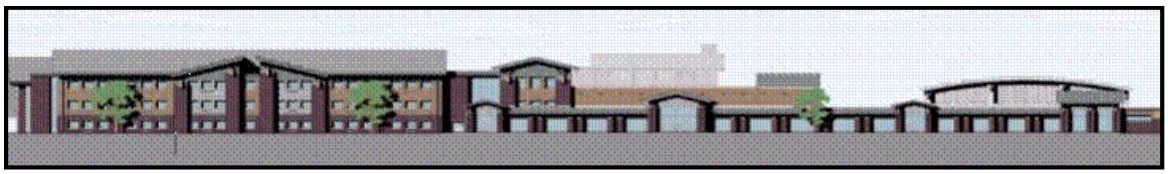
Sampling Results for the Keith Middle School Foundation Vent Stack and Indoor Air for Polychlorinated Biphenyls

October 2014 Monitoring Round



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EXECUTIVE SUMMARY

TRC Environmental Corporation (TRC) of Lowell, Massachusetts was retained by the City of New Bedford (the City) to provide sampling support in conducting foundation vent stack and indoor air sampling for polychlorinated biphenyls (PCBs) at the Keith Middle School (KMS) in New Bedford, Massachusetts. This report documents the indoor air and vent stack sampling performed by TRC during October 2014.

The sampling and analysis of vent stack and indoor air for the KMS is described in the *Revised Long-Term Monitoring and Maintenance Implementation Plan* (LTMMIP), revision 5.5, dated August 2012. The indoor air PCB sampling program involved the collection of one indoor air sample from the ground floor of each of the three school building sections (Building A, Building B, and Building C). Concurrently with the indoor air sampling, air sampling of the sub-slab foundation ventilation system for PCBs was performed from four selected rooftop vent stacks, including VS-1 which vents building Section A west side (near the front of the school), VS-4 which vents building Section A east side (near the front of the school), VS-10 which vents Section B (near the auditorium), and VS-12 which vents the gymnasium. The passive sub-slab ventilation system was installed to allow sub-slab soil vapors to migrate from beneath the vapor barrier to the vent stacks, installed through the school building roof. An air sample was also collected immediately outside of the school during this round to provide comparative background results.

The samples were analyzed for PCBs according to EPA Method 680 (PCB homologues) by Pace Analytical Services of Schenectady, New York. This PCB method reliably quantifies total PCB concentrations, making analytical results directly comparable to total PCB concentration data for indoor air at New Bedford High School.

During the October 2014 sampling round, PCBs were detected at the three indoor air sampling locations and the corresponding outdoor air background sample. However, PCBs were not detected in any of the vent stack air samples.

Detected concentrations for PCBs in indoor air samples were generally consistent with urban ambient air background levels. PCB concentrations in indoor air have fluctuated slightly between August 2006 and October 2014, consistent with background conditions, but all detected concentrations are below indoor air concentrations that would be of concern for the health of building occupants.

PCB indoor air concentrations were compared to site-specific outdoor air concentrations and risk-based air concentrations (RBACs). Two PCB RBACs have been developed for the KMS, assuming occupational exposures within the school (8 hours/day, 250 days/year, for 25 years). The first RBAC is the Action Level (AL; 0.05 ug/m^3), which is used as an initial indicator that PCB air concentrations above background levels have been detected. The second RBAC is the Acceptable Long-Term Average Exposure Concentration (ALTAEC; 0.3 ug/m^3), indicative of the maximum acceptable air concentration that should not be exceeded for an extended time period. PCB indoor air concentrations were also compared to EPA's Public Health Level (PHL) (USEPA, 2009; 0.45 ug/m^3) developed to be protective of indoor school air exposures for adult

employees and 12 to <15 year-old students. Indoor air PCB concentrations were lower than RBACs and EPA's PHL.

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1.0 INTRODUCTION

1.1 Overview

TRC Environmental Corporation (TRC) of Lowell, Massachusetts was retained by the City of New Bedford (the City) to provide sampling support in conducting foundation vent stack and indoor air sampling for polychlorinated biphenyls (PCBs) at the Keith Middle School (KMS) in New Bedford, Massachusetts. This report documents the indoor air and vent stack sampling performed by TRC during October 2014.

Soil gas sampling was performed under the location of the KMS building in December 2001. In addition to PCBs present in soil at this location, volatile organic compounds (VOCs) were also detected in the soil gas samples. The results of the December 2001 soil gas sampling event were evaluated for potential adverse impacts on indoor air quality, assuming no vapor barrier was installed. Despite the conclusion that no significant risk to human health is posed by the measured soil gas concentrations, the City and School Department decided to install a vapor barrier on top of the soil beneath the school building concrete floor as an added layer of protection against intrusion of any gases that may accumulate under the building. Passive ventilation has been installed to allow any sub-slab soil gases to migrate from beneath the vapor barrier to the vent stacks, installed through the school building roof.

Sampling and analysis of vent stack and indoor air was performed between July 2007 and April 2012 as part of United States Environmental Protection Agency (EPA) approved *Long-Term Monitoring and Maintenance Implementation Plan* (LTMMIP), revision 4, dated October 20, 2006. The LTMMIP was prepared by The BETA Group, Incorporated (BETA) in accordance with the August 31, 2005 *Approval for Risk-Based PCB Cleanup and Disposal under 40 CFR §761.6(c)* letter issued by EPA to the City. The LTMMIP set forth a vent stack and indoor air sampling schedule consisting of three monitoring events per year for the first year (July/August, December, April 2007), with the understanding that the City may submit a written request to EPA to reduce the indoor air sampling frequency after the first year of monitoring. However, per the order of the Mayor of the City, vent stack and indoor air monitoring took place monthly during the period of September 2006 to July/August 2007. Following the July/August 2007 sampling event, monitoring was reduced to once every four months, consistent with the 2006 LTMMIP. Monitoring from September 2006 through February 2007 was conducted by BETA and is reported elsewhere.

The sampling program described in the 2006 LTMMIP consisted of the collection of indoor air quality and vent stack samples for the analysis of PCBs and VOCs. Sampling of indoor air quality and vent stack air for PCBs and VOCs has been conducted for 29 monitoring events between July 2007 and April 2012 to confirm the proper functioning of the passive ventilation system. Between 2007 and 2012, PCBs and VOCs were detected in both indoor air and vent stack air samples. However, concentrations of PCBs and VOCs in indoor air samples were lower, in general, than those observed in vent stack air samples. The presence of higher levels of VOCs and PCBs in vent stack air samples is an expected finding for a sub-slab ventilation system and indicates that the passive ventilation system is performing as designed.

Based on the sampling data collected between 2007 and 2012, VOCs were determined to be present in indoor air due to off-gassing from building materials and the storage and use of cleaners, adhesives, paints, and other VOC-containing products indoors at the school. Concentrations of PCBs detected in indoor air samples are consistent with background levels measured in outdoor air samples collected simultaneously. Levels of VOCs detected in indoor air fluctuated and demonstrated noticeable decreasing trends over time.

Although PCBs and VOCs were measured in indoor air and vent stack air samples, the concentrations detected were determined to not pose a significant risk to human health, based on the comparison of concentrations to both background concentrations and applicable risk-based criteria (TRC, 2008a, 2008b, 2008c, 2008d, 2009a, 2009b, 2009c, 2010a, 2010b, 2011a, 2011b, 2011c, 2011d, 2012a and 2012b).

In 2011, the City proposed modifying the 2006 LTMMIP to reflect the detailed understanding of the site conceptual model (e.g., impacts from indoor use of commercially available cleaners, paints, adhesives, etc.), the relationship between vent measurements and historical soil gas measurements that illustrate the proper functioning of the passive sub-slab ventilation system, and long-term downward trends for indoor air and passive vent system concentrations of VOCs originating from building materials.

On August 27, 2012, USEPA approved the City's proposed revision to the LTMMIP, revision 5.5. This report presents monitoring data collected during October 2014, the fifth round of air sampling data collected under the 2012 LTMMIP. The results for the first four rounds of air sampling data collected under the 2012 LTMMIP are presented in TRC, 2012d, TRC, 2013a, TRC,2013b and TRC, 2014. The 2012 LTMMIP differs from the 2006 LTMMIP in a number of ways that are reflected in this report:

1. Analysis of indoor air and vent stack air samples for VOCs has been eliminated because VOCs are not the principal contaminants in soil and fill, and air monitoring conducted to date indicates that the remedy implemented for the KMS site is functioning as intended.

2. Indoor air and vent stack air sampling frequency has been reduced from three times per year to two times per year because air monitoring conducted to date demonstrates that the remedy implemented for the KMS site is preventing airborne release of PCBs that remain in the soil to the building.

3. The number of background air samples has been reduced from two samples to one sample because the single sample is sufficient to determine outdoor air concentrations of PCBs.

4. PCB analysis of indoor air and vent stack air samples includes quantification of homologue groups, but not Aroclors or individual congeners, because the homologue groups provide a sufficient and accurate measure of total PCB concentrations in air.

5. The comparison of vent stack air samples to health-based air concentrations has been eliminated because vent samples are not representative of the air that people breathe.

Therefore, vent stack air concentrations are not comparable to the health-based air concentrations.

1.2 Scope of Work

Sampling and analysis of vent stack and indoor air is performed as part of United States Environmental Protection Agency (EPA) approved *Long-Term Monitoring and Maintenance Implementation Plan* (LTMMIP), revision 5.5, dated August 2012 and approved by EPA on August 27, 2012.

The October 2014 sampling occurred during the Columbus Day weekend. Details concerning the sample collection procedures and analytical methods are described in Appendix A. Sampling data sheets are provided in Appendix B and the reduced data are presented in Appendix C. The calibration certifications can be found in Appendix D. Laboratory analytical results are presented in Appendix E.

Field sampling data were validated by the Field Team Leader and/or the Field Quality Control Coordinator based on their review of adherence to each approved sampling protocol and written sample collection procedure. Details concerning quality assurance procedures are described in Appendix A. The laboratory data validation memoranda can be found in Appendix F.

The following sections describe those features of the field sampling program, quality assurance/quality control (QA/QC) program, and data analysis that are specific to the October 2014 event. Generic information on the sampling and QA/QC programs and data analysis procedures can be found in Appendices A and G, respectively.

2.0 SAMPLING LOCATIONS

2.1 Indoor Air Quality Sample Locations

During the sampling event, one indoor air PCB sample was collected from the ground floor of each of the three school building sections (Building A, Building B, and Building C). Each sampling location was selected to be representative of portions of the school building normally occupied by students and teachers. The Building A sampling location is located within a hallway in an area of student classrooms. The Building B sampling location is located in the school cafeteria. The Building C sampling location is in the hallway between the auditorium and community room. These indoor air sampling locations have remained consistent throughout TRC's sampling program, with the exception of the December 2007 Building B sample which was collected in the school cafeteria at the request of the City. An outdoor air sample and a duplicate sample were collected from near the flagpole area immediately outside of the school to provide comparative background results.

Figure 2-1 presents the approximate locations of indoor air sampling. Table 2-1 summarizes the indoor air samples collected during the October 2014 sampling event. These samples were assigned sample identification numbers that include (1) the letter A, B, or C to identify the building section from which the sample was collected; and (2) a unique sample identification suffix indicating the sampling event number (e.g., A-34).

2.2 Foundation Vent Air Monitoring Sample Locations

The KMS foundation venting system is comprised of six sub-slab vapor collection zones, each vented by two or four vent stacks penetrating the roof. A total of four vent stacks are sampled during each round, including VS-1 and VS-4 which vent from the two collection zones located under building Section A (classrooms), and two other vent stacks which are rotated to cover the remaining collection zones (i.e., VS-10 and VS-12 for this sampling event). A duplicate sample was also collected from the VS-10 sampling location. PCB concentrations in vent stack air were compared to the outdoor air samples described in Section 2.1 that define background conditions.

Figure 2-2 presents the approximate locations of the vent stack sample locations. Table 2-1 summarizes the vent stack samples collected during the October 2014 sampling event. Vent stack samples collected during the October 2014 sampling event were designated with the vent stack number (e.g., VS-4) and a unique sample identification suffix indicating the sampling event number (e.g., VS-4-34).

3.0 QUALITY ASSURANCE

This section highlights the results of the QA/QC review for the October 2014 sampling event. Please refer to Appendix A for additional QA/QC details.

3.1 Data Validation Summary

Limited (Tier II) validation was performed on the data for 10 air samples and two trip blank samples collected at the Keith Middle School in New Bedford, Massachusetts. The samples were collected on October 11, 2014 and submitted to Pace Analytical Services (Pace) in Schenectady, New York for analysis. All air vent samples were collected on polyurethane foam (PUF) cartridges in accordance with EPA method TO-10A; all indoor and background outdoor air samples were collected on particulate filters and PUF cartridges in accordance with EPA method TO-4A. The samples were analyzed for polychlorinated biphenyl (PCB) homologues using EPA method 680. Pace reported the results under job number 13090035.

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. Appendix F contains the complete Laboratory Data Validation Memoranda.

3.2 Collocated Sampler Precision

Samples VS-10-34/VS-10-34-DUP (PUF) and BG-34/BG-34 DUP (PUF/Filter) were submitted as the field duplicate (collocated) pairs with this sample set. PCBs were not detected in samples VS-10-34/VS-10-34-DUP (PUF).

Table 3-1 summarizes the RPDs of the detected analytes in sample pair BG-34/BG-34 DUP, which were not within the acceptance criteria of 20%RPD or the difference of <2 times the reporting limit (RL) for dichlorobiphenyl and total PCB. The positive and nondetect results for dichlorobiphenyl and total PCB in samples BG-34 and BG-34 DUP were estimated (J/UJ).

4.0 SUMMARY OF RESULTS

Table 2-1 provides a summary of the types, numbers, and locations of the samples collected. Appendices E and F contain the laboratory data reports and data validation memoranda, respectively. Along with the samples, TO-4A and TO-10A trip blanks were analyzed as a quality assurance measure to check for shipping and laboratory-related sources of contamination.

All results represent "total PCB" concentrations. PCBs were not detected in the indoor air quality or vent stack air trip blanks. Low level fluctuations of PCB concentrations in indoor air are generally consistent with urban indoor background levels. Sporadic detected concentrations of PCBs in vent stack air are expected, and indicate that the passive ventilation system is performing as designed.

4.1 Indoor Air Quality Results

On October 11, 2014, TRC collected three indoor and one outdoor background (plus one duplicate) 24-hour TO-4A air samples at the KMS. Table 4-1 provides a summary of PCB indoor air results. Table 4-3 provides a complete list of total PCB indoor air results from August 2006 thru October 2014.

PCBs were detected in the three indoor air samples. PCBs were also detected in the background outdoor air sample, but not in the duplicate sample. PCB concentrations in the indoor air samples ranged from 0.0114 ug/m^3 in the Building A sample to 0.00566 ug/m^3 in the Building C sample. The PCB concentration in the Building A sample is consistent with the maximum concentrations reported in the April 2009, August 2010, April 2011, August 2012, January 2013, August 2013 and February 2014 sampling rounds.

4.2 Vent Stack Air Results

On October 11, 2014, TRC collected four (plus one duplicate) vent stack 4-hour TO-10A samples at the KMS. Table 4-2 provides a summary of results for the vent stack samples, and the results of the outdoor background 24-hour TO-4A air sample and its duplicate sample.

PCBs were not detected in the vent stack samples. As previously stated in Section 4.1, PCBs were detected in the background outdoor air sample, but not in the duplicate sample.

5.0 COMPARISON OF INDOOR AIR PCB RESULTS TO RISK-BASED AIR CONCENTRATIONS

This section of the report compares PCB concentrations in indoor air to outdoor air and risk-based air concentrations (RBACs). These concentrations are presented in Table 5-1. PCB concentrations that exceed the RBACs are highlighted on this table.

A detailed discussion of the RBACs can be found in Appendix G. Two PCB RBACs have been developed for the KMS. The first RBAC is the Action Level (AL; 0.05 ug/m^3) used as an initial indicator that PCB air concentrations above background levels have been detected. The second RBAC is the Acceptable Long-Term Average Exposure Concentration (ALTAEC; 0.3 ug/m^3), indicative of the maximum acceptable air concentration that should not be exceeded for an extended time period. The ALTAEC could be exceeded over the short-term and still result in acceptable risk levels. In September 2009, EPA published Public Health Levels (PHLs) which are indoor air concentrations that EPA believes protect building occupants (USEPA, 2009). PHLs were calculated for all ages of children from toddlers in day care to adolescents in high school as well as for adult school employees. In this report, indoor air PCB concentrations are compared to the PHL for adult school employees and children 12 to <15 years old, representative of the middle school age range.

Indoor air sampling results, outdoor air background results, and RBACs are presented in Table 5-1. As noted in Section 4.1, PCBs were detected at all three of the indoor air sampling locations (Buildings A, B, and C) and in the outdoor air background sample, but not in the duplicate outdoor air background sample. The highest indoor air PCB concentration (Building A sample) was approximately 4-fold lower than the PCB AL and roughly 30-fold lower than the ALTAEC; the Building B and Building C samples displayed concentrations of PCBs up to 9-fold lower than the AL and 53-fold lower than the ALTAEC. Because the PCB AL is used as an initial indicator that PCB air concentrations above background levels for indoor air have been detected and the detected concentrations of PCBs are significantly less than the AL, concentrations of PCBs in indoor air are consistent with levels associated with ambient conditions. The indoor air samples were also between 40- and 80-fold lower than the EPA PHL. Because there are no indoor air PCB concentrations in excess of the RBACs, no specific follow-up actions are recommended at this time.

Temporal trends for PCB indoor air concentrations at the sampling locations in Building A (classrooms), Building B (auditorium), and Building C (faculty dining area) are shown in Figure 5-1. Figure 5-1 also shows concentration trends at the outdoor air background sampling location. Data included on this figure are for the time period August 2006 to October 2014. The highest indoor air PCB concentration was detected during the April 2009 sampling event when the school was likely experiencing lower than normal air exchange (school vacation) and the potential for volatilization of PCBs from outdoor ambient sources is greater due to the warmer weather. The lowest indoor air PCB concentration was detected during the November 2006 sampling event.

No clear trends are noted for PCB concentrations in indoor air. Measured concentrations fluctuate over time, with slightly higher concentrations noted during the summer school vacation

period when the building is experiencing lower than normal air exchange and the potential for volatilization of PCBs from outdoor ambient sources is greatest due to warmer weather. The low level PCB indoor air concentrations are generally consistent with urban ambient background conditions. Based on the PCB indoor air results collected between August 2006 and October 2014, it appears that there is variability in indoor air concentrations and the slightly higher concentrations sporadically detected are not part of a trend.

6.0 CONCLUSIONS

Indoor air quality and vent stack air sampling was conducted at the KMS during February 2014 for PCBs. Indoor and vent stack air data were evaluated for quality and reliability, and indoor air concentrations were compared to risk-based air concentrations and analyzed for concentration trends over the period August 2006 to October 2014. The following summarizes the conclusions of the air sampling data evaluation.

In general, all TO-4A and TO-10A data collected during October 2014 were determined to be valid as reported and usable for decision-making purposes.

PCBs were detected in the three indoor air samples and in the outdoor air background sample, but not in the duplicate outdoor air background sample. The detected PCB concentrations for the indoor air samples were below risk-based action levels. The low level fluctuations of PCB indoor air concentrations are generally consistent with concentrations found in urban ambient air background.

PCBs were not detected in the four vent stack air samples or the duplicate vent stack air sample. The sporadic presence of PCBs in vent stack air is expected, and indicates that the passive ventilation system is performing as designed.

December 2014 is the date for the next sampling event.

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TABLES

Table 2-1. October 2014 Sample Summary
Keith Middle School
New Bedford, Massachusetts

Sample ID	Sample Location	Sample Collected	Sample Type
A	Building A, center of west hallway	X	IAQ
B	Building B, Auditorium	X	IAQ
C	Building C, Community room (hallway)	X	IAQ
BG	Background, flagpole area outside main entrance to Building A	XX	IAQ
VS-1	Building A, vent stack 1	X	Vent Stack
VS-4	Building A, vent stack 4	X	Vent Stack
VS-5	Building B, vent stack 5		Vent Stack
VS-7	Building B, vent stack 7		Vent Stack
VS-8	Building B, vent stack 8		Vent Stack
VS-9	Building B, vent stack 9		Vent Stack
VS-10	Building B, vent stack 10	XX	Vent Stack
VS-11	Gymnasium , vent stack 11		Vent Stack
VS-12	Gymnasium, vent stack 12	X	Vent Stack
VS-13	Gymnasium, vent stack 13		Vent Stack
VS-14	Gymnasium, vent stack 14		Vent Stack
VS-16	Building A , vent stack 16		Vent Stack
VS-BG	On the ground at main entrance to Building A		Vent Stack

X - Sample collected at this location during this sampling round.
XX - Sample and duplicate collected at this location during this sampling round.

Table 3-1. Comparison of PCB Indoor Air Sample Results - Collocated Sampler Precision
Keith Middle School
New Bedford, Massachusetts

		Oct-14				
Analysis	**Analyte**	**BG-34**		**BG-34 Dup**		**RPD (%)**
PCBs						
(µg/m3)	monochlorobiphenyl	< 0.0000180		< 0.0000180		NC
	dichlorobiphenyl	**0.0001040**	**J**	< 0.0000180	UJ	NC
	trichlorobiphenyl	< 0.0000180		< 0.0000180		NC
	tetrachlorobiphenyl	< 0.0000350		< 0.0000360		NC
	pentachlorobiphenyl	< 0.0000350		< 0.0000360		NC
	hexachlorobiphenyl	< 0.0000350		< 0.0000360		NC
	heptachlorobiphenyl	< 0.0000530		< 0.0000540		NC
	octachlorobiphenyl	< 0.0000530		< 0.0000540		NC
	nonachlorobiphenyl	< 0.0000890		< 0.0000900		NC
	decachlorobiphenyl	< 0.0000890		< 0.0000900		NC
(µg/m^3)	Total PCBs	**0.0001040**	**J**	< 0.0000900	UJ	NC

Notes:

RPD - Relative Percent Difference = ABS(Dup-Sample)/((Dup+Sample)/2)*100

NC - Not Calculated; RPD could not be calculated due to a non-detect in one or both of the collocated samples

Detected values are shown in bold

Table 3-2. Comparison of PCB Vent Stack Air Sample Results - Collocated Sampler Precision
Keith Middle School
New Bedford, Massachusetts

		Oct-14				
Analysis	**Analyte**	**VS-10-34**		**VS-10-34 DUP**		**RPD (%)**
PCBs						
(µg/m3)	monochlorobiphenyl	< 0.00427	UJ	< 0.00431	UJ	NC
	dichlorobiphenyl	< 0.00427	UJ	< 0.00431	UJ	NC
	trichlorobiphenyl	< 0.00427	UJ	< 0.00431	UJ	NC
	tetrachlorobiphenyl	< 0.00855	UJ	< 0.00862	UJ	NC
	pentachlorobiphenyl	< 0.00855	UJ	< 0.00862	UJ	NC
	hexachlorobiphenyl	< 0.00855	UJ	< 0.00862	UJ	NC
	heptachlorobiphenyl	< 0.0128	UJ	< 0.0129	UJ	NC
	octachlorobiphenyl	< 0.0128	UJ	< 0.0129	UJ	NC
	nonachlorobiphenyl	< 0.0214	UJ	< 0.0216	UJ	NC
	decachlorobiphenyl	< 0.0214	UJ	< 0.0216	UJ	NC
(µg/m^3)	Total PCBs	< 0.00427	UJ	< 0.00431	UJ	NC

Notes:
RPD - Relative Percent Difference = ABS(Dup-Sample)/((Dup+Sample)/2)*100
NC - Not Calculated; RPD could not be calculated due to a non-detect in one or both of the collocated samples
Detected values are shown in bold

Table 4-1. Indoor Air Quality Sample Results - October 2014
Keith Middle School
New Bedford, Massachusetts

		Sample Locations			Background		QA/QC
Analysis	**Analyte**	**A-34**	**B-34**	**C-34**	**BG-34**	**BG-34 Dup**	**Trip Blank**
PCBs							
(µg/m3)	monochlorobiphenyl	< 0.0000420	< 0.0000320	< 0.0000310	< 0.0000180	< 0.0000180	< 0.005 ug
	dichlorobiphenyl	< 0.0000420	< 0.0000320	< 0.0000310	**0.0001040 J**	< 0.0000180 UJ	< 0.005 ug
	trichlorobiphenyl	**0.0114**	**0.0100**	**0.00566**	< 0.0000180	< 0.0000180	< 0.005 ug
	tetrachlorobiphenyl	< 0.0000830	**0.000358**	< 0.0000620	< 0.0000350	< 0.0000360	< 0.01 ug
	pentachlorobiphenyl	< 0.0000830	< 0.0000640	< 0.0000620	< 0.0000350	< 0.0000360	< 0.01 ug
	hexachlorobiphenyl	< 0.0000830	< 0.0000640	< 0.0000620	< 0.0000350	< 0.0000360	< 0.01 ug
	heptachlorobiphenyl	< 0.000125	< 0.0000960	< 0.0000940	< 0.0000530	< 0.0000540	< 0.015 ug
	octachlorobiphenyl	< 0.000125	< 0.0000960	< 0.0000940	< 0.0000530	< 0.0000540	< 0.015 ug
	nonachlorobiphenyl	< 0.000208	< 0.000161	< 0.000156	< 0.0000890	< 0.0000900	< 0.025 ug
	decachlorobiphenyl	< 0.000208	< 0.000161	< 0.000156	< 0.0000890	< 0.0000900	< 0.025 ug
($\mu g/m^3$)	Total PCBs	**0.0114**	**0.0104**	**0.00566**	**0.000104 J**	< 0.0000900 UJ	< 0.025 ug

Notes:

$\mu g/m^3$ - micrograms per cubic meter
PCBs - polychlorinated biphenyls
µg - micrograms; trip blank results are presented in micrograms (µg) due to no air volume being collected during analysis.
Reporting Limit for Total PCBs is the highest individual homolog PQL (practical quantitation limit) per sample.
Values in **Bold** indicate the compound was detected.
< - less than laboratory reporting limit
J - Detected result reported is estimated
UJ - Non-Detect result reported is estimated

Table 4-2. Vent Stack Sample Results - October 2014
Keith Middle School
New Bedford, Massachusetts

		Sample Locations										Background				QA/QC
Analysis	**Analyte**	**VS-1-34**		**VS-4-34**		**VS-12-34**	**VS-10-34**		**VS-10-34-DUP**			**BG-34**		**BG-34 Dup**		**Trip Blank-VS**
PCBs																
(µg/m3)	monochlorobiphenyl	< 0.00417	UJ	< 0.00417	UJ	< 0.00495	< 0.00427	UJ	< 0.00431	UJ		< 0.0000180		< 0.0000180		< 0.005 ug
	dichlorobiphenyl	< 0.00417	UJ	< 0.00417	UJ	< 0.00495	< 0.00427	UJ	< 0.00431	UJ		**0.0001040**	**J**	< 0.0000180	UJ	< 0.005 ug
	trichlorobiphenyl	< 0.00417	UJ	< 0.00417	UJ	< 0.00495	< 0.00427	UJ	< 0.00431	UJ		< 0.0000180		< 0.0000180		< 0.005 ug
	tetrachlorobiphenyl	< 0.00833	UJ	< 0.00833	UJ	< 0.00990	< 0.00855	UJ	< 0.00862	UJ		< 0.0000350		< 0.0000360		< 0.01 ug
	pentachlorobiphenyl	< 0.00833	UJ	< 0.00833	UJ	< 0.00990	< 0.00855	UJ	< 0.00862	UJ		< 0.0000350		< 0.0000360		< 0.01 ug
	hexachlorobiphenyl	< 0.00833	UJ	< 0.00833	UJ	< 0.00990	< 0.00855	UJ	< 0.00862	UJ		< 0.0000350		< 0.0000360		< 0.01 ug
	heptachlorobiphenyl	< 0.0125	UJ	< 0.0125	UJ	< 0.0149	< 0.0128	UJ	< 0.0129	UJ		< 0.0000530		< 0.0000540		< 0.015 ug
	octachlorobiphenyl	< 0.0125	UJ	< 0.0125	UJ	< 0.0149	< 0.0128	UJ	< 0.0129	UJ		< 0.0000530		< 0.0000540		< 0.015 ug
	nonachlorobiphenyl	< 0.0208	UJ	< 0.0208	UJ	< 0.0248	< 0.0214	UJ	< 0.0216	UJ		< 0.0000890		< 0.0000900		< 0.025 ug
	decachlorobiphenyl	< 0.0208	UJ	< 0.0208	UJ	< 0.0248	< 0.0214	UJ	< 0.0216	UJ		< 0.0000890		< 0.0000900		< 0.025 ug
($\mu g/m^3$)	Total PCBs	< 0.0208	UJ	< 0.0208	UJ	< 0.0248	< 0.0214	UJ	< 0.0216	UJ		**0.0001040**	**J**	< 0.0000900	UJ	< 0.025 ug

Notes:
$\mu g/m^3$ - micrograms per cubic meter
PCBs - polychlorinated biphenyls
µg - micrograms; trip blank results are presented in micrograms (µg) due to no air volume being collected during analysis.
Reporting Limit for Total PCBs is the highest individual homolog PQL (practical quantitation limit) per sample.
Values in **Bold** indicate the compound was detected.
< - less than laboratory reporting limit
J - Detected result reported is estimated
UJ - Non-Detect result reported is estimated

Table 4-3. Total PCB Results in KMS Indoor Air Quality (IAQ) Samples August 2006 through October 2014 (24hr Sample, Method TO-4A [ug/m3])

Sampling Date	Hallway Building A	Auditorium Building B	Faculty Dining Building C	Background Outside	Background Outside (DUP)
AL	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*
ALTAEC	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*
8/5/2006	< 0.0000007	< 0.0000007	< 0.0000007	**0.0006**	NS
8/19/2006	< 0.0000007	**0.00023**	< 0.0000007	**0.00031**	NS
9/15/2006	**0.00273**	**0.0011**	**0.00052**	**0.00989**	**0.00995**
10/24/2006	**0.00087**	**0.00027**	**0.00008**	**0.00007**	NS
11/30/2006	**0.00105**	**0.00079**	**0.00003**	**0.00014**	**0.00014**
12/29/2006	**0.00005**	< 0.0000007 [2]	**0.00005**	**0.00008**	**0.00004**
1/20/2007	NS	NS	NS	NS	NS
3/31/2007	**0.0015**	**0.00064**	**0.00037**	< 0.0001850	< 0.0001900
4/18/2007	**0.0013**	**0.00031**	**0.0016**	< 0.0000950	< 0.0000950
5/19/2007	**0.00038**	**0.001**	**0.00051** [3]	< 0.0001050	< 0.0001000
6/21/2007	**0.003**	**0.0032**	**0.0016**	< 0.0001000	< 0.0001000
8/1/2007	**0.0018**	< 0.0001900	**0.0057**	< 0.0000750	< 0.0000750
12/27/2007	**0.003**	**0.00094** [2]	**0.0011**	< 0.0001850	**0.000035**
4/25/2008	< 0.0000700	< 0.0000360	< 0.0000355	< 0.0000355	< 0.0000355
7/16/2008	**0.0018**	**0.0075**	**0.0017**	< 0.0000700	< 0.0000370
12/29/2008	NS	NS	NS	NS	NS
2/19/2009	< 0.0001900	< 0.0001900	< 0.0000750	< 0.0000400	< 0.0000390
4/23/2009	**0.013**	**0.0034**	**0.0095**	< 0.0000400	< 0.0000400
8/20/2009	**0.00875** [1]	**0.00577**	**0.00366** [3]	**0.000759**	**0.00072**
12/29/2009	**0.00288**	**0.00165**	**0.00616**	< 0.0000389	NS
4/20/2010	**0.006163**	**0.000384**	**0.000882**	**0.0000614**	**0.000226**
8/24/2010	**0.0064**	**0.0049**	**0.0114**	**0.0029**	**0.0029**
12/29/2010	**0.0012**	**0.0027**	**0.0135**	< 0.0000500	NS
4/21/2011	**0.0036**	**0.0040**	**0.0115**	< 0.0000380	**0.0002**
8/24/2011	**0.0062**	**0.0090**	**0.0085**	< 0.0000425	**0.0005**
12/29/2011	**0.0036**	**0.0057**	**0.0054**	< 0.0000340	< 0.0000330
4/18/2012	**0.00499**	**0.0130**	**0.00578**	**0.000832**	< 0.0000330
8/30/2012	**0.00452**	**0.0061**	**0.01090**	**0.00158**	< 0.0000395
1/28/2013	**0.00333**	**0.0039** [2]	**0.00414** [3]	< 0.0000780	NS
8/30/2013	**0.00452**	**0.0054**	**0.00655**	< 0.0000730	< 0.0000710
2/20/2014	**0.00345**	**0.00339**	**0.00407**	< 0.0000730	< 0.0000730
10/14/2014	**0.0114**	**0.0104**	**0.00566** [3]	**0.000104**	< 0.0000180

AL = Action Level = 0.05 ug/m^3

ALTAEC = Acceptable Long-Term Average Exposure = 0.3 ug/m^3

NS = Not Sampled

BOLD = Positive Detection

1. Sampler moved to Front lobby Due to work in halls
2. Sampler moved to Cafferiteria due to auditoriom in use
3. Sampler moved to hall way outside of Community room due to room in use.

Table 5-1. Comparison of PCB Indoor Air Quality Sample Results to Risk-Based Air Concentrations - October 2014
Keith Middle School
New Bedford, Massachusetts

		Sample Locations			Background Location		QA/QC			
Analysis	**Analyte**	**A-34**	**B-34**	**C-34**	**BG-34**	**BG-34 Dup**	**Trip Blank**	**Comparison Values**		
PCBs								**AL***	**ALTAEC***	**PHL****
($\mu g/m^3$)	Total PCBs	**0.0114**	**0.0104**	**0.00566**	**0.000104**	<0.0000900	< 0.025 ug	0.05	0.3	0.45

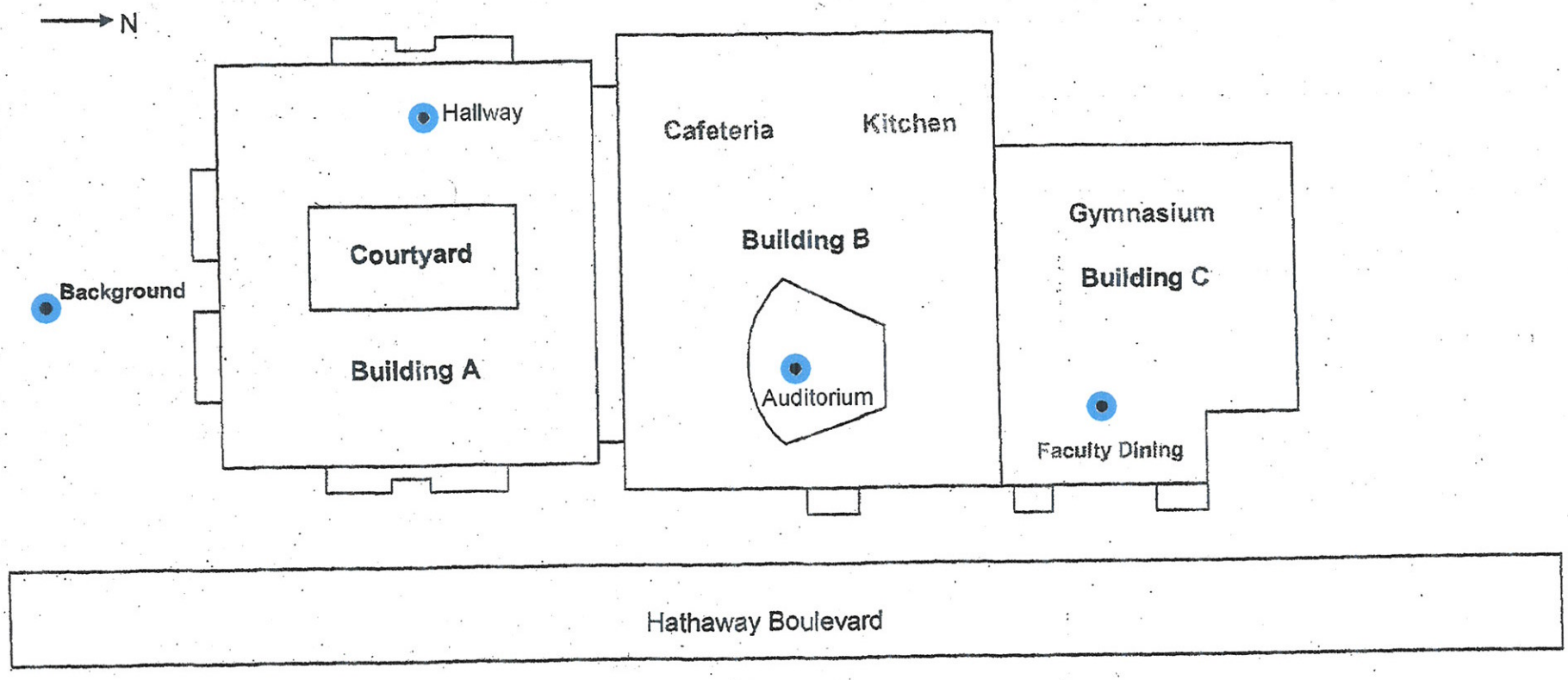
Notes:

$\mu g/m^3$ - micrograms per cubic meter
PCBs - polychlorinated biphenyls
ug - micrograms; trip blank results are presented in micrograms (ug) since no air volume is collected for the trip blank

PCB results for indoor air are compared to contemporary outdoor air (background) sample and MassDEP indoor air background values.
* PCBs are compared to the EPA site specific Action Level (AL) and the Acceptable Long-Term Average Exposure Concentration (ALTAEC).
** PCBs are compared to the lowest of the EPA Public Health Level for PCBs in School Indoor Air (September 2009) for adult employees and children 12-<15 year olds (http://www.epa.gov/pcbsincaulk/)
Reporting Limit for Total PCBs is the highest individual homolog PQL (practical quantitation limit) per sample.

FIGURES

Keith Middle School
Indoor Air Sampling Locations



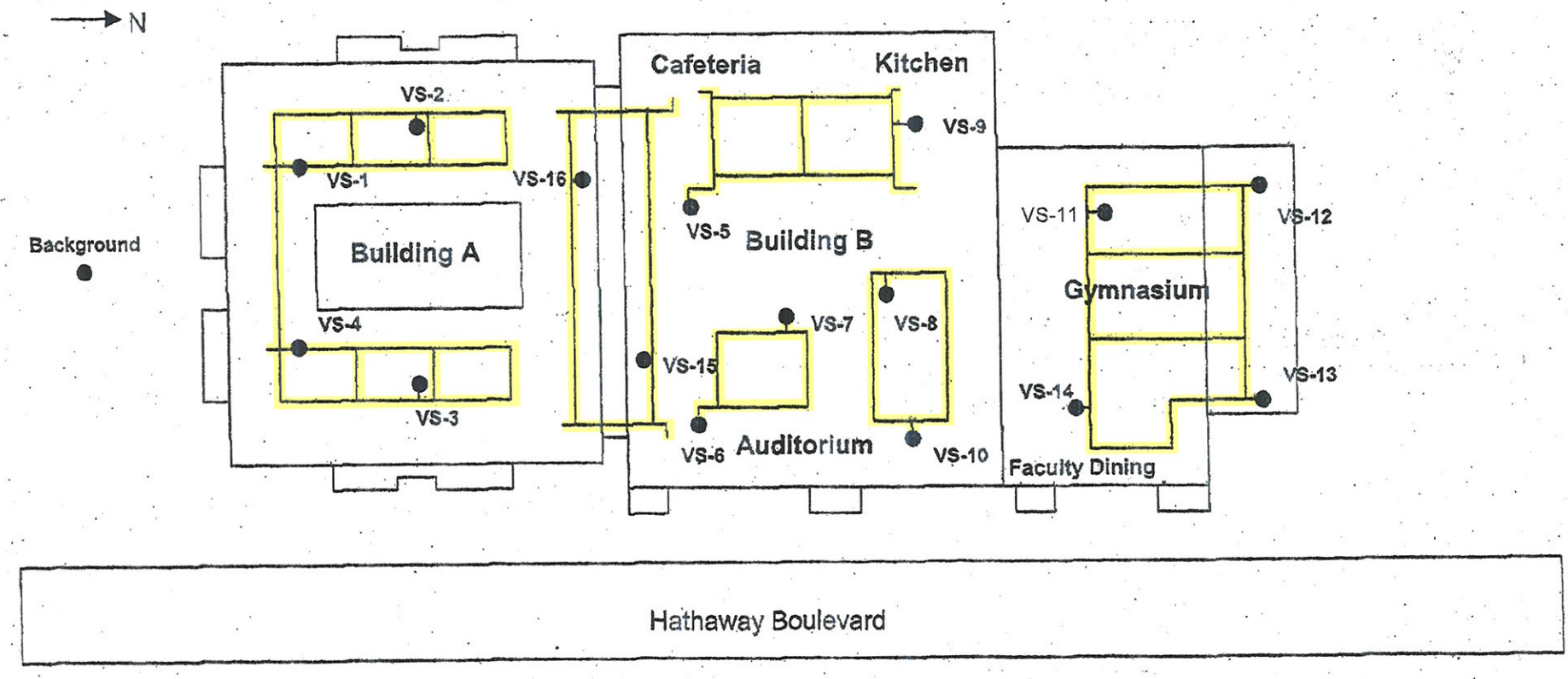
● = Indoor Air Sampling Point

● = Sample Locations

KEITH MIDDLE SCHOOL NEW BEDFORD, MASSACHUSETTS		
INDOOR AIR SAMPLING LOCATIONS		
TRC Wannalancit Mills 650 Suffolk Street Lowell, MA 01854 (978) 970-5600		FIGURE 2-1
DRAWN BY: ---	DATE: MAY 2008	
CHECKED BY: DMS		

FILE: F:\E_CAD\115058\indoorventsys1.dwg

Keith Middle School
Foundation Venting System



● = Vent Riser / Vent Stack Sampling location

═══ = Passive Venting and Collection System

KEITH MIDDLE SCHOOL
NEW BEDFORD, MASSACHUSETTS

VENT STACK SAMPLE LOCATIONS

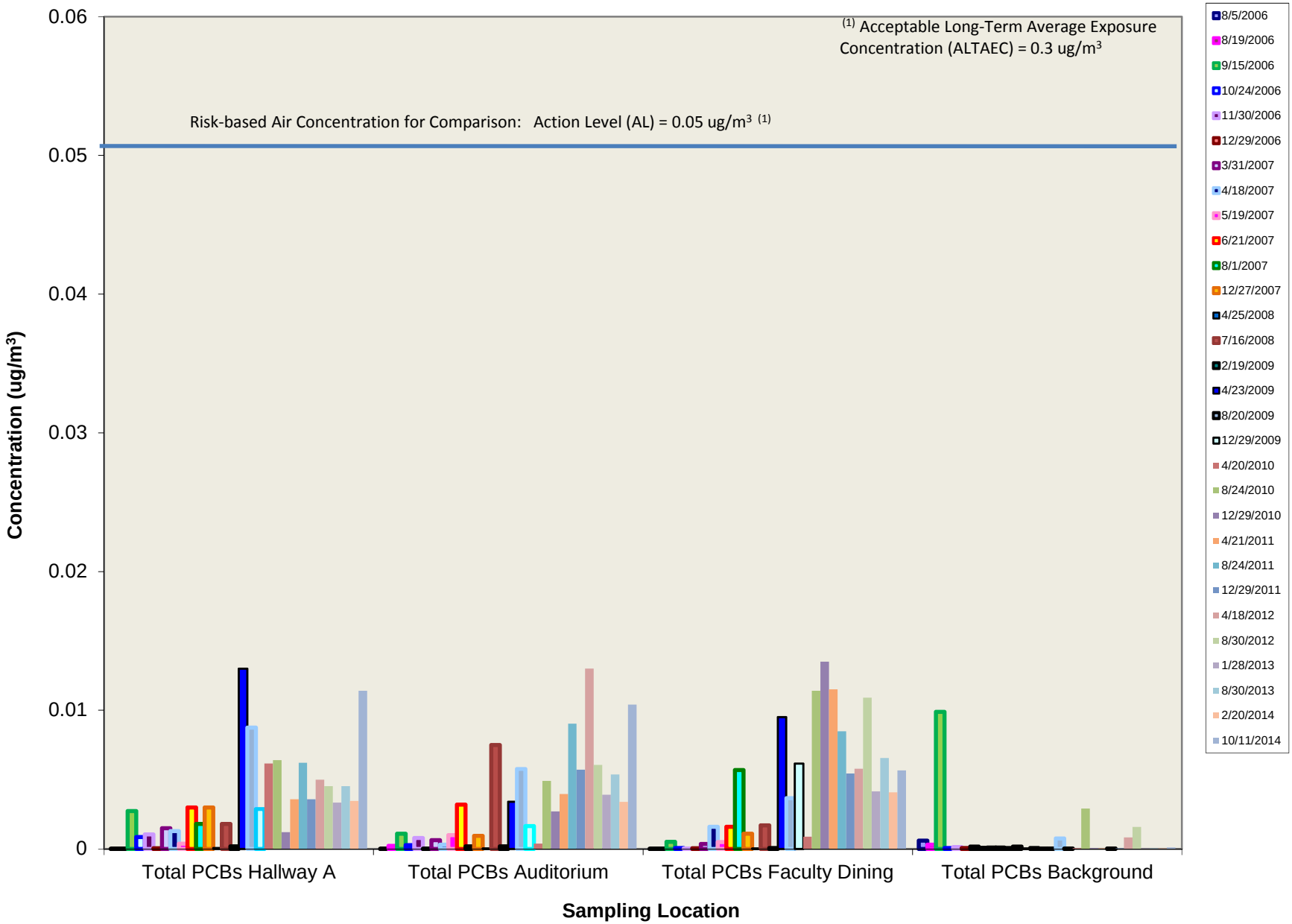
TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
(978) 970-5600

FIGURE 2-2

DRAWN BY: ---
CHECKED BY: DMS
DATE: MAY 2008

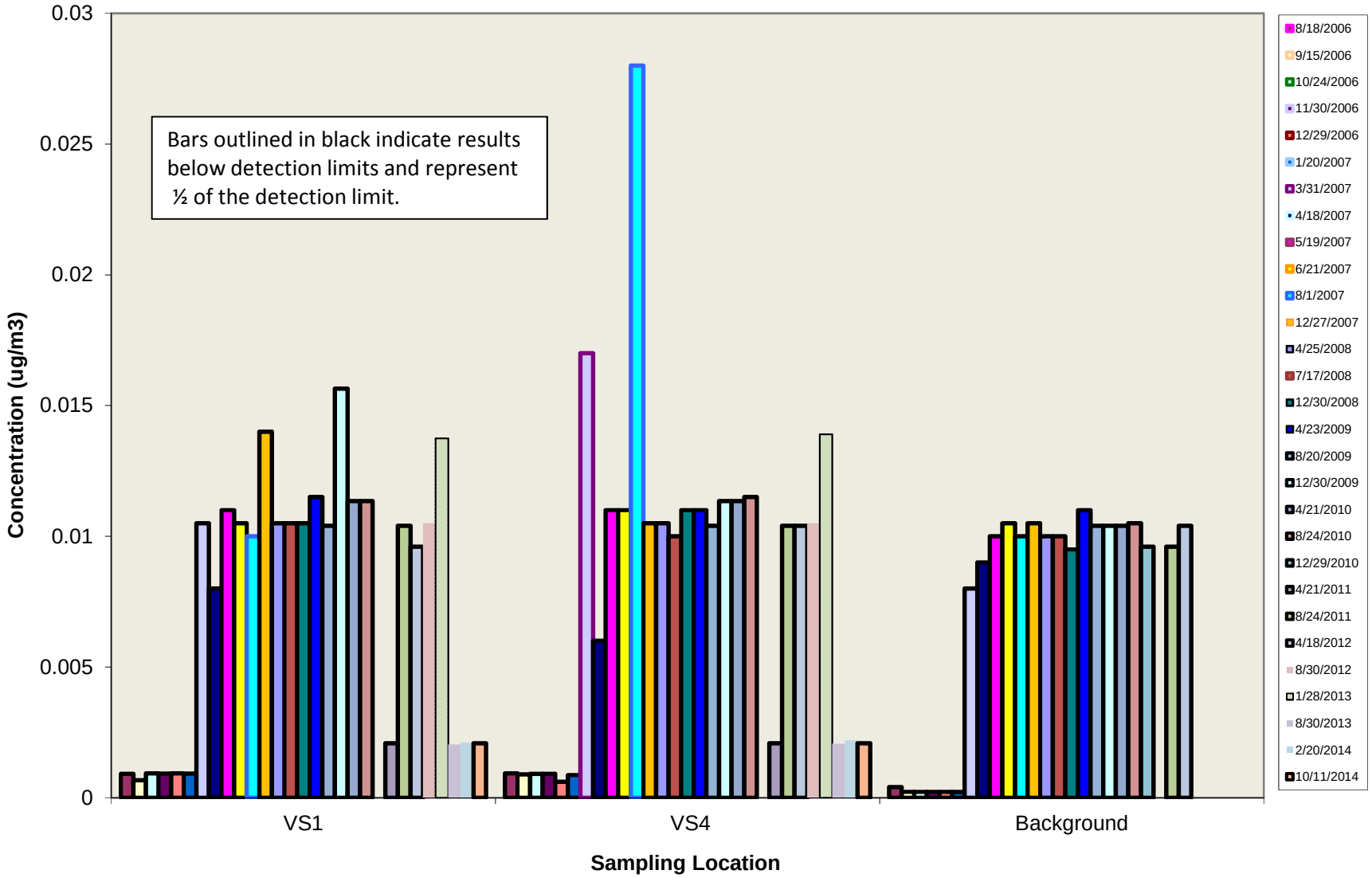
FILE: T:\E_CAD\115058\ventsys1A.dwg

Figure 5-1. Total PCB Trends in KMS Indoor Air Quality (IAQ) Samples - August 2006 through October 2014



Each bar represents a single measurement. Bars outlined in black represent values reported by the laboratory as nondetect. For charting purposes these nondetect values are plotted as one half the reporting limit.

Figure 5-2. KMS Vent Stack PCB Trends - August 2006 through October 2014



Each bar represents a single measurement. Bars outlined in black represent values reported by the laboratory as nondetect. For charting purposes these nondetect values are plotted as one half the reporting limit.

APPENDIX A

SUMMARY OF FIELD SAMPLING PROGRAM, ANALYTICAL PROGRAM, AND QUALITY ASSURANCE

1.0 FIELD SAMPLING PROGRAM

1.1 Overview

This section describes the procedures that TRC followed during the field sampling program.

1.2 Indoor Air Quality Sampling

Each of the indoor air quality field samples was collected by TRC over the course of one 24-hour test period. Indoor air quality samples were collected for analysis of PCBs by EPA Method TO-4A.

Indoor air quality (IAQ) samples were collected for PCBs following the procedures described in the EPA Compendium Method TO-4A, ***Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)***, *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition*, USEPA, January 1999.

TRC placed a high volume sampler at each PCB indoor air sampling location. A multi-point calibration was performed on each high volume sampler prior to sample collection using a calibrated orifice. A polyurethane foam (PUF) sampling cartridge was then unsealed and inserted into the high volume sampler and the sampler turned on. The start time, elapsed hours counter reading, and flow rate (magnehelic reading) were then recorded on a data sheet. After 24 hours of sampling, the elapsed hours counter reading and flow rate (magnehelic reading) were recorded on a data sheet along with the stop time. The PUF cartridge was then removed from the sampler, sealed, and labeled. A single-point post sampling calibration audit was performed to document that the high volume sampler remained calibrated.

Following the collection of the TO-4A samples, the total volume of ambient air sampled for each cartridge was calculated based on the duration of sampling and the average flow rate, as determined from the initial and final flow rates.

The data sheets are provided in Appendix B and the reduced data are presented in Appendix C. The calibration certifications of the critical orifice can be found in Appendix D.

1.3 Foundation Vent Air Sampling

Each of the vent air field samples was collected by TRC over the course of a 4-hour test period. Vent air samples were collected for analysis of PCBs by EPA Method TO-10A. Prior to sampling, all of the foundation vents were temporarily capped for approximately 24 hours. Just prior to sampling, TRC removed the caps from all vent stacks that were not being sampled to allow for the inflow of air. This approach is a modification to the procedure outlined in the LTMMIP to improve representativeness by allowing sample air to be drawn from the entire vent stack zone without potential stagnation of flow impacted by capped vent stacks.

Vent stack air samples were collected for PCBs following the procedures described in the EPA Compendium Method TO-10A, ***Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)***, *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition*, USEPA, January 1999.

In order to sample each vent stack without collecting ambient air, a cap with Teflon™ tubing penetrating through it was placed over the vent stack. Prior to capping the stack, a PUF sampling cartridge was unsealed and connected to the length of tubing that would extend inside the vent stack. The tubing on the opposite side of the cap (that would be outside of the vent stack after the cap was installed) was attached to a Dawson® vacuum pump. A vacuum was applied to the tubing and cartridge using the pump and the vacuum was adjusted so that a flow rate of five liters per minute (LPM) of air was flowing through the PUF. The flow rate was confirmed using a Bios Defender™ 520 primary gas flow calibrator. The cap was then placed over the vent stack with the PUF cartridge suspended in the stack. The start time and flow rate was then recorded on a data sheet. After 4 hours of sampling, the flow rate was confirmed using the bubble meter. The final flow rate and stop time are then recorded on the data sheet. The PUF cartridge was then disconnected from the tubing, sealed with the supplied end caps, placed into a sample jar and labeled.

Following the collection of all the TO-10A samples, the total volume of ambient air sampled for each cartridge was calculated based on the duration of sampling and the average flow rate, as determined from the initial and final flow rates.

The data sheets can be found in Appendix B and the reduced data can be found in Appendix C. The calibration certifications of the Bios Defender™ 520 primary gas flow calibrator can be found in Appendix D.

2.0 ANALYTICAL PROGRAM

Samples collected by EPA Method TO-10A and TO-4A were prepared by the Soxhlet Extraction Method (EPA Method 3540C/TO-4A) and analyzed by gas chromatography/mass spectroscopy (EPA Method 680) for PCB Homologue distribution. The homologue analytical method is a reliable method to quantify total PCBs to levels below the EPA Action Level (0.05 $\mu g/m^3$) and Acceptable Long-Term Average Exposure Concentration (0.3 $\mu g/m^3$) described in Section 5 and Appendix G. By quantifying PCB homologues, total PCB air data gathered at the KMS are directly comparable to total PCB air data gathered at the high school since both are based on homologues rather than congeners, which greatly facilitates communication and discussion with the general public on the results of analyses.

Laboratory analytical results are presented in Appendix E.

3.0 QUALITY ASSURANCE

3.1 Overview

TRC management is fully committed to an effective Quality Assurance/Quality Control (QA/QC) Program whose objective is the delivery of a quality product. For much of TRC's work, that product is data developed from field measurements, sampling and analysis activities, engineering assessments, and the analysis of gathered data for planning purposes. TRC's QA/QC Program works to provide complete, precise, accurate, representative data in a timely manner for each project, considering both the project's needs and budget.

This section highlights the specific QA/QC procedures that were followed during this sampling and analysis program.

3.2 Field Quality Control Summary

Calibrations of the field sampling equipment were performed prior to the field sampling effort. Copies of the calibration sheets were submitted to the Field Team Leader to take onsite and placed in the project file. Calibrations were performed as described in the EPA 40 CFR Part 50 Appendix B. All calibrations were available for review during the test program. Copies of the equipment calibration forms can be found in Appendix D. All instrument calibrations met the performance criteria defined in 40 CFR 50 Appendix B.

3.3 Data Reduction and Validation

Specific QC measures were used to ensure the generation of reliable data from sampling and analysis activities. Proper collection and organization of accurate information followed by clear and concise reporting of the data is a primary goal in all projects.

3.3.1 Field Data Reduction

Appendix B of this document presents the standardized forms that were used to record field sampling data. The data collected was reviewed in the field by the Field Team Leader and at least one other field crewmember. Errors or discrepancies were noted in the field book.

3.3.2 Data Validation

TRC supervisory and QC personnel used validation methods and criteria appropriate to the type of data and the purpose of the measurement. Records of all data were maintained, including that judged as an "outlying" or spurious value. The persons validating the data have sufficient knowledge of the technical work to identify questionable values.

Field sampling data was validated by the Field Team Leader and/or the Field QC Coordinator based on their review of adherence to each approved sampling protocol and written sample collection procedure.

The following criteria were used to evaluate the field sampling data:

- Use of approved test procedures;
- Proper operation of the process being tested;
- Use of properly operating and calibrated equipment;
- Proper chain-of-custody maintained.

Laboratory analytical data was validated by TRC chemists. 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.

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
- Method blanks
- System Monitoring Compound recoveries
- Laboratory control sample (LCS) and LCS Duplicate (LCSD) results
- Internal standard performance
- Field duplicate results
- Quantitation limits and sample results

The laboratory data validation memoranda can be found in Appendix F. All data are reported in standard units depending on the measurement and the ultimate use of the data.

3.4 Collocated Sampler Precision

Single collocated sampler pairs were included for both indoor and vent stack air during each sampling event. Collocated samplers were operated for the same duration at near identical flow rates and were in close proximity to each other so as to represent near identical air space. The data resulting from the analyses of the collocated sampler pairs were used to define the precision of the combined sample collection and analyses scheme.

Precision was determined by the collection and analysis of replicate samples and is expressed as the relative percent difference (RPD), which is determined according to the following equation:

$$RPD = \left[\frac{X_1 - X_2}{\frac{X_1 + X_2}{2}} \right] x\,100$$

where X_1 and X_2 are the measurement results of each replicate sample expressed as an absolute value (always positive).

APPENDIX B

SAMPLING DATA

Keith Middle School Sampling Data Sheet
Ambient / Vent Air Sampling

Setup Date: 10/10/14 **Sampler(s):** SM / JM

Recovery Date: 10/11/14 **Sampler(s):** SM / JM

TO-4A (Ambient)							
Location	Time (clock)		Sampler				
			Serial Number	Counter (Hrs)		Flow Rate (Mag Reading)	
	Start	Stop		Start	Finish	Initial	Final
Teacher Hall	1631	1602*	821	684.28	702.69	50	50
Aud	1633	1633	823	681.22	705.26	50	45
Hall (169)	1635	1636	820	287.51	311.53	50	46
** BG	1637	1640	825	557.47	557.47	47	46
BGDup	1637	1640	822	706.26	728.12	50	46

Sample Date: 10-11 **Sampler(s):** SM / JM

TO-10A (Vent)				
Location	Time (clock)		Flow Rate (LPM)	
	Start	Stop	Start	Finish
VS-10	11:01	15:01	5.03	4.72
VS-10 Dup	11:01	15:01	5.02	4.66
VS-12	11:06	15:06	5.03	3.37
VS-1	11:19	15:19	5.04	4.97
VS-4	11:23	15:23	5.05	4.92

*Unit unplugged. Time unknown

**GFI Tripped discovered @ 10:45am

✓DSC 11/3/14

TRC

Keith Middle School PS1 Calibration Data Sheet

Sampler ID: 821
Sampler Location: Teacher (Hallway)

Initial Calibration

Date: 10/10/14 Time: 1538

Magnehelic Reading	Manometer Left	Manometer Right	total
70	3.6	3.6	7.2
60	3.2	3.2	6.4
50	2.8	2.8	5.6
40	2.2	2.3	4.5
30	1.7	1.7	3.4

Post Calibration

Date: 10/11/14 Time: 1601

Magnahelic Reading	Manometer Left	Manometer Right	total
50	2.6	2.7	5.3

Sampler ID: 823
Sampler Location: AUI

Initial Calibration

Date: 10/10/14 Time: 1544

Magnehelic Reading	Manometer Left	Manometer Right	total
70	3.6	3.6	7.2
60	3.2	3.2	6.4
50	2.8	2.7	5.5
40	2.3	2.3	4.6
30	1.8	1.8	3.6

Post Calibration

Date: 10/11/14 Time: 1634

Magnahelic Reading	Manometer Left	Manometer Right	total
50	2.7	2.7	5.4

Sampler ID: 820
Sampler Location: Hallway (Rm169)

Initial Calibration

Date: 10/10/14 Time: 1550

Magnehelic Reading	Manometer Left	Manometer Right	total
70	3.8	3.7	7.5
60	3.3	3.3	6.6
50	2.9	2.9	5.8
40	2.3	2.3	4.6
30	1.8	1.8	3.6

Post Calibration

Date: 10/11/14 Time: 1640

Magnahelic Reading	Manometer Left	Manometer Right	total
50	2.9	2.9	5.8

Sampler ID: 825
Sampler Location: Background

Initial Calibration

Date: 10/10/14 Time: 1555

Magnehelic Reading	Manometer Left	Manometer Right	total
70	3.9	3.9	7.8
60	3.4	3.4	6.8
50	2.9	2.9	5.8
40	2.3	2.4	4.7
30	1.7	1.7	3.4

Post Calibration

Date: 10/11/14 Time: 1645

Magnahelic Reading	Manometer Left	Manometer Right	total
50	2.8	2.9	5.7

Sampler ID: 822
Sampler Location: Background (Dup)

Initial Calibration

Date: 10/10/14 Time: 1558

Magnehelic Reading	Manometer Left	Manometer Right	total
70	3.7	3.7	7.4
60	3.2	3.2	6.4
50	2.8	2.8	5.6
40	2.2	2.2	4.4
30	1.65	1.7	3.35

Post Calibration

Date: 10/11/14 Time: 1645

Magnahelic Reading	Manometer Left	Manometer Right	total
50	2.7	2.7	5.4

✓ DJC 11/3/14

Orifice ID: 1125 Cal. Date: 8/1/14
Initial Cal Temp (in/out): 68 / 68 F / C
Initial Cal Press: 30.22 inHg / mmHg
Post Cal Temp (in/out): 68 / 50 F / C
Post Cal Press: 30.1 inHg / mmHg

TRC

APPENDIX C

FIELD REDUCED DATA

INDOOR SAMPLING LOCATIONS

Average Temp (oF/ K): **68.0** 293.0

Average Baro. Press ("Hg / mmHg): **30.08** 764.0

Saturday, October 11, 2014

Location		Serial #	m_s	b_s	Start Reading ("H2O)	Start Reading (lpm)	Stop Reading ("H2O)	Stop Reading (lpm)	Avg. Reading ("H2O)	RPD of Start and Stop Readings	Avg. Flow (lpm)	Start time (hr)	Start time (clock)	Stop Time (hr)	Stop Time (clock)	Total Sample Time (min)	Total Actual Sample Volume (m^3)
C-34 Lounge hallway	TO-4A	**821**	0.033	-0.95784	**50**		**50**		50	0.00	240	**684.28**	16:31	**702.69**	16:02	1104.6	265.4
B-34 Aud	TO-4A	**823**	0.035	-1.60095	**50**		**45**		47.5	10.53	239	**681.22**	16:33	**705.26**	16:33	1442	345.4
A-34 hallway, Rm 169	TO-4A	**820**	0.032	-1.06141	**50**		**46**		48	8.33	247	**287.51**	16:35	**311.53**	16:36	1441	355.3

Note:
A-34 needed to be in the hall due to avtivities scheduled during the day of 10/11.
A-34 was found unplugged at 16:01, unit recovered.

