8982	13.941	27170
20.653	8369	20.641	2868	20.577	2917	14.192	17368
20.875	3408	20.660	4028	20.657	6745	15.079	2943
21.407	11513	20.876	2903	21.401	8734	15.991	3434
21.613	2076	21.406	8079	21.637	2476	16.962	7591
21.635	1425	21.613	2168	21.657	1511	18.196	2034
21.662	3599(M)	21.656	3121	21.905	3205	20.390	6083
21.910	5672	21.902	4610	22.009	1525	20.653	4492
22.023	1273	22.004	1496	22.349	1584	20.885	2016
22.360	9678	22.356	8615	22.370	1606	21.405	6150
22.465	1564	22.449	2460	22.426	1576	22.351	1453
23.890	10236	23.881	6888	22.457	1765	22.368	1322
24.042	18517	24.042	14784	23.883	3943	23.887	2290
24.259	15760	24.251	13557	24.043	8928	24.054	5708
24.986	4581	24.989	7441	24.260	7079	24.265	4690
25.007	3431	25.275	2025	24.993	4100	24.985	2814
25.283	5221	25.293	2456	25.286	2667		

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03091511"	"M03091511"		"M03091511"	"M03091511"	
m/z 288	m/z 324		m/z 326	m/z 328	m/z 289
	23.816	1492	23.804	1732	24.945 1285
	25.256	2251	25.262	3230	27.358 2500
	27.344	1380	26.302	1309	30.708 1724
	27.372	1428	26.797	1531	
			27.368	4083	
			29.257	3536	

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03091511"		"M03091511"		"M03091511"		"M03091511"		"M03091511"	
<u>m/z 326</u>		<u>m/z 324</u>		<u>m/z 254</u>		<u>m/z 256</u>		<u>m/z 258</u>	
23.804	1732	23.816	1492	27.357	1363	15.985	12781	15.979	12911
25.262	3230	25.256	2251			16.139	5592	16.140	5358
26.302	1309	27.344	1380			16.873	4935	16.866	5172
26.797	1531	27.372	1428			17.047	6002	17.052	5501
27.368	4083					18.176	4604	18.182	4517
29.257	3536					18.331	2793	18.338	2638
						18.766	23342	18.768	26427
						18.907	22894	18.906	22613
						19.031	19785	19.028	20235
						19.634	11330	19.633	10823
						21.276	11003	20.399	1255
						22.449	9284	22.464	8572
						23.816	1364	22.893	2857
						25.269	1521		
						27.367	1593		
						34.128	5116		

Extracted Ion Current Profiles

Pentachlorobiphenyls						
"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"
m/z 394	m/z 396	m/z 398	m/z 322	m/z 360	m/z 362	m/z 323
			31.457	1711		31.637
			31.497	1340		1284
			31.517	1358		
			31.565	2841		
			31.595	2572		
			31.634	4745		
			31.672	2350		
			31.707	4214		
			31.757	3303		
			31.854	1460		

Extracted Ion Current Profiles

Hexachlorobiphenyls					
"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"
m/z 360	m/z 362	m/z 288	m/z 290	m/z 426	m/z 428

18.784	1490
20.406	8734
20.575	2818
20.641	2868
20.660	4028
20.876	2903
21.406	8079
21.613	2168
21.656	3121
21.902	4610
22.004	1496
22.356	8615
22.449	2460
23.881	6888
24.042	14784
24.251	13557
24.989	7441
25.275	2025
25.293	2456

Hexachlorobiphenyls

44.785 1264

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"
<u>m/z 394</u>	<u>m/z 396</u>	<u>m/z 322</u>	<u>m/z 324</u>	<u>m/z 326</u>	<u>m/z 462</u>		
		31.457	1711	23.816	1492	23.804	1732
		31.497	1340	25.256	2251	25.262	3230
		31.517	1358	27.344	1380	26.302	1309
		31.565	2841	27.372	1428	26.797	1531
		31.595	2572			27.368	4083
		31.634	4745			29.257	3536
		31.672	2350				
		31.707	4214				
		31.757	3303				
		31.854	1460				

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"	"M03091511"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
		27.717	1612		

Extracted Ion Current Profiles

TCMX			
"M03091511"		"M03091511"	
m/z 244		m/z 242	

TCMX

11.011	110	10.968	161	424
12.536	684(M)	10.990	793	426
12.581	102	12.537	530	428
14.895	149	14.730	107	430
15.542	140	14.808	165	498
15.606	119	15.344	133	500
15.761	142	15.553	124	
15.904	120	15.912	114	
16.100	127	15.946	118	
16.613	113	16.033	130	
16.730	157	16.164	176	
16.818	148	16.246	113	
16.874	147	16.288	112	
16.947	2239	16.367	320	
16.982	2432	16.469	188	
17.032	197	16.521	157	
17.073	128	16.553	314	
17.215	188	16.582	137	
17.274	368	16.607	160	
17.300	612	16.706	105	
17.359	170	16.842	176	
17.413	206	16.935	334	
17.462	110	16.984	465	
17.482	111	17.071	160	
17.507	124	17.167	139	
17.531	110	17.284	317	
17.627	155	17.485	283	
17.669	203	17.542	329	
17.779	164	17.589	310	
17.813	192	17.640	125	
17.906	184	17.664	101	
17.933	259	17.698	137	
17.997	199	17.746	218	
18.063	163	17.792	176	
18.101	134	17.832	145	
18.136	224	17.905	182	
18.209	130	17.946	234	
18.245	158	18.028	226	
18.357	419	18.102	161	
18.391	167	18.150	169	
18.454	113	18.184	259	

chrysene -
d₁₂

Chrysene-d12			
"M03091511"		"M03091511"	
m/z 240		m/z 241	

phenanthrene -
d₁₀

35.234	183154	18.757	1276	188
		35.235	37782(M)	189
		35.267	10212	

Phenanthrene-d10			
"M03091511"		"M03091511"	
m/z 188		m/z 189	

15.969	5092	10.343	2040
16.134	1832	12.176	1540
16.524	154539	13.942	3901
16.876	2861	15.988	1255
18.776	4452	16.520	26189
18.913	4969	20.759	1413
19.033	4647	25.361	1682
19.650	2473		
22.442	2149		

Extracted Ion Current Profiles

Deca C13				
Deca C13	<u>m/z 510</u>		<u>m/z 512</u>	
510	34.353	122	32.685	124
512	34.382	118	33.697	130
	35.021	103	33.927	111
	35.220	113	35.387	127
	35.297	129	36.816	143
	37.018	120	39.418	111
	38.055	119	39.617	143
	38.880	103	40.295	122
	39.412	111	40.863	130
	39.675	143	41.113	148
	39.872	123	41.348	160
	40.050	153	41.736	159
	40.371	117	42.536	254
	40.664	114	42.792	164
	40.906	118	42.882	225
	41.055	118	43.226	106
	41.201	110	43.516	118
	41.302	131	43.592	7562(M)
	41.365	119	43.621	2784
	41.405	222	44.265	185
	41.477	122	44.487	162
	41.894	236	44.769	151
	42.238	117	44.851	163
	42.689	152		
	42.844	153		
	43.015	130		
	43.050	131		
	43.240	147		
	43.391	136		
	43.456	161		
	43.581	3017		
	43.599	8079(M)		
	43.638	1675		
	43.704	228		
	43.972	205		
	44.082	220		
	44.221	131		
	44.307	106		
	44.418	165		
	44.512	193		
	44.561	101		



Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL

Project: 115058

Client Sample ID: 1-315D

Lab Sample ID: 15090196-04 (AS27375)

Collection Date: 09/04/2015

Sample Matrix: POLYURETHANE FOAM

Received Date: 09/09/2015 09:22

Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-523-5	PCBs by EPA Method TO-10A/680	09/16/2015 16:01	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	7.69m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.000650	1.00	U	MS03-523-5
Dichlorobiphenyl	25512-42-9	0.0188	0.000650	1.00		MS03-523-5
Trichlorobiphenyl	25323-68-6	0.0889	0.000650	1.00		MS03-523-5
Tetrachlorobiphenyl	26914-33-0	0.108	0.00130	1.00		MS03-523-5
Pentachlorobiphenyl	25429-29-2	ND	0.00130	1.00	U	MS03-523-5
Hexachlorobiphenyl	26601-64-9	ND	0.00130	1.00	U	MS03-523-5
Heptachlorobiphenyl	28655-71-2	ND	0.00195	1.00	U	MS03-523-5
Octachlorobiphenyl	55722-26-4	ND	0.00195	1.00	U	MS03-523-5
Nonachlorobiphenyl	53742-07-7	ND	0.00325	1.00	U	MS03-523-5
Decachlorobiphenyl	2051-24-3	ND	0.00325	1.00	U	MS03-523-5
Total PCB	1336-36-3	0.216		1.00		MS03-523-5

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	72.2	70.1-116		MS03-523-5
Tetrachloro-meta-xylene	877-09-8	32.6	44.4-104	*	MS03-523-5

¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

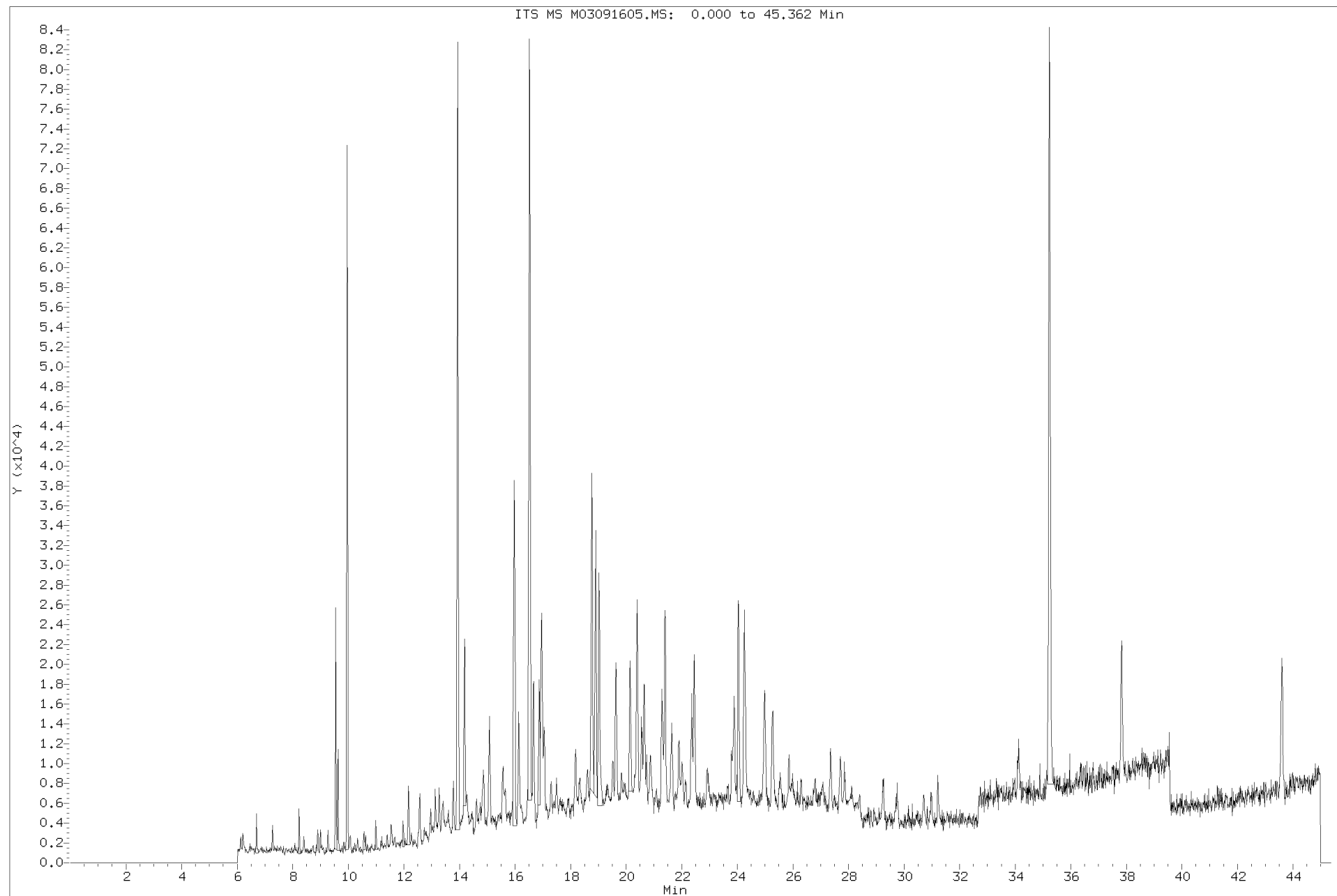
ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

Data File: \\APOLLO\GCMS\TP15\GCMS03\091615-680.b\M03091605.d\M03091605.MS
Injection Date: 16-SEP-2015 16:01
Instrument: GCMS03.i
Client Sample ID: 1-315D



Form 1

PCB Homolog Report

Pace Analytical Services, Inc.

ELAP ID No.: 11078
 Matrix: TO-10A PUF
 Sample weight: 7.69 cubic m
 % Moisture: 0 %
 Method: EPA 680 (GC/MS)
 Dilution Factor: 1
 GC Column: J&W, DB-XLB, 30m length, 0.25mm ID, 0.25µm Film

SDG No.: 15090196
 Client ID: 1-315D
 Lab Sample ID: AS27375RR1
 Date Received: 9/9/2015
 Date Extracted: 9/10/2015
 Date Analyzed: 9/16/2015
 Time Analyzed: 16:01

Monochlorobiphenyls									
Quant Ion RT m/z 188	Quant Ion Area	Confirm Ion RT m/z 190	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Mono Total:						0.000650	0.000650	ND	

Dichlorobiphenyls									
Quant Ion RT m/z 222	Quant Ion Area	Confirm Ion RT m/z 224	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
13.776	3580	13.777	2161	1.7	0.9128	0.000650	0.000650	0.00235	
14.183	16792	14.183	10496	1.6	0.9128	0.000650	0.000650	0.0110	
15.965	2948	15.965	1934	1.5	0.9128	0.000650	0.000650	0.000977	
16.956	7846	16.955	5125	1.5	0.9128	0.000650	0.000650	0.00451	
Di Total:						0.000650	0.000650	0.0188	

Trichlorobiphenyls									
Quant Ion RT m/z 256	Quant Ion Area	Confirm Ion RT m/z 258	Confirm Ion Area	Ratio	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
15.983	13746	15.978	12986	1.1	0.7325	0.000650	0.000650	0.0112	
16.131	5746	16.124	5300	1.1	0.7325	0.000650	0.000650	0.00469	
16.438	1270	16.446	1409	0.9	0.7325	0.000650	0.000650	0.00104	
16.873	5205	16.872	5513	0.9	0.7325	0.000650	0.000650	0.00425	
17.047	5709	17.043	5234	1.1	0.7325	0.000650	0.000650	0.00466	
18.337	2379	18.325	2175	1.1	0.7325	0.000650	0.000650	0.00194	
18.762	23547	18.762	23021	1.0	0.7325	0.000650	0.000650	0.0192	
18.901	21800	18.902	21824	1.0	0.7325	0.000650	0.000650	0.0178	
19.021	19000	19.021	18253	1.0	0.7325	0.000650	0.000650	0.0155	
19.636	10597	19.628	10680	1.0	0.7325	0.000650	0.000650	0.00851	
Tri Total:						0.000650	0.000650	0.0889	

Tetrachlorobiphenyls									
Quant Ion RT m/z 292	Quant Ion Area	Confirm Ion RT m/z 290	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
20.387	10451	20.392	8244	1.3	0.5577	0.00130	0.00130	0.0112	
20.561	3569	20.562	2605	1.4	0.5577	0.00130	0.00130	0.00383	
20.641	8466	20.645	7146	1.2	0.5577	0.00130	0.00130	0.00909	
20.861	3557	20.876	2833	1.3	0.5577	0.00130	0.00130	0.00382	
21.634	5414	21.643	4599	1.2	0.5577	0.00130	0.00130	0.00581	
21.902	6014	21.896	5274	1.1	0.5577	0.00130	0.00130	0.00645	
22.361	8919	22.361	7658	1.2	0.5577	0.00130	0.00130	0.00957	
23.869	4250	23.869	3103	1.4	0.5577	0.00130	0.00130	0.00456	
23.887	3222	23.887	2451	1.3	0.5577	0.00130	0.00130	0.00346	
23.912	2915	23.912	2010	1.5	0.5577	0.00130	0.00130	0.00313	
24.036	18631	24.041	14060	1.3	0.5577	0.00130	0.00130	0.0200	
24.251	16099	24.252	11806	1.4	0.5577	0.00130	0.00130	0.0173	
24.998	9470	24.987	7183	1.3	0.5577	0.00130	0.00130	0.0102	
Tetra Total:						0.00130	0.00130	0.108	

Pentachlorobiphenyls									
Quant Ion RT m/z 326	Quant Ion Area	Confirm Ion RT m/z 324	Confirm Ion Area	Ratio 1.4 to 1.8	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Penta Total:						0.00130	0.00130	ND	

Hexachlorobiphenyls									
Quant Ion RT m/z 360	Quant Ion Area	Confirm Ion RT m/z 362	Confirm Ion Area	Ratio 1.0 to 1.4	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Hexa Total:						0.00130	0.00130	ND	

Heptachlorobiphenyls									
Quant Ion RT m/z 394	Quant Ion Area	Confirm Ion RT m/z 396	Confirm Ion Area	Ratio 0.9 to 1.2	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Hepta Total:						0.00195	0.00195	ND	

Octachlorobiphenyls									
Quant Ion RT m/z 430	Quant Ion Area	Confirm Ion RT m/z 428	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Octa Total:						0.00195	0.00195	ND	

Nonachlorobiphenyls									
Quant Ion RT m/z 464	Quant Ion Area	Confirm Ion RT m/z 466	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Nona Total: 0.00325 0.00325 ND

Decachlorobiphenyl									
Quant Ion RT m/z 498	Quant Ion Area	Confirm Ion RT m/z 500	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag

Deca Total: 0.00325 0.00325 ND

Tetrachloro-meta-xylene: Surrogate Analyte								
Quant Ion RT m/z 244	Quant Ion Area	Confirm Ion RT m/z 242	Confirm Ion Area	Ratio 1.1 - 1.5	Response Factor		Solution Concentration ug/mL	Flag

12.538 389 12.549 299 1.3 0.2749 0.00651
TCMX Total: 0.00651

Decachloro ¹³ C Biphenyl: Surrogate Analyte								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor		Solution Concentration ug/mL	Flag
m/z 510		m/z 512						

43.596 9283 43.597 7264 1.3 0.5916 0.0722
Deca Total: 0.0722

TCMX Recovery % 32.6 %

Deca Recovery 72.2 %

Chrysene-d ₁₂ Internal Standard								
Quant Ion RT m/z 240	Quant Ion Area	Confirm Ion RT m/z 241	Confirm Ion Area	Ratio 4.3 - 5.9	Response Factor		Solution Concentration ug/mL	Flag

35.227 173810 35.238 36149 4.8 1.0000 0.800
Chrysene-d₁₂: 0.800

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091605"		"M03091605"		"M03091605"		"M03091605"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.980	4260	13.931	2137	12.163	3290	10.069	1484
16.139	1950			13.782	2684	14.190	1901
16.521	146468			13.938	1460	16.944	1328
16.874	2315			14.185	10071	16.975	1495
18.745	1537			15.063	1258		
18.767	2958			15.565	1708		
18.888	2270			16.665	4330		
18.910	2110			16.969	5574		
19.033	3819						
19.629	1583						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091605"		"M03091605"		"M03091605"		"M03091605"		"M03091605"		"M03091605"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
12.159	2991	12.167	1255	12.163	3290	10.069	1484	14.821	1287	15.980	4260
13.776	3580	13.777	2161	13.782	2684	14.190	1901	15.982	13861	16.139	1950
13.937	27679	14.183	10496	13.938	1460	16.944	1328	16.133	5111	16.521	146468
14.183	16792	15.965	1934	14.185	10071	16.975	1495	16.513	6875	16.874	2315
15.078	3000	16.955	5125	15.063	1258			16.530	6837	18.745	1537
15.965	2948			15.565	1708			16.874	6397	18.767	2958
16.668	1733			16.665	4330			17.042	3560	18.888	2270
16.956	7846			16.969	5574			18.182	2616	18.910	2110
19.519	1616							18.764	13140	19.033	3819
20.398	5227							18.904	13030	19.629	1583
20.648	3379							19.022	11183		
21.390	2866							19.630	6109		
21.413	2711							22.446	4686		
21.638	2565										
22.364	3242										
23.894	2638										
24.042	5175										
24.246	4904										
24.990	1473										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091605"		"M03091605"		"M03091605"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
14.818	1453	15.978	12986	7.278	1267
15.983	13746	16.124	5300	8.999	1537
16.131	5746	16.446	1409	11.552	1661
16.438	1270	16.872	5513	13.388	1602
16.873	5205	17.043	5234	13.936	142887
17.047	5709	18.177	2980	14.864	5180
18.173	4821	18.187	1589	15.081	15067
18.337	2379	18.325	2175	15.980	10802
18.762	23547	18.762	23021	16.129	4397
18.901	21800	18.902	21824	16.670	6661
19.021	19000	19.021	18253	16.873	7221
19.636	10597	19.628	10680	17.060	2183
21.278	8042	22.415	1532	18.607	2873
22.451	10340	22.458	7360	18.771	1997
23.802	1510	22.895	2113	18.900	1610
34.120	3474			20.389	1729
				20.738	1500
				22.447	1428
				24.261	1414
				24.281	1346
				27.707	1715

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091605"		"M03091605"		"M03091605"		"M03091605"		"M03091605"		"M03091605"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
14.818	1453	15.978	12986	14.821	1287	15.980	4260	23.799	1529	23.793	2137
15.983	13746	16.124	5300	15.982	13861	16.139	1950	27.351	1381	25.245	2269
16.131	5746	16.446	1409	16.133	5111	16.521	146468			25.553	1940
16.438	1270	16.872	5513	16.513	6875	16.874	2315			27.337	1690
16.873	5205	17.043	5234	16.530	6837	18.745	1537			27.358	2253
17.047	5709	18.177	2980	16.874	6397	18.767	2958			29.259	4372
18.173	4821	18.187	1589	17.042	3560	18.888	2270			30.690	1711
18.337	2379	18.325	2175	18.182	2616	18.910	2110				
18.762	23547	18.762	23021	18.764	13140	19.033	3819				
18.901	21800	18.902	21824	18.904	13030	19.629	1583				
19.021	19000	19.021	18253	19.022	11183						
19.636	10597	19.628	10680	19.630	6109						
21.278	8042	22.415	1532	22.446	4686						
22.451	10340	22.458	7360								
23.802	1510	22.895	2113								
34.120	3474										

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091605"		"M03091605"		"M03091605"		"M03091605"		"M03091605"		"M03091605"	
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
23.802	1726	25.250	1279	20.392	8244	19.529	1280	20.387	5113	18.791	1313
25.251	1312			20.562	2605	20.387	10451	20.640	4353	19.532	1320
27.356	3281			20.645	7146	20.561	3569	20.876	1962	20.394	5029
29.249	1293			20.876	2833	20.641	8466	21.408	5598	20.555	1395
				21.392	3905	20.861	3557	21.640	1641	20.655	3764
				21.410	4673	21.393	10116	21.889	1603	21.291	1439
				21.643	4599	21.598	1283	22.362	4834	21.399	7532
				21.896	5274	21.634	4131	23.888	4415	21.633	2954
				22.361	7658	21.902	4237	24.039	8781	21.999	1530
				23.869	3103	21.931	1777	24.249	4864	22.452	1392
				23.887	2451	22.006	1870	24.275	2620	23.136	1265
				23.912	2010	22.361	8919	24.982	4399		
				24.041	14060	22.443	1325	25.279	2881		
				24.252	11806	23.869	4250				
				24.987	7183	23.887	3222				
				25.279	4204	23.912	2915				
						24.036	18631				
						24.251	16099				
						24.998	9470				
						25.267	2908				
						25.291	2710				
						28.106	1583				

Extracted Ion Current Profiles

Tetrachlorobiphenyls							
"M03091605"		"M03091605"		"M03091605"		"M03091605"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>	
<u>m/z 360</u>		<u>m/z 362</u>					
19.529	1280	20.392	8244	9.628	5845	12.159	2991
20.387	10451	20.562	2605	13.937	2143	13.776	3580
20.561	3569	20.645	7146	20.396	8003	13.937	27679
20.641	8466	20.876	2833	20.568	2852	14.183	16792
20.861	3557	21.392	3905	20.640	3039	15.078	3000
21.393	10116	21.410	4673	20.656	3291	15.965	2948
21.598	1283	21.643	4599	21.402	8746	16.668	1733
21.634	5414(M)	21.896	5274	21.643	3483	16.956	7846
21.902	6014(M)	22.361	7658	21.896	1700	19.519	1616
21.931	1777	23.869	3103	22.345	2881	20.398	5227
22.006	1870	23.887	2451	22.377	1381	20.648	3379
22.361	8919	23.912	2010	22.442	2246	21.390	2866
22.443	1325	24.041	14060	23.889	4150	21.413	2711
23.869	4250	24.252	11806	24.044	7821	21.638	2565
23.887	3222	24.987	7183	24.252	7051	22.364	3242
23.912	2915	25.279	4204	24.986	4519	23.894	2638
24.036	18631			25.280	1741	24.042	5175
24.251	16099					24.246	4904
24.998	9470					24.990	1473
25.267	2908						
25.291	2710						
28.106	1583						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03091605"		"M03091605"		"M03091605"		"M03091605"		"M03091605"			
m/z 288		m/z 324		m/z 326		m/z 328		m/z 289			
23.799		1529		23.793		2137		23.802		1726	
27.351		1381		25.245		2269		25.251		1312	
				25.553		1940		27.356		3281	
				27.337		1690		29.249		1293	
				27.358		2253					
				29.259		4372					
				30.690		1711					

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03091605"		"M03091605"		"M03091605"		"M03091605"		"M03091605"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258	
23.793	2137	23.799	1529	25.250	1279	14.818	1453	15.978	12986
25.245	2269	27.351	1381			15.983	13746	16.124	5300
25.553	1940					16.131	5746	16.446	1409
27.337	1690					16.438	1270	16.872	5513
27.358	2253					16.873	5205	17.043	5234
29.259	4372					17.047	5709	18.177	2980
30.690	1711					18.173	4821	18.187	1589
						18.337	2379	18.325	2175
						18.762	23547	18.762	23021
						18.901	21800	18.902	21824
						19.021	19000	19.021	18253
						19.636	10597	19.628	10680
						21.278	8042	22.415	1532
						22.451	10340	22.458	7360
						23.802	1510	22.895	2113
						34.120	3474		

Extracted Ion Current Profiles

Hexachlorobiphenyls					
"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"
m/z 360	m/z 362	m/z 288	m/z 290	m/z 426	m/z 428
			20.392	8244	
			20.562	2605	
			20.645	7146	
			20.876	2833	
			21.392	3905	
			21.410	4673	
			21.643	4599	
			21.896	5274	
			22.361	7658	
			23.869	3103	
			23.887	2451	
			23.912	2010	
			24.041	14060	
			24.252	11806	
			24.987	7183	
			25.279	4204	

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
		20.738	1286				
		24.294	1339				

Extracted Ion Current Profiles

Heptachlorobiphenyls					
"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"
m/z 394	m/z 396	m/z 322	m/z 324	m/z 326	m/z 462
			23.799 1529	23.793 2137	
			27.351 1381	25.245 2269	
				25.553 1940	
				27.337 1690	
				27.358 2253	
				29.259 4372	
				30.690 1711	

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"	"M03091605"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
		20.738	1286		
		24.294	1339		

Extracted Ion Current Profiles

TCMX			
"M03091605"		"M03091605"	
m/z 244		m/z 242	

TCMX

chrysene -
d₁₂

Chrysene-d12			
"M03091605"		"M03091605"	
m/z 240		m/z 241	

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091605"		"M03091605"	
m/z 188		m/z 189	

11.001	327	10.989	989
12.538	389(M)	12.549	299
13.465	119	13.674	153
13.850	134	15.917	113
14.737	133	16.063	135
14.967	116	16.083	151
15.111	116	16.157	109
15.183	114	16.183	157
15.708	185	16.216	140
15.922	135	16.272	135
16.024	115	16.374	245
16.336	103	16.656	111
16.397	100	16.719	105
16.454	150	16.790	208
16.521	163	16.836	117
16.593	181	16.889	181
16.682	180	16.963	749
16.760	134	17.006	106
16.805	199	17.129	146
16.871	227	17.263	130
16.940	4708	17.312	110
17.073	133	17.332	141
17.107	119	17.371	180
17.189	112	17.437	196
17.292	933	17.464	137
17.321	331	17.505	145
17.382	115	17.585	144
17.405	115	17.635	143
17.444	152	17.708	249
17.462	122	17.790	184
17.489	119	17.861	124
17.539	153	17.905	230
17.710	184	18.076	184
17.777	173	18.132	202
17.809	229	18.170	123
17.892	312	18.294	120
17.931	205	18.313	111
18.024	281	18.351	142
18.058	212	18.408	385
18.088	151	18.487	124
18.143	314	18.556	145

Extracted Ion Current Profiles

Deca C13				
Deca C13	m/z 510		m/z 512	
510	33.140	101	32.751	101
512	34.333	129	35.605	171
	34.485	129	35.957	155
	35.150	141	36.346	112
	35.250	148	38.292	105
	36.447	105	40.018	107
	37.706	129	40.186	187
	39.768	180	40.752	158
	40.744	118	41.754	166
	41.034	122	43.456	127
	41.947	119	43.573	2446
	42.744	120	43.597	7264(M)
	42.956	137	44.227	145
	43.486	104	44.810	155
	43.596	9283(M)	44.862	121
	44.559	129		



Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL

Project: 115058

Client Sample ID: 2-203

Lab Sample ID: 15090196-05 (AS27376)

Collection Date: 09/04/2015

Sample Matrix: POLYURETHANE FOAM

Received Date: 09/09/2015 09:22

Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-522-13	PCBs by EPA Method TO-10A/680	09/15/2015 21:52	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	7.70m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.000649	1.00	U	MS03-522-13
Dichlorobiphenyl	25512-42-9	0.00825	0.000649	1.00		MS03-522-13
Trichlorobiphenyl	25323-68-6	0.0584	0.000649	1.00		MS03-522-13
Tetrachlorobiphenyl	26914-33-0	0.0360	0.00130	1.00		MS03-522-13
Pentachlorobiphenyl	25429-29-2	ND	0.00130	1.00	U	MS03-522-13
Hexachlorobiphenyl	26601-64-9	ND	0.00130	1.00	U	MS03-522-13
Heptachlorobiphenyl	28655-71-2	ND	0.00195	1.00	U	MS03-522-13
Octachlorobiphenyl	55722-26-4	ND	0.00195	1.00	U	MS03-522-13
Nonachlorobiphenyl	53742-07-7	ND	0.00325	1.00	U	MS03-522-13
Decachlorobiphenyl	2051-24-3	ND	0.00325	1.00	U	MS03-522-13
Total PCB	1336-36-3	0.103		1.00		MS03-522-13

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	66.8	70.1-116	*	MS03-522-13
Tetrachloro-meta-xylene	877-09-8	59.9	44.4-104		MS03-522-13

¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

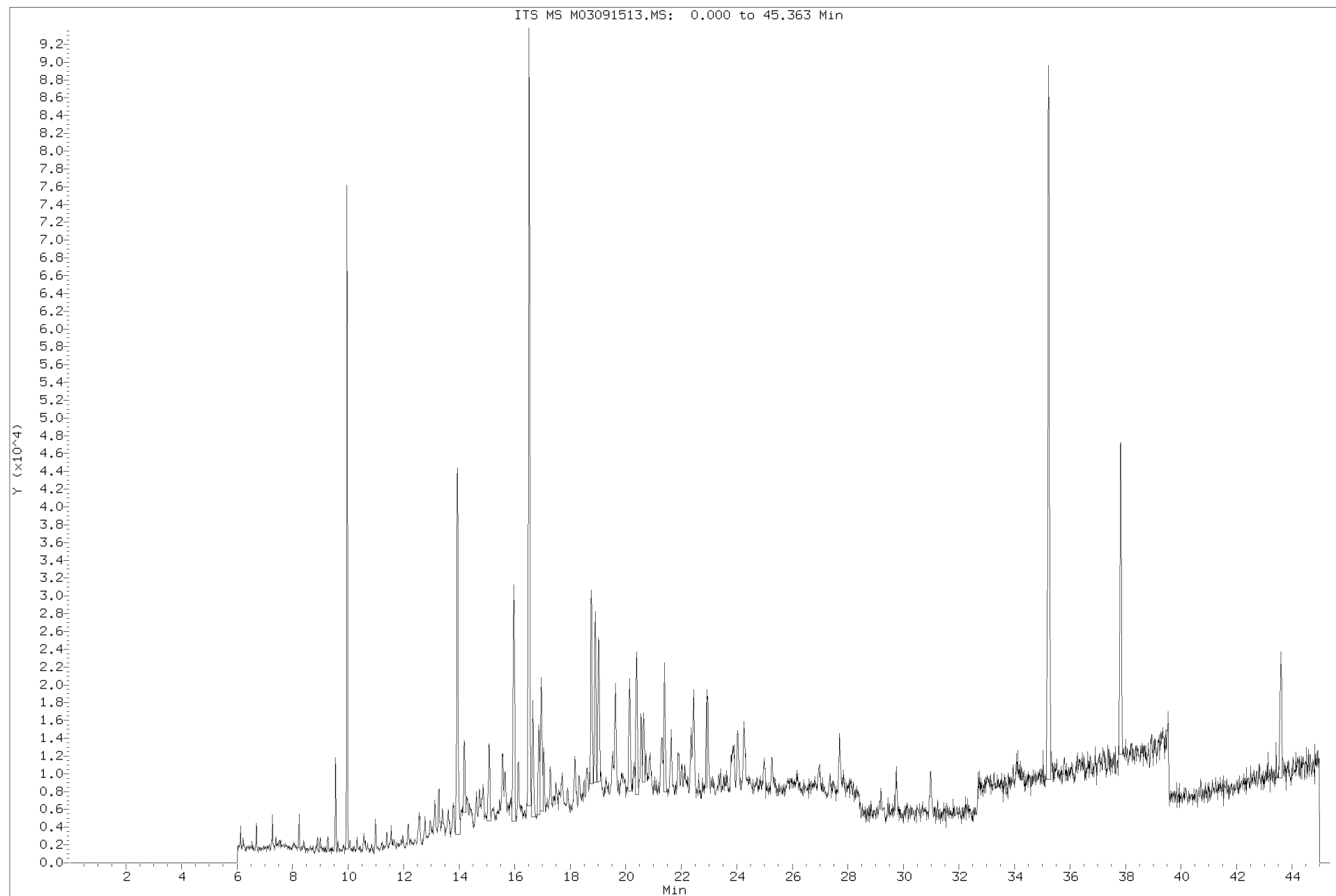
NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

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2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\M03091513.d\M03091513.MS
Injection Date: 15-SEP-2015 21:52
Instrument: GCMS03.i
Client Sample ID: 2-203



Form 1

PCB Homolog Report

Pace Analytical Services, Inc.