OUTDOOR SAMPLING LOCATIONS

Average Temp (oF/ K): **50.4** 283.2

Average Baro. Press ("Hg / mmHg): **30.08** 764.0

Saturday, October 11, 2014

Location		Serial #	m_s	b_s	Start Reading ("H2O)	Start Reading (lpm)	Stop Reading ("H2O)	Stop Reading (lpm)	Avg. Reading ("H2O)	RPD of Start and Stop Readings	Avg. Flow (lpm)	Start time (hr)	Start time (clock)	Stop Time (hr)	Stop Time (clock)	Total Sample Time (min)	Total Actual Sample Volume (m^3)
BG-34	TO-4A	**825**	0.029	-0.28991	**47**		**46**		46.5	2.15	238	**557.47**	16:37	**557.47**	16:40	1312	312.4
BG-34-Dup	TO-4A	**822**	0.031	-0.53798	**50**		**46**		48	8.33	234	**706.26**	16:37	**728.12**	16:40	1312	306.5
VS-10-34	TO-10A					**5.03**		**4.72**		6.36	4.88		**11:01**		**15:01**	240	1.17
VS-10-34 Dup	TO-10A					**5.02**		**4.66**		7.44	4.84		**11:01**		**15:01**	240	1.16
VS-12-34	TO-10A					**5.03**		**3.37**		39.52	4.20		**11:06**		**15:06**	240	1.01
VS-1-34	TO-10A					**5.04**		**4.97**		1.40	5.01		**11:19**		**15:19**	240	1.20
VS-4-34	TO-10A					**5.05**		**4.92**		2.61	4.99		**11:23**		**15:23**	240	1.20

Note: At approx. 10:45 on 10-11-14, Background GFI outlet was tripped

TimeEDT	Temperature F	Dew Point F	Humidity	Sea Level Pressure inHg	Speed MPH	Wind Direction
4:53 PM	61	39	44	30.05	10	West
5:53 PM	57	41	55	30.07	10	WSW
6:53 PM	54	45	72	30.08	10	Calm
7:53 PM	53.1	45	74	30.1	10	Calm
8:53 PM	50	46	86	30.12	10	Calm
9:53 PM	48.9	46	90	30.12	10	Calm
10:53 PM	46.9	45	93	30.13	10	Calm
11:53 PM	46	45	96	30.12	10	Calm
12:53 AM	45	43	93	30.11	10	Calm
1:53 AM	46	44.1	93	30.11	10	Calm
2:53 AM	46.9	45	93	30.09	10	Calm
3:53 AM	46.9	45	93	30.09	10	Calm
4:53 AM	48.2	44.6	87	30.09	10	Calm
5:53 AM	48.2	46.4	93	30.09	10	Calm
6:53 AM	48.9	45	86	30.1	10	Calm
7:53 AM	48.9	46.9	93	30.11	10	NNE
8:53 AM	50	46.9	89	30.12	5	NE
9:53 AM	50	48	93	30.08	10	East
10:53 AM	51.1	48.9	92	30.09	10	NNE
11:53 AM	51.1	48.9	92	30.08	5	NNE
12:30 PM	51.1	48.9	92	30.06	4	NE
12:37 PM	51.1	48.9	92	30.07	6	Calm
12:45 PM	51.1	50	96	30.08	3	WNW
12:53 PM	51.1	50	96	30.06	2	NE
1:03 PM	51.1	48.9	92	30.05	5	NNE
1:23 PM	51.1	48.9	92	30.06	8	Variable
1:53 PM	51.1	48.9	92	30.04	10	NNE
2:21 PM	51.1	48	89	30.04	10	NNE
2:53 PM	51.1	48	89	30.04	10	NNE
3:01 PM	51.1	48.9	92	30.04	10	NNE
3:15 PM	51.1	48.9	92	30.05	10	North
3:17 PM	51.1	48.9	92	30.05	10	North
3:53 PM	51.1	48	89	30.05	10	Variable
Average	**50.4**			**30.08**		

APPENDIX D

EQUIPMENT CALIBRATION SHEETS

MesaLabs

NVLAP Lab Code 200661-0

Calibration Certificate

Certificate No.	5046362	**Sold to:**	TRC Environmental Corporation - CT Wannalancit Mills 650 Suffolk Street Suite 200 Lowell, MA 01854 USA
Product	Defender 530 High Flow		
Serial No.	119011		
Cal. Date	12-Aug-2014		

All calibrations are performed in accordance with ISO 17025 at Mesa Laboratories, Inc., 10 Park Place, Butler, NJ, 07405, 800-663-4977, an ISO 17025:2005 – accredited laboratory through NVLAP. This report shall not be reproduced except in full without the written approval of the laboratory. Results only relate to the items calibrated. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

As Received Calibration Data

Technician Zenaida Ortiz

Lab. Pressure 754 mmHg
Lab. Temperature 22.4 °C

Instrument Reading	Lab Standard Reading	Deviation	Allowable Deviation	As Received
500.78 ccm	500.61 ccm	0.03 % %	1.00%	In Tolerance
4992.3 ccm	5002.85 ccm	-0.21 % %	1.00%	In Tolerance
29774 ccm	30051.5 ccm	-0.92 % %	1.00%	In Tolerance
23.4 °C	22.4 °C	1.0 °C	±0.8°C	Out of Tolerance
755 mmHg	754 mmHg	1.0 mmHg	±3.5mmHg	In Tolerance

Mesa Laboratories Standards Used

Description	Standard Serial Number	Calibration Date	Calibration Due Date
ML 500-44	113761	22-Apr-2014	22-Apr-2015
Precision Thermometer	300907	7-May-2014	7-May-2015
Precision Barometer	2981392	24-Jun-2014	24-Jun-2015

MesaLabs

NVLAP Lab Code 200661-0

As Shipped Calibration Data

Certificate No. 5046362
Technician Zenaida Ortiz

Lab. Pressure 752 mmHg
Lab. Temperature 22.0 °C

Instrument Reading	Lab Standard Reading	Deviation	Allowable Deviation	As Shipped
504.80 ccm	501.075 ccm	0.74 %%	1.00%	In Tolerance
5016.1 ccm	5006.95 ccm	0.18 %%	1.00%	In Tolerance
29875 ccm	30042 ccm	-0.56 %%	1.00%	In Tolerance
22.0 °C	22.0 °C	-	±0.8°C	In Tolerance
752 mmHg	752 mmHg	-	±3.5mmHg	In Tolerance

Mesa Laboratories Standards Used

Description	Standard Serial Number	Calibration Date	Calibration Due Date
ML-500-44	113761	22-Apr-2014	22-Apr-2015
Precision Thermometer	305460	27-Aug-2013	27-Aug-2014
Precision Barometer	2981392	24-Jun-2014	24-Jun-2015

Calibration Notes

The expanded uncertainty of flow, temperature, and pressure measurements all have a coverage factor of k = 2 for a confidence interval of approximately 95%.

Flow testing is in accordance with our test number PR18-13 with an expanded uncertainty of 0.27% using high-purity nitrogen or filtered laboratory air.

Pressure testing is in accordance with our test number PR18-11 with an expanded uncertainty of 0.16 mmHg.

Temperature testing is in accordance with our test number PR18-12 with an expanded uncertainty of 0.04 °C.

Traceability to the International System of Units (SI) is verified by accreditation to ISO/IEC 17025 by NVLAP under NVLAP Code 200661-0.

Technician Notes:

David W. Wilson, Chief Metrologist

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5040A

Date - Aug 01, 2014 Rootsmeter S/N 0438320 Ta (K) - 298
Operator Jim Tisch Orifice I.D. - 1125 Pa (mm) - 754.38

PLATE OR VDC #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	6.6060	3.6	2.00
2	NA	NA	1.00	3.9750	10.0	5.50
3	NA	NA	1.00	3.1740	15.5	8.50
4	NA	NA	1.00	2.7030	21.0	11.50
5	NA	NA	1.00	2.3890	26.5	14.50
6	NA	NA	1.00	2.2440	30.2	16.50

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9878	0.1495	1.4090		0.9951	0.1506	0.8888
0.9794	0.2464	2.3365		0.9867	0.2482	1.4740
0.9722	0.3063	2.9047		0.9794	0.3085	1.8324
0.9649	0.3569	3.3786		0.9721	0.3596	2.1314
0.9577	0.4008	3.7938		0.9648	0.4038	2.3933
0.9529	0.4246	4.0470 -		-0.9600	0.4278	2.5530
Qstd slope (m) =		9.53442		Qa slope (m) =		5.97029
intercept (b) =		-0.01678		intercept (b) =		-0.01058
coefficient (r) =		0.99991		coefficient (r) =		0.99991

y axis = SQRT[H2O(Pa/760)(298/Ta)] y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

Network: **New Bedford** Site: **Keith Middle** Serial #: **820** Station #: **Hall (rm 169)**

Technician: **EJM/JM** Date: **10/10/2014** OrificeS/N: **1125** Orif. Cal. Date: **1-Aug-14**

Reason for Puff Sampler Calibration: *Monthly Recal*

Amb. Temp, Ta (°C)	**20**	Bar. Press., Pa (in Hg)	**30.22**
Amb. Temp, Ta (K)	293.0	Bar. Press., Pa (mmHg)	767.6

Orifice Data

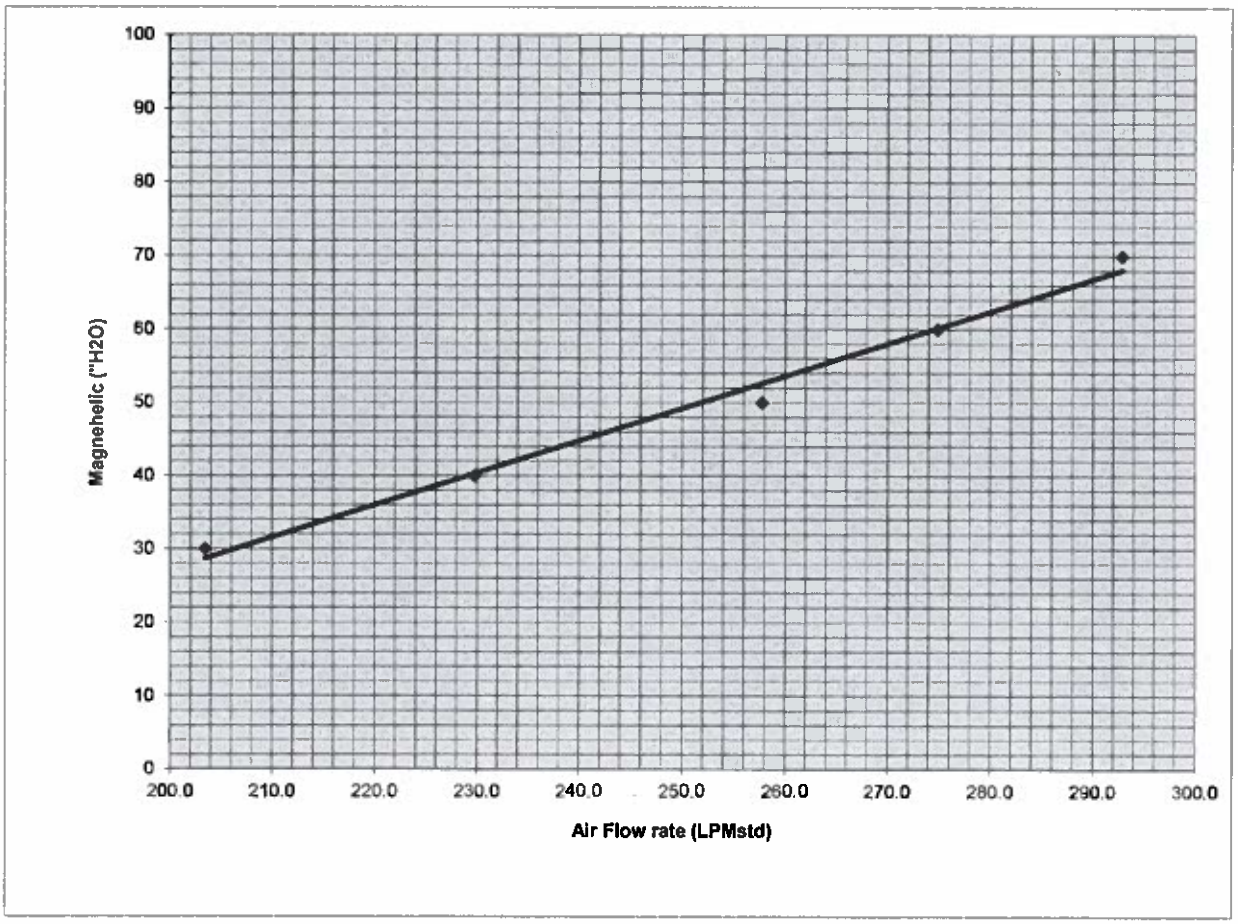
Qstd (m_o) = **9.53442** Qstd (b_o) = **-0.01678** Qstd (r_o) = **0.99991**

ΔH	Q_{std}	I	I_c
7.50	292.877	**70**	8.48
6.60	274.852	**60**	7.85
5.80	257.767	**50**	7.17
4.60	229.750	**40**	6.41
3.60	203.452	**30**	5.55

I_c = sqrt[I x 0.392 x (Pa/Ta)]

Qstd = {(1/mo) x sqrt[DH x (Pa/760) x (298/Ta) - bo]} x 1000

m_s = 0.032 b_s = -1.06141 r_s = 0.99821



Desired Flow Rate (lpm): 250 Sampler Setting: 49.2

m_{mag} = 0.441 b_{mag} = -61.02232 r_{mag} = 0.99382

checked DJC 11/3/14

Network: **New Bedford** Site: **Keith Middle** Serial #: **823** Station #: **Aud**

Technician: **EJM/JH** Date: **10/10/2014** OrificeS/N: **1125** Orif. Cal. Date: **1-Aug-14**

Reason for Puff Sampler Calibration: *Monthly Recal*

Amb. Temp, Ta (°C)	**20**	Bar. Press., Pa (in Hg)	**30.22**
Amb. Temp, Ta (K)	293.0	Bar. Press., Pa (mmHg)	767.6

Orifice Data

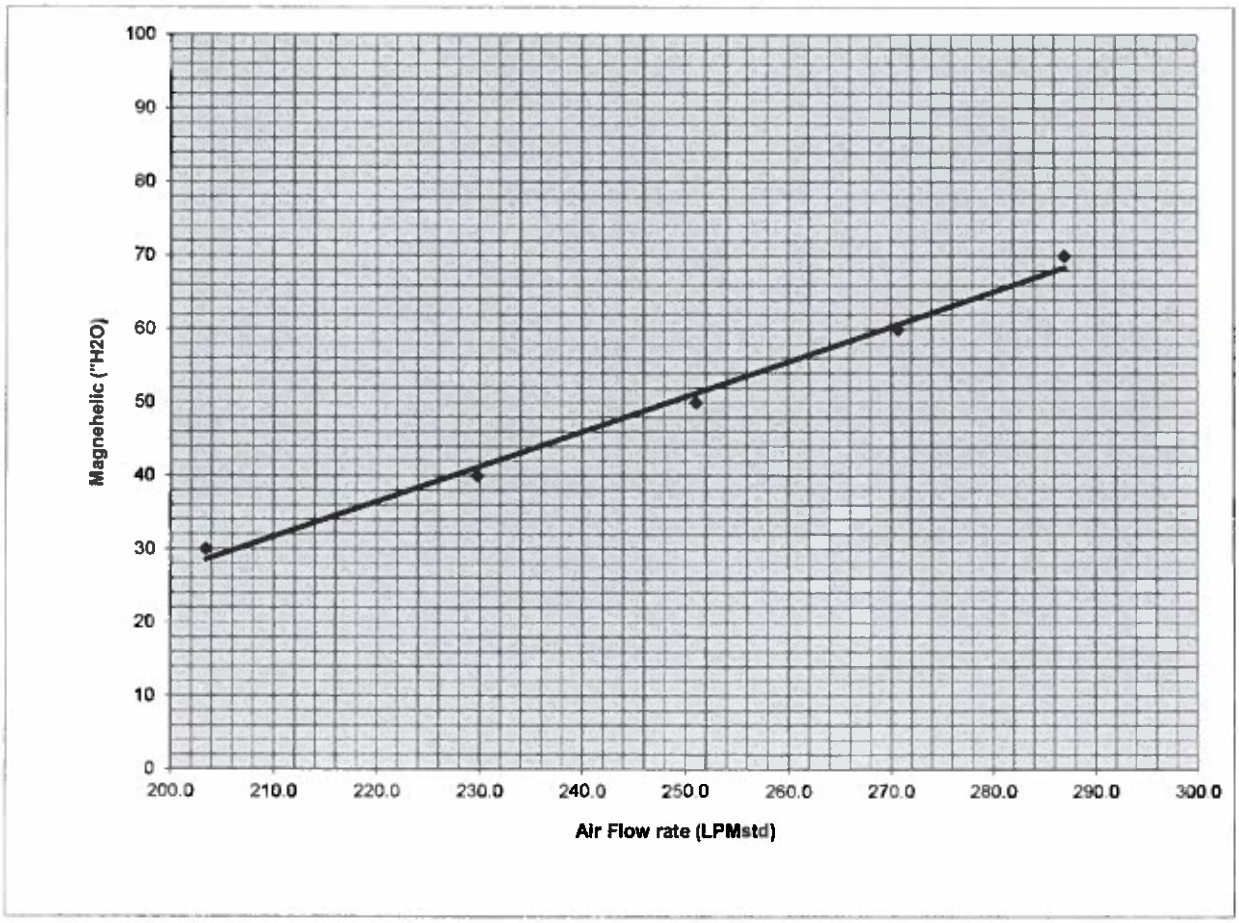
Qstd (m_o) = **9.53442** Qstd (b_o) = **-0.01678** Qstd (r_o) = **0.99991**

ΔH	Q_{std}	I	I_c
7.20	286.995	**70**	8.48
6.40	270.683	**60**	7.85
5.50	251.058	**50**	7.17
4.60	229.750	**40**	6.41
3.60	203.452	**30**	5.55

I_c = sqrt[I x 0.392 x (Pa/Ta)]

Qstd = {(1/mo) x sqrt[DH x (Pa/760) x (298/Ta) - bo]} x 1000

m_s = 0.035 b_s = -1.60095 r_s = 0.99962



Desired Flow Rate (lpm): 250 Sampler Setting: 50.8

m_{mag} = 0.477 b_{mag} = -68.47174 r_{mag} = 0.99608

checked DJC 10/3/14

Network: **New Bedford** Site: **Keith Middle** Serial #: **821** Station #: **teacher hallway**

Technician: **EJM/JM** Date: **10/10/2014** OrificeS/N: **1125** Orif. Cal. Date: **1-Aug-14**

Reason for Puff Sampler Calibration: *Monthly Recal*

Amb. Temp, Ta (°C)	**20**	Bar. Press., Pa (in Hg)	**30.22**
Amb. Temp, Ta (K)	293.0	Bar. Press., Pa (mmHg)	767.6

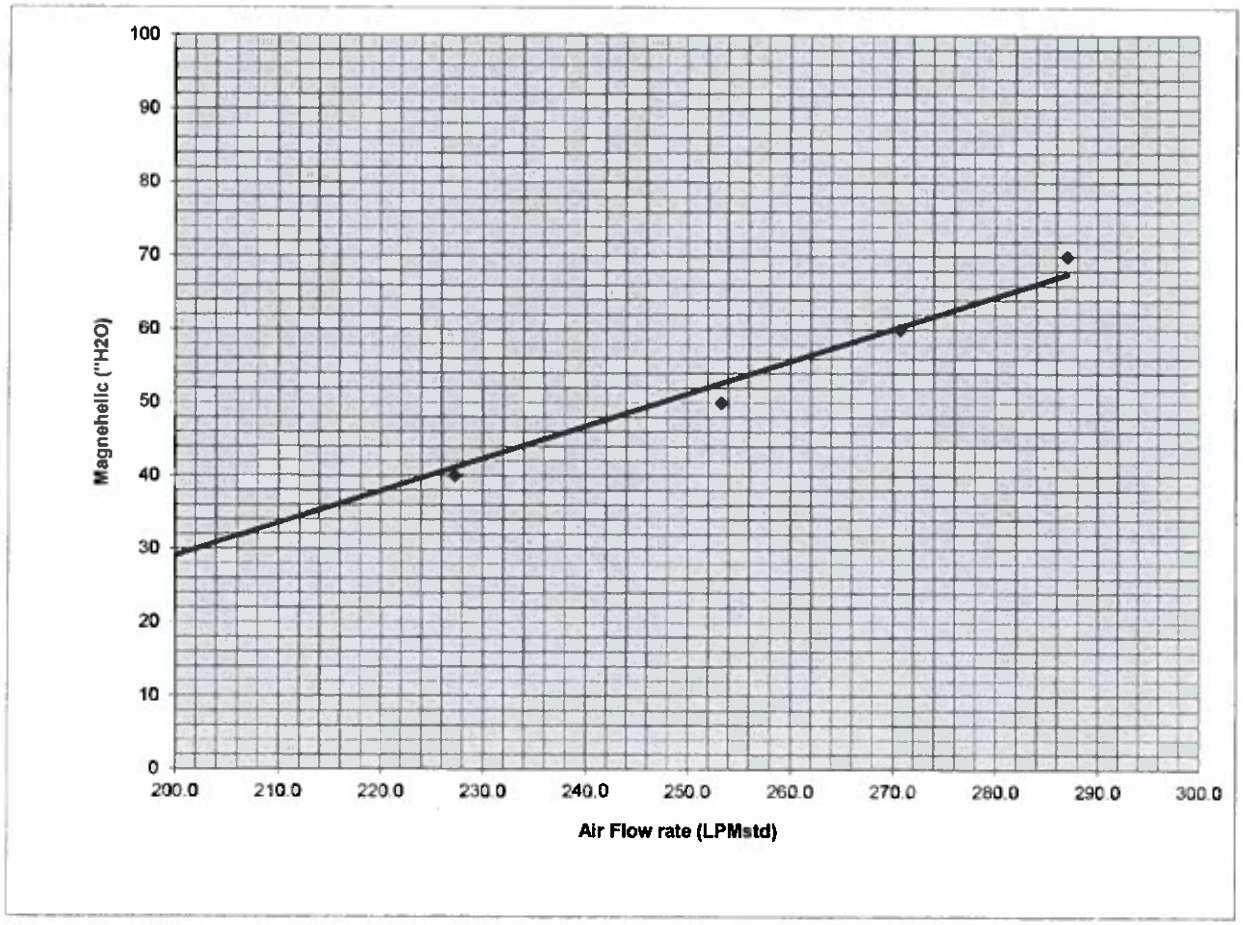
Orifice Data

Qstd (m_o) = **9.53442** Qstd (b_o) = **-0.01678** Qstd (r_o) = **0.99991**

ΔH	Q_{std}	I	I_c
7.20	286.995	**70**	8.48
6.40	270.683	**60**	7.85
5.60	253.314	**50**	7.17
4.50	227.258	**40**	6.41
3.40	197.769	**30**	5.55

I_c = sqrt[I x 0.392 x (Pa/Ta)] Qstd = {(1/mo) x sqrt[DH x (Pa/760) x (298/Ta) - bo]} x 1000

m_s = 0.033 b_s = -0.95784 r_s = 0.99721



Desired Flow Rate (lpm): 250 Sampler Setting: 51.2

m_{mag} = 0.443 b_{mag} = -59.40097 r_{mag} = 0.99092

checked DJG 11/2/14

Network: **New Bedford** Site: **Keith Middle** Serial #: **825** Station #: **BG**

Technician: **EJM/JM** Date: **10/10/2014** OrificeS/N: **1125** Orif. Cal. Date: **1-Aug-14**

Reason for Puff Sampler Calibration: *Monthly Recal*

Amb. Temp, Ta (°C)	**20**	Bar. Press., Pa (in Hg)	**30.22**
Amb. Temp, Ta (K)	293.0	Bar. Press., Pa (mmHg)	767.6

Orifice Data

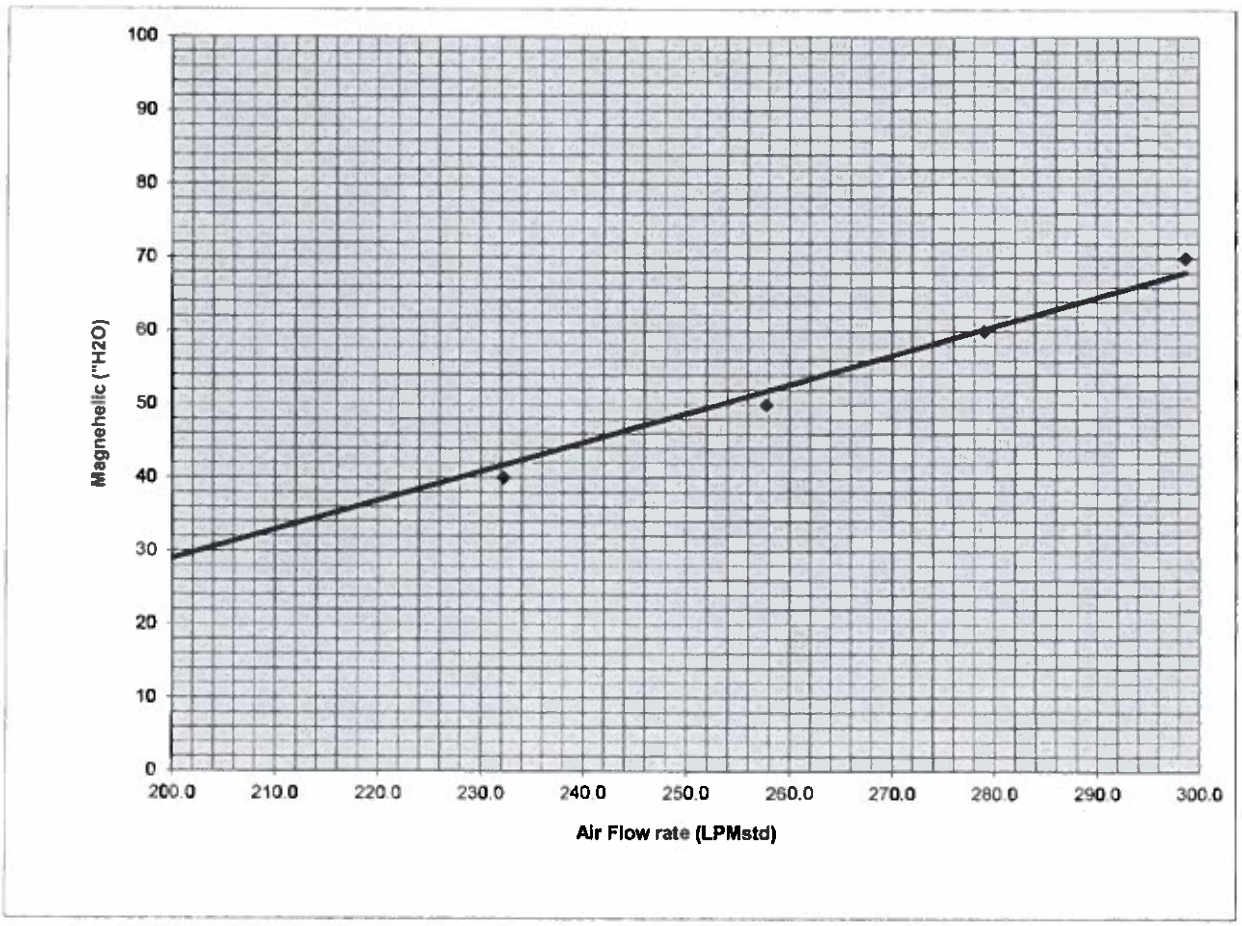
Qstd (m_o) = **9.53442** Qstd (b_o) = **-0.01678** Qstd (r_o) = **0.99991**

ΔH	Q_{std}	I	I_c
7.80	298.642	**70**	8.48
6.80	278.959	**60**	7.85
5.80	257.767	**50**	7.17
4.70	232.215	**40**	6.41
3.40	197.769	**30**	5.55

I_c = sqrt[I x 0.392 x (Pa/Ta)]

Qstd = {(1/mo) x sqrt[DH x (Pa/760) x (298/Ta) - bo]} x 1000

m_s = 0.029 b_s = -0.28991 r_s = 0.99832



Desired Flow Rate (lpm): 250 Sampler Setting: 48.8

m_{mag} = 0.397 b_{mag} = -50.42012 r_{mag} = 0.99299

checked DJG 11/3/14

Network: **New Bedford** Site: **Keith Middle** Serial #: **822** Station #: **BG Dup.**

Technician: **EJM/JM** Date: **10/10/2014** OrificeS/N: **1125** Orif. Cal. Date: **1-Aug-14**

Reason for Puff Sampler Calibration: *Monthly Recal*

Amb. Temp, Ta (°C)	**20**	Bar. Press., Pa (in Hg)	**30.22**
Amb. Temp, Ta (K)	293.0	Bar. Press., Pa (mmHg)	767.6

Orifice Data

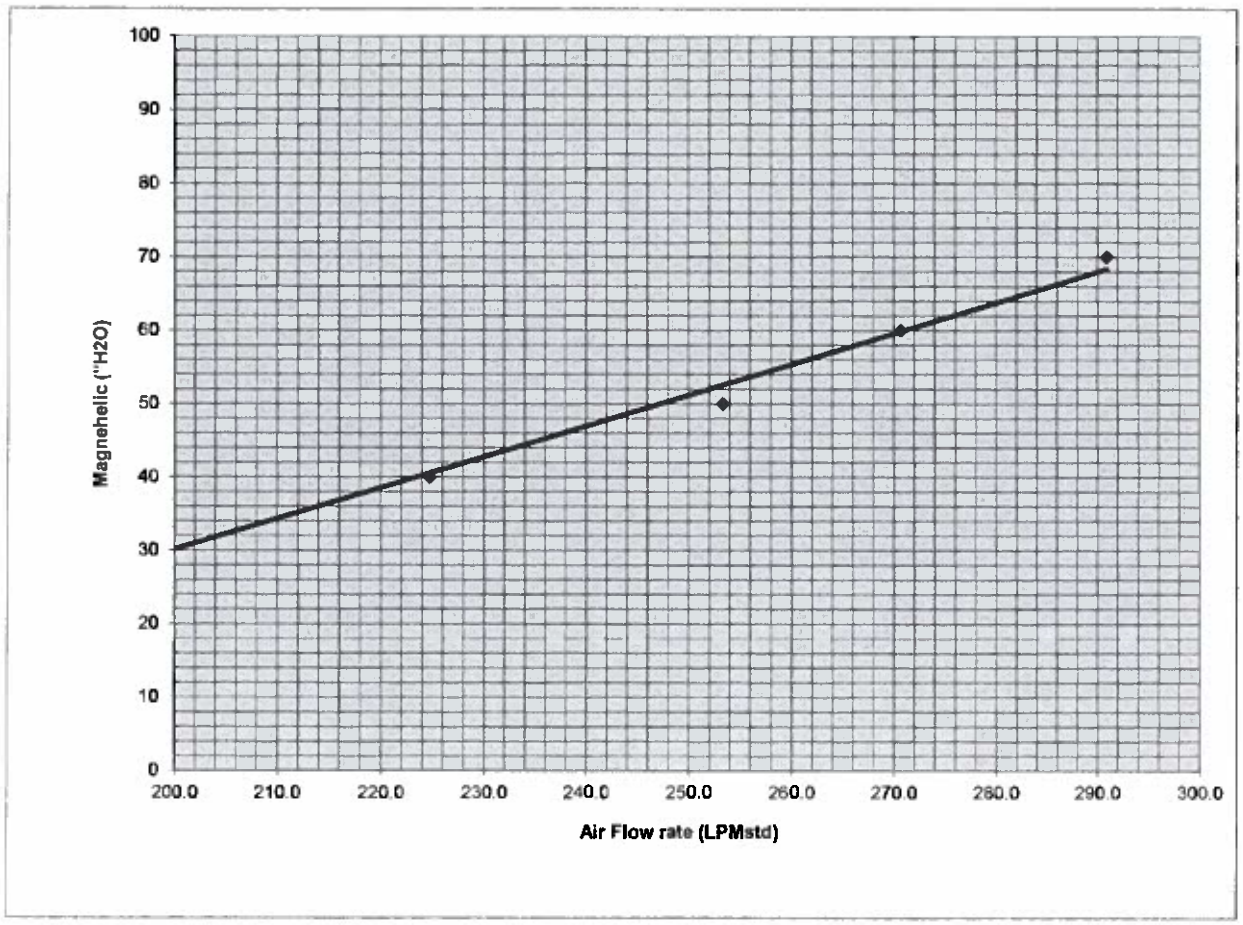
Qstd (m_o) = **9.53442** Qstd (b_o) = **-0.01678** Qstd (r_o) = **0.99991**

ΔH	Q_{std}	I	I_c
7.40	290.930	**70**	8.48
6.40	270.683	**60**	7.85
5.60	253.314	**50**	7.17
4.40	224.739	**40**	6.41
3.35	196.323	**30**	5.55

I_c = sqrt[I x 0.392 x (Pa/Ta)]

Qstd = {(1/mo) x sqrt[DH x (Pa/760) x (298/Ta) - bo]} x 1000

m_s = 0.031 b_s = -0.53798 r_s = 0.99845



Desired Flow Rate (lpm): 250 Sampler Setting: 51.2

m_{mag} = 0.420 b_{mag} = -53.91361 r_{mag} = 0.99425

check DJG 11/3/14

PS-1 Post-Sampling Flow Audit

Qstd Orifice (m^3/min) = $(1/m_o)*(SQRT(H_o*(Tstd/Pstd))-b_o)$)
Qstd Sampler (m^3/min) = $(1/m_s)*(SQRT(H_s*(Tstd/Pstd))-b_s)/1000$
% Difference = ((Qact Orifice - Qact Sampler) / Qact Orifice)*100

10/11/2014 Press ("Hg): **30.10** Press - P_a (mmHg): 764.5

	Temp (^oC):	Temp - T_a (K):	Sampler Serial #	Sampler Reading - H_s ("h20)	Orifice Reading - H_o ("h20)	Orifice #	Orifice Slope - m_o	Orifice Intercept - b_o	**Qstd Orifice**	Sampler #	Sampler Slope - m_s	Sampler Intercept - b_s	**Qstd Sampler**	**% Difference**
A-34	20.0	293.0	820	**50**	**5.80**	1125	**9.53442**	**-0.01678**	**0.257**	820	**0.032**	**-1.06141**	**0.257**	**0.22**
B-34	20.0	293.0	823	**50**	**5.40**	1125	**9.53442**	**-0.01678**	**0.248**	823	**0.035**	**-1.60095**	**0.250**	**-0.73**
C-34	20.0	293.0	821	**50**	**5.30**	1125	**9.53442**	**-0.01678**	**0.246**	821	**0.033**	**-0.95784**	**0.246**	**0.09**
BG-34	20.0	293.0	825	**50**	**5.70**	1125	**9.53442**	**-0.01678**	**0.255**	825	**0.029**	**-0.28991**	**0.257**	**-0.62**
BG-DUP-34	20.0	293.0	822	**50**	**5.40**	1125	**9.53442**	**-0.01678**	**0.248**	822	**0.031**	**-0.53798**	**0.248**	**0.09**

Acceptance Limit <= 10% Difference

APPENDIX E

LABORATORY DATA REPORTS (ON CD)

Date Issued: November 07, 2014

Pace Analytical e-Report

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

Project ID: VERIFICATION PUF
Sampling Date(s): August 31, 2014
Lab Report ID: 14081755_1756
Client Service Contact: Peggy Siegfried (518) 346-4592 ext. 3838

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.

Dan Pfalzer
Laboratory Director

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

Pace Analytical Services, Inc.| 2190 Technology Drive | Schenectady, NY 12308
Phone: 518.346.4592 | internet: www.pacelabs.com

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Case Narrative

November 07, 2014

CASE NARRATIVE

This data package (SDG ID: 14081755 and 14081756) consists of 1 filter sample and 1 polyurethane foam (TO-10A) sample and 2 polyurethane foam samples generated by Pace Analytical Services, Inc. on 08/20/2014 and 08/31/2014 for PCB analysis.

This sample delivery group consists of the following samples:

Lab Sample ID	Client ID	Collection Date
AR30073	VER PUF LOT #53993-1	08/31/2014
AR30074	VER PUF LOT #082014-0	08/20/2014
AR30075	VER PUF LOT #082014-1	08/20/2014
AR30076	VER FILTER LOT #082014-4	08/20/2014

Sample Delivery and Receipt Conditions

(1.) Not applicable, samples generated by the laboratory.

PCB Homolog Analysis (TO-4A)

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-4A. The following technical and administrative items were noted for the analysis:

(1.) All quality assurance parameters were met for this analysis, unless otherwise noted.

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.) The percent recovery for decachloro[13c12]biphenyl surrogate was below quality acceptance limits for sample (LAB ID: AR30073) and associated method blank sample (LAB ID: AR30073B. The alternate surrogate was within limits. Please see associated form 2 for details.

Respectfully submitted,

Chelsea L. Farmer
Project Manager

S:\Lims Data\1408\14081755\Package\CN_14081755_1756_Rev00.doc

Qualifier Definitions

Organic Laboratory Qualifiers

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

D - Surrogate recovery not evaluated against control limits due to sample dilution.

E - Denotes analyte concentration exceeded calibration range of instrument. Sample could not be re-analyzed 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).

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 %.

U - Denotes analyte not detected at concentration greater than the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

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

* - Value not within control limits.

Inorganic Laboratory Qualifiers

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

E - Denotes analyte concentration exceeded calibration range of instrument. Sample could not be re-analyzed 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).

U - Denotes analyte not detected at concentration greater than the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

* - Value not within control limits.

QA_QUALIFIERS_LIST_090413_REV01_01

Sample Chain Of Custody

<14081755P1>

140817551

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Pace Analytical Services, Inc.
2190 Technology Drive, Schenectady, NY 12308
Telephone (518) 346-4592 Fax (518) 381-6055
www.pacelabs.com

LRF # 14081755
(LAB USE ONLY)

DISPOSAL REQUIREMENTS: (To be filled in by Client)
- ○ RETURN TO CLIENT
- ● DISPOSAL BY RECEIVING LAB
- ○ ARCHIVAL BY RECEIVING LAB

Additional charges incurred for disposal (if hazardous) or archival. Call for details.

CLIENT (REPORTS TO BE SENT TO): PACE

PROJECT#/PROJECT NAME: 14081755

LOCATION (CITY/STATE) ADDRESS: NY

PROJECT MANAGER: Peggy Siegfried

SAMPLED BY: (Please Print)

REQUIRED TURN AROUND TIME: ASAP

SAMPLING FIRM:

NAME OF COURIER (IF USED):

ELECTRONIC RESULTS

FAXED RESULTS FAX #:

ENTER ANALYSIS AND METHOD NUMBER REQUESTED

PRESERVATIVE CODE:
BOTTLE TYPE:
BOTTLE SIZE:

PRESERVATIVE KEY: 0 - ICE; 1 - HCL; 2 - HNO3; 3 - H2SO4; 4 - NaOH; 5 - Zn. Acetate; 6 - MeOH; 7 - NaHSO4; 8 - Other (Na2SO3)

SAMPLE ID	DATE	TIME	MATRIX	GRAB/ COMP	LAB SAMPLE ID (LAB USE ONLY)	NUMBER OF CONTAINERS	PCBs by GCMS							REMARKS:
VER PUF LOT #53993-1	8/31/14		PF10	GRAB	AR30073	1	X							

AMBIENT OR CHILLED: TEMP: COC TAPE: Y N PROPERLY PRESERVED: Y N OTHER NOTES: Data Package [LEVEL-4] EDD: None

RECEIVED BROKEN OR LEAKING: Y N COC DISCREPANCIES: Y N RECVD W/I HOLDING TIMES: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME
COMPANY	COMPANY	COMPANY	COMPANY	COMPANY	COMPANY
DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME

S:\LOGIN\MDLCOCS

<14081756P1>

140817561

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Pace Analytical Services, Inc.
2190 Technology Drive, Schenectady, NY 12308
Telephone (518) 346-4592 Fax (518) 381-6055
www.pacelabs.com

LRF # 14081756
(LAB USE ONLY)

DISPOSAL REQUIREMENTS: (To be filled in by Client)
- ○ RETURN TO CLIENT
- ● DISPOSAL BY RECEIVING LAB
- ○ ARCHIVAL BY RECEIVING LAB

Additional charges incurred for disposal (if hazardous) or archival. Call for details.

CLIENT (REPORTS TO BE SENT TO): PACE

PROJECT#/PROJECT NAME: 14081756

LOCATION (CITY/STATE) ADDRESS: NY

PROJECT MANAGER: Peggy Siegfried

SAMPLED BY: (Please Print)

REQUIRED TURN AROUND TIME: ASAP

SAMPLING FIRM:

NAME OF COURIER (IF USED):

ELECTRONIC RESULTS

FAXED RESULTS FAX #:

ENTER ANALYSIS AND METHOD NUMBER REQUESTED

PRESERVATIVE CODE:
BOTTLE TYPE:
BOTTLE SIZE:

PRESERVATIVE KEY: 0 - ICE; 1 - HCL; 2 - HNO3; 3 - H2SO4; 4 - NaOH; 5 - Zn. Acetate; 6 - MeOH; 7 - NaHSO4; 8 - Other (Na2SO3)

SAMPLE ID	DATE	TIME	MATRIX	GRAB/ COMP	LAB SAMPLE ID (LAB USE ONLY)	NUMBER OF CONTAINERS	PCBs by GCMS							REMARKS:
VER PUF LOT #082014-0	8/20/14		PF4	GRAB	AR30074	1	X							
VER PUF LOT #082014-1	8/20/14		PF4	GRAB	AR30075	1	X							
VER FILTER LOT #082014-4	8/20/14		F	GRAB	AR30076	1	X							

AMBIENT OR CHILLED: TEMP: COC TAPE: Y N PROPERLY PRESERVED: Y N OTHER NOTES: Data Package [LEVEL-4] EDD: None

RECEIVED BROKEN OR LEAKING: Y N COC DISCREPANCIES: Y N RECVD W/I HOLDING TIMES: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME
COMPANY	COMPANY	COMPANY	COMPANY	COMPANY	COMPANY
DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME

S:\LOGIN\MDLCOCS

Internal Sample Tracking Record

EXTRACTION LOG

Pace Analytical®

Prep Date: 08/31/14 **Batch ID: 28193** **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	278096	SBLK-17	AR30073B	Solvent		E 680 A	SOX-PF10	N/A	1	15:40	07:40	NA	NA	1	09/01	NA
2	278095	14081755-01	AR30073	PF10		E 680 A	SOX-PF10	N/A	1	15:40	07:40	NA	NA	1	09/01	Lot: 53993(14081755)

Solvent, Surrogate, Spike, and Acid Information

Item	Lot Number	Amount (uL)	Conc (ug/mL)	B	L	LD	S	D	M	K
Sodium Sulfate CURRENT	113272	NA		p	..	..	p	..	..	..
Sulfuric Acid CURRENT	0000054026	NA		p	..	..	p	..	..	..
Ethyl Ether (fisher) CURRENT	134083	NA		p	..	..	p	..	..	..
DCBP-C13	110813P46D BXI	100	1.0	p	..	..	p	..	..	..
Mercury	051214	NA		p	..	..	p	..	..	..
TCMX Surrogate STD	070314P85B BXI	100	0.20	p	..	..	p	..	..	..
10% Florisil	072114MLB3P59C	NA		p	..	..	p	..	..	..
Hexane (Dewar) CURRENT	DL011	NA		p	..	..	p	..	..	..

Analyst Review: Melissa Harris
Melissa Harris

Peer Review:
Tom Herold

Print Date: 11/7/2014
Lims Version : 5.0.8.7

EXTRACTION LOG

Pace Analytical®

Prep Date: 08/31/14 **Batch ID: 28192** **Method: EPA TO-4A**

	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	278094	SBLK-16	AR30074B	Solvent		E 680 A	SOX-PF4	N/A	1	15:40	07:40	NA	NA	1	09/01	NA
2	278091	14081756-01	AR30074	PF4		E 680 A	SOX-PF4	N/A	1	15:40	07:40	NA	NA	1	09/01	Lot: 082014-0(14081756)
3	278092	14081756-02	AR30075	PF4		E 680 A	SOX-PF4	N/A	1	15:40	07:40	NA	NA	1	09/01	Lot: 082014-1(14081756)
4	278093	14081756-03	AR30076	Filter		E 680 A	SOX-PF4	N/A	1	15:40	07:40	NA	NA	1	09/01	Lot: 082014-4(14081756)

Solvent, Surrogate, Spike, and Acid Information

Item	Lot Number	Amount (uL)	Conc (ug/mL)	B	L	LD	S	D	M	K
Sodium Sulfate CURRENT	113272	NA		b	¨	¨	b	¨	¨	¨
Sulfuric Acid CURRENT	0000054026	NA		b	¨	¨	b	¨	¨	¨
Ethyl Ether (fisher) CURRENT	134083	NA		b	¨	¨	b	¨	¨	¨
DCBP-C13	110813P46D BXI	100	1.0	b	¨	¨	b	¨	¨	¨
Mercury	051214	NA		b	¨	¨	b	¨	¨	¨
TCMX Surrogate STD	070314P85B BXI	100	0.20	b	¨	¨	b	¨	¨	¨
10% Florisil	072114MLB3P59C	NA		b	¨	¨	b	¨	¨	¨
Hexane (Dewar) CURRENT	DL011	NA		b	¨	¨	b	¨	¨	¨

Analyst Review: Melissa Harris
Melissa Harris

Peer Review: Daniel Dodaro
Daniel Dodaro

Print Date: 11/7/2014
Lims Version : 5.0.8.7

PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: EPA680-031314.b

	Method #	PACE Sample ID	Saturn File ID	Date Analyzed	DIL	COMMENTS
1	dftpp	DFTPP-1	M03031301	3-13-14		
2	EPA 680	WDM3-0313A	02			
3		iCAL-7	03			
4		iCAL-6	04			
5		iCAL-5	05			
6		iCAL-4	06			
7		iCAL-3	07			
8		iCAL-2	08			
9		iCAL-1	09			
10		iCAL-6	10			
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

AB 3-14-14

CAL STD: 031114P68B BXI	CCC STD: 031114P68A BXI	WDM STD: 030614P65D BXI
Tune STD: 050813P8A BXI	Internal STD: 030714P66C BXI	

STANDARD CODES REFER TO STANDARD PREP BOOK

BOOK: 22
PAGE: 38

PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: 0902/4-680.b

	Method #	PACE Sample ID	Saturn File ID	Date Analyzed	DIL	COMMENTS
1	dftpp	DFTPP-1	M03090201	9-2-14		
2	EPA 680	WDM3-0902A	02			
3		CCV3-0902A	03			
4		CCV3-0902B	04			
5		AR30073B	05			
6		AR30073	06			
7		AR30074B	07			
8		AR30074	08			
9		AR30075	09			
10		AR30076	10			
11		CCV3-0902C	11			
12						
13						
14						
15						
16						
17						AB 9-3-14
18						
19						
20						

CAL STD:	0311149688 B	CCC STD:	0902149930 B	WDM STD:	0306149650 B
Tune STD:	0530149DDA B	Internal STD:	0307149666 B		

STANDARD CODES REFER TO STANDARD PREP BOOK

BOOK: 22
PAGE: 58

Surrogate Recovery Summary

2D-1
SURROGATE RECOVERY

Laboratory Name: Pace Analytical Services, Inc. SDG: 14081755_1756

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-17	AR30073B	MS03-460-5	61.5	68.3 *			1
14081755-01	AR30073	MS03-460-6	54.8	68.1 *			1

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)

Form II-CLP-680(PACE)

Print Date: 11/7/2014
Lims Version : 5.0.8.7

2D-1
SURROGATE RECOVERY

Laboratory Name: Pace Analytical Services, Inc. SDG: 14081755_1756

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-16	AR30074B	MS03-460-7	54.2	63.6			0
14081756-01	AR30074	MS03-460-8	60.3	73.0			0
14081756-02	AR30075	MS03-460-9	49.1	63.2			0
14081756-03	AR30076	MS03-460-10	55.7	63.6			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	(17.9-137)
SURR2 = DECACHLORO[13C12]BIPHENYL	(42.5-134)

Form II-CLP-680(PACE)

Print Date: 11/7/2014
Lims Version : 5.0.8.7

Method Blank Summary

FORM 4
EPA 680 METHOD BLANK SUMMARY

Laboratory Name:	Pace Analytical Services, Inc.	SDG No:	14081755_1756
ELAP ID No:	11078	Blank Sample ID:	SBLK-17
Matrix:	Solvent	Method Blank ID:	AR30073B
Instrument ID:	MS03	Lab File ID:	MS03-460-5
Extraction Type:	TO-10A	Date Extracted:	08/31/2014
GC Column (1):	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm	Date Analyzed:	09/02/2014
		Time Analyzed:	12:38:00

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE / TIME ANALYZED
VER PUF LOT #53993-1	AR30073	MS03-460-6	09/02/2014 13:27:00

FORM 4
EPA 680 METHOD BLANK SUMMARY

Laboratory Name:	Pace Analytical Services, Inc.	SDG No:	14081755_1756
ELAP ID No:	11078	Blank Sample ID:	SBLK-16
Matrix:	Solvent	Method Blank ID:	AR30074B
Instrument ID:	MS03	Lab File ID:	MS03-460-7
Extraction Type:	TO-4A	Date Extracted:	08/31/2014
GC Column (1):	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm	Date Analyzed:	09/02/2014
		Time Analyzed:	14:16:00

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE / TIME ANALYZED
VER PUF LOT #082014-0	AR30074	MS03-460-8	09/02/2014 15:05:00
VER PUF LOT #082014-1	AR30075	MS03-460-9	09/02/2014 15:54:00
VER FILTER LOT #082014-4	AR30076	MS03-460-10	09/02/2014 16:43:00

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.: EPA680-031314.B

Lab File ID: M03031301 DFTPP Injection Date: 03/13/14

Instrument ID: GCMS03 DFTPP Injection Time: 1120

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	49.4
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	7.3
275	10.0 - 30.0% of mass 198	15.6
365	Greater than 1.0% of mass 198	6.23
441	Present, but less than mass 443	14.2
442	40.0 - 110.0% of mass 198	99.7
443	17.0 - 23.0% of mass 442	20.4 (20.5)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	WDM3-0313A	WDM3-0313A	M03031302	03/13/14	1151
02	ICAL-7	ICAL-7	M03031303	03/13/14	1240
03	ICAL-5	ICAL-5	M03031305	03/13/14	1418
04	ICAL-4	ICAL-4	M03031306	03/13/14	1507
05	ICAL-3	ICAL-3	M03031307	03/13/14	1556
06	ICAL-2	ICAL-2	M03031308	03/13/14	1645
07	ICAL-1	ICAL-1	M03031309	03/13/14	1734
08	ICAL-6	ICAL-6	M03031310	03/13/14	1823
09					
10					
11					
12					
13					
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15					
16					
17					
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19					
20					
21					
22					

page 1 of 1

FORM V SV

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031301.d Page 1

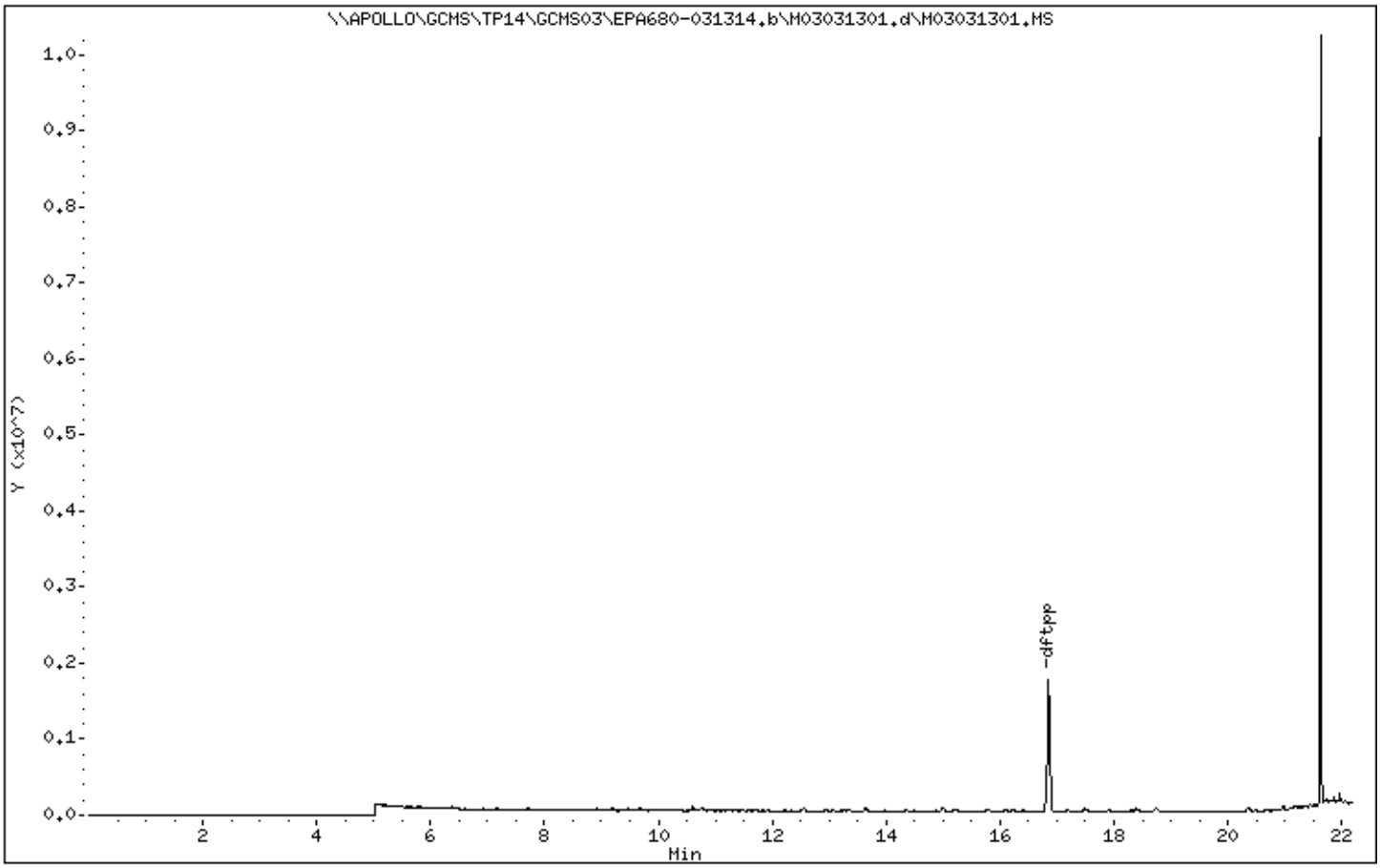
Date : 13-MAR-2014 11:20

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25



Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031301.d

Date : 13-MAR-2014 11:20

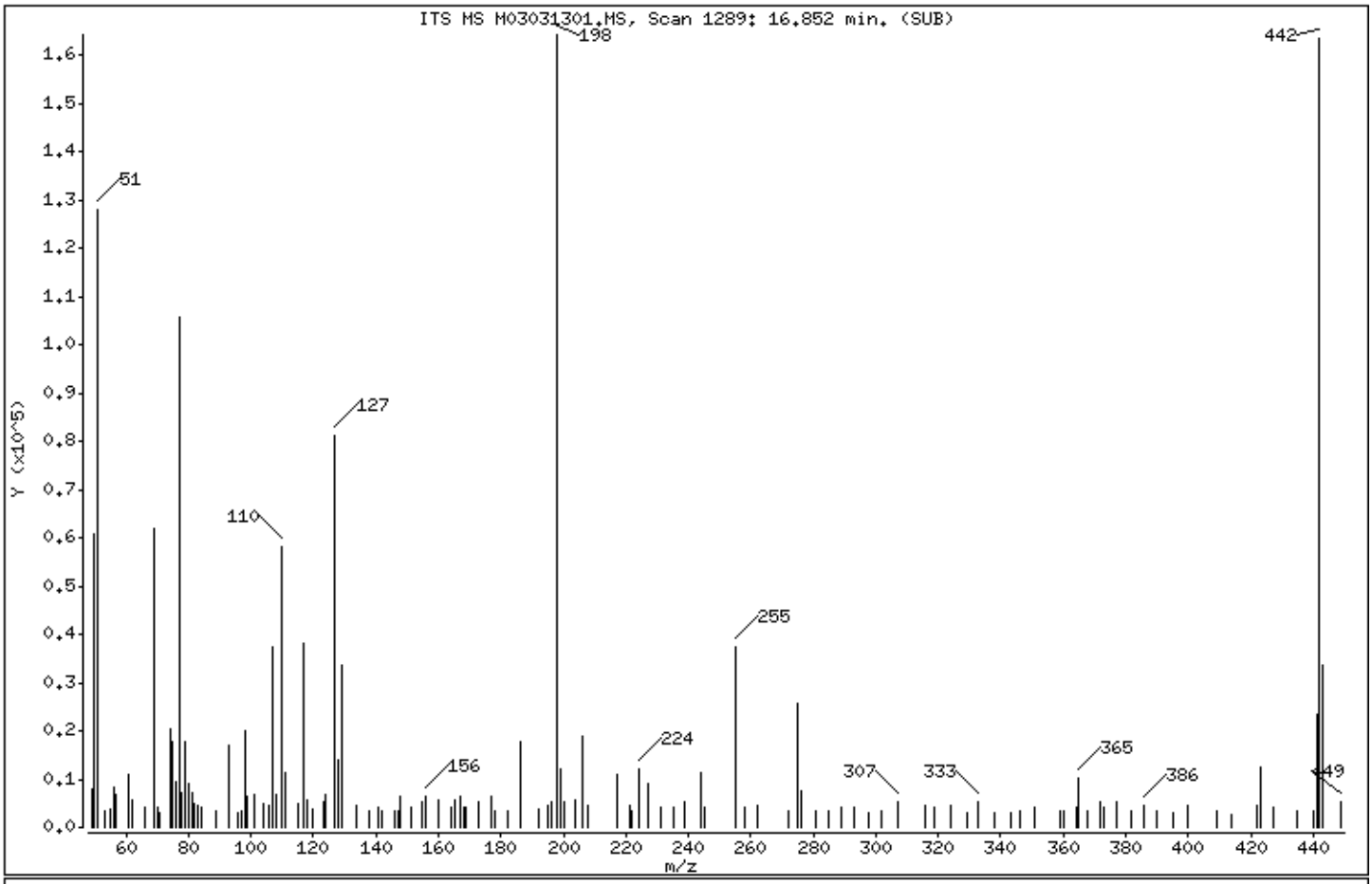
Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

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	49.43
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	7.27
275	10.00 - 30.00% of mass 198	15.57
365	Greater than 1.00% of mass 198	6.23
441	Present, but less than mass 443	14.19
442	40.00 - 110.00% of mass 198	99.65
443	17.00 - 23.00% of mass 442	20.41 (20.49)

Date : 13-MAR-2014 11:20

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25

Data File: M03031301.d
Spectrum: ITS MS M03031301.MS, Scan 1289: 16.852 min. (SUB)
Location of Maximum: 198.00
Number of points: 132

m/z	Y	m/z	Y	m/z	Y	m/z	Y
49.00	7764	108.00	6657	195.00	4545	329.00	2840
50.00	60888	110.00	58120	196.00	5113	333.00	5113
51.00	127872	111.00	11246	198.00	164160	338.00	2840
53.00	3483	115.00	4999	199.00	11931	343.00	2840
55.00	3630	117.00	37944	200.00	5113	346.00	3409
56.00	8331	118.00	5681	204.00	5681	351.00	3977
57.00	6809	120.00	3844	206.00	18744	359.00	3409
61.00	10795	123.00	5339	208.00	4545	360.00	3409
62.00	5681	124.00	6619	217.00	10795	364.00	3977
66.00	3977	127.00	81160	221.00	4545	365.00	10227
69.00	61968	128.00	14100	222.00	3409	368.00	3409
70.00	4162	129.00	33520	224.00	11931	372.00	5113
71.00	2918	134.00	4545	227.00	9090	373.00	3977
74.00	20448	138.00	3409	231.00	3977	377.00	5113
75.00	17608	141.00	3977	235.00	3977	382.00	3409
76.00	9517	142.00	3409	239.00	5113	386.00	4545
77.00	105792	146.00	3409	244.00	11363	390.00	3409
78.00	7234	147.00	3409	245.00	3977	395.00	2840
79.00	17816	148.00	6250	255.00	37496	400.00	4545
80.00	8881	151.00	3977	258.00	3977	409.00	3409
81.00	7260	155.00	5113	262.00	4545	414.00	2764
82.00	4818	156.00	6250	272.00	3409	422.00	4545
83.00	4680	160.00	5681	275.00	25568	423.00	12500
84.00	4324	164.00	3977	276.00	7386	427.00	3977
89.00	3305	165.00	5681	281.00	3409	435.00	3409
93.00	16848	167.00	6250	285.00	3409	440.00	3409
96.00	3029	168.00	3977	289.00	3977	441.00	23288
97.00	3337	169.00	3977	293.00	3977	442.00	163584
98.00	20032	173.00	5113	298.00	2840	443.00	33520
99.00	6250	177.00	6250	302.00	3409	449.00	5113
101.00	6818	178.00	3409	307.00	5113		
104.00	4961	182.00	3409	316.00	4545		
106.00	4450	186.00	17608	319.00	3977		
107.00	37192	192.00	3892	324.00	4545		

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.: 14081755NEA

Lab File ID: M03090201 DFTPP Injection Date: 09/02/14

Instrument ID: GCMS03 DFTPP Injection Time: 0945

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	52.7
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	5.9
275	10.0 - 30.0% of mass 198	15.1
365	Greater than 1.0% of mass 198	4.43
441	Present, but less than mass 443	6.6
442	40.0 - 110.0% of mass 198	51.7
443	17.0 - 23.0% of mass 442	9.7 (18.7)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	WDM3-0902A	WDM3-0902A	M03090202	09/02/14	1011
02	CCV3-0902B	CCV3-0902B	M03090204	09/02/14	1150
03	AR30073BLANK	AR30073B	M03090205	09/02/14	1238
04	VERPUFLOT#53	AR30073	M03090206	09/02/14	1327
05	CCV3-0902C	CCV3-0902C	M03090211	09/02/14	1732
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V SV

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.: 14081756NEA

Lab File ID: M03090201 DFTPP Injection Date: 09/02/14

Instrument ID: GCMS03 DFTPP Injection Time: 0945

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	52.7
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	5.9
275	10.0 - 30.0% of mass 198	15.1
365	Greater than 1.0% of mass 198	4.43
441	Present, but less than mass 443	6.6
442	40.0 - 110.0% of mass 198	51.7
443	17.0 - 23.0% of mass 442	9.7 (18.7)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	WDM3-0902A	WDM3-0902A	M03090202	09/02/14	1011
02	CCV3-0902B	CCV3-0902B	M03090204	09/02/14	1150
03	AR30074BLANK	AR30074B	M03090207	09/02/14	1416
04	VERPUFLOT#08	AR30074	M03090208	09/02/14	1505
05	VERPUFLOT#08	AR30075	M03090209	09/02/14	1554
06	VERFILTERLOT	AR30076	M03090210	09/02/14	1643
07	CCV3-0902C	CCV3-0902C	M03090211	09/02/14	1732
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V SV

Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090201.d Page 1

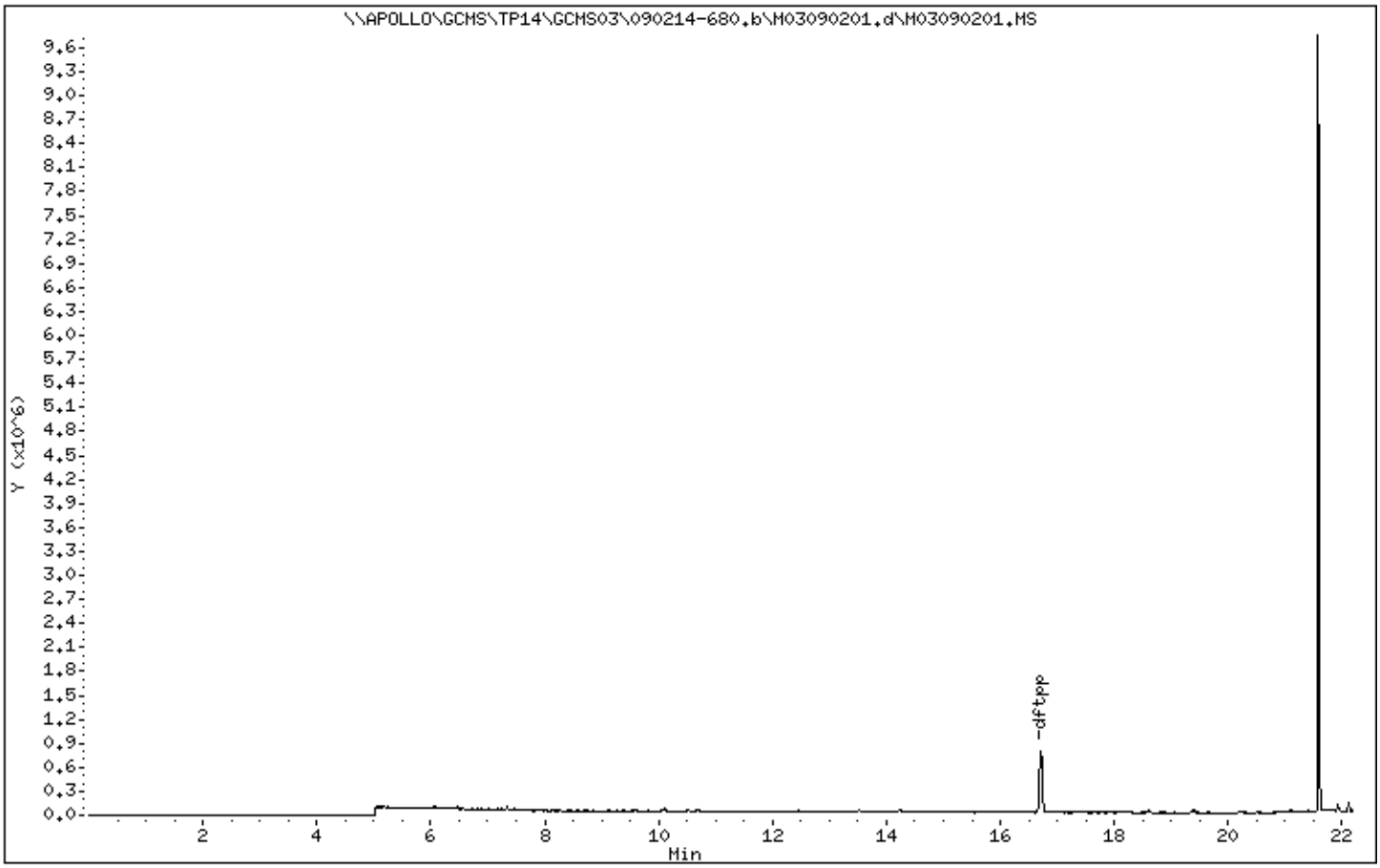
Date : 02-SEP-2014 09:45

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25



Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090201.d

Date : 02-SEP-2014 09:45

Client ID: 20ng DFTPP-1

Instrument: GCMS03.i

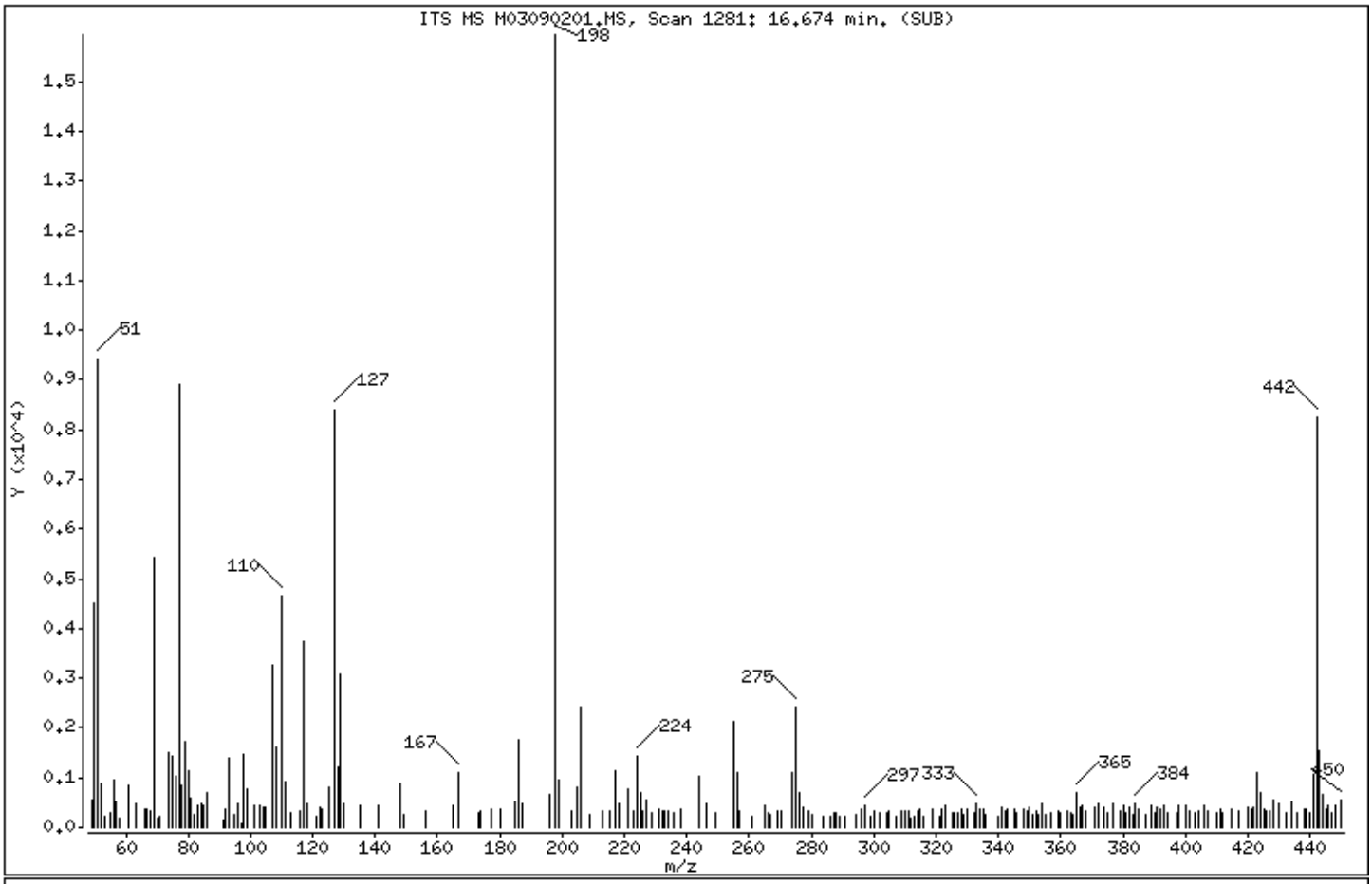
Sample Info: 20ng DFTPP-1

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	52.66
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	5.91
275	10.00 - 30.00% of mass 198	15.08
365	Greater than 1.00% of mass 198	4.43
441	Present, but less than mass 443	6.57
442	40.00 - 110.00% of mass 198	51.68
443	17.00 - 23.00% of mass 442	9.67 (18.71)

Date : 02-SEP-2014 09:45

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25

Data File: M03090201.d
Spectrum: ITS MS M03090201.MS, Scan 1281: 16.674 min. (SUB)
Location of Maximum: 198.00
Number of points: 233

m/z	Y	m/z	Y	m/z	Y	m/z	Y
49.00	537	141.00	424	289.00	237	372.00	490
50.00	4515	148.00	896	291.00	237	374.00	418
51.00	9419	149.00	239	294.00	254	375.00	277
52.00	882	156.00	330	296.00	355	377.00	465
53.00	222	165.00	424	297.00	424	379.00	330
55.00	292	167.00	1084	299.00	222	380.00	424
56.00	936	173.00	283	300.00	330	381.00	301
57.00	523	174.00	330	302.00	283	382.00	418
58.00	180	177.00	377	304.00	277	383.00	269
61.00	849	180.00	377	305.00	331	384.00	471
63.00	459	185.00	518	307.00	237	385.00	371
66.00	349	186.00	1745	309.00	331	387.00	261
67.00	371	187.00	471	310.00	330	389.00	424
68.00	322	196.00	660	311.00	331	390.00	308
69.00	5409	198.00	15943	312.00	189	391.00	418
70.00	184	199.00	943	313.00	237	392.00	355
71.00	237	203.00	330	314.00	330	393.00	424
74.00	1503	205.00	801	315.00	377	394.00	301
75.00	1415	206.00	2405	316.00	214	397.00	277
76.00	1037	209.00	269	319.00	378	398.00	457
77.00	8903	213.00	330	321.00	222	400.00	424
78.00	849	215.00	330	322.00	377	401.00	330
79.00	1718	217.00	1132	323.00	457	403.00	301
80.00	1132	218.00	471	325.00	283	404.00	324
81.00	570	221.00	754	326.00	284	406.00	424
82.00	271	223.00	330	327.00	284	407.00	316
83.00	431	224.00	1415	328.00	377	410.00	301
84.00	460	225.00	707	329.00	269	411.00	377
85.00	458	226.00	330	330.00	377	412.00	301
86.00	707	227.00	552	332.00	283	415.00	355
91.00	131	229.00	283	333.00	471	417.00	316
92.00	377	231.00	377	334.00	363	420.00	387
93.00	1410	232.00	330	335.00	378	421.00	377
95.00	263	233.00	330	336.00	269	422.00	395
96.00	460	234.00	330	340.00	222	423.00	1084

Date : 02-SEP-2014 09:45

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25

Data File: M03090201.d
Spectrum: ITS MS M03090201.MS, Scan 1281: 16.674 min. (SUB)
Location of Maximum: 198.00
Number of points: 233

m/z	Y	m/z	Y	m/z	Y	m/z	Y
97.00	65	236.00	283	341.00	418	424.00	707
98.00	1462	238.00	377	342.00	330	425.00	377
99.00	754	244.00	1037	343.00	355	426.00	316
101.00	424	246.00	471	345.00	371	427.00	316
103.00	424	249.00	283	346.00	308	428.00	566
104.00	411	255.00	2116	348.00	371	430.00	471
105.00	388	256.00	1084	349.00	316	432.00	293
107.00	3254	257.00	330	350.00	418	434.00	505
108.00	1614	261.00	235	351.00	261	436.00	308
110.00	4669	265.00	424	352.00	330	438.00	377
111.00	925	266.00	283	353.00	261	439.00	377
113.00	283	267.00	245	354.00	471	440.00	285
116.00	330	269.00	330	355.00	269	441.00	1048
117.00	3726	270.00	330	357.00	277	442.00	8240
118.00	471	274.00	1084	359.00	330	443.00	1542
121.00	230	275.00	2405	360.00	277	444.00	660
122.00	410	276.00	707	362.00	316	445.00	363
123.00	364	277.00	410	363.00	277	446.00	424
125.00	801	279.00	330	364.00	246	447.00	285
127.00	8396	280.00	245	365.00	707	448.00	424
128.00	1226	284.00	237	366.00	410	450.00	566
129.00	3066	286.00	230	367.00	424		
130.00	471	287.00	283	368.00	330		
135.00	424	288.00	283	371.00	418		

Sample Analysis Data

Analytical Sample Results

Job Number: 14081755

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: VER PUF LOT #53993-1
Lab Sample ID: 14081755-01 (AR30073)

Collection Date: 08/31/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 08/31/2014 13:24
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-460-6	PCBs by EPA Method TO-10A/680	09/02/2014 13:27	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	28193	TO-10A	08/31/2014 15:25	DNM	0.00m³	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	MS03-460-6
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-460-6
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-460-6
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-460-6
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-460-6
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-460-6
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-460-6
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-460-6
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-460-6
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-460-6
Total PCB	1336-36-3	ND		1.00	U	MS03-460-6

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	68.1	70.1-116	*	MS03-460-6
Tetrachloro-meta-xylene	877-09-8	54.8	44.4-104		MS03-460-6

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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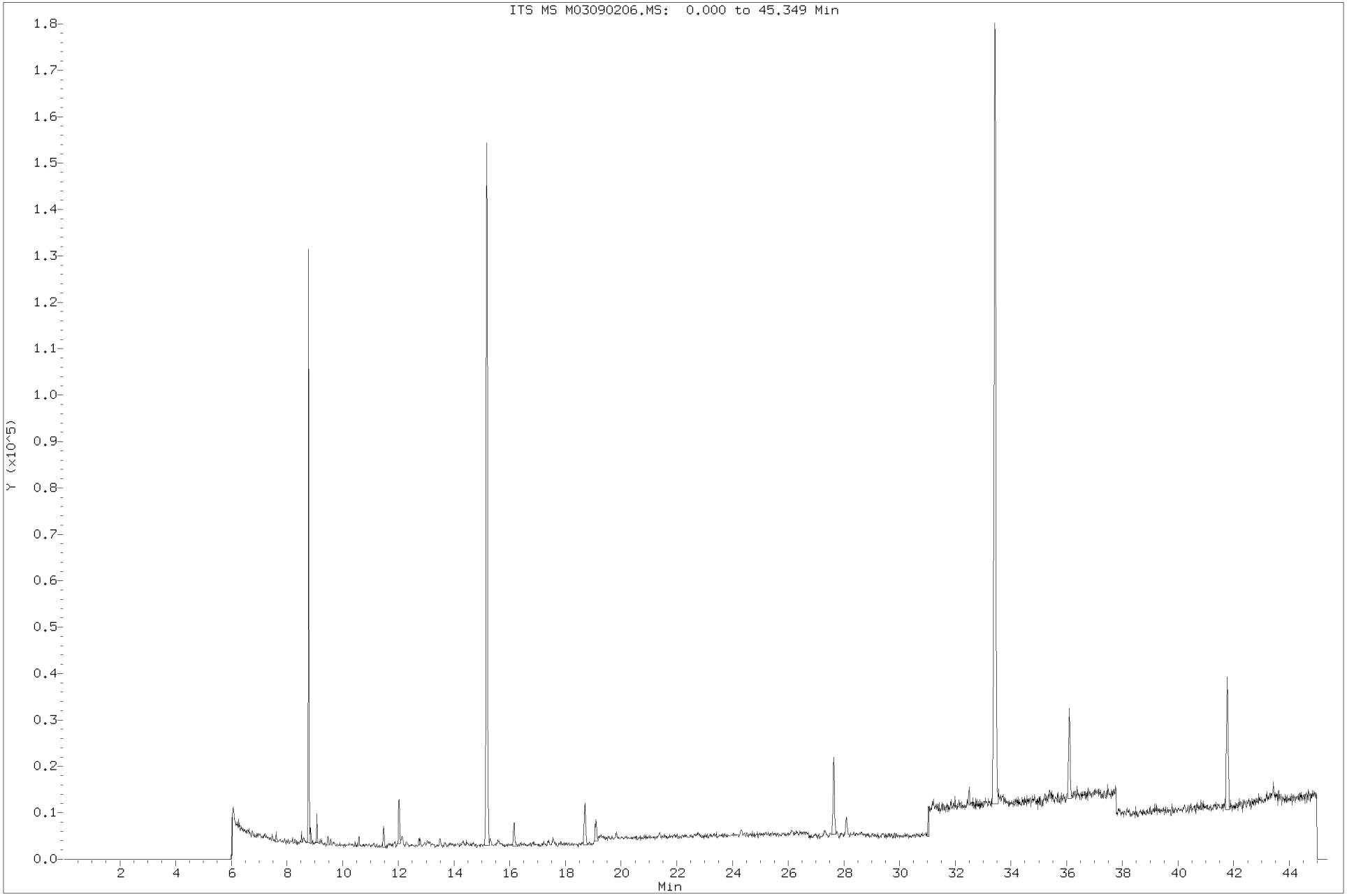
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090206.d/M03090206.MS
Injection Date: 02-SEP-2014 13:27
Instrument: GCMS03.i
Client Sample ID: VERPUFLOT#53993-



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14081755
ELAP ID No.:	11078	Client ID:	VER PUF LOT#53993-1
Matrix:	TO-10A PUF	Lab Sample ID:	AR30073
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	8/31/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	9/2/2014
Dilution Factor:	1	Time Analyzed:	13:27

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

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	Reporting Limit ug	Report Amount ug	Flag
				Mono Total:		0.00500	0.00500	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	Reporting Limit ug	Report Amount ug	Flag
				Di Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tri Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tetra Total:		0.0100	0.0100	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Penta Total:		0.0100	0.0100	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	Reporting Limit ug	Report Amount ug	Flag
				Hexa Total:		0.0100	0.0100	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	ug	ug	
				Hepta Total:		0.0150	0.0150	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	ug	ug	
				Octa Total:		0.0150	0.0150	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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
				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	Flag
m/z 244		m/z 242		1.1 - 1.5			ug/mL	
11.470	1776	11.468	1519	1.2	0.4346		0.0110	
				TCMX Total:			0.0110	

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	
41.766	18032	41.767	15315	1.2	0.7098		0.0681	
				Deca Total:			0.0681	

TCMX Recovery %	54.8 %
Deca Recovery	68.1 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
33.426	298405	33.431	61641	4.8	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03090206"		"M03090206"		"M03090206"		"M03090206"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.173	215970	15.184	3168				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03090206"		"M03090206"		"M03090206"		"M03090206"		"M03090206"		"M03090206"	
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
								15.174	21752	15.173	215970

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03090206"		"M03090206"		"M03090206"		"M03090206"		"M03090206"		"M03090206"	
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
				15.174	21752	15.173	215970				

Extracted Ion Current Profiles

Pentachlorobiphenyls						
"M03090206"	"M03090206"	"M03090206"	"M03090206"	"M03090206"	"M03090206"	"M03090206"
m/z 394	m/z 396	m/z 398	m/z 322	m/z 360	m/z 362	m/z 323
	27.637 2925					

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03090206"	"M03090206"	"M03090206"	"M03090206"	"M03090206"	"M03090206"	"M03090206"	"M03090206"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
					27.637 2925		

Extracted Ion Current Profiles

Heptachlorobiphenyls					
"M03090206"	"M03090206"	"M03090206"	"M03090206"	"M03090206"	"M03090206"
m/z 394	m/z 396	m/z 322	m/z 324	m/z 326	m/z 462

27.637 2925

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03090206"		"M03090206"				"M03090206"		"M03090206"			"M03090206"		"M03090206"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
11.470	1776(M)	11.468	1519	424	240	33.426	298405	33.431	61641	188	15.173	215970	15.174	36295
31.222	2680	33.418	6640	426	241					189				
				428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	33.425	507	33.424	2326
512	38.818	430	38.374	411
	41.766	18032	41.767	15315

Analytical Sample Results

Job Number: 14081756

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: VER PUF LOT #082014-0
Lab Sample ID: 14081756-01 (AR30074)

Collection Date: 08/20/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 08/31/2014 13:24
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-460-8	PCBs by EPA Method TO-4A/680	09/02/2014 15:05	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	28192	TO-4A	08/31/2014 15:25	DNM	0.00m³	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	MS03-460-8
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-460-8
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-460-8
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-460-8
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-460-8
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-460-8
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-460-8
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-460-8
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-460-8
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-460-8
Total PCB	1336-36-3	ND		1.00	U	MS03-460-8

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	73.0	42.5-134		MS03-460-8
Tetrachloro-meta-xylene	877-09-8	60.3	17.9-137		MS03-460-8

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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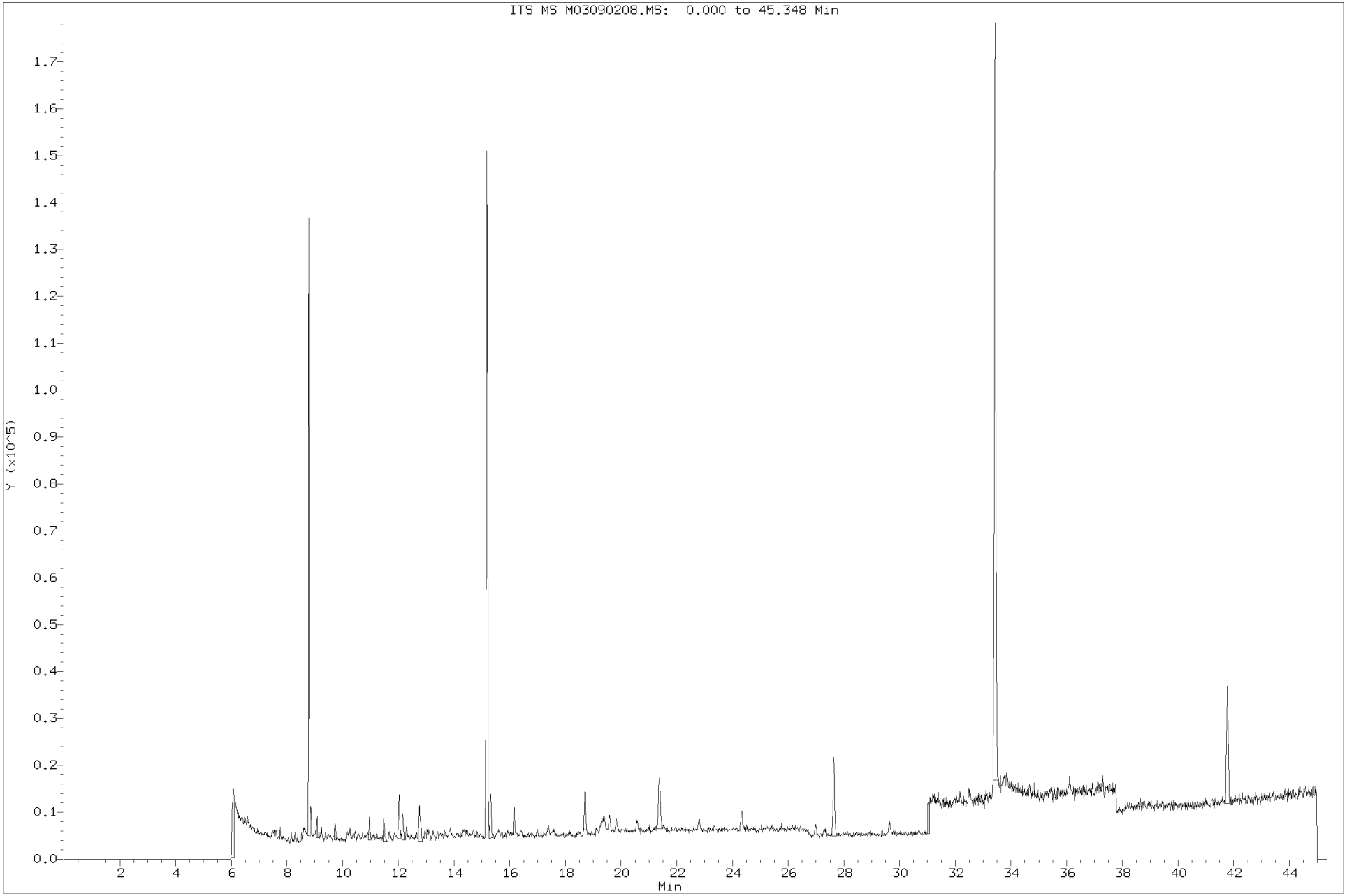
Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090208.d/M03090208.MS
Injection Date: 02-SEP-2014 15:05
Instrument: GCMS03.i
Client Sample ID: VERPUFLOT#082014



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14081756
ELAP ID No.:	11078	Client ID:	VER PUF LOT#082014-0
Matrix:	TO-4A PUF	Lab Sample ID:	AR30074
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	8/31/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	9/2/2014
Dilution Factor:	1	Time Analyzed:	15:05

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

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	Reporting Limit ug	Report Amount ug	Flag
				Mono Total:		0.00500	0.00500	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	Reporting Limit ug	Report Amount ug	Flag
				Di Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tri Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tetra Total:		0.0100	0.0100	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Penta Total:		0.0100	0.0100	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	Reporting Limit ug	Report Amount ug	Flag
				Hexa Total:		0.0100	0.0100	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	ug	ug	
				Hepta Total:		0.0150	0.0150	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	ug	ug	
				Octa Total:		0.0150	0.0150	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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
				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	Flag
m/z 244		m/z 242		1.1 - 1.5			ug/mL	
11.475	1808	11.480	1561	1.2	0.4346		0.0121	
				TCMX Total:			0.0121	

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	
41.772	17873	41.772	14624	1.2	0.7098		0.0730	
				Deca Total:			0.0730	

TCMX Recovery %	60.3 %
Deca Recovery	73.0 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
33.431	276019	33.428	60206	4.6	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03090208"		"M03090208"		"M03090208"		"M03090208"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.180	208851	15.181	3662	15.312	2887		

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03090208"		"M03090208"		"M03090208"		"M03090208"		"M03090208"		"M03090208"	
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
				15.312	2887			15.182	20642	15.180	208851

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03090208"		"M03090208"		"M03090208"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.064	3217
				12.765	5128

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03090208"		"M03090208"		"M03090208"		"M03090208"		"M03090208"		"M03090208"	
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
				15.182	20642	15.180	208851				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03090208"		"M03090208"				"M03090208"		"M03090208"			"M03090208"		"M03090208"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
11.475	1808	11.480	1561	424	240	33.431	276019	33.428	60206	188	15.180	208851	15.179	36183
25.719	488	15.184	1123	426	241					189				
31.228	3089	17.004	614	428										
		33.407	1912	430										
		33.445	3407	498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	33.415	773	33.405	617
512	33.453	645	33.441	1094
	33.492	403	41.006	419
	39.503	408	41.772	14624
	41.772	17873		
	44.948	480		

Analytical Sample Results

Job Number: 14081756

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: VER PUF LOT #082014-1
Lab Sample ID: 14081756-02 (AR30075)

Collection Date: 08/20/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 08/31/2014 13:24
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-460-9	PCBs by EPA Method TO-4A/680	09/02/2014 15:54	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	28192	TO-4A	08/31/2014 15:25	DNM	0.00m³	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	MS03-460-9
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-460-9
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-460-9
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-460-9
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-460-9
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-460-9
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-460-9
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-460-9
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-460-9
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-460-9
Total PCB	1336-36-3	ND		1.00	U	MS03-460-9

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	63.2	42.5-134		MS03-460-9
Tetrachloro-meta-xylene	877-09-8	49.1	17.9-137		MS03-460-9

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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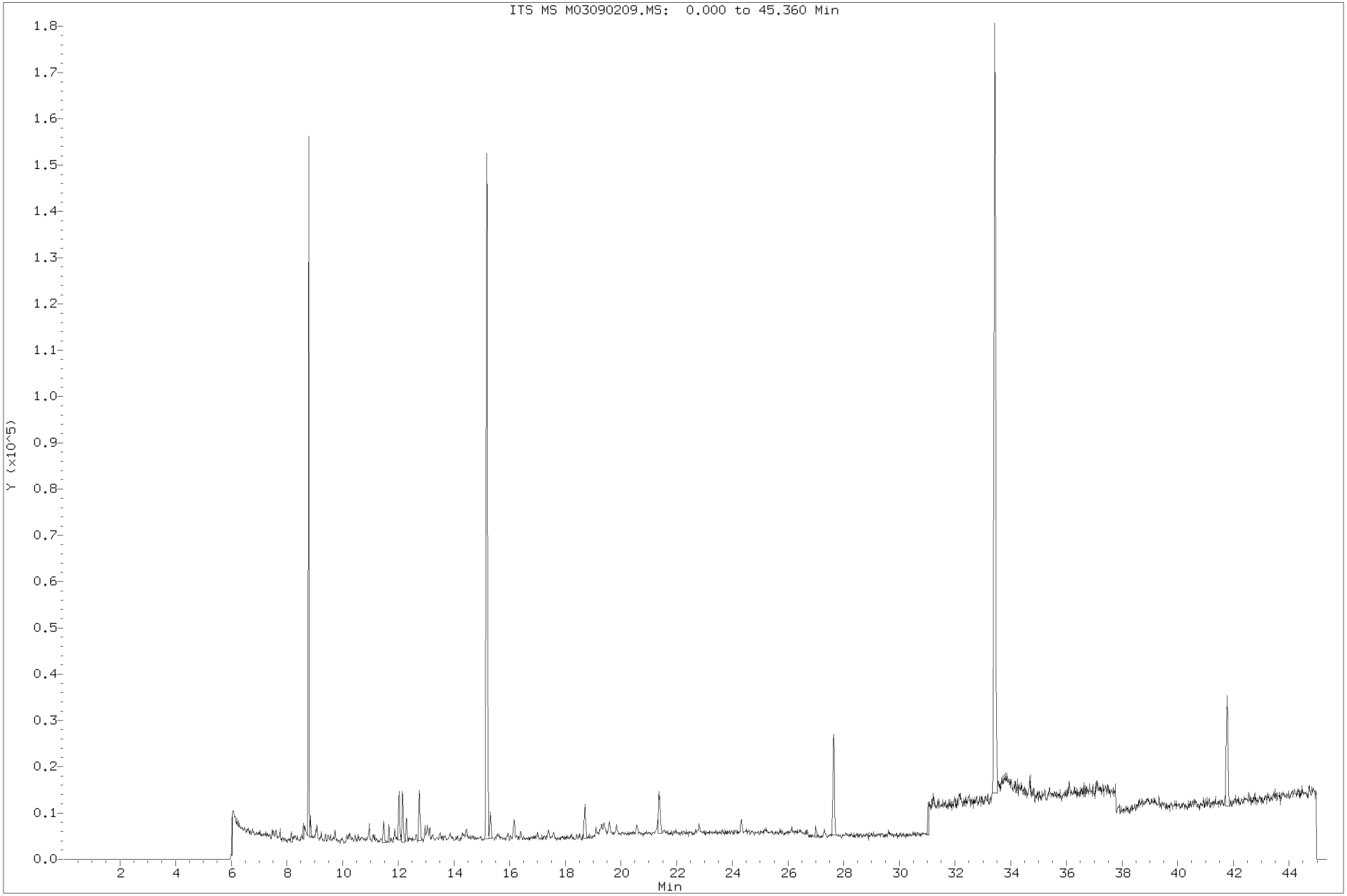
Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090209.d/M03090209.MS
Injection Date: 02-SEP-2014 15:54
Instrument: GCMS03.i
Client Sample ID: VERPUFLOT#082014



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14081756
ELAP ID No.:	11078	Client ID:	VER PUF LOT#082014-1
Matrix:	TO-4A PUF	Lab Sample ID:	AR30075
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	8/31/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	9/2/2014
Dilution Factor:	1	Time Analyzed:	15:54

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

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	Reporting Limit ug	Report Amount ug	Flag
				Mono Total:		0.00500	0.00500	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	Reporting Limit ug	Report Amount ug	Flag
				Di Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tri Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tetra Total:		0.0100	0.0100	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Penta Total:		0.0100	0.0100	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	Reporting Limit ug	Report Amount ug	Flag
				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 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
11.473	1509	11.477	1342	1.1	0.4346		0.00981	
				TCMX Total:			0.00981	

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
41.769	15871	41.776	13052	1.2	0.7098		0.0632	
				Deca Total:			0.0632	

TCMX Recovery %	49.1 %
Deca Recovery	63.2 %

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
33.431	283052	33.423	57389	4.9	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03090209"		"M03090209"		"M03090209"		"M03090209"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.177	207699	15.175	3526				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03090209"		"M03090209"		"M03090209"		"M03090209"		"M03090209"		"M03090209"	
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
								15.184	21777	15.177	207699

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03090209"		"M03090209"		"M03090209"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				12.765	8023

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03090209"		"M03090209"		"M03090209"		"M03090209"		"M03090209"		"M03090209"	
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
				15.184	21777	15.177	207699				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03090209"		"M03090209"				"M03090209"		"M03090209"			"M03090209"		"M03090209"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
11.473	1509	11.477	1342	424	240	33.431	283052	33.423	57389	188	15.177	207699	15.177	34620
31.217	1838	15.181	556	426	241					189				
31.241	1447	16.995	485	428										
		33.433	6036	430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	33.439	1229	33.398	672
512	40.792	470	33.463	433
	41.769	15871	41.722	1044
	43.837	416	41.776	13052(M)
	44.197	498	42.397	402
	44.420	452		

Analytical Sample Results

Job Number: 14081756

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: VER FILTER LOT #082014-4
Lab Sample ID: 14081756-03 (AR30076)

Collection Date: 08/20/2014
Sample Matrix: FILTER
Received Date: 08/31/2014 13:24
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-460-10	PCBs by EPA Method TO-4A/680	09/02/2014 16:43	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	28192	TO-4A	08/31/2014 15:25	DNM	0.00m³	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	MS03-460-10
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-460-10
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-460-10
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-460-10
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-460-10
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-460-10
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-460-10
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-460-10
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-460-10
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-460-10
Total PCB	1336-36-3	ND		1.00	U	MS03-460-10

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	63.6	42.5-134		MS03-460-10
Tetrachloro-meta-xylene	877-09-8	55.7	17.9-137		MS03-460-10

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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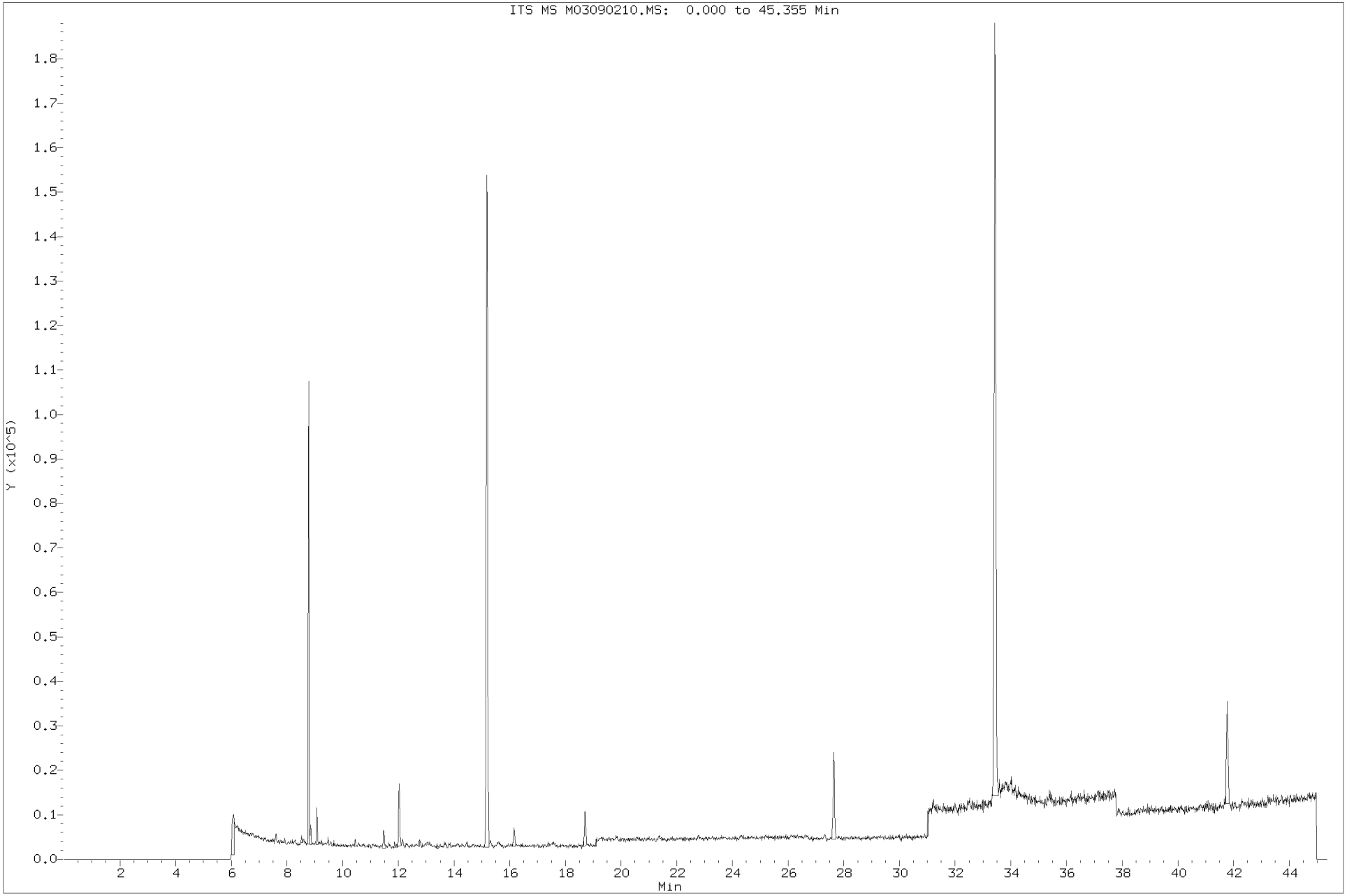
Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090210.d/M03090210.MS
Injection Date: 02-SEP-2014 16:43
Instrument: GCMS03.i
Client Sample ID: VERFILTERLOT#082



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14081756
ELAP ID No.:	11078	Client ID:	VER FILTER LOT#082014-4
Matrix:	TO-FILTER	Lab Sample ID:	AR30076
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	8/31/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	9/2/2014
Dilution Factor:	1	Time Analyzed:	16:43

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

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	Reporting Limit ug	Report Amount ug	Flag
				Mono Total:		0.00500	0.00500	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	Reporting Limit ug	Report Amount ug	Flag
				Di Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tri Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tetra Total:		0.0100	0.0100	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Penta Total:		0.0100	0.0100	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	Reporting Limit ug	Report Amount ug	Flag
				Hexa Total:		0.0100	0.0100	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	ug	ug	
				Hepta Total:		0.0150	0.0150	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	ug	ug	
				Octa Total:		0.0150	0.0150	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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
				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	Flag
m/z 244		m/z 242		1.1 - 1.5			ug/mL	
11.477	1730	11.478	1249	1.4	0.4346		0.0111	
				TCMX Total:			0.0111	

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	
41.774	16143	41.774	12162	1.3	0.7098		0.0636	
				Deca Total:			0.0636	

TCMX Recovery %	55.7 %
Deca Recovery	63.6 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
33.432	285973	33.429	59088	4.8	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03090210"		"M03090210"		"M03090210"		"M03090210"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.181	208927	15.177	3568				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03090210"		"M03090210"		"M03090210"		"M03090210"		"M03090210"		"M03090210"	
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
								15.185	20955	15.181	208927

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03090210"		"M03090210"		"M03090210"		"M03090210"		"M03090210"		"M03090210"	
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
				15.185	20955	15.181	208927				

Extracted Ion Current Profiles

Pentachlorobiphenyls						
"M03090210"	"M03090210"	"M03090210"	"M03090210"	"M03090210"	"M03090210"	"M03090210"
m/z 394	m/z 396	m/z 398	m/z 322	m/z 360	m/z 362	m/z 323
	27.643 3380					

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03090210"	"M03090210"	"M03090210"	"M03090210"	"M03090210"	"M03090210"	"M03090210"	"M03090210"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
					27.643 3380		

Extracted Ion Current Profiles

Heptachlorobiphenyls					
"M03090210"	"M03090210"	"M03090210"	"M03090210"	"M03090210"	"M03090210"
m/z 394	m/z 396	m/z 322	m/z 324	m/z 326	m/z 462
	27.643 3380				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03090210"		"M03090210"				"M03090210"		"M03090210"			"M03090210"		"M03090210"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
11.477	1730	11.478	1249	424	240	33.432	285973	33.429	59088	188	15.181	208927	15.178	33471
15.186	477	33.403	1857	426	241					189				
31.210	1286	33.432	3563	428										
31.232	1861	33.481	849	430										
33.410	473			498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	33.410	850	33.440	1276
512	33.433	649	41.718	956
	34.006	507	41.774	12162(M)
	38.474	462	42.512	411
	41.774	16143	44.187	445

Internal Standard Area Summary

8B

EPA 680 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Pace Analytical Services, Inc. Contract: NEA-VERPUF

Lab Code: 11078 Case No.: NA SAS No: NA SDG No: 14081755

Sample Name: CCV3-0902B

Lab File ID (Standard): MS03-460-44402

Instrument ID: MS03

Date Analyzed: 09/02/2014

Time Analyzed: 11:50:00 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	336425	33.42	245386	15.17		
UPPER LIMIT	437352.5	33.59	319001.8	15.34		
LOWER LIMIT	235497.5	33.25	171770.2	15.01		
EPA SAMPLE NO.						
AR30073B	281670	33.42	208877	15.17		
AR30073	298405	33.43	215970	15.17		
AR30074B	264085	33.43	199098	15.18		

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: NEA-VERPUF

Lab Code: 11078 Case No.: NA SAS No: NA SDG No: 14081756

Sample Name: CCV3-0902B

Lab File ID (Standard): MS03-460-44402

Instrument ID: MS03

Date Analyzed: 09/02/2014

Time Analyzed: 11:50:00 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	336425	33.42	245386	15.17		
UPPER LIMIT	437352.5	33.59	319001.8	15.34		
LOWER LIMIT	235497.5	33.25	171770.2	15.01		
EPA SAMPLE NO.						
AR30074	276019	33.43	208851	15.18		
AR30075	283052	33.43	207699	15.18		
AR30076	285973	33.43	208927	15.18		

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

Window Defining Mix

Pace Analytical - NY Lab

PCB REPORT EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031302.d
Lab Smp Id: WDM3-0313A Client Smp ID: WDM3-0313A
Inj Date : 13-MAR-2014 11:51
Operator : RMS Inst ID: GCMS03.i
Smp Info : WDM3-0313A
Misc Info : RMS M03031302
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\680WDM3.m
Meth Date : 13-Mar-2014 10:52 roys Quant Type: ISTD
Cal Date : 13-MAR-2014 09:02 Cal File: M03031300001.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 680WDM.sub
Target Version: 4.14
Processing Host: NEA88

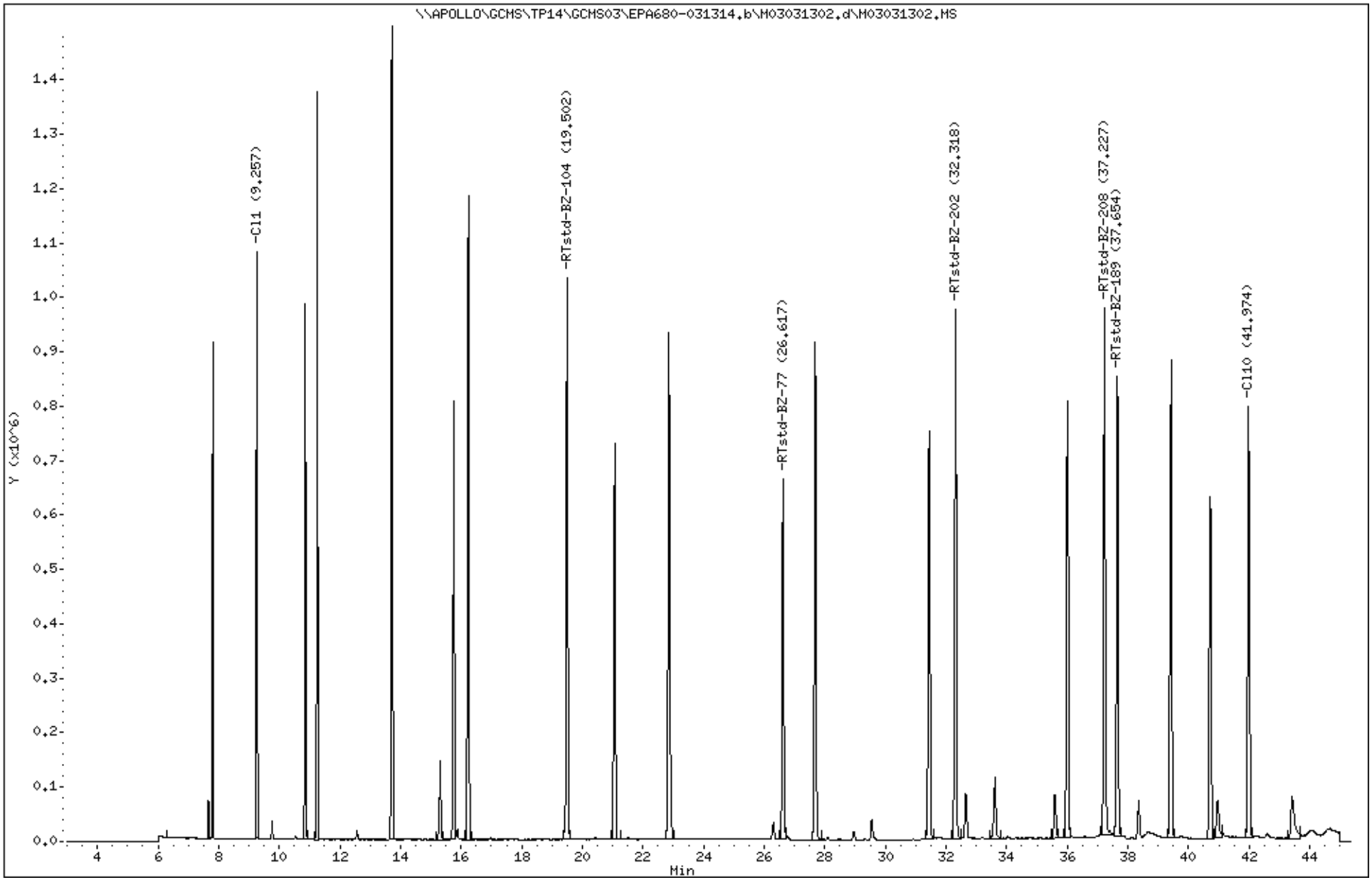
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188	15.306	15.310	(1.000)	232265	0.80000	
* 6 Chrysene-d12	240	33.616	33.615	(1.000)	289323	0.80000	
1 Cl1	188	9.269	9.263	(0.276)	931910	2.56569	2.57
3 RTstd-BZ-104	326	19.502	19.498	(0.580)	816011	2.54453	2.54
4 RTstd-BZ-77	292	26.616	26.634	(0.792)	649519	2.52366	2.52
5 RTstd-BZ-202	430	32.318	32.314	(0.961)	704681	2.50877	2.51
7 RTstd-BZ-208	464	37.227	37.242	(1.107)	655761	2.56350	2.56
8 RTstd-BZ-189	394	37.653	37.661	(1.120)	605005	2.48429	2.48
9 Cl10	498	41.974	41.983	(1.249)	574228	2.45069	2.45

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031302.d
Date : 13-MAR-2014 11:51
Client ID: WDM3-0313A
Sample Info: WDM3-0313A
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\TP14\GCMS03\090214-680.b\M03090202.d
Lab Smp Id: WDM3-0902A Client Smp ID: WDM3-0902A
Inj Date : 02-SEP-2014 10:11
Operator : RMS Inst ID: GCMS03.i
Smp Info : WDM3-0902A
Misc Info : RMS M03090202
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\680WDM3.m
Meth Date : 02-Sep-2014 10:53 roys Quant Type: ISTD
Cal Date : 13-MAR-2014 09:02 Cal File: M03031300001.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 MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188	15.171	15.144	(1.000)	257504	0.80000	
* 6 Chrysene-d12	240	33.420	33.398	(1.000)	344563	0.80000	
1 Cl1	188	9.181	9.175	(0.275)	1044818	2.41538	2.42
3 RTstd-BZ-104	326	19.333	19.323	(0.578)	931691	2.43948	2.44
4 RTstd-BZ-77	292	26.445	26.412	(0.791)	752411	2.45475	2.45
5 RTstd-BZ-202	430	32.131	32.106	(0.961)	808211	2.41605	2.42
7 RTstd-BZ-208	464	37.038	37.019	(1.108)	745187	2.44606	2.45
8 RTstd-BZ-189	394	37.466	37.441	(1.121)	730826	2.51983	2.52
9 Cl10	498	41.781	41.772	(1.250)	686501	2.46014	2.46

Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090202.d

Page 2

Date : 02-SEP-2014 10:11

Client ID: WDM3-0902A

Instrument: GCMS03.i

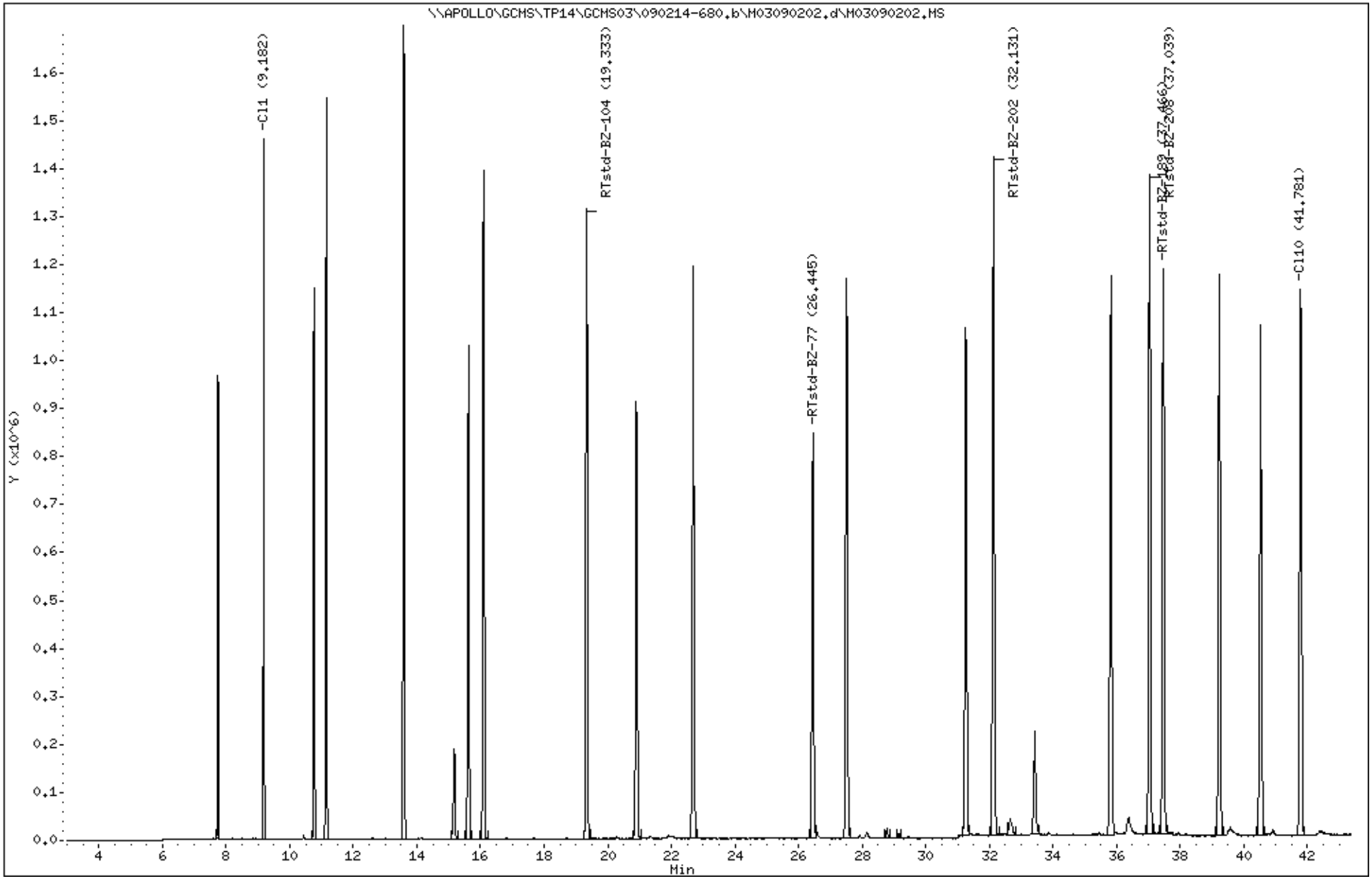
Sample Info: WDM3-0902A

Volume Injected (uL): 2.0

Operator: RMS

Column phase: DBXLB

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: 03/13/14 Time: 12:40
End Cal Date: 03/13/14 Time: 18:23

Calibration File Names:
Level 1: \\M03031309
Level 2: \\M03031308
Level 3: \\M03031307
Level 4: \\M03031306
Level 5: \\M03031305
Level 6: \\M03031310
Level 7: \\M03031303

PACE File ID: S:\Lab Data\DataPackages\CURVES_2014\680\680 031314 Calibration 7pt\[031314_680CLP_6B.xls]680CLP-6B

COMPOUND	RRF Level1	RRF Level2	RRF Level3	RRF Level4	RRF Level5	RRF Level6	RRF Level7	MEAN RRF	% RSD
CI1	1.2994	1.2837	1.0830	1.0605	1.1096	1.1311	1.1136	1.154	8.36%
CI2	1.1681	1.1028	0.9616	0.9489	0.9891	0.9930	0.9954	1.023	7.93%
CI3	0.8813	0.8691	0.7189	0.7254	0.7271	0.7566	0.7341	0.773	9.15%
CI4	0.7320	0.7096	0.6880	0.6882	0.7126	0.7401	0.7184	0.713	2.79%
CI5	0.7456	0.6687	0.6395	0.6481	0.6481	0.6592	0.6683	0.668	5.36%
CI6	0.6491	0.6669	0.6067	0.6312	0.6268	0.6359	0.6342	0.636	2.94%
CI7	0.7086	0.7113	0.6674	0.6839	0.6946	0.7157	0.7059	0.698	2.49%
CI8	0.8691	0.8334	0.7885	0.7947	0.8020	0.8425	0.8044	0.819	3.62%
CI9	0.5996	0.6941	0.6804	0.7178	0.7185	0.7258	0.7524	0.698	7.05%
CI10	0.5996	0.6941	0.6804	0.7178	0.7185	0.7258	0.7524	0.698	7.05%
Chyrsene-d12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	0.00%
TCMX	0.5031	0.4758	0.3862	0.4018	0.4057	0.4343	0.4353	0.435	9.68%
$D^{13}C_{12}BP$	0.6136	0.7018	0.7417	0.7255	0.7535	0.7230	**	0.710	7.09%

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
CI1	0.005	0.010	0.050	1.000	2.000	3.000	5.000
CI2	0.005	0.010	0.050	1.000	2.000	3.000	5.000
CI3	0.005	0.010	0.050	1.000	2.000	3.000	5.000
CI4	0.010	0.020	0.100	2.000	4.000	6.000	10.000
CI5	0.010	0.020	0.100	2.000	4.000	6.000	10.000
CI6	0.010	0.020	0.100	2.000	4.000	6.000	10.000
CI7	0.015	0.030	0.150	3.000	6.000	9.000	15.000
CI8	0.015	0.030	0.150	3.000	6.000	9.000	15.000
CI10	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
$D^{13}C_{12}BP$ = Decachlorobiphenyl (13C labeled)

FORM VI-CLP-EPA 680 -1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031309.d
Lab Smp Id: iCAL-1 Client Smp ID: iCAL-1
Inj Date : 13-MAR-2014 17:34
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-1
Misc Info : RMS M03031309
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\680low.m
Meth Date : 14-Mar-2014 12:02 GCMS03.i Quant Type: ISTD
Cal Date : 13-MAR-2014 17:34 Cal File: M03031309.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: ó╚╒ƒ╥╘í╥╘¿╚╓¼╥╓