ELAP ID No.:	11078	SDG No.:	15090196
Matrix:	TO-10A PUF	Client ID:	2-203
Sample weight:	7.7 cubic m	Lab Sample ID:	AS27376
% Moisture	0 %	Date Received:	9/9/2015
Method:	EPA 680 (GC/MS)	Date Extracted:	9/10/2015
Dilution Factor:	1	Date Analyzed:	9/15/2015
		Time Analyzed:	21:52

GC Column: J&W, DB-XLB, 30m length, 0.25mm ID, 0.25µm Film

Monochlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 188		m/z 190		2.5 to 3.5		ug/m ³	ug/m ³	ug/m ³	
Mono Total:						0.000649	0.000649	ND	

Dichlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 222		m/z 224		1.3 to 1.7		ug/m ³	ug/m ³	ug/m ³	
14.186	8532	14.191	5324	1.6	0.9128	0.000649	0.000649	0.00530	
16.957	5384	16.962	3630	1.5	0.9128	0.000649	0.000649	0.00295	
Di Total:						0.000649	0.000649	0.00825	

Trichlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 256		m/z 258		0.8 to 1.2		ug/m ³	ug/m ³	ug/m ³	
15.981	7815	15.981	8016	1.0	0.7325	0.000649	0.000649	0.00605	
16.135	3462	16.130	3345	1.0	0.7325	0.000649	0.000649	0.00268	
17.045	3636	17.044	3575	1.0	0.7325	0.000649	0.000649	0.00281	
18.182	3232	18.178	3621	0.9	0.7325	0.000649	0.000649	0.00250	
18.758	18746	18.754	17953	1.0	0.7325	0.000649	0.000649	0.0145	
18.901	16058	18.902	17109	0.9	0.7325	0.000649	0.000649	0.0124	
19.018	14335	19.021	14227	1.0	0.7325	0.000649	0.000649	0.0111	
19.626	8187	19.628	8272	1.0	0.7325	0.000649	0.000649	0.00634	
Tri Total:						0.000649	0.000649	0.0584	

Tetrachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 292		m/z 290		1.1 to 1.5		ug/m ³	ug/m ³	ug/m ³	
20.397	7611	20.400	6725	1.1	0.5577	0.00130	0.00130	0.00774	
20.562	2860	20.558	1951	1.5	0.5577	0.00130	0.00130	0.00291	
20.647	6958	20.645	5219	1.3	0.5577	0.00130	0.00130	0.00707	
21.403	7591	21.391	6030	1.3	0.5577	0.00130	0.00130	0.00772	
24.040	6109	24.048	4464	1.4	0.5577	0.00130	0.00130	0.00621	
24.245	4316	24.254	3344	1.3	0.5577	0.00130	0.00130	0.00439	
Tetra Total:						0.00130	0.00130	0.0360	

Pentachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 326		m/z 324		1.4 to 1.8		ug/m ³	ug/m ³	ug/m ³	

Penta Total: 0.00130 0.00130 ND

Hexachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 360		m/z 362		1.0 to 1.4		ug/m ³	ug/m ³	ug/m ³	

Hexa Total: 0.00130 0.00130 ND

Heptachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 394		m/z 396		0.9 to 1.2		ug/m ³	ug/m ³	ug/m ³	

Hepta Total: 0.00195 0.00195 ND

Octachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 430		m/z 428		0.9 to 1.3		ug/m ³	ug/m ³	ug/m ³	

Octa Total: 0.00195 0.00195 ND

Nonachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 464		m/z 466		1.1 to 1.5		ug/m ³	ug/m ³	ug/m ³	

Nona Total: 0.00325 0.00325 ND

Decachlorobiphenyl									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 498		m/z 500		0.9 to 1.3		ug/m ³	ug/m ³	ug/m ³	

Deca Total: 0.00325 0.00325 ND

Tetrachloro-meta-xylene: Surrogate Analyte									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag	
m/z 244		m/z 242		1.1 - 1.5			ug/mL		

12.532 754 12.540 592 1.3 0.2749 0.0120
TCMX Total: 0.0120

Decachloro ¹³ C Biphenyl: Surrogate Analyte									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag	
m/z 510		m/z 512		0.9 to 1.3			ug/mL		

43.598 9056 43.594 7801 1.2 0.5916 0.0668
Deca Total: 0.0668

TCMX Recovery % 59.9 %

Deca Recovery 66.8 %

Chrysene-d ₁₂ Internal Standard								
Quant Ion RT m/z 240	Quant Ion Area	Confirm Ion RT m/z 241	Confirm Ion Area	Ratio 4.3 - 5.9	Response Factor		Solution Concentration ug/mL	Flag
35.233	183227	35.226	27023	6.8	1.0000		0.800	
Chrysene-d ₁₂ :							0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091513"		"M03091513"		"M03091513"		"M03091513"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.977	2921	16.516	1611	12.165	1348	13.967	1597
16.520	153585			13.778	1863	15.092	1276
16.866	2382			13.956	1691	15.971	1391
18.749	3275			14.182	5451	16.668	1264
18.887	1534			14.611	1765	19.050	1450
18.907	2143			15.069	2532		
19.025	2863			15.959	2990		
19.628	1479			16.664	5392		
22.449	1462			16.967	3700		
				19.053	1693		

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091513"		"M03091513"		"M03091513"		"M03091513"		"M03091513"		"M03091513"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
13.770	1710	14.191	5324	12.165	1348	13.967	1597	15.974	8864	15.977	2921
13.938	14007	15.961	2030	13.778	1863	15.092	1276	16.141	3392	16.520	153585
14.186	8532	15.983	1633	13.956	1691	15.971	1391	16.520	14693	16.866	2382
15.072	1419	16.962	3630	14.182	5451	16.668	1264	16.868	4208	18.749	3275
15.969	4706			14.611	1765	19.050	1450	18.188	1261	18.887	1534
16.957	5384			15.069	2532			18.770	9561	18.907	2143
20.392	4022			15.959	2990			18.903	10123	19.025	2863
20.645	2645			16.664	5392			19.022	9509	19.628	1479
20.880	1457			16.967	3700			19.636	5092	22.449	1462
21.392	4325			19.053	1693			22.445	2781		
21.638	1922										
22.353	2510										
22.440	1457										
24.249	1593										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091513"		"M03091513"		"M03091513"	
<u>m/z 256</u>		<u>m/z 258</u>		<u>m/z 221</u>	
RT	Area	RT	Area	RT	Area
15.981	7815	15.981	8016	7.279	1433
16.135	3462	16.130	3345	13.935	76844
16.852	1358	16.872	3341	14.860	3194
16.872	2370	17.044	3575	15.080	7672
17.045	3636	18.178	3621	15.985	7437
18.182	3232	18.313	1264	16.135	2764
18.320	1656	18.754	17953	16.666	4433
18.758	18746	18.902	17109	16.872	4740
18.901	16058	19.021	14227	17.061	2140
19.018	14335	19.628	8272	18.616	3329
19.626	8187	22.432	1859	18.769	1499
21.271	3247	22.450	3467	22.460	2620
21.296	1558	22.906	2469	24.285	1295
21.393	1328			26.199	1386
22.448	5887			27.708	2648

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091513"		"M03091513"		"M03091513"		"M03091513"		"M03091513"		"M03091513"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
15.981	7815	15.981	8016	15.974	8864	15.977	2921			23.807	1295
16.135	3462	16.130	3345	16.141	3392	16.520	153585				
16.852	1358	16.872	3341	16.520	14693	16.866	2382				
16.872	2370	17.044	3575	16.868	4208	18.749	3275				
17.045	3636	18.178	3621	18.188	1261	18.887	1534				
18.182	3232	18.313	1264	18.770	9561	18.907	2143				
18.320	1656	18.754	17953	18.903	10123	19.025	2863				
18.758	18746	18.902	17109	19.022	9509	19.628	1479				
18.901	16058	19.021	14227	19.636	5092	22.449	1462				
19.018	14335	19.628	8272	22.445	2781						
19.626	8187	22.432	1859								
21.271	3247	22.450	3467								
21.296	1558	22.906	2469								
21.393	1328										
22.448	5887										

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091513"		"M03091513"		"M03091513"		"M03091513"		"M03091513"		"M03091513"	
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				20.400	6725	19.521	1579	20.390	4303	20.401	5365
				20.558	1951	20.397	7611	20.641	2960	20.555	1268
				20.645	5219	20.562	2860	20.873	1443	20.640	3221
				21.391	6030	20.647	6958	21.402	3985	21.400	5443
				21.635	3330	20.876	1404	21.890	1627	21.643	1906
				21.899	3228	21.403	7591	22.357	3630	22.007	1320
				22.364	6059	21.624	3581	24.033	1748		
				22.437	1275	21.659	1330	24.051	1639		
				23.893	2010	21.896	1948				
				24.048	4464	21.921	1322				
				24.254	3344	22.015	1704				
				24.993	1662	22.349	5094				
						23.862	1344				
						23.890	1999				
						24.040	6109				
						24.245	4316				
						24.987	1370				

Extracted Ion Current Profiles

Tetrachlorobiphenyls							
"M03091513"		"M03091513"		"M03091513"		"M03091513"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>	
<u>m/z 360</u>		<u>m/z 362</u>					
19.521	1579	20.400	6725	19.529	1361	13.770	1710
20.397	7611	20.558	1951	20.401	5497	13.938	14007
20.562	2860	20.645	5219	20.569	2579	14.186	8532
20.647	6958	21.391	6030	20.652	4291	15.072	1419
20.876	1404	21.635	3330	21.401	6167	15.969	4706
21.403	7591	21.899	3228	21.632	1936	16.957	5384
21.624	3581	22.364	6059	21.905	1441	20.392	4022
21.659	1330	22.437	1275	22.344	3689	20.645	2645
21.896	1948	23.893	2010	24.036	2595	20.880	1457
21.921	1322	24.048	4464	24.253	1728	21.392	4325
22.015	1704	24.254	3344			21.638	1922
22.349	5094	24.993	1662			22.353	2510
23.862	1344					22.440	1457
23.890	1999					24.249	1593
24.040	6109						
24.245	4316						
24.987	1370						

Extracted Ion Current Profiles

Tetrachlorobiphenyls				
"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"
m/z 288	m/z 324	m/z 326	m/z 328	m/z 289
23.807		1295		

Extracted Ion Current Profiles

Pentachlorobiphenyls					
"M03091513"	"M03091513"	"M03091513"	"M03091513"		"M03091513"
m/z 326	m/z 324	m/z 254	m/z 256	m/z 258	m/z 392
23.807	1295		15.981	7815	15.981 8016
			16.135	3462	16.130 3345
			16.852	1358	16.872 3341
			16.872	2370	17.044 3575
			17.045	3636	18.178 3621
			18.182	3232	18.313 1264
			18.320	1656	18.754 17953
			18.758	18746	18.902 17109
			18.901	16058	19.021 14227
			19.018	14335	19.628 8272
			19.626	8187	22.432 1859
			21.271	3247	22.450 3467
			21.296	1558	22.906 2469
			21.393	1328	
			22.448	5887	

Extracted Ion Current Profiles

Pentachlorobiphenyls						
"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"
m/z 394	m/z 396	m/z 398	m/z 322	m/z 360	m/z 362	m/z 323
37.824			1725			

Extracted Ion Current Profiles

Hexachlorobiphenyls					
"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"
m/z 360	m/z 362	m/z 288	m/z 290	m/z 426	m/z 428

20.400	6725
20.558	1951
20.645	5219
21.391	6030
21.635	3330
21.899	3228
22.364	6059
22.437	1275
23.893	2010
24.048	4464
24.254	3344
24.993	1662

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
		20.745	1542			20.729	1275

Extracted Ion Current Profiles

Heptachlorobiphenyls					
"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"
m/z 394	m/z 396	m/z 322	m/z 324	m/z 326	m/z 462
		37.824 1725		23.807 1295	

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"	"M03091513"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
20.745		1542			

Extracted Ion Current Profiles

TCMX			
"M03091513"		"M03091513"	
m/z 244		m/z 242	

10.985	327	10.985	739
11.012	126	12.540	592
12.532	754	14.008	122
15.280	106	14.745	107
15.420	194	15.112	140
15.570	147	16.045	124
15.791	142	16.349	215
15.872	173	16.386	110
15.910	141	16.442	125
15.987	135	16.547	178
16.058	103	16.675	372
16.090	121	16.752	184
16.142	149	16.815	134
16.180	141	16.909	242
16.227	123	17.100	144
16.312	218	17.142	295
16.376	161	17.193	291
16.414	100	17.297	191
16.533	288	17.328	289
16.589	112	17.420	160
16.643	201	17.446	149
16.789	126	17.475	167
16.887	270	17.545	320
16.969	3273	17.580	121
17.099	250	17.613	180
17.223	318	17.668	314
17.263	188	17.737	117
17.298	323	17.762	160
17.339	136	17.812	156
17.385	304	17.847	112
17.427	110	17.876	451
17.463	104	17.956	168
17.517	214	18.026	245
17.577	334	18.065	160
17.714	199	18.091	195
17.758	155	18.138	139
17.800	232	18.170	210
17.835	157	18.213	164
17.858	128	18.272	113
17.922	292	18.333	235
17.964	122	18.395	177

TCMX

chrysene -
d₁₂

Chrysene-d12			
"M03091513"		"M03091513"	
m/z 240		m/z 241	

35.233	183227	35.226	27023
		35.253	11969

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091513"		"M03091513"	
m/z 188		m/z 189	

15.977	2921	16.520	27355
16.520	153585	18.916	1459
16.866	2382	19.913	1352
18.749	3275		
18.887	1534		
18.907	2143		
19.025	2863		
19.628	1479		
22.449	1462		

Extracted Ion Current Profiles

Deca C13				
Deca C13	m/z 510		m/z 512	
510	32.938	117	32.833	109
512	33.228	145	33.289	135
	37.948	124	36.065	109
	38.365	106	36.729	116
	38.554	158	38.387	167
	38.590	153	39.338	126
	39.101	109	41.025	142
	39.794	109	42.629	108
	39.892	163	43.373	123
	40.262	102	43.594	7801
	40.549	187	43.796	145
	40.650	115	44.287	101
	40.783	191	44.380	135
	40.893	115	44.631	130
	41.016	135		
	41.142	127		
	41.383	119		
	41.474	137		
	41.645	104		
	41.840	157		
	42.580	103		
	42.772	179		
	42.980	116		
	43.477	224		
	43.523	166		
	43.598	9056		
	43.885	234		
	43.988	103		
	44.392	161		
	44.474	100		
	44.515	112		
	44.568	117		



Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL

Project: 115058

Client Sample ID: 2-203D

Lab Sample ID: 15090196-06 (AS27377)

Collection Date: 09/04/2015

Sample Matrix: POLYURETHANE FOAM

Received Date: 09/09/2015 09:22

Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-522-14	PCBs by EPA Method TO-10A/680	09/15/2015 22:40	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	7.60m ³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m ³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.000658	1.00	U	MS03-522-14
Dichlorobiphenyl	25512-42-9	0.00531	0.000658	1.00		MS03-522-14
Trichlorobiphenyl	25323-68-6	0.0609	0.000658	1.00		MS03-522-14
Tetrachlorobiphenyl	26914-33-0	0.0294	0.00132	1.00		MS03-522-14
Pentachlorobiphenyl	25429-29-2	ND	0.00132	1.00	U	MS03-522-14
Hexachlorobiphenyl	26601-64-9	ND	0.00132	1.00	U	MS03-522-14
Heptachlorobiphenyl	28655-71-2	ND	0.00197	1.00	U	MS03-522-14
Octachlorobiphenyl	55722-26-4	ND	0.00197	1.00	U	MS03-522-14
Nonachlorobiphenyl	53742-07-7	ND	0.00329	1.00	U	MS03-522-14
Decachlorobiphenyl	2051-24-3	ND	0.00329	1.00	U	MS03-522-14
Total PCB	1336-36-3	0.0956		1.00		MS03-522-14

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	70.9	70.1-116		MS03-522-14
Tetrachloro-meta-xylene	877-09-8	46.3	44.4-104		MS03-522-14

¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

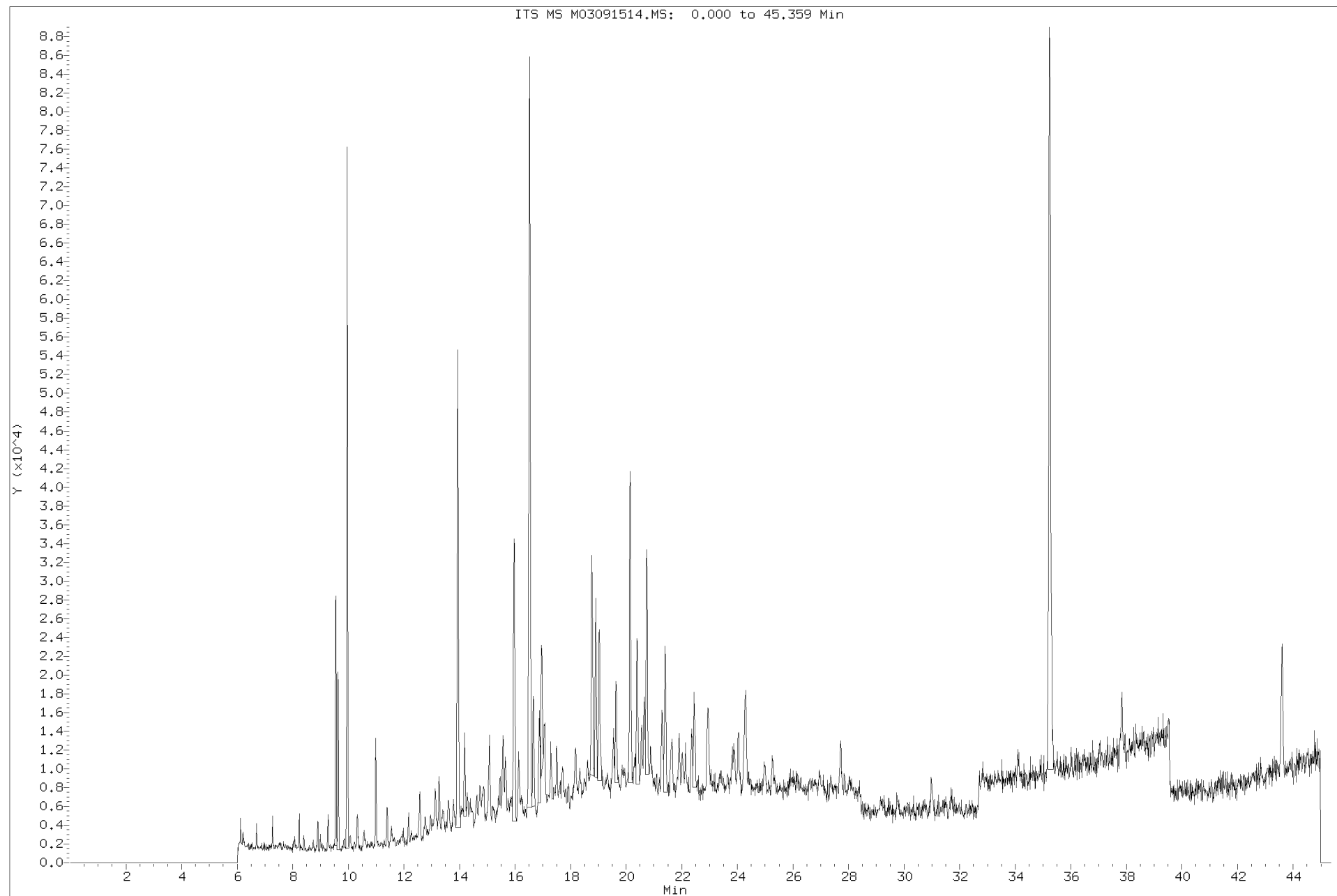
ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

Data File: \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\M03091514.d\M03091514.MS
Injection Date: 15-SEP-2015 22:40
Instrument: GCMS03.i
Client Sample ID: 2-203D



Form 1

PCB Homolog Report

Pace Analytical Services, Inc.

ELAP ID No.: 11078
 Matrix: TO-10A PUF
 Sample weight: 7.6 cubic m
 % Moisture: 0 %
 Method: EPA 680 (GC/MS)
 Dilution Factor: 1
 GC Column: J&W, DB-XLB, 30m length, 0.25mm ID, 0.25µm Film

SDG No.: 15090196
 Client ID: 2-203D
 Lab Sample ID: AS27377
 Date Received: 9/9/2015
 Date Extracted: 9/10/2015
 Date Analyzed: 9/15/2015
 Time Analyzed: 22:40

Monochlorobiphenyls									
Quant Ion RT m/z 188	Quant Ion Area	Confirm Ion RT m/z 190	Confirm Ion Area	Ratio 2.5 to 3.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Mono Total:						0.000658	0.000658	ND	

Dichlorobiphenyls									
Quant Ion RT m/z 222	Quant Ion Area	Confirm Ion RT m/z 224	Confirm Ion Area	Ratio 1.3 to 1.7	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
14.186	8404	14.180	5368	1.6	0.9128	0.000658	0.000658	0.00531	
Di Total:						0.000658	0.000658	0.00531	

Trichlorobiphenyls									
Quant Ion RT m/z 256	Quant Ion Area	Confirm Ion RT m/z 258	Confirm Ion Area	Ratio 0.8 to 1.2	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
15.985	7880	15.987	7245	1.1	0.7325	0.000658	0.000658	0.00621	
17.046	3898	17.045	3615	1.1	0.7325	0.000658	0.000658	0.00307	
18.179	3561	18.177	3148	1.1	0.7325	0.000658	0.000658	0.00281	
18.763	17065	18.765	16558	1.0	0.7325	0.000658	0.000658	0.0134	
18.903	17173	18.903	15958	1.1	0.7325	0.000658	0.000658	0.0135	
19.027	15425	19.023	13149	1.2	0.7325	0.000658	0.000658	0.0122	
19.633	8712	19.637	8396	1.0	0.7325	0.000658	0.000658	0.00686	
22.445	3578	22.449	3946	0.9	0.7325	0.000658	0.000658	0.00282	
Tri Total:						0.000658	0.000658	0.0609	

Tetrachlorobiphenyls									
Quant Ion RT m/z 292	Quant Ion Area	Confirm Ion RT m/z 290	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
20.394	7757	20.397	6833	1.1	0.5577	0.00132	0.00132	0.00803	
20.654	6664	20.649	5037	1.3	0.5577	0.00132	0.00132	0.00690	
21.398	8337	21.398	6579	1.3	0.5577	0.00132	0.00132	0.00863	
24.050	5653	24.041	5005	1.1	0.5577	0.00132	0.00132	0.00585	
Tetra Total:						0.00132	0.00132	0.0294	

Pentachlorobiphenyls									
Quant Ion RT m/z 326	Quant Ion Area	Confirm Ion RT m/z 324	Confirm Ion Area	Ratio 1.4 to 1.8	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Penta Total:						0.00132	0.00132	ND	

Hexachlorobiphenyls									
Quant Ion RT m/z 360	Quant Ion Area	Confirm Ion RT m/z 362	Confirm Ion Area	Ratio 1.0 to 1.4	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Hexa Total:						0.00132	0.00132	ND	

Heptachlorobiphenyls									
Quant Ion RT m/z 394	Quant Ion Area	Confirm Ion RT m/z 396	Confirm Ion Area	Ratio 0.9 to 1.2	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Hepta Total:						0.00197	0.00197	ND	

Octachlorobiphenyls									
Quant Ion RT m/z 430	Quant Ion Area	Confirm Ion RT m/z 428	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Octa Total:						0.00197	0.00197	ND	

Nonachlorobiphenyls									
Quant Ion RT m/z 464	Quant Ion Area	Confirm Ion RT m/z 466	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Nona Total:						0.00329	0.00329	ND	

Decachlorobiphenyl									
Quant Ion RT m/z 498	Quant Ion Area	Confirm Ion RT m/z 500	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug/m ³	Reporting Limit ug/m ³	Report Amount ug/m ³	Flag
Deca Total:						0.00329	0.00329	ND	

Tetrachloro-meta-xylene: Surrogate Analyte									
Quant Ion RT m/z 244	Quant Ion Area	Confirm Ion RT m/z 242	Confirm Ion Area	Ratio 1.1 - 1.5	Response Factor		Solution Concentration ug/mL	Flag	
12.543	580	12.545	520	1.1	0.2749		0.00926		
TCMX Total:							0.00926		

Decachloro ¹³ C Biphenyl: Surrogate Analyte								
Quant Ion RT m/z 510	Quant Ion Area	Confirm Ion RT m/z 512	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor		Solution Concentration ug/mL	Flag
43.599	9561	43.603	7453	1.3	0.5916		0.0709	
Deca Total:							0.0709	

TCMX Recovery % 46.3 %

Deca Recovery 70.9 %

Chrysene-d ₁₂ Internal Standard								
Quant Ion RT m/z 240	Quant Ion Area	Confirm Ion RT m/z 241	Confirm Ion Area	Ratio 4.3 - 5.9	Response Factor		Solution Concentration ug/mL	Flag
35.240	182381	35.230	37909	4.8	1.0000		0.800	
Chrysene-d ₁₂ :							0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091514"		"M03091514"		"M03091514"		"M03091514"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.975	1646	13.942	1426	12.163	1411		
16.519	149223	16.506	1404	13.781	1457		
16.884	1618			13.940	2861		
18.766	3365			14.191	5492		
18.907	3508			14.632	1735		
19.032	3418			15.064	2407		
				15.560	1564		
				15.968	3440		
				16.457	1308		
				16.659	4984		
				16.965	4419		

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091514"		"M03091514"		"M03091514"		"M03091514"		"M03091514"		"M03091514"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
13.774	1590	13.775	1343	12.163	1411			15.978	8485	15.975	1646
13.937	16759	14.180	5368	13.781	1457			16.130	3320	16.519	149223
14.186	8404	15.967	3395	13.940	2861			16.520	12630	16.884	1618
15.082	1725	16.971	1734	14.191	5492			16.872	4717	18.766	3365
15.963	3634			14.632	1735			18.164	2168	18.907	3508
15.988	1741			15.064	2407			18.763	9592	19.032	3418
16.955	4589			15.560	1564			18.898	9646		
20.401	3982			15.968	3440			19.019	8687		
20.569	1469			16.457	1308			19.634	5375		
20.635	1385			16.659	4984			22.444	1871		
20.653	1942			16.965	4419			22.470	1377		
20.734	1324										
21.390	2262										
21.411	2477										
21.650	1925										
21.911	1906										
22.358	1409										
22.444	1636										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091514"		"M03091514"		"M03091514"	
<u>m/z 256</u>		<u>m/z 258</u>		<u>m/z 221</u>	
RT	Area	RT	Area	RT	Area
15.985	7880	15.987	7245	7.276	1512
16.123	3486	16.125	1556	9.631	1814
16.866	1722	16.145	1392	13.586	1487
16.886	1614	16.866	3396	13.937	87071
17.046	3898	17.045	3615	14.866	3714
18.179	3561	18.177	3148	15.080	9476
18.336	1720	18.332	1374	15.975	6723
18.763	17065	18.765	16558	16.132	3066
18.903	17173	18.903	15958	16.669	3873
19.027	15425	19.023	13149	16.866	5313
19.633	8712	19.637	8396	17.068	3611
21.280	8145	22.428	1349	18.341	1387
22.445	3578	22.449	3946	18.620	3512
22.470	2338			18.759	1943
				19.026	1541
				20.398	1757
				20.736	7962
				22.437	2124
				24.315	3936
				27.702	2093

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091514"		"M03091514"		"M03091514"		"M03091514"		"M03091514"		"M03091514"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
15.985	7880	15.987	7245	15.978	8485	15.975	1646				
16.123	3486	16.125	1556	16.130	3320	16.519	149223				
16.866	1722	16.145	1392	16.520	12630	16.884	1618				
16.886	1614	16.866	3396	16.872	4717	18.766	3365				
17.046	3898	17.045	3615	18.164	2168	18.907	3508				
18.179	3561	18.177	3148	18.763	9592	19.032	3418				
18.336	1720	18.332	1374	18.898	9646						
18.763	17065	18.765	16558	19.019	8687						
18.903	17173	18.903	15958	19.634	5375						
19.027	15425	19.023	13149	22.444	1871						
19.633	8712	19.637	8396	22.470	1377						
21.280	8145	22.428	1349								
22.445	3578	22.449	3946								
22.470	2338										

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091514"		"M03091514"		"M03091514"		"M03091514"		"M03091514"		"M03091514"	
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				20.397	6833	19.525	1711	20.387	3539	20.394	4724
				20.562	1828	20.394	7757	20.574	1313	20.657	2747
				20.649	5037	20.572	3183	20.653	3337	20.882	1338
				20.870	1771	20.654	6664	21.402	3858	21.401	4083
				21.398	6579	20.868	2686	21.899	1463	21.647	2269
				21.619	1932	21.398	8337	22.361	2725		
				21.652	1287	21.620	2043	23.886	1368		
				21.905	3665	21.650	2697	24.045	1986		
				22.342	2250	21.905	3828	24.256	2262		
				22.363	2810	22.360	6653				
				23.878	2530	23.876	2196				
				24.041	5005	24.050	5653				
				24.258	4101	24.238	2419				
				24.991	1624	24.270	2093				
						25.000	1623				

Extracted Ion Current Profiles

Tetrachlorobiphenyls							
"M03091514"		"M03091514"		"M03091514"		"M03091514"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>	
						<u>m/z 360</u>	
						<u>m/z 362</u>	
19.525	1711	20.397	6833	9.266	1339	13.774	1590
20.394	7757	20.562	1828	9.630	10565	13.937	16759
20.572	3183	20.649	5037	13.934	1348	14.186	8404
20.654	6664	20.870	1771	20.388	6556	15.082	1725
20.868	2686	21.398	6579	20.550	1458	15.963	3634
21.398	8337	21.619	1932	20.652	4215	15.988	1741
21.620	2043	21.652	1287	20.876	1461	16.955	4589
21.650	2697	21.905	3665	21.406	7792	20.401	3982
21.905	3828	22.342	2250	21.642	2004	20.569	1469
22.360	6653	22.363	2810	22.340	1416	20.635	1385
23.876	2196	23.878	2530	22.363	2157	20.653	1942
24.050	5653	24.041	5005	23.889	2025	20.734	1324
24.238	2419	24.258	4101	24.034	1950	21.390	2262
24.270	2093	24.991	1624	24.249	1606	21.411	2477
25.000	1623					21.650	1925
						21.911	1906
						22.358	1409
						22.444	1636

Extracted Ion Current Profiles

Pentachlorobiphenyls						
"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"	
<u>m/z 326</u>	<u>m/z 324</u>	<u>m/z 254</u>	<u>m/z 256</u>	<u>m/z 258</u>	<u>m/z 392</u>	
			15.985	7880	15.987	7245
			16.123	3486	16.125	1556
			16.866	1722	16.145	1392
			16.886	1614	16.866	3396
			17.046	3898	17.045	3615
			18.179	3561	18.177	3148
			18.336	1720	18.332	1374
			18.763	17065	18.765	16558
			18.903	17173	18.903	15958
			19.027	15425	19.023	13149
			19.633	8712	19.637	8396
			21.280	8145	22.428	1349
			22.445	3578	22.449	3946
			22.470	2338		

Extracted Ion Current Profiles

Hexachlorobiphenyls					
"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"
m/z 360	m/z 362	m/z 288	m/z 290	m/z 426	m/z 428

20.397	6833
20.562	1828
20.649	5037
20.870	1771
21.398	6579
21.619	1932
21.652	1287
21.905	3665
22.342	2250
22.363	2810
23.878	2530
24.041	5005
24.258	4101
24.991	1624

Extracted Ion Current Profiles

Hexachlorobiphenyls								
"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357	
		20.744	8889					20.734 6038
		24.304	1854					44.234 1342

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"	"M03091514"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
		20.744 8889	20.731 2079		
		24.304 1854			

Extracted Ion Current Profiles

TCMX			
"M03091514"		"M03091514"	
m/z 244		m/z 242	

10.988	1245	10.989	1995
12.543	580(M)	12.545	520
13.944	155	15.255	140
15.587	103	15.475	176
15.656	135	15.527	170
15.997	154	15.600	106
16.022	118	15.718	101
16.060	137	15.814	105
16.137	105	15.973	177
16.192	102	16.146	247
16.265	524	16.342	143
16.374	221	16.411	114
16.600	131	16.578	353
16.715	127	16.670	243
16.788	164	16.739	298
16.835	102	16.825	248
16.873	226	16.913	379
16.952	4304	16.957	140
17.059	170	17.008	100
17.108	155	17.031	139
17.177	112	17.076	237
17.309	1544	17.106	109
17.393	182	17.216	214
17.434	245	17.266	189
17.459	205	17.288	120
17.508	156	17.325	217
17.582	179	17.385	110
17.715	188	17.456	215
17.801	101	17.484	131
17.825	144	17.555	428
17.860	121	17.618	558
17.893	190	17.696	244
17.947	214	17.741	201
17.987	201	17.788	210
18.022	154	17.845	132
18.058	106	17.894	172
18.092	182	17.999	149
18.146	342	18.020	121
18.184	269	18.055	174
18.286	243	18.080	101
18.337	239	18.140	254

TCMX

chrysene -
d₁₂

Chrysene-d12			
"M03091514"		"M03091514"	
m/z 240		m/z 241	

35.240	182381	35.230	37909
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phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091514"		"M03091514"	
m/z 188		m/z 189	

15.975	1646	9.634	5408
16.519	149223	10.348	1558
16.884	1618	13.939	2366
18.766	3365	16.526	23710
18.907	3508	19.615	1330
19.032	3418	21.086	1617
		25.356	1337
		27.505	1649

Extracted Ion Current Profiles

Deca C13				
Deca C13	<u>m/z 510</u>		<u>m/z 512</u>	
510	32.865	105	35.228	103
512	33.549	140	36.786	111
	35.188	138	40.195	112
	35.216	120	40.889	141
	35.397	108	42.050	207
	35.704	117	42.422	153
	37.264	139	42.642	134
	37.662	134	42.990	188
	39.931	179	43.580	7453(M)
	40.244	111	43.603	4212
	40.487	103	43.677	173
	40.671	121	43.787	115
	40.718	107	43.955	107
	40.794	101	44.080	123
	40.831	102	44.254	148
	41.003	130	44.449	125
	41.138	131	44.603	125
	41.260	142	44.672	111
	41.290	146	44.918	161
	41.350	105		
	41.797	129		
	42.189	220		
	42.323	173		
	42.417	120		
	42.659	140		
	42.748	107		
	42.854	118		
	42.907	108		
	42.999	189		
	43.599	9561		
	43.901	113		
	44.197	126		
	44.355	175		
	44.395	180		
	44.471	188		
	44.631	101		
	44.845	105		
	44.907	104		
	44.955	113		

Internal Standard Area Summary

8B

EPA 680 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Pace Analytical Services, Inc. Contract: 115058
 Lab Code: 11078 Case No.: NA SAS No: NA SDG No: 15090196
 Sample Name: CCV3-0914C
 Lab File ID (Standard): MS03-521-47754 Date Analyzed: 09/15/2015
 Instrument ID: MS03 Time Analyzed: 12:38:00 AM
 GC Column: Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm

	IS1 (CRY) AREA #	RT #	IS2 (PHN) AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	171137	35.25	139791	16.53		
UPPER LIMIT	222478.1	35.42	181728.3	16.70		
LOWER LIMIT	119795.9	35.09	97853.7	16.36		
EPA SAMPLE NO.						
AS27354L	169368	35.24	135978	16.53		
AS27354S	160063	35.24	134762	16.53		
AS27372	165318	35.24	134001	16.52		
AS27373	168830	35.23	138184	16.52		

IS1 (CRY) = Chrysene- d_{12} IS2 (PHN) = Phenanthrene- d_{10}

AREA UPPER LIMIT = + 30% of internal standard area

AREA LOWERLIMIT = -30% of internal standard area

RT UPPER LIMIT = +0.167 minutes of internal standard RT

RT LOWER LIMIT = -0.167 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

* Values outside of QC limits.

FORM VIII SVOA

8B

EPA 680 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Pace Analytical Services, Inc. Contract: 115058
 Lab Code: 11078 Case No.: NA SAS No: NA SDG No: 15090196
 Sample Name: CCV3-0915A
 Lab File ID (Standard): MS03-522-47769 Date Analyzed: 09/15/2015
 Instrument ID: MS03 Time Analyzed: 1:42:00 PM
 GC Column: Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm

	IS1 (CRY) AREA #	RT #	IS2 (PHN) AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	194678	35.24	175800	16.52		
UPPER LIMIT	253081.4	35.41	228540	16.68		
LOWER LIMIT	136274.6	35.07	123060	16.35		
EPA SAMPLE NO.						
AS27354BRR1	216143	35.24	181455	16.53		
AS27374	183154	35.23	154539	16.52		
AS27376	183227	35.23	153585	16.52		
AS27377	182381	35.24	149223	16.52		

IS1 (CRY) = Chrysene- d_{12} IS2 (PHN) = Phenanthrene- d_{10}

AREA UPPER LIMIT = + 30% of internal standard area

AREA LOWERLIMIT = -30% of internal standard area

RT UPPER LIMIT = +0.167 minutes of internal standard RT

RT LOWER LIMIT = -0.167 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

* Values outside of QC limits.

FORM VIII SVOA

8B

EPA 680 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Pace Analytical Services, Inc. Contract: 115058
 Lab Code: 11078 Case No.: NA SAS No: NA SDG No: 15090196
 Sample Name: CCV3-0916A
 Lab File ID (Standard): MS03-523-47785 Date Analyzed: 09/16/2015
 Instrument ID: MS03 Time Analyzed: 2:23:00 PM
 GC Column: Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm

	IS1 (CRY) AREA #	RT #	IS2 (PHN) AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	171089	35.24	155132	16.51		
UPPER LIMIT	222415.7	35.41	201671.6	16.68		
LOWER LIMIT	119762.3	35.08	108592.4	16.34		
EPA SAMPLE NO.						
AS27375RR1	173810	35.23	146468	16.52		

IS1 (CRY) = Chrysene-_d₁₂
 IS2 (PHN) = Phenanthrene-_d₁₀

AREA UPPER LIMIT = + 30% of internal standard area
 AREA LOWERLIMIT = -30% of internal standard area
 RT UPPER LIMIT = +0.167 minutes of internal standard RT
 RT LOWER LIMIT = -0.167 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

FORM VIII SVOA

Window Defining Mix

Pace Analytical - NY Lab

PCB REPORT EPA 680
 Data file : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\M03031212.d
 Lab Smp Id: WDM3-0312B Client Smp ID: WDM3-0312B
 Inj Date : 12-MAR-2015 19:03
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : WDM3-0312B
 Misc Info : RMS M03031212
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\680WDM3.m
 Meth Date : 12-Mar-2015 10:14 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 09:29 Cal File: M03031202.d
 Als bottle: 1
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: 680WDM.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188	16.505	16.505	(1.000)	149973	0.80000	
* 6 Chrysene-d12	240	35.214	35.226	(1.000)	175087	0.80000	
1 Cl1	188	10.002	10.006	(0.284)	456655	2.25236	2.25
3 RTstd-BZ-104	326	20.845	20.854	(0.592)	423022	2.17748	2.18
4 RTstd-BZ-77	292	28.093	28.101	(0.798)	409602	2.31737	2.32
5 RTstd-BZ-202	430	33.858	33.871	(0.961)	452223	2.24756	2.25
7 RTstd-BZ-208	464	38.816	38.824	(1.102)	437282	2.30820	2.31
8 RTstd-BZ-189	394	39.207	39.228	(1.113)	452176	2.26852	2.27
9 Cl10	498	43.612	43.620	(1.238)	287039	2.24804	2.25

Date : 12-MAR-2015 19:03

Client ID: WDM3-0312B

Sample Info: WDM3-0312B

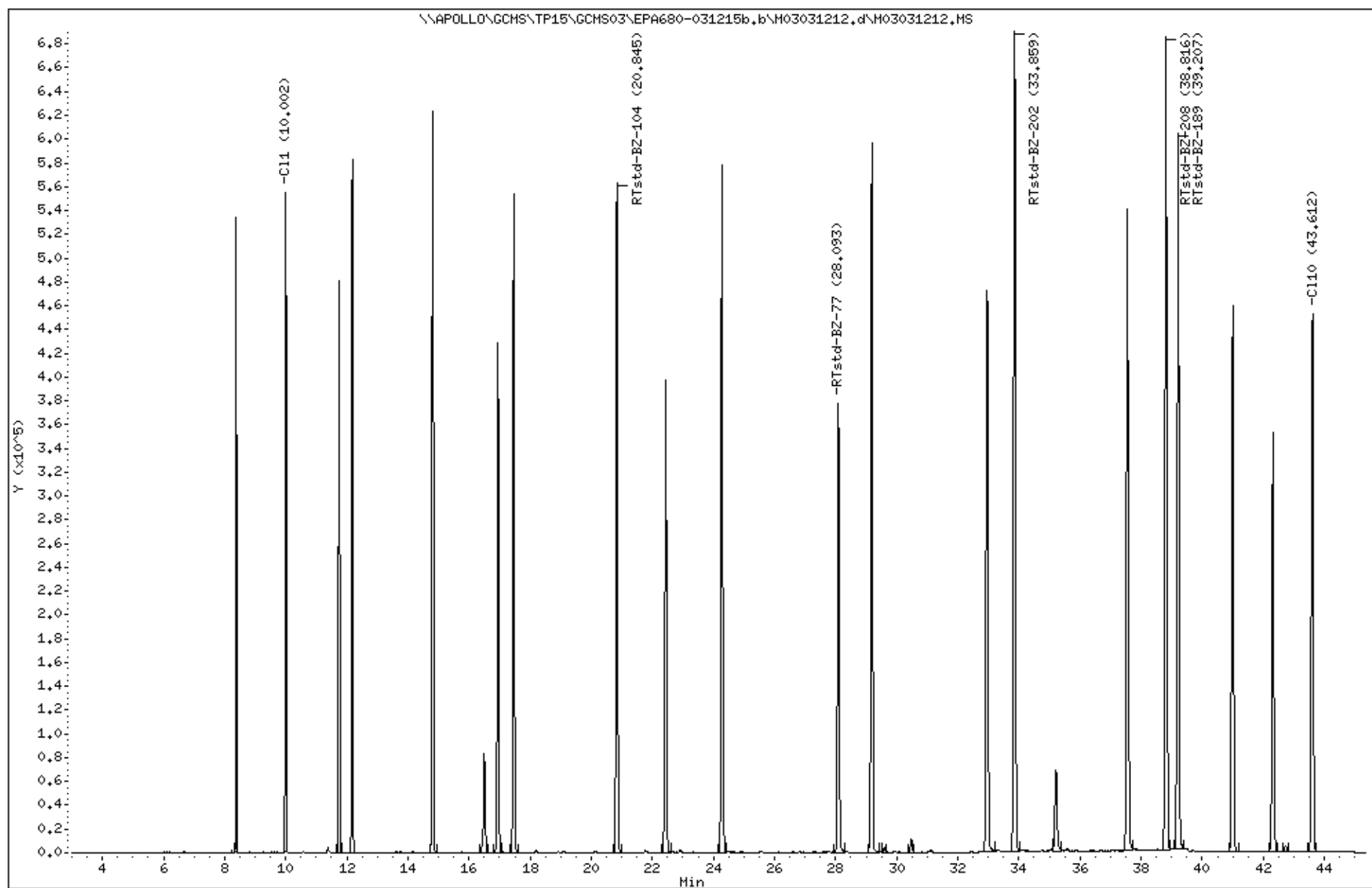
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCHS03.i

Operator: RMS

Column diameter: 0.25



Pace Analytical - NY Lab

PCB REPORT EPA 680
 Data file : \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\M03091417.d
 Lab Smp Id: WDM3-0914B Client Smp ID: WDM3-0914B
 Inj Date : 14-SEP-2015 23:49
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : WDM3-0914B
 Misc Info : RMS M03091417
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\680WDM3.m
 Meth Date : 14-Sep-2015 07:29 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 09:29 Cal File: M03031202.d
 Als bottle: 1
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: 680WDM.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188	16.534	16.505	(1.000)	147054	0.80000	
* 6 Chrysene-d12	240	35.253	35.226	(1.000)	167937	0.80000	
1 Cl1	188	10.031	10.006	(0.285)	407289	2.09440	2.09
3 RTstd-BZ-104	326	20.866	20.854	(0.592)	394543	2.11735	2.12
4 RTstd-BZ-77	292	28.126	28.101	(0.798)	381562	2.25064	2.25
5 RTstd-BZ-202	430	33.874	33.871	(0.961)	376862	1.95276	1.95
7 RTstd-BZ-208	464	38.836	38.824	(1.102)	349604	1.92396	1.92
8 RTstd-BZ-189	394	39.251	39.228	(1.113)	356493	1.86463	1.86
9 Cl10	498	43.636	43.620	(1.238)	244945	2.00005	2.00