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

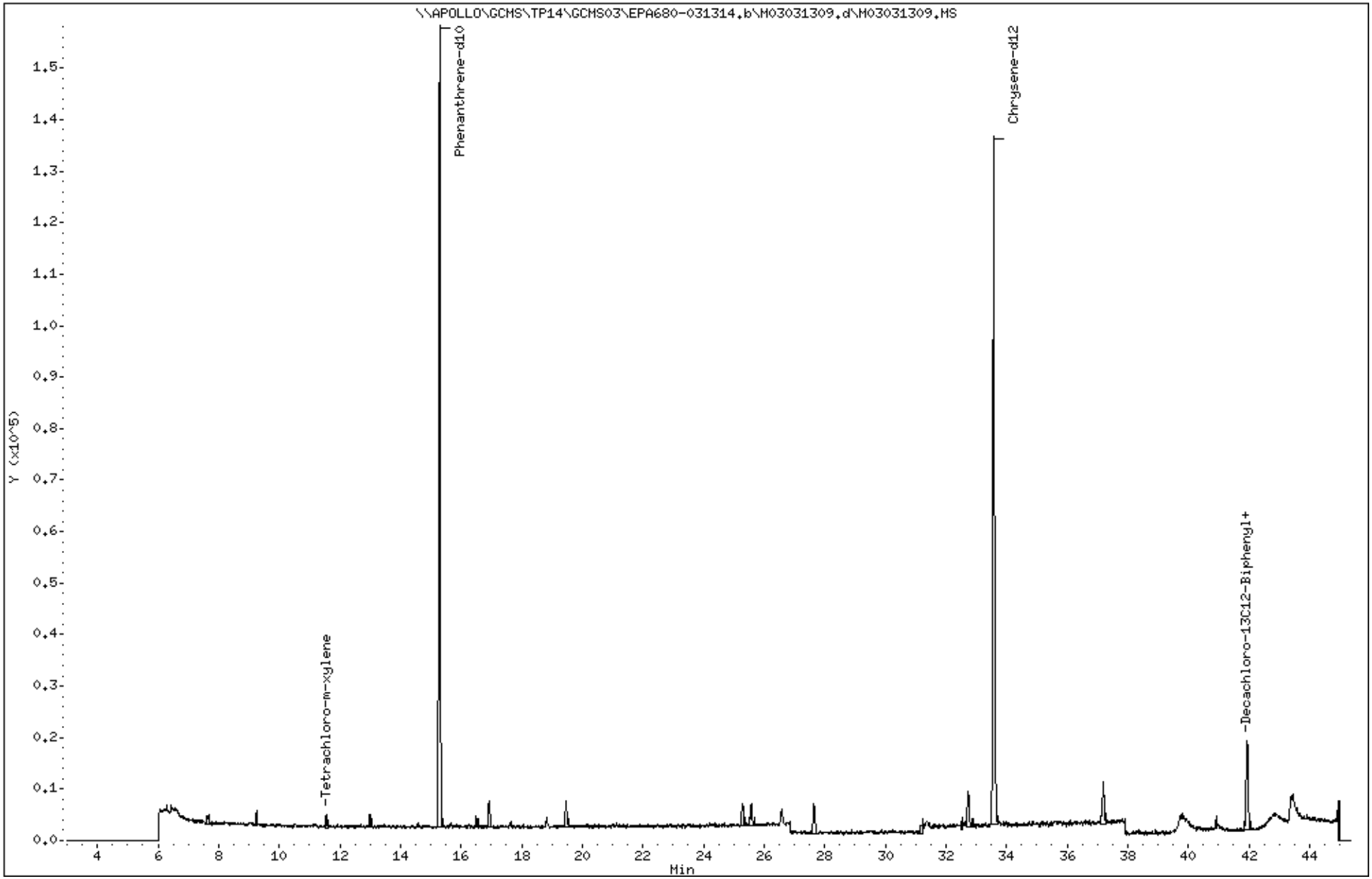
Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	15.293	15.268	(1.000)	224906	0.80000	
* 13 Chrysene-d12	240	33.583	33.574	(1.000)	291190	0.80000	
1 Cl1	188	9.254	9.219	(0.276)	2419	0.00500	0.00585
$ 2 Tetrachloro-m-xylene	244	11.553	11.535	(0.344)	873	0.00500	0.00569
3 Cl2	222	12.995	12.976	(0.387)	2222	0.00500	0.00607
5 Cl3	256	16.507	16.502	(0.492)	1639	0.00500	0.00592
6 Cl4	292	16.929	16.925	(0.504)	2803	0.01000	0.0109
7 RTstd-BZ-104	326	19.474	19.468	(0.580)	3764	0.01000	0.0112
8 Cl5	326	25.299	25.307	(0.753)	2745	0.01000	0.0113
9 Cl6	360	25.567	25.592	(0.761)	2508	0.01000	0.0107
10 RTstd-BZ-77	292	26.592	26.598	(0.792)	3015	0.01000	0.0108
11 Cl7	394	27.653	27.670	(0.823)	3942	0.01500	0.0154(a)
12 Cl8	430	32.739	32.746	(0.975)	4767	0.01500	0.0163(a)
14 RTstd-BZ-208	464	37.200	37.216	(1.108)	4997	0.02000	0.0187(a)
15 Cl10	498	41.955	42.001	(1.249)	6026	0.02500	0.0230(aM)
$ 16 Decachloro-13C12-Biphenyl	510	41.942	41.988	(1.249)	5609	0.02500	0.0210(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031309.d
Date : 13-MAR-2014 17:34
Client ID: iCAL-1
Instrument: GCMS03.i
Sample Info: iCAL-1
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031308.d
Lab Smp Id: iCAL-2 Client Smp ID: iCAL-2
Inj Date : 13-MAR-2014 16:45
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-2
Misc Info : RMS M03031308
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\680low.m
Meth Date : 14-Mar-2014 12:02 GCMS03.i Quant Type: ISTD
Cal Date : 13-MAR-2014 16:45 Cal File: M03031308.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: ó╚╒ƒ╥╘í╥╘¿╚╒¼╥╒

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

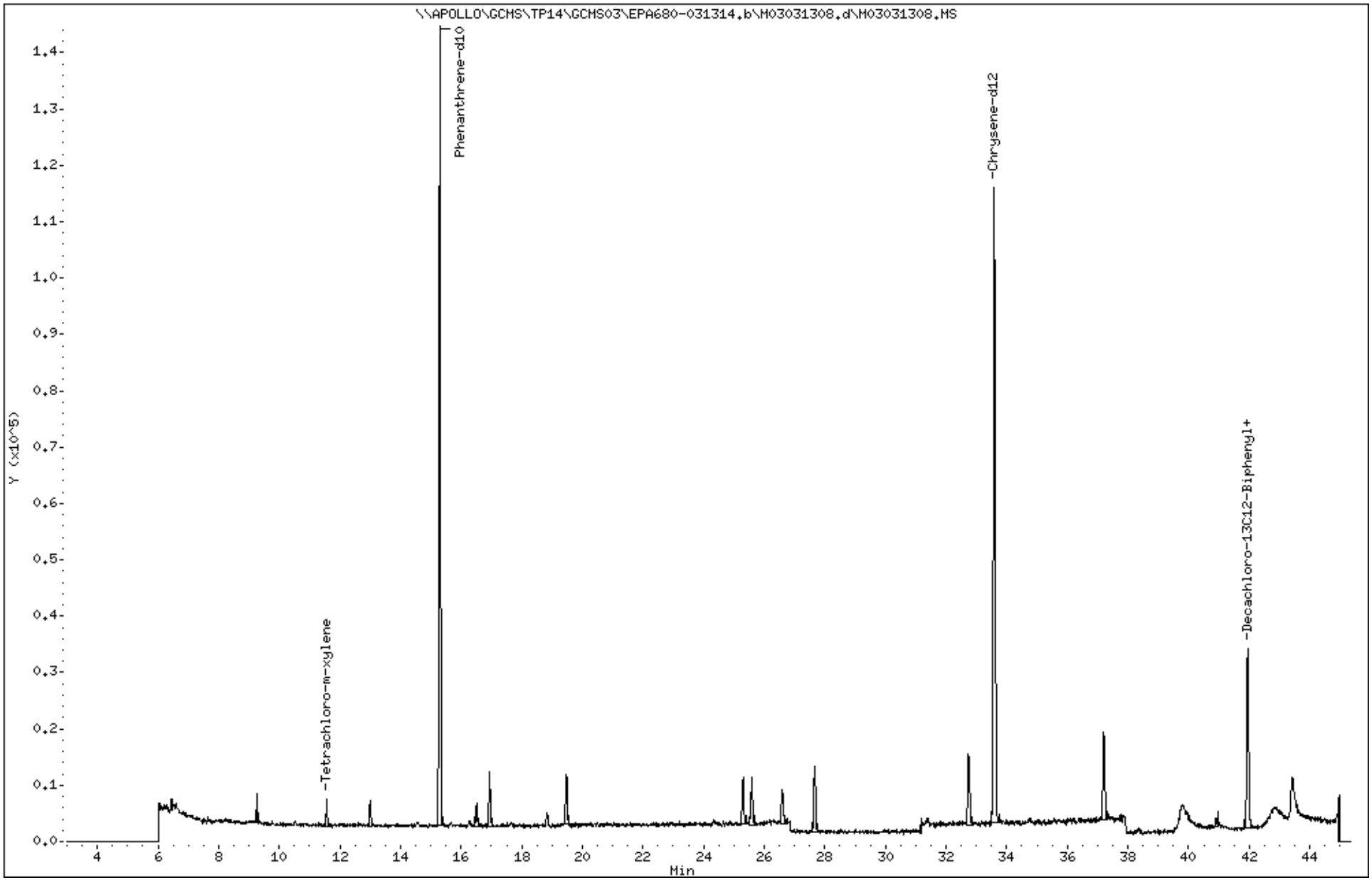
Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	15.289	15.268	(1.000)	229972	0.80000	
* 13 Chrysene-d12	240	33.597	33.574	(1.000)	295496	0.80000	
1 Cl1	188	9.259	9.219	(0.276)	4893	0.01000	0.0122
$ 2 Tetrachloro-m-xylene	244	11.560	11.535	(0.344)	1756	0.01000	0.0116
3 Cl2	222	13.001	12.976	(0.387)	4099	0.01000	0.0113
5 Cl3	256	16.508	16.502	(0.491)	3269	0.01000	0.0121
6 Cl4	292	16.941	16.925	(0.504)	5380	0.02000	0.0208
7 RTstd-BZ-104	326	19.485	19.468	(0.580)	6932	0.02000	0.0205
8 Cl5	326	25.304	25.307	(0.753)	5015	0.02000	0.0205
9 Cl6	360	25.587	25.592	(0.762)	4968	0.02000	0.0212
10 RTstd-BZ-77	292	26.586	26.598	(0.791)	5952	0.02000	0.0213
11 Cl7	394	27.666	27.670	(0.823)	7845	0.03000	0.0302(a)
12 Cl8	430	32.738	32.746	(0.974)	8903	0.03000	0.0300(a)
14 RTstd-BZ-208	464	37.204	37.216	(1.107)	10678	0.04000	0.0392(aM)
15 Cl10	498	41.960	42.001	(1.249)	12788	0.05000	0.0477(a)
$ 16 Decachloro-13C12-Biphenyl	510	41.935	41.988	(1.248)	12853	0.05000	0.0466(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031308.d
Date : 13-MAR-2014 16:45
Client ID: iCAL-2
Instrument: GCMS03.i
Sample Info: iCAL-2
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

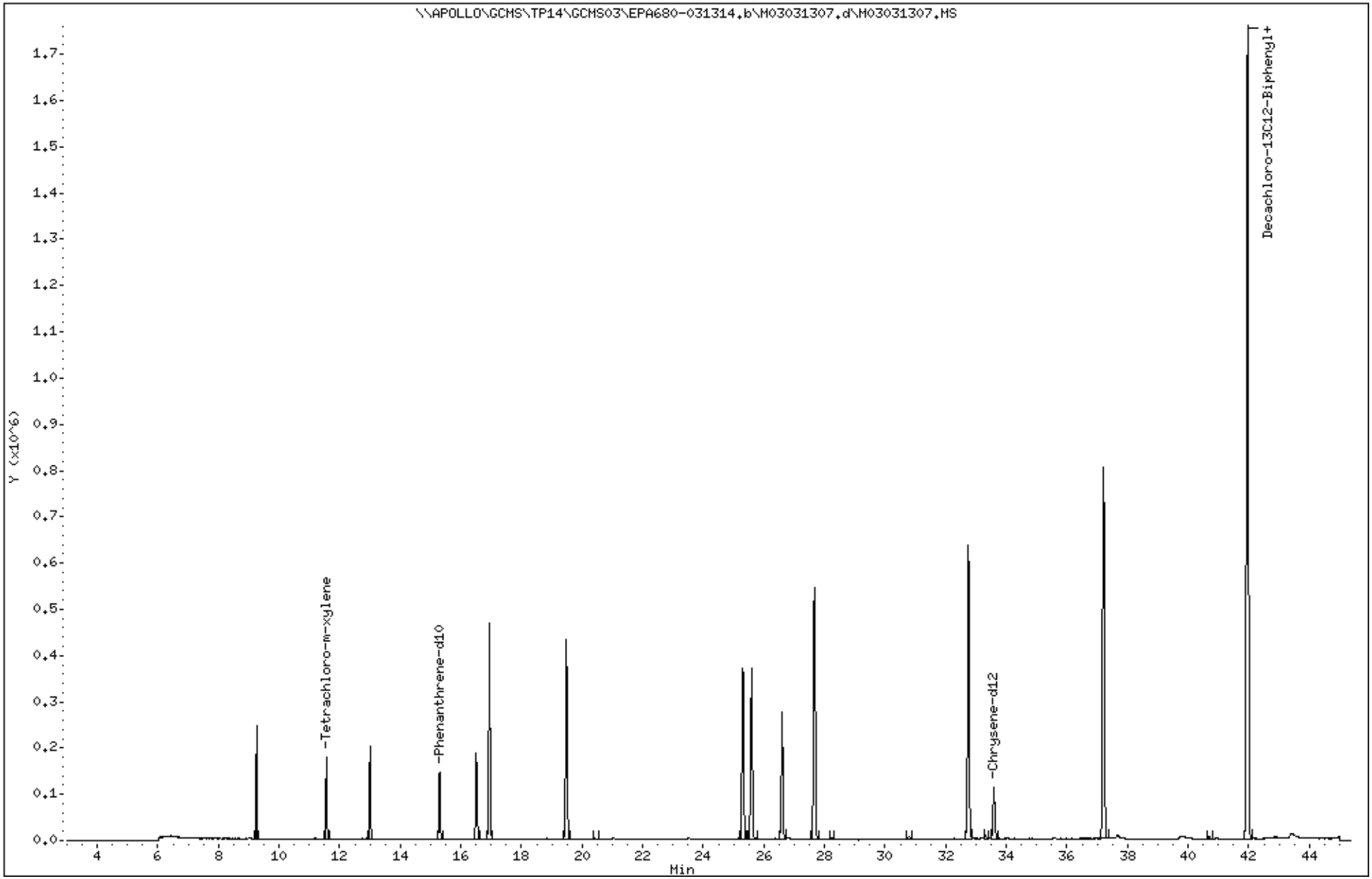
Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031307.d
Lab Smp Id: iCAL-3 Client Smp ID: iCAL-3
Inj Date : 13-MAR-2014 15:56
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-3
Misc Info : RMS M03031307
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\680low.m
Meth Date : 14-Mar-2014 12:02 GCMS03.i Quant Type: ISTD
Cal Date : 13-MAR-2014 15:56 Cal File: M03031307.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: ó╚╒╦╥╚í╥╚¿╚╥¼╥╥

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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	15.288	15.268	(1.000)	233911	0.80000	
* 13 Chrysene-d12	240	33.583	33.574	(1.000)	302801	0.80000	
1 Cl1	188	9.253	9.219	(0.276)	204692	0.50000	0.496
$ 2 Tetrachloro-m-xylene	244	11.566	11.535	(0.344)	73188	0.50000	0.466
3 Cl2	222	12.999	12.976	(0.387)	185076	0.50000	0.499
5 Cl3	256	16.511	16.502	(0.492)	138066	0.50000	0.500
6 Cl4	292	16.947	16.925	(0.505)	257470	1.00000	0.962
7 RTstd-BZ-104	326	19.485	19.468	(0.580)	336707	1.00000	0.960
8 Cl5	326	25.310	25.307	(0.754)	242873	1.00000	0.959
9 Cl6	360	25.594	25.592	(0.762)	230874	1.00000	0.950
10 RTstd-BZ-77	292	26.598	26.598	(0.792)	271545	1.00000	0.930
11 Cl7	394	27.665	27.670	(0.824)	391339	1.50000	1.46
12 Cl8	430	32.746	32.746	(0.975)	447269	1.50000	1.46
14 RTstd-BZ-208	464	37.210	37.216	(1.108)	535609	2.00000	1.89
15 Cl10	498	41.971	42.001	(1.250)	654221	2.50000	2.34
$ 16 Decachloro-13C12-Biphenyl	510	41.946	41.988	(1.249)	710768	2.50000	2.52

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031307.d
Date : 13-MAR-2014 15:56
Client ID: iCAL-3
Instrument: GCMS03.i
Sample Info: iCAL-3
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

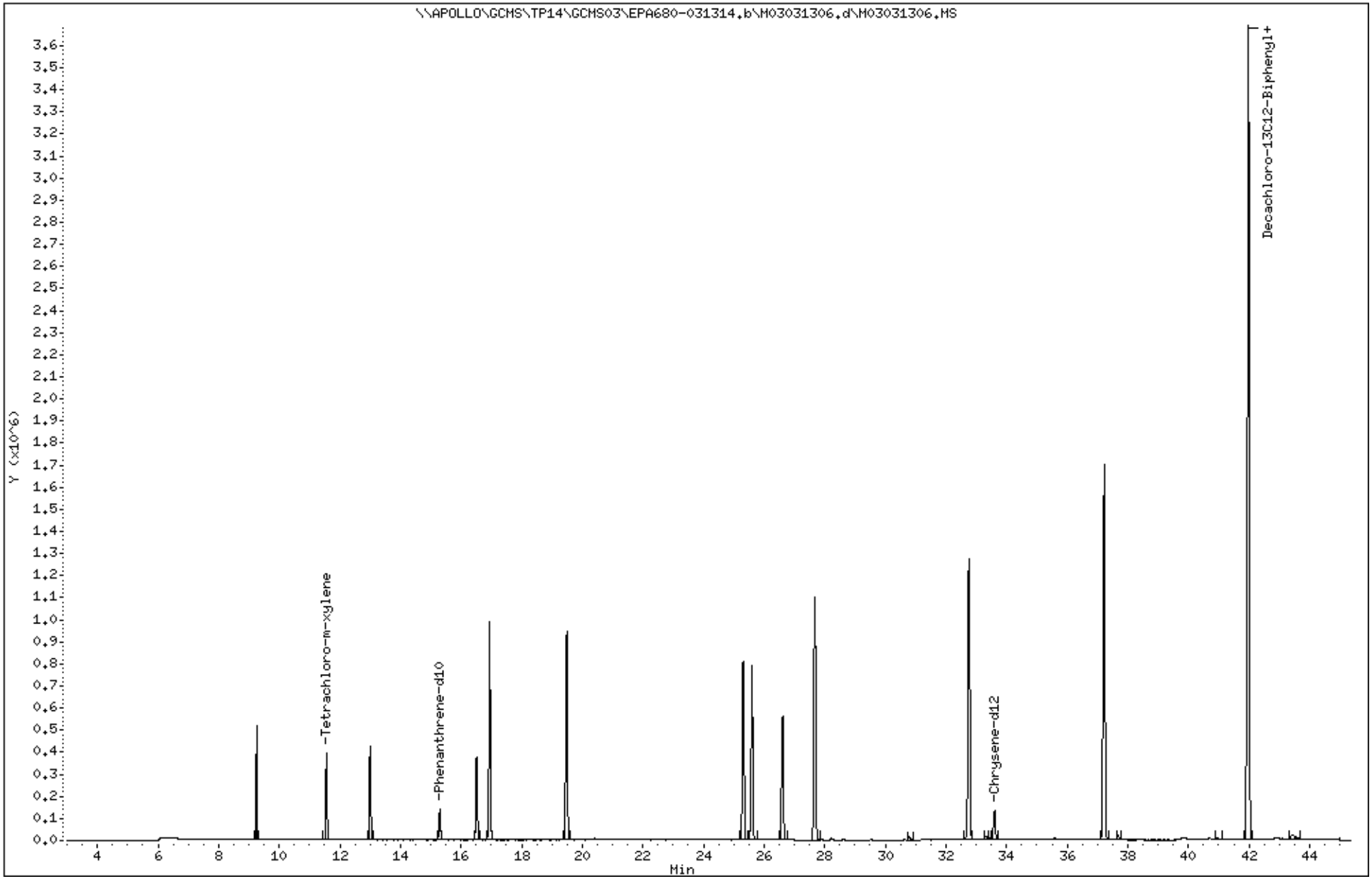
Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031306.d
Lab Smp Id: iCAL-4 Client Smp ID: iCAL-4
Inj Date : 13-MAR-2014 15:07
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-4
Misc Info : RMS M03031306
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\680low.m
Meth Date : 14-Mar-2014 12:02 GCMS03.i Quant Type: ISTD
Cal Date : 13-MAR-2014 15:07 Cal File: M03031306.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: ó╚╒ƒ╥╘í╥╘¿╚╒¼╥╒

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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	15.292	15.268	(1.000)	230585	0.80000	
* 13 Chrysene-d12	240	33.597	33.574	(1.000)	313765	0.80000	
1 Cl1	188	9.249	9.219	(0.275)	410524	1.00000	0.940
$ 2 Tetrachloro-m-xylene	244	11.557	11.535	(0.344)	158384	1.00000	0.959
3 Cl2	222	13.002	12.976	(0.387)	369718	1.00000	0.945
5 Cl3	256	16.509	16.502	(0.491)	283057	1.00000	0.983
6 Cl4	292	16.944	16.925	(0.504)	535521	2.00000	1.90
7 RTstd-BZ-104	326	19.490	19.468	(0.580)	704003	2.00000	1.91
8 Cl5	326	25.316	25.307	(0.754)	512982	2.00000	1.93
9 Cl6	360	25.601	25.592	(0.762)	499088	2.00000	1.97
10 RTstd-BZ-77	292	26.616	26.598	(0.792)	588978	2.00000	1.92
11 Cl7	394	27.673	27.670	(0.824)	816069	3.00000	2.91
12 Cl8	430	32.756	32.746	(0.975)	938379	3.00000	2.94
14 RTstd-BZ-208	464	37.216	37.216	(1.108)	1134146	4.00000	3.81
15 Cl10	498	41.987	42.001	(1.250)	1416698	5.00000	4.84
$ 16 Decachloro-13C12-Biphenyl	510	41.963	41.988	(1.249)	1436291	5.00000	4.84

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031306.d
Date : 13-MAR-2014 15:07
Client ID: iCAL-4
Instrument: GCMS03.i
Sample Info: iCAL-4
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031305.d
Lab Smp Id: iCAL-5 Client Smp ID: iCAL-5
Inj Date : 13-MAR-2014 14:18
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-5
Misc Info : RMS M03031305
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\680low.m
Meth Date : 14-Mar-2014 12:02 GCMS03.i Quant Type: ISTD
Cal Date : 13-MAR-2014 14:18 Cal File: M03031305.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: ó╚╒ƒ╥╘í╥╘¿╚╒¼╥╒

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

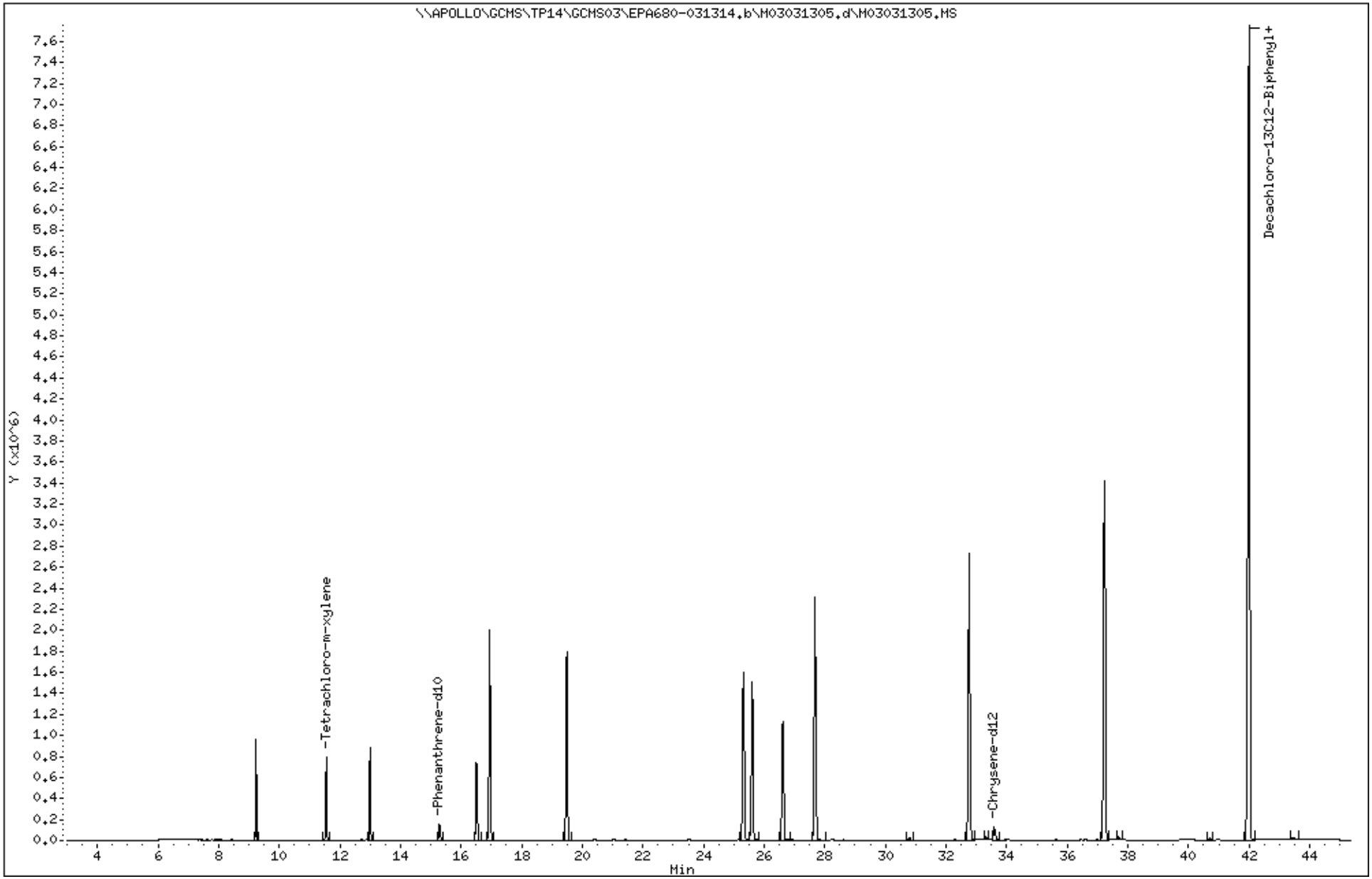
Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	15.288	15.268	(1.000)	230232	0.80000	
* 13 Chrysene-d12	240	33.601	33.574	(1.000)	309069	0.80000	
1 Cl1	188	9.244	9.219	(0.275)	852030	2.00000	1.96
$ 2 Tetrachloro-m-xylene	244	11.552	11.535	(0.344)	309624	2.00000	1.82
3 Cl2	222	12.996	12.976	(0.387)	768869	2.00000	1.99
5 Cl3	256	16.507	16.502	(0.491)	562838	2.00000	1.97
6 Cl4	292	16.943	16.925	(0.504)	1096938	4.00000	3.90
7 RTstd-BZ-104	326	19.490	19.468	(0.580)	1436370	4.00000	3.90
8 Cl5	326	25.314	25.307	(0.753)	1024296	4.00000	3.84
9 Cl6	360	25.599	25.592	(0.762)	983970	4.00000	3.90
10 RTstd-BZ-77	292	26.620	26.598	(0.792)	1190748	4.00000	3.88
11 Cl7	394	27.681	27.670	(0.824)	1626524	6.00000	5.78
12 Cl8	430	32.762	32.746	(0.975)	1870265	6.00000	5.88
14 RTstd-BZ-208	464	37.218	37.216	(1.108)	2345865	8.00000	7.99
15 Cl10	498	42.003	42.001	(1.250)	2795452	10.0000	9.42
$ 16 Decachloro-13C12-Biphenyl	510	42.003	41.988	(1.250)	2925869	10.0000	(a)

QC Flag Legend

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

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031305.d
Date : 13-MAR-2014 14:18
Client ID: iCAL-5
Instrument: GCMS03.i
Sample Info: iCAL-5
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031310.d
Lab Smp Id: iCAL-6 Client Smp ID: iCAL-6
Inj Date : 13-MAR-2014 18:23
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-6
Misc Info : RMS M03031310
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\680low.m
Meth Date : 14-Mar-2014 12:02 GCMS03.i Quant Type: ISTD
Cal Date : 13-MAR-2014 18:23 Cal File: M03031310.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: ó╚╒ƒ╥╘í╥╘¿╚╒¼╥╒

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

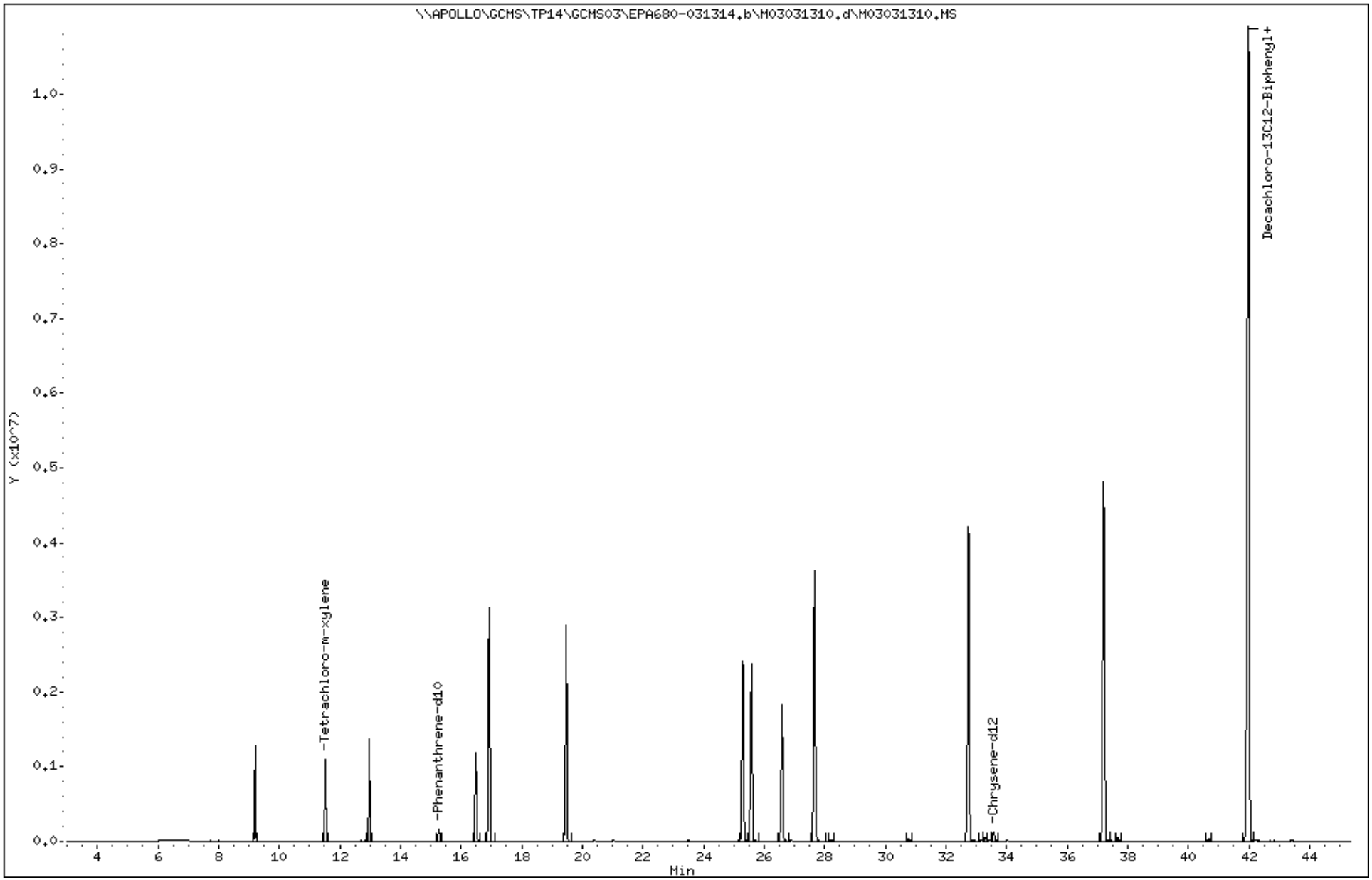
Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	15.268	15.268	(1.000)	241737	0.80000	
* 13 Chrysene-d12	240	33.574	33.574	(1.000)	314700	0.80000	
1 Cl1	188	9.219	9.219	(0.275)	1340091	3.00000	2.93
$ 2 Tetrachloro-m-xylene	244	11.535	11.535	(0.344)	515235	3.00000	3.03
3 Cl2	222	12.976	12.976	(0.386)	1172240	3.00000	2.88
5 Cl3	256	16.502	16.502	(0.492)	896389	3.00000	2.92
6 Cl4	292	16.925	16.925	(0.504)	1755405	6.00000	6.19
7 RTstd-BZ-104	326	19.468	19.468	(0.580)	2254097	6.00000	6.08
8 Cl5	326	25.307	25.307	(0.754)	1586862	6.00000	5.94
9 Cl6	360	25.592	25.592	(0.762)	1536537	6.00000	6.01
10 RTstd-BZ-77	292	26.598	26.598	(0.792)	1902112	6.00000	6.18
11 Cl7	394	27.670	27.670	(0.824)	2572202	9.00000	9.21
12 Cl8	430	32.746	32.746	(0.975)	3045302	9.00000	9.42
14 RTstd-BZ-208	464	37.216	37.216	(1.108)	3521510	12.0000	12.3
15 Cl10	498	42.001	42.001	(1.251)	4371449	15.0000	15.6
$ 16 Decachloro-13C12-Biphenyl	510	41.988	41.988	(1.251)	4335427	15.0000	15.4(A)

QC Flag Legend

A - Target compound detected but, quantitated amount
    exceeded maximum amount.

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031310.d
Date : 13-MAR-2014 18:23
Client ID: iCAL-6
Instrument: GCMS03.i
Sample Info: iCAL-6
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031303.d
Lab Smp Id: iCAL-7 Client Smp ID: iCAL-7
Inj Date : 13-MAR-2014 12:40
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-7
Misc Info : RMS M03031303
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\680low.m
Meth Date : 14-Mar-2014 12:02 GCMS03.i Quant Type: ISTD
Cal Date : 13-MAR-2014 12:40 Cal File: M03031303.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: ó╚╒ƒ╥╘í╥╘¿╚╓¼╥╓

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

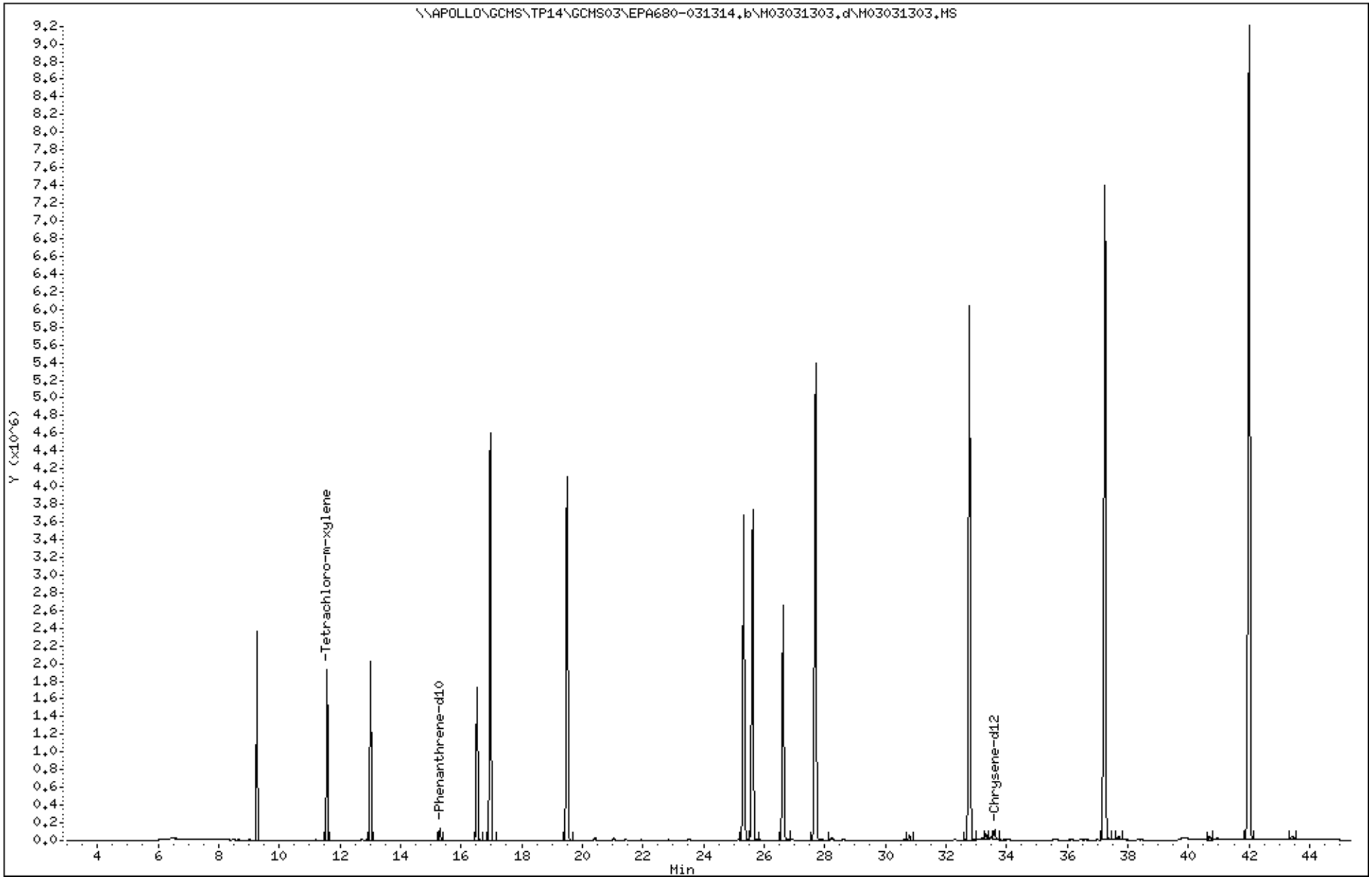
Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	ON-COL (ng/uL)	
* 4 Phenanthrene-d10	188	15.297	15.268	(1.000)	218142	0.80000		
* 13 Chrysene-d12	240	33.609	33.574	(1.000)	281088	0.80000		
1 Cl1	188	9.269	9.219	(0.276)	1975448	5.00000		(a)
$ 2 Tetrachloro-m-xylene	244	11.580	11.535	(0.345)	775545	5.00000		(a)
3 Cl2	222	13.015	12.976	(0.387)	1758328	5.00000		(a)
5 Cl3	256	16.531	16.502	(0.492)	1299793	5.00000		(a)
6 Cl4	292	16.968	16.925	(0.505)	2557276	10.0000		(a)
7 RTstd-BZ-104	326	19.498	19.468	(0.580)	3347877	10.0000		(a)
8 Cl5	326	25.324	25.307	(0.753)	2428813	10.0000		(a)
9 Cl6	360	25.622	25.592	(0.762)	2296492	10.0000		(a)
10 RTstd-BZ-77	292	26.633	26.598	(0.792)	2789142	10.0000		(a)
11 Cl7	394	27.699	27.670	(0.824)	3839086	15.0000		(a)
12 Cl8	430	32.780	32.746	(0.975)	4337365	15.0000		(a)
14 RTstd-BZ-208	464	37.251	37.216	(1.108)	5342169	20.0000		(a)
15 Cl10	498	42.007	42.001	(1.250)	6747214	25.0000		(a)

QC Flag Legend

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

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-031314.b\M03031303.d
Date : 13-MAR-2014 12:40
Client ID: iCAL-7
Instrument: GCMS03.i
Sample Info: iCAL-7
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Standards Summary Tables

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc.

SDG No.: 14081755

Instrument ID:	GCMS03	Calibration Date:	9/2/2014	Time:	11:50
Lab File ID:	M03090204	Start Cal Date:	3/13/2014	Time:	12:40
Client ID:	CCV3-0902B	End Cal Date:	3/13/2014	Time:	18:23
GC Column:	DB-XLB				

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\PACE_LRF14081755\[CCV3-0902B.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 Cl1	1.154	1.063	0.005	-7.95	20
$ 2 Tetrachloro-m-xylene	0.435	0.373	0.005	-14.1	20
3 Cl2	1.023	0.930	0.005	-9.02	20
5 Cl3	0.773	0.733	0.005	-5.24	20
6 Cl4	0.713	0.659	0.005	-7.48	20
8 Cl5	0.668	0.607	0.005	-9.21	20
9 Cl6	0.636	0.579	0.005	-8.89	20
11 Cl7	0.698	0.624	0.005	-10.6	20
13 Cl8	0.819	0.747	0.005	-8.77	20
17 Cl10	0.698	0.650	0.005	-6.87	20
$ 13C-DCBP	0.710	0.612	0.005	-13.8	20

FORM VII-CLP-EPA 680-1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090204.d
Lab Smp Id: CCV3-0902B Client Smp ID: CCV3-0902B
Inj Date : 02-SEP-2014 11:50
Operator : RMS Inst ID: GCMS03.i
Smp Info : CCV3-0902B
Misc Info : RMS M03090204
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\680low.m
Meth Date : 03-Sep-2014 08:17 roys Quant Type: ISTD
Cal Date : 13-MAR-2014 17:34 Cal File: M03031309.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

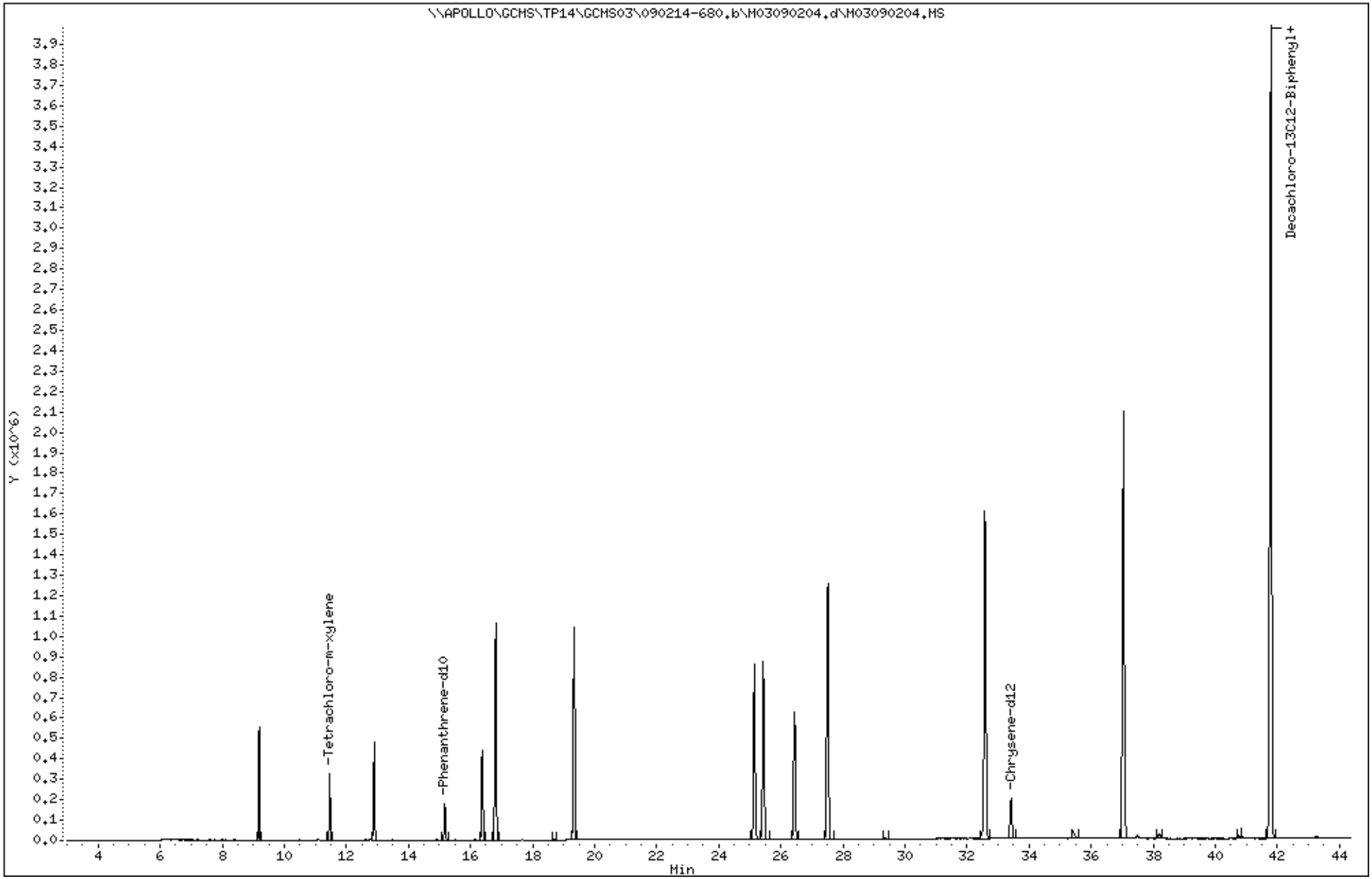
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	15.173	15.185	(1.000)	239325	0.80000	
* 13 Chrysene-d12	240	33.420	33.439	(1.000)	327839	0.80000	
1 Cl1	188	9.189	9.184	(0.275)	439000	1.00000	0.921
$ 2 Tetrachloro-m-xylene	244	11.464	11.473	(0.343)	153653	1.00000	0.868
3 Cl2	222	12.890	12.907	(0.386)	384826	1.00000	0.908
5 Cl3	256	16.380	16.392	(0.490)	300968	1.00000	0.941
6 Cl4	292	16.810	16.820	(0.503)	542063	2.00000	1.84
7 RTstd-BZ-104	326	19.339	19.348	(0.579)	721709	2.00000	1.87
8 Cl5	326	25.152	25.165	(0.753)	509710	2.00000	1.83
9 Cl6	360	25.437	25.451	(0.761)	486199	2.00000	1.83
10 RTstd-BZ-77	292	26.447	26.462	(0.791)	568852	2.00000	1.78
11 Cl7	394	27.500	27.527	(0.823)	785447	3.00000	2.70
12 Cl8	430	32.577	32.597	(0.975)	932036	3.00000	2.77
14 RTstd-BZ-208	464	37.041	37.058	(1.108)	1103477	4.00000	3.69
15 Cl10	498	41.798	41.812	(1.251)	1359025	5.00000	4.64
$ 16 Decachloro-13C12-Biphenyl	510	41.785	41.801	(1.250)	1270181	5.00000	4.34

Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090204.d
Date : 02-SEP-2014 11:50
Client ID: CCV3-0902B
Sample Info: CCV3-0902B
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.i
Operator: RMS
Column diameter: 0.25



Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b/M03090204.d
Injection Date: 02-SEP-2014 11:50
Instrument: GCMS03.i
Lab Sample ID: CCV3-0902B
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03090204"		"M03090204"		"M03090204"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
9.185	446877	9.184	148447				
12.898	13523	12.894	2526				
15.172	245386	15.173	3835				
16.380	52741						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03090204"		"M03090204"		"M03090204"						"M03090204"	
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
12.895	391288	12.896	266817							9.185	446877
16.381	11134	16.376	3236							12.898	13523
16.810	178026	16.805	32216							15.172	245386
19.342	5911	26.428	9251							16.380	52741
25.151	8232	26.446	14000								
25.442	8393										
26.442	132975										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03090204"		"M03090204"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
16.379	308121	16.380	309644		
16.812	50747	16.805	43745		
19.338	184469	19.340	63892		
25.148	183127	25.147	62882		
25.439	8836	26.457	5766		
26.427	4681				
26.447	6955				
27.509	31698				
37.026	2790				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03090204"		"M03090204"				"M03090204"		"M03090204"		"M03090204"	
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
16.379	308121	16.380	309644			9.185	446877	19.339	421940	16.815	3438
16.812	50747	16.805	43745			12.898	13523	25.149	304331	19.337	718252
19.338	184469	19.340	63892			15.172	245386	25.429	18727	25.150	510234
25.148	183127	25.147	62882			16.380	52741	27.506	244466	25.442	27942
25.439	8836	26.457	5766					32.591	19520	27.510	163107
26.427	4681							37.048	99185	32.572	4645
26.447	6955									32.606	2857
27.509	31698									37.043	41247
37.026	2790										

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03090204"		"M03090204"					
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
				16.809	408113	16.808	554606				
				19.335	17170	19.343	20016				
				25.145	35971	25.155	40073				
				25.437	175574	25.438	86019				
				26.446	410518	26.444	569171				
				27.512	18951	27.485	2590				
				32.590	57736	32.556	8005				
				37.027	3801	32.603	5388				
				37.060	3259	37.036	5001				

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03090204"		"M03090204"			"M03090204"		"M03090204"		"M03090204"		
m/z 292		m/z 290		m/z 220	m/z 222		m/z 360		m/z 362		
16.808	554606	16.809	408113		12.895	391288	25.156	3525	25.436	400707	
19.343	20016	19.335	17170		16.381	11134	25.436	487239	26.440	2809	
25.155	40073	25.145	35971		16.810	178026	27.486	9043	27.501	15346	
25.438	86019	25.437	175574		19.342	5911	27.516	10110	32.576	88298	
26.444	569171	26.446	410518		25.151	8232	32.593	201627	37.012	4107	
27.485	2590	27.512	18951		25.442	8393	33.427	2557	41.787	19055	
32.556	8005	32.590	57736		26.442	132975	37.040	11034			
32.603	5388	37.027	3801				37.076	2786			
37.036	5001	37.060	3259				41.805	61402			

Extracted Ion Current Profiles

Tetrachlorobiphenyls						
	"M03090204"		"M03090204"			
m/z 288	m/z 324		m/z 326		m/z 328	m/z 289
	19.339	421940	16.815	3438		
	25.149	304331	19.337	718252		
	25.429	18727	25.150	510234		
	27.506	244466	25.442	27942		
	32.591	19520	27.510	163107		
	37.048	99185	32.572	4645		
			32.606	2857		
			37.043	41247		

Extracted Ion Current Profiles

Pentachlorobiphenyls										
"M03090204"		"M03090204"			"M03090204"		"M03090204"		"M03090204"	
m/z 326		m/z 324		m/z 254	m/z 256		m/z 258		m/z 392	
16.815	3438	19.339	421940		16.379	308121	16.380	309644		
19.337	718252	25.149	304331		16.812	50747	16.805	43745		
25.150	510234	25.429	18727		19.338	184469	19.340	63892		
25.442	27942	27.506	244466		25.148	183127	25.147	62882		
27.510	163107	32.591	19520		25.439	8836	26.457	5766		
32.572	4645	37.048	99185		26.427	4681				
32.606	2857				26.447	6955				
37.043	41247				27.509	31698				
					37.026	2790				

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03090204"		"M03090204"						"M03090204"		"M03090204"		
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360		m/z 362		m/z 323
19.337	3982	25.438	2650					25.156	3525	25.436	400707	
25.439	3402	27.509	831104					25.436	487239	26.440	2809	
27.507	787203	32.584	16276					27.486	9043	27.501	15346	
32.577	19594	37.040	150698					27.516	10110	32.576	88298	
37.044	269876	41.779	16289					32.593	201627	37.012	4107	
41.735	3095	41.829	2799					33.427	2557	41.787	19055	
41.788	5013							37.040	11034			
41.829	3397							37.076	2786			
								41.805	61402			

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03090204"		"M03090204"			"M03090204"			"M03090204"	
m/z 360		m/z 362		m/z 288	m/z 290		m/z 426	m/z 428	
25.156	3525	25.436	400707		16.809	408113		32.581	809266
25.436	487239	26.440	2809		19.335	17170		37.023	8621
27.486	9043	27.501	15346		25.145	35971		37.056	5573
27.516	10110	32.576	88298		25.437	175574		41.796	312745
32.593	201627	37.012	4107		26.446	410518			
33.427	2557	41.787	19055		27.512	18951			
37.040	11034				32.590	57736			
37.076	2786				37.027	3801			
41.805	61402				37.060	3259			

Extracted Ion Current Profiles

Hexachlorobiphenyls													
"M03090204"						"M03090204"		"M03090204"					
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398	m/z 357
32.127	2628							19.337	3982	25.438	2650		
32.580	942940							25.439	3402	27.509	831104		
35.396	4121							27.507	787203	32.584	16276		
35.422	2727							32.577	19594	37.040	150698		
35.439	3496							37.044	269876	41.779	16289		
37.022	10192							41.735	3095	41.829	2799		
37.044	9955							41.788	5013				
38.188	6337							41.829	3397				
38.212	3302												
40.770	3370												
40.805	2529												
40.851	3832												
41.798	192152												

Extracted Ion Current Profiles

Heptachlorobiphenyls									
"M03090204"		"M03090204"			"M03090204"		"M03090204"		
m/z 394		m/z 396		m/z 322	m/z 324		m/z 326		m/z 462
19.337	3982	25.438	2650		19.339	421940	16.815	3438	
25.439	3402	27.509	831104		25.149	304331	19.337	718252	
27.507	787203	32.584	16276		25.429	18727	25.150	510234	
32.577	19594	37.040	150698		27.506	244466	25.442	27942	
37.044	269876	41.779	16289		32.591	19520	27.510	163107	
41.735	3095	41.829	2799		37.048	99185	32.572	4645	
41.788	5013						32.606	2857	
41.829	3397						37.043	41247	

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03090204"		"M03090204"			"M03090204"		"M03090204"				
m/z 464		m/z 466		m/z 390	m/z 428		m/z 430		m/z 432	m/z 391	
32.582	7198	32.581	6973		32.581	809266	32.127	2628			
37.041	1116373	37.037	875682		37.023	8621	32.580	942940			
41.777	18726	41.781	21811		37.056	5573	35.396	4121			
41.795	14341				41.796	312745	35.422	2727			
							35.439	3496			
							37.022	10192			
							37.044	9955			
							38.188	6337			
							38.212	3302			
							40.770	3370			
							40.805	2529			
							40.851	3832			
							41.798	192152			

Extracted Ion Current Profiles

Octachlorobiphenyls											
"M03090204"		"M03090204"						"M03090204"			
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462	
32.127	2628	32.581	809266					25.156	3525		
32.580	942940	37.023	8621					25.436	487239		
35.396	4121	37.056	5573					27.486	9043		
35.422	2727	41.796	312745					27.516	10110		
35.439	3496							32.593	201627		
37.022	10192							33.427	2557		
37.044	9955							37.040	11034		
38.188	6337							37.076	2786		
38.212	3302							41.805	61402		
40.770	3370										
40.805	2529										
40.851	3832										
41.798	192152										

Extracted Ion Current Profiles

Octachlorobiphenyls				
"M03090204"		"M03090204"		
m/z 464		m/z 466		m/z 425
32.582	7198	32.581	6973	
37.041	1116373	37.037	875682	
41.777	18726	41.781	21811	
41.795	14341			

Extracted Ion Current Profiles

Nonachlorobiphenyls							
"M03090204"		"M03090204"				"M03090204"	
m/z 464		m/z 466		m/z 390	m/z 392	m/z 394	
32.582	7198	32.581	6973			19.337	3982
37.041	1116373	37.037	875682			25.439	3402
41.777	18726	41.781	21811			27.507	787203
41.795	14341					32.577	19594
						37.044	269876
						41.735	3095
						41.788	5013
						41.829	3397

Extracted Ion Current Profiles

Decachlorobiphenyl									
"M03090204"		"M03090204"				"M03090204"		"M03090204"	
m/z 498		m/z 500		m/z 424		m/z 426		m/z 428		m/z 430	
32.580	6953	37.059	3942					32.581	809266	32.127	2628
33.423	2782	41.799	1222232					37.023	8621	32.580	942940
37.046	10084							37.056	5573	35.396	4121
41.798	1367520							41.796	312745	35.422	2727
										35.439	3496
										37.022	10192
										37.044	9955
										38.188	6337
										38.212	3302
										40.770	3370
										40.805	2529
										40.851	3832
										41.798	192152

Extracted Ion Current Profiles

TCMX				TCMX
"M03090204"		"M03090204"		
m/z 244		m/z 242		
11.468	156988	11.468	119723	424
31.205	3460	19.330	3036	426
		33.407	3819	428
		33.433	3054	430
		37.045	3065	498
				500

chrysene - d_{12}	Chrysene-d12			
	"M03090204"		"M03090204"	
	m/z 240		m/z 241	
240	32.579	6792	11.472	8288
241	33.421	336425	32.576	4853
	37.014	3460	32.602	4038
			33.429	68815

phenanthrene - d_{10}	Phenanthrene-d10			
	"M03090204"		"M03090204"	
	m/z 188		m/z 189	
188	9.185	446877	9.185	70458
189	12.898	13523	12.898	13032
	15.172	245386	15.168	40424
	16.380	52741	16.390	7718

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	32.597	4702	32.575	6561
512	37.044	9702	37.029	7835
	41.781	1286580	41.778	1140753

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc. SDG No.: 14081755

Instrument ID:	GCMS03	Calibration Date:	9/2/2014	Time:	17:32
Lab File ID:	M03090211	Start Cal Date:	3/13/2014	Time:	12:40
Client ID:	CCV3-0902C	End Cal Date:	3/13/2014	Time:	18:23
GC Column:	DB-XLB				

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\PACE_LRF14081755\[CCV3-0902B.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 CI1	1.154	1.114	0.005	-3.48	20
$ 2 Tetrachloro-m-xylene	0.435	0.382	0.005	-12.2	20
3 CI2	1.023	0.951	0.005	-6.97	20
5 CI3	0.773	0.753	0.005	-2.60	20
6 CI4	0.713	0.715	0.005	0.38	20
8 CI5	0.668	0.634	0.005	-5.11	20
9 CI6	0.636	0.629	0.005	-1.06	20
11 CI7	0.698	0.670	0.005	-4.02	20
13 CI8	0.819	0.794	0.005	-3.09	20
17 CI10	0.698	0.659	0.005	-5.60	20
$ 13C-DCBP	0.710	0.657	0.005	-7.41	20

FORM VII-CLP-EPA 680-1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090211.d
Lab Smp Id: CCV3-0902C Client Smp ID: CCV3-0902C
Inj Date : 02-SEP-2014 17:32
Operator : RMS Inst ID: GCMS03.i
Smp Info : CCV3-0902C
Misc Info : RMS M03090211
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\680low.m
Meth Date : 03-Sep-2014 08:17 roys Quant Type: ISTD
Cal Date : 13-MAR-2014 17:34 Cal File: M03031309.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

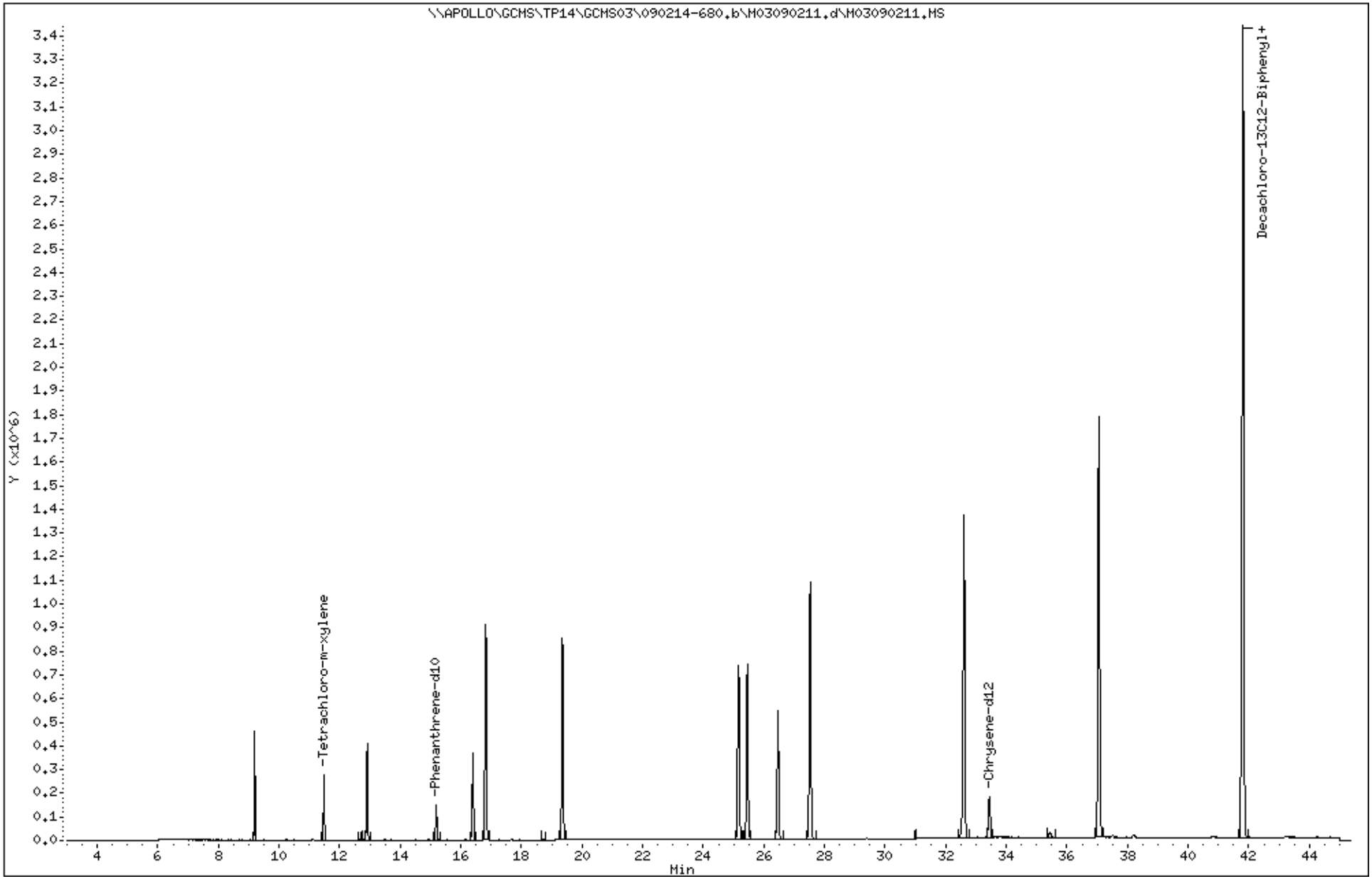
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	15.185	15.185	(1.000)	200414	0.80000	
* 13 Chrysene-d12	240	33.439	33.439	(1.000)	266951	0.80000	
1 Cl1	188	9.184	9.184	(0.275)	371866	1.00000	0.958
$ 2 Tetrachloro-m-xylene	244	11.473	11.473	(0.343)	126967	1.00000	0.881
3 Cl2	222	12.907	12.907	(0.386)	318078	1.00000	0.922
5 Cl3	256	16.392	16.392	(0.490)	251269	1.00000	0.965
6 Cl4	292	16.820	16.820	(0.503)	476339	2.00000	1.98
7 RTstd-BZ-104	326	19.348	19.348	(0.579)	605327	2.00000	1.92
8 Cl5	326	25.165	25.165	(0.753)	435048	2.00000	1.92
9 Cl6	360	25.451	25.451	(0.761)	431169	2.00000	1.99
10 RTstd-BZ-77	292	26.462	26.462	(0.791)	496532	2.00000	1.90
11 Cl7	394	27.527	27.527	(0.823)	684559	3.00000	2.89
12 Cl8	430	32.597	32.597	(0.975)	798199	3.00000	2.91
14 RTstd-BZ-208	464	37.058	37.058	(1.108)	985859	4.00000	4.05
15 Cl10	498	41.812	41.812	(1.250)	1126599	5.00000	4.73
$ 16 Decachloro-13C12-Biphenyl	510	41.801	41.801	(1.250)	1117505	5.00000	4.69

Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090211.d
Date : 02-SEP-2014 17:32
Client ID: CCV3-0902C
Sample Info: CCV3-0902C
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.i
Operator: RMS
Column diameter: 0.25



Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b/M03090211.d
Injection Date: 02-SEP-2014 17:32
Instrument: GCMS03.i
Lab Sample ID: CCV3-0902C
NO SIGNAL MANUAL INTEGRATIONS DONE FOR THIS DATA FILE

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03090211"		"M03090211"		"M03090211"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
9.189	381576	9.190	128105				
12.907	11485	15.181	3250				
15.184	204342						
16.394	43171						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03090211"		"M03090211"		"M03090211"						"M03090211"	
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
12.906	325843	12.905	230666							9.189	381576
16.393	9691	16.822	28435							12.907	11485
16.822	158355	26.462	21364							15.184	204342
19.347	4621									16.394	43171
25.173	6221										
25.452	8401										
26.464	116734										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03090211"		"M03090211"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
16.392	257922	16.392	267380		
16.819	44364	16.820	38303		
19.354	161403	19.350	54834		
25.164	160001	25.163	54130		
25.446	8327	26.453	3529		
26.456	10361				
27.503	9215				
27.530	18061				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03090211"		"M03090211"				"M03090211"		"M03090211"		"M03090211"	
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
16.392	257922	16.392	267380			9.189	381576	19.349	363754	16.825	2709
16.819	44364	16.820	38303			12.907	11485	25.165	255408	19.352	605345
19.354	161403	19.350	54834			15.184	204342	25.454	17743	25.164	434291
25.164	160001	25.163	54130			16.394	43171	27.523	202980	25.447	23281
25.446	8327	26.453	3529					32.584	5422	27.525	139871
26.456	10361							32.591	8066	32.608	8881
27.503	9215							37.059	83622	37.031	8473
27.530	18061									37.065	22267

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03090211"		"M03090211"					
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
				16.823	361029	16.824	490026				
				19.362	15193	19.346	17219				
				25.167	27651	25.163	35473				
				25.451	141797	25.447	74649				
				26.457	342285	26.460	496687				
				27.525	13151	27.536	6213				
				32.600	46483	32.595	13863				
				37.065	6585						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03090211"		"M03090211"			"M03090211"		"M03090211"		"M03090211"		
m/z 292		m/z 290		m/z 220	m/z 222		m/z 360		m/z 362		
16.824	490026	16.823	361029		12.906	325843	25.166	2895	25.452	351725	
19.346	17219	19.362	15193		16.393	9691	25.452	430849	27.522	13845	
25.163	35473	25.167	27651		16.822	158355	26.463	2648	32.604	82072	
25.447	74649	25.451	141797		19.347	4621	27.512	14368	37.044	7959	
26.460	496687	26.457	342285		25.173	6221	32.605	176005	41.807	11543	
27.536	6213	27.525	13151		25.452	8401	37.019	2918	41.843	2652	
32.595	13863	32.600	46483		26.464	116734	37.060	10546			
		37.065	6585				41.794	22057			
							41.828	32196			

Extracted Ion Current Profiles

Tetrachlorobiphenyls						
	"M03090211"		"M03090211"			
m/z 288	m/z 324		m/z 326		m/z 328	m/z 289
	19.349	363754	16.825	2709		
	25.165	255408	19.352	605345		
	25.454	17743	25.164	434291		
	27.523	202980	25.447	23281		
	32.584	5422	27.525	139871		
	32.591	8066	32.608	8881		
	37.059	83622	37.031	8473		
			37.065	22267		

Extracted Ion Current Profiles

Pentachlorobiphenyls										
"M03090211"		"M03090211"			"M03090211"		"M03090211"		"M03090211"	
m/z 326		m/z 324		m/z 254	m/z 256		m/z 258		m/z 392	
16.825	2709	19.349	363754		16.392	257922	16.392	267380		
19.352	605345	25.165	255408		16.819	44364	16.820	38303		
25.164	434291	25.454	17743		19.354	161403	19.350	54834		
25.447	23281	27.523	202980		25.164	160001	25.163	54130		
27.525	139871	32.584	5422		25.446	8327	26.453	3529		
32.608	8881	32.591	8066		26.456	10361				
37.031	8473	37.059	83622		27.503	9215				
37.065	22267				27.530	18061				

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03090211"		"M03090211"					"M03090211"		"M03090211"		
m/z 394		m/z 396		m/z 398		m/z 322	m/z 360		m/z 362		m/z 323
19.353	3485	19.362	2893				25.166	2895	25.452	351725	
27.526	688519	27.525	702592				25.452	430849	27.522	13845	
32.608	15107	32.598	16390				26.463	2648	32.604	82072	
37.058	219979	37.052	132931				27.512	14368	37.044	7959	
41.796	15951	41.791	3175				32.605	176005	41.807	11543	
41.845	4301	41.829	2939				37.019	2918	41.843	2652	
							37.060	10546			
							41.794	22057			
							41.828	32196			

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03090211"		"M03090211"			"M03090211"			"M03090211"	
m/z 360		m/z 362		m/z 288	m/z 290		m/z 426	m/z 428	
25.166	2895	25.452	351725		16.823	361029		32.604	691747
25.452	430849	27.522	13845		19.362	15193		37.029	5805
26.463	2648	32.604	82072		25.167	27651		37.059	8418
27.512	14368	37.044	7959		25.451	141797		41.811	178957
32.605	176005	41.807	11543		26.457	342285		41.839	60256
37.019	2918	41.843	2652		27.525	13151			
37.060	10546				32.600	46483			
41.794	22057				37.065	6585			
41.828	32196								

Extracted Ion Current Profiles

Hexachlorobiphenyls													
"M03090211"						"M03090211"		"M03090211"					
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398	m/z 357
32.597	815624							19.353	3485	19.362	2893		
35.431	6920							27.526	688519	27.525	702592		
37.060	16949							32.608	15107	32.598	16390		
38.205	5668							37.058	219979	37.052	132931		
40.794	3285							41.796	15951	41.791	3175		
41.806	100378							41.845	4301	41.829	2939		
41.826	66687												

Extracted Ion Current Profiles

Heptachlorobiphenyls									
"M03090211"		"M03090211"			"M03090211"		"M03090211"		
m/z 394		m/z 396		m/z 322	m/z 324		m/z 326		m/z 462
19.353	3485	19.362	2893		19.349	363754	16.825	2709	
27.526	688519	27.525	702592		25.165	255408	19.352	605345	
32.608	15107	32.598	16390		25.454	17743	25.164	434291	
37.058	219979	37.052	132931		27.523	202980	25.447	23281	
41.796	15951	41.791	3175		32.584	5422	27.525	139871	
41.845	4301	41.829	2939		32.591	8066	32.608	8881	
					37.059	83622	37.031	8473	
							37.065	22267	

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03090211"		"M03090211"			"M03090211"		"M03090211"				
m/z 464		m/z 466		m/z 390	m/z 428		m/z 430		m/z 432	m/z 391	
37.054	992073	32.603	6701		32.604	691747	32.597	815624			
41.773	4757	37.054	765409		37.029	5805	35.431	6920			
41.820	8574	41.773	5629		37.059	8418	37.060	16949			
		41.812	16664		41.811	178957	38.205	5668			
					41.839	60256	40.794	3285			
							41.806	100378			
							41.826	66687			

Extracted Ion Current Profiles

Octachlorobiphenyls									
"M03090211"		"M03090211"				"M03090211"			
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462
32.597	815624	32.604	691747				25.166	2895	
35.431	6920	37.029	5805				25.452	430849	
37.060	16949	37.059	8418				26.463	2648	
38.205	5668	41.811	178957				27.512	14368	
40.794	3285	41.839	60256				32.605	176005	
41.806	100378						37.019	2918	
41.826	66687						37.060	10546	
							41.794	22057	
							41.828	32196	

Extracted Ion Current Profiles

Octachlorobiphenyls				
"M03090211"		"M03090211"		
m/z 464		m/z 466		m/z 425
37.054	992073	32.603	6701	
41.773	4757	37.054	765409	
41.820	8574	41.773	5629	
		41.812	16664	

Extracted Ion Current Profiles

Nonachlorobiphenyls							
"M03090211"		"M03090211"				"M03090211"	
m/z 464		m/z 466		m/z 390	m/z 392	m/z 394	
37.054	992073	32.603	6701			19.353	3485
41.773	4757	37.054	765409			27.526	688519
41.820	8574	41.773	5629			32.608	15107
		41.812	16664			37.058	219979
						41.796	15951
						41.845	4301

Extracted Ion Current Profiles

Decachlorobiphenyl									
"M03090211"		"M03090211"				"M03090211"		"M03090211"	
m/z 498		m/z 500		m/z 424		m/z 426		m/z 428		m/z 430	
32.579	3118	32.598	5657					32.604	691747	32.597	815624
37.040	5061	37.051	6034					37.029	5805	35.431	6920
41.816	1128916	41.812	1042283					37.059	8418	37.060	16949
								41.811	178957	38.205	5668
								41.839	60256	40.794	3285
										41.806	100378
										41.826	66687

Extracted Ion Current Profiles

TCMX				TCMX
"M03090211"		"M03090211"		
m/z 244		m/z 242		
11.475	130665	11.477	100424	424
		27.531	3354	426
		33.437	7014	428
				430
				498
				500

chrysene - d_{12}	Chrysene-d12			
	"M03090211"		"M03090211"	
	m/z 240		m/z 241	
240	27.535	3733	11.478	7527
241	32.614	3173	27.512	2980
	33.441	273972	32.576	3604
	37.037	4686	33.439	59471
	37.081	2532	37.054	2979

phenanthrene - d_{10}	Phenanthrene-d10			
	"M03090211"		"M03090211"	
	m/z 188		m/z 189	
188	9.189	381576	9.192	54534
189	12.907	11485	12.903	10913
	15.184	204342	15.186	32828
	16.394	43171	16.388	7195

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	32.583	3338	32.595	2720
512	32.610	5199	37.029	3439
	37.054	8553	37.079	3774
	41.799	1125422	41.794	980247

QC Sample Raw Data

Quality Control Results
Method Blank

Job Number: 14081755

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: Method Blank (AR30073B)
Lab Sample ID: SBLK-17

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:	MS03-460-5	PCBs by EPA Method TO-10A/680	09/02/2014 12:38	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	28193	TO-10A	08/31/2014 15:25	DNM	0.00m³	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	MS03-460-5
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-460-5
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-460-5
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-460-5
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-460-5
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-460-5
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-460-5
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-460-5
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-460-5
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-460-5
Total PCB	1336-36-3	ND		1.00	U	MS03-460-5

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	68.3	70.1-116	*	MS03-460-5
Tetrachloro-meta-xylene	877-09-8	61.5	44.4-104		MS03-460-5

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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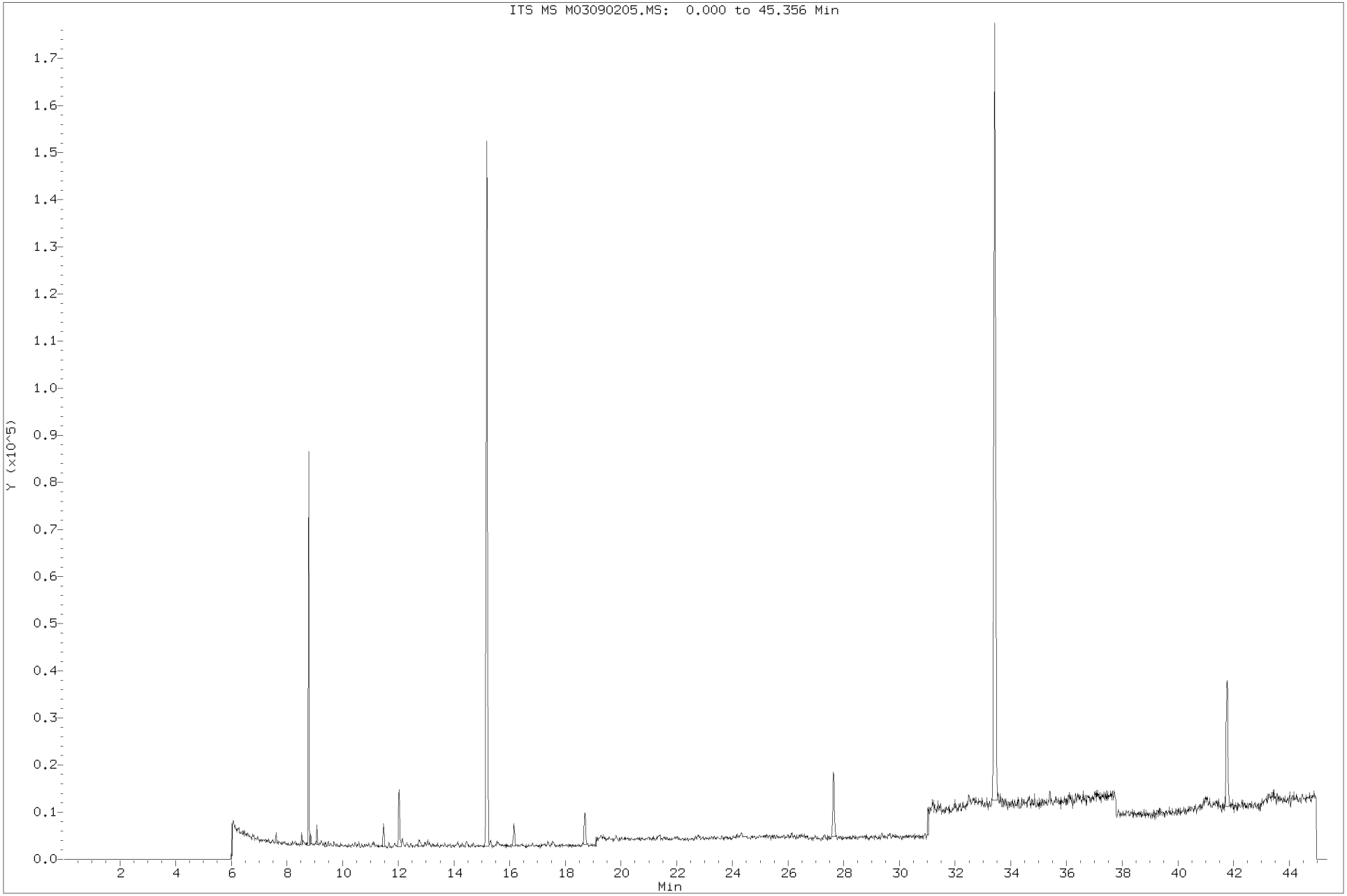
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090205.d/M03090205.MS
Injection Date: 02-SEP-2014 12:38
Instrument: GCMS03.i
Client Sample ID: AR30073BLANK



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14081755
ELAP ID No.:	11078	Client ID:	Method Blank
Matrix:	TO-10A PUF	Lab Sample ID:	AR30073B
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	8/31/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	9/2/2014
Dilution Factor:	1	Time Analyzed:	12:38

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 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
11.470	1883	11.471	1571	1.2	0.4346		0.0123	
				TCMX Total:			0.0123	

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
41.768	17071	41.767	15141	1.1	0.7098		0.0683	
				Deca Total:			0.0683	

TCMX Recovery %	61.5 %
Deca Recovery	68.3 %

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
33.417	281670	33.417	60016	4.7	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03090205"		"M03090205"		"M03090205"		"M03090205"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.174	208877	15.173	3170				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03090205"		"M03090205"		"M03090205"		"M03090205"		"M03090205"		"M03090205"	
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
								15.180	20565	15.174	208877

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03090205"		"M03090205"		"M03090205"		"M03090205"		"M03090205"		"M03090205"	
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
				15.180	20565	15.174	208877				

Extracted Ion Current Profiles

Pentachlorobiphenyls						
"M03090205"	"M03090205"	"M03090205"	"M03090205"	"M03090205"	"M03090205"	"M03090205"
m/z 394	m/z 396	m/z 398	m/z 322	m/z 360	m/z 362	m/z 323
	27.635 2612					

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03090205"	"M03090205"	"M03090205"	"M03090205"	"M03090205"	"M03090205"	"M03090205"	"M03090205"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
					27.635 2612		

Extracted Ion Current Profiles

Heptachlorobiphenyls					
"M03090205"	"M03090205"	"M03090205"	"M03090205"	"M03090205"	"M03090205"
m/z 394	m/z 396	m/z 322	m/z 324	m/z 326	m/z 462
	27.635 2612				

Extracted Ion Current Profiles

TCMX						Chrysene-d12						Phenanthrene-d10			
"M03090205"		"M03090205"				"M03090205"		"M03090205"				"M03090205"		"M03090205"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
11.470	1883	11.471	1571	424	240	33.417	281670	33.417	60016	188	15.174	208877	15.174	35377
31.186	612	33.426	6462	426	241					189				
31.215	2274			428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	33.400	798	33.409	1202
512	33.477	414	41.767	15141
	41.768	17071		
	42.665	464		

Quality Control Results
Method Blank
Job Number: 14081756

Pace Analytical Services, Inc.
2190 Technology Drive
Schenectady, NY 12308
Phone: 518.346.4592
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Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: Method Blank (AR30074B)
Lab Sample ID: SBLK-16

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:	MS03-460-7	PCBs by EPA Method TO-4A/680	09/02/2014 14:16	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	28192	TO-4A	08/31/2014 15:25	DNM	0.00m³	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	MS03-460-7
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-460-7
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-460-7
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-460-7
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-460-7
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-460-7
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-460-7
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-460-7
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-460-7
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-460-7
Total PCB	1336-36-3	ND		1.00	U	MS03-460-7

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	63.6	42.5-134		MS03-460-7
Tetrachloro-meta-xylene	877-09-8	54.2	17.9-137		MS03-460-7

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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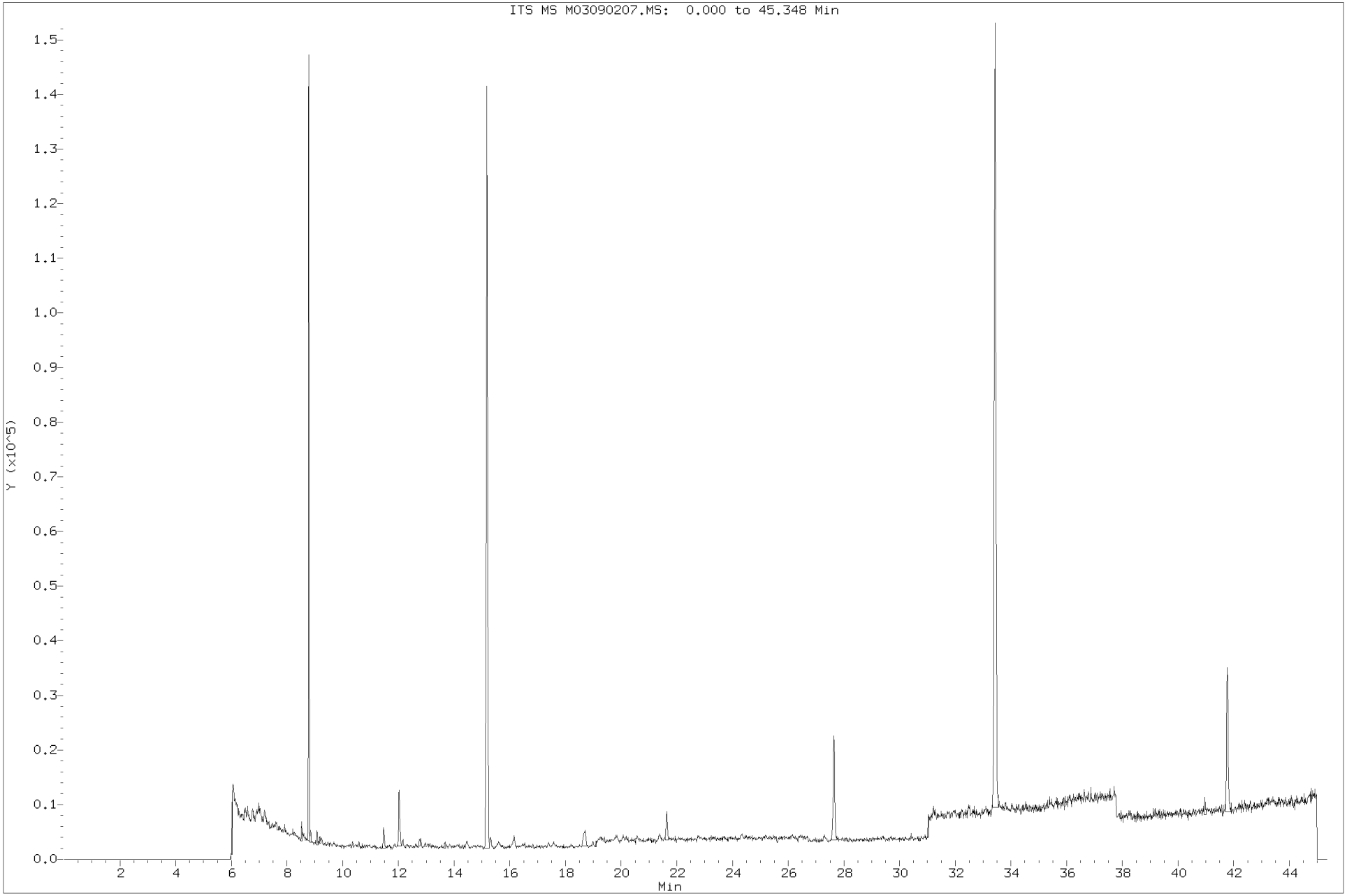
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\090214-680.b\M03090207.d/M03090207.MS
Injection Date: 02-SEP-2014 14:16
Instrument: GCMS03.i
Client Sample ID: AR30074BLANK



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14081756
ELAP ID No.:	11078	Client ID:	Method Blank
Matrix:	TO-10A PUF	Lab Sample ID:	AR30074B
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	8/31/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	9/2/2014
Dilution Factor:	1	Time Analyzed:	14:16

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	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	ug	ug	
				Hepta Total:		0.0150	0.0150	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	ug	ug	
				Octa Total:		0.0150	0.0150	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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
				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	Flag
m/z 244		m/z 242		1.1 - 1.5			ug/mL	
11.473	1556	11.471	1336	1.2	0.4346		0.0108	
				TCMX Total:			0.0108	

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	
41.774	14894	41.774	12515	1.2	0.7098		0.0636	
				Deca Total:			0.0636	

TCMX Recovery %	54.2 %
Deca Recovery	63.6 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
33.428	264085	33.435	54420	4.9	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03090207"		"M03090207"		"M03090207"		"M03090207"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
15.178	199098	15.179	3030				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03090207"		"M03090207"		"M03090207"		"M03090207"		"M03090207"		"M03090207"	
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
								15.180	21367	15.178	199098

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03090207"		"M03090207"		"M03090207"		"M03090207"		"M03090207"		"M03090207"	
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
				15.180	21367	15.178	199098				

Extracted Ion Current Profiles

Pentachlorobiphenyls						
"M03090207"	"M03090207"	"M03090207"	"M03090207"	"M03090207"	"M03090207"	"M03090207"
m/z 394	m/z 396	m/z 398	m/z 322	m/z 360	m/z 362	m/z 323
	27.637 3955					

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03090207"	"M03090207"	"M03090207"	"M03090207"	"M03090207"	"M03090207"	"M03090207"	"M03090207"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
					27.637 3955		

Extracted Ion Current Profiles

Heptachlorobiphenyls					
"M03090207"	"M03090207"	"M03090207"	"M03090207"	"M03090207"	"M03090207"
m/z 394	m/z 396	m/z 322	m/z 324	m/z 326	m/z 462
	27.637 3955				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03090207"		"M03090207"				"M03090207"		"M03090207"			"M03090207"		"M03090207"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
11.473	1556	11.471	1336	424	240	33.428	264085	33.435	54420	188	15.178	199098	15.177	32318
31.221	2948	33.419	5745	426	241					189				
				428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	33.429	1671	33.432	1512
512	41.774	14894	41.774	12515(M)
			41.828	1061

Date Issued: November 06, 2014

Pace Analytical e-Report

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

Project ID: 115058 KEITH MIDDLE SCHOOL
Sampling Date(s): October 11, 2014
Lab Report ID: 14100477
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.

Dan Pfalzer
Laboratory Director

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

Pace Analytical Services, Inc.| 2190 Technology Drive | Schenectady, NY 12308
Phone: 518.346.4592 | internet: www.pacelabs.com

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Case Narrative

November 06, 2014

CASE NARRATIVE

This data package (SDG ID: 14100477) consists of 6 polyurethane foam (TO-10A) samples and 6 polyurethane foam with associated glass fiber filter (TO-4A) samples received on 10/14/2014. The samples are from Project Name: 115058 KEITH MIDDLE SCHOOL.

This sample delivery group consists of the following samples:

Lab Sample ID	Client ID	Collection Date
AR39372	VS-10-34	10/11/2014
AR39373	VS-10-34-DUP	10/11/2014
AR39374	VS-12-34	10/11/2014
AR39375	VS-1-34	10/11/2014
AR39376	VS-4-34	10/11/2014
AR39377	VS-TB-34	10/11/2014
AR39378	A-34	10/11/2014
AR39379	B-34	10/11/2014
AR39380	C-34	10/11/2014
AR39381	BG-34	10/11/2014
AR39382	BG-34-DUP	10/11/2014
AR39383	TB-34	10/11/2014

Sample Delivery and Receipt Conditions

(1.) All samples were delivered to the laboratory via FEDEX delivery service on 10/14/2014.

(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.

Note: Please see the communication log for more details regarding TO-4A media expiration date.

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.) The percent recovery for decachloro[13c12]biphenyl surrogate was below quality acceptance limits for samples (LAB ID: AR39372, AR39373, AR39375, AR39376 and AR39377) including associated laboratory control spike sample (LAB ID: AR39372L). The alternate surrogate was within limits. Please see associated form 2 for details.

PCB Homolog Analysis (TO-4A)

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-4A. The following technical and administrative items were noted for the analysis:

(1.) All quality assurance parameters were met for this analysis, unless otherwise noted.

Respectfully submitted,

Chelsea L. Farmer
Project Manager

S:\Lims Data\1410\14100477\Package\CN_14100477_Rev00.doc

Qualifier Definitions

Organic Laboratory Qualifiers

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

D - Surrogate recovery not evaluated against control limits due to sample dilution.

E - Denotes analyte concentration exceeded calibration range of instrument. Sample could not be re-analyzed 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).

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 %.

U - Denotes analyte not detected at concentration greater than the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

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

* - Value not within control limits.

Inorganic Laboratory Qualifiers

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

E - Denotes analyte concentration exceeded calibration range of instrument. Sample could not be re-analyzed 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).

U - Denotes analyte not detected at concentration greater than the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

* - Value not within control limits.

Communication Log

>>> "Gill, Dave" <DGill@trcsolutions.com> 10/16/2014 5:01 PM >>>

Yes analysis the pufs. The original cert will be fine since I also have a blank
David Gill

603 303-6507

-------- Original message --------
From: Chelsea Farmer <Chelsea.Farmer@pacelabs.com>
Date:10/16/2014 4:55 PM (GMT-05:00)
To: "Gill, Dave" <DGill@trcsolutions.com>
Cc: "Mulhall, John" <JMulhall@trcsolutions.com>
Subject: Fwd: Re: KMS Samples PO 71178

Hi Dave,

Just checking in again since I haven't heard back from you.

Would you still like us to analyze the TO-4 pufs? Or would like us to send you new media to re-collect?

Thanks,

Chelsea

Chelsea Farmer

Project Manager

Pace Analytical Services, Inc.

>>> Chelsea Farmer 10/14/2014 4:52 PM >>>

Hi Dave,

I left a voicemail for you and figured I would follow up with an email as well.

The TO-4 lot was verified clean on 9/2/2014. According to the method cartridges are considered clean for up for 30 days from the date of certification when stored in their sealed containers.

The lot expired on 10/2/2014 and the media was used on 10/11/2014. Would you like us to still analyze the TO-4 media?

Please let me know how you would like us to proceed.

Thank you,

Chelsea

Chelsea Farmer

Project Manager

Pace Analytical Services, Inc.

Sample Chain Of Custody

CHAIN OF CUSTODY RECORD

<14100477P1>

141004771

'roject Name: Keith Middle School

'roject No.: 223832

ampling Date(s): 10/11/14

aboratory: Pace

aboratory P.O.: **71178** please use this po#

hipping Date(s): 10/13/14

hipper's Name: TRC

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX	Description	ANALYSIS	Comments (volume m^3)	
'S-10-34	10/11/14		G	PUF	vent stack air	TO-10A	1.17	AR39372
'S-10-34-DUP	10/11/14		G	PUF	vent stack air	TO-10A	1.16	AR39373
'S-12-34	10/11/14		G	PUF	vent stack air	TO-10A	1.01	AR39374
'S-1-34	10/11/14		G	PUF	vent stack air	TO-10A	1.2	AR39375
S-4-34	10/11/14		G	PUF	vent stack air	TO-10A	1.2	AR39376
S-TB-34	10/11/14		G	PUF	trip blank	TO-10A	N/A	AR39377
0				0	0	0		
0				0	0	0		
-34	10/11/14		G	PUF/filter	ambient air , Community rm hallway	TO-4A	240.6	AR39378
-34	10/11/14		G	PUF/filter	ambient air , Aud	TO-4A	311	AR39379
-34	10/11/14		G	PUF/filter	ambient air , Hallway (rm 169)	TO-4A	320.8	AR39380
G-34	10/11/14		G	PUF/filter	background	TO-4A	281.9	AR39381
G-34-DUP	10/11/14		G	PUF/filter	background	TO-4A	276.6	AR39382
B-34	10/11/14		G	PUF/filter	trip blank	TO-4A	N/A	AR39383
0				0	0	0		
0				0	0	0		
2 UNUSED SPARE TO4A w/ FILTER								
2 UNUSED SPARE TO10A								

elinquished by: [signature] Date/Time: 10/13/14 1500 Relinquished by: VIA FED EX →

eceived by: VIA FED EX → Date/Time: 10/14/14 10:00 Received by: [signature] (PACE)

emarks (*): **Normal TAT. Please send data to David Gill dgill@trcsolutions.com**

Temp: 1.6° C

TRC

Pace Analytical

Sample Condition Upon Receipt

<14100477P2>

141004772

AR 10/14/14

CLIENT NAME: TRC-~~SM~~ DS

PROJECT : Keith Middle School

COURIER: FedEx ☒ UPS ☐ Client ☐ Pace ☐ Other ☐

TRACKING # 6044 9263 9310

CUSTODY 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): 1.6

BIOLOGICAL TISSUE IS FROZEN: Yes ☐ No ☐ N/A ☒

Temp should be above freezing to 6°C

				COMMENTS:
Chain of Custody Present:	☒Yes	☐No		1.
Chain of Custody Filled Out:	☒Yes	☐No		2. No collection times on CoC - but sample volumes were calculated by
Chain of Custody Relinquished:	☒Yes	☐No		3. client.
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	11.
Sample Labels match COC: - Includes date/time/ID/Analysis	☒Yes	☐No		12.
All containers needing preservation have been checked:	☐Yes	☐No	☒N/A	13.
All containers needing preservation are in compliance with EPA recommendation: - Exceptions that are not checked: VOA	☐Yes	☐No	☒N/A	Initial when completed: N/A — Lot # of added preservative: N/A
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A	14.
Trip Blank Present:	☐Yes	☐No	☒N/A	15.
Trip Blank Custody Seals Present:	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot #: N/A				

Sample Receipt form filled in: AJB 10/14/14

Line-Out (Includes Copying Shipping Documents and verifying sample pH): AJB 10/14/14

Log In (Includes notifying PM of any discrepacies and documenting in LIMS): AJB 10/14/14

Labeling (Includes Scanning Bottles and entering LAB IDs into pH logbook): AJB 10/14/14

LOGIN_SCUR_FORM_052914_Rev01_01

Sample Receipt

SAMPLE RECEIPT REPORT
14100477

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
LRF: 14100477
REPORT: CLP-LIKE FORMS
EDD: YES
LRF TAT: 2 WEEK

RECEIVED DATE: 10/14/2014 10:00
SHIPPED VIA: FEDEX
SHIPPING ID: 6044 9263 9310
NUMBER OF COOLERS: 1
CUSTODY SEAL INTACT: NA
COOLER STATUS: CHILLED
TEMPERATURE(S): [5] 1.6 °C

SAMPLE SEALS INTACT: NA
SAMPLES PRESERVED PER METHOD GUIDANCE: [1,2] YES
SAMPLES REC'D IN HOLDTIME: [3] YES
DISPOSAL: BY LAB (45 DAYS)
COC DISCREPANCY: NO

COMMENTS:
NO COLLECTION TIMES WRITTEN ON COC: CLIENT HAS CALCULATED OUT SAMPLE VOLUMES.

CLIENT ID (LAB ID)	TAT-DUE Date[4]	DATE-TIME SAMPLED	MATRIX	METHOD	TEST DESCRIPTION	QC REQUEST
VS-10-34 (AR39372)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-10-34-DUP (AR39373)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-12-34 (AR39374)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-1-34 (AR39375)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-4-34 (AR39376)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-TB-34 (AR39377)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
A-34 (AR39378)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
B-34 (AR39379)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
C-34 (AR39380)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
BG-34 (AR39381)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
BG-34-DUP (AR39382)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
TB-34 (AR39383)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	

[1] The pH preservation check of Oil and Grease (Method 1664) is performed as soon as possible after sample receipt and may not be included in this report.
[2] The 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.
[3] Samples 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.
[4] Samples 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.
[5] All 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.

Reporting Parameters and Lists

EPA 680 - PCBs by GCMS - (ug)

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

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

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

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2190 Technology Drive Schenectady, NY 12308 Phone 518.346.4592 Fax 518.381.6055

Internal Sample Tracking Record

EXTRACTION LOG

Prep Date: 10/16/14 **Batch ID: 29027** **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	289019	SBLK-01	AR39372B	PF10		E 680 A	SOX-PF10	N/A	1	18:15	10:15	NA	NA	1	10/18	Lot: 55120
2	289018	LCS-01	AR39372L	PF10		E 680 A	SOX-PF10	N/A	1	18:15	10:15	NA	NA	1	10/18	Lot: 55120
3	289017	LCSD-01	AR39372S	PF10		E 680 A	SOX-PF10	N/A	1	18:15	10:15	NA	NA	1	10/18	Lot: 55120
4	289011	14100477-01	AR39372	PF10		E 680 A	SOX-PF10	N/A	1170000	18:15	10:15	NA	NA	1	10/18	Lot: 53993(14081755)
5	289012	14100477-02	AR39373	PF10		E 680 A	SOX-PF10	N/A	1160000	18:15	10:15	NA	NA	1	10/18	Lot: 53993(14081755)
6	289013	14100477-03	AR39374	PF10		E 680 A	SOX-PF10	N/A	1010000	18:15	10:15	NA	NA	1	10/18	Lot: 53993(14081755)
7	289014	14100477-04	AR39375	PF10		E 680 A	SOX-PF10	N/A	1200000	18:15	10:15	NA	NA	1	10/18	Lot: 53993(14081755)
8	289015	14100477-05	AR39376	PF10		E 680 A	SOX-PF10	N/A	1200000	18:15	10:15	NA	NA	1	10/18	Lot: 53993(14081755)
9	289016	14100477-06	AR39377	PF10		E 680 A	SOX-PF10	N/A	1	18:15	10:15	NA	NA	1	10/18	Lot: 53993(14081755)

Solvent, Surrogate, Spike, and Acid Information

Item	Lot Number	Amount (uL)	Conc (ug/mL)	B	L	LD	S	D	M	K
Sulfuric Acid CURRENT	**0000054026**	**NA**		p	p	p	p	¨	¨	¨
Ethyl Ether (fisher) CURRENT	**134083**	**NA**		p	p	p	p	¨	¨	¨
TCMX Surrogate STD	**070314P85B BXI**	**100**	**0.20**	p	p	p	p	¨	¨	¨
Mercury CURRENT	**082414**	**NA**		p	p	p	p	¨	¨	¨
EPA 680 Spike STD	**092614P97B BXI**	**100**		¨	p	p	¨	¨	¨	¨
DCBP-C13	**090214P93C BXI**	**100**	**1.0**	p	p	p	p	¨	¨	¨
Hexane (Dewar)	**DL495B**	**NA**		p	p	p	p	¨	¨	¨
10% Florisil	**101314MLB3P81C**	**NA**		p	p	p	p	¨	¨	¨

Analyst Review: _____
Kudakwashe Chinhoyi

Peer Review: _____
Diyana Azhari

Print Date: 11/3/2014
Lims Version : 5.0.8.7

EXTRACTION LOG

Prep Date: 10/18/14 **Batch ID: 29058** **Method: EPA TO-4A**

	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	289401	SBLK-05	AR39378B	PF4		E 680 A	SOX-PF4	N/A	1	16:15	08:15	NA	NA	1	10/19	Lot: 092514-1
2	289400	LCS-05	AR39378L	PF4		E 680 A	SOX-PF4	N/A	1	16:15	08:15	NA	NA	1	10/19	Lot: 092514-1
3	289399	LCSD-05	AR39378S	PF4		E 680 A	SOX-PF4	N/A	1	16:15	08:15	NA	NA	1	10/19	Lot: 092514-1
4	289393	14100477-07	AR39378	PF4		E 680 A	SOX-PF4	N/A	240600000	16:15	08:15	NA	NA	1	10/19	Lot: 082014-0(14081756)
5	289394	14100477-08	AR39379	PF4		E 680 A	SOX-PF4	N/A	311000000	16:15	08:15	NA	NA	1	10/19	Lot: 082014-0(14081756)
6	289395	14100477-09	AR39380	PF4		E 680 A	SOX-PF4	N/A	320800000	16:15	08:15	NA	NA	1	10/19	Lot: 082014-0(14081756)
7	289396	14100477-10	AR39381	PF4		E 680 A	SOX-PF4	N/A	281900000	16:15	08:15	NA	NA	1	10/19	Lot: 082014-0(14081756)
8	289397	14100477-11	AR39382	PF4		E 680 A	SOX-PF4	N/A	276600000	16:15	08:15	NA	NA	1	10/19	Lot: 082014-0(14081756)
9	289398	14100477-12	AR39383	PF4		E 680 A	SOX-PF4	N/A	1	16:15	08:15	NA	NA	1	10/19	Lot: 082014-0(14081756)

Solvent, Surrogate, Spike, and Acid Information

Item	Lot Number	Amount (uL)	Conc (ug/mL)	B	L	LD	S	D	M	K
Sulfuric Acid CURRENT	**0000054026**	**NA**		p	p	p	p	¨	¨	¨
Ethyl Ether (fisher) CURRENT	**134083**	**NA**		p	p	p	p	¨	¨	¨
TCMX Surrogate STD	**070314P85B BXI**	**100**	**0.20**	p	p	p	p	¨	¨	¨
Mercury CURRENT	**082414**	**NA**		p	p	p	p	¨	¨	¨
EPA 680 Spike STD	**092614P97B BXI**	**100**		¨	p	p	¨	¨	¨	¨
DCBP-C13	**090214P93C BXI**	**100**	**1.0**	p	p	p	p	¨	¨	¨
Hexane (Dewar)	**DL495B**	**NA**		p	p	p	p	¨	¨	¨
10% Florisil	**101314MLB3P81C**	**NA**		p	p	p	p	¨	¨	¨

Analyst Review: Kudakwashe Chinhoyi

Peer Review: Melissa Harris

Print Date: 11/3/2014
Lims Version : 5.0.8.7

Signal/Noise Report

Date : 07-Oct-2014 15:35
Data File : ITS MS M03100709.MS, Ion 241.00
Inj. Date : 07-OCT-2014 13:25

RMS Noise : 9.67359
RMS Noise time window: 33.130 to 35.130 min.
Number of peaks: 1

Time	Start Time	End Time	Area	Area%	Height	Height%	Peak Type	S/N
35.326	35.202	35.448	60002	100.00	14669	100.00	**	1516.4

Signal/Noise Report

Date : 07-Oct-2014 15:35
Data File : ITS MS M03100709.MS, Ion 499.00
Inj. Date : 07-OCT-2014 13:25

RMS Noise : 8.43941
RMS Noise time window: 41.500 to 43.500 min.
Number of peaks: 1

Time	Start Time	End Time	Area	Area%	Height	Height%	Peak Type	S/N
43.712	43.648	43.811	1231	100.00	291	100.00	**	34.5

PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: EPA680 - 100714.b

	Method #	PACE Sample ID	Saturn File ID	Date Analyzed	DIL	COMMENTS
1	dftpp	DFTPP7	M03100701	10-7-14		
2	EPA 680	WDM3-1007A	02			
3		iCAL-7	03			
4		iCAL-6	04			
5		iCAL-5	05			
6		iCAL-4	06			
7		iCAL-3	07			
8		iCAL-2	08			
9		iCAL-1	09			
10		ICV3-1007A	10			
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

10-7-14

CAL STD:	031114P68B B	CCC STD:	100614P101A B	WDM STD:	100614P101B B
Tune STD:	053014P80A B	Internal STD:	030714P66C B		

STANDARD CODES REFER TO STANDARD PREP BOOK

BOOK: 22
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PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: 102014-6806.5

	Method #	PACE Sample ID	Saturn File ID	Date Analyzed	DIL	COMMENTS
1	dfTPP	DFTPP-3	M03102011	10-20-14		
2	EPA 6800	WDM3-1020B	12			
3		CCV3-1020C	13			
4		AR39372B	14			
5		AR39372L	15			
6		AR39372S	16			
7		AR39372	17			
8		AR39373	18			
9		AR39374	19			
10		AR39375	20			
11		AR39376	21	10-21-14		
12		AR39377	22			
13		AR39383	23			
14		CCV3-1020D	24			
15						
16						
17						
18						10-21-14
19						
20						

CAL STD:	031114P68B BFI	CCC STD: 100614P101A BFI	WDM STD: 100614P101B BFI
Tune STD:	053014P80A BFI	Internal STD: 030714P66C BFI	

STANDARD CODES REFER TO STANDARD PREP BOOK

BOOK: 22
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S:\LOGBOOKS\SVOA\SVLOG-GCMS03.xls, rev. 00, 3/3/06, SVOA

PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: 102114-680.5

	Method #	PACE Sample ID	Saturn File ID	Date Analyzed	DIL	COMMENTS
1	dfTPP	DFTPP-1	M03102101	10-21-14		
2	EPA680	WDM3-1021A	02			
3		CCV3-1021A	03			
4		AR39378B	04			
5		AR39378L	05			
6		AR39378S	06			
7		AR39378	07		2	100µl → 200µl
8		AR39379	08		2	↓
9		AR39380	09		2	
10		AR39381	10			
11		AR39382	11			
12		CCV3-1021B	12			
13						
14						
15						
16						
17						
18						By 10/21/14
19						
20						

CAL STD:	031114P68B BET	CCC STD:	100614P101A BET	WDM STD:	100614P101B BET
Tune STD:	053014P80A BET	Internal STD:	030714PLCC BET		

STANDARD CODES REFER TO STANDARD PREP BOOK

BOOK: 22
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Surrogate Recovery Summary

2D-1
SURROGATE RECOVERY

Laboratory Name: Pace Analytical Services, Inc. SDG: 14100477

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-01	AR39372B	MS03-472-14	63.4	82.2			0
LCS-01	AR39372L	MS03-472-15	56.6	66.0 *			1
LCSD-01	AR39372S	MS03-472-16	60.5	110			0
14100477-01	AR39372	MS03-472-17	63.3	59.0 *			1
14100477-02	AR39373	MS03-472-18	61.7	68.5 *			1
14100477-03	AR39374	MS03-472-19	66.0	73.6			0
14100477-04	AR39375	MS03-472-20	57.8	64.0 *			1
14100477-05	AR39376	MS03-472-21	51.6	63.5 *			1
14100477-06	AR39377	MS03-472-22	55.0	66.8 *			1

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)

Form II-CLP-680(PACE)

Print Date: 11/6/2014
Lims Version : 5.0.8.7

2D-1
SURROGATE RECOVERY

Laboratory Name: Pace Analytical Services, Inc. SDG: 14100477

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-05	AR39378B	MS03-473-4	58.9	68.9			0
LCS-05	AR39378L	MS03-473-5	61.0	98.1			0
LCSD-05	AR39378S	MS03-473-6	63.4	63.0			0
14100477-07	AR39378	MS03-473-7	98.4	53.6			0
14100477-08	AR39379	MS03-473-8	79.7	54.6			0
14100477-09	AR39380	MS03-473-9	65.9	66.9			0
14100477-10	AR39381	MS03-473-10	63.8	72.6			0
14100477-11	AR39382	MS03-473-11	60.2	68.9			0
14100477-12	AR39383	MS03-472-23	63.7	54.8			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	(17.9-137)
SURR2 = DECACHLORO[13C12]BIPHENYL	(42.5-134)

Form II-CLP-680(PACE)

Print Date: 11/6/2014
Lims Version : 5.0.8.7

Laboratory Control Spike 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: 14100477

LCS LRF ID: LCS-05 LCSD LRF ID: LCSD-05

LCS Lab File ID: MS03-473-5 LCSD Lab File ID: MS03-473-6

LCS Sample Inj Date: 10/21/2014 08:01:00 LCSD Sample Inj Date: 10/21/2014 08:49:00

LCS Lab Sample ID: AR39378L LCSD Lab Sample ID: AR39378S

COMPOUND	SPIKE ADDED (ug)	LCS CONCENTRATION (ug)	LCS PERCENT RECOVERY #	QC LIMITS[1] PERCENT RECOVERY
2-Chlorobiphenyl	1.00	0.680	68.0	(28.7-78.9)
2,3-Dichlorobiphenyl	1.00	0.716	71.6	(30.8-82.6)
2,4,5-Trichlorobiphenyl	1.00	0.745	74.5	(34.4-86.8)
2,2',4,6-Tetrachlorobiphenyl	2.00	1.53	76.5	(34.6-86.9)
2,2'3,4,5'-Pentachlorobiphenyl	2.00	1.66	83.2	(37.8-91.9)
2,2'4,4',5,6'-Hexachlorobiphenyl	2.00	1.66	82.8	(40.9-94.8)
2,2',3,4',5,6,6'-Heptachlorobiphenyl	3.00	2.46	82.0	(41.7-98.0)
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	3.00	2.48	82.6	(43.2-102)
Decachlorobiphenyl	5.00	4.30	86.0	(46.4-102)

COMPOUND	SPIKE ADDED (ug)	LCSD CONCENTRATION (ug)	LCSD PERCENT RECOVERY #	RPD #	QC LIMITS[1] RPD	REC
2-Chlorobiphenyl	1.00	0.649	64.9	4.67	40	(28.7-78.9)
2,3-Dichlorobiphenyl	1.00	0.691	69.1	3.55	40	(30.8-82.6)
2,4,5-Trichlorobiphenyl	1.00	0.724	72.4	2.86	40	(34.4-86.8)
2,2',4,6-Tetrachlorobiphenyl	2.00	1.45	72.4	5.51	40	(34.6-86.9)
2,2'3,4,5'-Pentachlorobiphenyl	2.00	1.58	79.2	4.93	40	(37.8-91.9)
2,2'4,4',5,6'-Hexachlorobiphenyl	2.00	1.61	80.4	2.94	40	(40.9-94.8)
2,2',3,4',5,6,6'-Heptachlorobiphenyl	3.00	2.36	78.7	4.11	40	(41.7-98.0)
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	3.00	2.44	81.4	1.46	40	(43.2-102)
Decachlorobiphenyl	5.00	4.26	85.2	0.935	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:

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: 14100477

LCS LRF ID: LCS-01 LCSD LRF ID: LCSD-01

LCS Lab File ID: MS03-472-15 LCSD Lab File ID: MS03-472-16

LCS Sample Inj Date: 10/20/2014 19:44:00 LCSD Sample Inj Date: 10/20/2014 20:33:00

LCS Lab Sample ID: AR39372L LCSD Lab Sample ID: AR39372S

COMPOUND	SPIKE ADDED (ug)	LCS CONCENTRATION (ug)	LCS PERCENT RECOVERY #	QC LIMITS[1] PERCENT RECOVERY
2-Chlorobiphenyl	1.00	0.638	63.8	(28.7-78.9)
2,3-Dichlorobiphenyl	1.00	0.649	64.9	(30.8-82.6)
2,4,5-Trichlorobiphenyl	1.00	0.695	69.5	(34.4-86.8)
2,2',4,6-Tetrachlorobiphenyl	2.00	1.41	70.3	(34.6-86.9)
2,2'3,4,5'-Pentachlorobiphenyl	2.00	1.48	74.1	(37.8-91.9)
2,2'4,4',5,6'-Hexachlorobiphenyl	2.00	1.53	76.4	(40.9-94.8)
2,2',3,4',5,6,6'-Heptachlorobiphenyl	3.00	2.28	76.0	(41.7-98.0)
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	3.00	2.36	78.7	(43.2-102)
Decachlorobiphenyl	5.00	4.09	81.9	(46.4-102)

COMPOUND	SPIKE ADDED (ug)	LCSD CONCENTRATION (ug)	LCSD PERCENT RECOVERY #	RPD #	QC LIMITS[1] RPD	REC
2-Chlorobiphenyl	1.00	0.684	68.4	6.96	40	(28.7-78.9)
2,3-Dichlorobiphenyl	1.00	0.701	70.1	7.70	40	(30.8-82.6)
2,4,5-Trichlorobiphenyl	1.00	0.763	76.3	9.33	40	(34.4-86.8)
2,2',4,6-Tetrachlorobiphenyl	2.00	1.50	75.1	6.60	40	(34.6-86.9)
2,2'3,4,5'-Pentachlorobiphenyl	2.00	1.70	85.1	13.8	40	(37.8-91.9)
2,2'4,4',5,6'-Hexachlorobiphenyl	2.00	1.70	84.8	10.4	40	(40.9-94.8)
2,2',3,4',5,6,6'-Heptachlorobiphenyl	3.00	2.56	85.3	11.5	40	(41.7-98.0)
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	3.00	2.57	85.6	8.40	40	(43.2-102)
Decachlorobiphenyl	5.00	4.55	91.1	10.6	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:	14100477
ELAP ID No:	11078	Blank Sample ID:	SBLK-01
Matrix:	Polyurethane Foam (PF10)	Method Blank ID:	AR39372B
Instrument ID:	MS03	Lab File ID:	MS03-472-14
Extraction Type:	TO-10A	Date Extracted:	10/16/2014
GC Column (1):	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm	Date Analyzed:	10/20/2014
		Time Analyzed:	18:55:00

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE / TIME ANALYZED
LCS-01(LAB CONTROL SPIKE)	AR39372L	MS03-472-15	10/20/2014 19:44:00
LCSD-01(LAB CONTROL SPIKE DUPLICATE)	AR39372S	MS03-472-16	10/20/2014 20:33:00
VS-10-34	AR39372	MS03-472-17	10/20/2014 21:22:00
VS-10-34-DUP	AR39373	MS03-472-18	10/20/2014 22:11:00
VS-12-34	AR39374	MS03-472-19	10/20/2014 22:59:00
VS-1-34	AR39375	MS03-472-20	10/20/2014 23:48:00
VS-4-34	AR39376	MS03-472-21	10/21/2014 00:37:00
VS-TB-34	AR39377	MS03-472-22	10/21/2014 01:26:00

FORM 4
EPA 680 METHOD BLANK SUMMARY

Laboratory Name:	Pace Analytical Services, Inc.	SDG No:	14100477
ELAP ID No:	11078	Blank Sample ID:	SBLK-05
Matrix:	Polyurethane Foam (PF4)	Method Blank ID:	AR39378B
Instrument ID:	MS03	Lab File ID:	MS03-473-4
Extraction Type:	TO-4A	Date Extracted:	10/18/2014
GC Column (1):	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm	Date Analyzed:	10/21/2014
		Time Analyzed:	07:12:00

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE / TIME ANALYZED
TB-34	AR39383	MS03-472-23	10/21/2014 02:15:00
LCS-05(LAB CONTROL SPIKE)	AR39378L	MS03-473-5	10/21/2014 08:01:00
LCSD-05(LAB CONTROL SPIKE DUPLICATE)	AR39378S	MS03-473-6	10/21/2014 08:49:00
A-34	AR39378	MS03-473-7	10/21/2014 09:38:00
B-34	AR39379	MS03-473-8	10/21/2014 10:27:00
C-34	AR39380	MS03-473-9	10/21/2014 11:16:00
BG-34	AR39381	MS03-473-10	10/21/2014 12:05:00
BG-34-DUP	AR39382	MS03-473-11	10/21/2014 12:54:00

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.: EPA680-100714.B

Lab File ID: M03100701 DFTPP Injection Date: 10/07/14

Instrument ID: GCMS03 DFTPP Injection Time: 0714

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	49.3
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	6.5
275	10.0 - 30.0% of mass 198	11.2
365	Greater than 1.0% of mass 198	4.35
441	Present, but less than mass 443	5.1
442	40.0 - 110.0% of mass 198	72.8
443	17.0 - 23.0% of mass 442	14.1 (19.4)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	WDM3-1007A	WDM3-1007A	M03100702	10/07/14	0743
02	ICAL-7	ICAL-7	M03100703	10/07/14	0831
03	ICAL-6	ICAL-6	M03100704	10/07/14	0920
04	ICAL-5	ICAL-5	M03100705	10/07/14	1009
05	ICAL-4	ICAL-4	M03100706	10/07/14	1058
06	ICAL-3	ICAL-3	M03100707	10/07/14	1147
07	ICAL-2	ICAL-2	M03100708	10/07/14	1236
08	ICAL-1	ICAL-1	M03100709	10/07/14	1325
09	ICV3-1007A	ICV3-1007A	M03100710	10/07/14	1442
10					
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17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V SV

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100701.d Page 1

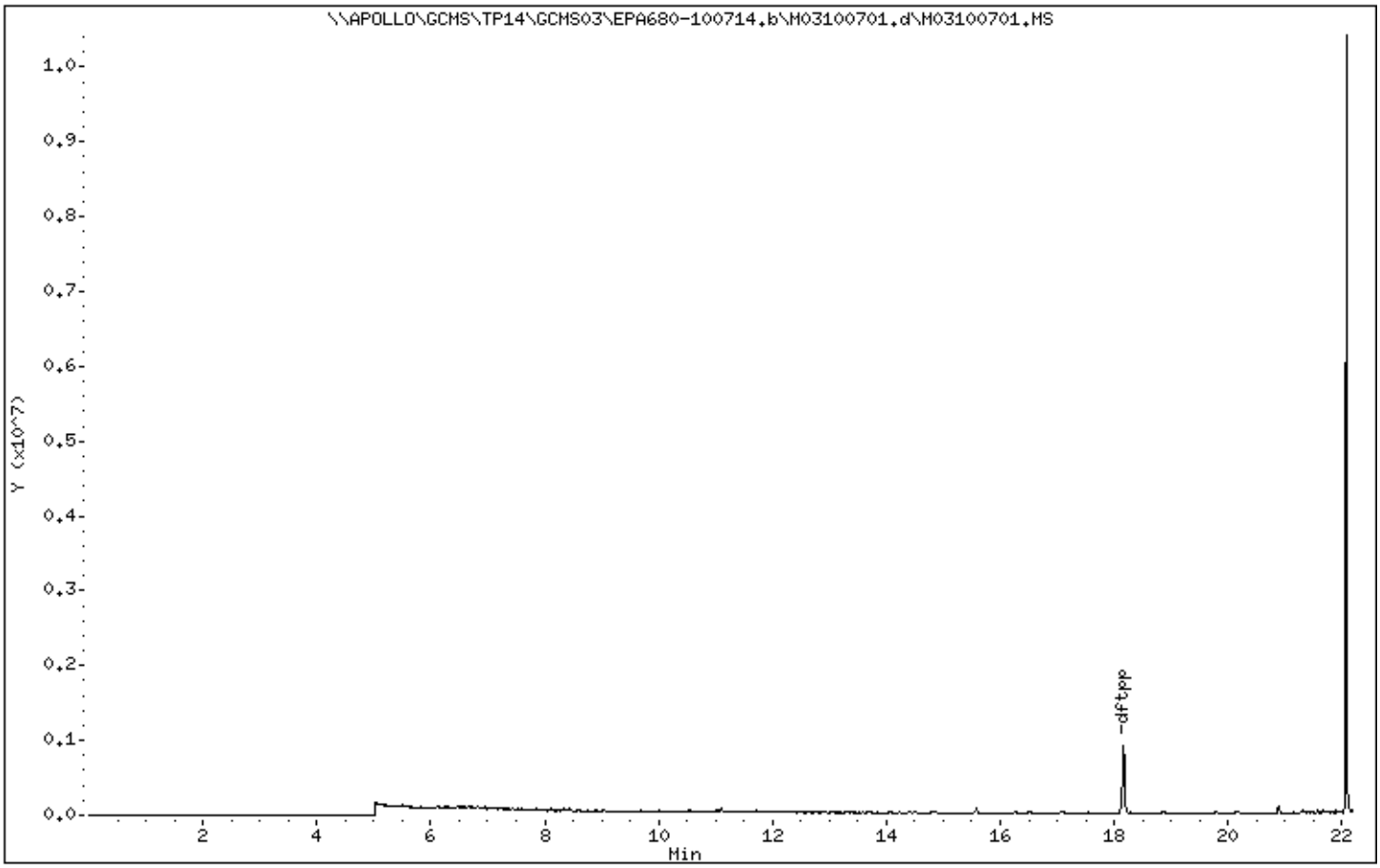
Date : 07-OCT-2014 07:14

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25



Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100701.d

Date : 07-OCT-2014 07:14

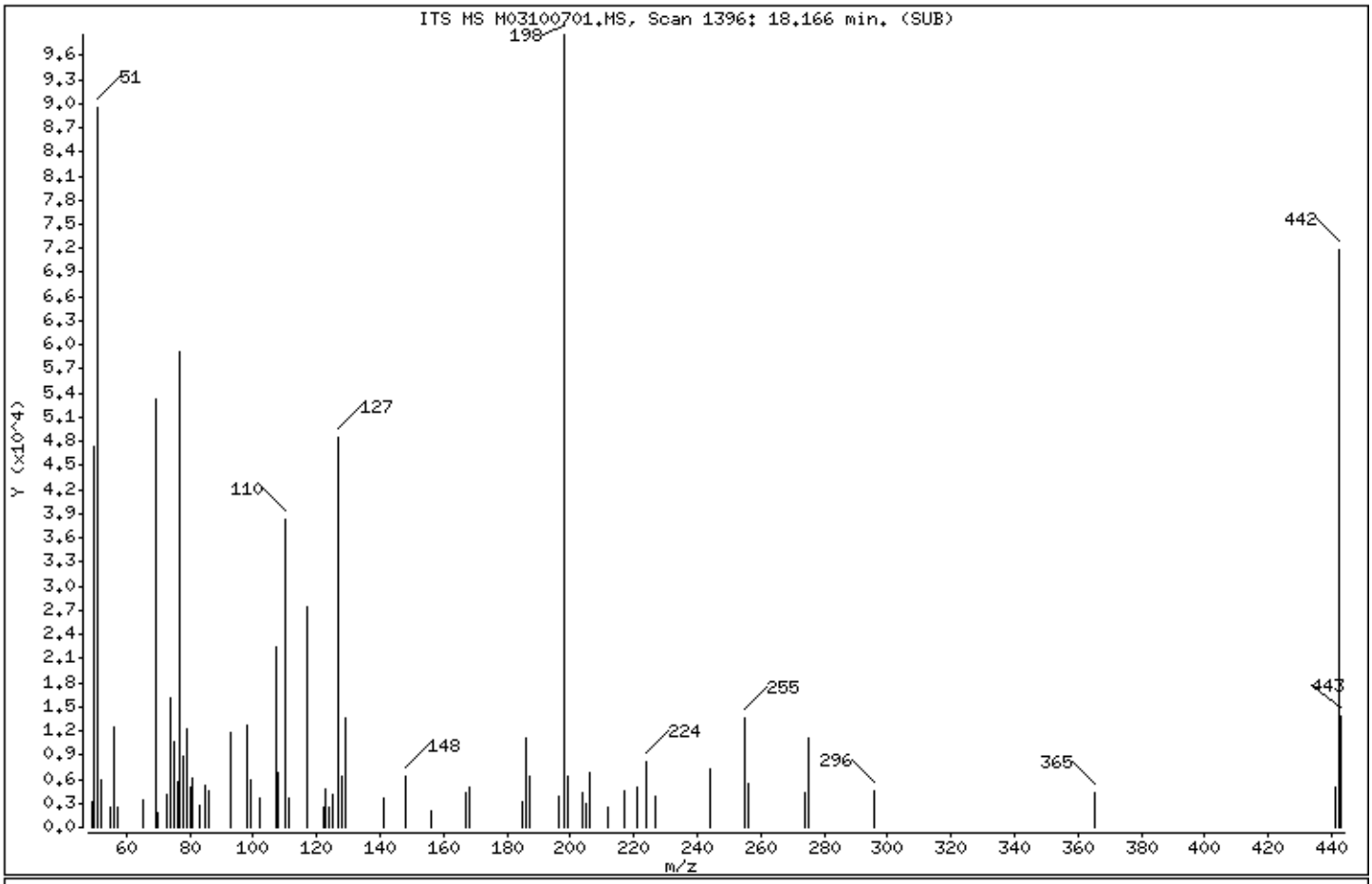
Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