Date : 14-SEP-2015 23:49

Client ID: WDM3-0914B

Sample Info: WDM3-0914B

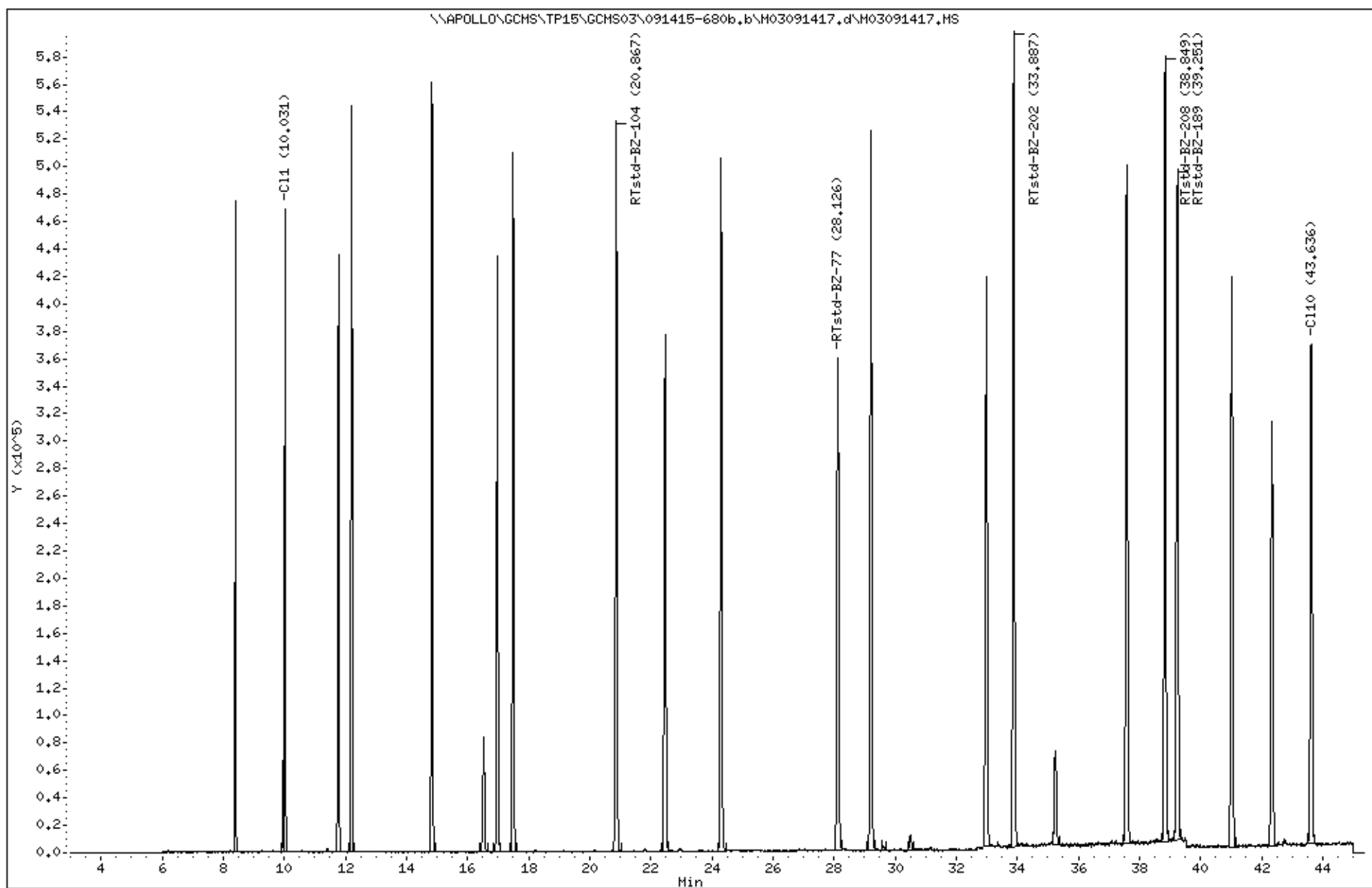
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Pace Analytical - NY Lab

PCB REPORT EPA 680
 Data file : \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\M03091502.d
 Lab Smp Id: WDM3-0915A Client Smp ID: WDM3-0915A
 Inj Date : 15-SEP-2015 12:54
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : WDM3-0915A
 Misc Info : RMS M03091502
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\680WDM3.m
 Meth Date : 15-Sep-2015 07:48 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 09:29 Cal File: M03031202.d
 Als bottle: 1
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: 680WDM.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT	SIG						CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
	MASS						(ng/uL)	(ug/L)	
=====	=====		=====	=====	=====	=====	=====	=====	
* 2 Phenanthrene-d10	188		16.521	16.505	(1.000)	167382	0.80000		
* 6 Chrysene-d12	240		35.237	35.226	(1.000)	191470	0.80000		
1 Cl1	188		10.013	10.006	(0.284)	486394	2.19377	2.19	
3 RTstd-BZ-104	326		20.850	20.854	(0.592)	453997	2.13696	2.14	
4 RTstd-BZ-77	292		28.114	28.101	(0.798)	421771	2.18205	2.18	
5 RTstd-BZ-202	430		33.878	33.871	(0.961)	416230	1.89167	1.89	
7 RTstd-BZ-208	464		38.823	38.824	(1.102)	204109	0.98520	0.985(Q)	
8 RTstd-BZ-189	394		39.227	39.228	(1.113)	417344	1.91462	1.91	
9 Cl10	498		43.618	43.620	(1.238)	303478	2.17342	2.17	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Date : 15-SEP-2015 12:54

Client ID: WDM3-0915A

Sample Info: WDM3-0915A

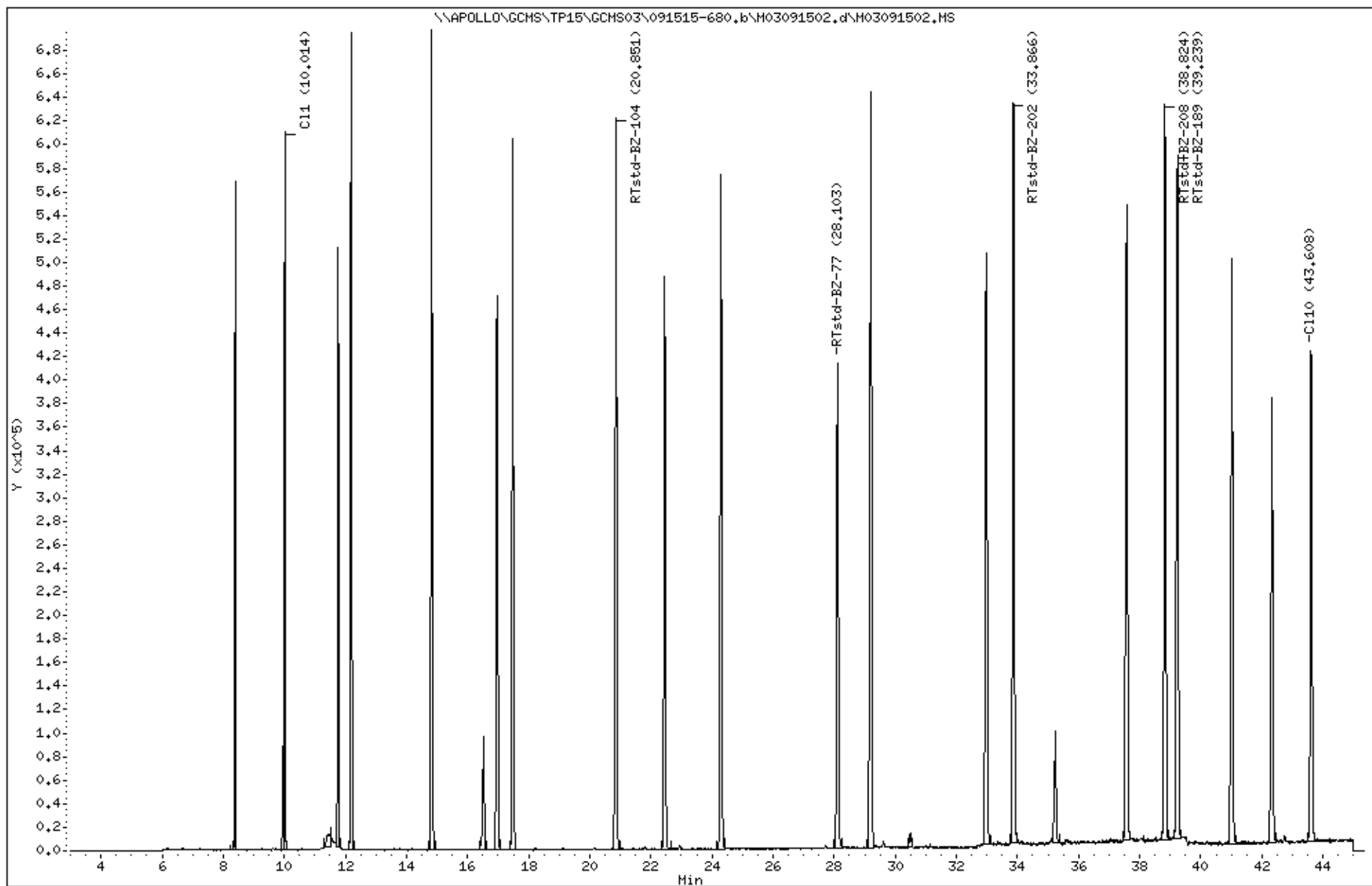
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Pace Analytical - NY Lab

PCB REPORT EPA 680
 Data file : \\APOLLO\GCMS\TP15\GCMS03\091615-680.b\M03091602.d
 Lab Smp Id: WDM3-0916A Client Smp ID: WDM3-0916A
 Inj Date : 16-SEP-2015 13:34
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : WDM3-0916A
 Misc Info : RMS M03091602
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\091615-680.b\680WDM3.m
 Meth Date : 16-Sep-2015 12:17 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 09:29 Cal File: M03031202.d
 Als bottle: 1
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: 680WDM.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG						CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188		16.519	16.505	(1.000)	178381	0.80000	
* 6 Chrysene-d12	240		35.230	35.226	(1.000)	208876	0.80000	
1 Cl1	188		10.012	10.006	(0.284)	530907	2.19499	2.19
3 RTstd-BZ-104	326		20.853	20.854	(0.592)	472993	2.04085	2.04
4 RTstd-BZ-77	292		28.115	28.101	(0.798)	459383	2.17858	2.18
5 RTstd-BZ-202	430		33.867	33.871	(0.961)	447266	1.86333	1.86
7 RTstd-BZ-208	464		38.816	38.824	(1.102)	415903	1.84022	1.84
8 RTstd-BZ-189	394		39.230	39.228	(1.114)	471158	1.98137	1.98
9 Cl10	498		43.619	43.620	(1.238)	316539	2.07805	2.08

Date : 16-SEP-2015 13:34

Client ID: WDM3-0916A

Sample Info: WDM3-0916A

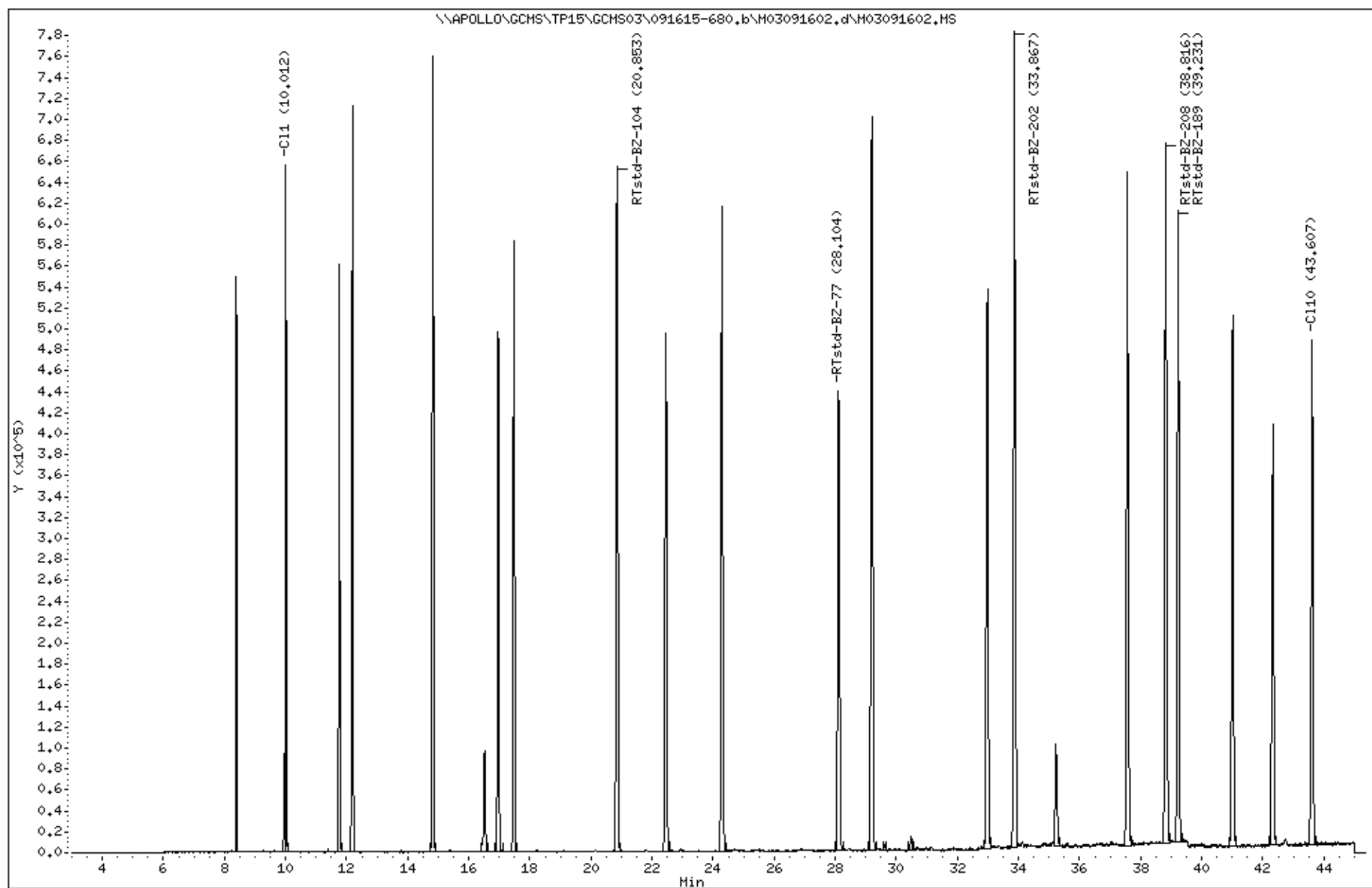
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCHS03.i

Operator: RMS

Column diameter: 0.25



Initial Calibration Data

6B
EPA 680 Initial Calibration Data

Pace Analytical Services, Inc.

Instrument ID: GCMS 03
GC Column: DB XLB

Start Cal Date: 03/12/15 Time: 19:52
End Cal Date: 03/13/15 Time: 00:49

Calibration File Names:

Level 1: \\M03031213
Level 2: \\M03031214
Level 3: \\M03031215
Level 4: \\M03031216
Level 5: \\M03031217
Level 6: \\M03031218
Level 7: \\M03031219

PACE File ID: S:\Lab Data\DataPackages\CURVES_2015\680\680 031215 Calibration 7pt\031215_680CLP_6B.xls\680CLP-6B

COMPOUND	RRF Level1	RRF Level2	RRF Level3	RRF Level4	RRF Level5	RRF Level6	RRF Level7	MEAN RRF	% RSD
Cl1	1.0497	1.0802	0.9613	0.9150	0.9663	0.9371	0.9024	0.973	6.92%
Cl2	0.9298	1.0848	0.8894	0.8718	0.8827	0.8741	0.8571	0.913	8.67%
Cl3	0.7291	0.8009	0.7330	0.7231	0.7216	0.7207	0.6993	0.733	4.36%
Cl4	0.6077	0.6291	0.5436	0.5370	0.5395	0.5196	0.5273	0.558	7.65%
Cl5	0.5336	0.6250	0.5475	0.5371	0.5430	0.5458	0.5398	0.553	5.80%
Cl6	0.6496	0.7032	0.5824	0.5688	0.5729	0.5874	0.5706	0.605	8.53%
Cl7	0.7177	0.8260	0.7192	0.6909	0.7095	0.6662	0.6829	0.716	7.29%
Cl8	0.9646	1.0826	0.9012	0.8730	0.8677	0.8514	0.8705	0.916	9.00%
Cl9	0.5945	0.6526	0.5950	0.5742	0.5904	0.5886	0.5816	0.597	4.31%
Cl10	0.5945	0.6526	0.5950	0.5742	0.5904	0.5886	0.5816	0.597	4.31%
Chrysene-d12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	0.00%
TCMX	0.3021	0.2974	0.2650	0.2582	0.2674	0.2666	0.2671	0.275	6.32%
D ¹³ C ₁₂ BP	0.5984	0.6240	0.6106	0.5659	0.5848	0.5659	**	0.592	4.02%

COMPOUND	Conc. ug/mL Level1	Conc. ug/mL Level2	Conc. ug/mL Level3	Conc. ug/mL Level4	Conc. ug/mL Level5	Conc. ug/mL Level6	Conc. ug/mL Level7
Cl1	0.005	0.010	0.050	1.000	2.000	3.000	5.000
Cl2	0.005	0.010	0.050	1.000	2.000	3.000	5.000
Cl3	0.005	0.010	0.050	1.000	2.000	3.000	5.000
Cl4	0.010	0.020	0.100	2.000	4.000	6.000	10.000
Cl5	0.010	0.020	0.100	2.000	4.000	6.000	10.000
Cl6	0.010	0.020	0.100	2.000	4.000	6.000	10.000
Cl7	0.015	0.030	0.150	3.000	6.000	9.000	15.000
Cl8	0.015	0.030	0.150	3.000	6.000	9.000	15.000
Cl10	0.025	0.050	0.250	5.000	10.000	15.000	25.000
TCMX	0.005	0.010	0.050	1.000	2.000	3.000	5.000
D ¹³ C ₁₂ BP	0.025	0.050	0.250	5.000	10.00	15.000	+++++

TCMX = Tetrachloro-m-xylene

D¹³C₁₂BP = Decachlorobiphenyl (13C labeled)

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\M03031219.d
 Lab Smp Id: iCAL-1 Client Smp ID: iCAL-1
 Inj Date : 13-MAR-2015 00:49
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : iCAL-1
 Misc Info : RMS M03031219
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\680low.m
 Meth Date : 13-Mar-2015 08:22 roys Quant Type: ISTD
 Cal Date : 13-MAR-2015 00:49 Cal File: M03031219.d
 Als bottle: 1 Calibration Sample, Level: 1
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT	SIG						AMOUNTS	
			RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL	
	MASS						(ng/uL)	(ng/uL)	
=====	=====		=====	=====	=====	=====	=====	=====	
* 4 Phenanthrene-d10	188		16.483	16.483	(1.000)	142753	0.80000		
* 13 Chrysene-d12	240		35.199	35.199	(1.000)	162156	0.80000		
1 Cl1	188		10.009	10.009	(0.284)	1105	0.00500	0.00555	
\$ 2 Tetrachloro-m-xylene	244		12.520	12.520	(0.356)	303	0.00500	0.00541	
3 Cl2	222		14.058	14.058	(0.399)	969	0.00500	0.00516	
5 Cl3	256		17.736	17.736	(0.504)	745	0.00500	0.00496(a)	
6 Cl4	292		18.193	18.193	(0.517)	1214	0.01000	0.0107	
7 RTstd-BZ-104	326		20.837	20.837	(0.592)	1860	0.01000	0.0108	
8 Cl5	326		26.771	26.771	(0.761)	1094	0.01000	0.00957(a)	
9 Cl6	360		27.056	27.056	(0.769)	1328	0.01000	0.0106	
10 RTstd-BZ-77	292		28.077	28.077	(0.798)	1700	0.01000	0.0103	
11 Cl7	394		29.158	29.158	(0.828)	2239	0.01500	0.0153	
12 Cl8	430		34.296	34.296	(0.974)	3028	0.01500	0.0161	
14 RTstd-BZ-208	464		38.796	38.796	(1.102)	3503	0.02000	0.0204	
15 Cl10	498		43.594	43.594	(1.239)	3076	0.02500	0.0252	
\$ 16 Decachloro-13Cl2-Biphenyl	510		43.569	43.569	(1.238)	3081	0.02500	0.0256	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Date : 13-MAR-2015 00:49

Client ID: iCAL-1

Sample Info: iCAL-1

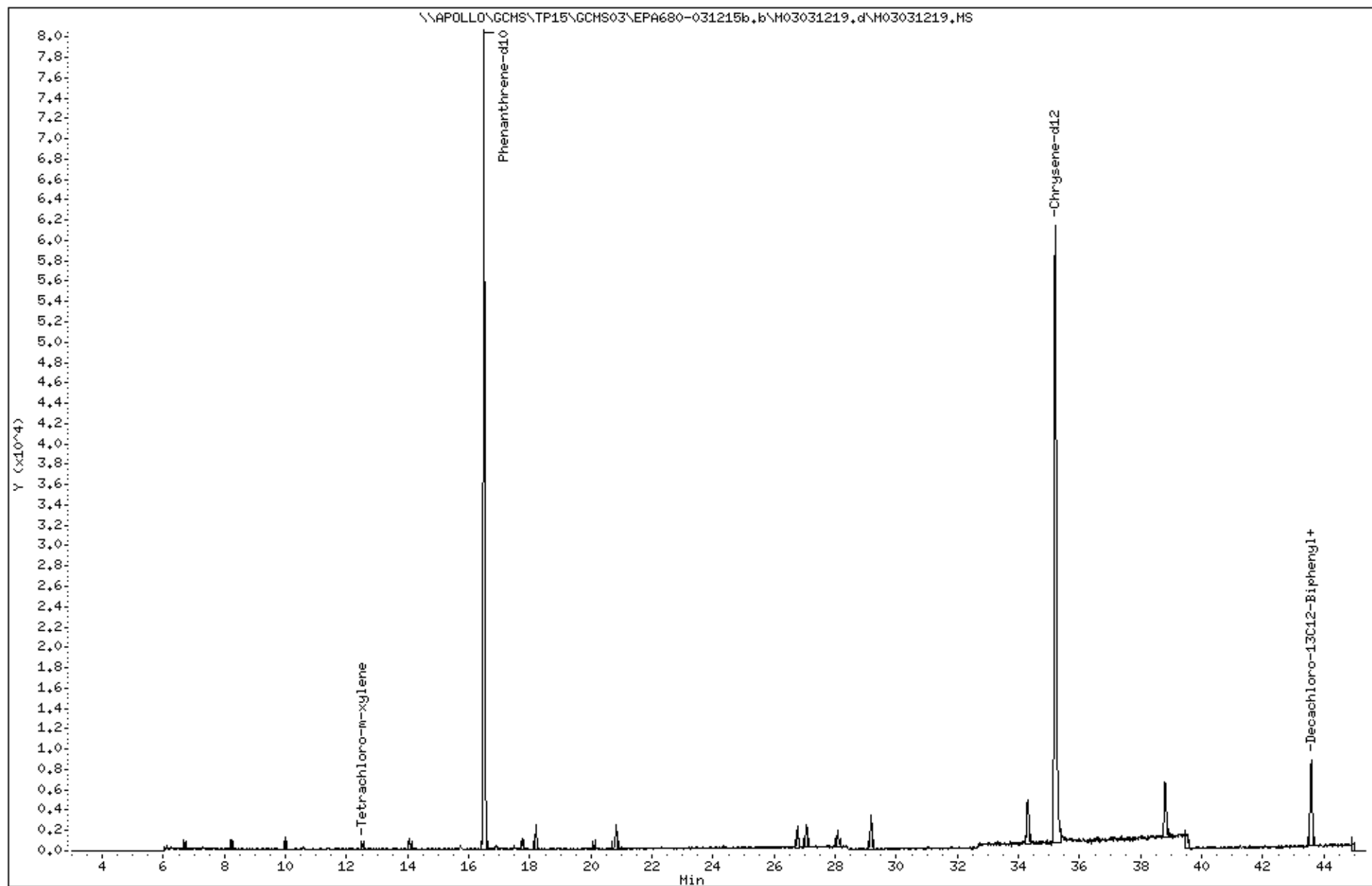
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\M03031218.d
 Lab Smp Id: iCAL-2 Client Smp ID: iCAL-2
 Inj Date : 12-MAR-2015 23:58
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : iCAL-2
 Misc Info : RMS M03031218
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\680low.m
 Meth Date : 13-Mar-2015 08:22 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 23:58 Cal File: M03031218.d
 Als bottle: 1 Calibration Sample, Level: 2
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT	SIG						AMOUNTS	
			RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL	
	MASS						(ng/uL)	(ng/uL)	
=====	=====		=====	=====	=====	=====	=====	=====	
* 4 Phenanthrene-d10	188		16.500	16.483	(1.000)	137931	0.80000		
* 13 Chrysene-d12	240		35.196	35.199	(1.000)	159350	0.80000		
1 C11	188		10.003	10.009	(0.284)	2138	0.01000	0.0111	
\$ 2 Tetrachloro-m-xylene	244		12.516	12.520	(0.356)	593	0.01000	0.0109	
3 C12	222		14.050	14.058	(0.399)	2182	0.01000	0.0119	
5 C13	256		17.747	17.736	(0.504)	1629	0.01000	0.0110	
6 C14	292		18.192	18.193	(0.517)	2510	0.02000	0.0228	
7 RTstd-BZ-104	326		20.822	20.837	(0.592)	3799	0.02000	0.0227	
8 C15	326		26.761	26.771	(0.760)	2459	0.02000	0.0217	
9 C16	360		27.049	27.056	(0.769)	2776	0.02000	0.0229	
10 RTstd-BZ-77	292		28.073	28.077	(0.798)	3497	0.02000	0.0217	
11 C17	394		29.176	29.158	(0.829)	4777	0.03000	0.0333	
12 C18	430		34.306	34.296	(0.975)	6281	0.03000	0.0344	
14 RTstd-BZ-208	464		38.787	38.796	(1.102)	7151	0.04000	0.0426	
15 C110	498		43.593	43.594	(1.239)	6463	0.05000	0.0540	
\$ 16 Decachloro-13C12-Biphenyl	510		43.568	43.569	(1.238)	6194	0.05000	0.0526	

Date : 12-MAR-2015 23:58

Client ID: iCAL-2

Sample Info: iCAL-2

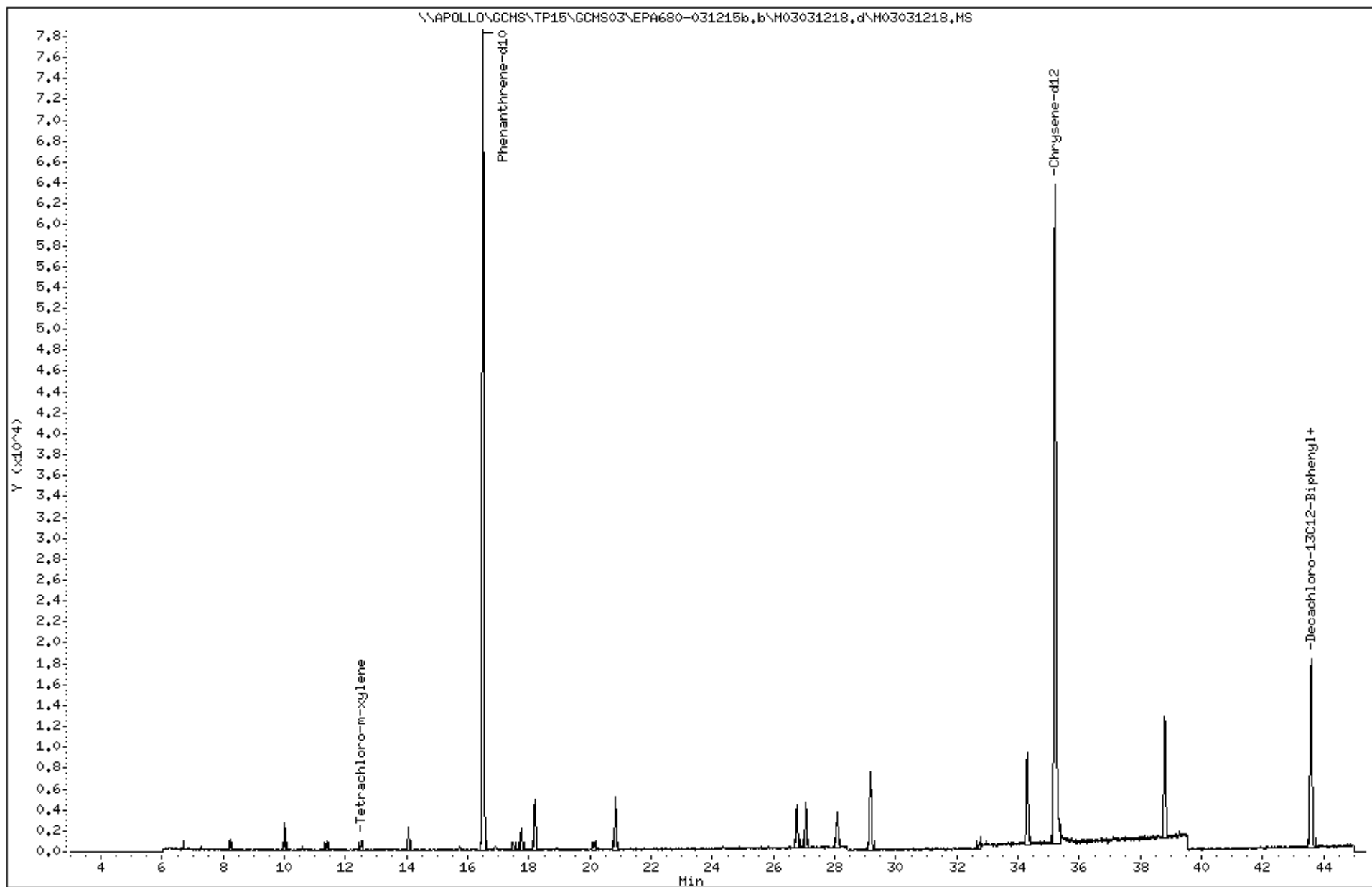
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCHS03.i

Operator: RMS

Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680
 Data file : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\M03031217.d
 Lab Smp Id: iCAL-3 Client Smp ID: iCAL-3
 Inj Date : 12-MAR-2015 23:08
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : iCAL-3
 Misc Info : RMS M03031217
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\680low.m
 Meth Date : 13-Mar-2015 08:22 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 23:08 Cal File: M03031217.d
 Als bottle: 1 Calibration Sample, Level: 3
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

						AMOUNTS	
		QUANT	SIG				
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/uL)	ON-COL (ng/uL)
*****	----	----	-----	-----	-----	-----	-----
* 4 Phenanthrene-d10	188	16.485	16.483	(1.000)	142768	0.80000	
* 13 Chrysene-d12	240	35.195	35.199	(1.000)	161598	0.80000	
1 Cl1	188	9.995	10.009	(0.284)	95265	0.50000	0.501
\$ 2 Tetrachloro-m-xylene	244	12.516	12.520	(0.356)	26959	0.50000	0.499
3 Cl2	222	14.049	14.058	(0.399)	91824	0.50000	0.513
5 Cl3	256	17.741	17.736	(0.504)	73441	0.50000	0.500
6 Cl4	292	18.199	18.193	(0.517)	108171	1.00000	0.997
7 RTstd-BZ-104	326	20.833	20.837	(0.592)	164272	1.00000	0.997
8 Cl5	326	26.759	26.771	(0.760)	111589	1.00000	0.989
9 Cl6	360	27.061	27.056	(0.769)	118023	1.00000	0.987
10 RTstd-BZ-77	292	28.086	28.077	(0.798)	157286	1.00000	0.978
11 Cl7	394	29.165	29.158	(0.829)	219137	1.50000	1.54
12 Cl8	430	34.299	34.296	(0.975)	271158	1.50000	1.51
14 RTstd-BZ-208	464	38.812	38.796	(1.103)	329477	2.00000	1.96
15 Cl10	498	43.608	43.594	(1.239)	303002	2.50000	2.54
\$ 16 Decachloro-13Cl2-Biphenyl	510	43.582	43.569	(1.238)	307490	2.50000	2.61

Date : 12-MAR-2015 23:08

Client ID: iCAL-3

Sample Info: iCAL-3

Volume Injected (uL): 2.0

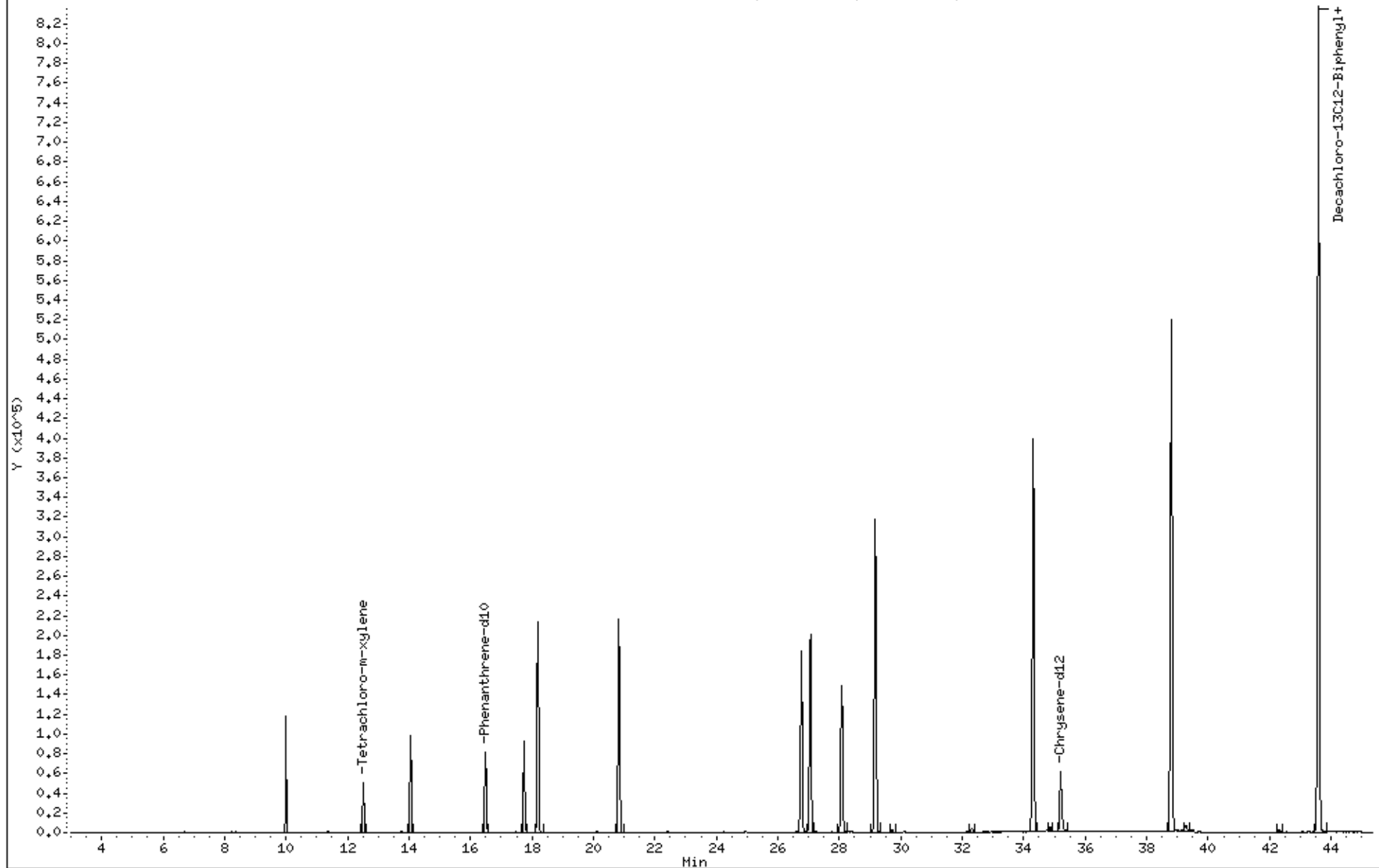
Column phase: DBXL8

Instrument: GCHS03.i

Operator: RMS

Column diameter: 0.25

\\APOLLO\GCHS\TP15\GCHS03\EPA680-031215b,b\M03031217.d\M03031217.MS



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\M03031216.d
 Lab Smp Id: iCAL-4 Client Smp ID: iCAL-4
 Inj Date : 12-MAR-2015 22:19
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : iCAL-4
 Misc Info : RMS M03031216
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\680low.m
 Meth Date : 13-Mar-2015 08:22 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 22:19 Cal File: M03031216.d
 Als bottle: 1 Calibration Sample, Level: 4
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

						AMOUNTS	
		QUANT	SIG				
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/uL)	ON-COL (ng/uL)
*****	----	----	-----	-----	-----	-----	-----
* 4 Phenanthrene-d10	188	16.480	16.483	(1.000)	143294	0.80000	
* 13 Chrysene-d12	240	35.197	35.199	(1.000)	158351	0.80000	
1 Cl1	188	9.992	10.009	(0.284)	184812	1.00000	0.991
\$ 2 Tetrachloro-m-xylene	244	12.502	12.520	(0.355)	52807	1.00000	0.996
3 Cl2	222	14.046	14.058	(0.399)	175156	1.00000	1.01
5 Cl3	256	17.733	17.736	(0.504)	145710	1.00000	1.01
6 Cl4	292	18.192	18.193	(0.517)	216415	2.00000	2.03
7 RTstd-BZ-104	326	20.826	20.837	(0.592)	328243	2.00000	2.03
8 Cl5	326	26.763	26.771	(0.760)	219564	2.00000	1.98
9 Cl6	360	27.052	27.056	(0.769)	232281	2.00000	1.98
10 RTstd-BZ-77	292	28.078	28.077	(0.798)	315083	2.00000	1.99
11 Cl7	394	29.160	29.158	(0.828)	419504	3.00000	3.02
12 Cl8	430	34.305	34.296	(0.975)	534122	3.00000	3.04
14 RTstd-BZ-208	464	38.798	38.796	(1.102)	658071	4.00000	3.98
15 Cl10	498	43.597	43.594	(1.239)	579574	5.00000	4.97
\$ 16 Decachloro-13Cl2-Biphenyl	510	43.585	43.569	(1.238)	567556	5.00000	4.98