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	49.28
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.52
275	10.00 - 30.00% of mass 198	11.23
365	Greater than 1.00% of mass 198	4.35
441	Present, but less than mass 443	5.07
442	40.00 - 110.00% of mass 198	72.83
443	17.00 - 23.00% of mass 442	14.13 (19.40)

Date : 07-OCT-2014 07:14

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25

Data File: M03100701.d
Spectrum: ITS MS M03100701.MS, Scan 1396: 18.166 min. (SUB)
Location of Maximum: 198.00
Number of points: 67

m/z	Y	m/z	Y	m/z	Y	m/z	Y
49.00	3112	80.00	5000	125.00	4177	206.00	6785
50.00	47456	81.00	6140	127.00	48568	212.00	2456
51.00	89584	83.00	2715	128.00	6428	217.00	4642
52.00	5988	85.00	5258	129.00	13514	221.00	5000
55.00	2466	86.00	4642	141.00	3571	224.00	8214
56.00	12402	93.00	11785	148.00	6428	227.00	3928
57.00	2554	98.00	12710	156.00	2142	244.00	7142
65.00	3399	99.00	5918	167.00	4285	255.00	13571
69.00	53256	102.00	3571	168.00	5000	256.00	5357
70.00	1847	107.00	22384	185.00	3214	274.00	4285
73.00	4023	108.00	6734	186.00	11071	275.00	11071
74.00	16071	110.00	38384	187.00	6428	296.00	4642
75.00	10714	111.00	3595	196.00	3890	365.00	4285
76.00	5631	117.00	27496	198.00	98568	441.00	5000
77.00	59136	122.00	2424	199.00	6428	442.00	71784
78.00	8864	123.00	4821	204.00	4285	443.00	13928
79.00	12270	124.00	2398	205.00	2857		

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.: 14100477TRC-DS

Lab File ID: M03102011 DFTPP Injection Date: 10/20/14

Instrument ID: GCMS03 DFTPP Injection Time: 1626

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	46.6
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	8.4
275	10.0 - 30.0% of mass 198	13.7
365	Greater than 1.0% of mass 198	3.47
441	Present, but less than mass 443	6.6
442	40.0 - 110.0% of mass 198	47.5
443	17.0 - 23.0% of mass 442	10.1 (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	WDM3-1020B	WDM3-1020B	M03102012	10/20/14	1717
02	CCV3-1020C	CCV3-1020C	M03102013	10/20/14	1806
03	AR39372BLANK	AR39372B	M03102014	10/20/14	1855
04	AR39372LCS	AR39372L	M03102015	10/20/14	1944
05	AR39372S	AR39372S	M03102016	10/20/14	2033
06	VS-10-34	AR39372	M03102017	10/20/14	2122
07	VS-10-34-DUP	AR39373	M03102018	10/20/14	2211
08	VS-12-34	AR39374	M03102019	10/20/14	2259
09	VS-1-34	AR39375	M03102020	10/20/14	2348
10	VS-4-34	AR39376	M03102021	10/21/14	0037
11	VS-TB-34	AR39377	M03102022	10/21/14	0126
12	TB-34	AR39383	M03102023	10/21/14	0215
13	CCV3-1020D	CCV3-1020D	M03102024	10/21/14	0304
14					
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20					
21					
22					

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FORM V SV

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102011.d Page 1

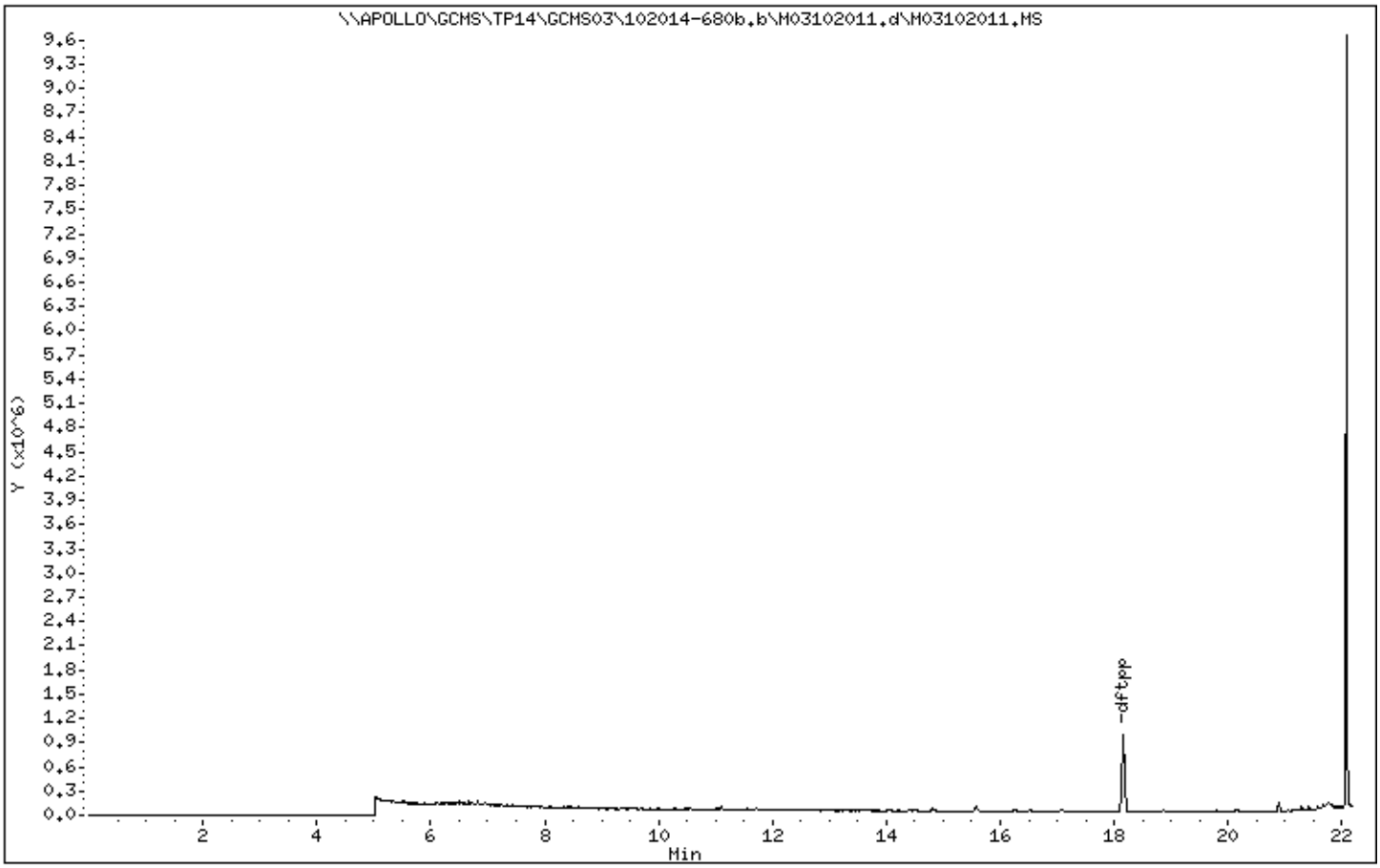
Date : 20-OCT-2014 16:26

Client ID: 20ng DFTPP-3 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-3

Operator: RMS

Column phase: DBXLB Column diameter: 0.25



Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102011.d

Date : 20-OCT-2014 16:26

Client ID: 20ng DFTPP-3

Instrument: GCMS03.i

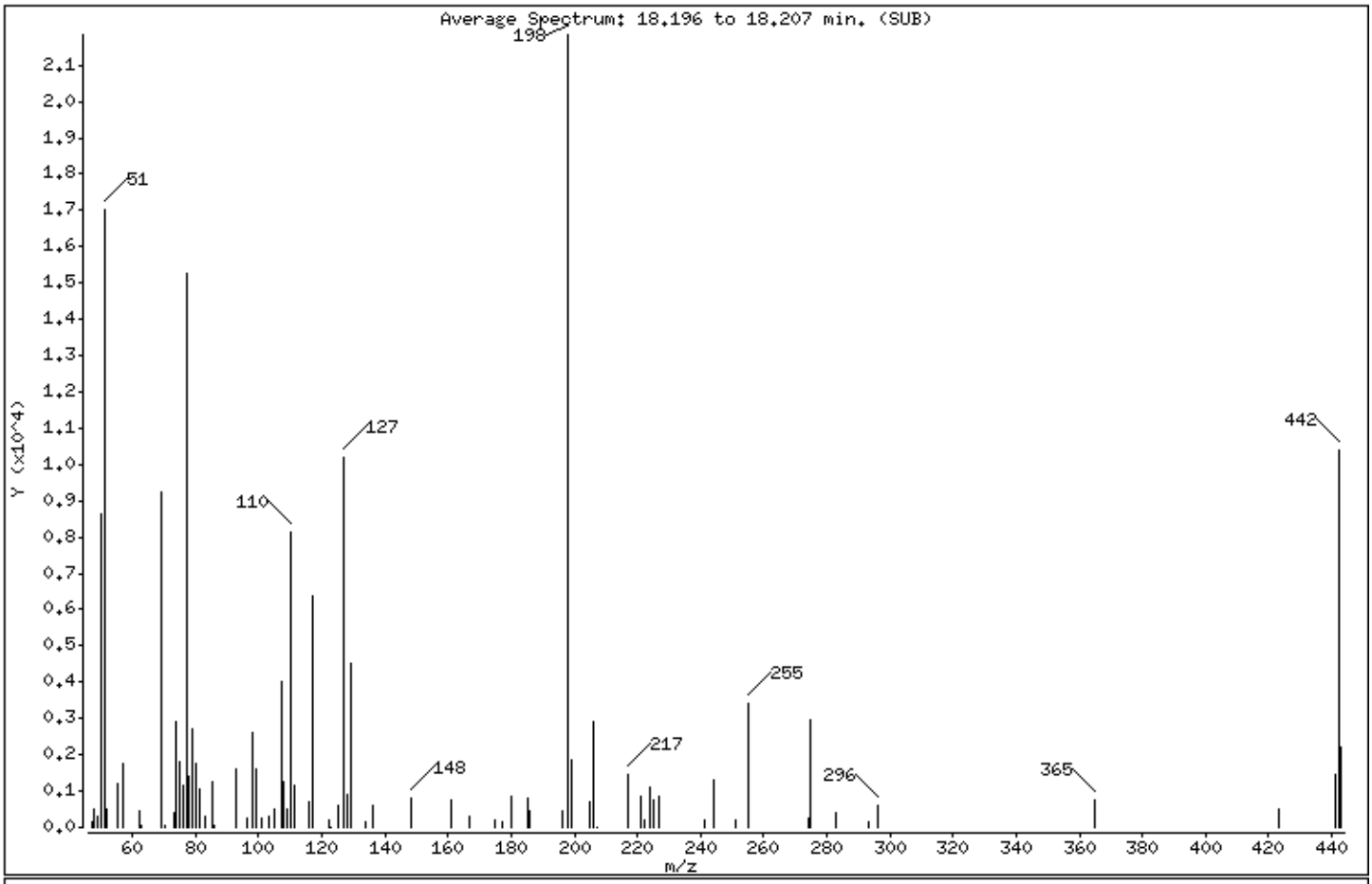
Sample Info: 20ng DFTPP-3

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	46.56
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	8.44
275	10.00 - 30.00% of mass 198	13.67
365	Greater than 1.00% of mass 198	3.47
441	Present, but less than mass 443	6.57
442	40.00 - 110.00% of mass 198	47.51
443	17.00 - 23.00% of mass 442	10.08 (21.22)

Date : 20-OCT-2014 16:26

Client ID: 20ng DFTPP-3 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-3

Operator: RMS

Column phase: DBXLB Column diameter: 0.25

Data File: M03102011.d
Spectrum: Average Spectrum: 18.196 to 18.207 min. (SUB)
Location of Maximum: 198.00
Number of points: 80

m/z	Y	m/z	Y	m/z	Y	m/z	Y
47.00	142	83.00	284	128.00	886	224.00	1109
48.00	525	85.00	1268	129.00	4519	225.00	746
49.00	299	86.00	42	134.00	142	227.00	866
50.00	8632	93.00	1597	136.00	584	241.00	183
51.00	17032	96.00	266	148.00	817	244.00	1323
52.00	492	98.00	2586	161.00	729	251.00	183
55.00	1181	99.00	1592	167.00	325	255.00	3422
57.00	1735	101.00	244	175.00	203	274.00	244
62.00	467	103.00	306	177.00	142	275.00	2987
63.00	43	105.00	485	180.00	876	283.00	408
69.00	9232	107.00	3995	185.00	807	293.00	142
70.00	64	108.00	1257	186.00	447	296.00	584
73.00	424	109.00	499	196.00	467	365.00	759
74.00	2926	110.00	8151	198.00	21840	423.00	525
75.00	1796	111.00	1173	199.00	1844	441.00	1435
76.00	1167	116.00	700	205.00	700	442.00	10378
77.00	15288	117.00	6374	206.00	2896	443.00	2202
78.00	1398	122.00	203	207.00	12		
79.00	2709	123.00	2	217.00	1468		
80.00	1747	125.00	580	221.00	830		
81.00	1071	127.00	10171	222.00	183		

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.: 14100477TRC-DS

Lab File ID: M03102101 DFTPP Injection Date: 10/21/14

Instrument ID: GCMS03 DFTPP Injection Time: 0508

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	45.8
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	5.5
275	10.0 - 30.0% of mass 198	17.9
365	Greater than 1.0% of mass 198	4.22
441	Present, but less than mass 443	7.8
442	40.0 - 110.0% of mass 198	59.1
443	17.0 - 23.0% of mass 442	11.7 (19.8)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	WDM3-1021A	WDM3-1021A	M03102102	10/21/14	0534
02	CCV3-1021A	CCV3-1021A	M03102103	10/21/14	0623
03	AR39378BLANK	AR39378B	M03102104	10/21/14	0712
04	AR39378LCS	AR39378L	M03102105	10/21/14	0801
05	AR39378S	AR39378S	M03102106	10/21/14	0849
06	A-34	AR39378	M03102107	10/21/14	0938
07	B-34	AR39379	M03102108	10/21/14	1027
08	C-34	AR39380	M03102109	10/21/14	1116
09	BG-34	AR39381	M03102110	10/21/14	1205
10	BG-34-DUP	AR39382	M03102111	10/21/14	1254
11	CCV3-1021B	CCV3-1021B	M03102112	10/21/14	1343
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V SV

Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102101.d Page 1

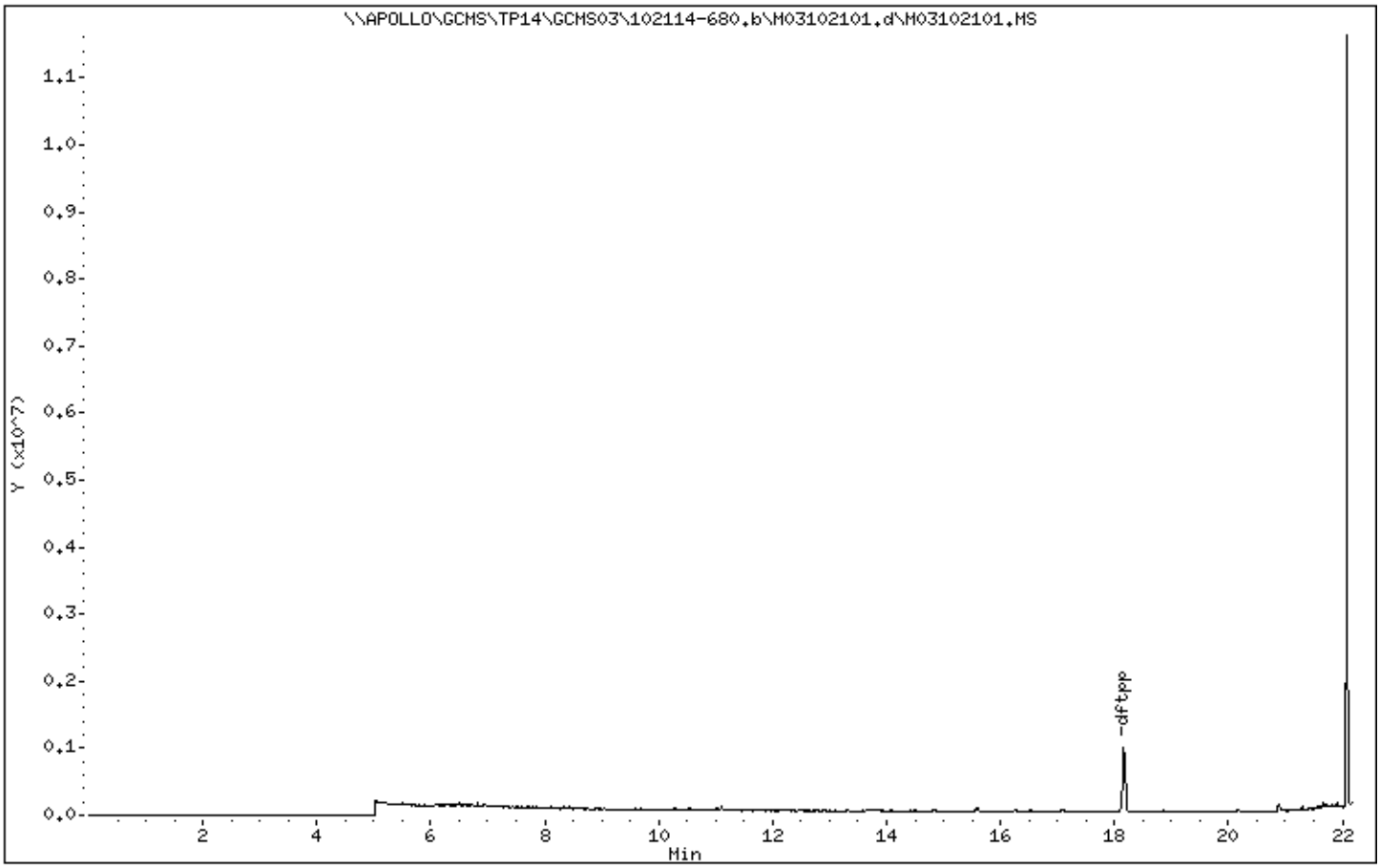
Date : 21-OCT-2014 05:08

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25



Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102101.d

Date : 21-OCT-2014 05:08

Client ID: 20ng DFTPP-1

Instrument: GCMS03.i

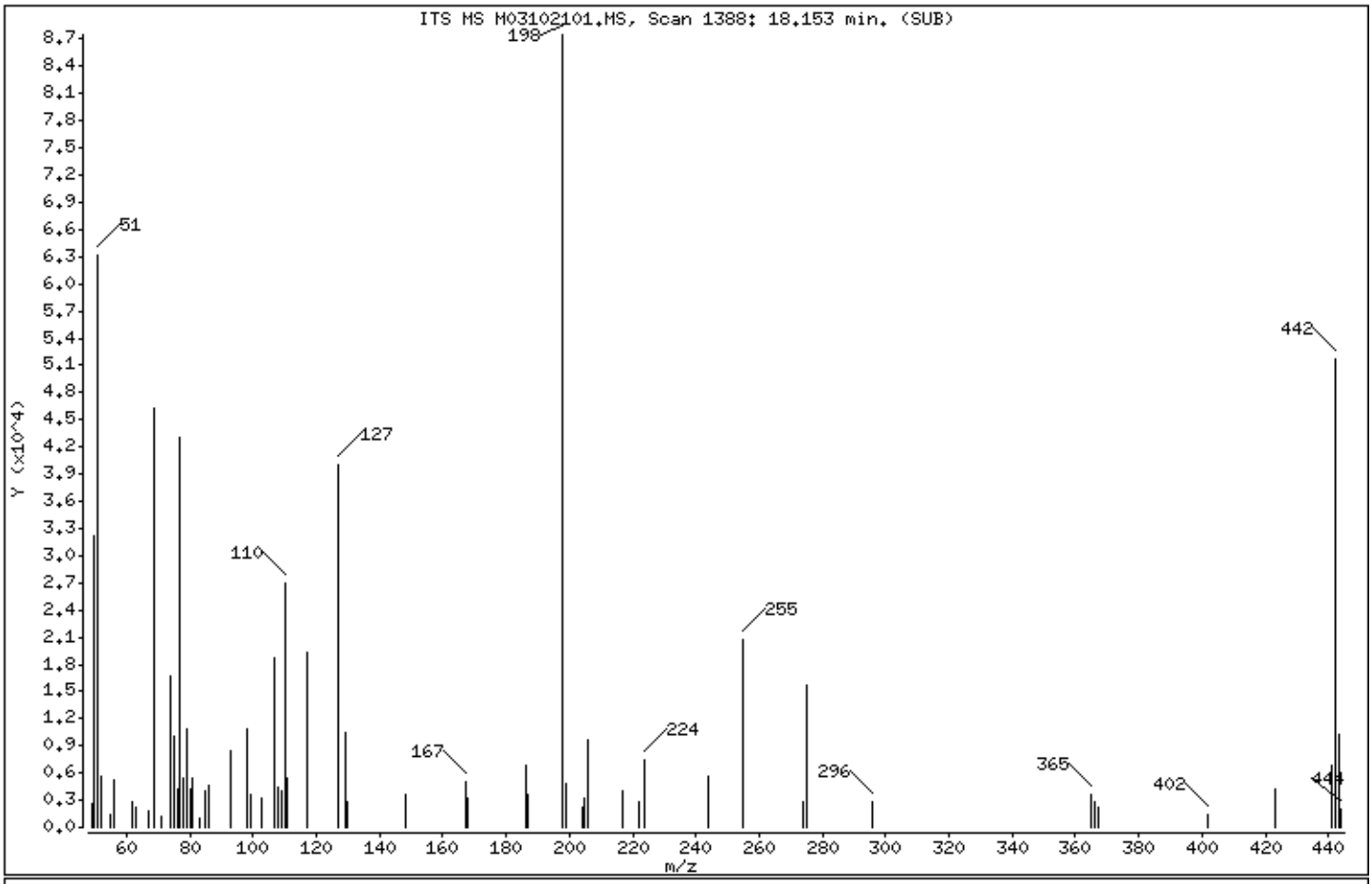
Sample Info: 20ng DFTPP-1

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	45.78
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	5.52
275	10.00 - 30.00% of mass 198	17.86
365	Greater than 1.00% of mass 198	4.22
441	Present, but less than mass 443	7.79
442	40.00 - 110.00% of mass 198	59.09
443	17.00 - 23.00% of mass 442	11.69 (19.78)

Date : 21-OCT-2014 05:08

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25

Data File: M03102101.d
Spectrum: ITS MS M03102101.MS, Scan 1388: 18.153 min. (SUB)
Location of Maximum: 198.00
Number of points: 62

m/z	Y	m/z	Y	m/z	Y	m/z	Y
49.00	2535	79.00	10872	127.00	40056	244.00	5681
50.00	32256	80.00	4174	129.00	10511	255.00	20736
51.00	63152	81.00	5518	130.00	2840	274.00	2840
52.00	5540	83.00	1071	148.00	3693	275.00	15625
55.00	1324	85.00	4054	167.00	5113	296.00	2840
56.00	5261	86.00	4644	168.00	3125	365.00	3693
62.00	2907	93.00	8424	186.00	6818	366.00	2840
63.00	2120	98.00	10927	187.00	3693	367.00	2272
67.00	1879	99.00	3693	198.00	87496	402.00	1420
69.00	46352	103.00	3125	199.00	4829	423.00	4261
71.00	1225	107.00	18744	204.00	2272	441.00	6818
74.00	16760	108.00	4393	205.00	3125	442.00	51704
75.00	10096	109.00	3988	206.00	9659	443.00	10227
76.00	4261	110.00	26864	217.00	3977	444.00	1988
77.00	42960	111.00	5398	222.00	2840		
78.00	5397	117.00	19312	224.00	7386		

Sample Analysis Data

Analytical Sample Results

Job Number: 14100477

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: VS-10-34
Lab Sample ID: 14100477-01 (AR39372)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-17	PCBs by EPA Method TO-10A/680	10/20/2014 21:22	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.17m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00427	1.00	U	MS03-472-17
Dichlorobiphenyl	25512-42-9	ND	0.00427	1.00	U	MS03-472-17
Trichlorobiphenyl	25323-68-6	ND	0.00427	1.00	U	MS03-472-17
Tetrachlorobiphenyl	26914-33-0	ND	0.00855	1.00	U	MS03-472-17
Pentachlorobiphenyl	25429-29-2	ND	0.00855	1.00	U	MS03-472-17
Hexachlorobiphenyl	26601-64-9	ND	0.00855	1.00	U	MS03-472-17
Heptachlorobiphenyl	28655-71-2	ND	0.0128	1.00	U	MS03-472-17
Octachlorobiphenyl	55722-26-4	ND	0.0128	1.00	U	MS03-472-17
Nonachlorobiphenyl	53742-07-7	ND	0.0214	1.00	U	MS03-472-17
Decachlorobiphenyl	2051-24-3	ND	0.0214	1.00	U	MS03-472-17
Total PCB	1336-36-3	ND		1.00	U	MS03-472-17

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	59.0	70.1-116	*	MS03-472-17
Tetrachloro-meta-xylene	877-09-8	63.3	44.4-104		MS03-472-17

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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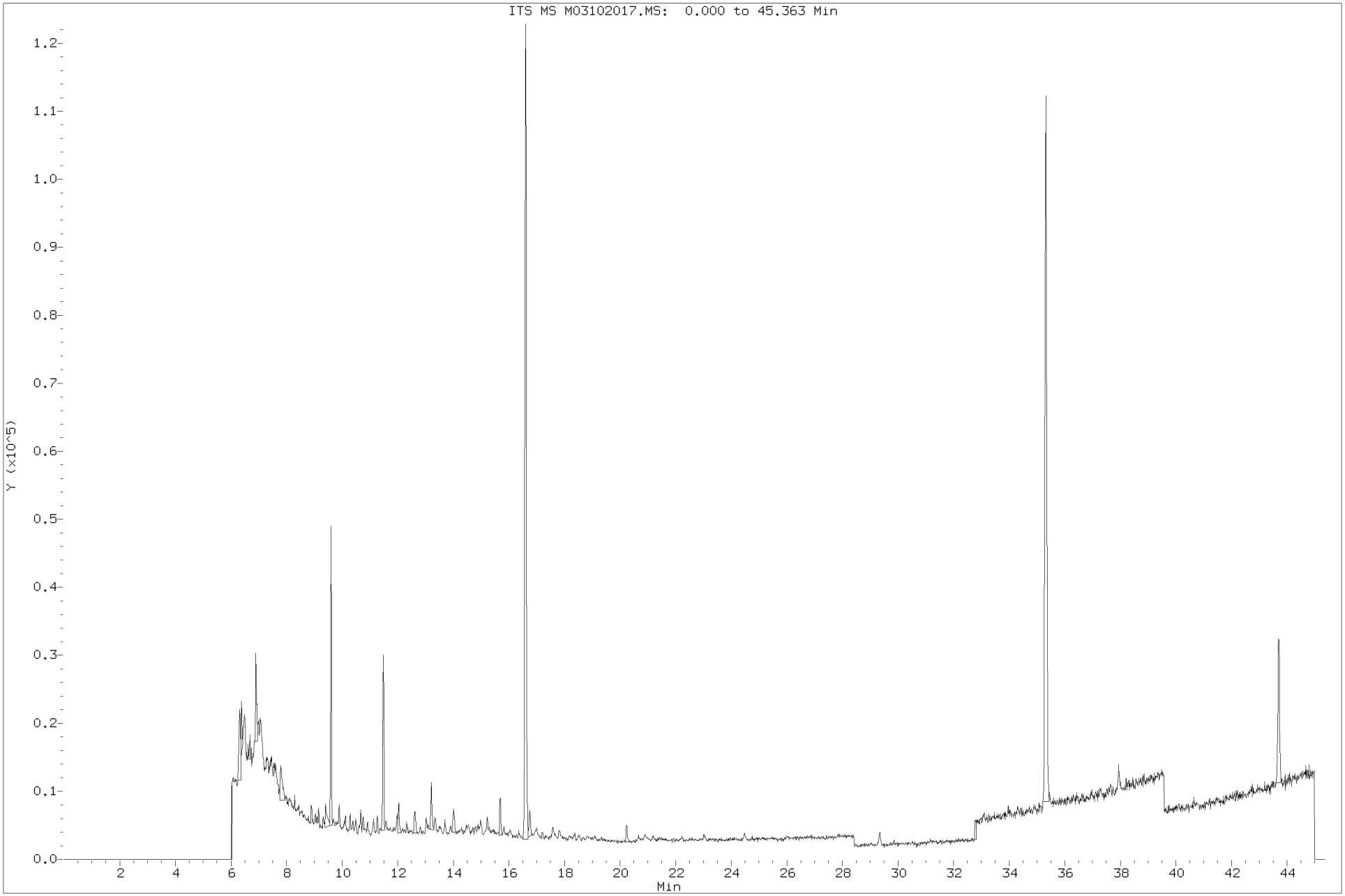
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102017.d/M03102017.MS
Injection Date: 20-OCT-2014 21:22
Instrument: GCMS03.i
Client Sample ID: VS-10-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	VS-10-34
Matrix:	TO-10A PUF	Lab Sample ID:	AR39372
Sample weight:	1.17 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	21:22

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:		0.00427	0.00427	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	
				Di Total:		0.00427	0.00427	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/m^3	ug/m^3	ug/m^3	
				Tri Total:		0.00427	0.00427	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/m^3	ug/m^3	ug/m^3	
				Tetra Total:		0.00855	0.00855	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/m^3	ug/m^3	ug/m^3	
				Penta Total:		0.00855	0.00855	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:		0.00855	0.00855	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:		0.0128	0.0128	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:		0.0128	0.0128	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:		0.0214	0.0214	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:		0.0214	0.0214	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	
12.611	1661	12.609	1268	1.3	0.3809		0.0127	
				TCMX Total:			0.0127	

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	
43.723	13455	43.701	14587	0.9	0.6617		0.0590	
				Deca Total:			0.0590	

TCMX Recovery %	63.3 %
Deca Recovery	59.0 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.318	275574	35.329	58914	4.7	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102017"		"M03102017"		"M03102017"		"M03102017"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.603	206110	16.606	3218				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102017"		"M03102017"		"M03102017"		"M03102017"		"M03102017"		"M03102017"	
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
								16.596	19988	16.603	206110

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102017"		"M03102017"		"M03102017"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.163	4673
				6.214	3185
				6.309	9324
				6.387	4916
				6.445	3518
				6.491	8490
				6.575	3148
				6.657	5785
				6.720	2588
				6.786	3638
				6.835	4805
				6.905	12169
				6.999	5196
				7.060	10503
				7.176	4191
				7.249	3266
				7.322	5665
				7.412	3039
				7.485	3506
				7.598	2595
				7.636	3046
				7.798	3381
				7.849	5137
				14.017	6411

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102017"		"M03102017"		"M03102017"		"M03102017"		"M03102017"		"M03102017"	
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
				16.596	19988	16.603	206110				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102017"		"M03102017"				"M03102017"		"M03102017"			"M03102017"		"M03102017"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.611	1661	12.609	1268	424	240	35.318	275574	35.329	58914	188	16.603	206110	16.602	34702
33.068	744	35.273	612	426	241					189				
33.099	2002	35.305	2428	428										
		35.333	3128	430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	35.316	723	35.303	422
512	43.691	13455(M)	43.701	14587
	43.723	4663		

Analytical Sample Results

Job Number: 14100477

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: VS-10-34-DUP
Lab Sample ID: 14100477-02 (AR39373)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-18	PCBs by EPA Method TO-10A/680	10/20/2014 22:11	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.16m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00431	1.00	U	MS03-472-18
Dichlorobiphenyl	25512-42-9	ND	0.00431	1.00	U	MS03-472-18
Trichlorobiphenyl	25323-68-6	ND	0.00431	1.00	U	MS03-472-18
Tetrachlorobiphenyl	26914-33-0	ND	0.00862	1.00	U	MS03-472-18
Pentachlorobiphenyl	25429-29-2	ND	0.00862	1.00	U	MS03-472-18
Hexachlorobiphenyl	26601-64-9	ND	0.00862	1.00	U	MS03-472-18
Heptachlorobiphenyl	28655-71-2	ND	0.0129	1.00	U	MS03-472-18
Octachlorobiphenyl	55722-26-4	ND	0.0129	1.00	U	MS03-472-18
Nonachlorobiphenyl	53742-07-7	ND	0.0216	1.00	U	MS03-472-18
Decachlorobiphenyl	2051-24-3	ND	0.0216	1.00	U	MS03-472-18
Total PCB	1336-36-3	ND		1.00	U	MS03-472-18

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	68.5	70.1-116	*	MS03-472-18
Tetrachloro-meta-xylene	877-09-8	61.7	44.4-104		MS03-472-18

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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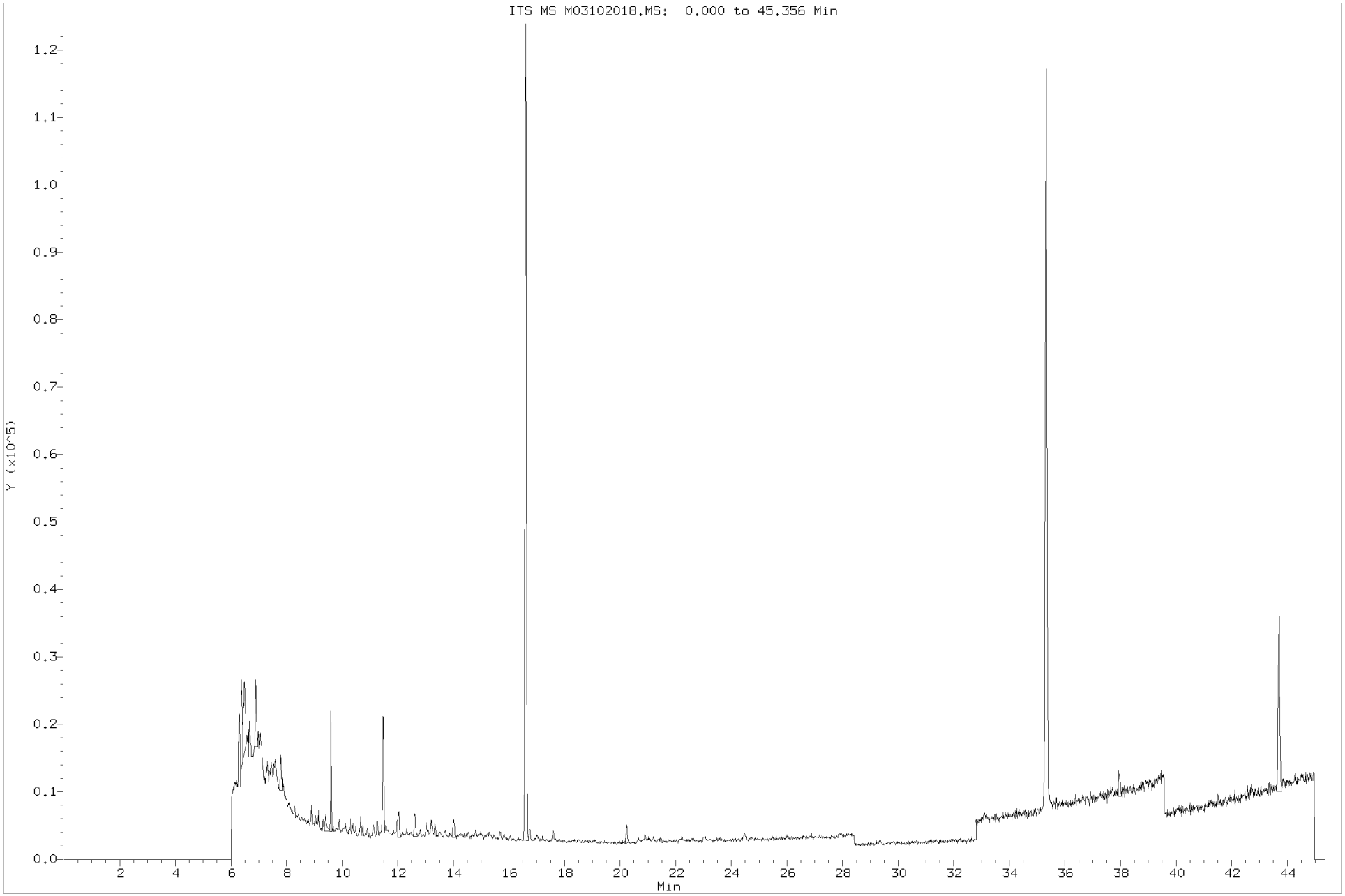
Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102018.d/M03102018.MS
Injection Date: 20-OCT-2014 22:11
Instrument: GCMS03.i
Client Sample ID: VS-10-34-DUP



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	VS-10-34-DUP
Matrix:	TO-10A PUF	Lab Sample ID:	AR39373
Sample weight:	1.16 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	22:11

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:		0.00431	0.00431	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	
				Di Total:		0.00431	0.00431	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/m^3	ug/m^3	ug/m^3	
				Tri Total:		0.00431	0.00431	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/m^3	ug/m^3	ug/m^3	
				Tetra Total:		0.00862	0.00862	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/m^3	ug/m^3	ug/m^3	
				Penta Total:		0.00862	0.00862	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:		0.00862	0.00862	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:		0.0129	0.0129	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:		0.0129	0.0129	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:		0.0216	0.0216	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:		0.0216	0.0216	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	
12.610	1652	12.609	1254	1.3	0.3809		0.0123	
				TCMX Total:			0.0123	

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	
43.704	15912	43.705	13682	1.2	0.6617		0.0685	
				Deca Total:			0.0685	

TCMX Recovery %	61.7 %
Deca Recovery	68.5 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.325	280969	35.317	58932	4.8	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102018"		"M03102018"		"M03102018"		"M03102018"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.599	206768	16.594	3463				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102018"		"M03102018"		"M03102018"		"M03102018"		"M03102018"		"M03102018"	
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
								16.603	20684	16.599	206768

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102018"		"M03102018"		"M03102018"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.088	2654
				6.138	2593
				6.209	3785
				6.297	7067
				6.387	7288
				6.438	5040
				6.494	9642
				6.582	4129
				6.623	2570
				6.666	6043
				6.725	3519
				6.781	2575
				6.848	2813
				6.894	6670
				6.955	5359
				7.031	5391
				7.084	2514
				7.110	3930
				7.309	6748
				7.427	3369
				7.541	2723
				7.589	2624
				7.624	2725
				7.698	3728
				7.806	5020
				8.070	2890
				14.015	4906

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102018"		"M03102018"		"M03102018"		"M03102018"		"M03102018"		"M03102018"	
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
				16.603	20684	16.599	206768				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102018"		"M03102018"				"M03102018"		"M03102018"			"M03102018"		"M03102018"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.610	1652	12.609	1254	424	240	35.325	280969	35.317	58932	188	16.599	206768	16.601	32281
33.096	2804	35.303	1895	426	241					189				
35.327	471	35.332	3048	428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	35.349	410	43.705	13682
512	43.704	15912		

Analytical Sample Results

Job Number: 14100477

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: VS-12-34
Lab Sample ID: 14100477-03 (AR39374)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-19	PCBs by EPA Method TO-10A/680	10/20/2014 22:59	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.01m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00495	1.00	U	MS03-472-19
Dichlorobiphenyl	25512-42-9	ND	0.00495	1.00	U	MS03-472-19
Trichlorobiphenyl	25323-68-6	ND	0.00495	1.00	U	MS03-472-19
Tetrachlorobiphenyl	26914-33-0	ND	0.00990	1.00	U	MS03-472-19
Pentachlorobiphenyl	25429-29-2	ND	0.00990	1.00	U	MS03-472-19
Hexachlorobiphenyl	26601-64-9	ND	0.00990	1.00	U	MS03-472-19
Heptachlorobiphenyl	28655-71-2	ND	0.0149	1.00	U	MS03-472-19
Octachlorobiphenyl	55722-26-4	ND	0.0149	1.00	U	MS03-472-19
Nonachlorobiphenyl	53742-07-7	ND	0.0248	1.00	U	MS03-472-19
Decachlorobiphenyl	2051-24-3	ND	0.0248	1.00	U	MS03-472-19
Total PCB	1336-36-3	ND		1.00	U	MS03-472-19

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	73.6	70.1-116		MS03-472-19
Tetrachloro-meta-xylene	877-09-8	66.0	44.4-104		MS03-472-19

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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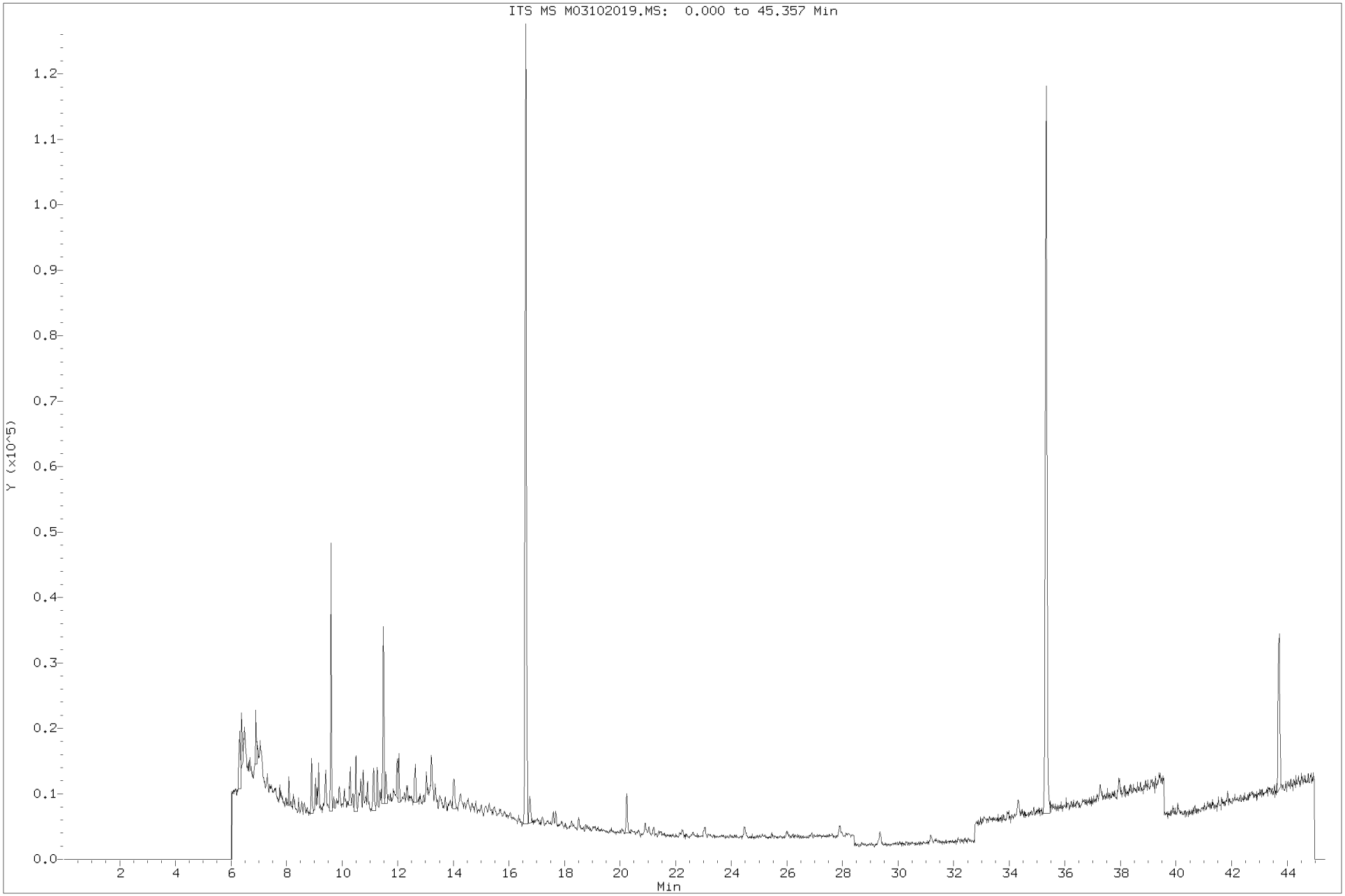
Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102019.d/M03102019.MS
Injection Date: 20-OCT-2014 22:59
Instrument: GCMS03.i
Client Sample ID: VS-12-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	VS-12-34
Matrix:	TO-10A PUF	Lab Sample ID:	AR39374
Sample weight:	1.01 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	22:59

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:		0.00495	0.00495	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	
				Di Total:		0.00495	0.00495	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/m^3	ug/m^3	ug/m^3	
				Tri Total:		0.00495	0.00495	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/m^3	ug/m^3	ug/m^3	
				Tetra Total:		0.00990	0.00990	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/m^3	ug/m^3	ug/m^3	
				Penta Total:		0.00990	0.00990	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:		0.00990	0.00990	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:		0.0149	0.0149	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:		0.0149	0.0149	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:		0.0248	0.0248	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:		0.0248	0.0248	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	
11.448	1751	11.447	1256	1.4	0.3809		0.0132	
				TCMX Total:			0.0132	

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	
43.702	16956	43.699	14927	1.1	0.6617		0.0736	
				Deca Total:			0.0736	

TCMX Recovery %	66.0 %
Deca Recovery	73.6 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.327	278373	35.316	55961	5.0	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102019"		"M03102019"		"M03102019"		"M03102019"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
9.378	3032	16.606	3292				
9.925	3383						
10.491	3295						
16.604	210674						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102019"		"M03102019"		"M03102019"		"M03102019"		"M03102019"		"M03102019"	
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
								16.608	21624	9.378	3032
										9.925	3383
										10.491	3295
										16.604	210674

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102019"		"M03102019"		"M03102019"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.084	2924
				6.158	3388
				6.311	6352
				6.385	7687
				6.487	6298
				6.554	6762
				6.634	3911
				6.893	8233
				6.956	4660
				7.059	3741
				7.122	5984
				7.464	2608
				7.682	2799
				7.811	2979
				14.021	6566

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102019"		"M03102019"		"M03102019"		"M03102019"		"M03102019"		"M03102019"	
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
				16.608	21624	9.378	3032				
						9.925	3383				
						10.491	3295				
						16.604	210674				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102019"		"M03102019"				"M03102019"		"M03102019"			"M03102019"		"M03102019"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.610	1782	12.609	1561	424	240	35.327	278373	18.509	3360	188	9.378	3032	7.759	3765
13.044	1302	13.912	684	426	241			35.316	55961(M)	189	9.925	3383	16.607	35078
33.088	2899	14.262	459	428				35.339	26235		10.491	3295		
		18.507	756	430							16.604	210674		
		35.297	2192	498										
		35.330	3672	500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	43.702	16956	43.699	14927
512				

Analytical Sample Results

Job Number: 14100477

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: VS-1-34
Lab Sample ID: 14100477-04 (AR39375)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-20	PCBs by EPA Method TO-10A/680	10/20/2014 23:48	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.20m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00417	1.00	U	MS03-472-20
Dichlorobiphenyl	25512-42-9	ND	0.00417	1.00	U	MS03-472-20
Trichlorobiphenyl	25323-68-6	ND	0.00417	1.00	U	MS03-472-20
Tetrachlorobiphenyl	26914-33-0	ND	0.00833	1.00	U	MS03-472-20
Pentachlorobiphenyl	25429-29-2	ND	0.00833	1.00	U	MS03-472-20
Hexachlorobiphenyl	26601-64-9	ND	0.00833	1.00	U	MS03-472-20
Heptachlorobiphenyl	28655-71-2	ND	0.0125	1.00	U	MS03-472-20
Octachlorobiphenyl	55722-26-4	ND	0.0125	1.00	U	MS03-472-20
Nonachlorobiphenyl	53742-07-7	ND	0.0208	1.00	U	MS03-472-20
Decachlorobiphenyl	2051-24-3	ND	0.0208	1.00	U	MS03-472-20
Total PCB	1336-36-3	ND		1.00	U	MS03-472-20

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	64.0	70.1-116	*	MS03-472-20
Tetrachloro-meta-xylene	877-09-8	57.8	44.4-104		MS03-472-20

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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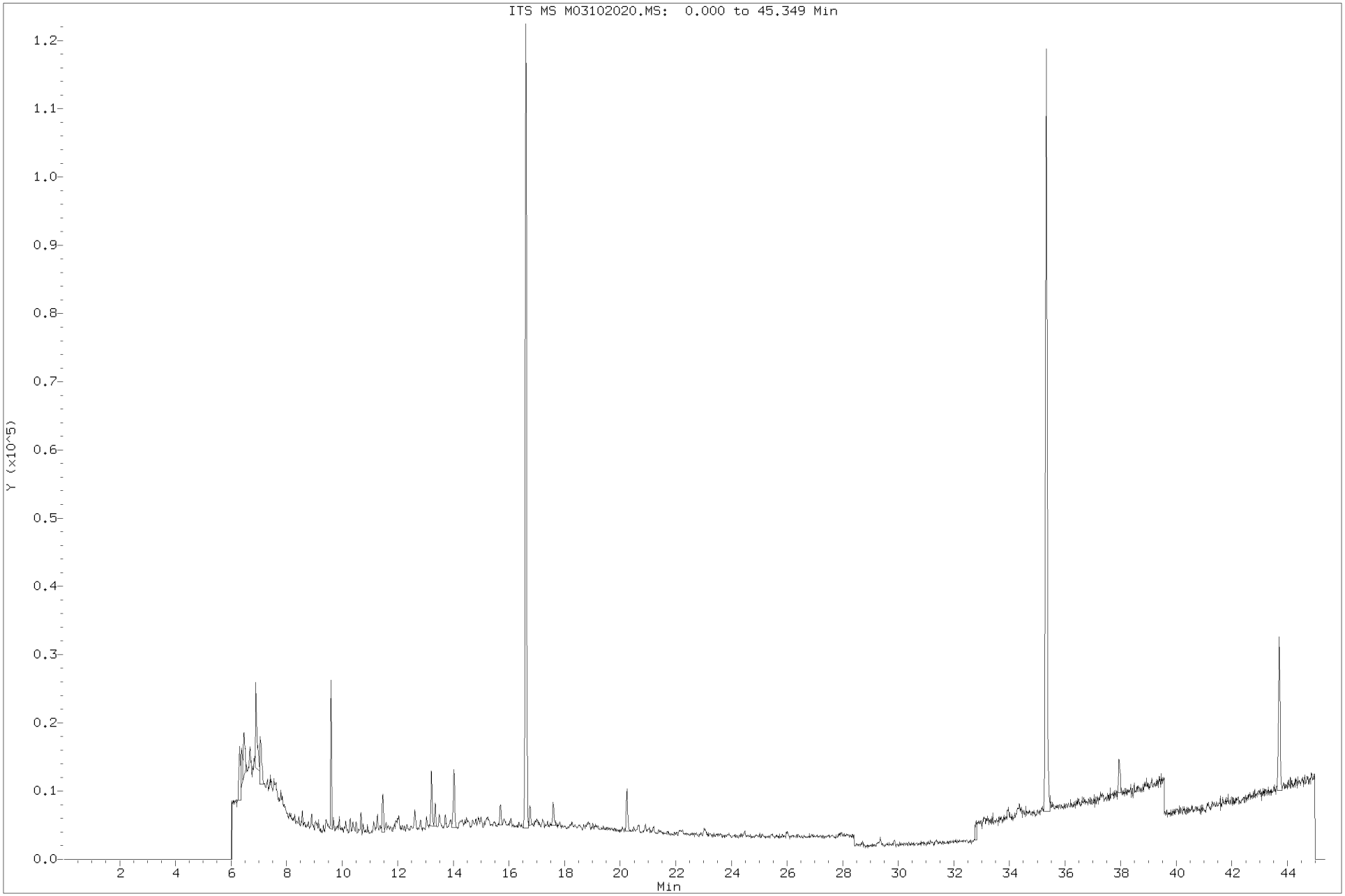
Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102020.d/M03102020.MS
Injection Date: 20-OCT-2014 23:48
Instrument: GCMS03.i
Client Sample ID: VS-1-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	VS-1-34
Matrix:	TO-10A PUF	Lab Sample ID:	AR39375
Sample weight:	1.2 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	23:48

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:		0.00417	0.00417	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	
				Di Total:		0.00417	0.00417	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/m^3	ug/m^3	ug/m^3	
				Tri Total:		0.00417	0.00417	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/m^3	ug/m^3	ug/m^3	
				Tetra Total:		0.00833	0.00833	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/m^3	ug/m^3	ug/m^3	
				Penta Total:		0.00833	0.00833	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:		0.00833	0.00833	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:		0.0125	0.0125	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:		0.0125	0.0125	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:		0.0208	0.0208	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:		0.0208	0.0208	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	
12.612	1539	12.613	1174	1.3	0.3809		0.0116	
				TCMX Total:			0.0116	

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	
43.708	14808	43.701	12557	1.2	0.6617		0.0640	
				Deca Total:			0.0640	

TCMX Recovery %	57.8 %
Deca Recovery	64.0 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.323	279666	35.331	55946	5.0	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102020"		"M03102020"		"M03102020"		"M03102020"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.604	199599						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102020"		"M03102020"		"M03102020"		"M03102020"		"M03102020"		"M03102020"	
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
14.021	2798							16.609	21538	16.604	199599

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102020"		"M03102020"		"M03102020"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.162	3466
				6.319	4956
				6.400	5415
				6.473	5174
				6.511	3779
				6.596	3499
				6.693	4905
				6.776	2885
				6.909	12617
				6.991	2934
				7.080	5986
				7.119	4922
				7.274	2804
				7.436	3158
				7.551	3886
				7.619	3329
				7.779	3165
				14.021	14162

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102020"		"M03102020"		"M03102020"		"M03102020"		"M03102020"		"M03102020"	
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
				16.609	21538	16.604	199599				

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03102020"	"M03102020"	"M03102020"	"M03102020"	"M03102020"	"M03102020"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362

14.021 2798

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102020"		"M03102020"				"M03102020"		"M03102020"			"M03102020"		"M03102020"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.612	1539	12.613	1174	424	240	35.323	279666	35.331	55946	188	16.604	199599	16.602	34569
33.099	2551	35.342	5917	426	241					189				
				428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	35.343	541	35.327	914
512	43.708	14808	43.701	12557

Analytical Sample Results

Job Number: 14100477

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: VS-4-34
Lab Sample ID: 14100477-05 (AR39376)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-21	PCBs by EPA Method TO-10A/680	10/21/2014 00:37	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.20m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00417	1.00	U	MS03-472-21
Dichlorobiphenyl	25512-42-9	ND	0.00417	1.00	U	MS03-472-21
Trichlorobiphenyl	25323-68-6	ND	0.00417	1.00	U	MS03-472-21
Tetrachlorobiphenyl	26914-33-0	ND	0.00833	1.00	U	MS03-472-21
Pentachlorobiphenyl	25429-29-2	ND	0.00833	1.00	U	MS03-472-21
Hexachlorobiphenyl	26601-64-9	ND	0.00833	1.00	U	MS03-472-21
Heptachlorobiphenyl	28655-71-2	ND	0.0125	1.00	U	MS03-472-21
Octachlorobiphenyl	55722-26-4	ND	0.0125	1.00	U	MS03-472-21
Nonachlorobiphenyl	53742-07-7	ND	0.0208	1.00	U	MS03-472-21
Decachlorobiphenyl	2051-24-3	ND	0.0208	1.00	U	MS03-472-21
Total PCB	1336-36-3	ND		1.00	U	MS03-472-21

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	63.5	70.1-116	*	MS03-472-21
Tetrachloro-meta-xylene	877-09-8	51.6	44.4-104		MS03-472-21

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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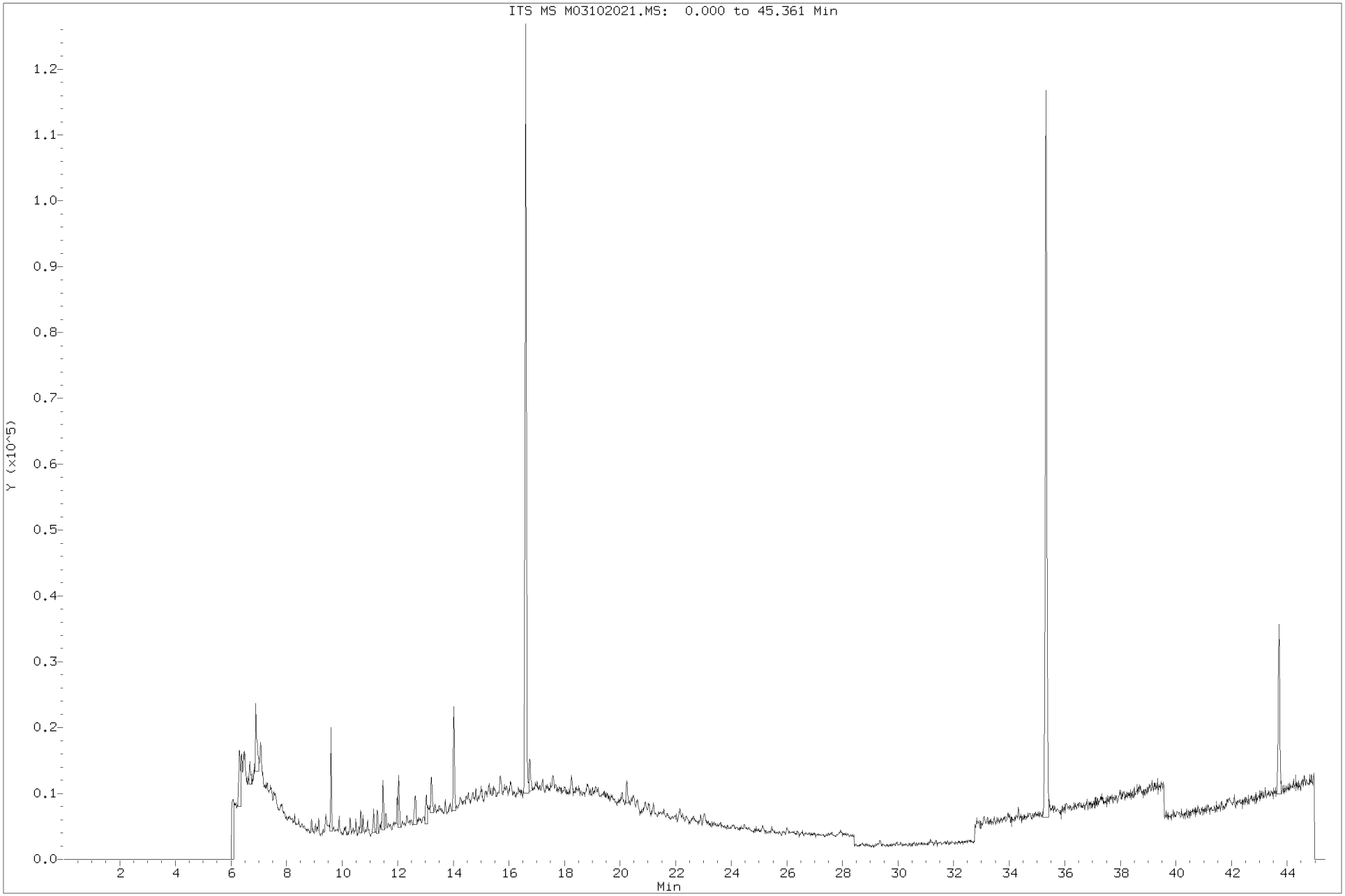
Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102021.d/M03102021.MS
Injection Date: 21-OCT-2014 00:37
Instrument: GCMS03.i
Client Sample ID: VS-4-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	VS-4-34
Matrix:	TO-10A PUF	Lab Sample ID:	AR39376
Sample weight:	1.2 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	1	Time Analyzed:	0:37

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:		0.00417	0.00417	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	
				Di Total:		0.00417	0.00417	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/m^3	ug/m^3	ug/m^3	
				Tri Total:		0.00417	0.00417	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/m^3	ug/m^3	ug/m^3	
				Tetra Total:		0.00833	0.00833	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/m^3	ug/m^3	ug/m^3	
				Penta Total:		0.00833	0.00833	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:		0.00833	0.00833	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:		0.0125	0.0125	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:		0.0125	0.0125	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:		0.0208	0.0208	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:		0.0208	0.0208	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
12.611	1331	12.605	1128	1.2	0.3809		0.0103	
				TCMX Total:			0.0103	

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
43.711	14230	43.702	12971	1.1	0.6617		0.0635	
				Deca Total:			0.0635	

TCMX Recovery %	51.6 %
Deca Recovery	63.5 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.323	270998	35.325	56133	4.8	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102021"		"M03102021"		"M03102021"		"M03102021"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.605	204558	16.597	2511				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102021"		"M03102021"		"M03102021"		"M03102021"		"M03102021"		"M03102021"	
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
14.021	6526							16.606	21059	16.605	204558

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102021"		"M03102021"		"M03102021"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.080	3383
				6.296	2869
				6.319	2699
				6.387	4194
				6.471	4096
				6.511	3348
				6.578	2730
				6.674	3346
				6.791	2981
				6.845	2996
				6.900	5457
				6.943	2738
				6.981	2776
				7.071	4140
				7.091	2592
				7.143	4303
				7.241	2692
				7.442	2509
				7.543	3104
				7.602	2557
				14.023	32213

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102021"		"M03102021"		"M03102021"		"M03102021"		"M03102021"		"M03102021"	
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
				16.606	21059	16.605	204558				

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03102021"	"M03102021"	"M03102021"	"M03102021"	"M03102021"	"M03102021"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362