Date : 12-MAR-2015 22:19

Client ID: iCAL-4

Sample Info: iCAL-4

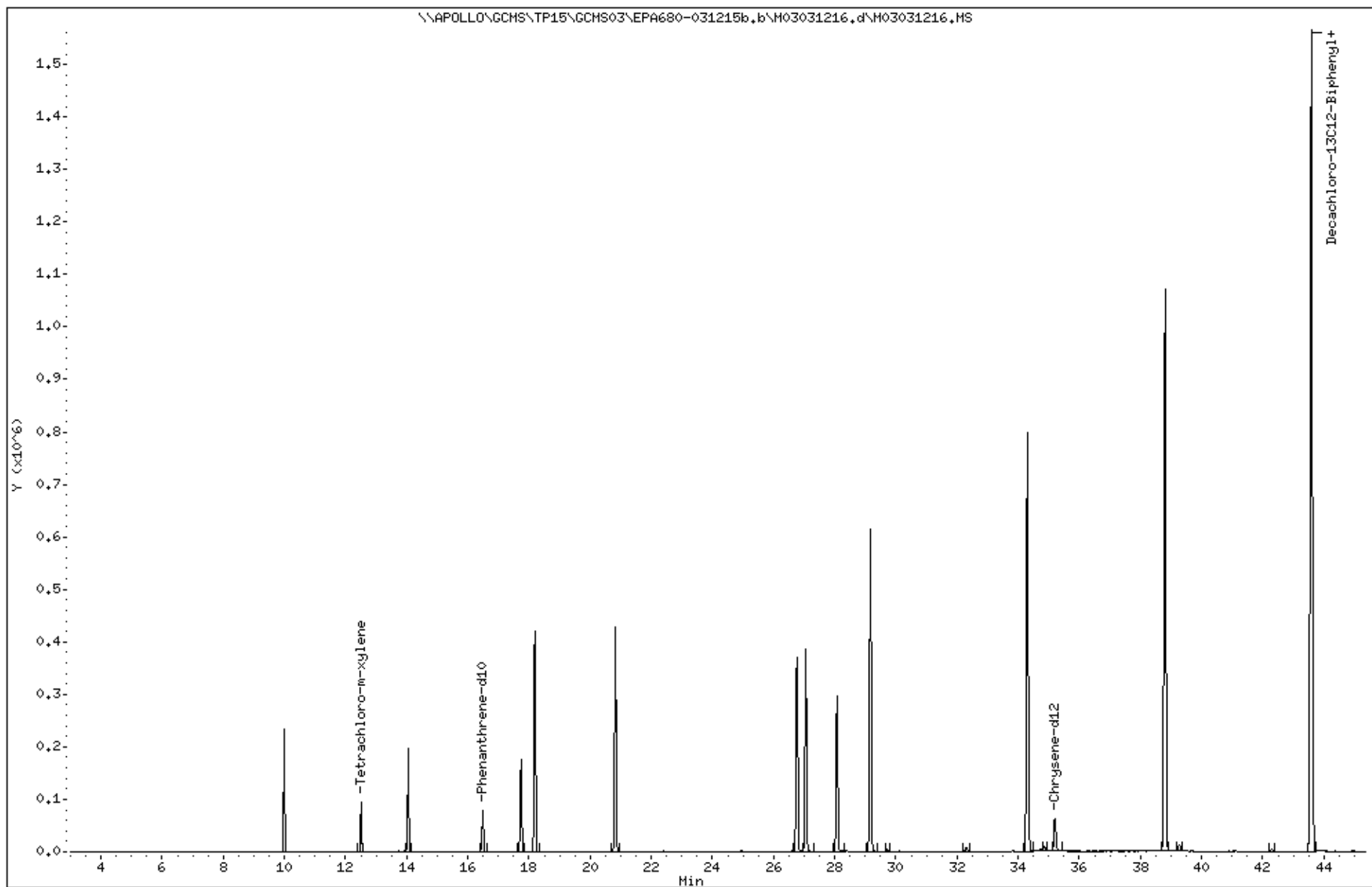
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680
 Data file : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\M03031215.d
 Lab Smp Id: iCAL-5 Client Smp ID: iCAL-5
 Inj Date : 12-MAR-2015 21:30
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : iCAL-5
 Misc Info : RMS M03031215
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\680low.m
 Meth Date : 13-Mar-2015 08:22 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 21:30 Cal File: M03031215.d
 Als bottle: 1 Calibration Sample, Level: 5
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

						AMOUNTS	
		QUANT	SIG				
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/uL)	ON-COL (ng/uL)
*****	----	----	-----	-----	-----	-----	-----
* 4 Phenanthrene-d10	188	16.476	16.483	(1.000)	148239	0.80000	
* 13 Chrysene-d12	240	35.193	35.199	(1.000)	162437	0.80000	
1 Cl1	188	9.970	10.009	(0.283)	399696	2.00000	2.08
\$ 2 Tetrachloro-m-xylene	244	12.497	12.520	(0.355)	108827	2.00000	2.00
3 Cl2	222	14.041	14.058	(0.399)	363006	2.00000	2.03
5 Cl3	256	17.735	17.736	(0.504)	300422	2.00000	2.05
6 Cl4	292	18.194	18.193	(0.517)	446180	4.00000	4.11
7 RTstd-BZ-104	326	20.819	20.837	(0.592)	665368	4.00000	4.03
8 Cl5	326	26.763	26.771	(0.760)	458530	4.00000	4.02
9 Cl6	360	27.066	27.056	(0.769)	482775	4.00000	3.99
10 RTstd-BZ-77	292	28.084	28.077	(0.798)	655860	4.00000	4.03
11 Cl7	394	29.174	29.158	(0.829)	895583	6.00000	6.31
12 Cl8	430	34.305	34.296	(0.975)	1083413	6.00000	6.04
14 RTstd-BZ-208	464	38.813	38.796	(1.103)	1358170	8.00000	7.99
15 Cl10	498	43.617	43.594	(1.239)	1217909	10.0000	10.2
\$ 16 Decachloro-13Cl2-Biphenyl	510	43.604	43.569	(1.239)	1200246	10.0000	10.2

Date : 12-MAR-2015 21:30

Client ID: iCAL-5

Sample Info: iCAL-5

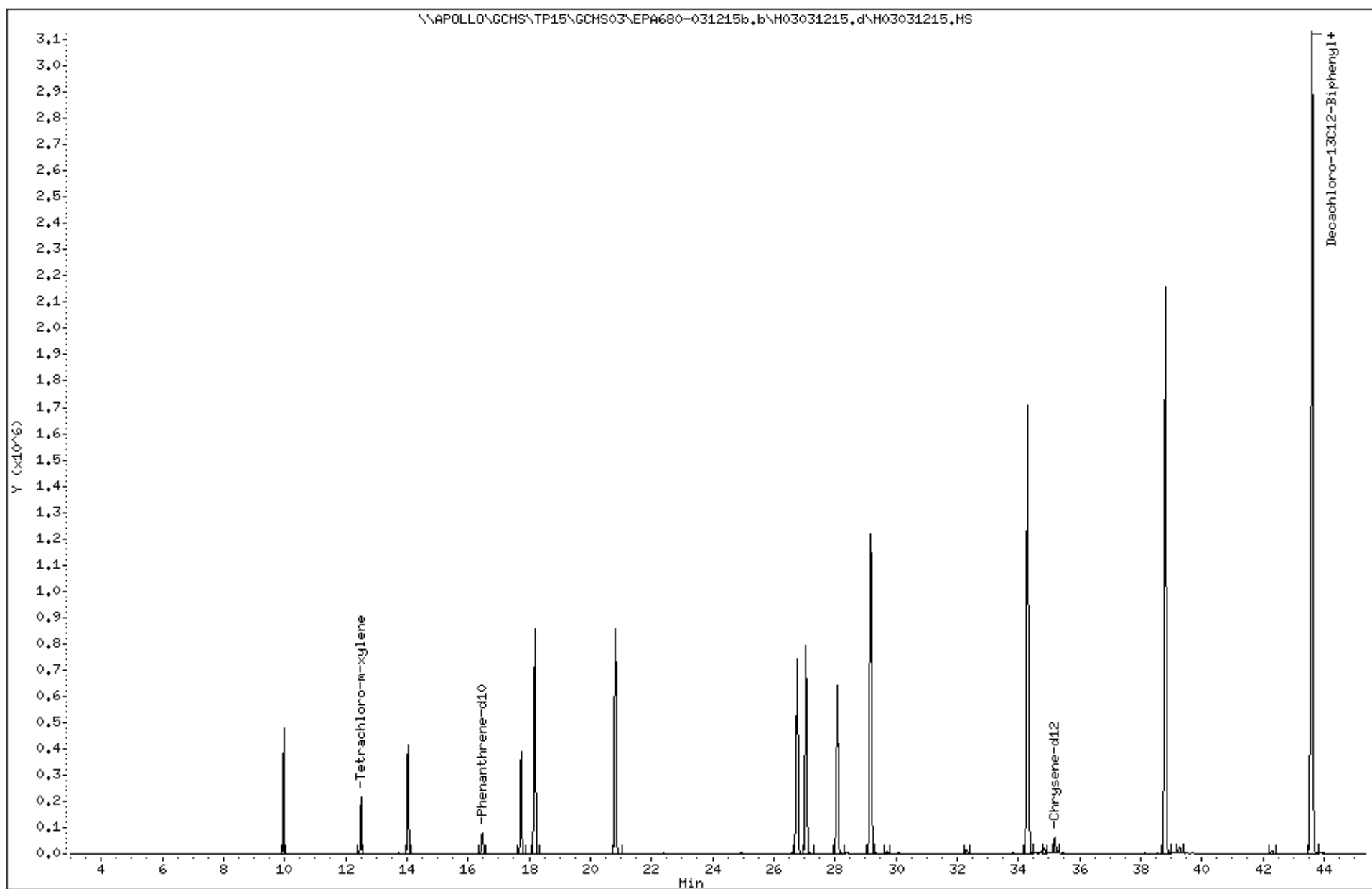
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\M03031214.d
 Lab Smp Id: iCAL-6 Client Smp ID: iCAL-6
 Inj Date : 12-MAR-2015 20:41
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : iCAL-6
 Misc Info : RMS M03031214
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\680low.m
 Meth Date : 13-Mar-2015 08:22 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 20:41 Cal File: M03031214.d
 Als bottle: 1 Calibration Sample, Level: 6
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

						AMOUNTS	
		QUANT	SIG				
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/uL)	ON-COL (ng/uL)
*****	----	----	-----	-----	-----	-----	-----
* 4 Phenanthrene-d10	188	16.483	16.483	(1.000)	149400	0.80000	
* 13 Chrysene-d12	240	35.211	35.199	(1.000)	167440	0.80000	
1 C11	188	9.958	10.009	(0.283)	588393	3.00000	3.04
\$ 2 Tetrachloro-m-xylene	244	12.496	12.520	(0.355)	166842	3.00000	2.97
3 C12	222	14.041	14.058	(0.399)	548590	3.00000	3.01
5 C13	256	17.741	17.736	(0.504)	455277	3.00000	3.04
6 C14	292	18.188	18.193	(0.517)	655307	6.00000	5.94
7 RTstd-BZ-104	326	20.826	20.837	(0.591)	1016411	6.00000	6.00
8 C15	326	26.774	26.771	(0.760)	703367	6.00000	6.00
9 C16	360	27.064	27.056	(0.769)	763408	6.00000	6.11
10 RTstd-BZ-77	292	28.093	28.077	(0.798)	1005436	6.00000	6.01
11 C17	394	29.193	29.158	(0.829)	1267379	9.00000	8.90
12 C18	430	34.319	34.296	(0.975)	1633763	9.00000	8.86
14 RTstd-BZ-208	464	38.820	38.796	(1.103)	2111334	12.0000	12.0
15 C110	498	43.641	43.594	(1.239)	1841348	15.0000	15.0
\$ 16 Decachloro-13C12-Biphenyl	510	43.616	43.569	(1.239)	1765724	15.0000	15.0

Date : 12-MAR-2015 20:41

Client ID: iCAL-6

Sample Info: iCAL-6

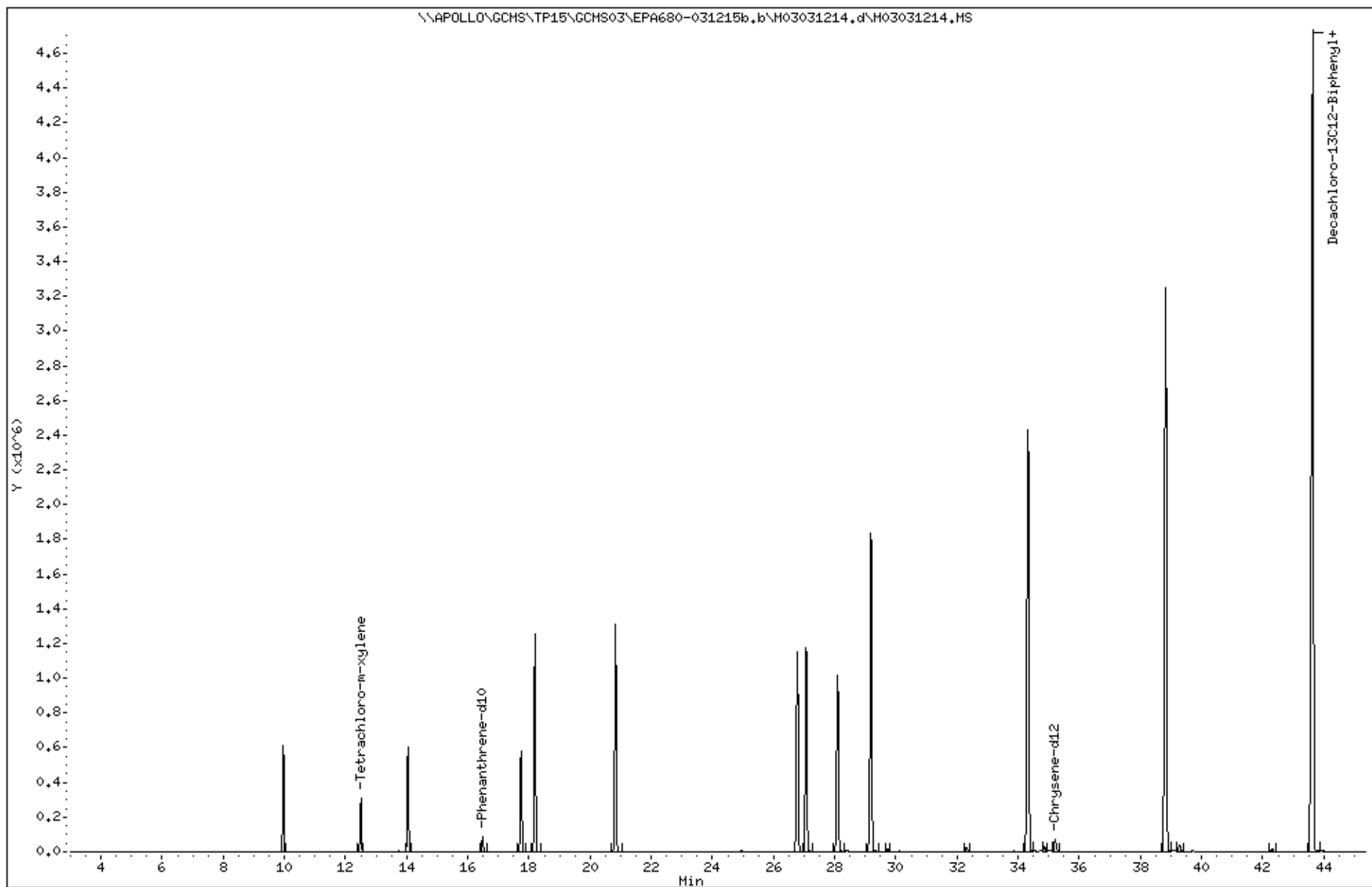
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCHS03.i

Operator: RMS

Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\M03031213.d
 Lab Smp Id: iCAL-7 Client Smp ID: iCAL-7
 Inj Date : 12-MAR-2015 19:52
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : iCAL-7
 Misc Info : RMS M03031213
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\680low.m
 Meth Date : 13-Mar-2015 08:22 roys Quant Type: ISTD
 Cal Date : 12-MAR-2015 19:52 Cal File: M03031213.d
 Als bottle: 1 Calibration Sample, Level: 7
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/uL)	ON-COL (ng/uL)
*****	----		----	----	-----	-----	-----	-----	-----
* 4 Phenanthrene-d10	188		16.491	16.483	(1.000)	148762	0.80000		
* 13 Chrysene-d12	240		35.201	35.199	(1.000)	170731	0.80000		
1 C11	188		10.011	10.009	(0.284)	973850	5.00000	5.00	
\$ 2 Tetrachloro-m-xylene	244		12.528	12.520	(0.356)	288607	5.00000	5.00	
3 C12	222		14.060	14.058	(0.399)	926453	5.00000	5.00	
5 C13	256		17.758	17.736	(0.504)	752762	5.00000	5.00	
6 C14	292		18.205	18.193	(0.517)	1137048	10.0000	10.0	
7 RTstd-BZ-104	326		20.840	20.837	(0.592)	1727490	10.0000	10.0	
8 C15	326		26.797	26.771	(0.761)	1197217	10.0000	10.0	
9 C16	360		27.073	27.056	(0.769)	1248912	10.0000	10.0	
10 RTstd-BZ-77	292		28.099	28.077	(0.798)	1702309	10.0000	10.0	
11 C17	394		29.195	29.158	(0.829)	2203911	15.0000	15.0	
12 C18	430		34.334	34.296	(0.975)	2864191	15.0000	15.0	
14 RTstd-BZ-208	464		38.826	38.796	(1.103)	3565928	20.0000	20.0	
15 C110	498		43.627	43.594	(1.239)	3114762	25.0000	25.0	

Date : 12-MAR-2015 19:52

Client ID: iCAL-7

Sample Info: iCAL-7

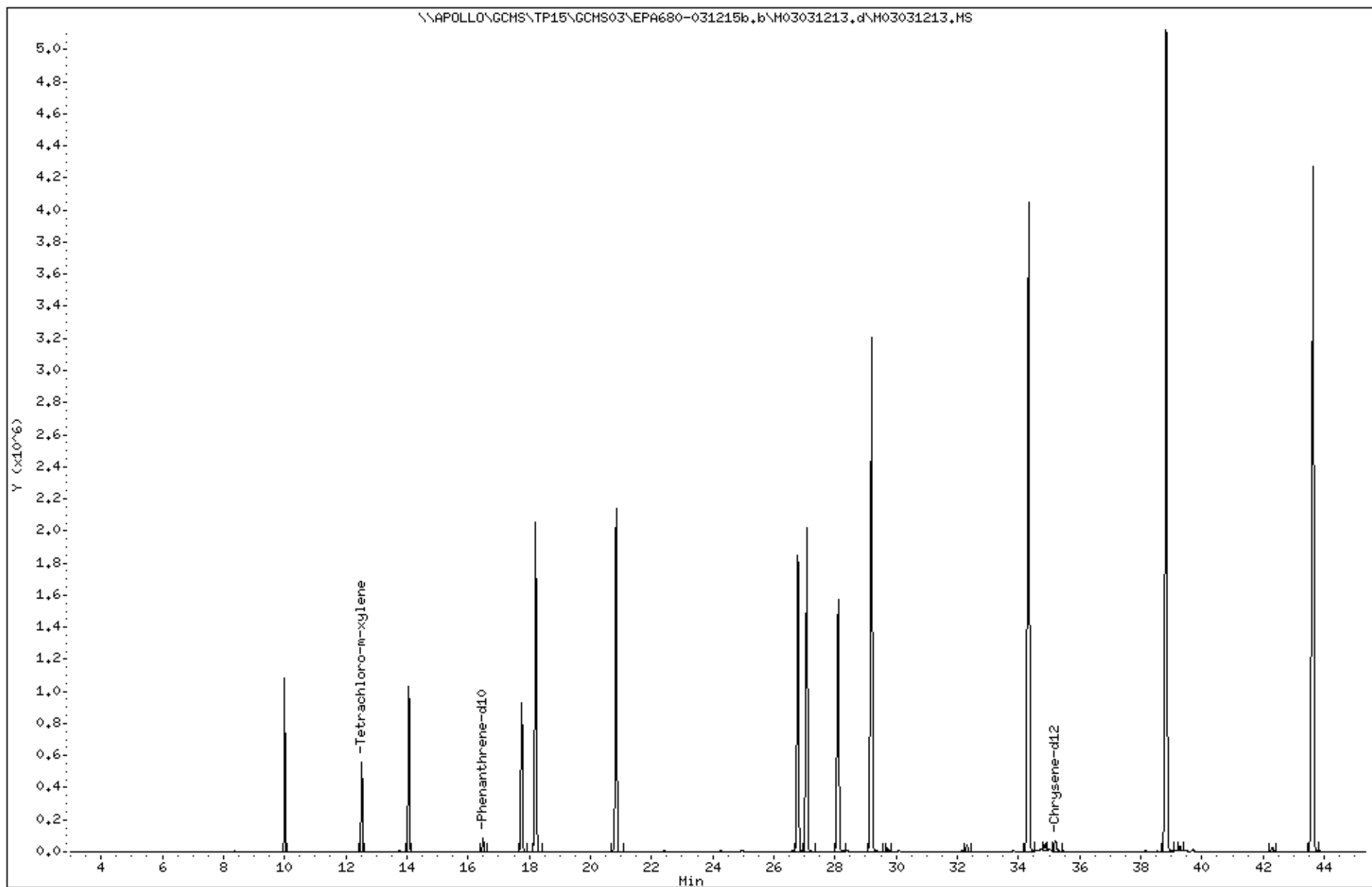
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCHS03.i

Operator: RMS

Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\M03031220.d
 Lab Smp Id: ICV3-0312B Client Smp ID: ICV3-0312B
 Inj Date : 13-MAR-2015 01:40
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : ICV3-0312B
 Misc Info : RMS M03031220
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\EPA680-031215b.b\680low.m
 Meth Date : 13-Mar-2015 08:22 roys Quant Type: ISTD
 Cal Date : 13-MAR-2015 00:49 Cal File: M03031219.d
 Als bottle: 1 QC Sample: LCS
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vo} * \text{Vi}) * \text{CpndVariable}$

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT	SIG						CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
	MASS						(ng/uL)	(ug/L)	
=====	=====		=====	=====	=====	=====	=====	=====	
* 4 Phenanthrene-d10	188		16.481	16.483	(1.000)	131080	0.80000		
* 13 Chrysene-d12	240		35.197	35.199	(1.000)	158617	0.80000		
1 Cl1	188		9.987	10.009	(0.284)	182703	0.93830	0.938	
\$ 2 Tetrachloro-m-xylene	244		12.510	12.520	(0.355)	52407	0.95641	0.956 (R)	
3 Cl2	222		14.057	14.058	(0.399)	174407	0.95002	0.950	
5 Cl3	256		17.748	17.736	(0.504)	142587	0.97060	0.971	
6 Cl4	292		18.195	18.193	(0.517)	201438	1.81649	1.82	
7 RTstd-BZ-104	326		20.835	20.837	(0.592)	316255	1.87600	1.88	
8 Cl5	326		26.765	26.771	(0.760)	214492	1.91729	1.92	
9 Cl6	360		27.054	27.056	(0.769)	222698	1.82398	1.82	
10 RTstd-BZ-77	292		28.074	28.077	(0.798)	303025	1.87793	1.88	
11 Cl7	394		29.169	29.158	(0.829)	421255	2.93812	2.94	
12 Cl8	430		34.307	34.296	(0.975)	503906	2.74005	2.74	
14 RTstd-BZ-208	464		38.810	38.796	(1.103)	652716	3.89226	3.89	
15 Cl10	498		43.592	43.594	(1.239)	562850	4.71817	4.72	
\$ 16 Decachloro-13Cl12-Biphenyl	510		43.579	43.569	(1.238)	536268	4.55105	4.55 (R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Date : 13-MAR-2015 01:40

Client ID: ICV3-0312B

Sample Info: ICV3-0312B

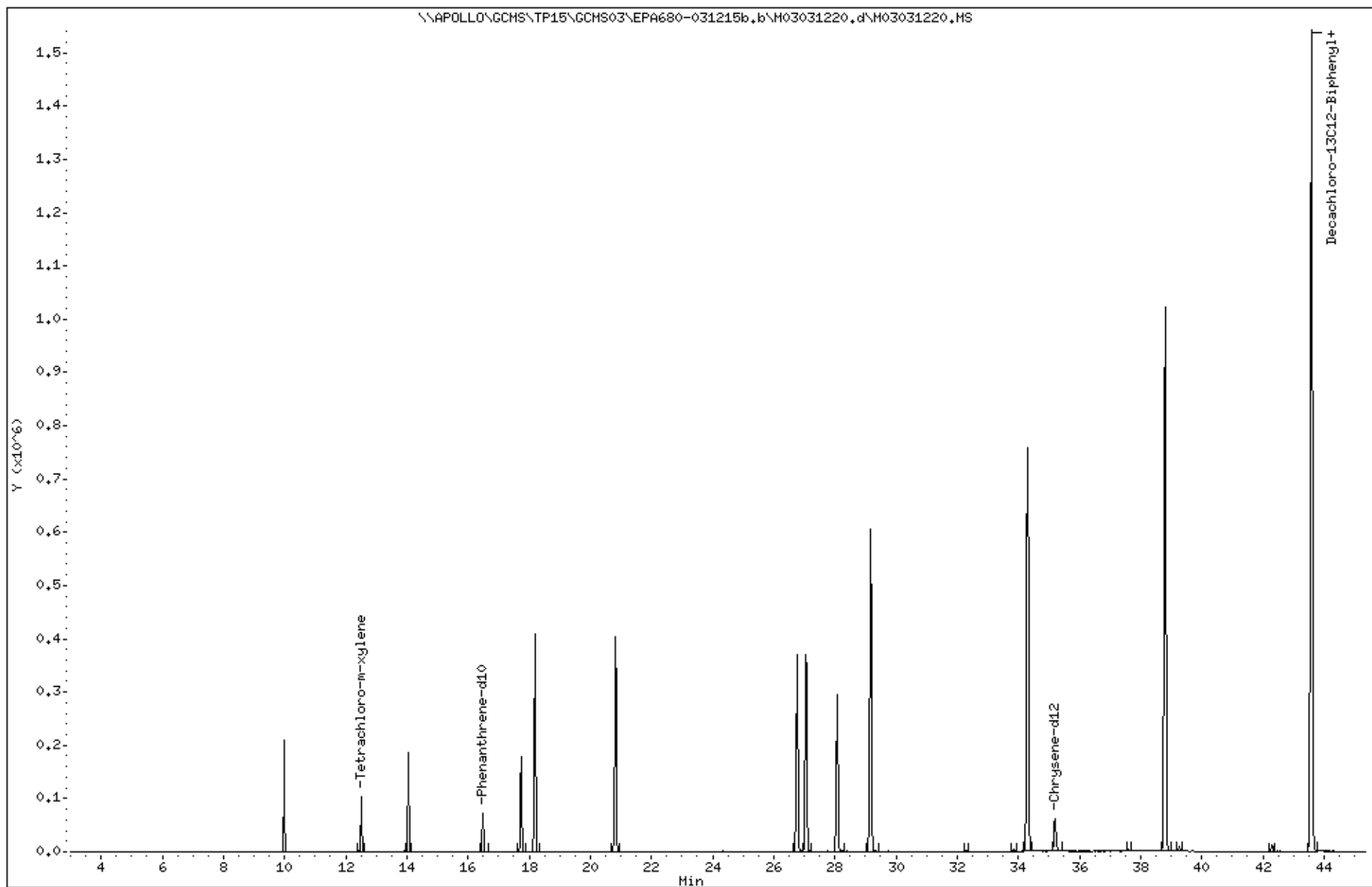
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCHS03.i

Operator: RMS

Column diameter: 0.25



Standards Summary Tables

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc.

SDG No.: N/A

Instrument ID: GCMS03
Lab File ID: M03091418
Client ID: CCV3-0914C
GC Column: DB-XLB

Calibration Date: 9/15/2015
Start Cal Date: 3/12/2015
End Cal Date: 3/13/2015

Time: 0:38
Time: 19:52
Time: 00:49

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\TRC-DS_LRF15090194\CCV3-0914C.xls\Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 Cl1	0.973	0.948	0.005	-2.57	20
\$ 2 Tetrachloro-m-xylene	0.275	0.275	0.005	-0.05	20
3 Cl2	0.913	0.907	0.005	-0.64	20
5 Cl3	0.733	0.763	0.005	4.22	20
6 Cl4	0.558	0.539	0.005	-3.29	20
8 Cl5	0.553	0.521	0.005	-5.75	20
9 Cl6	0.605	0.539	0.005	-11.0	20
11 Cl7	0.716	0.712	0.005	-0.60	20
13 Cl8	0.916	0.764	0.005	-16.6	20
17 Cl10	0.597	0.553	0.005	-7.32	20
\$ 13C-DCBP	0.592	0.523	0.005	-11.6	20

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\M03091418.d
 Lab Smp Id: CCV3-0914C Client Smp ID: CCV3-0914C
 Inj Date : 15-SEP-2015 00:38
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : CCV3-0914C
 Misc Info : RMS M03091418
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\680low.m
 Meth Date : 15-Sep-2015 11:08 roys Quant Type: ISTD
 Cal Date : 13-MAR-2015 00:49 Cal File: M03031219.d
 Als bottle: 1 Continuing Calibration Sample
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

							AMOUNTS	
QUANT SIG							CAL-AMT	ON-COL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ng/uL)	(ng/uL)
=====		=====	=====	=====	=====	=====	=====	=====
*	4 Phenanthrene-d10	188	16.525	16.509	(1.000)	138730	0.80000	
*	13 Chrysene-d12	240	35.253	35.231	(1.000)	166897	0.80000	
	1 Cl1	188	10.011	10.001	(0.284)	200844	1.00000	0.980
\$	2 Tetrachloro-m-xylene	244	12.553	12.528	(0.356)	57790	1.00000	1.00
	3 Cl2	222	14.090	14.070	(0.400)	191111	1.00000	0.989
	5 Cl3	256	17.780	17.763	(0.504)	160601	1.00000	1.04
	6 Cl4	292	18.239	18.221	(0.517)	229221	2.00000	1.96
	7 RTstd-BZ-104	326	20.866	20.844	(0.592)	345968	2.00000	1.95
	8 Cl5	326	26.815	26.802	(0.761)	224361	2.00000	1.91
	9 Cl6	360	27.105	27.080	(0.769)	232899	2.00000	1.81
	10 RTstd-BZ-77	292	28.131	28.117	(0.798)	340037	2.00000	2.00
	11 Cl7	394	29.212	29.186	(0.829)	454904	3.00000	3.02
	12 Cl8	430	34.345	34.331	(0.974)	483941	3.00000	2.50
	14 RTstd-BZ-208	464	38.846	38.822	(1.102)	611909	4.00000	3.47
	15 Cl10	498	43.649	43.622	(1.238)	587362	5.00000	4.68
\$	16 Decachloro-13Cl2-Biphenyl	510	43.624	43.610	(1.237)	546029	5.00000	4.40

Date : 15-SEP-2015 00:38

Client ID: CCV3-0914C

Sample Info: CCV3-0914C

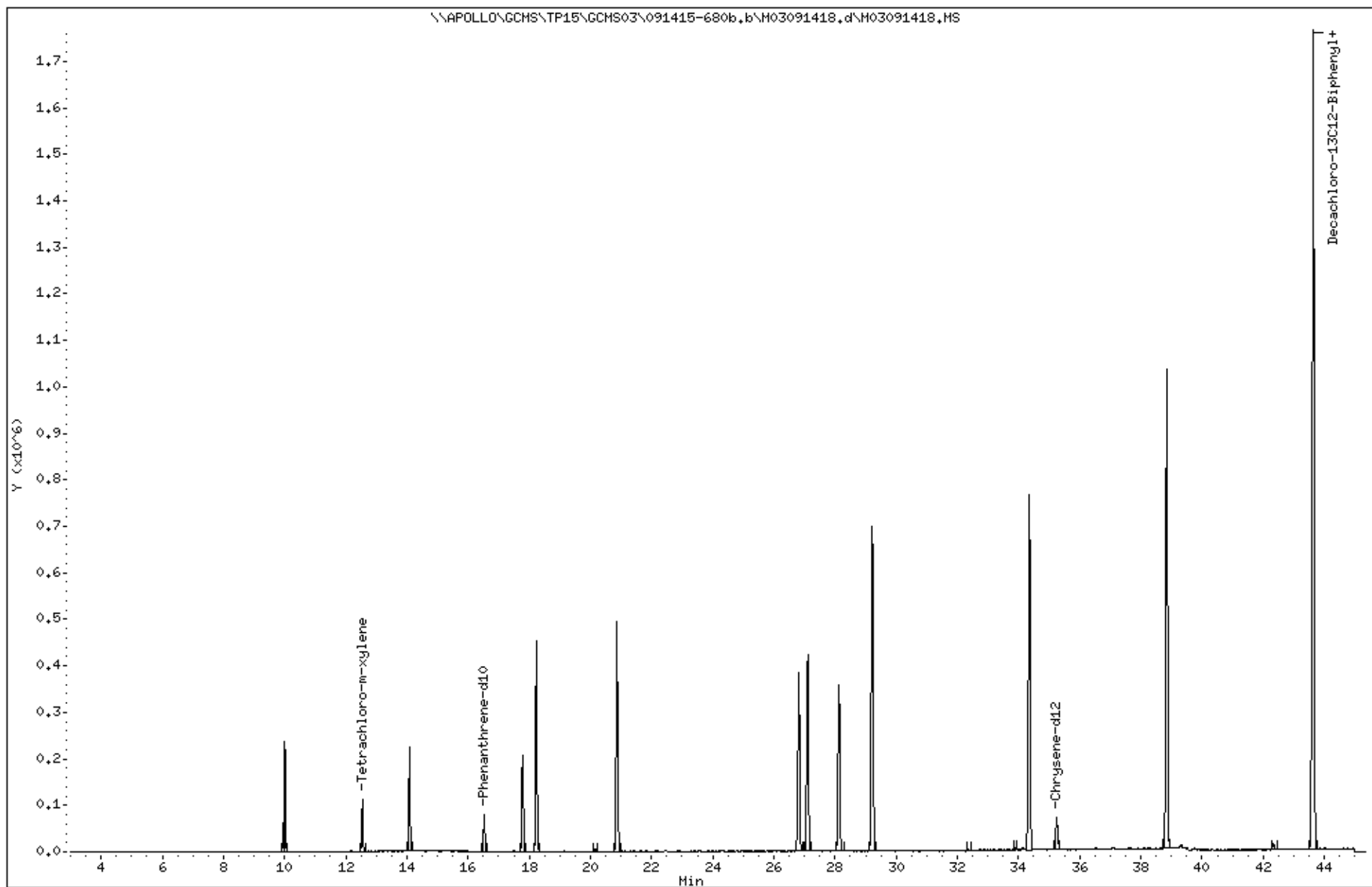
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091418"		"M03091418"		"M03091418"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.017	202830	10.017	67442				
14.088	7667	16.525	1645				
16.529	139791						
17.787	30828						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091418"		"M03091418"		"M03091418"						"M03091418"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
14.088	194016	14.089	137995							10.017	202830
17.769	2034	18.240	20748							14.088	7667
17.793	3261	28.114	15944							16.529	139791
18.233	107010									17.787	30828
20.849	1890										
26.809	3600										
27.109	4359										
28.132	88543										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091418"		"M03091418"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.784	163320	17.786	158413		
18.237	20564	18.233	19483		
20.866	127053	20.868	44272		
26.814	126625	26.811	41529		
27.105	2047	28.138	2950		
27.130	1345	29.239	1663		
28.109	2574				
28.141	3197				
29.192	5663				
29.213	6121				
29.237	5698				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091418"		"M03091418"				"M03091418"		"M03091418"		"M03091418"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
17.784	163320	17.786	158413			10.017	202830	20.867	213473	20.868	340352
18.237	20564	18.233	19483			14.088	7667	26.812	147430	26.816	223052
20.866	127053	20.868	44272			16.529	139791	27.102	6234	27.104	14965
26.814	126625	26.811	41529			17.787	30828	27.130	2394	29.222	121182
27.105	2047	28.138	2950					29.214	192454	34.318	1330
27.130	1345	29.239	1663					34.345	3064	34.347	1834
28.109	2574							34.374	2215	38.832	10772
28.141	3197							38.842	61283	38.859	11860
29.192	5663										
29.213	6121										
29.237	5698										

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03091418"		"M03091418"					
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				18.230	175399	18.238	230742				
				20.876	7231	20.854	3890				
				26.803	11619	20.879	4787				
				26.851	1643	26.814	17289				
				27.103	128439	27.105	61354				
				28.125	254903	28.129	336036				
				29.198	4832	34.344	5917				
				29.227	3099	34.380	1897				
				34.326	10210						
				34.363	27204						
				38.814	1459						

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03091418"		"M03091418"				"M03091418"		"M03091418"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>		<u>m/z 360</u>	
18.238	230742	18.230	175399			14.088	194016	27.102	230417
20.854	3890	20.876	7231			17.769	2034	29.201	6568
20.879	4787	26.803	11619			17.793	3261	34.349	146493
26.814	17289	26.851	1643			18.233	107010	38.817	1776
27.105	61354	27.103	128439			20.849	1890	38.848	2385
28.129	336036	28.125	254903			26.809	3600	38.871	1855
34.344	5917	29.198	4832			27.109	4359	43.637	35264
34.380	1897	29.227	3099			28.132	88543		
		34.326	10210						
		34.363	27204						
		38.814	1459						

Extracted Ion Current Profiles

Tetrachlorobiphenyls				
	"M03091418"		"M03091418"	
m/z 288	m/z 324	m/z 326	m/z 328	m/z 289
	20.867	213473	20.868	340352
	26.812	147430	26.816	223052
	27.102	6234	27.104	14965
	27.130	2394	29.222	121182
	29.214	192454	34.318	1330
	34.345	3064	34.347	1834
	34.374	2215	38.832	10772
	38.842	61283	38.859	11860

Extracted Ion Current Profiles

Pentachlorobiphenyls							
"M03091418"		"M03091418"		"M03091418"		"M03091418"	
<u>m/z 326</u>		<u>m/z 324</u>		<u>m/z 254</u>		<u>m/z 256</u>	
20.868	340352	20.867	213473			17.784	163320
26.816	223052	26.812	147430			18.237	20564
27.104	14965	27.102	6234			20.866	127053
29.222	121182	27.130	2394			26.814	126625
34.318	1330	29.214	192454			27.105	2047
34.347	1834	34.345	3064			27.130	1345
38.832	10772	34.374	2215			28.109	2574
38.859	11860	38.842	61283			28.141	3197
						29.192	5663
						29.213	6121
						29.237	5698

Pentachlorobiphenyls

CCV3-0914C.xls

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091418"		"M03091418"		"M03091418"		"M03091418"	
<u>m/z 360</u>		<u>m/z 362</u>		<u>m/z 288</u>		<u>m/z 290</u>	
27.102	230417	27.097	192281			18.230	175399
29.201	6568	29.202	2840			20.876	7231
34.349	146493	29.223	1833			26.803	11619
38.817	1776	29.248	1432			26.851	1643
38.848	2385	34.336	28692			27.103	128439
38.871	1855	34.357	30750			28.125	254903
43.637	35264	38.838	2102			29.198	4832
		43.616	2275			29.227	3099
		43.640	3326			34.326	10210
		43.663	3928			34.363	27204
						38.814	1459

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091418"				"M03091418"	"M03091418"		
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
33.891	2228			29.215	456782	29.217	438629
34.348	490291			34.353	5166	34.331	2607
38.849	8714			38.839	196841	34.365	1535
43.648	128317			42.342	3058	38.810	17634
				43.651	4445	38.855	82554
						42.343	1297

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091418"		"M03091418"		"M03091418"		"M03091418"	
<u>m/z 394</u>		<u>m/z 396</u>		<u>m/z 322</u>		<u>m/z 324</u>	
29.215	456782	29.217	438629			20.867	213473
34.353	5166	34.331	2607			26.812	147430
38.839	196841	34.365	1535			27.102	6234
42.342	3058	38.810	17634			27.130	2394
43.651	4445	38.855	82554			29.214	192454
		42.343	1297			34.345	3064
						34.374	2215
						38.842	61283
						20.868	340352
						26.816	223052
						27.104	14965
						29.222	121182
						34.318	1330
						34.347	1834
						38.832	10772
						38.859	11860

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091418"		"M03091418"		"M03091418"		"M03091418"	
m/z 464		m/z 466		m/z 390		m/z 428	
38.848	615996	38.846	481022			33.879	1388
42.342	6886	42.345	5654			34.338	214561
		43.652	2013			34.356	247213
						38.863	3029
						43.643	188662
						33.891	2228
						34.348	490291
						38.849	8714
						43.648	128317

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091418"		"M03091418"		"M03091418"	
m/z 430		m/z 428		m/z 360	
33.891	2228	33.879	1388	27.102	230417
34.348	490291	34.338	461774(M)	29.201	6568
38.849	8714	34.356	247213	34.349	146493
43.648	128317	38.863	3029	38.817	1776
		43.643	188662	38.848	2385
				38.871	1855
				43.637	35264

Extracted Ion Current Profiles

Octachlorobiphenyls			
"M03091418"		"M03091418"	
m/z 464		m/z 466	
38.848	615996	38.846	481022
42.342	6886	42.345	5654
		43.652	2013

Extracted Ion Current Profiles

Nonachlorobiphenyls					
"M03091418"		"M03091418"		"M03091418"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>	
38.848	615996	38.846	481022	29.215	456782
42.342	6886	42.345	5654	34.353	5166
		43.652	2013	38.839	196841
				42.342	3058
				43.651	4445

Extracted Ion Current Profiles

Decachlorobiphenyl							
"M03091418"		"M03091418"		"M03091418"		"M03091418"	
<u>m/z 498</u>		<u>m/z 500</u>		<u>m/z 424</u>		<u>m/z 426</u>	
43.644	591536	43.641	503907			33.879	1388
						34.338	214561
						34.356	247213
						38.863	3029
						43.643	188662
						33.891	2228
						34.348	490291
						38.849	8714
						43.648	128317

Extracted Ion Current Profiles

TCMX			
"M03091418"		"M03091418"	
<u>m/z 244</u>		<u>m/z 242</u>	

12.548	58772	12.545	46388
		35.245	1653
		38.867	2109

TCMX

424
426
428
430
498
500

chrysene -
d₁₂

Chrysene-d12			
"M03091418"		"M03091418"	
<u>m/z 240</u>		<u>m/z 241</u>	

29.192	1353	12.545	3773
29.229	2594	34.338	5111
34.348	2716	35.248	34968
35.254	171137	38.846	1656
35.360	1312		
38.834	2595		
38.867	1291		

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091418"		"M03091418"	
<u>m/z 188</u>		<u>m/z 189</u>	

10.017	202830	10.013	29466
14.088	7667	14.088	4222
16.529	139791	16.526	21943
17.787	30828	17.775	4116

Extracted Ion Current Profiles

Deca C13				
Deca C13	m/z 510	m/z 512		
510	38.853	1267	43.626	477016
512	43.628	559510		

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc.

SDG No.: N/A

Instrument ID: GCMS03
 Lab File ID: M03091430
 Client ID: CCV3-0914D
 GC Column: DB-XLB

Calibration Date: 9/15/2015
 Start Cal Date: 3/12/2015
 End Cal Date: 3/13/2015

Time: 10:25
 Time: 19:52
 Time: 00:49

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\TRC-DS_LRF15090194\CCV3-0914C.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 Cl1	0.973	0.972	0.005	-0.08	20
\$ 2 Tetrachloro-m-xylene	0.275	0.298	0.005	8.43	20
3 Cl2	0.913	0.930	0.005	1.84	20
5 Cl3	0.733	0.748	0.005	2.08	20
6 Cl4	0.558	0.541	0.005	-2.99	20
8 Cl5	0.553	0.581	0.005	4.96	20
9 Cl6	0.605	0.559	0.005	-7.61	20
11 Cl7	0.716	0.753	0.005	5.11	20
13 Cl8	0.916	0.802	0.005	-12.4	20
17 Cl10	0.597	0.575	0.005	-3.65	20
\$ 13C-DCBP	0.592	0.571	0.005	-3.50	20

Pace Analytical - NY Lab

PCB Report EPA 680
 Data file : \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\M03091430.d
 Lab Smp Id: CCV3-0914D Client Smp ID: CCV3-0914D
 Inj Date : 15-SEP-2015 10:25
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : CCV3-0914D
 Misc Info : RMS M03091430
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\680low.m
 Meth Date : 15-Sep-2015 11:08 roys Quant Type: ISTD
 Cal Date : 13-MAR-2015 00:49 Cal File: M03031219.d
 Als bottle: 1 Continuing Calibration Sample
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT	SIG						AMOUNTS	
			RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL	
	MASS						(ng/uL)	(ng/uL)	
=====	=====		=====	=====	=====	=====	=====	=====	
* 4 Phenanthrene-d10	188		16.509	16.509	(1.000)	146247	0.80000		
* 13 Chrysene-d12	240		35.231	35.231	(1.000)	169381	0.80000		
1 Cl1	188		10.001	10.001	(0.284)	208676	1.00000	1.00	
\$ 2 Tetrachloro-m-xylene	244		12.528	12.528	(0.356)	64062	1.00000	1.09	
3 Cl2	222		14.070	14.070	(0.399)	197940	1.00000	1.01	
5 Cl3	256		17.763	17.763	(0.504)	158639	1.00000	1.01	
6 Cl4	292		18.221	18.221	(0.517)	230146	2.00000	1.94	
7 RTstd-BZ-104	326		20.844	20.844	(0.592)	366046	2.00000	2.03	
8 Cl5	326		26.802	26.802	(0.761)	252097	2.00000	2.11	
9 Cl6	360		27.080	27.080	(0.769)	244055	2.00000	1.87	
10 RTstd-BZ-77	292		28.117	28.117	(0.798)	370016	2.00000	2.15	
11 Cl7	394		29.186	29.186	(0.828)	491602	3.00000	3.21	
12 Cl8	430		34.331	34.331	(0.974)	517905	3.00000	2.64	
14 RTstd-BZ-208	464		38.822	38.822	(1.102)	652937	4.00000	3.65	
15 Cl10	498		43.622	43.622	(1.238)	616465	5.00000	4.84	
\$ 16 Decachloro-13Cl2-Biphenyl	510		43.610	43.610	(1.238)	605213	5.00000	4.81	

Date : 15-SEP-2015 10:25

Client ID: CCV3-0914D

Sample Info: CCV3-0914D

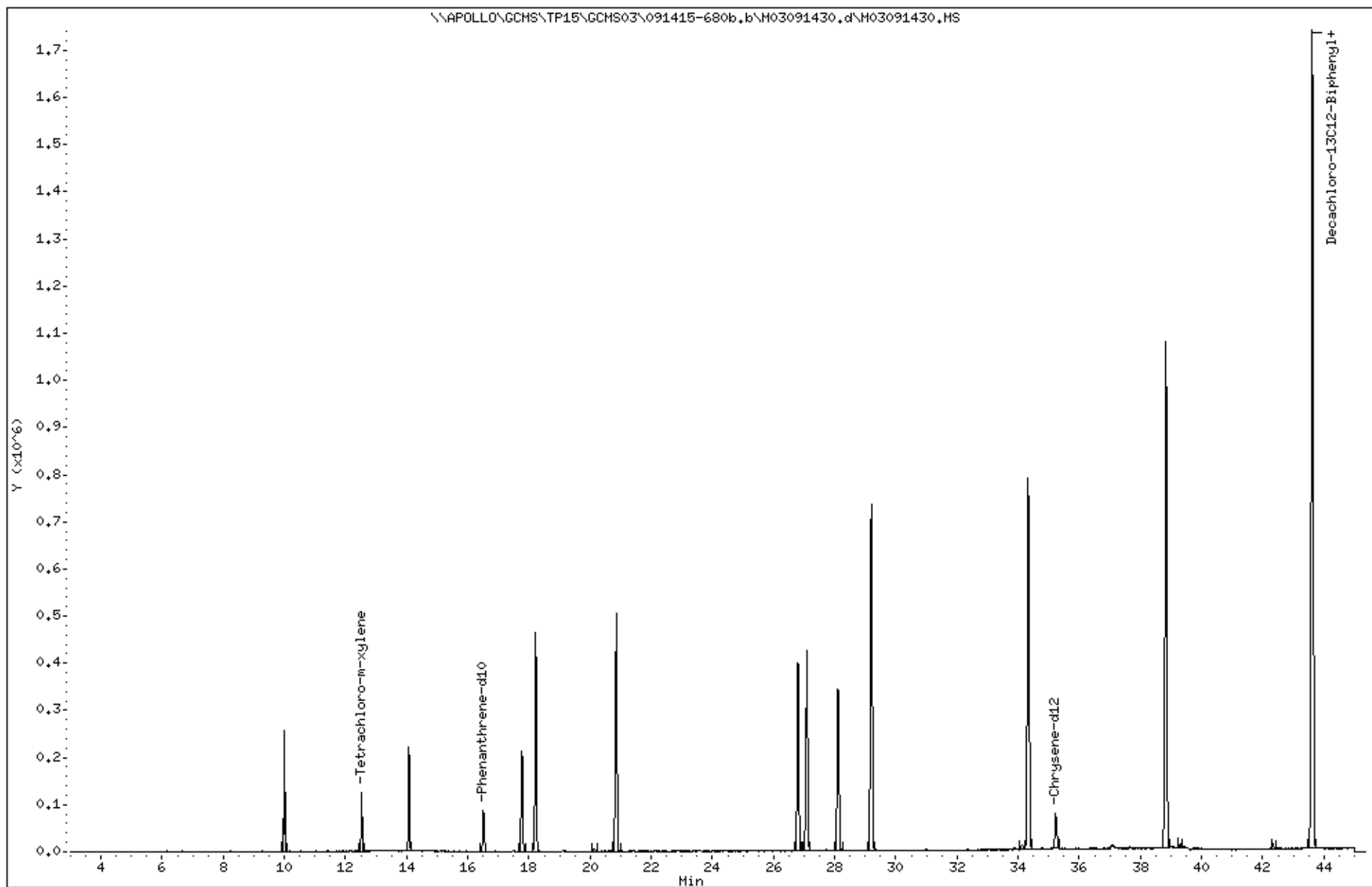
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091430"		"M03091430"		"M03091430"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.003	210696	10.003	67921				
14.059	2837	16.510	2004				
14.081	3281						
16.512	147699						
17.767	34009						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091430"		"M03091430"		"M03091430"						"M03091430"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
14.071	201422	14.072	131090							10.003	210696
17.763	6619	17.756	1751							14.059	2837
18.220	106584	18.213	18918							14.081	3281
20.856	2471	28.103	16911							16.512	147699
27.081	2790									17.767	34009
27.104	2311										
28.116	86181										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091430"		"M03091430"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.765	162023	17.771	168728		
18.219	23368	18.219	12290		
20.850	137528	18.246	5126		
26.798	131262	20.846	44131		
27.055	1493	26.799	45148		
27.084	2735	29.168	1828		
28.086	2197	29.211	2007		
28.124	4954				
29.202	22791				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091430"		"M03091430"				"M03091430"		"M03091430"		"M03091430"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
17.765	162023	17.771	168728			10.003	210696	20.854	218219	20.850	364351
18.219	23368	18.219	12290			14.059	2837	26.794	152455	26.798	251589
20.850	137528	18.246	5126			14.081	3281	27.059	2072	27.072	11042
26.798	131262	20.846	44131			16.512	147699	27.082	5543	29.198	123269
27.055	1493	26.799	45148			17.767	34009	29.198	192414	34.310	2055
27.084	2735	29.168	1828					34.339	5665	34.329	1736
28.086	2197	29.211	2007					34.367	1276	38.816	7766
28.124	4954							38.829	61040	38.833	9656
29.202	22791										

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03091430"		"M03091430"					
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				18.213	175722	18.220	234444				
				20.858	9645	20.844	6355				
				26.769	5347	20.869	3800				
				26.791	5570	26.799	18655				
				26.814	7094	27.072	30323				
				27.074	60691	27.091	36212				
				27.090	69221	28.114	362018				
				28.109	278449	34.312	3255				
				29.176	3755	34.330	2833				
				29.199	7638						
				34.295	6926						
				34.332	20980						
				34.367	8066						

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03091430"		"M03091430"		"M03091430"		"M03091430"		"M03091430"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>		<u>m/z 360</u>	
18.220	234444	18.213	175722			14.071	201422	27.080	242214
20.844	6355	20.858	9645			17.763	6619	29.185	4516
20.869	3800	26.769	5347			18.220	106584	29.214	3234
26.799	18655	26.791	5570			20.856	2471	34.336	153452
27.072	30323	26.814	7094			27.081	2790	38.799	2073
27.091	36212	27.074	60691			27.104	2311	38.827	3313
28.114	362018	27.090	69221			28.116	86181	43.613	16698
34.312	3255	28.109	278449					43.636	19241
34.330	2833	29.176	3755						43.648
		29.199	7638						
		34.295	6926						
		34.332	20980						
		34.367	8066						

Extracted Ion Current Profiles

Tetrachlorobiphenyls				
	"M03091430"		"M03091430"	
m/z 288	m/z 324	m/z 326	m/z 328	m/z 289
	20.854	218219	20.850	364351
	26.794	152455	26.798	251589
	27.059	2072	27.072	11042
	27.082	5543	29.198	123269
	29.198	192414	34.310	2055
	34.339	5665	34.329	1736
	34.367	1276	38.816	7766
	38.829	61040	38.833	9656

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03091430"		"M03091430"				"M03091430"		"M03091430"	
<u>m/z 326</u>		<u>m/z 324</u>		<u>m/z 254</u>		<u>m/z 256</u>		<u>m/z 258</u>	
20.850	364351	20.854	218219			17.765	162023	17.771	168728
26.798	251589	26.794	152455			18.219	23368	18.219	12290
27.072	11042	27.059	2072			20.850	137528	18.246	5126
29.198	123269	27.082	5543			26.798	131262	20.846	44131
34.310	2055	29.198	192414			27.055	1493	26.799	45148
34.329	1736	34.339	5665			27.084	2735	29.168	1828
38.816	7766	34.367	1276			28.086	2197	29.211	2007
38.833	9656	38.829	61040			28.124	4954		
						29.202	22791		

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03091430"		"M03091430"				"M03091430"		"M03091430"	
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360	
29.193	489239	29.198	446506					27.080	242214
32.339	1957	34.331	3086					29.185	4516
34.317	3481	38.827	107231					29.214	3234
38.834	199781	43.620	2355					34.336	153452
42.324	2710							38.799	2073
43.610	2207							38.827	3313
43.638	2014							43.613	16698
								43.636	19241
								27.090	203147
								29.207	6109
								34.325	42176
								34.351	15956
								34.380	4624
								38.835	1269
								43.622	7097
								43.648	3561

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091430"		"M03091430"		"M03091430"		"M03091430"	
<u>m/z 360</u>		<u>m/z 362</u>		<u>m/z 288</u>		<u>m/z 290</u>	
27.080	242214	27.090	203147			18.213	175722
29.185	4516	29.207	6109			20.858	9645
29.214	3234	34.325	42176			26.769	5347
34.336	153452	34.351	15956			26.791	5570
38.799	2073	34.380	4624			26.814	7094
38.827	3313	38.835	1269			27.074	60691
43.613	16698	43.622	7097			27.090	69221
43.636	19241	43.648	3561			28.109	278449
						29.176	3755
						29.199	7638
						34.295	6926
						34.332	20980
						34.367	8066

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091430"				"M03091430"	"M03091430"		
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
33.869	2431			29.193	489239	29.198	446506
34.108	1592			32.339	1957	34.331	3086
34.141	1739			34.317	3481	38.827	107231
34.331	521304			38.834	199781	43.620	2355
37.060	1282			42.324	2710		
38.811	5489			43.610	2207		
38.847	1907			43.638	2014		
43.627	126207						

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091430"		"M03091430"		"M03091430"		"M03091430"	
<u>m/z 394</u>		<u>m/z 396</u>		<u>m/z 322</u>		<u>m/z 324</u>	
29.193	489239	29.198	446506			20.854	218219
32.339	1957	34.331	3086			26.794	152455
34.317	3481	38.827	107231			27.059	2072
38.834	199781	43.620	2355			27.082	5543
42.324	2710					29.198	192414
43.610	2207					34.339	5665
43.638	2014					34.367	1276
						38.829	61040
						20.850	364351
						26.798	251589
						27.072	11042
						29.198	123269
						34.310	2055
						34.329	1736
						38.816	7766
						38.833	9656

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091430"		"M03091430"		"M03091430"		"M03091430"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>		<u>m/z 428</u>	
38.825	646760	38.835	501223			33.864	1346
42.315	3080	42.326	3831			34.328	455260
42.337	3606	43.625	3213			38.789	1854
43.596	3992					38.828	3412
43.625	4126					38.845	7232
						43.633	186507
							33.869
							2431
							34.108
							1592
							34.141
							1739
							34.331
							521304
							37.060
							1282
							38.811
							5489
							38.847
							1907
							43.627
							126207

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091430"		"M03091430"		"M03091430"	
m/z 430		m/z 428		m/z 360	m/z 462
33.869	2431	33.864	1346	27.080	242214
34.108	1592	34.328	455260	29.185	4516
34.141	1739	38.789	1854	29.214	3234
34.331	521304	38.828	3412	34.336	153452
37.060	1282	38.845	7232	38.799	2073
38.811	5489	43.633	186507	38.827	3313
38.847	1907			43.613	16698
43.627	126207			43.636	19241

Extracted Ion Current Profiles

Octachlorobiphenyls			
"M03091430"		"M03091430"	
<u>m/z 464</u>		<u>m/z 466</u>	
38.825	646760	38.835	501223
42.315	3080	42.326	3831
42.337	3606	43.625	3213
43.596	3992		
43.625	4126		

Extracted Ion Current Profiles

Nonachlorobiphenyls					
"M03091430"		"M03091430"		"M03091430"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>	
38.825	646760	38.835	501223		
42.315	3080	42.326	3831		
42.337	3606	43.625	3213		
43.596	3992				
43.625	4126				
				29.193	489239
				32.339	1957
				34.317	3481
				38.834	199781
				42.324	2710
				43.610	2207
				43.638	2014

Extracted Ion Current Profiles

Decachlorobiphenyl							
"M03091430"		"M03091430"		"M03091430"		"M03091430"	
<u>m/z 498</u>		<u>m/z 500</u>		<u>m/z 424</u>		<u>m/z 426</u>	
43.626	622865	43.624	528936			33.864	1346
						34.328	455260
						38.789	1854
						38.828	3412
						38.845	7232
						43.633	186507
							33.869
							2431
							34.108
							1592
							34.141
							1739
							34.331
							521304
							37.060
							1282
							38.811
							5489
							38.847
							1907
							43.627
							126207

Extracted Ion Current Profiles

TCMX			
"M03091430"		"M03091430"	
m/z 244		m/z 242	

12.530	64574	12.531	47422	424
29.191	1550	29.200	1358	426
		34.340	1330	428
		35.209	2056	430
		35.244	1757	498
				500

TCMX

chrysene -
d₁₂

Chrysene-d12			
"M03091430"		"M03091430"	
m/z 240		m/z 241	

29.173	1461	12.520	1745
29.224	1649	12.542	2150
35.230	173340	29.173	1648
38.825	1383	29.198	1691
38.846	2035	34.348	2329
		35.212	11461
		35.233	36193(M)

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091430"		"M03091430"	
m/z 188		m/z 189	

10.003	210696	10.002	34151
14.059	2837	14.071	6398
14.081	3281	16.519	22080
16.512	147699	17.744	1372
17.767	34009	17.770	3463

Extracted Ion Current Profiles

Deca C13	
<u>m/z 510</u>	<u>m/z 512</u>
43.613 618530	43.620 508140
510	
512	

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc.

SDG No.: N/A

Instrument ID: GCMS03
Lab File ID: M03091503
Client ID: CCV3-0915A
GC Column: DB-XLB

Calibration Date: 9/15/2015
Start Cal Date: 3/12/2015
End Cal Date: 3/13/2015

Time: 13:42
Time: 19:52
Time: 00:49

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\TRC-DS_LRF15090194\CCV3-0914C.xls\Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 Cl1	0.973	0.995	0.005	2.22	20
\$ 2 Tetrachloro-m-xylene	0.275	0.301	0.005	9.56	20
3 Cl2	0.913	0.949	0.005	3.98	20
5 Cl3	0.733	0.750	0.005	2.40	20
6 Cl4	0.558	0.539	0.005	-3.42	20
8 Cl5	0.553	0.551	0.005	-0.30	20
9 Cl6	0.605	0.575	0.005	-4.93	20
11 Cl7	0.716	0.747	0.005	4.28	20
13 Cl8	0.916	0.795	0.005	-13.2	20
17 Cl10	0.597	0.577	0.005	-3.34	20
\$ 13C-DCBP	0.592	0.563	0.005	-4.81	20

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\M03091503.d
 Lab Smp Id: CCV3-0915A Client Smp ID: CCV3-0915A
 Inj Date : 15-SEP-2015 13:42
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : CCV3-0915A
 Misc Info : RMS M03091503
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\680low.m
 Meth Date : 16-Sep-2015 07:44 roys Quant Type: ISTD
 Cal Date : 13-MAR-2015 00:49 Cal File: M03031219.d
 Als bottle: 1 Continuing Calibration Sample
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT	SIG						AMOUNTS	
			RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL	
	MASS						(ng/uL)	(ng/uL)	
=====	=====		=====	=====	=====	=====	=====	=====	
* 4 Phenanthrene-d10	188		16.519	16.513	(1.000)	171406	0.80000		
* 13 Chrysene-d12	240		35.244	35.231	(1.000)	192612	0.80000		
1 Cl1	188		10.013	9.997	(0.284)	237157	1.00000	1.00	
\$ 2 Tetrachloro-m-xylene	244		12.540	12.526	(0.356)	72167	1.00000	1.08	
3 Cl2	222		14.074	14.071	(0.399)	227087	1.00000	1.02	
5 Cl3	256		17.771	17.769	(0.504)	180912	1.00000	1.01	
6 Cl4	292		18.232	18.217	(0.517)	257454	2.00000	1.91	
7 RTstd-BZ-104	326		20.861	20.859	(0.592)	404346	2.00000	1.98	
8 Cl5	326		26.801	26.798	(0.760)	272449	2.00000	2.01	
9 Cl6	360		27.092	27.076	(0.769)	281190	2.00000	1.90	
10 RTstd-BZ-77	292		28.119	28.117	(0.798)	393767	2.00000	2.01	
11 Cl7	394		29.202	29.190	(0.829)	540961	3.00000	3.11	
12 Cl8	430		34.335	34.343	(0.974)	581614	3.00000	2.60	
14 RTstd-BZ-208	464		38.837	38.831	(1.102)	719058	4.00000	3.53	
15 Cl10	498		43.639	43.624	(1.238)	698056	5.00000	4.82	
\$ 16 Decachloro-13Cl12-Biphenyl	510		43.626	43.624	(1.238)	673526	5.00000	4.71	

Date : 15-SEP-2015 13:42

Client ID: CCV3-0915A

Sample Info: CCV3-0915A

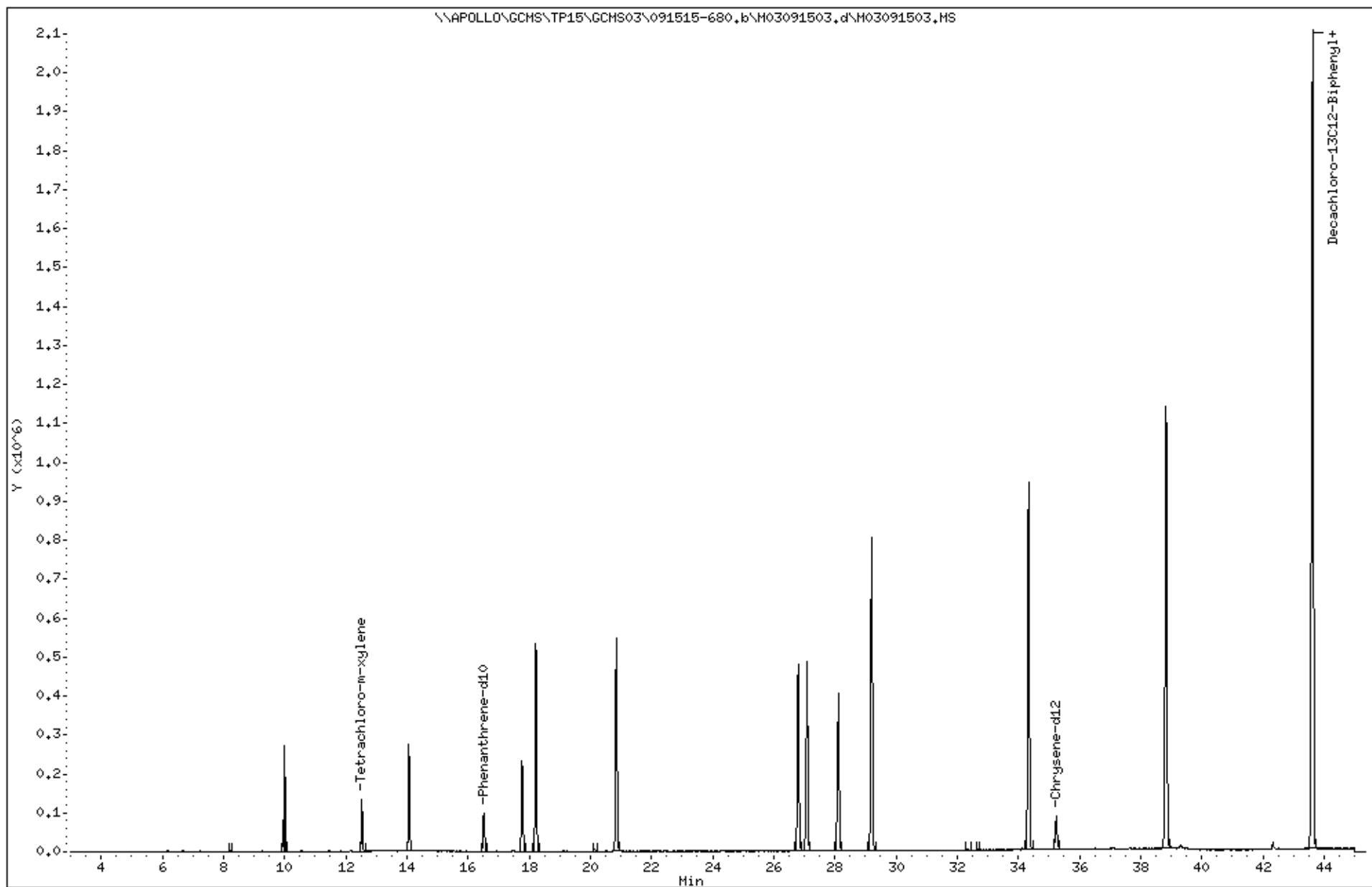
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091503"		"M03091503"		"M03091503"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.009	242063	10.007	84442				
14.075	6838	16.512	2787				
16.517	175800						
17.778	35211						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091503"		"M03091503"		"M03091503"						"M03091503"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
14.075	230973	14.074	149177							10.009	242063
17.776	6518	17.781	1815							14.075	6838
18.227	128623	18.229	23867							16.517	175800
20.872	2917	28.090	4321							17.778	35211
26.808	4030	28.119	13452								
27.071	2556										
27.103	4994										
28.119	97127										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091503"		"M03091503"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.772	182534	17.770	186572		
18.212	27324	18.218	17989		
20.860	146852	20.857	39948		
26.801	146394	20.885	11482		
27.105	5566	26.807	53509		
28.117	10920	28.114	2768		
29.192	13859	29.204	2942		
29.216	13277				
34.337	1447				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091503"		"M03091503"				"M03091503"		"M03091503"		"M03091503"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
17.772	182534	17.770	186572			10.009	242063	20.854	251498	20.860	399730
18.212	27324	18.218	17989			14.075	6838	26.793	170995	26.802	268390
20.860	146852	20.857	39948			16.517	175800	27.077	5406	27.089	13919
26.801	146394	20.885	11482			17.778	35211	27.104	3837	29.201	151193
27.105	5566	26.807	53509					29.192	114576	34.300	1713
28.117	10920	28.114	2768					29.216	111572	34.334	1493
29.192	13859	29.204	2942					34.335	7585	34.373	2005
29.216	13277							34.359	4587	38.814	8348
34.337	1447							38.849	68627	38.837	4734
										38.861	5506

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03091503"		"M03091503"					
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				18.225	204109	18.226	262139				
				20.827	2861	20.861	8479				
				20.853	7462	26.802	18768				
				26.793	10208	27.082	72344				
				26.814	8285	28.115	389229				
				27.088	150177	29.179	1431				
				28.117	299212	29.215	2953				
				29.174	2466	34.311	2590				
				29.204	3012	34.345	6472				
				29.227	4709	34.379	1934				
				34.325	27133						
				34.359	10655						
				34.396	1635						

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03091503"		"M03091503"				"M03091503"		"M03091503"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>		<u>m/z 360</u>	
18.226	262139	18.225	204109			14.075	230973	27.093	279912
20.861	8479	20.827	2861			17.776	6518	29.202	5531
26.802	18768	20.853	7462			18.227	128623	29.227	1853
27.082	72344	26.793	10208			20.872	2917	34.347	168586
28.115	389229	26.814	8285			26.808	4030	38.828	5429
29.179	1431	27.088	150177			27.071	2556	43.627	27062
29.215	2953	28.117	299212			27.103	4994	43.652	18364
34.311	2590	29.174	2466			28.119	97127		
34.345	6472	29.204	3012					43.663	2800
34.379	1934	29.227	4709						
		34.325	27133						
		34.359	10655						
		34.396	1635						

Extracted Ion Current Profiles

Tetrachlorobiphenyls				
	"M03091503"		"M03091503"	
m/z 288	m/z 324	m/z 326	m/z 328	m/z 289
	20.854	251498	20.860	399730
	26.793	170995	26.802	268390
	27.077	5406	27.089	13919
	27.104	3837	29.201	151193
	29.192	114576	34.300	1713
	29.216	111572	34.334	1493
	34.335	7585	34.373	2005
	34.359	4587	38.814	8348
	38.849	68627	38.837	4734
			38.861	5506

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03091503"		"M03091503"			"M03091503"		"M03091503"		"M03091503"
m/z 326		m/z 324		m/z 254	m/z 256		m/z 258		m/z 392
20.860	399730	20.854	251498		17.772	182534	17.770	186572	
26.802	268390	26.793	170995		18.212	27324	18.218	17989	
27.089	13919	27.077	5406		20.860	146852	20.857	39948	
29.201	151193	27.104	3837		26.801	146394	20.885	11482	
34.300	1713	29.192	114576		27.105	5566	26.807	53509	
34.334	1493	29.216	111572		28.117	10920	28.114	2768	
34.373	2005	34.335	7585		29.192	13859	29.204	2942	
38.814	8348	34.359	4587		29.216	13277			
38.837	4734	38.849	68627		34.337	1447			
38.861	5506								

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03091503"		"M03091503"				"M03091503"		"M03091503"	
m/z 394		m/z 396		m/z 398		m/z 360		m/z 362	
29.201	545135	29.211	548112			27.093	279912	27.090	234614
34.313	2403	32.341	1813			29.202	5531	29.179	2873
34.336	4973	34.335	3471			29.227	1853	29.225	3357
38.834	217734	34.359	1473			34.347	168586	34.326	33303
42.337	2741	38.830	110373			38.828	5429	34.345	37008
43.607	3252	38.886	9584			43.627	27062	38.812	1528
43.641	9000	42.326	1505			43.652	18364	43.636	11480
		43.592	1749					43.663	2800

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091503"		"M03091503"		"M03091503"		"M03091503"	
m/z 360		m/z 362		m/z 288		m/z 290	
27.093	279912	27.090	234614			18.225	204109
29.202	5531	29.179	2873			20.827	2861
29.227	1853	29.225	3357			20.853	7462
34.347	168586	34.326	33303			26.793	10208
38.828	5429	34.345	37008			26.814	8285
43.627	27062	38.812	1528			27.088	150177
43.652	18364	43.636	11480			28.117	299212
		43.663	2800			29.174	2466
						29.204	3012
						29.227	4709
						34.325	27133
						34.359	10655
						34.396	1635

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091503"				"M03091503"		"M03091503"	
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
33.877	1753			29.201	545135	29.211	548112
34.338	580644			34.313	2403	32.341	1813
38.833	5787			34.336	4973	34.335	3471
38.878	1274			38.834	217734	34.359	1473
43.640	143229			42.337	2741	38.830	110373
				43.607	3252	38.886	9584
				43.641	9000	42.326	1505
						43.592	1749

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091503"		"M03091503"		"M03091503"		"M03091503"	
<u>m/z 394</u>		<u>m/z 396</u>		<u>m/z 322</u>		<u>m/z 324</u>	
29.201	545135	29.211	548112			20.854	251498
34.313	2403	32.341	1813			26.793	170995
34.336	4973	34.335	3471			27.077	5406
38.834	217734	34.359	1473			27.104	3837
42.337	2741	38.830	110373			29.192	114576
43.607	3252	38.886	9584			29.216	111572
43.641	9000	42.326	1505			34.335	7585
		43.592	1749			34.359	4587
						38.849	68627
							20.860
							399730
							26.802
							268390
							27.089
							13919
							29.201
							151193
							34.300
							1713
							34.334
							1493
							34.373
							2005
							38.814
							8348
							38.837
							4734
							38.861
							5506

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091503"		"M03091503"		"M03091503"		"M03091503"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>		<u>m/z 428</u>	
38.834	709827	38.831	565842			33.865	1923
42.336	8240	42.300	1299			34.338	540084
43.631	11170	42.342	5909			38.811	4887
		43.599	2056			38.836	2287
		43.639	1675			38.862	3504
						43.647	239202
						33.877	1753
						34.338	580644
						38.833	5787
						38.878	1274
						43.640	143229

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091503"		"M03091503"		"M03091503"	
m/z 430		m/z 428		m/z 360	m/z 462
33.877	1753	33.865	1923	27.093	279912
34.338	580644	34.338	540084	29.202	5531
38.833	5787	38.811	4887	29.227	1853
38.878	1274	38.836	2287	34.347	168586
43.640	143229	38.862	3504	38.828	5429
		43.647	239202	43.627	27062
				43.652	18364

Extracted Ion Current Profiles

Octachlorobiphenyls			
"M03091503"		"M03091503"	
<u>m/z 464</u>		<u>m/z 466</u>	
38.834	709827	38.831	565842
42.336	8240	42.300	1299
43.631	11170	42.342	5909
		43.599	2056
		43.639	1675

Extracted Ion Current Profiles

Nonachlorobiphenyls					
"M03091503"		"M03091503"		"M03091503"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>	
38.834	709827	38.831	565842	29.201	545135
42.336	8240	42.300	1299	34.313	2403
43.631	11170	42.342	5909	34.336	4973
		43.599	2056	38.834	217734
		43.639	1675	42.337	2741
				43.607	3252
				43.641	9000

Extracted Ion Current Profiles

Decachlorobiphenyl							
"M03091503"		"M03091503"		"M03091503"		"M03091503"	
m/z 498		m/z 500		m/z 428		m/z 430	
34.350	1693	43.636	590137	33.865	1923	33.877	1753
43.637	701773			34.338	540084	34.338	580644
				38.811	4887	38.833	5787
				38.836	2287	38.878	1274
				38.862	3504	43.640	143229
				43.647	239202		

Extracted Ion Current Profiles

TCMX				Chrysene-d12				Phenanthrene-d10			
"M03091503"		"M03091503"		"M03091503"		"M03091503"		"M03091503"		"M03091503"	
<u>m/z 244</u>		<u>m/z 242</u>		<u>m/z 240</u>		<u>m/z 241</u>		<u>m/z 188</u>		<u>m/z 189</u>	
12.538	73283	12.533	56599	29.189	1984	12.548	3965	10.009	242063	10.006	33824
		29.213	2304	35.241	194678	18.233	2015	14.075	6838	14.066	2528
		34.342	1500	38.825	1875	29.200	2581	16.517	175800	14.085	3875
		35.240	3908			34.320	2320	17.778	35211	16.520	24487
						34.351	1605			17.782	5467
						34.371	1691				
						35.241	45159(M)				
						38.802	1324				
						38.823	1281				
						38.863	1735				

Extracted Ion Current Profiles

Deca C13	
<u>m/z 510</u>	<u>m/z 512</u>
43.624 685258	43.623 600066
510	
512	

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc.