14.021 6526

Extracted Ion Current Profiles

TCMX				TCMX	chrysene - d_{12}	Chrysene-d12				phenanthrene - d_{10}	Phenanthrene-d10			
"M03102021"		"M03102021"				"M03102021"		"M03102021"			"M03102021"		"M03102021"	
m/z 244		m/z 242				m/z 240		m/z 241			m/z 188		m/z 189	
12.611	1331	12.605	1128	424	240	35.323	270998	35.325	56133	188	16.605	204558	16.604	34496
13.045	821	14.631	435	426	241					189				
33.096	2419	14.818	470	428										
		15.021	452	430										
		15.127	455	498										
		15.923	418	500										
		16.479	435											
		16.572	589											
		17.116	501											
		17.231	601											
		17.411	535											
		17.648	631											
		17.711	547											
		17.883	519											
		17.934	529											
		18.276	592											
		18.425	421											
		18.505	401											
		18.644	414											
		18.816	421											
		19.160	499											
		19.464	460											
		19.799	445											
		35.301	2193											
		35.323	2456											
		35.359	1370											

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	43.679	4764	35.327	664
512	43.711	14230(M)	43.702	12971

Analytical Sample Results

Job Number: 14100477

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: VS-TB-34
Lab Sample ID: 14100477-06 (AR39377)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-22	PCBs by EPA Method TO-10A/680	10/21/2014 01:26	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	0.00m³	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	MS03-472-22
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-472-22
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-472-22
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-472-22
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-472-22
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-472-22
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-472-22
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-472-22
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-472-22
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-472-22
Total PCB	1336-36-3	ND		1.00	U	MS03-472-22

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	66.8	70.1-116	*	MS03-472-22
Tetrachloro-meta-xylene	877-09-8	55.0	44.4-104		MS03-472-22

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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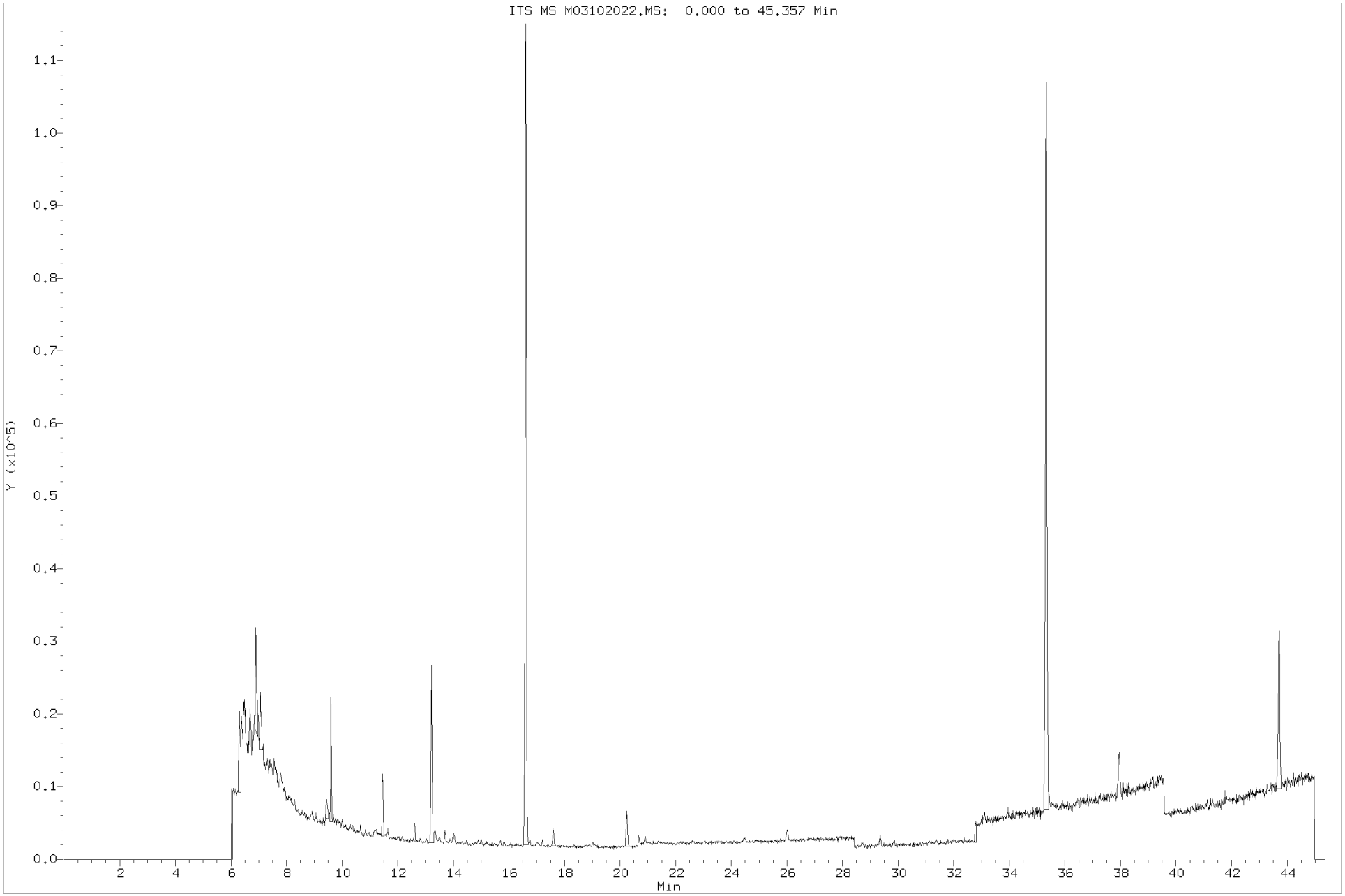
Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102022.d/M03102022.MS
Injection Date: 21-OCT-2014 01:26
Instrument: GCMS03.i
Client Sample ID: VS-TB-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	VS-TB-34
Matrix:	TO-10A PUF	Lab Sample ID:	AR39377
Sample weight:	NA	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	1	Time Analyzed:	1:26

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	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	ug	ug	
				Hepta Total:		0.0150	0.0150	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	ug	ug	
				Octa Total:		0.0150	0.0150	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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
				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	Flag
m/z 244		m/z 242		1.1 - 1.5			ug/mL	
12.606	1382	12.610	1230	1.1	0.3809		0.0110	
				TCMX Total:			0.0110	

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	
43.705	14527	43.706	12689	1.1	0.6594		0.0668	
				Deca Total:			0.0668	

TCMX Recovery %	55.0 %
Deca Recovery	66.8 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.327	263670	35.321	55562	4.7	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102022"		"M03102022"		"M03102022"		"M03102022"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.605	197476	16.603	2595				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102022"		"M03102022"		"M03102022"		"M03102022"		"M03102022"		"M03102022"	
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
								16.602	19082	16.605	197476

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102022"		"M03102022"		"M03102022"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.072	3459
				6.213	3511
				6.311	5261
				6.393	5550
				6.453	4217
				6.500	6522
				6.625	4544
				6.676	4599
				6.713	3954
				6.776	2564
				6.832	5017
				6.907	9271
				6.947	2648
				6.979	3776
				7.058	9950
				7.150	2672
				7.243	2509
				7.312	2585
				7.391	4648
				7.554	5892
				7.606	3265
				7.911	2559
				9.463	4481

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102022"		"M03102022"		"M03102022"		"M03102022"		"M03102022"		"M03102022"	
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
				16.602	19082	16.605	197476				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102022"		"M03102022"				"M03102022"		"M03102022"			"M03102022"		"M03102022"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.606	1382(M)	12.610	1230	424	240	35.327	263670	35.321	55562	188	16.605	197476	16.605	31907
33.100	2568	35.308	2594	426	241				44916(M)	189				
		35.342	2826	428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	35.336	610	43.706	12689
512	43.705	14527		

Analytical Sample Results

Job Number: 14100477

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: A-34
Lab Sample ID: 14100477-07 (AR39378)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-7	PCBs by EPA Method TO-4A/680	10/21/2014 09:38	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	240.60m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000420	2.00	U	MS03-473-7
Dichlorobiphenyl	25512-42-9	ND	0.0000420	2.00	U	MS03-473-7
Trichlorobiphenyl	25323-68-6	**0.0114**	0.0000420	2.00		MS03-473-7
Tetrachlorobiphenyl	26914-33-0	ND	0.0000830	2.00	U	MS03-473-7
Pentachlorobiphenyl	25429-29-2	ND	0.0000830	2.00	U	MS03-473-7
Hexachlorobiphenyl	26601-64-9	ND	0.0000830	2.00	U	MS03-473-7
Heptachlorobiphenyl	28655-71-2	ND	0.000125	2.00	U	MS03-473-7
Octachlorobiphenyl	55722-26-4	ND	0.000125	2.00	U	MS03-473-7
Nonachlorobiphenyl	53742-07-7	ND	0.000208	2.00	U	MS03-473-7
Decachlorobiphenyl	2051-24-3	ND	0.000208	2.00	U	MS03-473-7
Total PCB	1336-36-3	**0.0114**		2.00		MS03-473-7

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	53.6	42.5-134		MS03-473-7
Tetrachloro-meta-xylene	877-09-8	98.4	17.9-137		MS03-473-7

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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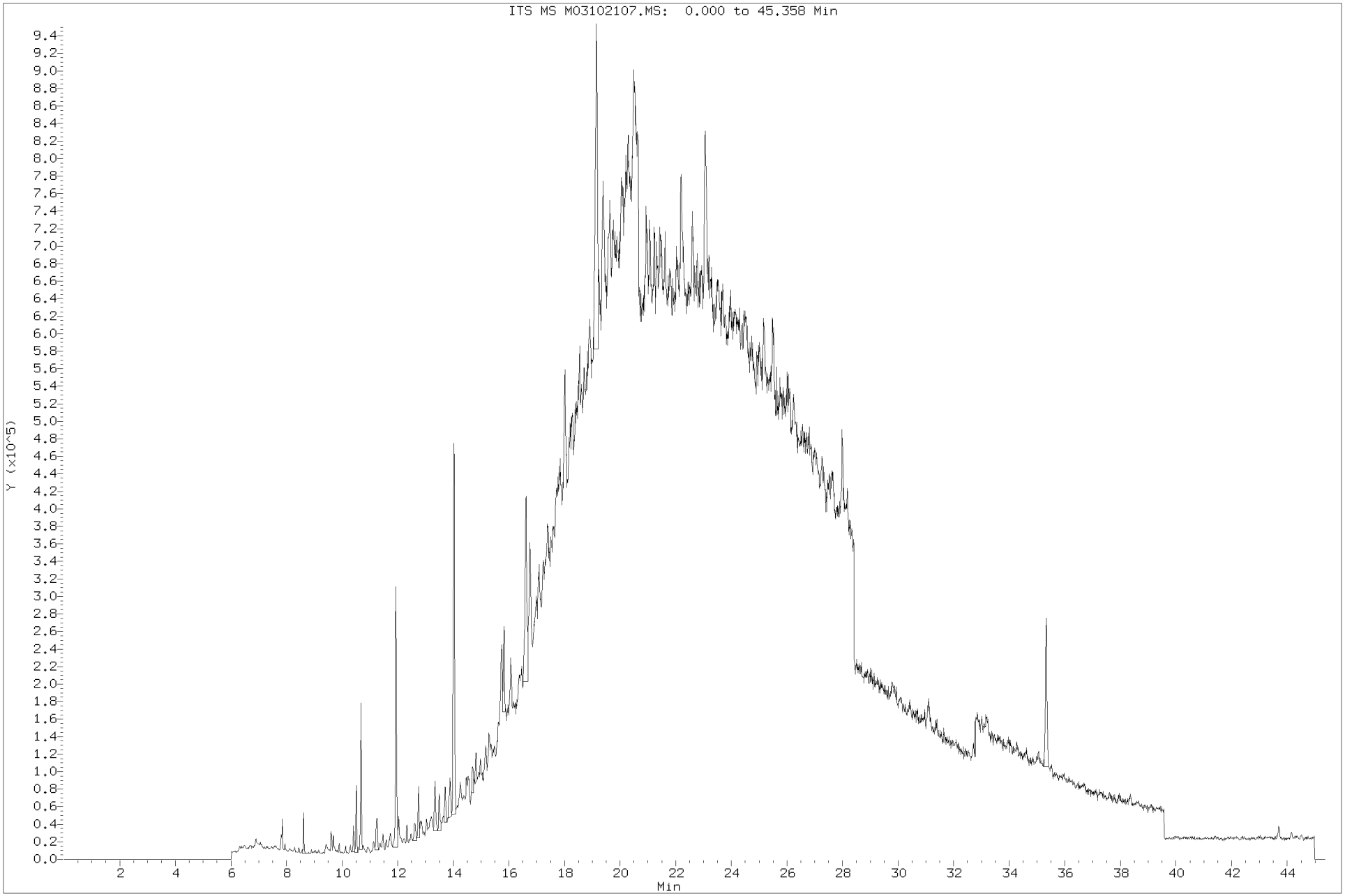
Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102107.d/M03102107.MS
Injection Date: 21-OCT-2014 09:38
Instrument: GCMS03.i
Client Sample ID: A-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	A-34
Matrix:	TO-4A PUF	Lab Sample ID:	AR39378
Sample weight:	240.6 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/18/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	2	Time Analyzed:	9:38

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:		0.0000416	0.0000416	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	
				Di Total:		0.0000416	0.0000416	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/m^3	ug/m^3	ug/m^3	
17.140	13597	17.014	12326	1.1	0.6326	0.0000416	0.0000416	0.000343	
17.371	12194	17.375	12331	1.0	0.6326	0.0000416	0.0000416	0.000307	
18.023	17852	17.941	17496	1.0	0.6326	0.0000416	0.0000416	0.000450	
18.163	19307	18.145	19188	1.0	0.6326	0.0000416	0.0000416	0.000487	
18.353	13808	18.338	12852	1.1	0.6326	0.0000416	0.0000416	0.000348	
18.495	13647	18.506	15927	0.9	0.6326	0.0000416	0.0000416	0.000344	
18.674	19203	18.671	18869	1.0	0.6326	0.0000416	0.0000416	0.000484	
19.041	18739	19.025	20885	0.9	0.6326	0.0000416	0.0000416	0.000472	
19.637	17418	19.621	14618	1.2	0.6326	0.0000416	0.0000416	0.000439	
19.939	24639	19.951	24214	1.0	0.6326	0.0000416	0.0000416	0.000621	
20.039	19550	20.040	20839	0.9	0.6326	0.0000416	0.0000416	0.000493	
20.239	26983	20.222	23204	1.2	0.6326	0.0000416	0.0000416	0.000680	
20.272	17140	20.274	20695	0.8	0.6326	0.0000416	0.0000416	0.000432	
20.388	22012	20.373	19264	1.1	0.6326	0.0000416	0.0000416	0.000555	
20.553	25589	20.560	21362	1.2	0.6326	0.0000416	0.0000416	0.000645	
20.747	17513	20.721	21742	0.8	0.6326	0.0000416	0.0000416	0.000441	
20.835	19763	20.825	23780	0.8	0.6326	0.0000416	0.0000416	0.000498	
20.861	18132	20.870	18454	1.0	0.6326	0.0000416	0.0000416	0.000457	
21.503	22726	21.540	18972	1.2	0.6326	0.0000416	0.0000416	0.000573	
21.639	17458	21.650	15596	1.1	0.6326	0.0000416	0.0000416	0.000440	
21.999	14892	22.014	14904	1.0	0.6326	0.0000416	0.0000416	0.000375	
22.157	16863	22.140	14300	1.2	0.6326	0.0000416	0.0000416	0.000425	
22.242	26584	22.253	25250	1.1	0.6326	0.0000416	0.0000416	0.000670	
22.406	17856	22.419	16146	1.1	0.6326	0.0000416	0.0000416	0.000450	
				Tri Total:		0.0000416	0.0000416	0.0114	

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	
				Tetra Total:		0.0000831	0.0000831	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/m^3	ug/m^3	ug/m^3	
				Penta Total:		0.0000831	0.0000831	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:		0.0000831	0.0000831	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:		0.000125	0.000125	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:		0.000125	0.000125	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:		0.000208	0.000208	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:		0.000208	0.000208	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	
12.613	1955	12.600	1310	1.5	0.3809		0.00984	
				TCMX Total:			0.00984	

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
43.692	9239	43.694	9187	1.0	0.6617		0.0268	
				Deca Total:			0.0268	

TCMX Recovery % 98.4 %

Deca Recovery 53.6 %

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
35.327	417147		90352	4.6	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102107"		"M03102107"		"M03102107"		"M03102107"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
11.936	14930	14.016	12547	10.512	22866	16.744	12350
16.610	324627	17.179	22715	10.682	53763	16.827	14691
17.029	13208	17.670	13505	14.030	21392	16.912	14382
17.685	14844	17.819	14569	14.703	14732	17.395	13696
17.879	12513	17.944	16765	14.820	13065	17.751	16959
18.736	12248	18.294	21763	15.150	20190	17.872	19517
18.822	21789	18.766	12675	15.290	18453	17.923	18605
19.136	17778	18.856	13156	15.613	14172	18.008	27297
19.327	17352	18.983	19575	15.712	14397	18.089	16184
19.382	13947	19.037	12091	15.749	14251	18.153	14848
19.529	14962	19.182	24740	15.935	12695	18.208	15531
19.660	12495	19.242	23331	16.058	27987	18.276	17335
19.759	20558	19.372	18858	16.169	15477	18.374	16577
19.837	17488	19.495	23247	16.423	13257	18.455	12772
19.866	14385	19.567	14291	16.552	14281	18.522	27107
20.073	13914	19.604	22086	16.747	90883	18.617	27170
20.178	15562	19.671	23099	16.822	13142	18.707	13849
20.238	15702	19.733	21789	16.929	22865	18.754	17648
20.327	12291	19.770	27559	16.990	15445	18.808	15261
20.366	16539	19.851	26307	17.123	13214	18.857	15161
20.412	15602	19.924	16652	17.231	24375	18.907	16432
20.549	16586	20.003	20764	17.295	15884	18.946	15834
20.612	13351	20.034	18120	17.345	13785	19.025	14179
20.654	20716	20.100	30411	17.422	44070	19.095	18773
20.727	13983	20.191	16467	17.535	24641	19.125	23214
20.790	15254	20.232	22857	17.571	12324	19.164	33380
20.971	17105	20.315	29812	17.666	12527	19.260	29361
21.144	24379	20.364	39644	17.694	15223	19.335	14886
21.211	15233	20.431	17216	17.732	16892	19.380	13819
21.239	15829	20.469	16258	17.766	16040	19.394	26908
21.268	12565	20.540	31410	17.816	20007	19.530	13652
21.341	17845	20.571	31190	17.871	19328	19.555	16594
21.470	12410	20.668	26946	17.934	27398	19.633	22119
21.541	12402	20.694	14822	17.970	12833	19.677	13556
21.598	12887	20.733	18950	18.035	37650	19.778	44484
21.648	13004	20.799	20219	18.082	14880	19.843	18064
21.712	12269	20.833	26033	18.148	17102	19.877	15972
21.803	13135	20.878	21662	18.173	12779	19.923	23012
21.871	12919	20.943	21511	18.205	14760	20.012	15267
22.000	16070	20.978	17494	18.248	18269	20.053	16157
22.067	17516	21.069	32079	18.280	36109	20.096	15528

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"	
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
13.693	13407	15.723	28880	10.512	22866	16.744	12350	11.935	16602	11.936	14930
14.023	167865	15.848	12784	10.682	53763	16.827	14691	14.669	18345	16.610	324627
16.056	28637	16.059	35503	14.030	21392	16.912	14382	15.821	13238	17.029	13208
16.770	27538	16.363	14142	14.703	14732	17.395	13696	16.028	15156	17.685	14844
16.976	13418	16.987	16588	14.820	13065	17.751	16959	16.614	48347	17.879	12513
18.736	13097	17.243	18543	15.150	20190	17.872	19517	16.969	12062	18.736	12248
19.014	21288	17.365	12123	15.290	18453	17.923	18605	17.050	31144	18.822	21789
19.185	21645	17.616	22685	15.613	14172	18.008	27297	17.146	14359	19.136	17778
19.618	25644	17.790	29563	15.712	14397	18.089	16184	17.214	12488	19.327	17352
19.916	29659	17.811	20862	15.749	14251	18.153	14848	17.295	13268	19.382	13947
20.129	14275	18.088	18291	15.935	12695	18.208	15531	17.362	26510	19.529	14962
20.175	13553	18.179	26657	16.058	27987	18.276	17335	17.421	17508	19.660	12495
20.348	27557	18.241	21020	16.169	15477	18.374	16577	17.499	17388	19.759	20558
20.692	24932	18.334	19441	16.423	13257	18.455	12772	17.749	17112	19.837	17488
20.930	15343	18.541	13846	16.552	14281	18.522	27107	17.801	12025	19.866	14385
20.970	12142	18.695	25445	16.747	90883	18.617	27170	17.846	13735	20.073	13914
21.035	16365	18.784	12926	16.822	13142	18.707	13849	17.932	24975	20.178	15562
21.417	13380	18.922	22558	16.929	22865	18.754	17648	18.006	85647	20.238	15702
21.448	13565	18.959	16265	16.990	15445	18.808	15261	18.087	12739	20.327	12291
21.496	20927	19.143	25905	17.123	13214	18.857	15161	18.144	33159	20.366	16539
21.703	19900	19.268	18999	17.231	24375	18.907	16432	18.203	21918	20.412	15602
21.836	24678	19.347	15426	17.295	15884	18.946	15834	18.228	23061	20.549	16586
22.052	27550	19.447	59001	17.345	13785	19.025	14179	18.389	34957	20.612	13351
22.101	42334	19.495	15660	17.422	44070	19.095	18773	18.436	22969	20.654	20716
22.180	15153	19.642	15118	17.535	24641	19.125	23214	18.500	21032	20.727	13983
22.233	16519	19.719	31874	17.571	12324	19.164	33380	18.554	34158	20.790	15254
22.378	12024	19.874	12456	17.666	12527	19.260	29361	18.598	27383	20.971	17105
22.459	15802	19.960	16332	17.694	15223	19.335	14886	18.731	16143	21.144	24379
22.512	12685	20.110	12679	17.732	16892	19.380	13819	18.790	42767	21.211	15233
22.632	15612	20.410	22857	17.766	16040	19.394	26908	18.898	31347	21.239	15829
22.890	18745	20.451	19935	17.816	20007	19.530	13652	18.961	23755	21.268	12565
22.958	19904	20.602	64304	17.871	19328	19.555	16594	19.000	16132	21.341	17845
23.004	14148	20.635	19324	17.934	27398	19.633	22119	19.050	13153	21.470	12410
23.073	13136	20.745	13525	17.970	12833	19.677	13556	19.113	55971	21.541	12402
23.103	19862	20.819	20232	18.035	37650	19.778	44484	19.154	94914	21.598	12887
23.194	13426	20.942	17529	18.082	14880	19.843	18064	19.239	33554	21.648	13004
23.393	22095	21.136	19061	18.148	17102	19.877	15972	19.292	13658	21.712	12269
23.521	30991	21.372	15337	18.173	12779	19.923	23012	19.388	84860	21.803	13135
23.572	15835	21.481	13532	18.205	14760	20.012	15267	19.488	41133	21.871	12919
23.704	25071	21.532	15396	18.248	18269	20.053	16157	19.627	56676	22.000	16070
23.773	13991	21.588	12203	18.280	36109	20.096	15528	19.665	12341	22.067	17516

Dichlorobiphenyls					
"M03102107"		"M03102107"		"M03102107"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.140	13597	15.815	12482	13.714	20207
17.371	12194	16.545	20983	14.024	860378
17.569	12550	17.014	12326	15.612	29167
17.628	17732	17.375	12331	15.719	14379
17.856	16740	17.888	27172	16.235	12857
18.023	17852	17.941	17496	16.597	12540
18.065	12795	18.145	19188	16.769	100755
18.163	19307	18.207	20094	16.989	21121
18.244	13836	18.270	25087	17.157	17810
18.296	15267	18.338	12852	17.232	41932
18.317	15883	18.396	13591	17.433	14009
18.353	13808	18.432	21405	17.549	12510
18.423	14726	18.506	15927	17.720	16593
18.465	15650	18.535	15546	17.751	13618
18.495	13647	18.568	13121	17.838	12076
18.547	19901	18.647	13534	18.083	16189
18.632	20693	18.671	18869	18.212	20705
18.674	19203	18.769	13876	18.285	22694
18.708	21360	18.809	15269	18.353	17711
18.740	19263	18.860	13919	18.450	12032
18.771	13869	18.904	22958	18.524	20760
18.798	13575	18.957	16085	18.598	16602
18.861	23837	19.025	20885	18.765	12313
18.900	13657	19.090	35492	18.838	12569
18.925	12149	19.144	18056	18.885	14010
18.990	26908	19.192	24740	19.034	19215
19.041	18739	19.231	15481	19.112	20007
19.073	23587	19.271	19378	19.167	17111
19.126	39882	19.377	17385	19.238	28454
19.167	14379	19.434	12647	19.395	37719
19.198	14273	19.459	24171	19.446	13687
19.224	22678	19.519	25749	19.475	15951
19.251	14682	19.574	17751	19.549	17966
19.293	31200	19.621	14618	19.587	26715
19.331	20266	19.683	29024	19.676	23511
19.378	25395	19.710	17704	19.746	17835
19.408	44651	19.750	16517	19.762	16631
19.470	13678	19.786	12472	19.811	15227
19.499	34596	19.851	19249	19.860	26979
19.563	41538	19.877	19722	19.949	28484
19.608	16031	19.951	24214	19.991	14354

Extracted Ion Current Profiles

23.807	17741	21.634	12777	18.335	23606	20.124	19363	19.695	26372	22.147	13728
23.955	12643	21.748	32475	18.404	16381	20.172	18034	19.749	12633	22.209	13041
24.005	14213	21.879	30321	18.444	23801	20.214	15915	19.784	23806	22.276	14349
24.071	13497	22.210	18395	18.487	14302	20.269	29060	19.834	18793	22.346	18716
24.167	16875	22.305	21670	18.515	16335	20.309	18749	19.878	21775	22.380	12728
24.678	12253	22.449	12361	18.547	21377	20.357	14673	19.931	35117	22.451	26372
		22.552	14129	18.595	21657	20.396	14120	20.001	25221	22.507	19731
		22.600	18758	18.632	29605	20.432	18621	20.070	69359	22.563	13747
		22.658	35445	18.695	41160	20.476	14875	20.161	25897	22.595	13405
		22.727	12016	18.759	17494	20.507	14721	20.200	47790	22.653	15758
		22.769	12909	18.789	15847	20.553	25661	20.250	26803	22.676	13427
		22.844	12296	18.856	19975	20.609	19763	20.293	60055	22.715	13822
		23.073	14065	18.900	30318			20.403	41223	22.780	13488
		23.264	13165	18.942	18533			20.462	47110	22.838	13099
		23.351	35028	18.982	12279			20.494	30561	22.910	14217
		23.466	19456	19.022	27141			20.544	34347	22.946	15835
		23.703	14766	19.068	16862			20.594	32546	22.984	13635
		23.761	12779	19.101	15416			20.654	13623	23.037	15972

Extracted Ion Current Profiles

19.637	17418	19.990	12124	20.044	18465
19.660	19562	20.015	13830	20.091	26944
19.709	43863	20.040	20839	20.202	19640
19.752	26694	20.075	12865	20.252	14739
19.798	42164	20.106	12714	20.290	18743
19.874	31555	20.129	23704	20.362	15042
19.911	25282	20.181	17810	20.425	13532
19.939	24639	20.222	23204	20.458	21818
20.013	48277	20.274	20695	20.508	20093
20.039	19550	20.312	14640	20.550	19233
20.076	49622	20.332	23050	20.643	25530
20.129	18055	20.373	19264	20.677	14646
20.156	29612	20.432	12330	20.707	17358
20.201	27392	20.464	17294	20.756	32139
20.239	26983	20.500	12680	20.813	15790
20.272	17140	20.522	14759	20.909	38030
20.295	18500	20.560	21362	20.945	23153
20.321	20557	20.589	22565	21.031	13399

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"	
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
17.140	13597	15.815	12482	11.935	16602	11.936	14930				
17.371	12194	16.545	20983	14.669	18345	16.610	324627				
17.569	12550	17.014	12326	15.821	13238	17.029	13208				
17.628	17732	17.375	12331	16.028	15156	17.685	14844				
17.856	16740	17.888	27172	16.614	48347	17.879	12513				
18.023	17852	17.941	17496	16.969	12062	18.736	12248				
18.065	12795	18.145	19188	17.050	31144	18.822	21789				
18.163	19307	18.207	20094	17.146	14359	19.136	17778				
18.244	13836	18.270	25087	17.214	12488	19.327	17352				
18.296	15267	18.338	12852	17.295	13268	19.382	13947				
18.317	15883	18.396	13591	17.362	26510	19.529	14962				
18.353	13808	18.432	21405	17.421	17508	19.660	12495				
18.423	14726	18.506	15927	17.499	17388	19.759	20558				
18.465	15650	18.535	15546	17.749	17112	19.837	17488				
18.495	13647	18.568	13121	17.801	12025	19.866	14385				
18.547	19901	18.647	13534	17.846	13735	20.073	13914				
18.632	20693	18.671	18869	17.932	24975	20.178	15562				
18.674	19203	18.769	13876	18.006	85647	20.238	15702				
18.708	21360	18.809	15269	18.087	12739	20.327	12291				
18.740	19263	18.860	13919	18.144	33159	20.366	16539				
18.771	13869	18.904	22958	18.203	21918	20.412	15602				
18.798	13575	18.957	16085	18.228	23061	20.549	16586				
18.861	23837	19.025	20885	18.389	34957	20.612	13351				
18.900	13657	19.090	35492	18.436	22969	20.654	20716				
18.925	12149	19.144	18056	18.500	21032	20.727	13983				
18.990	26908	19.192	24740	18.554	34158	20.790	15254				
19.041	18739	19.231	15481	18.598	27383	20.971	17105				
19.073	23587	19.271	19378	18.731	16143	21.144	24379				
19.126	39882	19.377	17385	18.790	42767	21.211	15233				
19.167	14379	19.434	12647	18.898	31347	21.239	15829				
19.198	14273	19.459	24171	18.961	23755	21.268	12565				
19.224	22678	19.519	25749	19.000	16132	21.341	17845				
19.251	14682	19.574	17751	19.050	13153	21.470	12410				
19.293	31200	19.621	14618	19.113	55971	21.541	12402				
19.331	20266	19.683	29024	19.154	94914	21.598	12887				
19.378	25395	19.710	17704	19.239	33554	21.648	13004				
19.408	44651	19.750	16517	19.292	13658	21.712	12269				
19.470	13678	19.786	12472	19.388	84860	21.803	13135				
19.499	34596	19.851	19249	19.488	41133	21.871	12919				
19.563	41538	19.877	19722	19.627	56676	22.000	16070				
19.608	16031	19.951	24214	19.665	12341	22.067	17516				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"	
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
		18.699	13171	24.407	12130			26.554	15666	17.554	14206
		18.975	13785					28.280	14023	17.869	15489
		19.026	12541					28.430	13000	17.986	12700
		19.105	16621					28.916	13284	18.100	12490
		19.196	18704					30.640	12184	18.304	13596
		19.267	13052							18.333	16596
		19.319	14532							18.509	19430
		19.383	17717							18.657	21678
		19.419	22851							18.695	18643
		19.537	12368							18.757	17675
		19.580	17439							18.797	25965
		19.681	20890							18.851	14733
		19.750	17075							18.900	36664
		19.773	13108							19.055	15528
		19.838	24657							19.121	15540
		19.875	15587							19.165	18751
		19.907	12962							19.242	12459
		19.922	12328							19.289	33660
		19.965	25275							19.370	28559
		20.000	26040							19.446	15758
		20.060	27515							19.469	12337
		20.111	29100							19.498	27873
		20.178	27528							19.553	26760
		20.219	24674							19.596	13263
		20.282	28947							19.635	28733
		20.316	25593							19.672	13429
		20.346	15177							19.713	37511
		20.384	21437							19.776	29998
		20.422	22710							19.813	13509
		20.459	23589							19.866	21074
		20.483	23195							19.903	14153
		20.538	19958							19.924	14932
		20.564	22315							19.953	16501
		20.599	12684							19.976	22161
		20.639	22552							20.016	31417
		20.663	20687							20.070	15519
		20.729	42308							20.093	26013
		20.785	21011							20.130	15984
		20.817	22813							20.151	15345
		20.879	41709							20.180	15787
		20.933	44235							20.207	15901

Extracted Ion Current Profiles

19.637	17418	19.990	12124	19.695	26372	22.147	13728
19.660	19562	20.015	13830	19.749	12633	22.209	13041
19.709	43863	20.040	20839	19.784	23806	22.276	14349
19.752	26694	20.075	12865	19.834	18793	22.346	18716
19.798	42164	20.106	12714	19.878	21775	22.380	12728
19.874	31555	20.129	23704	19.931	35117	22.451	26372
19.911	25282	20.181	17810	20.001	25221	22.507	19731
19.939	24639	20.222	23204	20.070	69359	22.563	13747
20.013	48277	20.274	20695	20.161	25897	22.595	13405
20.039	19550	20.312	14640	20.200	47790	22.653	15758
20.076	49622	20.332	23050	20.250	26803	22.676	13427
20.129	18055	20.373	19264	20.293	60055	22.715	13822
20.156	29612	20.432	12330	20.403	41223	22.780	13488
20.201	27392	20.464	17294	20.462	47110	22.838	13099
20.239	26983	20.500	12680	20.494	30561	22.910	14217
20.272	17140	20.522	14759	20.544	34347	22.946	15835
20.295	18500	20.560	21362	20.594	32546	22.984	13635
20.321	20557	20.589	22565	20.654	13623	23.037	15972
20.353	31525	20.626	20287	20.693	16387	23.071	14041
20.388	22012	20.669	23981	20.731	24911	23.111	14761
20.406	22155	20.721	21742	20.750	23156	23.170	21145
20.435	16395	20.825	23780	20.832	27124	23.195	15509
20.472	31391	20.870	18454	20.861	13946	23.243	13554
20.495	22053	20.898	12095	20.906	19072	23.319	12824
20.523	17379	20.935	16628	20.960	36667	23.364	13222
20.553	25589	20.963	12709	21.000	16126	23.426	14280
20.585	17579	20.994	19619	21.034	13576	23.529	13043
20.624	29515	21.023	15095	21.067	18129	23.608	14546
20.658	30313	21.044	19972	21.099	27657	23.623	14265
20.702	45151	21.096	17807	21.180	33073	23.684	18575
20.747	17513	21.140	27776	21.194	15065	23.766	12991
20.787	25358	21.170	13131	21.227	29804	23.802	13193
20.817	18421	21.224	12429	21.291	16885	23.905	17192
20.835	19763	21.242	19037	21.363	23728	23.990	17517
20.861	18132	21.288	16081	21.412	20135	24.034	18142
20.888	30211	21.342	23834	21.461	20848	24.083	13529
20.937	30003	21.417	25185	21.506	14530	24.131	12222
20.981	63486	21.455	35525	21.548	34957	24.257	26493
21.042	28007	21.540	18972	21.625	27702	24.379	15672
21.091	62747	21.650	15596	21.677	35830	24.438	16457
21.148	39500	21.724	19715	21.761	13988	24.492	19027
21.193	16872	21.784	20309	21.790	12760	24.534	17001
21.247	32744	21.924	14884	21.817	20004	24.742	23851
21.281	47762	21.972	15915	21.890	18142	24.786	14852
21.334	16955	22.014	14904	21.964	26356	24.866	13015
21.352	17537	22.031	14049	22.036	26370	25.000	13573

Extracted Ion Current Profiles

20.983	24794
21.009	15381
21.033	15140
21.058	14740
21.096	33186
21.150	22275
21.177	34054
21.223	25812
21.259	25597
21.295	26318
21.330	16075
21.356	16435
21.379	15658
21.403	16721
21.456	49099
21.512	28649
21.535	19071
21.583	38441
21.614	29135
21.662	26546
21.688	15382
21.727	23722
21.760	26513
21.792	25482
21.826	18979
21.860	38558
21.900	18409
21.935	32407
21.960	27745
22.005	25992
22.042	25496
22.083	21552
22.125	23412
22.167	37094
22.194	16717
22.227	29084
22.281	50182
22.318	19809
22.345	30175
22.381	29256
22.425	28005
22.459	27563
22.515	38433
22.540	19330
22.566	27126
22.604	16888

20.233	24857
20.278	32992
20.346	32498
20.370	18246
20.398	34917
20.486	39972
20.518	24479
20.566	40081
20.619	28629
20.650	15670
20.696	31035
20.730	33674
20.788	26018
20.811	17252
20.838	18135
20.865	20425
20.882	20261
20.913	17973
20.945	28296
20.974	17779
20.997	43908
21.084	34788
21.108	37452
21.180	35464
21.221	27169
21.248	32660
21.281	20010
21.312	28443
21.347	41527
21.419	45770
21.441	46693
21.493	20351
21.516	30651
21.572	41423
21.603	19981
21.633	30051
21.662	20333
21.693	28878
21.738	25914
21.764	20039
21.788	21238
21.815	22450
21.844	43809
21.883	20120
21.910	28765
21.948	27838

Extracted Ion Current Profiles

21.393	32489	22.081	22231	22.197	34332	25.061	16425
21.429	126111	22.140	14300	22.252	24054	25.123	12628
21.503	22726	22.194	21372	22.284	18174	25.182	18627
21.529	37572	22.253	25250	22.355	23432	25.303	13557
21.591	27299	22.286	22543	22.406	15351	25.375	12786
21.612	20044	22.330	15829	22.441	34762	25.447	21583
21.639	17458	22.419	16146	22.535	13123	25.497	13554
21.668	27815	22.481	12945	22.573	14004	25.742	12046
21.710	27670	22.520	18655	22.593	15285	25.890	22224
21.737	28276	22.592	17819	22.623	12323	26.024	17829
21.779	29355	22.627	13383	22.681	19315	26.241	15328
21.813	18309	22.669	16115	22.768	59673	26.295	14082
21.840	26241	22.716	15299	22.867	12146	26.565	14867
21.886	40205	22.910	13762	22.915	21303	26.957	19248
21.923	26227	23.042	109951	23.000	21261	27.642	16108
21.960	21605	23.084	26153	23.042	18016	27.729	15826
21.999	14892	23.217	29211	23.095	19143		
22.028	33949	23.800	12807	23.169	28831		
22.095	36295	23.953	12896	23.243	12958		
22.118	26594	24.068	20743	23.279	29744		
22.157	16863	24.475	12805	23.441	26987		
22.188	34574	24.997	12177	23.496	13611		
22.242	26584	25.316	12734	23.587	15513		
22.278	27346			23.698	15798		
22.323	50656			23.762	23586		
22.382	14431			23.846	12394		
22.406	17856			23.958	27942		
22.439	25944			24.056	26577		
22.490	47020			24.139	20586		
22.540	13057			24.203	17615		
22.581	43359			24.248	13974		
22.627	15105			24.318	14442		
22.651	15864			24.382	12120		
22.676	24106			24.574	22323		
22.717	13740			24.627	20826		
22.735	19460			24.700	14973		
22.813	38779			24.753	13982		
22.838	16860			24.797	15689		
22.868	23618			24.856	12149		
22.901	18809			24.916	16891		
22.954	19316			25.021	19252		
22.972	15225			25.084	14133		
22.995	15383			25.170	17965		
23.025	13598			25.241	12332		
23.047	13406			25.431	22613		
23.076	18750			25.514	15506		

Extracted Ion Current Profiles

22.628	17489
22.654	28642
22.701	46879
22.752	17031
22.782	27989
22.812	17798
22.868	43685
22.913	55229
23.006	44262
23.057	38331
23.101	35415
23.147	27802
23.194	38503
23.247	31217
23.266	21650
23.294	27170
23.330	23924
23.377	21132
23.406	21816
23.446	15740
23.463	15978
23.498	21712
23.529	15649
23.556	16090
23.580	42583
23.638	14753
23.666	14011
23.701	30425
23.751	22731
23.778	26239
23.845	41258
23.880	22593
23.940	33965
23.958	19283
23.986	15769
24.010	14131
24.039	31151
24.081	13721
24.111	23871
24.146	17256
24.174	22643
24.219	31334
24.261	29860
24.310	15572
24.332	14130
24.362	19821

21.986	26411
22.023	30763
22.059	17897
22.092	28185
22.122	25243
22.179	37776
22.207	18353
22.233	19808
22.256	19529
22.281	21596
22.313	29085
22.344	28492
22.383	49376
22.441	19340
22.481	27930
22.514	31444
22.540	18124
22.569	18011
22.597	29290
22.645	40193
22.688	38560
22.739	39236
22.782	26679
22.814	24862
22.852	20854
22.879	44551
22.919	19540
22.955	33533
23.002	25302
23.037	19167
23.057	19522
23.084	17899
23.108	17250
23.132	18149
23.167	28136
23.222	40580
23.245	23586
23.291	66127
23.331	30480
23.365	17672
23.407	23407
23.449	37354
23.479	28952
23.528	38529
23.564	19423
23.590	28165

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"	
m/z 292		m/z 290		m/z 220		m/z 222		m/z 360		m/z 362	
		24.407	12130	9.690	13790	13.693	13407				
				17.227	14123	14.023	167865				
				17.399	13353	16.056	28637				
				18.248	12342	16.770	27538				
				19.157	15829	16.976	13418				
				19.605	14048	18.736	13097				
				19.948	13196	19.014	21288				
				20.077	12629	19.185	21645				
				20.237	15016	19.618	25644				
				20.407	15451	19.916	29659				
				20.463	14472	20.129	14275				
				20.492	13776	20.175	13553				
				20.553	12289	20.348	27557				
				20.802	19221	20.692	24932				
				20.852	14785	20.930	15343				
				20.997	12132	20.970	12142				
				21.125	12657	21.035	16365				
				21.313	14080	21.417	13380				
				21.482	15364	21.448	13565				
				21.550	12661	21.496	20927				
				21.871	13668	21.703	19900				
				22.130	16008	21.836	24678				
				22.610	12590	22.052	27550				
				23.052	12074	22.101	42334				
				23.781	13402	22.180	15153				
				24.025	15207	22.233	16519				
				24.090	13978	22.378	12024				
				24.167	19808	22.459	15802				
				24.350	12143	22.512	12685				
				24.578	12572	22.632	15612				
				24.759	15590	22.890	18745				
				24.824	15037	22.958	19904				
				25.058	13396	23.004	14148				
				25.252	13994	23.073	13136				
				25.349	14874	23.103	19862				
				25.654	14254	23.194	13426				
				25.907	14935	23.393	22095				
				26.178	13214	23.521	30991				
				26.413	14237	23.572	15835				
				26.683	15470	23.704	25071				
				26.755	13695	23.773	13991				
				26.871	14628	23.807	17741				

Tetrachlorobiphenyls									
"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"	
m/z 288		m/z 324		m/z 326		m/z 328		m/z 289	
20.544	13628							21.389	13613
21.395	12164							23.193	12896
21.531	12930							23.511	18725
21.795	12335							23.562	12494
21.884	15730							23.605	12039
22.046	18770							23.777	14076
22.380	13909							23.963	14451
22.549	12629							24.219	12586
22.713	15180							24.317	19387
22.773	13424							24.354	12527
22.863	12362							24.628	14797
22.997	16442							24.832	13805
23.064	12958							24.921	14489
23.107	14452							25.158	16752
23.188	12132							25.472	12752
23.248	13686							25.534	14883
23.330	12147							25.628	14177
23.691	12328							27.057	12362
23.785	12889								
23.811	13514								
23.902	12992								
24.440	13071								
24.565	13826								
24.762	20554								
24.938	12762								
25.009	13122								
25.086	14235								
25.178	21001								
25.377	12768								
25.506	32712								
25.531	19623								
25.861	15820								
26.018	19836								
26.151	17849								
26.314	16054								
26.371	16465								
26.427	14748								
27.121	15589								
28.004	17639								

Extracted Ion Current Profiles

27.024	42166	23.955	12643
27.288	12584	24.005	14213
27.348	12479	24.071	13497
27.550	13652	24.167	16875
27.701	12800	24.678	12253
28.180	12958		

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258		m/z 392	
				18.699	13171	17.140	13597	15.815	12482		
				18.975	13785	17.371	12194	16.545	20983		
				19.026	12541	17.569	12550	17.014	12326		
				19.105	16621	17.628	17732	17.375	12331		
				19.196	18704	17.856	16740	17.888	27172		
				19.267	13052	18.023	17852	17.941	17496		
				19.319	14532	18.065	12795	18.145	19188		
				19.383	17717	18.163	19307	18.207	20094		
				19.419	22851	18.244	13836	18.270	25087		
				19.537	12368	18.296	15267	18.338	12852		
				19.580	17439	18.317	15883	18.396	13591		
				19.681	20890	18.353	13808	18.432	21405		
				19.750	17075	18.423	14726	18.506	15927		
				19.773	13108	18.465	15650	18.535	15546		
				19.838	24657	18.495	13647	18.568	13121		
				19.875	15587	18.547	19901	18.647	13534		
				19.907	12962	18.632	20693	18.671	18869		
				19.922	12328	18.674	19203	18.769	13876		
				19.965	25275	18.708	21360	18.809	15269		
				20.000	26040	18.740	19263	18.860	13919		
				20.060	27515	18.771	13869	18.904	22958		
				20.111	29100	18.798	13575	18.957	16085		
				20.178	27528	18.861	23837	19.025	20885		
				20.219	24674	18.900	13657	19.090	35492		
				20.282	28947	18.925	12149	19.144	18056		
				20.316	25593	18.990	26908	19.192	24740		
				20.346	15177	19.041	18739	19.231	15481		
				20.384	21437	19.073	23587	19.271	19378		
				20.422	22710	19.126	39882	19.377	17385		
				20.459	23589	19.167	14379	19.434	12647		
				20.483	23195	19.198	14273	19.459	24171		
				20.538	19958	19.224	22678	19.519	25749		
				20.564	22315	19.251	14682	19.574	17751		
				20.599	12684	19.293	31200	19.621	14618		
				20.639	22552	19.331	20266	19.683	29024		
				20.663	20687	19.378	25395	19.710	17704		
				20.729	42308	19.408	44651	19.750	16517		
				20.785	21011	19.470	13678	19.786	12472		
				20.817	22813	19.499	34596	19.851	19249		
				20.879	41709	19.563	41538	19.877	19722		
				20.933	44235	19.608	16031	19.951	24214		
				20.983	24794	19.637	17418	19.990	12124		

Extracted Ion Current Profiles

21.009	15381	19.660	19562	20.015	13830
21.033	15140	19.709	43863	20.040	20839
21.058	14740	19.752	26694	20.075	12865
21.096	33186	19.798	42164	20.106	12714
21.150	22275	19.874	31555	20.129	23704
21.177	34054	19.911	25282	20.181	17810
21.223	25812	19.939	24639	20.222	23204
21.259	25597	20.013	48277	20.274	20695
21.295	26318	20.039	19550	20.312	14640
21.330	16075	20.076	49622	20.332	23050
21.356	16435	20.129	18055	20.373	19264
21.379	15658	20.156	29612	20.432	12330
21.403	16721	20.201	27392	20.464	17294
21.456	49099	20.239	26983	20.500	12680
21.512	28649	20.272	17140	20.522	14759
21.535	19071	20.295	18500	20.560	21362
21.583	38441	20.321	20557	20.589	22565
21.614	29135	20.353	31525	20.626	20287
21.662	26546	20.388	22012	20.669	23981
21.688	15382	20.406	22155	20.721	21742
21.727	23722	20.435	16395	20.825	23780
21.760	26513	20.472	31391	20.870	18454
21.792	25482	20.495	22053	20.898	12095
21.826	18979	20.523	17379	20.935	16628
21.860	38558	20.553	25589	20.963	12709
21.900	18409	20.585	17579	20.994	19619
21.935	32407	20.624	29515	21.023	15095
21.960	27745	20.658	30313	21.044	19972
22.005	25992	20.702	45151	21.096	17807
22.042	25496	20.747	17513	21.140	27776
22.083	21552	20.787	25358	21.170	13131
22.125	23412	20.817	18421	21.224	12429
22.167	37094	20.835	19763	21.242	19037
22.194	16717	20.861	18132	21.288	16081
22.227	29084	20.888	30211	21.342	23834
22.281	50182	20.937	30003	21.417	25185
22.318	19809	20.981	63486	21.455	35525
22.345	30175	21.042	28007	21.540	18972
22.381	29256	21.091	62747	21.650	15596
22.425	28005	21.148	39500	21.724	19715
22.459	27563	21.193	16872	21.784	20309
22.515	38433	21.247	32744	21.924	14884
22.540	19330	21.281	47762	21.972	15915
22.566	27126	21.334	16955	22.014	14904
22.604	16888	21.352	17537	22.031	14049
22.628	17489	21.393	32489	22.081	22231

Extracted Ion Current Profiles

22.654	28642	21.429	126111	22.140	14300
22.701	46879	21.503	22726	22.194	21372
22.752	17031	21.529	37572	22.253	25250
22.782	27989	21.591	27299	22.286	22543
22.812	17798	21.612	20044	22.330	15829
22.868	43685	21.639	17458	22.419	16146
22.913	55229	21.668	27815	22.481	12945
23.006	44262	21.710	27670	22.520	18655
23.057	38331	21.737	28276	22.592	17819
23.101	35415	21.779	29355	22.627	13383
23.147	27802	21.813	18309	22.669	16115
23.194	38503	21.840	26241	22.716	15299
23.247	31217	21.886	40205	22.910	13762
23.266	21650	21.923	26227	23.042	109951
23.294	27170	21.960	21605	23.084	26153
23.330	23924	21.999	14892	23.217	29211
23.377	21132	22.028	33949	23.800	12807
23.406	21816	22.095	36295	23.953	12896
23.446	15740	22.118	26594	24.068	20743
23.463	15978	22.157	16863	24.475	12805
23.498	21712	22.188	34574	24.997	12177
23.529	15649	22.242	26584	25.316	12734
23.556	16090	22.278	27346		
23.580	42583	22.323	50656		
23.638	14753	22.382	14431		
23.666	14011	22.406	17856		
23.701	30425	22.439	25944		
23.751	22731	22.490	47020		
23.778	26239	22.540	13057		
23.845	41258	22.581	43359		
23.880	22593	22.627	15105		
23.940	33965	22.651	15864		
23.958	19283	22.676	24106		
23.986	15769	22.717	13740		
24.010	14131	22.735	19460		
24.039	31151	22.813	38779		
24.081	13721	22.838	16860		
24.111	23871	22.868	23618		
24.146	17256	22.901	18809		
24.174	22643	22.954	19316		
24.219	31334	22.972	15225		
24.261	29860	22.995	15383		
24.310	15572	23.025	13598		
24.332	14130	23.047	13406		
24.362	19821	23.076	18750		
24.394	15325	23.117	19765		

Extracted Ion Current Profiles

24.421	31204	23.151	23051
24.470	24443	23.196	24816
24.505	15163	23.220	16595
24.537	35117	23.256	39457
24.591	12566	23.305	13397
24.626	18752	23.390	18053
24.681	31197	23.417	16627
24.717	21513	23.477	23182
24.752	21555	23.516	18861
24.826	15275	23.547	27332
24.887	25226	23.615	13047
24.987	16016	23.657	17527
25.059	20151	23.703	42908
25.089	19033	23.789	15716
25.131	29384	23.837	21655
25.206	21247	23.930	36785
25.260	17833	23.969	24620
25.305	15700	24.021	22190
25.357	18712	24.084	14250
25.391	14191	24.157	28638
25.423	14165	24.230	15469
25.474	15826	24.318	15915
25.492	12521	24.351	20240
25.543	21006	24.401	14739
25.590	22488	24.457	20452
25.638	19195	24.494	21177
25.682	22535	24.589	20343
25.775	33467	24.682	14681
25.840	25467	24.741	15981
25.894	19387	24.766	14184
25.958	17940	24.800	16577
26.014	15238	24.856	13264
26.065	14177	24.992	16086
26.090	16493	25.193	13213
26.197	15045	25.241	14965
26.308	17007	25.295	18217
26.533	12769	25.430	18057
		25.478	24038
		25.764	15925
		25.878	12066
		26.003	23555
		26.270	19868
		26.310	12103

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"		"M03102107"	
m/z 360		m/z 362		m/z 288		m/z 290		m/z 426		m/z 428	
				20.544	13628	24.407	12130				
				21.395	12164						
				21.531	12930						
				21.795	12335						
				21.884	15730						
				22.046	18770						
				22.380	13909						
				22.549	12629						
				22.713	15180						
				22.773	13424						
				22.863	12362						
				22.997	16442						
				23.064	12958						
				23.107	14452						
				23.188	12132						
				23.248	13686						
				23.330	12147						
				23.691	12328						
				23.785	12889						
				23.811	13514						
				23.902	12992						
				24.440	13071						
				24.565	13826						
				24.762	20554						
				24.938	12762						
				25.009	13122						
				25.086	14235						
				25.178	21001						
				25.377	12768						
				25.506	32712						
				25.531	19623						
				25.861	15820						
				26.018	19836						
				26.151	17849						
				26.314	16054						
				26.371	16465						
				26.427	14748						
				27.121	15589						
				28.004	17639						

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03102107"	"M03102107"	"M03102107"	"M03102107"	"M03102107"	"M03102107"	"M03102107"	"M03102107"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
		20.919 16456					

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102107"	"M03102107"	"M03102107"	"M03102107"	"M03102107"	"M03102107"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
		20.919 16456			

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102107"		"M03102107"				"M03102107"		"M03102107"			"M03102107"		"M03102107"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
11.937	13437	11.052	419	424	240	17.073	12456	16.880	14144	188	11.936	14930	13.882	12069
12.613	1955	11.923	594	426	241	17.925	14831	17.005	15449	189	16.610	324627	14.030	18612
12.750	18614	12.600	1310	428		18.215	19783	17.373	20456		17.029	13208	15.800	16576
12.970	481	12.747	628	430		18.457	13841	17.496	12070		17.685	14844	15.950	13950
13.039	1561	13.262	437	498		18.490	14793	17.557	20607		17.879	12513	16.211	19114
13.216	411	13.676	503	500		18.529	14774	17.596	14190		18.736	12248	16.327	13996
13.258	770	13.736	601			18.638	35046	17.637	13962		18.822	21789	16.610	76349
13.563	535	13.760	872			18.703	22679	17.715	36769		19.136	17778	16.696	16026
13.663	1220	13.820	413			18.761	13705	17.739	34582		19.327	17352	16.864	12937
13.709	597	14.104	1016			18.899	33474	17.827	17421		19.382	13947	16.944	12559
13.762	1609	14.191	727			18.963	15549	17.864	29141		19.529	14962	16.997	14877
13.826	1591	14.228	746			18.999	17828	17.906	17111		19.660	12495	17.036	14577
13.883	1798	14.274	779			19.079	37592	17.944	23193		19.759	20558	17.193	16582
13.975	871	14.339	997			19.166	21028	17.990	12455		19.837	17488	17.211	13380
14.060	981	14.391	808			19.218	18531	18.016	13801		19.866	14385	17.299	12949
14.105	779	14.410	567			19.281	25828	18.041	12759		20.073	13914	17.438	29372
14.129	516	14.448	922			19.317	14323	18.068	59089		20.178	15562	17.520	21197
14.170	751	14.478	913			19.356	17792	18.168	13630		20.238	15702	17.571	26322
14.199	1052	14.512	868			19.397	22396	18.218	28527		20.327	12291	17.651	29949
14.243	703	14.547	512			19.419	16513	18.242	14754		20.366	16539	17.700	18275
14.267	1017	14.598	1381			19.457	50495	18.267	14843		20.412	15602	17.741	13658
14.314	1231	14.634	1540			19.521	18025	18.299	28876		20.549	16586	17.798	13397
14.352	639	14.690	1181			19.621	48502	18.341	14343		20.612	13351	17.828	17107
14.375	1073	14.722	699			19.645	16111	18.371	14375		20.654	20716	17.872	16552
14.430	1540	14.748	728			19.691	36247	18.398	15697		20.727	13983	17.884	19588
14.474	829	14.805	2233			19.734	14013	18.418	16199		20.790	15254	17.963	25567
14.508	1251	14.857	2754			19.762	13248	18.445	31227		20.971	17105	18.006	22978
14.538	2226	14.898	1471			19.787	20161	18.497	15680		21.144	24379	18.055	18799
14.598	748	14.934	765			19.825	13772	18.528	50836		21.211	15233	18.092	12606
14.626	1373	14.957	1186			19.853	16597	18.571	22392		21.239	15829	18.165	39963
14.661	966	14.997	966			19.875	18027	18.596	17387		21.268	12565	18.212	15657
14.704	2226	15.023	2660			19.908	23816	18.622	14300		21.341	17845	18.269	33111
14.745	1583	15.079	2022			19.939	15268	18.657	25393		21.470	12410	18.293	14681
14.771	965	15.106	1466			19.965	14423	18.688	17399		21.541	12402	18.349	18254
14.798	999	15.129	1449			20.012	33554	18.718	27699		21.598	12887	18.399	30438
14.832	3083	15.164	2276			20.041	26280	18.747	18897		21.648	13004	18.470	41710
14.869	1516	15.193	1285			20.080	26069	18.807	59614		21.712	12269	18.548	34914
14.898	1570	15.221	2946			20.118	26985	18.876	44294		21.803	13135	18.598	20861
14.919	1525	15.291	3316			20.163	29399	18.899	31903		21.871	12919	18.617	13569
14.944	1035	15.316	1928			20.198	43407	18.940	29454		22.000	16070	18.654	16993
14.987	2231	15.342	2701			35.327	417147	35.327	90352(M)		22.067	17516	19.181	38954

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	32.775	428	33.370	533
512	33.626	482	34.865	530
	33.665	567	34.949	477
	34.408	455	35.308	1331
	35.293	531	35.343	890
	35.331	788	35.390	604
	35.370	770	43.694	9187
	43.653	1061		
	43.692	9239(M)		

8685(M)

Analytical Sample Results

Job Number: 14100477

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: B-34
Lab Sample ID: 14100477-08 (AR39379)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-8	PCBs by EPA Method TO-4A/680	10/21/2014 10:27	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	311.00m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000320	2.00	U	MS03-473-8
Dichlorobiphenyl	25512-42-9	ND	0.0000320	2.00	U	MS03-473-8
Trichlorobiphenyl	25323-68-6	**0.0100**	0.0000320	2.00		MS03-473-8
Tetrachlorobiphenyl	26914-33-0	**0.000358**	0.0000640	2.00		MS03-473-8
Pentachlorobiphenyl	25429-29-2	ND	0.0000640	2.00	U	MS03-473-8
Hexachlorobiphenyl	26601-64-9	ND	0.0000640	2.00	U	MS03-473-8
Heptachlorobiphenyl	28655-71-2	ND	0.0000960	2.00	U	MS03-473-8
Octachlorobiphenyl	55722-26-4	ND	0.0000960	2.00	U	MS03-473-8
Nonachlorobiphenyl	53742-07-7	ND	0.000161	2.00	U	MS03-473-8
Decachlorobiphenyl	2051-24-3	ND	0.000161	2.00	U	MS03-473-8
Total PCB	1336-36-3	**0.0104**		2.00		MS03-473-8

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	54.6	42.5-134		MS03-473-8
Tetrachloro-meta-xylene	877-09-8	79.7	17.9-137		MS03-473-8

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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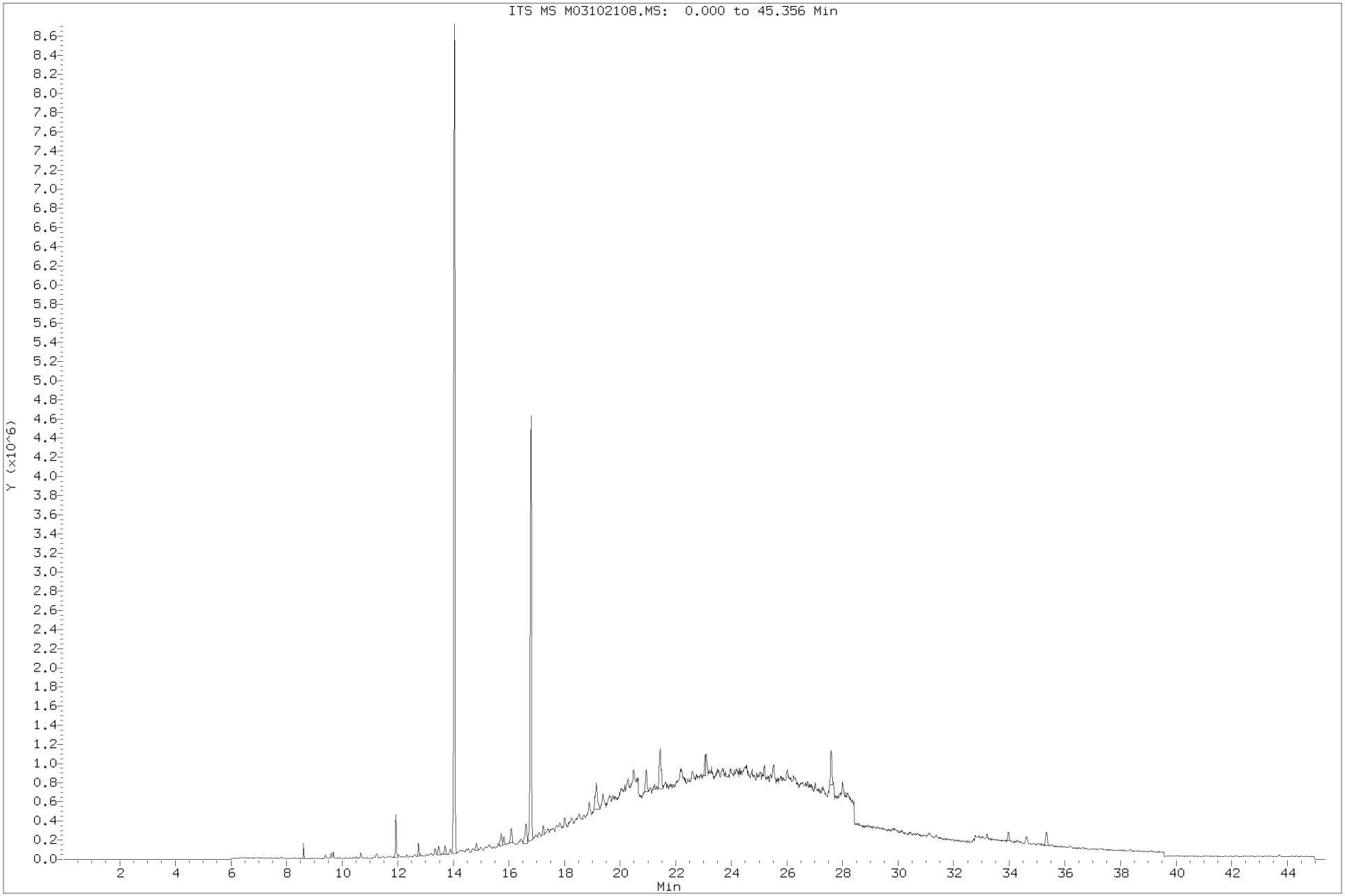
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102108.d/M03102108.MS
Injection Date: 21-OCT-2014 10:27
Instrument: GCMS03.i
Client Sample ID: B-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	B-34
Matrix:	TO-4A PUF	Lab Sample ID:	AR39379
Sample weight:	311 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/18/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	2	Time Analyzed:	10:27