SDG No.: N/A

Instrument ID: GCMS03
Lab File ID: M03091515
Client ID: CCV3-0915B
GC Column: DB-XLB

Calibration Date: 9/15/2015
Start Cal Date: 3/12/2015
End Cal Date: 3/13/2015

Time: 23:29
Time: 19:52
Time: 00:49

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\TRC-DS_LRF15090194\CCV3-0915B.xls\Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 Cl1	0.973	0.984	0.005	1.16	20
\$ 2 Tetrachloro-m-xylene	0.275	0.269	0.005	-2.27	20
3 Cl2	0.913	0.939	0.005	2.90	20
5 Cl3	0.733	0.774	0.005	5.71	20
6 Cl4	0.558	0.529	0.005	-5.21	20
8 Cl5	0.553	0.552	0.005	-0.18	20
9 Cl6	0.605	0.579	0.005	-4.21	20
11 Cl7	0.716	0.766	0.005	6.92	20
13 Cl8	0.916	0.820	0.005	-10.5	20
17 Cl10	0.597	0.580	0.005	-2.85	20
\$ 13C-DCBP	0.592	0.578	0.005	-2.32	20

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\M03091515.d
 Lab Smp Id: CCV3-0915B Client Smp ID: CCV3-0915B
 Inj Date : 15-SEP-2015 23:29
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : CCV3-0915B
 Misc Info : RMS M03091515
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\680low.m
 Meth Date : 16-Sep-2015 07:44 roys Quant Type: ISTD
 Cal Date : 13-MAR-2015 00:49 Cal File: M03031219.d
 Als bottle: 1 Continuing Calibration Sample
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG							AMOUNTS	
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/uL)	ON-COL (ng/uL)	
* 4 Phenanthrene-d10	188	16.513	16.513	(1.000)	170120	0.80000			
* 13 Chrysene-d12	240	35.231	35.231	(1.000)	213708	0.80000			
1 Cl1	188	9.997	9.997	(0.284)	248025	1.00000		0.945	
\$ 2 Tetrachloro-m-xylene	244	12.526	12.526	(0.356)	69987	1.00000		0.948	
3 Cl2	222	14.071	14.071	(0.399)	246246	1.00000		0.996	
5 Cl3	256	17.769	17.769	(0.504)	194399	1.00000		0.982	
6 Cl4	292	18.217	18.217	(0.517)	268999	2.00000		1.80	
7 RTstd-BZ-104	326	20.859	20.859	(0.592)	421030	2.00000		1.85	
8 Cl5	326	26.798	26.798	(0.761)	298568	2.00000		1.98	
9 Cl6	360	27.076	27.076	(0.769)	297214	2.00000		1.81	
10 RTstd-BZ-77	292	28.117	28.117	(0.798)	422524	2.00000		1.94	
11 Cl7	394	29.190	29.190	(0.829)	607779	3.00000		3.15	
12 Cl8	430	34.343	34.343	(0.975)	640611	3.00000		2.59	
14 RTstd-BZ-208	464	38.831	38.831	(1.102)	589591	4.00000		2.61	
15 Cl10	498	43.624	43.624	(1.238)	758984	5.00000		4.72	
\$ 16 Decachloro-13Cl12-Biphenyl	510	43.624	43.624	(1.238)	729883	5.00000		4.60	

Date : 15-SEP-2015 23:29

Client ID: CCV3-0915B

Sample Info: CCV3-0915B

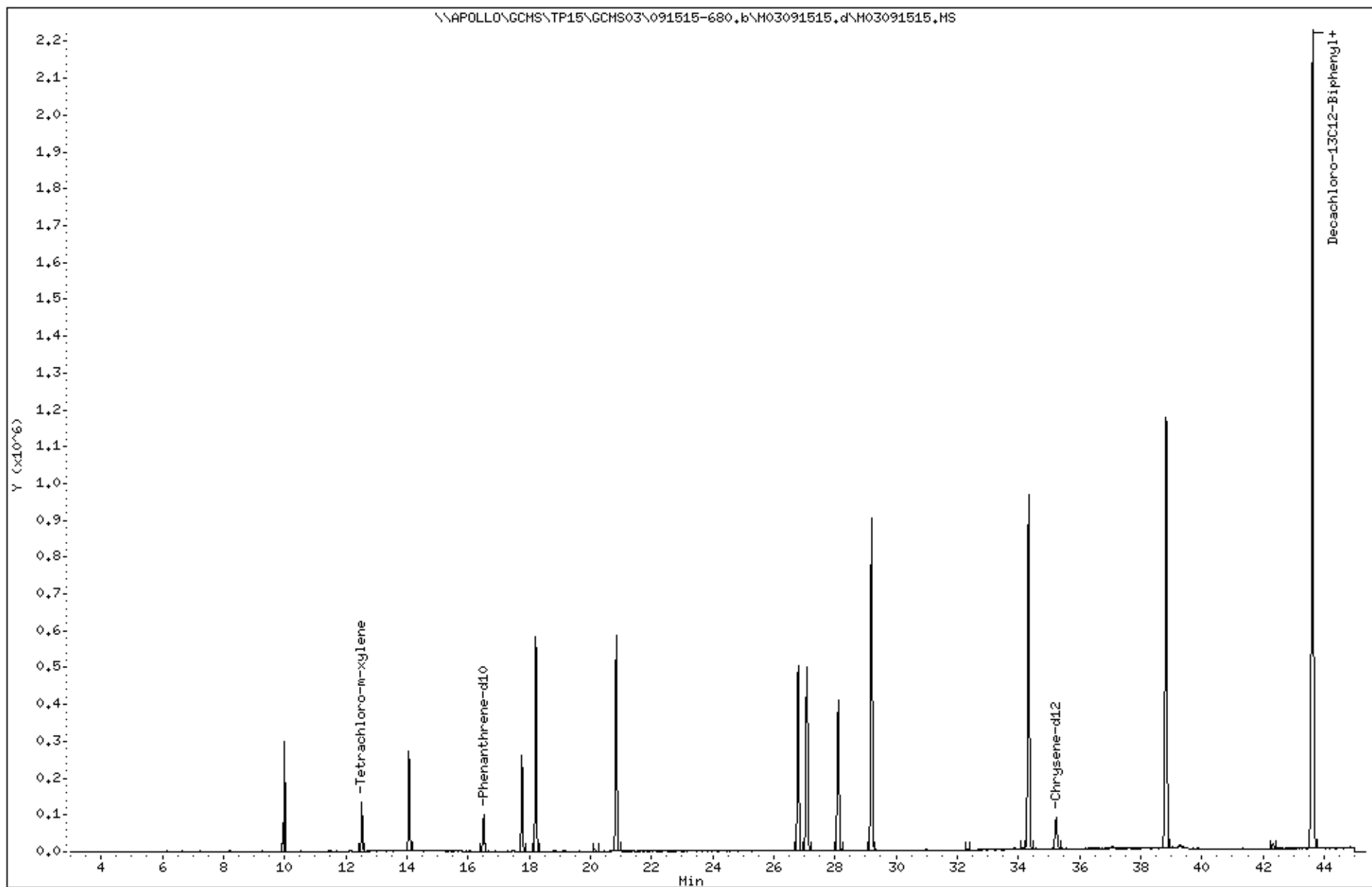
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091515"		"M03091515"		"M03091515"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.003	258495	10.001	94885				
14.075	8715	16.518	2185				
16.510	175809						
17.765	39108						
18.223	2525						
28.107	1496						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091515"		"M03091515"		"M03091515"						"M03091515"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
14.070	246635	14.070	166774							10.003	258495
17.764	6569	17.768	2087							14.075	8715
18.218	140312	18.222	24635							16.510	175809
20.828	1473	28.101	8736							17.765	39108
20.860	3029	28.117	9391							18.223	2525
26.775	2194									28.107	1496
26.819	2699										
27.086	7361										
28.106	107440										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091515"		"M03091515"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.766	203347	17.766	193863		
18.214	26873	18.222	26953		
20.855	160133	20.843	53482		
26.796	155803	26.797	55576		
27.079	2353	28.104	4350		
27.111	1449	29.194	1494		
28.107	7920				
29.156	3210				
29.179	6780				
29.201	11166				
29.235	3043				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091515"		"M03091515"				"M03091515"		"M03091515"		"M03091515"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
17.766	203347	17.766	193863			10.003	258495	20.851	273167	20.851	429478
18.214	26873	18.222	26953			14.075	8715	26.787	175972	26.795	289971
20.855	160133	20.843	53482			16.510	175809	27.087	9550	27.068	7819
26.796	155803	26.797	55576			17.765	39108	27.111	3086	27.083	5163
27.079	2353	28.104	4350			18.223	2525	29.201	241223	27.111	2903
27.111	1449	29.194	1494			28.107	1496	34.286	2337	29.202	167455
28.107	7920							34.319	7264	38.823	26638
29.156	3210							34.356	1976		
29.179	6780							38.824	70846		
29.201	11166							38.872	9472		
29.235	3043										

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03091515"		"M03091515"					
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				18.217	220313	18.220	277610				
				20.852	9785	20.833	4051				
				26.794	13376	20.849	4953				
				26.818	5278	26.796	24239				
				27.088	148040	27.080	47639				
				28.109	312633	27.095	36787				
				29.183	10125	28.109	413728				
				29.219	3230	29.169	1743				
				34.290	5979	29.202	1402				
				34.313	12482	29.222	1695				
				34.339	34873	34.281	1272				
						34.319	6853				
						34.354	2333				
						34.380	1270				
						38.836	1735				

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03091515"		"M03091515"				"M03091515"		"M03091515"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>		<u>m/z 360</u>	<u>m/z 362</u>
18.220	277610	18.217	220313			14.070	246635	27.084	304329
20.833	4051	20.852	9785			17.764	6569	29.177	4710
20.849	4953	26.794	13376			18.218	140312	29.202	7937
26.796	24239	26.818	5278			20.828	1473	34.339	186501
27.080	47639	27.088	148040			20.860	3029	38.820	4739
27.095	36787	28.109	312633			26.775	2194	38.849	2026
28.109	413728	29.183	10125			26.819	2699	43.598	7582
29.169	1743	29.219	3230			27.086	7361	43.621	20836
29.202	1402	34.290	5979			28.106	107440	43.656	13008
29.222	1695	34.313	12482						
34.281	1272	34.339	34873						
34.319	6853								
34.354	2333								
34.380	1270								
38.836	1735								

Extracted Ion Current Profiles

Tetrachlorobiphenyls				
	"M03091515"		"M03091515"	
m/z 288	m/z 324	m/z 326	m/z 328	m/z 289
	20.851	273167	20.851	429478
	26.787	175972	26.795	289971
	27.087	9550	27.068	7819
	27.111	3086	27.083	5163
	29.201	241223	27.111	2903
	34.286	2337	29.202	167455
	34.319	7264	38.823	26638
	34.356	1976		
	38.824	70846		
	38.872	9472		

Extracted Ion Current Profiles

Pentachlorobiphenyls							
"M03091515"		"M03091515"		"M03091515"		"M03091515"	
<u>m/z 326</u>		<u>m/z 324</u>		<u>m/z 254</u>		<u>m/z 256</u>	
20.851	429478	20.851	273167			17.766	203347
26.795	289971	26.787	175972			18.214	26873
27.068	7819	27.087	9550			20.855	160133
27.083	5163	27.111	3086			26.796	155803
27.111	2903	29.201	241223			27.079	2353
29.202	167455	34.286	2337			27.111	1449
38.823	26638	34.319	7264			28.107	7920
		34.356	1976			29.156	3210
		38.824	70846			29.179	6780
		38.872	9472			29.201	11166
						29.235	3043

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03091515"		"M03091515"				"M03091515"		"M03091515"	
m/z 394		m/z 396		m/z 398		m/z 360		m/z 362	
29.192	603109	29.206	568281			27.084	304329	27.087	237346
29.295	1733	32.337	2126			29.177	4710	29.199	6276
34.346	1963	34.300	1369			29.202	7937	34.321	42997
38.831	181397	34.331	4308			34.339	186501	34.344	36263
38.861	45954	38.833	144627			38.820	4739	38.828	2430
42.327	4632	43.593	2499			38.849	2026	43.600	6798
43.573	2921					43.598	7582	43.645	7568
43.618	7449					43.621	20836		
						43.656	13008		

Hexachlorobiphenyls

CCV3-0915B.xls

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091515"				"M03091515"		"M03091515"	
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
33.867	2928			29.192	603109	29.206	568281
34.329	645851			29.295	1733	32.337	2126
34.503	1569			34.346	1963	34.300	1369
37.085	1349			38.831	181397	34.331	4308
38.829	7563			38.861	45954	38.833	144627
43.616	154682			42.327	4632	43.593	2499
				43.573	2921		
				43.618	7449		

Extracted Ion Current Profiles

Heptachlorobiphenyls									
"M03091515"		"M03091515"				"M03091515"		"M03091515"	
<u>m/z 394</u>		<u>m/z 396</u>		<u>m/z 322</u>		<u>m/z 324</u>		<u>m/z 326</u>	
29.192	603109	29.206	568281			20.851	273167	20.851	429478
29.295	1733	32.337	2126			26.787	175972	26.795	289971
34.346	1963	34.300	1369			27.087	9550	27.068	7819
38.831	181397	34.331	4308			27.111	3086	27.083	5163
38.861	45954	38.833	144627			29.201	241223	27.111	2903
42.327	4632	43.593	2499			34.286	2337	29.202	167455
43.573	2921					34.319	7264	38.823	26638
43.618	7449					34.356	1976		
						38.824	70846		
						38.872	9472		

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091515"		"M03091515"		"M03091515"		"M03091515"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>		<u>m/z 428</u>	
38.826	758828	38.831	588000			33.859	1702
42.319	4550	42.313	6661			34.326	308432
42.338	2521	43.592	2731			34.339	248903
43.588	2182	43.640	3543			38.801	1892
43.624	5333					38.833	3051
						43.611	133378
						43.641	89965
						33.867	2928
						34.329	645851
						34.503	1569
						37.085	1349
						38.829	7563
						43.616	154682

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091515"	"M03091515"			"M03091515"	
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
33.867	2928	33.859	1702	27.084	304329
34.329	645851	34.326	557335(M)	29.177	4710
34.503	1569	34.339	248903	29.202	7937
37.085	1349	38.801	1892	34.339	186501
38.829	7563	38.833	3051	38.820	4739
43.616	154682	43.611	133378	38.849	2026
		43.641	89965	43.598	7582
				43.621	20836
				43.656	13008

Extracted Ion Current Profiles

Octachlorobiphenyls			
"M03091515"		"M03091515"	
<u>m/z 464</u>		<u>m/z 466</u>	
38.826	758828	38.831	588000
42.319	4550	42.313	6661
42.338	2521	43.592	2731
43.588	2182	43.640	3543
43.624	5333		

Extracted Ion Current Profiles

Nonachlorobiphenyls					
"M03091515"		"M03091515"		"M03091515"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>	
38.826	758828	38.831	588000		
42.319	4550	42.313	6661		
42.338	2521	43.592	2731		
43.588	2182	43.640	3543		
43.624	5333				
				29.192	603109
				29.295	1733
				34.346	1963
				38.831	181397
				38.861	45954
				42.327	4632
				43.573	2921
				43.618	7449

Extracted Ion Current Profiles

Decachlorobiphenyl							
"M03091515"		"M03091515"		"M03091515"		"M03091515"	
m/z 498		m/z 500		m/z 428		m/z 430	
38.842	1996	34.319	2062	33.859	1702	33.867	2928
43.627	761122	38.839	1499	34.326	308432	34.329	645851
		43.622	653185	34.339	248903	34.503	1569
				38.801	1892	37.085	1349
				38.833	3051	38.829	7563
				43.611	133378	43.616	154682
				43.641	89965		

Extracted Ion Current Profiles

TCMX			
"M03091515"		"M03091515"	
m/z 244		m/z 242	

12.526	70535	12.528	59746
29.191	1704	29.186	2434
		35.221	3389

TCMX

424
426
428
430
498
500

chrysene -
d₁₂

Chrysene-d12			
"M03091515"		"M03091515"	
m/z 240		m/z 241	

27.095	1823	12.520	2724
29.174	1400	12.546	1611
29.207	2599	18.201	1294
35.226	210072	29.187	1568
38.798	1485	29.212	2637
38.856	1471	34.333	1731
		35.220	42410(M)
		35.246	18307
		38.849	1714

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091515"		"M03091515"	
m/z 188		m/z 189	

10.003	258495	9.999	37817
14.075	8715	14.070	5317
16.510	175809	16.502	25659(M)
17.765	39108	16.523	11943
18.223	2525	17.752	5044
28.107	1496		

Extracted Ion Current Profiles

Deca C13	
<u>m/z 510</u>	<u>m/z 512</u>
510	43.614 758751 43.601 612708
512	1231190(M)

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc.

SDG No.: N/A

Instrument ID: GCMS03
Lab File ID: M03091603
Client ID: CCV3-0916A
GC Column: DB-XLB

Calibration Date: 9/16/2015
Start Cal Date: 3/12/2015
End Cal Date: 3/13/2015

Time: 14:23
Time: 19:52
Time: 00:49

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\TRC-DS_LRF15090194\CCV3-0916A.xls\Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 Cl1	0.973	1.078	0.005	10.8	20
\$ 2 Tetrachloro-m-xylene	0.275	0.313	0.005	13.8	20
3 Cl2	0.913	1.026	0.005	12.4	20
5 Cl3	0.733	0.792	0.005	8.07	20
6 Cl4	0.558	0.585	0.005	4.86	20
8 Cl5	0.553	0.584	0.005	5.59	20
9 Cl6	0.605	0.582	0.005	-3.88	20
11 Cl7	0.716	0.806	0.005	12.5	20
13 Cl8	0.916	0.839	0.005	-8.36	20
17 Cl10	0.597	0.597	0.005	0.01	20
\$ 13C-DCBP	0.592	0.602	0.005	1.81	20

Pace Analytical - NY Lab

PCB Report EPA 680
 Data file : \\APOLLO\GCMS\TP15\GCMS03\091615-680.b\M03091603.d
 Lab Smp Id: CCV3-0916A Client Smp ID: CCV3-0916A
 Inj Date : 16-SEP-2015 14:23
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : CCV3-0916A
 Misc Info : RMS M03091603
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\091615-680.b\680low.m
 Meth Date : 17-Sep-2015 08:09 roys Quant Type: ISTD
 Cal Date : 13-MAR-2015 00:49 Cal File: M03031219.d
 Als bottle: 1 Continuing Calibration Sample
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

						AMOUNTS	
		QUANT	SIG				
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/uL)	ON-COL (ng/uL)
=====	=====	=====	=====	=====	=====	=====	=====
* 4 Phenanthrene-d10	188	16.511	16.514	(1.000)	153807	0.80000	
* 13 Chrysene-d12	240	35.218	35.229	(1.000)	167079	0.80000	
1 Cl1	188	10.002	10.008	(0.284)	228539	1.00000	1.11
\$ 2 Tetrachloro-m-xylene	244	12.529	12.535	(0.356)	66772	1.00000	1.16
3 Cl2	222	14.074	14.075	(0.400)	215263	1.00000	1.11
5 Cl3	256	17.768	17.780	(0.505)	166168	1.00000	1.07
6 Cl4	292	18.215	18.226	(0.517)	245819	2.00000	2.10
7 RTstd-BZ-104	326	20.853	20.862	(0.592)	380208	2.00000	2.14
8 Cl5	326	26.797	26.796	(0.761)	251342	2.00000	2.13
9 Cl6	360	27.089	27.088	(0.769)	251948	2.00000	1.96
10 RTstd-BZ-77	292	28.113	28.123	(0.798)	361244	2.00000	2.13
11 Cl7	394	29.198	29.207	(0.829)	510796	3.00000	3.38
12 Cl8	430	34.340	34.327	(0.975)	540488	3.00000	2.79
14 RTstd-BZ-208	464	38.822	38.834	(1.102)	665267	4.00000	3.77
15 Cl10	498	43.632	43.627	(1.239)	632202	5.00000	5.03
\$ 16 Decachloro-13Cl12-Biphenyl	510	43.607	43.614	(1.238)	632375	5.00000	5.09

Date : 16-SEP-2015 14:23

Client ID: CCV3-0916A

Sample Info: CCV3-0916A

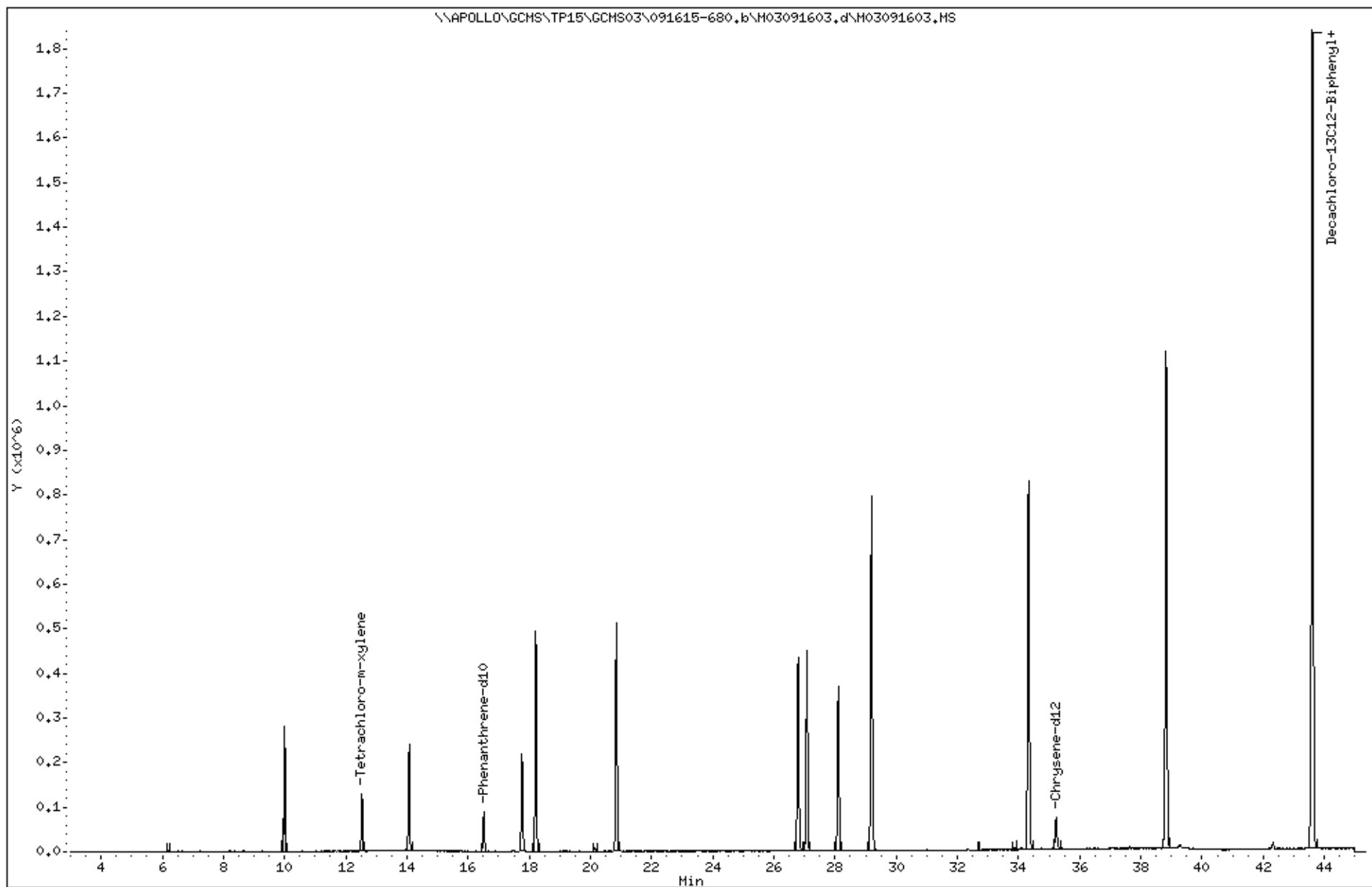
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091603"		"M03091603"		"M03091603"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.003	230493	10.003	74564				
14.073	7116	16.500	1441				
16.512	155132						
17.763	33571						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091603"		"M03091603"		"M03091603"						"M03091603"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
14.074	219344	14.070	132746							10.003	230493
17.768	6859	17.778	1839							14.073	7116
18.214	116428	18.216	17519							16.512	155132
20.840	1587	28.104	17292							17.763	33571
20.877	1396										
26.778	3261										
27.064	1515										
27.099	1829										
28.104	96698										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091603"		"M03091603"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.767	169304	17.767	165481		
18.215	15065	18.217	21184		
18.240	7236	20.849	45871		
20.845	131741	26.799	44593		
26.792	132122	28.114	2052		
27.081	5877	29.190	2720		
28.097	2534				
28.128	1940				
29.190	23421				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091603"		"M03091603"				"M03091603"		"M03091603"		"M03091603"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
17.767	169304	17.767	165481			10.003	230493	20.852	228855	20.850	376026
18.215	15065	18.217	21184			14.073	7116	26.794	151888	26.796	249815
18.240	7236	20.849	45871			16.512	155132	27.086	8513	27.057	6537
20.845	131741	26.799	44593			17.763	33571	27.113	1904	27.091	6104
26.792	132122	28.114	2052					29.190	208546	29.197	137660
27.081	5877	29.190	2720					34.326	7466	34.318	2443
28.097	2534							34.354	2747	34.341	3102
28.128	1940							38.813	30465	38.795	4725
29.190	23421							38.842	41574	38.828	7632
										38.858	3374

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03091603"		"M03091603"					
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				18.216	197259	18.220	250126				
				20.819	2384	20.862	7613				
				20.843	4599	26.789	12392				
				20.877	2056	26.821	4529				
				26.797	14288	27.079	65909				
				27.077	139346	28.108	357155				
				28.106	280596	29.184	3440				
				29.174	5514	34.307	2125				
				29.210	3017	34.335	5437				
				29.234	1578	38.816	1617				
				34.285	4689						
				34.329	38727						
				38.801	1335						
				38.846	3553						

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03091603"		"M03091603"				"M03091603"		"M03091603"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>		<u>m/z 360</u>	
18.220	250126	18.216	197259			14.074	219344	27.085	248733
20.862	7613	20.819	2384			17.768	6859	29.176	3424
26.789	12392	20.843	4599			18.214	116428	29.205	3063
26.821	4529	20.877	2056			20.840	1587	34.320	80452
27.079	65909	26.797	14288			20.877	1396	34.337	77596
28.108	357155	27.077	139346			26.778	3261	38.788	1277
29.184	3440	28.106	280596			27.064	1515	38.814	2608
34.307	2125	29.174	5514			27.099	1829	43.585	5682
34.335	5437	29.210	3017			28.104	96698	43.618	13247
38.816	1617	29.234	1578					43.642	9091
		34.285	4689					43.669	3469
		34.329	38727						
		38.801	1335						
		38.846	3553						

Extracted Ion Current Profiles

Tetrachlorobiphenyls				
	"M03091603"		"M03091603"	
m/z 288	m/z 324	m/z 326	m/z 328	m/z 289
	20.852	228855	20.850	376026
	26.794	151888	26.796	249815
	27.086	8513	27.057	6537
	27.113	1904	27.091	6104
	29.190	208546	29.197	137660
	34.326	7466	34.318	2443
	34.354	2747	34.341	3102
	38.813	30465	38.795	4725
	38.842	41574	38.828	7632
			38.858	3374

Extracted Ion Current Profiles

Pentachlorobiphenyls							
"M03091603"		"M03091603"		"M03091603"		"M03091603"	
<u>m/z 326</u>		<u>m/z 324</u>		<u>m/z 254</u>		<u>m/z 256</u>	
20.850	376026	20.852	228855			17.767	169304
26.796	249815	26.794	151888			18.215	15065
27.057	6537	27.086	8513			18.240	7236
27.091	6104	27.113	1904			20.845	131741
29.197	137660	29.190	208546			26.792	132122
34.318	2443	34.326	7466			27.081	5877
34.341	3102	34.354	2747			28.097	2534
38.795	4725	38.813	30465			28.128	1940
38.828	7632	38.842	41574			29.190	23421
38.858	3374						

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03091603"		"M03091603"				"M03091603"		"M03091603"	
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360	
29.196	516877	29.198	481892					27.085	248733
32.332	1833	34.316	1872					29.176	3424
34.314	4602	38.780	7306					29.205	3063
34.342	3104	38.832	97638					34.320	80452
38.822	127075	43.630	3589					34.337	77596
38.846	83847							38.788	1277
42.328	3302							38.814	2608
43.603	3914							43.585	5682
43.639	2897							43.618	13247
								43.642	9091
								43.669	3469

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091603"		"M03091603"		"M03091603"		"M03091603"	
<u>m/z 360</u>		<u>m/z 362</u>		<u>m/z 288</u>		<u>m/z 290</u>	
27.085	248733	27.079	205042			18.216	197259
29.176	3424	29.200	5307			20.819	2384
29.205	3063	34.316	34477			20.843	4599
34.320	80452	34.341	32477			20.877	2056
34.337	77596	38.833	1747			26.797	14288
38.788	1277	43.623	12660			27.077	139346
38.814	2608					28.106	280596
43.585	5682					29.174	5514
43.618	13247					29.210	3017
43.642	9091					29.234	1578
43.669	3469					34.285	4689
						34.329	38727
						38.801	1335
						38.846	3553

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091603"				"M03091603"	"M03091603"		
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
33.868	2279			29.196	516877	29.198	481892
34.330	538482			32.332	1833	34.316	1872
38.813	5028			34.314	4602	38.780	7306
38.841	2177			34.342	3104	38.832	97638
43.618	72564			38.822	127075	43.630	3589
43.632	60967			38.846	83847		
				42.328	3302		
				43.603	3914		
				43.639	2897		

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091603"		"M03091603"		"M03091603"		"M03091603"	
<u>m/z 394</u>		<u>m/z 396</u>		<u>m/z 322</u>		<u>m/z 324</u>	
29.196	516877	29.198	481892			20.852	228855
32.332	1833	34.316	1872			26.794	151888
34.314	4602	38.780	7306			27.086	8513
34.342	3104	38.832	97638			27.113	1904
38.822	127075	43.630	3589			29.190	208546
38.846	83847					34.326	7466
42.328	3302					34.354	2747
43.603	3914					38.813	30465
43.639	2897					38.842	41574
							38.828
							38.858
							376026
							249815
							6537
							6104
							137660
							2443
							3102
							4725
							7632
							3374

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091603"		"M03091603"		"M03091603"		"M03091603"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>		<u>m/z 428</u>	
38.823	664171	38.830	486845			33.869	1549
42.309	3531	42.327	6102			34.336	481067
42.330	3586	43.572	1999			38.796	2575
43.614	2972	43.599	2452			38.870	1359
43.648	1703					43.612	89923
						43.632	104721
						33.868	2279
						34.330	538482
						38.813	5028
						38.841	2177
						43.618	72564
						43.632	60967

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091603"		"M03091603"		"M03091603"	
m/z 430		m/z 428		m/z 360	m/z 462
33.868	2279	33.869	1549	27.085	248733
34.330	538482	34.336	481067	29.176	3424
38.813	5028	38.796	2575	29.205	3063
38.841	2177	38.870	1359	34.320	80452
43.618	72564	43.612	89923	34.337	77596
43.632	60967	43.632	104721	38.788	1277
				38.814	2608
				43.585	5682
				43.618	13247
				43.642	9091
				43.669	3469

Extracted Ion Current Profiles

Octachlorobiphenyls			
"M03091603"		"M03091603"	
<u>m/z 464</u>		<u>m/z 466</u>	
38.823	664171	38.830	486845
42.309	3531	42.327	6102
42.330	3586	43.572	1999
43.614	2972	43.599	2452
43.648	1703		

Extracted Ion Current Profiles

Nonachlorobiphenyls					
"M03091603"		"M03091603"		"M03091603"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>	
38.823	664171	38.830	486845		
42.309	3531	42.327	6102		
42.330	3586	43.572	1999		
43.614	2972	43.599	2452		
43.648	1703				
				29.196	516877
				32.332	1833
				34.314	4602
				34.342	3104
				38.822	127075
				38.846	83847
				42.328	3302
				43.603	3914
				43.639	2897

Extracted Ion Current Profiles

Decachlorobiphenyl							
"M03091603"		"M03091603"		"M03091603"		"M03091603"	
<u>m/z 498</u>		<u>m/z 500</u>		<u>m/z 428</u>		<u>m/z 430</u>	
43.627	638134	43.631	568398	33.869	1549	33.868	2279
				34.336	481067	34.330	538482
				38.796	2575	38.813	5028
				38.870	1359	38.841	2177
				43.612	89923	43.618	72564
				43.632	104721	43.632	60967

Extracted Ion Current Profiles

TCMX				Chrysene-d12				Phenanthrene-d10			
"M03091603"		"M03091603"		"M03091603"		"M03091603"		"M03091603"		"M03091603"	
m/z 244		m/z 242		m/z 240		m/z 241		m/z 188		m/z 189	
12.532	66879	12.531	48618	29.186	1585	12.529	3669	10.003	230493	10.005	29931
29.196	1680	29.208	2425	29.210	2261	18.228	1924	14.073	7116	14.071	5449
		35.229	3110	35.224	81517	29.189	1854	16.512	155132	16.511	22227
				35.243	171089(M)	34.312	4749	17.763	33571	17.761	1357
				38.818	2765	35.231	39044			17.781	1844
						38.830	1488				

TCMX

chrysene -
d₁₂

phenanthrene -
d₁₀

Extracted Ion Current Profiles

Deca C13	
<u>m/z 510</u>	<u>m/z 512</u>
43.612 644068	43.606 576626

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc.

SDG No.: N/A

Instrument ID: GCMS03
Lab File ID: M03091610
Client ID: CCV3-0916B
GC Column: DB-XLB

Calibration Date: 9/16/2015
Start Cal Date: 3/12/2015
End Cal Date: 3/13/2015

Time: 20:06
Time: 19:52
Time: 00:49

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\TRC-DS_LRF15090194\CCV3-0916B.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 Cl1	0.973	1.015	0.005	4.32	20
\$ 2 Tetrachloro-m-xylene	0.275	0.291	0.005	5.92	20
3 Cl2	0.913	0.972	0.005	6.51	20
5 Cl3	0.733	0.788	0.005	7.63	20
6 Cl4	0.558	0.544	0.005	-2.41	20
8 Cl5	0.553	0.591	0.005	6.80	20
9 Cl6	0.605	0.591	0.005	-2.33	20
11 Cl7	0.716	0.787	0.005	9.94	20
13 Cl8	0.916	0.860	0.005	-6.06	20
17 Cl10	0.597	0.589	0.005	-1.31	20
\$ 13C-DCBP	0.592	0.603	0.005	1.95	20

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP15\GCMS03\091615-680.b\M03091610.d
 Lab Smp Id: CCV3-0916B Client Smp ID: CCV3-0916B
 Inj Date : 16-SEP-2015 20:06
 Operator : RMS Inst ID: GCMS03.i
 Smp Info : CCV3-0916B
 Misc Info : RMS M03091610
 Comment :
 Method : \\APOLLO\GCMS\TP15\GCMS03\091615-680.b\680low.m
 Meth Date : 17-Sep-2015 08:09 roys Quant Type: ISTD
 Cal Date : 13-MAR-2015 00:49 Cal File: M03031219.d
 Als bottle: 1 Continuing Calibration Sample
 Dil Factor: 1.00000 Sample Compound Amounts Loaded
 Integrator: HP RTE Compound Sublist: EPA680.sub
 Target Version: 4.14
 Processing Host: NEA88

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

						AMOUNTS	
		QUANT	SIG				
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/uL)	ON-COL (ng/uL)
=====	=====	=====	=====	=====	=====	=====	=====
* 4 Phenanthrene-d10	188	16.514	16.514	(1.000)	149844	0.80000	
* 13 Chrysene-d12	240	35.229	35.229	(1.000)	175527	0.80000	
1 Cl1	188	10.008	10.008	(0.284)	223309	1.00000	1.04
\$ 2 Tetrachloro-m-xylene	244	12.535	12.535	(0.356)	62706	1.00000	1.03
3 Cl2	222	14.075	14.075	(0.400)	212471	1.00000	1.05
5 Cl3	256	17.780	17.780	(0.505)	170770	1.00000	1.05
6 Cl4	292	18.226	18.226	(0.517)	238487	2.00000	1.94
7 RTstd-BZ-104	326	20.862	20.862	(0.592)	394892	2.00000	2.12
8 Cl5	326	26.796	26.796	(0.761)	266389	2.00000	2.15
9 Cl6	360	27.088	27.088	(0.769)	264576	2.00000	1.96
10 RTstd-BZ-77	292	28.123	28.123	(0.798)	379265	2.00000	2.12
11 Cl7	394	29.207	29.207	(0.829)	516259	3.00000	3.25
12 Cl8	430	34.327	34.327	(0.974)	574240	3.00000	2.82
14 RTstd-BZ-208	464	38.834	38.834	(1.102)	685727	4.00000	3.70
15 Cl10	498	43.627	43.627	(1.238)	651149	5.00000	4.93
\$ 16 Decachloro-13Cl12-Biphenyl	510	43.614	43.614	(1.238)	663814	5.00000	5.09

Date : 16-SEP-2015 20:06

Client ID: CCV3-0916B

Sample Info: CCV3-0916B

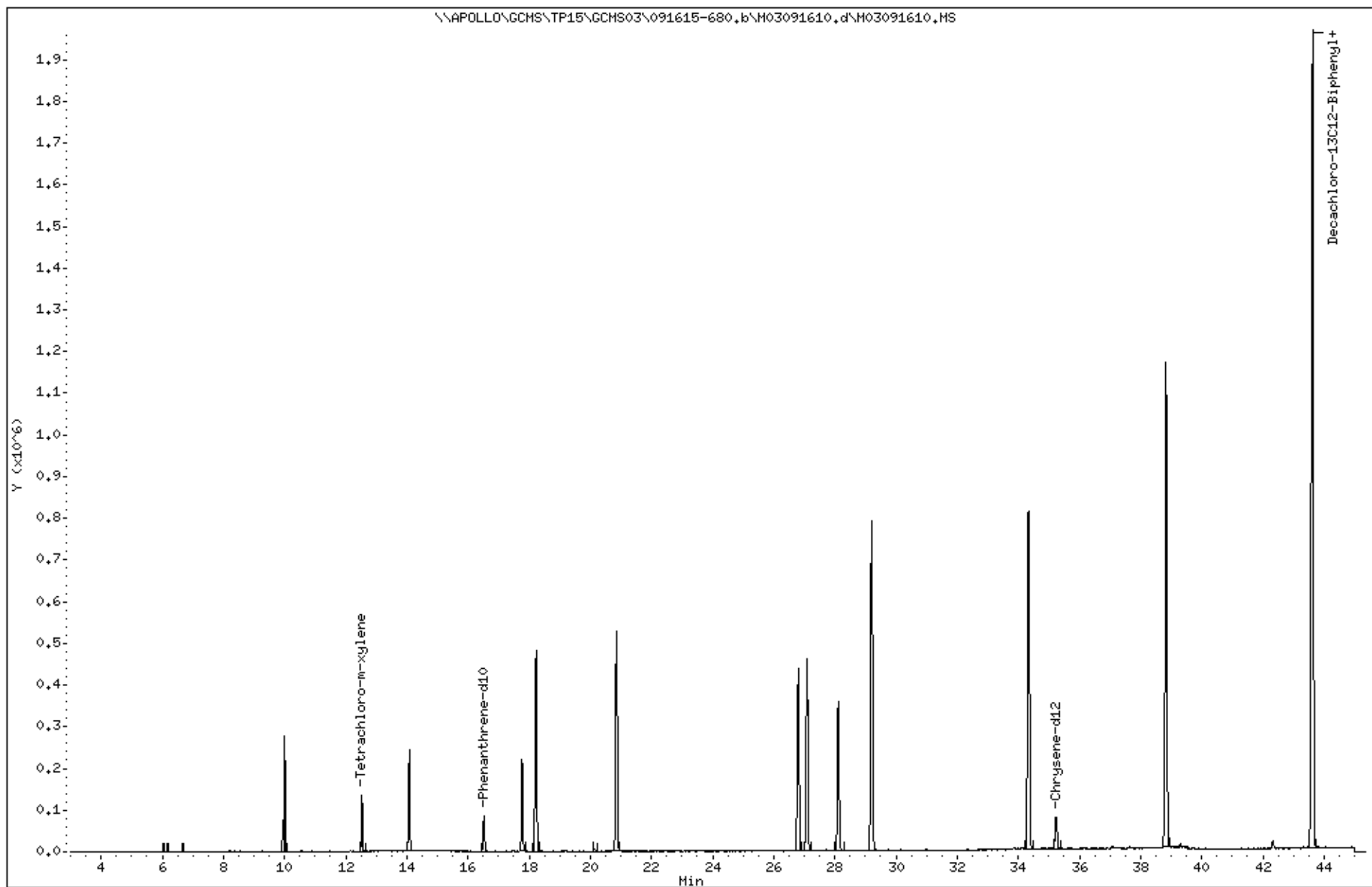
Volume Injected (uL): 2.0

Column phase: DBXLB

Instrument: GCMS03.i

Operator: RMS

Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091610"		"M03091610"		"M03091610"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.008	225605	10.007	76953				
14.076	7496	14.082	1952				
16.519	151817	16.514	2444				
17.779	31881						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091610"		"M03091610"		"M03091610"						"M03091610"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
14.078	216056	14.078	140486							10.008	225605
17.773	5726	18.207	5491							14.076	7496
18.224	117230	18.228	13503							16.519	151817
20.861	1501	28.104	8197							17.779	31881
26.787	2120	28.122	9475								
26.807	2265										
27.065	1999										
27.096	4417										
28.112	101460										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091610"		"M03091610"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.774	175218	17.773	162486		
18.225	25690	18.216	12103		
20.857	140770	18.239	8989		
26.807	136390	20.843	16488		
27.087	3725	20.864	25818		
27.112	2271	26.799	49851		
28.116	7420	27.086	1468		
29.188	13554	28.089	1373		
29.216	9814	28.126	1287		
34.361	1550	29.212	2125		

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091610"		"M03091610"				"M03091610"		"M03091610"		"M03091610"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
17.774	175218	17.773	162486			10.008	225605	20.853	236670	20.858	389733
18.225	25690	18.216	12103			14.076	7496	26.804	151594	26.800	262561
20.857	140770	18.239	8989			16.519	151817	27.093	9132	27.081	7112
26.807	136390	20.843	16488			17.779	31881	29.205	208648	27.100	6599
27.087	3725	20.864	25818					34.306	3155	29.206	136057
27.112	2271	26.799	49851					34.342	3576	34.314	1371
28.116	7420	27.086	1468					38.815	25190	34.341	2061
29.188	13554	28.089	1373					38.834	43039	38.802	5697
29.216	9814	28.126	1287							38.836	17652
34.361	1550	29.212	2125								

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03091610"		"M03091610"					
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				18.224	195435	18.228	241888				
				20.864	7772	20.828	2080				
				26.792	10885	20.853	3427				
				26.821	6728	20.881	4057				
				27.094	132014	26.788	10177				
				28.111	283512	26.820	7381				
				29.199	11951	27.080	34085				
				34.309	9004	27.098	38256				
				34.338	19720	28.119	373464				
				34.364	10637	29.190	3336				
				38.825	4360	29.219	1398				
						34.337	8463				
						34.382	1884				

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03091610"		"M03091610"		"M03091610"		"M03091610"		"M03091610"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>		<u>m/z 360</u>	
18.228	241888	18.224	195435			14.078	216056	27.090	262612
20.828	2080	20.864	7772			17.773	5726	29.197	4722
20.853	3427	26.792	10885			18.224	117230	29.218	3043
20.881	4057	26.821	6728			20.861	1501	34.339	156627
26.788	10177	27.094	132014			26.787	2120	38.812	2942
26.820	7381	28.111	283512			26.807	2265	38.834	2894
27.080	34085	29.199	11951			27.065	1999	38.858	2720
27.098	38256	34.309	9004			27.096	4417	43.636	37467
28.119	373464	34.338	19720			28.112	101460		
29.190	3336	34.364	10637						
29.219	1398	38.825	4360						
34.337	8463								
34.382	1884								

Extracted Ion Current Profiles

Tetrachlorobiphenyls				
	"M03091610"		"M03091610"	
m/z 288	m/z 324	m/z 326	m/z 328	m/z 289
	20.853	236670	20.858	389733
	26.804	151594	26.800	262561
	27.093	9132	27.081	7112
	29.205	208648	27.100	6599
	34.306	3155	29.206	136057
	34.342	3576	34.314	1371
	38.815	25190	34.341	2061
	38.834	43039	38.802	5697
			38.836	17652

Extracted Ion Current Profiles

Pentachlorobiphenyls							
"M03091610"		"M03091610"		"M03091610"		"M03091610"	
m/z 326		m/z 324		m/z 254		m/z 256	
20.858	389733	20.853	236670			17.774	175218
26.800	262561	26.804	151594			18.225	25690
27.081	7112	27.093	9132			20.857	140770
27.100	6599	29.205	208648			26.807	136390
29.206	136057	34.306	3155			27.087	3725
34.314	1371	34.342	3576			27.112	2271
34.341	2061	38.815	25190			28.116	7420
38.802	5697	38.834	43039			29.188	13554
38.836	17652					29.216	9814
						34.361	1550
						17.773	162486
						18.216	12103
						18.239	8989
						20.843	16488
						20.864	25818
						26.799	49851
						27.086	1468
						28.089	1373
						28.126	1287
						29.212	2125

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03091610"		"M03091610"				"M03091610"		"M03091610"	
m/z 394		m/z 396		m/z 398		m/z 360		m/z 362	
29.205	524818	29.204	495922			27.090	262612	27.089	206138
34.317	3901	32.345	1473			29.197	4722	29.196	4558
38.833	200828	34.331	5421			29.218	3043	29.219	3254
42.326	4163	34.364	1279			34.339	156627	34.338	72306
43.602	3454	38.833	116726			38.812	2942	43.636	8246
43.627	6561	42.332	2522			38.834	2894		
		43.640	3517			38.858	2720		
						43.636	37467		

Hexachlorobiphenyls

CCV3-0916B.xls

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03091610"				"M03091610"	"M03091610"		
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
33.874	1411			29.205	524818	29.204	495922
34.103	1532			34.317	3901	32.345	1473
34.335	573576			38.833	200828	34.331	5421
34.460	1896			42.326	4163	34.364	1279
37.089	1396			43.602	3454	38.833	116726
38.819	5651			43.627	6561	42.332	2522
38.864	2725					43.640	3517
43.638	118316						

Heptachlorobiphenyls

CCV3-0916B.xls

Extracted Ion Current Profiles

Heptachlorobiphenyls							
"M03091610"		"M03091610"		"M03091610"		"M03091610"	
m/z 464		m/z 466		m/z 390		m/z 428	
38.833	684748	38.836	516555			34.346	476371
42.327	8616	42.328	6328			38.805	2291
43.601	2502	43.606	1353			38.841	2091
43.642	3227	43.636	2824			43.630	209472
							33.874
							1411
							34.103
							1532
							34.335
							573576
							34.460
							1896
							37.089
							1396
							38.819
							5651
							38.864
							2725
							43.638
							118316

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091610"		"M03091610"		"M03091610"	
m/z 430		m/z 428		m/z 360	m/z 462
33.874	1411	34.346	476371	27.090	262612
34.103	1532	38.805	2291	29.197	4722
34.335	573576	38.841	2091	29.218	3043
34.460	1896	43.630	209472	34.339	156627
37.089	1396			38.812	2942
38.819	5651			38.834	2894
38.864	2725			38.858	2720
43.638	118316			43.636	37467

Extracted Ion Current Profiles

Octachlorobiphenyls			
"M03091610"		"M03091610"	
<u>m/z 464</u>		<u>m/z 466</u>	
38.833	684748	38.836	516555
42.327	8616	42.328	6328
43.601	2502	43.606	1353
43.642	3227	43.636	2824

CCV3-0916B.xls

Nonachlorobiphenyls					
"M03091610"		"M03091610"			"M03091610"
m/z 464		m/z 466		m/z 390	
38.833	684748	38.836	516555		29.205 524818
42.327	8616	42.328	6328		34.317 3901
43.601	2502	43.606	1353		38.833 200828
43.642	3227	43.636	2824		42.326 4163
					43.602 3454
					43.627 6561

Extracted Ion Current Profiles

Decachlorobiphenyl							
"M03091610"		"M03091610"		"M03091610"		"M03091610"	
<u>m/z 498</u>		<u>m/z 500</u>		<u>m/z 424</u>		<u>m/z 426</u>	
43.626	654349	43.625	581739			34.346	476371
						38.805	2291
						38.841	2091
						43.630	209472
							33.874
							1411
							34.103
							1532
							34.335
							573576
							34.460
							1896
							37.089
							1396
							38.819
							5651
							38.864
							2725
							43.638
							118316

Extracted Ion Current Profiles

TCMX				Chrysene-d ₁₂				Phenanthrene-d ₁₀			
"M03091610"		"M03091610"		"M03091610"		"M03091610"		"M03091610"		"M03091610"	
<u>m/z 244</u>		<u>m/z 242</u>		<u>m/z 240</u>		<u>m/z 241</u>		<u>m/z 188</u>		<u>m/z 189</u>	
12.536	64699	12.536	52684	27.077	1620	12.534	3228	10.008	225605	10.008	30660
		29.206	4105	29.186	2147	29.206	3291	14.076	7496	14.070	5758
		35.248	1705	29.206	3508	34.333	4155	16.519	151817	16.519	24638
				34.318	3192	35.231	36729	17.779	31881	17.770	5028
				35.234	177783						
				35.350	1566						
				38.861	1371						

Extracted Ion Current Profiles

Deca C13				
Deca C13	m/z 510		m/z 512	
510	43.609	670211	43.606	533647(M)
512			43.627	230868

QC Sample Raw Data



Quality Control Results Method Blank

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: Method Blank (AS27354BRR1)
Lab Sample ID: SBLK-11

Collection Date: N/A
Sample Matrix: POLYURETHANE FOAM
Received Date: N/A
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-522-4	PCBs by EPA Method TO-10A/680	09/15/2015 14:31	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	0.00m ³	1.00 mL	NA

Analyte	CAS No.	Result (ug)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00500	1.00	U	MS03-522-4
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-522-4
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-522-4
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-522-4
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-522-4
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-522-4
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-522-4
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-522-4
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-522-4
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-522-4
Total PCB	1336-36-3	ND		1.00	U	MS03-522-4

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	74.3	70.1-116		MS03-522-4
Tetrachloro-meta-xylene	877-09-8	36.0	44.4-104	*	MS03-522-4

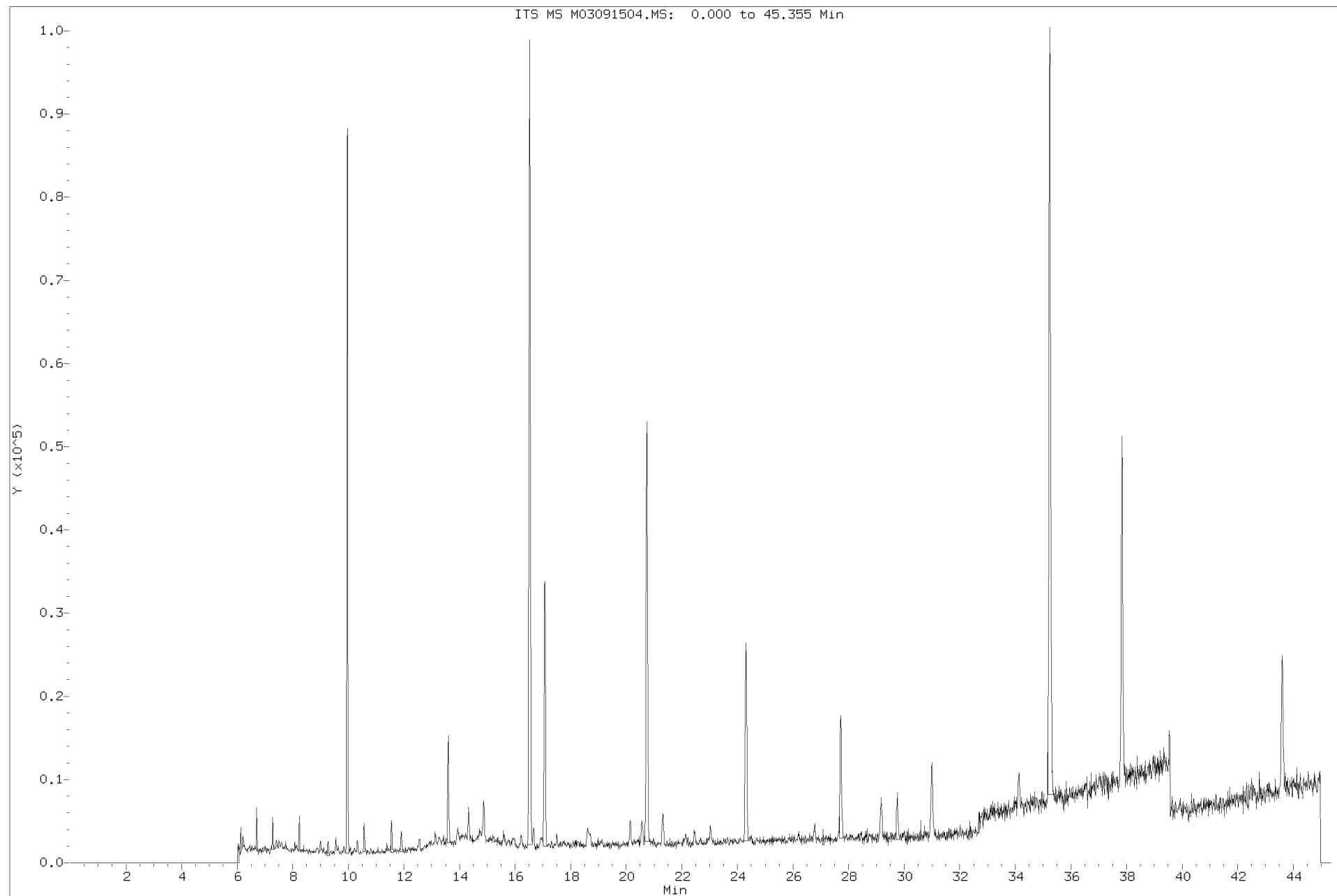
¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Data File: \\APOLLO\GCMS\TP15\GCMS03\091515-680.b\M03091504.d\M03091504.MS
Injection Date: 15-SEP-2015 14:31
Instrument: GCMS03.i
Client Sample ID: AS27354BLANK



Form 1

PCB Homolog Report

Pace Analytical Services, Inc.

ELAP ID No.: 11078
 Matrix: TO-10A PUF
 Sample weight: NA
 % Moisture: 0 %
 Method: EPA 680 (GC/MS)
 Dilution Factor: 1

SDG No.: 15090196
 Client ID: Method Blank
 Lab Sample ID: AS27354BRR1
 Date Received: N/A
 Date Extracted: 9/10/2015
 Date Analyzed: 9/15/2015
 Time Analyzed: 14:31

GC Column: J&W, DB-XLB, 30m length, 0.25mm ID, 0.25µm Film

Monochlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 188		m/z 190		2.5 to 3.5		ug	ug	ug	

Mono Total: 0.00500 0.00500 ND

Dichlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 222		m/z 224		1.3 to 1.7		ug	ug	ug	

Di Total: 0.00500 0.00500 ND

Trichlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 256		m/z 258		0.8 to 1.2		ug	ug	ug	

Tri Total: 0.00500 0.00500 ND

Tetrachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 292		m/z 290		1.1 to 1.5		ug	ug	ug	

Tetra Total: 0.0100 0.0100 ND

Pentachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 326		m/z 324		1.4 to 1.8		ug	ug	ug	

Penta Total: 0.0100 0.0100 ND

Hexachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 360		m/z 362		1.0 to 1.4		ug	ug	ug	

Hexa Total: 0.0100 0.0100 ND

Heptachlorobiphenyls									
Quant Ion RT m/z 394	Quant Ion Area	Confirm Ion RT m/z 396	Confirm Ion Area	Ratio 0.9 to 1.2	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag

Hepta Total: 0.0150 0.0150 ND

Octachlorobiphenyls									
Quant Ion RT m/z 430	Quant Ion Area	Confirm Ion RT m/z 428	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag

Octa Total: 0.0150 0.0150 ND

Nonachlorobiphenyls									
Quant Ion RT m/z 464	Quant Ion Area	Confirm Ion RT m/z 466	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag

Nona Total: 0.0250 0.0250 ND

Decachlorobiphenyl									
Quant Ion RT m/z 498	Quant Ion Area	Confirm Ion RT m/z 500	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag

Deca Total: 0.0250 0.0250 ND

Tetrachloro-meta-xylene: Surrogate Analyte								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration ug/mL	Flag
m/z 244		m/z 242		1.1 - 1.5				

12.553 534 12.537 360 1.5 0.2749 0.00719
TCMX Total: 0.00719

Decachloro ¹³ C Biphenyl: Surrogate Analyte								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration ug/mL	Flag
m/z 510		m/z 512		0.9 to 1.3				

43.609 11971 43.592 10147 1.2 0.5967 0.0743
Deca Total: 0.0743

TCMX Recovery % 36.0 %

Deca Recovery 74.3 %

Chrysene-d ₁₂ Internal Standard								
Quant Ion RT m/z 240	Quant Ion Area	Confirm Ion RT m/z 241	Confirm Ion Area	Ratio 4.3 - 5.9	Response Factor		Solution Concentration ug/mL	Flag

35.238 216143 35.235 43212 5.0 1.0000 0.800
Chrysene-d₁₂: 0.800

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091504"		"M03091504"		"M03091504"		"M03091504"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.526	181455						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091504"		"M03091504"		"M03091504"		"M03091504"		"M03091504"		"M03091504"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
13.590	1773							16.526	14189	16.526	181455
17.072	3235										
20.735	3839										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091504"		"M03091504"		"M03091504"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				7.278	1912
				10.572	2031
				11.551	2668
				11.914	2368
				13.597	8433
				13.930	1746
				14.323	4075
				14.874	3740
				17.074	14906
				18.653	2689
				20.744	16322
				23.025	2187
				24.306	9232
				27.717	6418

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091504"		"M03091504"		"M03091504"		"M03091504"		"M03091504"		"M03091504"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
				16.526	14189	16.526	181455				

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362

13.590 1773
17.072 3235
20.735 3839

Extracted Ion Current Profiles

Pentachlorobiphenyls						
"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"
m/z 394	m/z 396	m/z 398	m/z 322	m/z 360	m/z 362	m/z 323

37.835 2838

Extracted Ion Current Profiles

Hexachlorobiphenyls								
"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"	
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357	
		20.737	20189				20.739	12262
		24.293	6712				24.301	4399
		27.707	3210				27.714	1383
		30.980	2438					
		31.013	2016					

Extracted Ion Current Profiles

Heptachlorobiphenyls					
"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"
m/z 394	m/z 396	m/z 322	m/z 324	m/z 326	m/z 462
		37.835	2838		

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"	"M03091504"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
		20.737 20189	20.744 2890		
		24.293 6712			
		27.707 3210			
		30.980 2438			
		31.013 2016			

Extracted Ion Current Profiles

TCMX			
"M03091504"		"M03091504"	
m/z 244		m/z 242	

9.957	163	12.537	360
12.553	534	12.558	272
16.546	121	16.991	166
16.769	121	17.076	102
16.949	445	17.485	111
17.012	151	17.605	113
18.131	109	18.832	138
20.131	202	20.466	105
29.017	106	28.826	112
29.254	116	29.115	113
30.065	110	29.763	114
30.237	130	30.751	143
30.760	157	31.466	142
31.925	101	32.230	153
32.214	109	33.226	110
32.364	111	33.489	154
32.942	125	33.763	248
33.116	106	34.282	104
33.198	134	34.762	127
33.584	123	34.863	101
33.630	126	35.225	3004
33.843	105	35.272	668
33.878	123	35.301	548
33.983	137	35.339	137
34.223	103	35.355	157
34.391	105	35.416	124
34.606	121	35.615	110
34.925	109	36.265	127
34.989	130	36.849	101
35.115	121	36.973	115
35.210	206	37.159	151
35.320	111	37.363	106
35.643	107	37.819	136
35.979	182	38.122	144
36.116	114	38.534	135
36.180	151	38.836	142
36.488	158	38.867	161
36.723	241	38.986	147
36.827	110	39.312	203
36.901	105	39.462	211
37.155	203		

TCMX

chrysene -
d₁₂

Chrysene-d12			
"M03091504"		"M03091504"	
m/z 240		m/z 241	

35.238	216143	35.235	43212
35.333	1864		
35.363	2636		

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091504"		"M03091504"	
m/z 188		m/z 189	

16.526	181455	16.524	28352
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Extracted Ion Current Profiles

Deca C13				
Deca C13	<u>m/z 510</u>		<u>m/z 512</u>	
510	32.786	159	33.031	104
512	35.212	120	35.221	538
	35.236	361	35.255	155
	35.453	118	35.617	160
	38.785	106	39.708	138
	40.605	108	39.886	179
	40.747	115	40.550	120
	40.872	271	40.587	161
	41.029	130	43.235	159
	41.163	129	43.340	203
	41.313	107	43.592	10147
	41.645	149	43.686	140
	41.951	225	43.798	106
	42.260	125	44.031	100
	42.377	101	44.173	175
	42.586	153	44.383	114
	42.687	104	44.522	103
	42.780	124	44.618	149
	42.963	134	44.937	118
	43.334	199		
	43.498	115		
	43.609	11971		
	43.727	111		



Quality Control Results
Lab Control Sample (LCS)
Job Number: 15090196

Pace Analytical Services, Inc.
 2190 Technology Drive
 Schenectady, NY 12308
 Phone: 518.346.4592
 Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: Lab Control Sample (AS27354L)
Lab Sample ID: LCS-11

Collection Date: N/A
Sample Matrix: POLYURETHANE FOAM
Received Date: N/A
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-521-20	PCBs by EPA Method TO-10A/680	09/15/2015 02:16	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	0.00m ³	1.00 mL	NA

Analyte Spiked	CAS No.	Added (ug)	LCS (ug)	LCS % Rec.	Q ¹	Limits (%)
Monochlorobiphenyl	27323-18-8	1.00	0.557	55.7		28.7-78.9
Dichlorobiphenyl	25512-42-9	1.00	0.608	60.8		30.8-82.6
Trichlorobiphenyl	25323-68-6	1.00	0.608	60.8		34.4-86.8
Tetrachlorobiphenyl	26914-33-0	2.00	1.15	57.5		34.6-86.9
Pentachlorobiphenyl	25429-29-2	2.00	1.36	67.9		37.8-91.9
Hexachlorobiphenyl	26601-64-9	2.00	1.32	66.0		40.9-94.8
Heptachlorobiphenyl	28655-71-2	3.00	2.09	69.6		41.7-98.0
Octachlorobiphenyl	55722-26-4	3.00	1.85	61.6		43.2-102
Decachlorobiphenyl	2051-24-3	5.00	3.28	65.5		46.4-102

¹Qualifier column where '*' denotes value outside the control limits. Note: RPD criteria does not apply if either the sample and duplicate sample are not detected.

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	81.2	70.1-116		MS03-521-20
Tetrachloro-meta-xylene	877-09-8	45.7	44.4-104		MS03-521-20

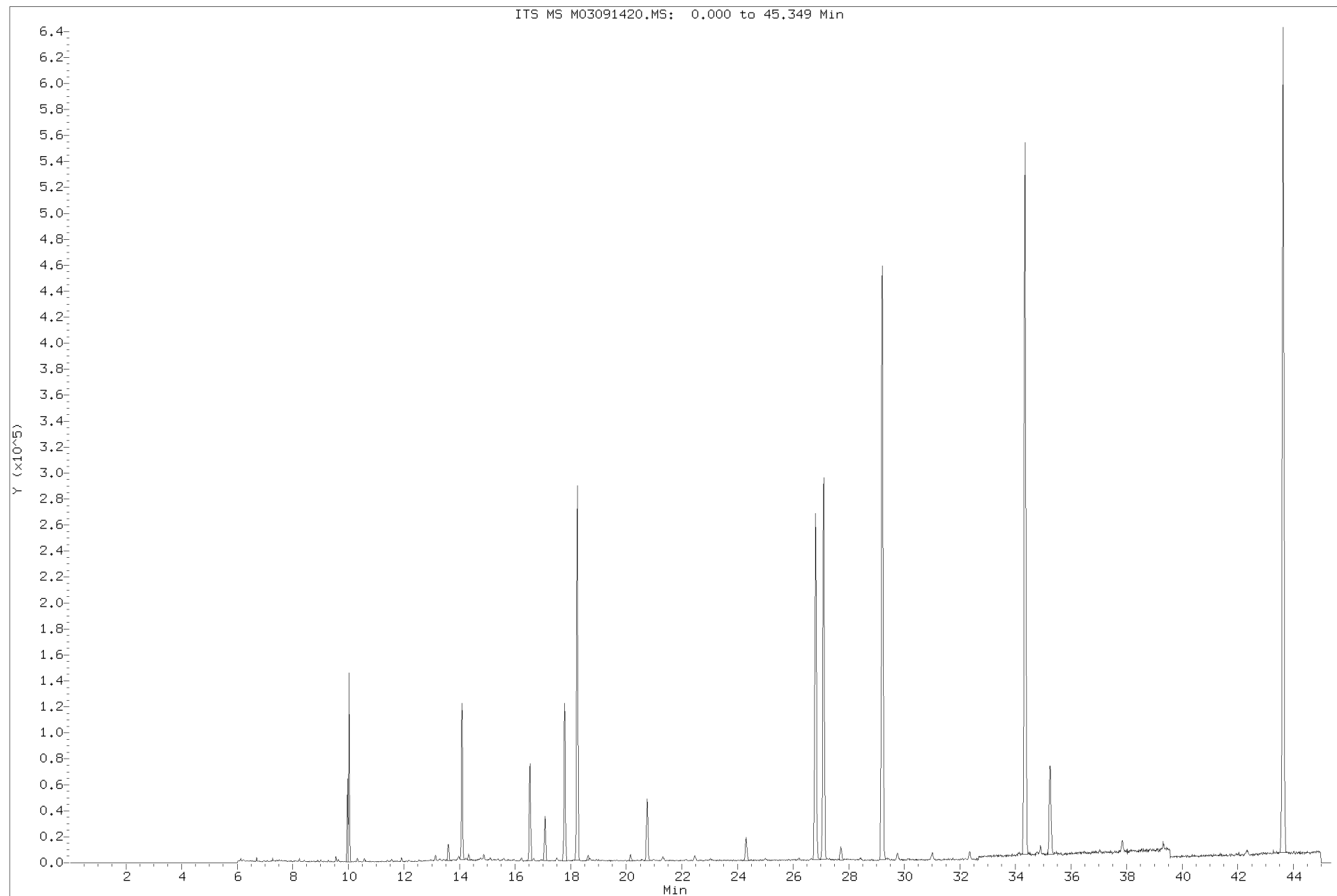
¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Data File: \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\M03091420.d\M03091420.MS
Injection Date: 15-SEP-2015 02:16
Instrument: GCMS03.i
Client Sample ID: AS27354LCS



Form 1

PCB Homolog Report

Pace Analytical Services, Inc.

ELAP ID No.: 11078
 Matrix: TO-10A PUF
 Sample volume: N/A
 % Moisture: 0 %
 Method: EPA 680 (GC/MS)
 Dilution Factor: 1
 GC Column: J&W, DB-XLB, 30m length, 0.25mm ID, 0.25µm Film

SDG No.: 15090196
 Client ID: LCS
 Lab Sample ID: AS27354L
 Date Received: N/A
 Date Extracted: 9/10/2015
 Date Analyzed: 9/15/2015
 Time Analyzed: 2:16

Monochlorobiphenyls									
Quant Ion RT m/z 188	Quant Ion Area	Confirm Ion RT m/z 190	Confirm Ion Area	Ratio	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
10.026	114796	10.024	41518	2.8	0.9732	0.00500	0.00500	0.557	
Mono Total:						0.00500	0.00500	0.557	

Dichlorobiphenyls									
Quant Ion RT m/z 222	Quant Ion Area	Confirm Ion RT m/z 224	Confirm Ion Area	Ratio	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
14.091	117535	14.088	70707	1.7	0.9128	0.00500	0.00500	0.608	
Di Total:						0.00500	0.00500	0.608	

Trichlorobiphenyls									
Quant Ion RT m/z 256	Quant Ion Area	Confirm Ion RT m/z 258	Confirm Ion Area	Ratio	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
17.780	94349	17.780	92428	1.0	0.7325	0.00500	0.00500	0.608	
Tri Total:						0.00500	0.00500	0.608	

Tetrachlorobiphenyls									
Quant Ion RT m/z 292	Quant Ion Area	Confirm Ion RT m/z 290	Confirm Ion Area	Ratio	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
18.236	135800	18.234	115587	1.2	0.5577	0.0100	0.0100	1.15	
Tetra Total:						0.0100	0.0100	1.15	

Pentachlorobiphenyls									
Quant Ion RT m/z 326	Quant Ion Area	Confirm Ion RT m/z 324	Confirm Ion Area	Ratio	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
26.805	159051	26.808	95767	1.7	0.5531	0.0100	0.0100	1.36	
Penta Total:						0.0100	0.0100	1.36	

Hexachlorobiphenyls									
Quant Ion RT m/z 360	Quant Ion Area	Confirm Ion RT m/z 362	Confirm Ion Area	Ratio 1.0 to 1.4	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
27.095	168993	27.096	138956	1.2	0.6050	0.0100	0.0100	1.32	
Hexa Total:						0.0100	0.0100	1.32	

Heptachlorobiphenyls									
Quant Ion RT m/z 394	Quant Ion Area	Confirm Ion RT m/z 396	Confirm Ion Area	Ratio 0.9 to 1.2	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
29.208	316630	29.206	307402	1.0	0.7160	0.0150	0.0150	2.09	
Hepta Total:						0.0150	0.0150	2.09	

Octachlorobiphenyls									
Quant Ion RT m/z 430	Quant Ion Area	Confirm Ion RT m/z 428	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
34.346	358583	34.342	309419	1.2	0.9158	0.0150	0.0150	1.85	
Octa Total:						0.0150	0.0150	1.85	

Nonachlorobiphenyls									
Quant Ion RT m/z 464	Quant Ion Area	Confirm Ion RT m/z 466	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
Nona Total:						0.0250	0.0250	ND	

Decachlorobiphenyl									
Quant Ion RT m/z 498	Quant Ion Area	Confirm Ion RT m/z 500	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
43.627	413950	43.626	351928	1.2	0.5967	0.0250	0.0250	3.28	
Deca Total:						0.0250	0.0250	3.28	

Tetrachloro-meta-xylene: Surrogate Analyte									
Quant Ion RT m/z 244	Quant Ion Area	Confirm Ion RT m/z 242	Confirm Ion Area	Ratio 1.1 - 1.5	Response Factor		Solution Concentration ug/mL	Flag	
12.545	532	12.554	388	1.4	0.2749		0.00914		
TCMX Total:							0.00914		

Decachloro ¹³ C Biphenyl: Surrogate Analyte								
Quant Ion RT m/z 510	Quant Ion Area	Confirm Ion RT m/z 512	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor		Solution Concentration ug/mL	Flag
43.614	10258	43.613	9143	1.1	0.5967		0.0812	
Deca Total:							0.0812	

TCMX Recovery % 45.7 %

Deca Recovery 81.2 %

Chrysene-d ₁₂ Internal Standard								
Quant Ion RT m/z 240	Quant Ion Area	Confirm Ion RT m/z 241	Confirm Ion Area	Ratio 4.3 - 5.9	Response Factor		Solution Concentration ug/mL	Flag
35.235	169368	35.245	30518	5.5	1.0000		0.800	
Chrysene-d ₁₂ :							0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.026	114796	10.024	41518	10.026	47671	10.028	29709
14.079	1583			14.089	63443	14.087	8189
14.098	2358			17.782	1421		
16.531	135978						
17.779	18131						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
13.593	1942	14.088	70707	10.026	47671	10.028	29709	14.095	8302	10.026	114796
14.091	117535	18.226	13416	14.089	63443	14.087	8189	16.529	12443	14.079	1583
17.077	3608			17.782	1421			17.779	54351	14.098	2358
17.768	2949							18.244	6892	16.531	135978
18.233	72267							26.808	5779	17.779	18131
20.761	2674							26.830	4100		
26.789	1316										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091420"		"M03091420"		"M03091420"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.780	94349	17.780	92428	7.280	1286
18.225	15523	18.214	3456	11.916	2707
26.815	85568	18.236	6774	13.598	8630
27.090	2697	26.806	30448	14.329	4467
29.178	1960			14.875	3509
29.201	4938			17.075	15319
29.219	8492			17.779	4702
				18.236	16234
				18.623	4103
				18.677	2438
				20.755	15372
				22.457	2505
				23.042	1453
				24.314	6976
				26.200	1428
				26.807	10216
				27.078	1494
				27.715	3906

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
17.780	94349	17.780	92428	14.095	8302	10.026	114796	26.808	95767	26.805	159051
18.225	15523	18.214	3456	16.529	12443	14.079	1583	27.078	3191	27.066	2352
26.815	85568	18.236	6774	17.779	54351	14.098	2358	27.100	3940	27.089	1983
27.090	2697	26.806	30448	18.244	6892	16.531	135978	29.198	126998	27.112	2653
29.178	1960			26.808	5779	17.779	18131	32.353	1540	29.206	85028
29.201	4938			26.830	4100			34.345	4225	34.319	1580
29.219	8492										

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
26.806	103816	18.235	1721	18.234	115587	18.236	135800	18.234	69217	18.234	79758
27.094	2881	26.806	88481	26.772	1472	26.788	4893	26.808	5104	26.792	7339
27.124	1385	27.085	7594	26.816	6936	26.802	7610	27.088	5532	26.817	7232
29.198	16796	29.209	39402	27.098	85661	27.088	44918	27.112	4135	27.079	3840
29.221	13317	34.334	2345	29.210	4689	34.345	2847			27.101	6640
				34.336	25686					29.205	8435
										34.321	2916
										34.367	1419

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>		<u>m/z 360</u>		<u>m/z 362</u>	
18.236	135800	18.234	115587	17.788	4777	13.593	1942	27.095	168993	27.096	138956
26.788	4893	26.772	1472	18.235	104103	14.091	117535	29.196	4383	29.203	2158
26.802	7610	26.816	6936	26.805	5025	17.077	3608	29.233	1422	29.227	2502
27.088	44918	27.098	85661	26.830	2282	17.768	2949	29.764	1415	29.763	1527
34.345	2847	29.210	4689	27.090	19100	18.233	72267	34.343	102339	34.344	47586
		34.336	25686			20.761	2674	43.616	18748	43.633	5835
						26.789	1316	43.662	6403		

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 288		m/z 324		m/z 326		m/z 328		m/z 289	
27.091	66204	26.808	95767	26.805	159051	26.806	103816	26.804	61989
29.175	1816	27.078	3191	27.066	2352	27.094	2881	27.097	12434
29.214	6522	27.100	3940	27.089	1983	27.124	1385	29.199	13298
34.311	11559	29.198	126998	27.112	2653	29.198	16796	29.232	5278
34.350	38393	32.353	1540	29.206	85028	29.221	13317	34.334	7915
		34.345	4225	34.319	1580				

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
<u>m/z 326</u>		<u>m/z 324</u>		<u>m/z 254</u>		<u>m/z 256</u>		<u>m/z 258</u>		<u>m/z 392</u>	
26.805	159051	26.808	95767	18.235	1721	17.780	94349	17.780	92428	29.207	146637
27.066	2352	27.078	3191	26.806	88481	18.225	15523	18.214	3456	32.364	1445
27.089	1983	27.100	3940	27.085	7594	26.815	85568	18.236	6774	34.357	1407
27.112	2653	29.198	126998	29.209	39402	27.090	2697	26.806	30448	43.615	3589
29.206	85028	32.353	1540	34.334	2345	29.178	1960			43.649	1984
34.319	1580	34.345	4225			29.201	4938				
						29.219	8492				

Extracted Ion Current Profiles

Pentachlorobiphenyls													
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360		m/z 362		m/z 323	
29.208	316630	29.206	307402	29.211	164479	29.200	77034	27.095	168993	27.096	138956	27.099	32089
32.351	2986	32.346	3529			34.340	7029	29.196	4383	29.203	2158	29.205	16165
34.311	1678	34.335	1534					29.233	1422	29.227	2502	34.329	12159
34.333	1514	34.355	1464					29.764	1415	29.763	1527	34.358	8546
34.357	1491							34.343	102339	34.344	47586		
43.622	2934							43.616	18748	43.633	5835		
43.653	1416							43.662	6403				

Extracted Ion Current Profiles

Hexachlorobiphenyls											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
<u>m/z 360</u>		<u>m/z 362</u>		<u>m/z 288</u>		<u>m/z 290</u>		<u>m/z 426</u>		<u>m/z 428</u>	
27.095	168993	27.096	138956	27.091	66204	18.234	115587	34.341	131277	34.342	309419
29.196	4383	29.203	2158	29.175	1816	26.772	1472	43.626	118017	43.621	67158
29.233	1422	29.227	2502	29.214	6522	26.816	6936			43.651	39629
29.764	1415	29.763	1527	34.311	11559	27.098	85661				
34.343	102339	34.344	47586	34.350	38393	29.210	4689				
43.616	18748	43.633	5835			34.336	25686				
43.662	6403										

Extracted Ion Current Profiles

Hexachlorobiphenyls															
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398		m/z 357	
34.346	358583	34.345	238898	20.748	18510	29.207	146637	29.208	316630	29.206	307402	29.211	164479	20.749	12001
43.627	91688	43.639	34117	24.289	1606	32.364	1445	32.351	2986	32.346	3529			24.299	1341
				24.312	3233	34.357	1407	34.311	1678	34.335	1534			24.328	2024
				27.720	1980	43.615	3589	34.333	1514	34.355	1464			29.218	13424
				34.325	24325	43.649	1984	34.357	1491					34.321	5987
				34.352	41182			43.622	2934					34.347	7900
				43.622	59129			43.653	1416					43.612	6743
														43.648	3766

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
<u>m/z 394</u>		<u>m/z 396</u>		<u>m/z 322</u>		<u>m/z 324</u>		<u>m/z 326</u>		<u>m/z 462</u>	
29.208	316630	29.206	307402	29.200	77034	26.808	95767	26.805	159051	39.317	2096
32.351	2986	32.346	3529	34.340	7029	27.078	3191	27.066	2352	43.621	2740
34.311	1678	34.335	1534			27.100	3940	27.089	1983		
34.333	1514	34.355	1464			29.198	126998	27.112	2653		
34.357	1491					32.353	1540	29.206	85028		
43.622	2934					34.345	4225	34.319	1580		
43.653	1416										

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 464		m/z 466		m/z 390		m/z 428		m/z 430		m/z 432	
39.323	2696	39.315	1866			34.342	309419	34.346	358583	34.345	238898
42.338	1315	42.339	1339			43.621	67158	43.627	91688	43.639	34117
43.597	1276					43.651	39629			43.624	19627
43.638	1765										

Extracted Ion Current Profiles

Octachlorobiphenyls											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462	
34.346	358583	34.342	309419	20.748	18510	20.740	2996	27.095	168993	39.317	2096
43.627	91688	43.621	67158	24.289	1606	27.092	87838	29.196	4383	43.621	2740
		43.651	39629	24.312	3233	29.209	2063	29.233	1422		
				27.720	1980	34.348	126843	29.764	1415		
				34.325	24325	43.629	56129	34.343	102339		
				34.352	41182			43.616	18748		
				43.622	59129			43.662	6403		

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091420"		"M03091420"		"M03091420"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 425</u>	
39.323	2696	39.315	1866	43.615	4746
42.338	1315	42.339	1339	43.636	3482
43.597	1276				
43.638	1765				

Extracted Ion Current Profiles

Nonachlorobiphenyls							
"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 464		m/z 466		m/z 390		m/z 392	
39.323	2696	39.315	1866			29.207	146637
42.338	1315	42.339	1339			32.364	1445
43.597	1276					34.357	1407
43.638	1765					43.615	3589
						43.649	1984
							29.208
							316630
							32.351
							2986
							34.311
							1678
							34.333
							1514
							34.357
							1491
							43.622
							2934
							43.653
							1416

FALSE

Extracted Ion Current Profiles

Decachlorobiphenyl											
"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"		"M03091420"	
m/z 498		m/z 500		m/z 424		m/z 426		m/z 428		m/z 430	
43.627	413950	43.626	351928	43.637	44172	34.341	131277	34.342	309419	34.346	358583
						43.626	118017	43.621	67158	43.627	91688
								43.651	39629		

Extracted Ion Current Profiles

TCMX			
"M03091420"		"M03091420"	
m/z 244		m/z 242	

12.545	532(M)	12.554	388(M)
12.570	159	16.522	157
16.939	105	17.078	104
16.978	132	18.249	187
20.168	121	29.185	155
27.112	164	29.231	775
28.624	101	33.212	114
29.197	304	33.592	121
34.114	143	33.986	119
34.235	105	34.295	309
34.345	283	34.333	380
34.585	117	34.372	404
34.623	136	35.160	182
34.923	155	35.187	254
35.635	173	35.213	480
35.951	117	35.234	1145
35.984	137	35.267	1121
36.056	117	35.477	176
36.163	179	35.890	100
36.211	124	36.292	146
36.666	192	36.999	195
36.918	180	37.291	143
37.072	152	37.422	209
37.280	129	38.082	121
37.318	114	38.294	126
37.603	181	39.066	129
38.177	112	39.453	170
38.259	171		
38.443	238		
38.611	150		
38.752	136		
38.774	146		
38.811	146		
39.002	100		
39.188	220		
39.420	211		
39.454	207		
39.546	104		

TCMX

chrysene -
d₁₂

Chrysene-d12			
"M03091420"		"M03091420"	
m/z 240		m/z 241	

29.197	2119	34.339	2145
29.233	1273	35.245	30518
35.235	169368	35.294	3652

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091420"		"M03091420"	
m/z 188		m/z 189	

10.026	114796	10.025	18259
14.079	1583	14.098	3928
14.098	2358	16.528	22480
16.531	135978	17.782	2826
17.779	18131		

Extracted Ion Current Profiles

Deca C13				
Deca C13	m/z 510		m/z 512	
510	34.321	296	34.357	264
512	35.017	105	34.383	190
	35.245	114	38.928	217
	38.124	120	38.973	148
	40.627	119	43.419	102
	41.309	107	43.542	263
	41.433	119	43.613	9143(M)
	41.741	150	43.649	1563
	41.943	136	43.688	143
	42.496	105	43.743	170
	43.189	115	44.261	111
	43.614	10258		
	43.685	204		
	43.820	193		
	43.917	185		
	44.176	121		
	44.450	166		
	44.555	178		
	44.711	124		
	44.837	105		



Quality Control Results
Lab Control Sample - Duplicate (LCSD)
Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: Lab Control Sample - Duplicate (AS27354S)
Lab Sample ID: LCSD-11

Collection Date: N/A
Sample Matrix: POLYURETHANE FOAM
Received Date: N/A
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-521-21	PCBs by EPA Method TO-10A/680	09/15/2015 03:04	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	0.00m ³	1.00 mL	NA

Analyte Spiked	CAS No.	Added (ug)	LCSD (ug)	LCSD % Rec.	Q ¹	Limits (%)	Precision			
							LCS % Rec.	RPD	Q ¹	Limits (%)
Monochlorobiphenyl	27323-18-8	1.00	0.622	62.2		28.7-78.9	55.7	11.0		40
Dichlorobiphenyl	25512-42-9	1.00	0.627	62.7		30.8-82.6	60.8	3.08		40
Trichlorobiphenyl	25323-68-6	1.00	0.647	64.7		34.4-86.8	60.8	6.22		40
Tetrachlorobiphenyl	26914-33-0	2.00	1.34	66.9		34.6-86.9	57.5	15.1		40
Pentachlorobiphenyl	25429-29-2	2.00	1.48	74.1		37.8-91.9	67.9	8.73		40
Hexachlorobiphenyl	26601-64-9	2.00	1.46	72.8		40.9-94.8	66.0	9.80		40
Heptachlorobiphenyl	28655-71-2	3.00	2.27	75.8		41.7-98.0	69.6	8.53		40
Octachlorobiphenyl	55722-26-4	3.00	1.98	66.0		43.2-102	61.6	6.90		40
Decachlorobiphenyl	2051-24-3	5.00	3.54	70.9		46.4-102	65.5	7.92		40

¹Qualifier column where '*' denotes value outside the control limits. Note: RPD criteria does not apply if either the sample and duplicate sample are not detected.

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	63.6	70.1-116	*	MS03-521-21
Tetrachloro-meta-xylene	877-09-8	47.5	44.4-104		MS03-521-21

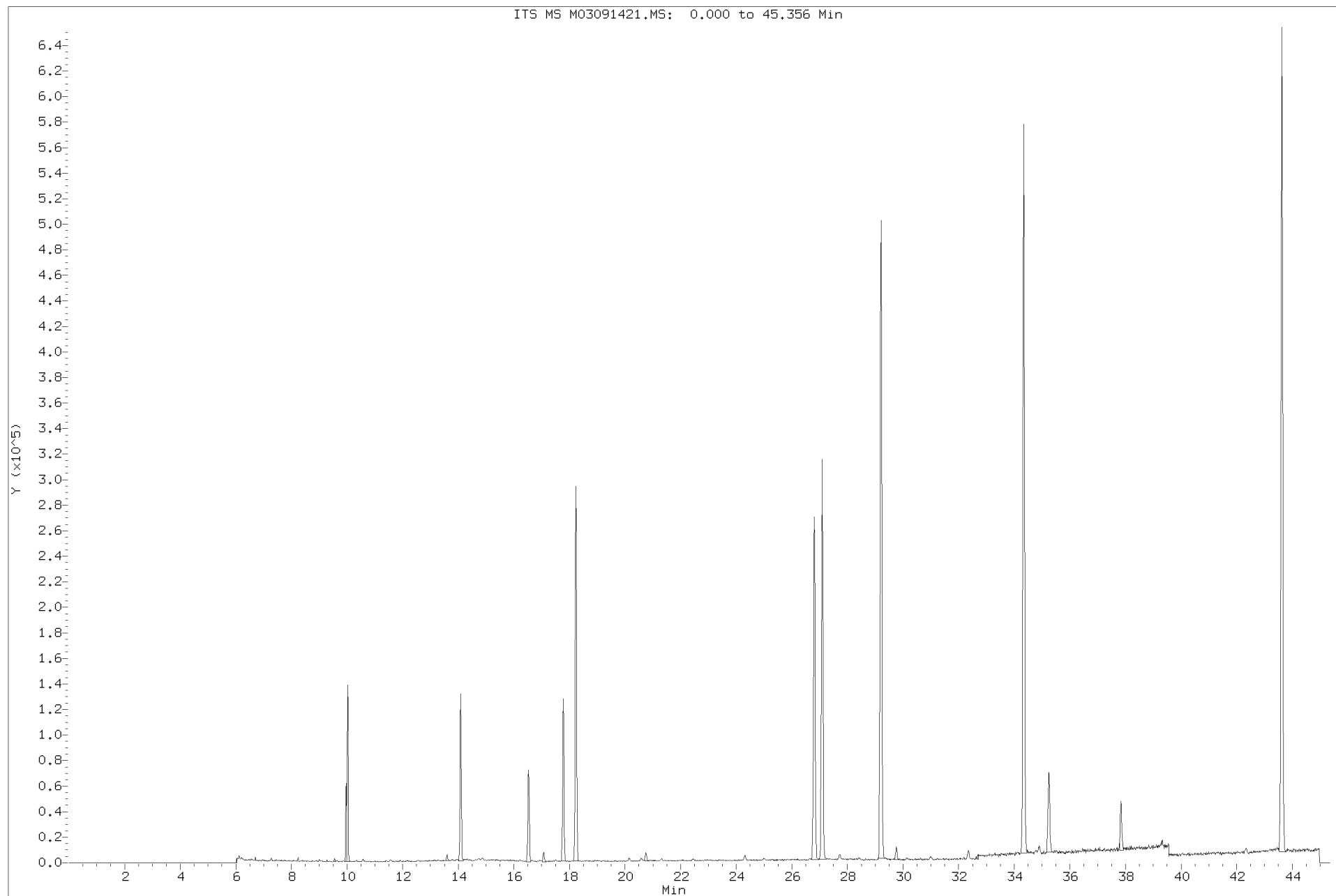
¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Data File: \\APOLLO\GCMS\TP15\GCMS03\091415-680b.b\M03091421.d\M03091421.MS
Injection Date: 15-SEP-2015 03:04
Instrument: GCMS03.i
Client Sample ID: AS27354S



Form 1

PCB Homolog Report

Pace Analytical Services, Inc.

ELAP ID No.: 11078
 Matrix: TO-10A PUF
 Sample volume: N/A
 % Moisture: 0 %
 Method: EPA 680 (GC/MS)
 Dilution Factor: 1
 GC Column: J&W, DB-XLB, 30m length, 0.25mm ID, 0.25µm Film

SDG No.: 15090196
 Client ID: LCSD
 Lab Sample ID: AS27354S
 Date Received: N/A
 Date Extracted: 9/10/2015
 Date Analyzed: 9/15/2015
 Time Analyzed: 3:04

Monochlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 188		m/z 190		2.5 to 3.5		ug	ug	ug	
10.026	121184	10.023	41742	2.9	0.9732	0.00500	0.00500	0.622	
Mono Total:						0.00500	0.00500	0.622	

Dichlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 222		m/z 224		1.3 to 1.7		ug	ug	ug	
14.089	114513	14.089	75409	1.5	0.9128	0.00500	0.00500	0.627	
Di Total:						0.00500	0.00500	0.627	

Trichlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 256		m/z 258		0.8 to 1.2		ug	ug	ug	
17.782	94894	17.784	100979	0.9	0.7325	0.00500	0.00500	0.647	
Tri Total:						0.00500	0.00500	0.647	

Tetrachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 292		m/z 290		1.1 to 1.5		ug	ug	ug	
18.232	149204	18.230	109035	1.4	0.5577	0.0100	0.0100	1.34	
Tetra Total:						0.0100	0.0100	1.34	

Pentachlorobiphenyls									
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor	MDL	Reporting Limit	Report Amount	Flag
m/z 326		m/z 324		1.4 to 1.8		ug	ug	ug	
26.808	163975	26.804	102568	1.6	0.5531	0.0100	0.0100	1.48	
Penta Total:						0.0100	0.0100	1.48	

Hexachlorobiphenyls									
Quant Ion RT m/z 360	Quant Ion Area	Confirm Ion RT m/z 362	Confirm Ion Area	Ratio 1.0 to 1.4	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
27.091	176241	27.091	143778	1.2	0.6050	0.0100	0.0100	1.46	
Hexa Total:						0.0100	0.0100	1.46	

Heptachlorobiphenyls									
Quant Ion RT m/z 394	Quant Ion Area	Confirm Ion RT m/z 396	Confirm Ion Area	Ratio 0.9 to 1.2	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
29.210	325737	29.212	317980	1.0	0.7160	0.0150	0.0150	2.27	
Hepta Total:						0.0150	0.0150	2.27	

Octachlorobiphenyls									
Quant Ion RT m/z 430	Quant Ion Area	Confirm Ion RT m/z 428	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
34.341	362572	34.334	313693	1.2	0.9158	0.0150	0.0150	1.98	
Octa Total:						0.0150	0.0150	1.98	

Nonachlorobiphenyls									
Quant Ion RT m/z 464	Quant Ion Area	Confirm Ion RT m/z 466	Confirm Ion Area	Ratio 1.1 to 1.5	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
Nona Total:						0.0250	0.0250	ND	

Decachlorobiphenyl									
Quant Ion RT m/z 498	Quant Ion Area	Confirm Ion RT m/z 500	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor	MDL ug	Reporting Limit ug	Report Amount ug	Flag
43.626	422940	43.626	363256	1.2	0.5967	0.0250	0.0250	3.54	
Deca Total:						0.0250	0.0250	3.54	

Tetrachloro-meta-xylene: Surrogate Analyte									
Quant Ion RT m/z 244	Quant Ion Area	Confirm Ion RT m/z 242	Confirm Ion Area	Ratio 1.1 - 1.5	Response Factor		Solution Concentration ug/mL	Flag	
12.557	522	12.541	400	1.3	0.2749		0.00949		
TCMX Total:							0.00949		

Decachloro ¹³ C Biphenyl: Surrogate Analyte								
Quant Ion RT m/z 510	Quant Ion Area	Confirm Ion RT m/z 512	Confirm Ion Area	Ratio 0.9 to 1.3	Response Factor		Solution Concentration ug/mL	Flag
43.615	7597	43.605	6318	1.2	0.5967		0.0636	
Deca Total:							0.0636	

TCMX Recovery % 47.5 %

Deca Recovery 63.6 %

Chrysene-d ₁₂ Internal Standard								
Quant Ion RT m/z 240	Quant Ion Area	Confirm Ion RT m/z 241	Confirm Ion Area	Ratio 4.3 - 5.9	Response Factor		Solution Concentration ug/mL	Flag
35.243	160063	35.242	29683	5.4	1.0000		0.800	
Chrysene-d ₁₂ :							0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03091421"		"M03091421"		"M03091421"		"M03091421"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.026	121184	10.023	41742	10.029	50463	10.029	31471
14.097	3594	16.529	1703	14.089	61811	14.088	8832
16.528	134762			17.792	1951		
17.784	19549						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
m/z 222		m/z 224		m/z 152		m/z 153		m/z 186		m/z 188	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
14.089	114513	14.089	75409	10.029	50463	10.029	31471	14.089	8378	10.026	121184
17.776	2861	18.240	12101	14.089	61811	14.088	8832	16.538	10419	14.097	3594
18.231	69657			17.792	1951			17.785	57629	16.528	134762
26.798	1408							18.229	6465	17.784	19549
27.106	2645							26.800	4986		
								26.817	6747		

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03091421"		"M03091421"		"M03091421"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.782	94894	17.784	100979	7.281	1253
18.230	15275	18.236	12184	13.599	3663
26.798	85976	26.799	14229	14.877	1576
27.100	3601	26.815	15366	17.079	3411
29.205	13802	29.217	1741	17.778	4939
				18.234	16611
				20.754	2168
				24.311	1413
				26.802	10697
				27.077	3471
				27.718	1790

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
m/z 256		m/z 258		m/z 186		m/z 188		m/z 324		m/z 326	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
17.782	94894	17.784	100979	14.089	8378	10.026	121184	26.804	102568	26.808	163975
18.230	15275	18.236	12184	16.538	10419	14.097	3594	27.087	3095	27.075	2923
26.798	85976	26.799	14229	17.785	57629	16.528	134762	27.112	1872	27.109	4208
27.100	3601	26.815	15366	18.229	6465	17.784	19549	29.208	137443	29.209	86469
29.205	13802	29.217	1741	26.800	4986			34.327	2427	32.355	1366
				26.817	6747			34.365	3068	34.346	1392

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
m/z 328		m/z 254		m/z 290		m/z 292		m/z 294		m/z 255	
RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area
26.813	107394	26.812	88672	18.230	109035	18.232	149204	18.228	72592	18.231	78944
27.078	4410	27.092	8485	26.805	11048	26.783	3969	26.794	3654	26.814	10159
29.196	14115	29.194	17239	27.091	87125	26.818	8070	26.818	3430	26.842	2477
29.212	17932	29.213	22016	29.204	2507	27.091	45560	27.098	10699	27.080	4672
		34.374	1265	29.226	2240	29.218	1997			27.097	3126
				34.297	3159	34.323	4468			27.124	2551
				34.335	24060					29.201	6493
										29.239	1390
										34.322	1411
										34.346	2416

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
<u>m/z 292</u>		<u>m/z 290</u>		<u>m/z 220</u>		<u>m/z 222</u>		<u>m/z 360</u>		<u>m/z 362</u>	
18.232	149204	18.230	109035	17.774	4848	14.089	114513	27.091	176241	27.091	143778
26.783	3969	26.805	11048	18.230	105580	17.776	2861	29.213	4955	29.202	1501
26.818	8070	27.091	87125	26.783	3226	18.231	69657	29.765	1564	34.312	9991
27.091	45560	29.204	2507	26.808	2904	26.798	1408	34.342	114134	34.344	31739
29.218	1997	29.226	2240	26.830	3196	27.106	2645	43.628	25303	43.626	4198
34.323	4468	34.297	3159	27.091	10604					43.663	1361
		34.335	24060	27.112	8322						

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
<u>m/z 288</u>		<u>m/z 324</u>		<u>m/z 326</u>		<u>m/z 328</u>		<u>m/z 289</u>	
27.090	39057	26.804	102568	26.808	163975	26.813	107394	26.797	32410
27.108	28309	27.087	3095	27.075	2923	27.078	4410	26.818	30445
29.199	6494	27.112	1872	27.109	4208	29.196	14115	27.096	8318
29.226	3391	29.208	137443	29.209	86469	29.212	17932	27.124	2786
34.347	49839	34.327	2427	32.355	1366			29.180	5137
		34.365	3068	34.346	1392			29.212	13736
								34.311	2206
								34.343	8628

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
<u>m/z 326</u>		<u>m/z 324</u>		<u>m/z 254</u>		<u>m/z 256</u>		<u>m/z 258</u>		<u>m/z 392</u>	
26.808	163975	26.804	102568	26.812	88672	17.782	94894	17.784	100979	29.211	141722
27.075	2923	27.087	3095	27.092	8485	18.230	15275	18.236	12184	34.345	1341
27.109	4208	27.112	1872	29.194	17239	26.798	85976	26.799	14229	43.606	2155
29.209	86469	29.208	137443	29.213	22016	27.100	3601	26.815	15366	43.628	4568
32.355	1366	34.327	2427	34.374	1265	29.205	13802	29.217	1741		
34.346	1392	34.365	3068								

Extracted Ion Current Profiles

Pentachlorobiphenyls													
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360		m/z 362		m/z 323	
29.210	325737	29.212	317980	29.210	169125	29.205	81912	27.091	176241	27.091	143778	27.081	14648
32.349	3234	32.337	3653	34.329	1795	34.320	2936	29.213	4955	29.202	1501	27.098	19274
34.330	2911	34.344	1997			34.350	4136	29.765	1564	34.312	9991	29.193	7239
43.626	1367	43.623	1788			37.823	1366	34.342	114134	34.344	31739	29.214	9713
43.659	1254							43.628	25303	43.626	4198	34.320	8775
										43.663	1361	34.343	12633

Extracted Ion Current Profiles

Hexachlorobiphenyls											
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
<u>m/z 360</u>		<u>m/z 362</u>		<u>m/z 288</u>		<u>m/z 290</u>		<u>m/z 426</u>		<u>m/z 428</u>	
27.091	176241	27.091	143778	27.090	39057	18.230	109035	34.341	127704	34.334	313693
29.213	4955	29.202	1501	27.108	28309	26.805	11048	43.626	110229	43.634	133120
29.765	1564	34.312	9991	29.199	6494	27.091	87125				
34.342	114134	34.344	31739	29.226	3391	29.204	2507				
43.628	25303	43.626	4198	34.347	49839	29.226	2240				
		43.663	1361			34.297	3159				
						34.335	24060				

Extracted Ion Current Profiles

Hexachlorobiphenyls															
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398		m/z 357	
34.341	362572	34.340	241550	20.759	2238	29.211	141722	29.210	325737	29.212	317980	29.210	169125	20.751	1377
34.783	1370	43.627	30308	34.332	67871	34.345	1341	32.349	3234	32.337	3653	34.329	1795	29.202	14707
43.630	90738	43.670	4637	43.627	69461	43.606	2155	34.330	2911	34.344	1997			34.357	11620
						43.628	4568	43.626	1367	43.623	1788			43.602	4937
								43.659	1254					43.634	8497

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
<u>m/z 394</u>		<u>m/z 396</u>		<u>m/z 322</u>		<u>m/z 324</u>		<u>m/z 326</u>		<u>m/z 462</u>	
29.210	325737	29.212	317980	29.205	81912	26.804	102568	26.808	163975	39.326	1835
32.349	3234	32.337	3653	34.320	2936	27.087	3095	27.075	2923	43.591	1251
34.330	2911	34.344	1997	34.350	4136	27.112	1872	27.109	4208	43.626	2287
43.626	1367	43.623	1788	37.823	1366	29.208	137443	29.209	86469	43.652	1347
43.659	1254					34.327	2427	32.355	1366		
						34.365	3068	34.346	1392		

Extracted Ion Current Profiles

Heptachlorobiphenyls													
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
m/z 464		m/z 466		m/z 390		m/z 428		m/z 430		m/z 432		m/z 391	
39.328	1772	42.347	1565	43.617	1680	34.334	313693	34.341	362572	34.340	241550	34.308	2116
42.324	1995	43.629	1810			43.634	133120	34.783	1370	43.627	30308	34.334	8370
43.605	3912							43.630	90738	43.670	4637	43.635	21840
43.651	1925												

Extracted Ion Current Profiles

Octachlorobiphenyls											
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462	
34.341	362572	34.334	313693	20.759	2238	27.097	91274	27.091	176241	39.326	1835
34.783	1370	43.634	133120	34.332	67871	29.218	1640	29.213	4955	43.591	1251
43.630	90738			43.627	69461	29.751	1281	29.765	1564	43.626	2287
						34.341	128076	34.342	114134	43.652	1347
						43.625	52171	43.628	25303		

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03091421"		"M03091421"		"M03091421"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 425</u>	
39.328	1772	42.347	1565	43.627	7095
42.324	1995	43.629	1810	43.652	3464
43.605	3912				
43.651	1925				

Extracted Ion Current Profiles

Nonachlorobiphenyls									
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
<u>m/z 464</u>		<u>m/z 466</u>		<u>m/z 390</u>		<u>m/z 392</u>		<u>m/z 394</u>	
39.328	1772	42.347	1565	43.617	1680	29.211	141722	29.210	325737
42.324	1995	43.629	1810			34.345	1341	32.349	3234
43.605	3912					43.606	2155	34.330	2911
43.651	1925					43.628	4568	43.626	1367
								43.659	1254

FALSE

Extracted Ion Current Profiles

Decachlorobiphenyl											
"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"		"M03091421"	
m/z 498		m/z 500		m/z 424		m/z 426		m/z 428		m/z 430	
43.626	422940	43.626	363256	43.621	43788	34.341	127704	34.334	313693	34.341	362572
						43.626	110229	43.634	133120	34.783	1370
										43.630	90738

Extracted Ion Current Profiles

TCMX			
"M03091421"		"M03091421"	
m/z 244		m/z 242	

12.557	522	12.541	400(M)
27.076	197	27.076	125
29.189	475	27.112	185
29.216	541	29.182	368
29.239	602	29.214	1430
30.341	111	32.494	113
32.101	121	34.279	122
32.964	106	34.307	418
33.120	116	34.331	558
33.662	126	35.210	593
33.834	191	35.231	879
34.050	129	35.256	1421
35.515	102	35.315	132
35.596	163	35.501	127
35.866	147	35.621	133
36.376	103	36.893	113
36.445	118	37.662	108
36.499	103	38.016	179
36.830	117	38.503	175
36.860	101	38.688	116
37.025	251	38.863	109
37.166	145	39.151	135
37.601	202	39.185	160
37.800	107	39.345	160
37.910	222	39.485	110
38.021	121		
38.070	282		
38.125	151		
38.180	209		
38.438	163		
38.475	161		
38.578	132		
38.735	100		
38.865	162		
39.088	119		
39.317	113		

TCMX

chrysene -
d₁₂

Chrysene-d12			
"M03091421"		"M03091421"	
m/z 240		m/z 241	

29.212	3063	29.198	1867
35.243	160063	34.325	2642
		34.363	1562
		35.242	29683

phenanthrene -
d₁₀

Phenanthrene-d10			
"M03091421"		"M03091421"	
m/z 188		m/z 189	

10.026	121184	10.027	15540
14.097	3594	14.088	3281
16.528	134762	16.529	21681
17.784	19549	17.777	2230

Extracted Ion Current Profiles

Deca C13				
Deca C13	<u>m/z 510</u>		<u>m/z 512</u>	
510	34.319	280	32.851	111
512	35.255	115	34.307	178
	40.702	143	35.231	101
	41.809	117	38.149	117
	43.615	7597	40.190	161
	43.676	369	40.250	105
	43.736	284	40.386	140
	43.834	106	40.455	140
	43.929	102	42.448	100
	44.400	114	42.564	121
			42.828	118
			43.291	103
			43.348	100
			43.530	118
			43.605	6318
			43.947	109
			44.323	140
			44.448	115
			44.622	123

Attachment 2 – Data Validation Memoranda



Memo

To: David Sullivan
From: Lorie MacKinnon
CC:
Date: 10/12/15
Re: Data Validation Review: Air Samples: New Bedford High School/New Bedford, MA: SDG 15090196

SUMMARY

Limited (Tier II) validation was performed on the data for six air samples collected at the New Bedford High School in New Bedford, Massachusetts. The samples were collected on September 4, 2014 and submitted to Pace Analytical Services, Inc. in Schenectady, New York for analysis. All air samples were collected on polyurethane foam (PUF) cartridges in accordance with EPA method TO-10A. The samples were analyzed for polychlorinated biphenyl (PCB) homolog distribution using EPA method 680. The results were reported under job number 15090196.

The sample results were assessed using the *EPA New England Data Validation Functional Guidelines for Evaluating Environmental Analyses*, revised December 1996. Modification of these guidelines was performed to accommodate the non-CLP methodology.

In general, the data appear to be valid as reported and may be used for decision-making purposes. Potential uncertainty exists for the results for trichlorobiphenyl, tetrachlorobiphenyl, and total PCBs in samples 1-110 and 1-110D and dichlorobiphenyl, tetrachlorobiphenyl, and total PCBs in samples 2-203 and 2-203D due to high relative percent differences in the evaluation of the field duplicate pair. Potential low bias exists for results in samples 1-110, 1-110D, 1-315, 1-315D, and 2-203 due to low surrogate recoveries. These issues have a minor impact on the data usability; all results are still usable for project objectives.

SAMPLES

Samples included in this review are listed below:

1-110	1-110D ¹	1-315
1-315D ²	2-203	2-203D ³

¹ – Field duplicate of 1-110

² – Field duplicate of 1-315

REVIEW ELEMENTS

Sample data were reviewed for the following parameters:

- Agreement of analyses conducted with TRC requests
- Holding times and sample preservation
- Gas chromatography/mass spectrometry (GC/MS) tunes
- Initial and continuing calibrations
- Blanks
- Surrogate spike recoveries
- Laboratory control sample (LCS) results
- Internal standard performance
- Field duplicate results
- Quantitation limits and sample results

DISCUSSION

Agreement of Analyses Conducted with TRC Requests

Sample reports were checked to verify that the results corresponded to analytical requests as designated on the chain-of-custody and any correspondence between TRC and the laboratory.

Holding Times and Sample Preservation

All samples were extracted and analyzed within the method-specified holding time.

GC/MS Tunes

The frequency and abundance of all decafluorotriphenylphosphine (DFTPP) tunes were within the acceptance criteria. The samples were analyzed within 12 hours from the DFTPP tunes. Window defining mixtures were analyzed following each DFTPP tune.

Initial and Continuing Calibrations

The %RSDs and %Ds of all PCB homologs used in the initial and continuing calibrations were within the acceptance criteria.

Blanks

Target compounds were not detected in the laboratory method blanks associated with the PCB homologue analyses.

Target compounds were not detected in the VER PUF samples (Lot #s 68389, 67183, and 68582) which were analyzed and reported under job numbers 15080722, 15080723, and 15090326.

Surrogate Spike Recoveries

Select samples exhibited surrogate recoveries outside the acceptance criteria. The following table summarizes the surrogate recoveries in the affected samples.

Sample ID Control Limit (PUF)	TCMX 44.4-104	DCB 70.1-116	Validation Actions
1-110	41.4%	51.5%	Estimate (J/UJ) the positive and nondetect results for samples 1-110, 1-110D, 1-315, 1-315D, and 2-203; Low bias.
1-110D	Criteria Met	62.6%	
1-315	Criteria Met	59.6%	
1-315D	32.6%	Criteria met	
2-203	Criteria Met	66.8%	

LCS Results

All criteria were met.

Internal Standard Performance

All internal standard criteria were met for the project samples.

Field Duplicate Results

Samples 1-110/1-110D, 1-315/1-315D, and 2-203/2-203D were submitted as the field duplicate (collocated) pairs with this sample set.

The following table summarizes the RPDs of the detected analytes in sample pair 1-110/1-110D, which were not within the acceptance criteria of 20%RPD or the difference of <2 times the reporting limit (RL) for trichlorobiphenyl, tetrachlorobiphenyl, and total PCB. The positive results for trichlorobiphenyl, tetrachlorobiphenyl, and total PCB in samples 1-110 and 1-110D were estimated (J).

Parameter	1-110 (ug/m3)	1-110D (ug/m3)	RPD (%)
Dichlorobiphenyl	0.0119	0.0138	14.8
Trichlorobiphenyl	0.0303	0.0408	29.5
Tetrachlorobiphenyl	0.00707	0.00924	26.6
Total PCB	0.0492	0.0638	25.8

The following table summarizes the RPDs of the detected analytes in sample pair 1-315/1-315D, which were within the acceptance criteria of 20%RPD or the difference of <2 times the reporting limit (RL).

Parameter	1-315 (ug/m3)	1-315D (ug/m3)	RPD (%)
Dichlorobiphenyl	0.0194	0.0188	3.1
Trichlorobiphenyl	0.0943	0.0889	5.9
Tetrachlorobiphenyl	0.0956	0.108	12.2
Total PCB	0.209	0.216	3.3

The following table summarizes the RPDs of the detected analytes in sample pair 2-203/2-203D, which were not within the acceptance criteria of 20%RPD or the difference of <2 times the reporting limit (RL) for dichlorobiphenyl and tetrachlorobiphenyl. The positive results for dichlorobiphenyl and tetrachlorobiphenyl in samples 2-203 and 2-203D were estimated (J). Additionally, although within the field duplicate acceptance criteria, the results for total PCBs in samples 2-203 and 2-203D were estimated (J) as homologs were estimated in these samples.

Parameter	2-203 (ug/m3)	2-203D (ug/m3)	RPD (%)
Dichlorobiphenyl	0.00825	0.00531	43.4
Trichlorobiphenyl	0.0584	0.0609	4.2
Tetrachlorobiphenyl	0.0360	0.0294	20.2
Total PCB	0.103	0.0956	7.5

Quantitation Limits and Sample Results

The quantitation limits met the requirements in the Sampling Plan for this program.



Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058
Client Sample ID: 1-110
Lab Sample ID: 15090196-01 (AS27372)

Collection Date: 09/04/2015
Sample Matrix: POLYURETHANE FOAM
Received Date: 09/09/2015 09:22
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-521-28	PCBs by EPA Method TO-10A/680	09/15/2015 08:47	RMS	NA	NA	Agilent, J&W DB-1XL.D, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	7.53m ³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m ³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.000664	1.00	U J	MS03-521-28
Dichlorobiphenyl	25512-42-9	0.0119	0.000664	1.00	J	MS03-521-28
Trichlorobiphenyl	25323-68-6	0.0303	0.000664	1.00	J	MS03-521-28
Tetrachlorobiphenyl	26914-33-0	0.00707	0.00133	1.00	J	MS03-521-28
Pentachlorobiphenyl	25429-29-2	ND	0.00133	1.00	U J	MS03-521-28
Hexachlorobiphenyl	26601-64-9	ND	0.00133	1.00	U	MS03-521-28
Heptachlorobiphenyl	28655-71-2	ND	0.00199	1.00	U	MS03-521-28
Octachlorobiphenyl	55722-26-4	ND	0.00199	1.00	U	MS03-521-28
Nonachlorobiphenyl	53742-07-7	ND	0.00332	1.00	U	MS03-521-28
Decachlorobiphenyl	2051-24-3	ND	0.00332	1.00	U J	MS03-521-28
Total PCB	1336-36-3	0.0492		1.00	J	MS03-521-28

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	51.5	70.1-116	*	MS03-521-28
Tetrachloro-meta-xylene	877-09-8	41.4	44.4-104	*	MS03-521-28

¹Qualifier column where '*' denotes value outside the control limits or 'D' denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit): Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

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A analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058
Client Sample ID: 1-110D
Lab Sample ID: 15090196-02 (AS27373)

Collection Date: 09/04/2015
Sample Matrix: POLYURETHANE FOAM
Received Date: 09/09/2015 09:22
Percent Solid: N/A

Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1: MS03-521-29	PCBs by EPA Method TO-10A/680	09/15/2015 09:36	RMS	NA	NA	Agilent, 10W DB-XXL, 50 m, 0.25 mm ID, 0.25 µm
Prep 1: 32196	TO-10A	09/10/2015 17:00	LMB	7.55m ³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m ³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.000662	1.00	U	MS03-521-29
Dichlorobiphenyl	25512-42-9	0.0138	0.000662	1.00	J	MS03-521-29
Trichlorobiphenyl	25323-68-6	0.0408	0.000662	1.00	J	MS03-521-29
Tetrachlorobiphenyl	26914-33-0	0.00924	0.00133	1.00	J	MS03-521-29
Pentachlorobiphenyl	25429-29-2	ND	0.00133	1.00	U	MS03-521-29
Hexachlorobiphenyl	26601-64-9	ND	0.00133	1.00	U	MS03-521-29
Heptachlorobiphenyl	28655-71-2	ND	0.00199	1.00	U	MS03-521-29
Octachlorobiphenyl	55722-26-4	ND	0.00199	1.00	U	MS03-521-29
Nonachlorobiphenyl	53742-07-7	ND	0.00331	1.00	U	MS03-521-29
Decachlorobiphenyl	2051-24-3	ND	0.00331	1.00	U	MS03-521-29
Total PCB	1336-36-3	0.0638		1.00	J	MS03-521-29

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	62.6	70.1-116	*	MS03-521-29
Tetrachloro-meta-xylene	877-09-8	62.2	44.4-104		MS03-521-29

*Qualifier column where * denotes value outside the control limits or 'D' denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

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Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
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Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058
Client Sample ID: 1-315
Lab Sample ID: 15090196-03 (AS27374)

Collection Date: 09/04/2015
Sample Matrix: POLYURETHANE FOAM
Received Date: 09/09/2015 09:22
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-522-11	PCBs by EPA Method TO-10A/680	09/15/2015 20:14	RMS	NA	NA	Agilent, 30W1305-20.0, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	7.60m ³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m ³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND <i>UJ</i>	0.000658	1.00	<i>UJ</i>	MS03-522-11
Dichlorobiphenyl	25512-42-9	0.0194 <i>J</i>	0.000658	1.00	<i>J</i>	MS03-522-11
Trichlorobiphenyl	25323-68-6	0.0943 <i>J</i>	0.000658	1.00	<i>J</i>	MS03-522-11
Tetrachlorobiphenyl	26914-33-0	0.0956 <i>J</i>	0.00132	1.00	<i>J</i>	MS03-522-11
Pentachlorobiphenyl	25429-29-2	ND <i>UJ</i>	0.00132	1.00	<i>UJ</i>	MS03-522-11
Hexachlorobiphenyl	26601-64-9	ND	0.00132	1.00	<i>U</i>	MS03-522-11
Heptachlorobiphenyl	28655-71-2	ND	0.00197	1.00	<i>U</i>	MS03-522-11
Octachlorobiphenyl	55722-26-4	ND	0.00197	1.00	<i>U</i>	MS03-522-11
Nonachlorobiphenyl	53742-07-7	ND	0.00329	1.00	<i>U</i>	MS03-522-11
Decachlorobiphenyl	2051-24-3	ND <i>UJ</i>	0.00329	1.00	<i>UJ</i>	MS03-522-11
Total PCB	1336-36-3	0.209 <i>J</i>		1.00	<i>J</i>	MS03-522-11

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	59.6	70.1-116	*	MS03-522-11
Tetrachloro-meta-xylene	877-09-8	54.3	44.4-104		MS03-522-11

Qualifier column where "" denotes value outside the control limits or "D" denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit): Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

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Analytical Sample Results

Job Number: 15090196

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Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058
Client Sample ID: 1-315D
Lab Sample ID: 15090196-04 (AS27375)

Collection Date: 09/04/2015
Sample Matrix: POLYURETHANE FOAM
Received Date: 09/09/2015 09:22
Percent Solid: N/A

Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1: MS03-523-5	PCBs by EPA Method TO-10A/680	09/16/2015 16:01	RMS	NA	NA	Agilent, J&W DB-20.0, 30 m, 0.25 mm ID, 0.25 µm
Prep 1: 32196	TO-10A	09/10/2015 17:00	LMB	7.69m ³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m ³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND UJ	0.000650	1.00	UJ	MS03-523-5
Dichlorobiphenyl	25512-42-9	0.0188 J	0.000650	1.00	J	MS03-523-5
Trichlorobiphenyl	25323-68-6	0.0889 J	0.000650	1.00	J	MS03-523-5
Tetrachlorobiphenyl	26914-33-0	0.108 J	0.00130	1.00	J	MS03-523-5
Pentachlorobiphenyl	25429-29-2	ND UJ	0.00130	1.00	UJ	MS03-523-5
Hexachlorobiphenyl	26601-64-9	ND J	0.00130	1.00	UJ	MS03-523-5
Heptachlorobiphenyl	28655-71-2	ND J	0.00195	1.00	UJ	MS03-523-5
Octachlorobiphenyl	55722-26-4	ND J	0.00195	1.00	UJ	MS03-523-5
Nonachlorobiphenyl	53742-07-7	ND J	0.00325	1.00	UJ	MS03-523-5
Decachlorobiphenyl	2051-24-3	ND UJ	0.00325	1.00	UJ	MS03-523-5
Total PCB	1336-36-3	0.216 J		1.00	J	MS03-523-5

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	72.2	70.1-116		MS03-523-5
Tetrachloro-meta-xylene	877-09-8	32.6	44.4-104	*	MS03-523-5

¹Qualifier column where * denotes value outside the control limits or 'U' denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit): Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

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Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058
Client Sample ID: 2-203
Lab Sample ID: 15090196-05 (AS27376)

Collection Date: 09/04/2015
Sample Matrix: POLYURETHANE FOAM
Received Date: 09/09/2015 09:22
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-522-13	PCBs by EPA Method TO-10A/680	09/15/2015 21:52	RMS	NA	NA	Agilent, J&W DB-30.30, 30 m, 0.25 mm ID, 0.25 μ m
Prep 1:	32196	TO-10A	09/10/2015 17:00	LMB	7.70m ³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m ³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND <i>UJ</i>	0.000649	1.00	U <i>J</i>	MS03-522-13
Dichlorobiphenyl	25512-42-9	0.00825 <i>J</i>	0.000649	1.00	<i>J</i>	MS03-522-13
Trichlorobiphenyl	25323-68-6	0.0584 <i>J</i>	0.000649	1.00	<i>J</i>	MS03-522-13
Tetrachlorobiphenyl	26914-33-0	0.0360 <i>J</i>	0.00130	1.00	<i>J</i>	MS03-522-13
Pentachlorobiphenyl	25429-29-2	ND <i>UJ</i>	0.00130	1.00	U <i>J</i>	MS03-522-13
Hexachlorobiphenyl	26601-64-9	ND	0.00130	1.00	U	MS03-522-13
Heptachlorobiphenyl	28655-71-2	ND	0.00195	1.00	U	MS03-522-13
Octachlorobiphenyl	55722-26-4	ND	0.00195	1.00	U	MS03-522-13
Nonachlorobiphenyl	53742-07-7	ND	0.00325	1.00	U	MS03-522-13
Decachlorobiphenyl	2051-24-3	ND <i>UJ</i>	0.00325	1.00	U <i>J</i>	MS03-522-13
Total PCB	1336-36-3	0.103 <i>J</i>		1.00	<i>J</i>	MS03-522-13

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	66.8	70.1-116	*	MS03-522-13
Tetrachloro-meta-xylene	877-09-8	59.9	44.4-104		MS03-522-13

¹Qualifier column where * denotes value outside the control limits or 'U' denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit): Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

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Analytical Sample Results

Job Number: 15090196

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058
Client Sample ID: 2-203D
Lab Sample ID: 15090196-06 (AS27377)

Collection Date: 09/04/2015
Sample Matrix: POLYURETHANE FOAM
Received Date: 09/09/2015 09:22
Percent Solid: N/A

Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1: MS03-522-14	PCBs by EPA Method TO-10A/680	09/15/2015 22:40	RMS	NA	NA	Agilent, J&W 100-30.31, 30 m, 0.23 mm ID, 0.25 µm
Prep 1: 32196	TO-10A	09/10/2015 17:00	LMB	7.60m ³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m ³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.000658	1.00	U	MS03-522-14
Dichlorobiphenyl	25512-42-9	0.00531 J	0.000658	1.00		MS03-522-14
Trichlorobiphenyl	25323-68-6	0.0609	0.000658	1.00		MS03-522-14
Tetrachlorobiphenyl	26914-33-0	0.0294 J	0.00132	1.00		MS03-522-14
Pentachlorobiphenyl	25429-29-2	ND	0.00132	1.00	U	MS03-522-14
Hexachlorobiphenyl	26601-64-9	ND	0.00132	1.00	U	MS03-522-14
Heptachlorobiphenyl	28655-71-2	ND	0.00197	1.00	U	MS03-522-14
Octachlorobiphenyl	55722-26-4	ND	0.00197	1.00	U	MS03-522-14
Nonachlorobiphenyl	53742-07-7	ND	0.00329	1.00	U	MS03-522-14
Decachlorobiphenyl	2051-24-3	ND	0.00329	1.00	U	MS03-522-14
Total PCB	1336-36-3	0.0956 J		1.00		MS03-522-14

Surrogate	CAS No.	% Recovery	Limits (%)	Q ¹	File ID
Decachloro[13C12]biphenyl	105600-27-9	70.9	70.1-116		MS03-522-14
Tetrachloro-meta-xylene	877-09-8	46.3	44.4-104		MS03-522-14

¹Qualifier column where "J" denotes value outside the control limits or "U" denotes value was diluted.

ND: Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

NYSDOH-ELAP does not currently offer NELAC certification for this method.

Note: Concentration results based upon client supplied air volumes.

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Project Name:	NBHS
Project No.:	115058
Sampling Date(s):	9/4/15
Laboratory:	Pace
Laboratory P.O.:	84583 please use this po#
Shipping Date(s):	09/08/15
Shipper's Name:	TRC

84583 please use this post

09/08/15

TTRC

[illegible]

Submitted by:

Received by:

marks (*): Normal TAT. Please send data to David Gill_dgill@tresolutions.com

Relinquished by:

Received by:

Temp: 3.6°C (18) Call send Y