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:		0.0000322	0.0000322	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	
				Di Total:		0.0000322	0.0000322	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/m^3	ug/m^3	ug/m^3	
18.205	14387	18.133	12448	1.2	0.6326	0.0000322	0.0000322	0.000297	
18.510	12212	18.536	14886	0.8	0.6326	0.0000322	0.0000322	0.000252	
18.593	21887	18.623	19971	1.1	0.6326	0.0000322	0.0000322	0.000452	
18.724	14055	18.761	15324	0.9	0.6326	0.0000322	0.0000322	0.000290	
18.824	14523	18.805	12544	1.2	0.6326	0.0000322	0.0000322	0.000300	
19.050	21378	19.063	22524	0.9	0.6326	0.0000322	0.0000322	0.000442	
19.149	20601	19.199	23048	0.9	0.6326	0.0000322	0.0000322	0.000426	
19.229	16911	19.245	20881	0.8	0.6326	0.0000322	0.0000322	0.000349	
19.317	20307	19.311	21525	0.9	0.6326	0.0000322	0.0000322	0.000420	
19.518	15148	19.487	18393	0.8	0.6326	0.0000322	0.0000322	0.000313	
19.620	21279	19.609	22248	1.0	0.6326	0.0000322	0.0000322	0.000440	
19.695	18576	19.683	18044	1.0	0.6326	0.0000322	0.0000322	0.000384	
19.991	20115	20.000	19915	1.0	0.6326	0.0000322	0.0000322	0.000416	
20.050	20414	20.039	17362	1.2	0.6326	0.0000322	0.0000322	0.000422	
20.104	30950	20.096	27885	1.1	0.6326	0.0000322	0.0000322	0.000639	
20.533	30396	20.520	32752	0.9	0.6326	0.0000322	0.0000322	0.000628	
20.763	21864	20.775	19051	1.1	0.6326	0.0000322	0.0000322	0.000452	
20.852	60324	20.847	64516	0.9	0.6326	0.0000322	0.0000322	0.00125	
21.192	21122	21.199	18266	1.2	0.6326	0.0000322	0.0000322	0.000436	
21.256	47880	21.274	48520	1.0	0.6326	0.0000322	0.0000322	0.000989	
22.020	23683	22.005	25074	0.9	0.6326	0.0000322	0.0000322	0.000432	
				Tri Total:		0.0000322	0.0000322	0.0100	

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	
23.797	17493	23.812	13227	1.3	0.6382	0.0000643	0.0000643	0.000358	
				Tetra Total:		0.0000643	0.0000643	0.000358	

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:		0.0000643	0.0000643	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:		0.0000643	0.0000643	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:		0.0000965	0.0000965	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:		0.0000965	0.0000965	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:		0.000161	0.000161	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:		0.000161	0.000161	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	
12.616	1494	12.609	1212	1.2	0.3809		0.00797	
				TCMX Total:			0.00797	

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	
43.695	8881	43.701	7838	1.1	0.6617		0.0273	
				Deca Total:			0.0273	

TCMX Recovery %	79.7 %
Deca Recovery	54.6 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.331	393603	35.338	88796	4.4	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102108"		"M03102108"		"M03102108"		"M03102108"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
11.935	21962	14.047	157622	9.391	15547	11.927	15470
16.611	288299	16.786	74192	10.678	15418	14.045	56805
18.317	12403	17.763	15392	13.495	12796	15.729	12334
18.493	14423	18.191	13964	14.046	171270	16.778	35462
19.084	12971	18.285	13314	14.555	12802	16.816	13873
19.257	12759	18.514	12976	14.709	18303	17.310	14390
19.370	15163	18.566	15835	14.817	22832	17.702	19141
19.491	12205	18.814	12527	15.163	23388	17.863	12990
19.619	18923	18.869	13071	15.290	24537	17.991	14412
19.816	18036	18.928	16630	15.338	14676	18.027	14593
20.011	15937	18.992	19556	15.468	13040	18.140	12900
20.036	16209	19.170	14915	15.724	22536	18.386	15595
20.107	16748	19.334	20675	15.942	19591	18.478	19968
20.159	22284	19.538	12131	16.058	37055	18.545	17032
20.353	28177	19.659	13977	16.249	12501	18.610	12653
20.391	15920	19.731	18323	16.582	12096	18.723	24113
20.442	15696	19.760	21983	16.751	86173	18.914	24684
20.484	13107	19.872	12594	16.783	44331	19.060	19972
20.596	23607	19.993	28317	16.806	20484	19.147	48250
20.687	17676	20.041	24485	17.074	17324	19.296	14479
20.769	22294	20.068	16741	17.106	13687	19.330	18293
20.832	15155	20.130	21305	17.244	13292	19.397	24659
20.968	15015	20.196	16315	17.309	14255	19.467	13896
21.031	12720	20.226	12900	17.363	14936	19.535	12691
21.059	14406	20.301	31588	17.406	17422	19.571	15443
21.110	24091	20.363	27411	17.494	15023	19.628	34057
21.188	13869	20.420	15347	17.579	15255	19.703	16548
21.227	16655	20.485	17845	17.695	22491	19.756	13896
21.263	14252	20.529	21390	17.742	19216	19.800	44259
21.318	17429	20.562	21058	17.860	37483	19.882	12794
21.511	21353	20.625	13143	17.938	21339	19.919	12273
21.599	16904	20.655	26744	17.972	24034	19.944	21825
21.659	13339	20.709	20876	18.041	28575	20.050	19902
21.758	17397	20.768	20806	18.103	12491	20.084	20708
21.823	17569	20.841	20836	18.150	18406	20.136	17541
21.881	12478	20.890	24486	18.245	27225	20.176	19743
21.922	13987	20.952	14565	18.281	17863	20.220	22714
21.953	14863	20.980	12838	18.378	13246	20.293	31115
21.991	20736	20.994	16100	18.449	25263	20.345	16136
22.042	14961	21.064	31610	18.473	16106	20.434	29173
22.079	21297	21.117	19738	18.524	14261	20.475	27433

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"	
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
13.465	20625	14.056	17631	9.391	15547	11.927	15470	11.933	20758	11.935	21962
13.693	32809	15.515	12431	10.678	15418	14.045	56805	14.669	17756	16.611	288299
14.041	3570217	15.718	68852	13.495	12796	15.729	12334	15.809	13085	18.317	12403
15.616	14656	16.056	31699	14.046	171270	16.778	35462	16.019	12683	18.493	14423
16.055	38263	16.377	15984	14.555	12802	16.816	13873	16.059	13662	19.084	12971
16.382	17931	16.486	15660	14.709	18303	17.310	14390	16.617	30372	19.257	12759
16.789	1102016	16.640	14046	14.817	22832	17.702	19141	16.644	20796	19.370	15163
16.981	14460	16.790	14567	15.163	23388	17.863	12990	16.960	12341	19.491	12205
17.215	28624	17.118	17750	15.290	24537	17.991	14412	17.092	12907	19.619	18923
18.040	23110	17.241	32337	15.338	14676	18.027	14593	17.366	18438	19.816	18036
18.370	12496	17.602	34761	15.468	13040	18.140	12900	17.871	15140	20.011	15937
18.989	25583	17.775	24913	15.724	22536	18.386	15595	17.920	14702	20.036	16209
19.174	21810	17.812	34413	15.942	19591	18.478	19968	17.995	70061	20.107	16748
19.601	33027	18.071	22300	16.058	37055	18.545	17032	18.143	17081	20.159	22284
19.894	15740	18.185	30648	16.249	12501	18.610	12653	18.180	15207	20.353	28177
19.947	14337	18.239	18729	16.582	12096	18.723	24113	18.279	12666	20.391	15920
20.194	38078	18.635	13865	16.751	86173	18.914	24684	18.361	14853	20.442	15696
20.248	18239	18.703	33386	16.783	44331	19.060	19972	18.403	14949	20.484	13107
20.353	31983	18.946	26073	16.806	20484	19.147	48250	18.458	13813	20.596	23607
20.436	12862	19.129	24036	17.074	17324	19.296	14479	18.519	21006	20.687	17676
20.594	15193	19.242	15339	17.106	13687	19.330	18293	18.569	14647	20.769	22294
20.673	17454	19.311	13961	17.244	13292	19.397	24659	18.670	16101	20.832	15155
20.714	16827	19.428	90475	17.309	14255	19.467	13896	18.779	14964	20.968	15015
20.824	12170	19.571	13030	17.363	14936	19.535	12691	18.830	15844	21.031	12720
20.912	27595	19.639	14107	17.406	17422	19.571	15443	18.890	22636	21.059	14406
20.944	13852	19.663	15366	17.494	15023	19.628	34057	18.908	22060	21.110	24091
21.037	15751	19.715	22025	17.579	15255	19.703	16548	18.971	16932	21.188	13869
21.073	22102	19.789	12054	17.695	22491	19.756	13896	19.038	20124	21.227	16655
21.141	12571	19.833	12396	17.742	19216	19.800	44259	19.081	31573	21.263	14252
21.344	17625	19.940	12296	17.860	37483	19.882	12794	19.140	49387	21.318	17429
21.406	12557	20.068	19303	17.938	21339	19.919	12273	19.164	25890	21.511	21353
21.450	28259	20.097	14528	17.972	24034	19.944	21825	19.188	31040	21.599	16904
21.484	18627	20.141	22395	18.041	28575	20.050	19902	19.243	16011	21.659	13339
21.634	13632	20.256	15828	18.103	12491	20.084	20708	19.378	59758	21.758	17397
21.757	14180	20.293	12073	18.150	18406	20.136	17541	19.513	33518	21.823	17569
21.839	24528	20.334	16755	18.245	27225	20.176	19743	19.572	15853	21.881	12478
21.893	15968	20.388	14830	18.281	17863	20.220	22714	19.617	45295	21.922	13987
22.035	38259	20.430	18340	18.378	13246	20.293	31115	19.716	27146	21.953	14863
22.073	19930	20.500	17069	18.449	25263	20.345	16136	19.754	17009	21.991	20736
22.102	47896	20.602	95245	18.473	16106	20.434	29173	19.788	18679	22.042	14961
22.231	40147	20.711	16931	18.524	14261	20.475	27433	19.889	48331	22.079	21297

Dichlorobiphenyls					
"M03102108"		"M03102108"		"M03102108"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
18.205	14387	15.796	12907	10.655	15446
18.290	19927	16.552	24706	13.464	111093
18.419	19655	16.799	12284	13.714	38628
18.468	12121	18.133	12448	14.043	18758136
18.510	12212	18.465	16760	14.093	15548
18.593	21887	18.536	14886	14.883	17419
18.724	14055	18.623	19971	15.007	24598
18.768	24909	18.682	14068	15.164	22476
18.824	14523	18.761	15324	15.609	58118
18.862	17374	18.805	12544	15.731	19613
18.943	15900	18.919	33692	16.096	41395
19.010	16779	19.036	13482	16.231	21652
19.050	21378	19.063	22524	16.422	26534
19.149	20601	19.199	23048	16.791	5562408
19.229	16911	19.245	20881	16.927	18441
19.280	25229	19.311	21525	16.981	22290
19.317	20307	19.340	15165	17.144	26393
19.364	19557	19.430	40290	17.223	67512
19.404	21421	19.487	18393	17.354	21427
19.438	21483	19.571	16441	17.570	18653
19.474	34489	19.609	22248	17.688	12444
19.518	15148	19.683	18044	17.759	14022
19.565	34156	19.745	41685	17.837	30562
19.593	15564	19.816	16223	18.062	30617
19.620	21279	19.851	29126	18.251	16804
19.657	22674	19.969	27322	18.301	18543
19.695	18576	20.000	19915	18.349	18350
19.720	23349	20.039	17362	18.509	17198
19.770	26520	20.096	27885	18.567	37277
19.833	55867	20.145	26520	18.791	14938
19.891	15902	20.176	17500	19.248	30797
19.906	16546	20.242	28914	19.400	13636
19.939	33146	20.312	19148	19.476	19949
19.991	20115	20.344	16042	19.586	14384
20.007	30185	20.367	14353	19.613	19809
20.050	20414	20.397	18216	19.701	28083
20.075	18860	20.435	19680	19.770	23090
20.104	30950	20.471	17891	19.834	18823
20.133	18695	20.520	32752	19.868	20384
20.170	26912	20.572	12911	19.920	18348
20.222	35134	20.596	28175	19.968	12862

Extracted Ion Current Profiles

22.324	18481	20.855	13140	18.560	13848	20.524	17085	19.968	21493	22.188	34981
22.437	14346	20.911	16931	18.612	32573	20.594	12191	20.025	18587	22.235	19231
22.487	14481	20.965	13011	18.697	38985	20.622	27064	20.051	35313	22.294	17161
22.521	19033	21.005	15011	18.733	15253			20.100	13472	22.331	14638
22.639	30161	21.053	20697	18.786	14932			20.166	39451	22.418	15666
22.675	13738	21.182	18475	18.819	17678			20.189	28763	22.448	16547
22.725	19766	21.200	15238	18.880	15174			20.233	27036	22.510	19497
22.766	23865	21.408	16310	18.921	16717			20.269	51412	22.547	17172
22.824	12302	21.455	17115	18.982	13551			20.335	25580	22.616	24551
22.893	13673	21.503	21475	19.018	14765			20.380	31086	22.647	20948
22.976	24464	21.575	20054	19.080	44410			20.448	39157	22.731	15819
23.005	19746	21.618	22701	19.144	19867			20.470	26636	22.866	31489
23.070	12596	21.716	29888	19.181	31325			20.494	34038	22.909	14999
23.110	22389	21.769	13881	19.227	16724			20.546	30174	22.970	13867
23.159	15952	21.860	35774	19.261	21743			20.588	23465	23.040	16883
23.203	27554	21.905	17236	19.327	33767			20.621	13288	23.068	13198
23.398	28291	21.945	21107	19.375	34657			20.669	28504	23.090	12194
23.452	13180	22.064	17106	19.438	31441			20.712	42921	23.139	25951

20.256	20892	20.646	12114	19.991	13457
20.275	21798	20.682	21091	20.059	13547
20.322	28706	20.710	18004	20.114	20811
20.391	71095	20.775	19051	20.211	17716
20.429	35610	20.847	64516	20.303	40179
20.458	22137	20.924	22009	20.388	13877
20.481	26008	20.961	26286	20.426	18579
20.508	25910	20.995	16908	20.466	34133
20.533	30396	21.025	25636	20.518	22294
20.573	19531	21.056	14470	20.552	15385
20.595	22356	21.084	26902	20.598	14480
20.630	34398	21.117	12298	20.670	37073
20.662	22313	21.161	25123	20.719	42545
20.711	46655	21.199	18266	20.782	13577
20.730	23481	21.274	48520	20.837	14397
20.763	21864	21.345	16120	20.923	76697
20.790	34828	21.388	20967	20.944	42820
20.852	60324	21.429	88556	21.047	29493

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"	
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
18.205	14387	15.796	12907	11.933	20758	11.935	21962			28.721	12580
18.290	19927	16.552	24706	14.669	17756	16.611	288299			29.122	13545
18.419	19655	16.799	12284	15.809	13085	18.317	12403				
18.468	12121	18.133	12448	16.019	12683	18.493	14423				
18.510	12212	18.465	16760	16.059	13662	19.084	12971				
18.593	21887	18.536	14886	16.617	30372	19.257	12759				
18.724	14055	18.623	19971	16.644	20796	19.370	15163				
18.768	24909	18.682	14068	16.960	12341	19.491	12205				
18.824	14523	18.761	15324	17.092	12907	19.619	18923				
18.862	17374	18.805	12544	17.366	18438	19.816	18036				
18.943	15900	18.919	33692	17.871	15140	20.011	15937				
19.010	16779	19.036	13482	17.920	14702	20.036	16209				
19.050	21378	19.063	22524	17.995	70061	20.107	16748				
19.149	20601	19.199	23048	18.143	17081	20.159	22284				
19.229	16911	19.245	20881	18.180	15207	20.353	28177				
19.280	25229	19.311	21525	18.279	12666	20.391	15920				
19.317	20307	19.340	15165	18.361	14853	20.442	15696				
19.364	19557	19.430	40290	18.403	14949	20.484	13107				
19.404	21421	19.487	18393	18.458	13813	20.596	23607				
19.438	21483	19.571	16441	18.519	21006	20.687	17676				
19.474	34489	19.609	22248	18.569	14647	20.769	22294				
19.518	15148	19.683	18044	18.670	16101	20.832	15155				
19.565	34156	19.745	41685	18.779	14964	20.968	15015				
19.593	15564	19.816	16223	18.830	15844	21.031	12720				
19.620	21279	19.851	29126	18.890	22636	21.059	14406				
19.657	22674	19.969	27322	18.908	22060	21.110	24091				
19.695	18576	20.000	19915	18.971	16932	21.188	13869				
19.720	23349	20.039	17362	19.038	20124	21.227	16655				
19.770	26520	20.096	27885	19.081	31573	21.263	14252				
19.833	55867	20.145	26520	19.140	49387	21.318	17429				
19.891	15902	20.176	17500	19.164	25890	21.511	21353				
19.906	16546	20.242	28914	19.188	31040	21.599	16904				
19.939	33146	20.312	19148	19.243	16011	21.659	13339				
19.991	20115	20.344	16042	19.378	59758	21.758	17397				
20.007	30185	20.367	14353	19.513	33518	21.823	17569				
20.050	20414	20.397	18216	19.572	15853	21.881	12478				
20.075	18860	20.435	19680	19.617	45295	21.922	13987				
20.104	30950	20.471	17891	19.716	27146	21.953	14863				
20.133	18695	20.520	32752	19.754	17009	21.991	20736				
20.170	26912	20.572	12911	19.788	18679	22.042	14961				
20.222	35134	20.596	28175	19.889	48331	22.079	21297				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"	
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
29.347	12153	18.583	12527	22.306	15490	22.412	15472	24.986	13120	18.396	13199
29.464	17240	18.805	13142	22.623	13887	23.797	17493	26.188	12343	18.721	12414
30.875	12106	19.256	22684	22.938	12556	29.199	12323	26.530	13413	18.868	21323
32.923	12842	19.315	15153	23.169	13503	29.298	12545	27.118	17285	18.925	20825
		19.447	17765	23.255	12142			27.592	14476	18.970	15506
		19.624	12580	23.546	18064			27.772	13845	19.062	13258
		19.677	18269	23.632	12346			28.456	12666	19.126	22498
		19.709	15022	23.812	13227			28.866	15920	19.202	24227
		19.771	14645	23.948	12312			28.957	12826	19.283	21096
		19.822	12897	24.089	13217			29.122	22877	19.357	15269
		19.847	13244	24.533	14364			29.201	15514	19.392	15730
		19.900	19791	24.914	14278			29.257	16116	19.451	25899
		19.952	14327	25.173	19358			29.497	12669	19.502	14433
		19.995	19402	26.038	13897			31.661	12217	19.560	12411
		20.076	24003	27.655	12736					19.578	13218
		20.165	26018							19.619	25029
		20.239	43398							19.666	17483
		20.290	28735							19.744	25677
		20.339	20972							19.771	12860
		20.377	26479							19.801	12543
		20.423	32470							19.821	14673
		20.480	35299							19.863	18728
		20.522	13281							19.923	18298
		20.549	15301							19.961	15193
		20.570	13646							19.986	23460
		20.598	15292							20.023	14470
		20.621	14882							20.050	13541
		20.649	23834							20.088	28037
		20.690	14628							20.155	30927
		20.710	16190							20.206	31173
		20.736	24324							20.251	16995
		20.783	31521							20.279	17564
		20.840	29907							20.311	26884
		20.874	26156							20.342	15009
		20.913	33278							20.369	15854
		20.959	20474							20.418	68313
		21.002	24326							20.498	16813
		21.031	16274							20.541	38019
		21.066	25056							20.581	28450
		21.117	33820							20.650	45738
		21.138	16979							20.685	17923

Extracted Ion Current Profiles

20.256	20892	20.646	12114	19.968	21493	22.188	34981
20.275	21798	20.682	21091	20.025	18587	22.235	19231
20.322	28706	20.710	18004	20.051	35313	22.294	17161
20.391	71095	20.775	19051	20.100	13472	22.331	14638
20.429	35610	20.847	64516	20.166	39451	22.418	15666
20.458	22137	20.924	22009	20.189	28763	22.448	16547
20.481	26008	20.961	26286	20.233	27036	22.510	19497
20.508	25910	20.995	16908	20.269	51412	22.547	17172
20.533	30396	21.025	25636	20.335	25580	22.616	24551
20.573	19531	21.056	14470	20.380	31086	22.647	20948
20.595	22356	21.084	26902	20.448	39157	22.731	15819
20.630	34398	21.117	12298	20.470	26636	22.866	31489
20.662	22313	21.161	25123	20.494	34038	22.909	14999
20.711	46655	21.199	18266	20.546	30174	22.970	13867
20.730	23481	21.274	48520	20.588	23465	23.040	16883
20.763	21864	21.345	16120	20.621	13288	23.068	13198
20.790	34828	21.388	20967	20.669	28504	23.090	12194
20.852	60324	21.429	88556	20.712	42921	23.139	25951
20.897	36007	21.546	15636	20.756	27643	23.164	15245
20.921	49684	21.588	15915	20.820	18833	23.202	14352
20.985	67931	21.653	22435	20.850	18055	23.252	18464
21.043	23039	21.697	18602	20.894	18106	23.277	14050
21.092	60281	21.719	12904	20.947	45953	23.300	18983
21.134	21194	21.766	19915	20.981	42716	23.337	12297
21.162	36670	21.803	17608	21.067	62081	23.484	20152
21.192	21122	21.846	23031	21.132	17725	23.514	20999
21.224	33928	21.904	19991	21.154	18057	23.548	19872
21.256	47880	21.939	16629	21.190	36994	23.607	22644
21.316	55047	22.005	25074	21.228	40567	23.633	17642
21.427	583566	22.076	19273	21.299	18340	23.671	12793
21.539	51914	22.128	12155	21.329	18192	23.721	14821
21.586	27183	22.165	18153	21.365	17339	23.780	33882
21.610	25335	22.189	17280	21.413	23409	23.841	23176
21.644	42459	22.241	19512	21.438	21544	23.893	31976
21.684	50396	22.293	28681	21.485	23152	23.958	18086
21.744	54673	22.321	14303	21.515	22992	24.057	21941
21.793	51993	22.351	12603	21.547	16186	24.095	19457
21.835	47723	22.378	15680	21.573	13818	24.123	17862
21.913	76533	22.449	23601	21.626	50441	24.170	19290
21.944	25028	22.498	12951	21.670	14238	24.226	14262
21.968	23146	22.548	22996	21.705	22027	24.289	31632
21.993	22938	22.589	12814	21.732	14672	24.336	16936
22.020	23683	22.632	21924	21.763	22036	24.401	25899
22.044	23819	22.696	12507	21.793	14822	24.457	31509
22.068	42241	22.724	13833	21.834	19376	24.508	12834
22.117	36218	22.806	16179	21.857	21419	24.541	17558

Extracted Ion Current Profiles

21.175	32093
21.215	16020
21.242	19429
21.269	48025
21.327	17187
21.351	14632
21.407	56186
21.444	41776
21.478	29166
21.518	28643
21.548	19199
21.590	30476
21.609	23461
21.641	20114
21.670	31983
21.702	19554
21.752	56703
21.797	41801
21.849	44660
21.890	34958
21.919	21661
21.947	25293
21.968	24889
21.993	23078
22.018	21144
22.042	22020
22.070	19607
22.092	18708
22.119	18273
22.196	92116
22.237	48942
22.280	24463
22.302	25881
22.346	58029
22.375	28069
22.405	26301
22.423	27991
22.449	25364
22.472	26081
22.523	43795
22.549	35874
22.596	34888
22.626	44864
22.680	37722
22.712	46951
22.760	24562

20.714	34613
20.773	34382
20.812	20574
20.855	76037
20.924	32429
20.957	19491
20.986	17867
21.017	32843
21.057	52207
21.112	36665
21.145	45057
21.206	36061
21.228	25837
21.253	22040
21.278	22601
21.305	21797
21.326	22414
21.355	38342
21.401	64023
21.441	44482
21.462	98692
21.539	24454
21.561	26866
21.586	24251
21.611	24943
21.635	37498
21.677	51239
21.724	60150
21.781	22771
21.811	24343
21.833	25462
21.858	48223
21.907	24140
21.938	39220
21.969	38799
22.005	20457
22.043	41371
22.093	37106
22.116	37275
22.154	24767
22.179	23446
22.212	39771
22.256	58546
22.289	27471
22.326	55907
22.366	29259

Extracted Ion Current Profiles

22.148	47082	22.927	22477	21.947	24760	24.632	19197
22.189	22837	22.978	17442	21.965	13927	24.682	15734
22.228	47688	23.048	185752	21.998	21409	24.716	20906
22.264	27639	23.201	34627	22.030	13384	24.753	28218
22.289	22900	23.450	20636	22.109	12320	24.794	12491
22.328	45582	23.570	13120	22.132	23401	24.817	24272
22.364	22347	23.653	12311	22.165	15932	24.869	21080
22.388	25914	23.685	16269	22.192	15512	24.928	21298
22.412	23441	23.976	16365	22.229	25042	25.013	32692
22.447	33902	24.051	32880	22.252	18582	25.054	14517
22.476	47496	24.091	16459	22.296	38897	25.075	14291
22.527	50103	24.226	16962	22.328	16743	25.104	19243
22.572	24309	24.277	17368	22.351	31741	25.174	17864
22.634	78260	24.399	15876	22.400	13712	25.201	22910
22.671	24445	24.546	35968	22.424	31155	25.249	12048
22.696	22688	24.567	17011	22.500	20164	25.273	15992
22.744	44808	24.595	16180	22.523	13243	25.311	21049
22.770	20748	24.670	13420	22.551	13519	25.368	23729
22.831	96085	24.702	15099	22.595	30382	25.415	16847
22.908	60871	24.749	12927	22.624	21191	25.462	14907
22.981	51069	25.001	16952	22.660	20537	25.481	13984
23.031	20785	25.051	14128	22.715	26338	25.509	20318
23.076	61042	25.128	18613	22.759	22040	25.544	12387
23.115	34468	25.232	13219	22.782	23039	25.633	32125
23.153	21756	25.409	15513	22.825	21854	25.695	25885
23.186	48267	25.891	13604	22.856	13849	25.759	23952
23.231	22629	26.002	36079	22.881	14684	25.902	14518
23.263	53085	26.523	12086	22.907	18976	25.940	20202
23.303	39787	26.661	12483	22.955	30438	25.998	16132
23.337	21722	26.743	13546	23.016	27944	26.027	22406
23.363	21757	27.461	15648	23.041	15479	26.078	19109
23.386	20386	27.834	18542	23.068	18944	26.135	16751
23.411	24958	29.403	12396	23.090	29192	26.180	22949
23.462	28053			23.162	36678	26.220	22612
23.485	18674			23.200	21547	26.260	15748
23.520	29895			23.236	13628	26.337	14444
23.551	45589			23.278	29053	26.368	24602
23.600	43165			23.321	28263	26.441	18972
23.662	20883			23.413	12309	26.481	14717
23.698	66156			23.435	12866	26.539	26589
23.752	31332			23.470	19869	26.639	20450
23.783	31564			23.499	14427	26.701	14841
23.840	43505			23.536	29305	26.763	14299
23.867	17236			23.570	21700	26.803	17085
23.900	27278			23.614	14095	26.848	21180
23.940	35666			23.629	13737	26.893	17860

Extracted Ion Current Profiles

22.791	50798
22.837	25296
22.858	27683
22.880	53164
22.931	37443
22.994	69376
23.042	21608
23.067	22446
23.090	22748
23.115	21538
23.145	51970
23.187	27450
23.219	29131
23.253	52354
23.285	76493
23.325	28767
23.350	25238
23.372	25435
23.402	21985
23.436	47520
23.473	24403
23.520	47579
23.582	63955
23.607	26716
23.646	54206
23.682	35556
23.733	34743
23.758	38484
23.795	26912
23.821	27525
23.842	41230
23.890	61002
23.950	56704
24.000	51826
24.041	22292
24.069	37029
24.105	36509
24.141	31549
24.179	25215
24.200	26089
24.225	22553
24.256	38679
24.286	26832
24.311	25615
24.336	22851
24.360	27031

22.387	27921
22.415	26602
22.442	41625
22.474	37095
22.514	34660
22.588	64446
22.610	27586
22.657	64940
22.695	25808
22.722	27921
22.748	39754
22.784	33995
22.825	23518
22.843	27217
22.878	39869
22.905	26605
22.932	21633
22.955	23862
22.984	37382
23.028	54694
23.068	40609
23.109	21241
23.126	26535
23.152	26189
23.178	26821
23.227	59207
23.288	206276
23.387	26931
23.411	33995
23.467	62916
23.520	37128
23.570	48951
23.612	37946
23.633	26088
23.670	55238
23.719	46004
23.750	47029
23.781	40816
23.819	34557
23.878	53795
23.914	37071
23.944	25619
23.965	38707
24.003	35508
24.043	47256
24.100	35796

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"	"M03102108"
m/z 292		m/z 290		m/z 220		m/z 222		m/z 360	m/z 362
22.412	15472	22.306	15490	9.686	47302	13.465	20625		
23.797	17493	22.623	13887	14.048	333589	13.693	32809		
29.199	12323	22.938	12556	16.094	13326	14.041	3570217		
29.298	12545	23.169	13503	16.790	144935	15.616	14656		
		23.255	12142	18.244	12043	16.055	38263		
		23.546	18064	18.462	19651	16.382	17931		
		23.632	12346	19.098	14452	16.789	1102016		
		23.812	13227	19.709	13763	16.981	14460		
		23.948	12312	19.983	30998	17.215	28624		
		24.089	13217	20.113	14935	18.040	23110		
		24.533	14364	20.435	13506	18.370	12496		
		24.914	14278	20.476	14607	18.989	25583		
		25.173	19358	20.575	15657	19.174	21810		
		26.038	13897	20.755	13522	19.601	33027		
		27.655	12736	21.057	20542	19.894	15740		
				21.183	22733	19.947	14337		
				21.247	15887	20.194	38078		
				21.389	14151	20.248	18239		
				21.447	19506	20.353	31983		
				21.561	15997	20.436	12862		
				21.661	14923	20.594	15193		
				21.703	16591	20.673	17454		
				21.793	15449	20.714	16827		
				21.842	16106	20.824	12170		
				22.038	12656	20.912	27595		
				22.170	14189	20.944	13852		
				22.275	12176	21.037	15751		
				22.368	18036	21.073	22102		
				22.513	19528	21.141	12571		
				22.556	13531	21.344	17625		
				22.673	19833	21.406	12557		
				22.726	15743	21.450	28259		
				22.820	19053	21.484	18627		
				22.885	12579	21.634	13632		
				23.004	12425	21.757	14180		
				23.108	15442	21.839	24528		
				23.160	19778	21.893	15968		
				23.281	18946	22.035	38259		
				23.329	14523	22.073	19930		
				23.395	18950	22.102	47896		
				23.450	13664	22.231	40147		
				23.482	21125	22.324	18481		

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"	
m/z 288		m/z 324		m/z 326		m/z 328		m/z 289	
20.658	15792			28.721	12580	29.347	12153	21.698	12504
21.252	14772			29.122	13545	29.464	17240	22.390	16650
21.314	17573					30.875	12106	22.619	14294
21.447	12141					32.923	12842	22.770	14129
21.712	17122							22.879	14164
21.897	18601							23.124	13713
22.091	14419							23.176	13790
22.160	12878							23.210	12464
22.388	22415							23.264	14283
22.643	21203							23.585	15048
22.699	15489							23.673	13812
22.754	15362							23.766	14833
22.824	15829							23.831	12158
22.903	13072							23.958	17051
22.987	20138							23.991	12241
23.039	15698							24.094	21314
23.091	17145							24.212	13793
23.129	13607							24.266	20126
23.324	14260							24.334	20328
23.351	12499							24.422	25286
23.472	12389							24.550	14934
23.511	21367							24.614	21632
23.623	13070							24.705	14819
23.663	13300							24.774	16151
23.732	12200							24.852	15808
23.794	31846							25.060	13189
23.858	20261							25.098	12067
23.911	21907							25.129	12386
23.990	17327							25.170	14596
24.052	17287							25.209	16795
24.162	25574							25.556	19612
24.204	17387							25.640	14997
24.272	25025							25.700	19502
24.313	15215							25.828	13847
24.347	12192							25.912	16677
24.378	14825							26.051	15782
24.410	12110							26.203	12969
24.458	18536							26.309	18444
24.604	18198							26.382	14665
24.634	12615							26.440	14121
24.678	13728							26.541	20203
24.721	15760							26.568	20047

Extracted Ion Current Profiles

23.623	21661	22.437	14346
23.682	21066	22.487	14481
23.776	32778	22.521	19033
23.859	12481	22.639	30161
23.914	19784	22.675	13738
23.963	12549	22.725	19766
24.035	24278	22.766	23865
24.066	18614	22.824	12302
24.181	25289	22.893	13673
24.365	13321	22.976	24464
24.481	15739	23.005	19746
24.627	17606	23.070	12596
24.679	16735	23.110	22389
24.728	14464	23.159	15952
24.782	15749	23.203	27554
24.824	16326	23.398	28291
24.869	19545	23.452	13180
25.050	15950	23.531	38878
25.119	18554	23.559	15261
25.169	24461	23.604	16830
25.303	21625	23.694	40576
25.384	21666	23.786	29827
25.474	23083	23.852	21083
25.528	19433	23.967	25432
25.588	13502	24.101	17339
25.651	18935	24.183	26302
25.779	12623	24.209	17922
25.967	15328	24.253	21016
26.028	18090	24.311	20713
26.119	17949	24.345	22508
26.168	15344	24.407	16028
26.211	12250	24.524	16754
26.364	16564	24.619	35661
26.423	13199	24.652	14448
26.481	15545	24.772	17752
26.657	29363	25.080	16293
26.709	17492	25.110	14394
26.761	12556	25.210	12834
26.847	17372	25.260	17397
26.941	12350	25.319	13281
27.017	48995	25.402	12864
27.078	13606	25.490	14930
27.131	12940	25.674	13198
27.172	17764	25.897	32977
27.257	17259	26.091	12641
27.338	22594	26.232	16906

Extracted Ion Current Profiles

24.742	19676
24.879	23331
24.942	17514
25.106	32748
25.156	14607
25.188	14694
25.260	14653
25.299	29962
25.404	12260
25.459	12603
25.485	24245
25.520	20405
25.544	16466
25.569	20502
25.624	13884
25.681	14808
25.727	12262
25.755	13378
25.796	13087
25.906	34488
26.033	17224
26.108	33060
26.213	21603
26.299	16981
26.366	16242
26.403	15627
26.453	26429
26.495	12990
26.545	13801
26.618	36052
26.790	12641
26.842	17965
26.909	18676
26.987	13529
27.012	12918
27.058	15605
27.134	14044
27.263	15477
27.346	14739
27.609	13150
27.647	12925
27.733	15155
27.986	17290
28.012	15065
28.141	12637
28.541	14585
26.675	19121
26.885	18999
26.990	14158
27.144	13095
27.290	27263
27.560	15897
27.629	12652
27.796	13250
27.980	22552
28.163	23152
28.360	14609
28.461	16168
28.832	14007
28.909	12053
29.485	14442
31.225	12922

Extracted Ion Current Profiles

27.383	15364	26.294	12089
27.532	13048	26.368	12070
27.597	19620	27.075	12367
27.727	23248	27.847	14661
27.797	12255	27.952	12315
27.887	12811		
27.924	13958		
27.981	16348		
28.029	21467		
28.232	18825		

Extracted Ion Current Profiles

28.576	14540
28.931	13443
29.523	12444
29.881	19295
30.966	13193
32.727	20729
33.180	21476

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258		m/z 392	
28.721	12580			18.583	12527	18.205	14387	15.796	12907		
29.122	13545			18.805	13142	18.290	19927	16.552	24706		
				19.256	22684	18.419	19655	16.799	12284		
				19.315	15153	18.468	12121	18.133	12448		
				19.447	17765	18.510	12212	18.465	16760		
				19.624	12580	18.593	21887	18.536	14886		
				19.677	18269	18.724	14055	18.623	19971		
				19.709	15022	18.768	24909	18.682	14068		
				19.771	14645	18.824	14523	18.761	15324		
				19.822	12897	18.862	17374	18.805	12544		
				19.847	13244	18.943	15900	18.919	33692		
				19.900	19791	19.010	16779	19.036	13482		
				19.952	14327	19.050	21378	19.063	22524		
				19.995	19402	19.149	20601	19.199	23048		
				20.076	24003	19.229	16911	19.245	20881		
				20.165	26018	19.280	25229	19.311	21525		
				20.239	43398	19.317	20307	19.340	15165		
				20.290	28735	19.364	19557	19.430	40290		
				20.339	20972	19.404	21421	19.487	18393		
				20.377	26479	19.438	21483	19.571	16441		
				20.423	32470	19.474	34489	19.609	22248		
				20.480	35299	19.518	15148	19.683	18044		
				20.522	13281	19.565	34156	19.745	41685		
				20.549	15301	19.593	15564	19.816	16223		
				20.570	13646	19.620	21279	19.851	29126		
				20.598	15292	19.657	22674	19.969	27322		
				20.621	14882	19.695	18576	20.000	19915		
				20.649	23834	19.720	23349	20.039	17362		
				20.690	14628	19.770	26520	20.096	27885		
				20.710	16190	19.833	55867	20.145	26520		
				20.736	24324	19.891	15902	20.176	17500		
				20.783	31521	19.906	16546	20.242	28914		
				20.840	29907	19.939	33146	20.312	19148		
				20.874	26156	19.991	20115	20.344	16042		
				20.913	33278	20.007	30185	20.367	14353		
				20.959	20474	20.050	20414	20.397	18216		
				21.002	24326	20.075	18860	20.435	19680		
				21.031	16274	20.104	30950	20.471	17891		
				21.066	25056	20.133	18695	20.520	32752		
				21.117	33820	20.170	26912	20.572	12911		
				21.138	16979	20.222	35134	20.596	28175		
				21.175	32093	20.256	20892	20.646	12114		

Extracted Ion Current Profiles

21.215	16020	20.275	21798	20.682	21091
21.242	19429	20.322	28706	20.710	18004
21.269	48025	20.391	71095	20.775	19051
21.327	17187	20.429	35610	20.847	64516
21.351	14632	20.458	22137	20.924	22009
21.407	56186	20.481	26008	20.961	26286
21.444	41776	20.508	25910	20.995	16908
21.478	29166	20.533	30396	21.025	25636
21.518	28643	20.573	19531	21.056	14470
21.548	19199	20.595	22356	21.084	26902
21.590	30476	20.630	34398	21.117	12298
21.609	23461	20.662	22313	21.161	25123
21.641	20114	20.711	46655	21.199	18266
21.670	31983	20.730	23481	21.274	48520
21.702	19554	20.763	21864	21.345	16120
21.752	56703	20.790	34828	21.388	20967
21.797	41801	20.852	60324	21.429	88556
21.849	44660	20.897	36007	21.546	15636
21.890	34958	20.921	49684	21.588	15915
21.919	21661	20.985	67931	21.653	22435
21.947	25293	21.043	23039	21.697	18602
21.968	24889	21.092	60281	21.719	12904
21.993	23078	21.134	21194	21.766	19915
22.018	21144	21.162	36670	21.803	17608
22.042	22020	21.192	21122	21.846	23031
22.070	19607	21.224	33928	21.904	19991
22.092	18708	21.256	47880	21.939	16629
22.119	18273	21.316	55047	22.005	25074
22.196	92116	21.427	583566	22.076	19273
22.237	48942	21.539	51914	22.128	12155
22.280	24463	21.586	27183	22.165	18153
22.302	25881	21.610	25335	22.189	17280
22.346	58029	21.644	42459	22.241	19512
22.375	28069	21.684	50396	22.293	28681
22.405	26301	21.744	54673	22.321	14303
22.423	27991	21.793	51993	22.351	12603
22.449	25364	21.835	47723	22.378	15680
22.472	26081	21.913	76533	22.449	23601
22.523	43795	21.944	25028	22.498	12951
22.549	35874	21.968	23146	22.548	22996
22.596	34888	21.993	22938	22.589	12814
22.626	44864	22.020	23683	22.632	21924
22.680	37722	22.044	23819	22.696	12507
22.712	46951	22.068	42241	22.724	13833
22.760	24562	22.117	36218	22.806	16179
22.791	50798	22.148	47082	22.927	22477

Extracted Ion Current Profiles

22.837	25296	22.189	22837	22.978	17442
22.858	27683	22.228	47688	23.048	185752
22.880	53164	22.264	27639	23.201	34627
22.931	37443	22.289	22900	23.450	20636
22.994	69376	22.328	45582	23.570	13120
23.042	21608	22.364	22347	23.653	12311
23.067	22446	22.388	25914	23.685	16269
23.090	22748	22.412	23441	23.976	16365
23.115	21538	22.447	33902	24.051	32880
23.145	51970	22.476	47496	24.091	16459
23.187	27450	22.527	50103	24.226	16962
23.219	29131	22.572	24309	24.277	17368
23.253	52354	22.634	78260	24.399	15876
23.285	76493	22.671	24445	24.546	35968
23.325	28767	22.696	22688	24.567	17011
23.350	25238	22.744	44808	24.595	16180
23.372	25435	22.770	20748	24.670	13420
23.402	21985	22.831	96085	24.702	15099
23.436	47520	22.908	60871	24.749	12927
23.473	24403	22.981	51069	25.001	16952
23.520	47579	23.031	20785	25.051	14128
23.582	63955	23.076	61042	25.128	18613
23.607	26716	23.115	34468	25.232	13219
23.646	54206	23.153	21756	25.409	15513
23.682	35556	23.186	48267	25.891	13604
23.733	34743	23.231	22629	26.002	36079
23.758	38484	23.263	53085	26.523	12086
23.795	26912	23.303	39787	26.661	12483
23.821	27525	23.337	21722	26.743	13546
23.842	41230	23.363	21757	27.461	15648
23.890	61002	23.386	20386	27.834	18542
23.950	56704	23.411	24958	29.403	12396
24.000	51826	23.462	28053		
24.041	22292	23.485	18674		
24.069	37029	23.520	29895		
24.105	36509	23.551	45589		
24.141	31549	23.600	43165		
24.179	25215	23.662	20883		
24.200	26089	23.698	66156		
24.225	22553	23.752	31332		
24.256	38679	23.783	31564		
24.286	26832	23.840	43505		
24.311	25615	23.867	17236		
24.336	22851	23.900	27278		
24.360	27031	23.940	35666		
24.400	44511	23.971	61404		

Extracted Ion Current Profiles

24.449	24815	24.049	28264
24.482	49227	24.081	28913
24.526	47690	24.114	18504
24.605	59148	24.138	17940
24.640	35048	24.190	45942
24.668	18398	24.234	37897
24.717	37921	24.285	28319
24.754	42800	24.323	26293
24.805	41091	24.348	18545
24.841	16411	24.370	18181
24.867	23764	24.397	18479
24.911	23398	24.438	26449
24.951	23068	24.460	31105
24.978	18216	24.506	28966
25.023	37842	24.549	13965
25.064	35522	24.575	25234
25.106	32429	24.623	29656
25.160	65200	24.663	22640
25.220	26816	24.703	29052
25.256	23281	24.744	21315
25.291	29796	24.797	31705
25.334	15345	24.829	17848
25.373	26216	24.852	17260
25.396	17353	24.878	12144
25.424	17782	24.912	19901
25.449	39429	24.954	25720
25.497	25516	24.994	22675
25.542	40329	25.042	12358
25.591	68799	25.067	18699
25.676	33882	25.130	14890
25.730	25716	25.177	25689
25.784	44015	25.209	13201
25.799	33391	25.260	23376
25.843	30665	25.318	41510
25.888	28260	25.388	27292
25.914	18129	25.426	24876
25.939	17139	25.473	12709
25.996	46759	25.498	26643
26.024	36188	25.538	23815
26.079	31052	25.578	25022
26.131	23826	25.617	20647
26.162	38251	25.683	16581
26.238	33447	25.774	22321
26.271	14315	25.829	18353
26.311	31036	25.852	28500
26.357	12394	25.928	12102

Extracted Ion Current Profiles

26.390	18035	25.992	26851
26.420	14498	26.012	33398
26.514	18598	26.051	20079
26.635	21586	26.082	12102
26.686	21966	26.113	26315
26.742	29624	26.206	16206
26.804	15049	26.242	24193
26.874	21430	26.289	37177
26.964	20650	26.383	12390
27.035	12650	26.443	12596
27.161	16485	26.638	18070
27.196	12206	26.717	13362
27.268	13927	26.826	17760
27.325	12832	26.891	17001
27.364	12183	27.284	14326
27.410	13973	27.307	12042
27.588	336330	27.412	23069
27.676	30295	27.481	14448
27.715	16328	27.628	12187
27.758	15820	28.249	12085
27.814	12251		
27.915	26743		
27.997	13997		
28.210	14360		
28.474	17979		
28.580	22160		
28.676	12223		
28.844	15246		
28.923	19285		
29.114	16290		
29.194	15795		
30.730	14287		
30.911	12216		
32.129	21279		

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"	
m/z 360		m/z 362		m/z 288		m/z 290		m/z 426	m/z 428
				20.658	15792	22.306	15490		
				21.252	14772	22.623	13887		
				21.314	17573	22.938	12556		
				21.447	12141	23.169	13503		
				21.712	17122	23.255	12142		
				21.897	18601	23.546	18064		
				22.091	14419	23.632	12346		
				22.160	12878	23.812	13227		
				22.388	22415	23.948	12312		
				22.643	21203	24.089	13217		
				22.699	15489	24.533	14364		
				22.754	15362	24.914	14278		
				22.824	15829	25.173	19358		
				22.903	13072	26.038	13897		
				22.987	20138	27.655	12736		
				23.039	15698				
				23.091	17145				
				23.129	13607				
				23.324	14260				
				23.351	12499				
				23.472	12389				
				23.511	21367				
				23.623	13070				
				23.663	13300				
				23.732	12200				
				23.794	31846				
				23.858	20261				
				23.911	21907				
				23.990	17327				
				24.052	17287				
				24.162	25574				
				24.204	17387				
				24.272	25025				
				24.313	15215				
				24.347	12192				
				24.378	14825				
				24.410	12110				
				24.458	18536				
				24.604	18198				
				24.634	12615				
				24.678	13728				
				24.721	15760				

Extracted Ion Current Profiles

Hexachlorobiphenyls															
"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"		"M03102108"	
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398		m/z 357	
				20.922	75044									20.920	33639
				21.473	13461									20.942	14076

Extracted Ion Current Profiles

Heptachlorobiphenyls					
"M03102108"	"M03102108"	"M03102108"	"M03102108"	"M03102108"	"M03102108"
m/z 394	m/z 396	m/z 322	m/z 324	m/z 326	m/z 462
				28.721 12580	
				29.122 13545	

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102108"	"M03102108"	"M03102108"	"M03102108"	"M03102108"	"M03102108"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
		20.922 75044			
		21.473 13461			

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102108"		"M03102108"				"M03102108"		"M03102108"			"M03102108"		"M03102108"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
11.934	21967	11.926	1356	424	240	18.252	12161	17.288	12796	188	11.935	21962	9.686	20111
12.616	1494(M)	12.609	1212	426	241	18.847	24319	17.487	12691	189	16.611	288299	14.050	227519
12.746	42164	12.758	2092	428		18.911	23825	17.731	28273		18.317	12403	15.718	14792
13.032	2317	13.625	490	430		18.958	12864	17.792	13207		18.493	14423	15.944	13127
13.231	802	13.769	1658	498		18.991	20858	17.851	17296		19.084	12971	16.145	17653
13.271	534	13.848	431	500		19.064	14977	17.886	13980		19.257	12759	16.296	15241
13.309	531	13.893	1105			19.117	15702	17.926	12813		19.370	15163	16.608	71798
13.336	503	13.938	461			19.139	17910	18.055	22399		19.491	12205	16.753	17324
13.358	455	14.076	665			19.189	15234	18.113	17724		19.619	18923	16.791	68481
13.419	522	14.133	791			19.262	24227	18.241	23693		19.816	18036	17.007	13323
13.465	470	14.195	951			19.330	17207	18.267	12243		20.011	15937	17.117	18469
13.545	581	14.224	519			19.388	33868	18.308	29349		20.036	16209	17.200	25204
13.568	524	14.249	602			19.445	16433	18.422	25499		20.107	16748	17.351	15390
13.616	1219	14.284	1002			19.489	26635	18.455	13996		20.159	22284	17.422	15877
13.684	420	14.313	559			19.518	16251	18.528	104799		20.353	28177	17.500	14011
13.704	792	14.381	1044			19.554	12005	18.608	17812		20.391	15920	17.546	12808
13.741	1786	14.412	983			19.604	31433	18.646	14116		20.442	15696	17.588	20514
13.765	1501	14.447	1030			19.671	12326	18.691	34451		20.484	13107	17.629	13783
13.828	1845	14.470	1069			19.694	12115	18.737	15027		20.596	23607	17.698	21729
13.863	1029	14.495	894			19.722	25615	18.766	25035		20.687	17676	17.796	23019
13.902	1297	14.534	1054			19.819	22829	18.797	14305		20.769	22294	17.866	21401
13.943	943	14.582	1943			19.860	20438	18.887	128163		20.832	15155	17.900	15727
13.985	1552	14.613	1035			19.893	23361	18.961	26071		20.968	15015	17.942	17329
14.102	515	14.629	1828			19.929	19083	19.010	26024		21.031	12720	17.997	18678
14.123	451	14.685	641			19.970	26115	19.040	27059		21.059	14406	18.064	14261
14.173	939	14.710	690			20.031	33346	19.083	25913		21.110	24091	18.118	21480
14.213	1037	14.730	1084			20.064	15889	19.123	24217		21.188	13869	18.162	19071
14.236	1147	14.770	841			20.085	16218	19.153	24935		21.227	16655	18.213	19411
14.296	1554	14.795	809			20.137	30296	19.204	27836		21.263	14252	18.255	21654
14.326	753	14.821	1348			20.169	32116	19.227	28071		21.318	17429	18.307	19072
14.344	803	14.844	1812			20.222	39508	19.289	39694		21.511	21353	18.353	18106
14.376	1112	14.883	1062			20.279	27028	19.315	37946		21.599	16904	18.413	24218
14.418	1184	14.906	972			20.319	24192	19.373	29521		21.659	13339	18.449	12316
14.446	848	14.932	1182			20.368	21050	19.413	32647		21.758	17397	18.482	16825
14.473	895	14.967	798			20.417	30746	19.447	41849		21.823	17569	18.543	23686
14.506	2167	15.003	1582			20.443	15622	19.489	20209		21.881	12478	18.579	21625
14.541	863	15.040	1660			20.471	15721	19.522	17432		21.922	13987	18.616	18268
14.618	2542	15.070	1284			20.528	47136	19.540	19656		21.953	14863	18.701	23705
14.641	1000	15.092	1281			20.558	18573	19.617	90344		21.991	20736	18.741	12790
14.689	2381	15.116	1562			20.584	19466	19.675	36138		22.042	14961	18.784	14479
14.721	1492	15.142	1209			35.331	393603	35.338	88796		22.079	21297	19.359	20628

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	32.812	422	32.853	629
512	32.861	635	33.074	526
	33.086	426	33.186	415
	33.199	462	33.339	694
	33.448	676	33.400	609
	33.617	407	33.564	440
	33.712	719	33.658	935
	33.748	429	33.766	582
	33.875	448	33.933	446
	33.956	779	33.985	852
	34.322	438	34.043	432
	34.402	544	34.137	849
	34.685	428	34.390	438
	34.993	546	34.863	1447
	35.333	944	35.065	420
	35.763	438	35.295	876
	43.695	8881(M)	35.371	863
	43.737	468	35.700	476
			36.148	490
			38.185	407
			43.701	7838

Analytical Sample Results

Job Number: 14100477

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: C-34
Lab Sample ID: 14100477-09 (AR39380)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-9	PCBs by EPA Method TO-4A/680	10/21/2014 11:16	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	320.80m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000310	2.00	U	MS03-473-9
Dichlorobiphenyl	25512-42-9	ND	0.0000310	2.00	U	MS03-473-9
Trichlorobiphenyl	25323-68-6	**0.00566**	0.0000310	2.00		MS03-473-9
Tetrachlorobiphenyl	26914-33-0	ND	0.0000620	2.00	U	MS03-473-9
Pentachlorobiphenyl	25429-29-2	ND	0.0000620	2.00	U	MS03-473-9
Hexachlorobiphenyl	26601-64-9	ND	0.0000620	2.00	U	MS03-473-9
Heptachlorobiphenyl	28655-71-2	ND	0.0000940	2.00	U	MS03-473-9
Octachlorobiphenyl	55722-26-4	ND	0.0000940	2.00	U	MS03-473-9
Nonachlorobiphenyl	53742-07-7	ND	0.000156	2.00	U	MS03-473-9
Decachlorobiphenyl	2051-24-3	ND	0.000156	2.00	U	MS03-473-9
Total PCB	1336-36-3	**0.00566**		2.00		MS03-473-9

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	66.9	42.5-134		MS03-473-9
Tetrachloro-meta-xylene	877-09-8	65.9	17.9-137		MS03-473-9

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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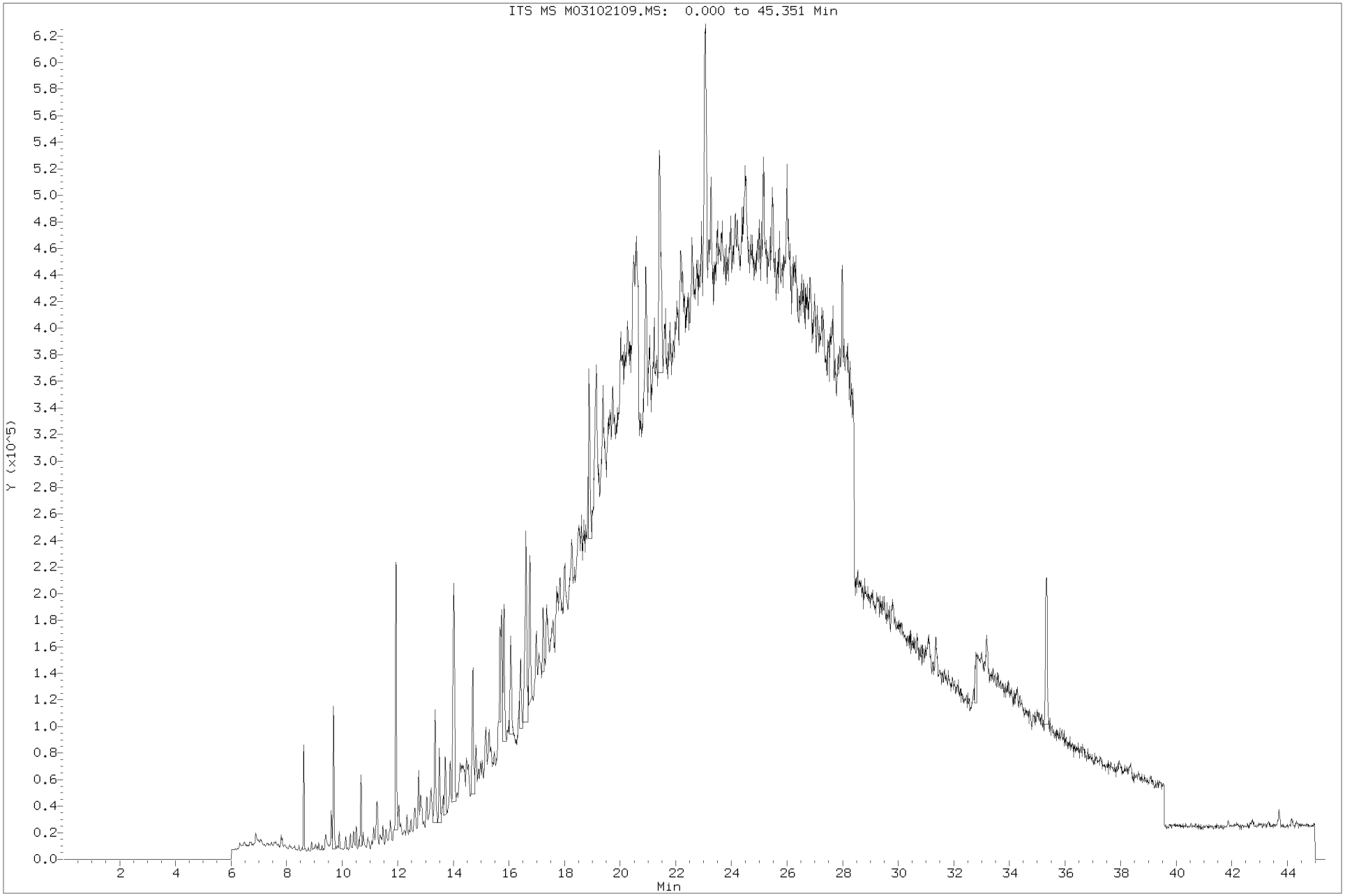
Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102109.d/M03102109.MS
Injection Date: 21-OCT-2014 11:16
Instrument: GCMS03.i
Client Sample ID: C-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	C-34
Matrix:	TO-4A PUF	Lab Sample ID:	AR39380
Sample weight:	320.8 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/18/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	2	Time Analyzed:	11:16

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:		0.0000312	0.0000312	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	
				Di Total:		0.0000312	0.0000312	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/m^3	ug/m^3	ug/m^3	
19.433	13936	19.429	16867	0.8	0.6326	0.0000312	0.0000312	0.000365	
19.861	14221	19.828	12582	1.1	0.6326	0.0000312	0.0000312	0.000372	
20.081	17717	20.059	18532	1.0	0.6326	0.0000312	0.0000312	0.000464	
20.311	18069	20.337	18089	1.0	0.6326	0.0000312	0.0000312	0.000473	
20.473	15329	20.416	16862	0.9	0.6326	0.0000312	0.0000312	0.000401	
20.599	24737	20.588	28058	0.9	0.6326	0.0000312	0.0000312	0.000647	
20.817	18266	20.867	18110	1.0	0.6326	0.0000312	0.0000312	0.000478	
21.047	23124	21.031	22890	1.0	0.6326	0.0000312	0.0000312	0.000605	
21.262	20029	21.245	19542	1.0	0.6326	0.0000312	0.0000312	0.000524	
21.728	21239	21.758	18980	1.1	0.6326	0.0000312	0.0000312	0.000556	
21.950	15017	21.980	14735	1.0	0.6326	0.0000312	0.0000312	0.000393	
22.199	14698	22.144	15279	1.0	0.6326	0.0000312	0.0000312	0.000385	
				Tri Total:		0.0000312	0.0000312	0.00566	

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	
				Tetra Total:		0.0000623	0.0000623	ND	

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:	0.0000623	0.0000623	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:	0.0000623	0.0000623	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:	0.0000935	0.0000935	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:	0.0000935	0.0000935	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:	0.000156	0.000156	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:	0.000156	0.000156	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
12.605	946	12.625	731	1.3	0.3809		0.00659		
					TCMX Total:		0.00659		

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	
43.701	8329	43.702	6491	1.3	0.6617		0.0334	
				Deca Total:			0.0334	

TCMX Recovery %	65.9 %
Deca Recovery	66.9 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.331	301241	35.323	73915	4.1	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Monochlorobiphenyls							
"M03102109"		"M03102109"		"M03102109"		"M03102109"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.607	229858	19.016	13032	10.681	16557	16.750	13971
19.112	13459	19.716	15218	14.005	18325	18.830	12193
20.347	12149	19.738	12592	14.698	33312	18.901	12213
20.523	14693	20.024	17630	15.162	20831	19.017	13540
20.706	12724	20.196	16165	15.292	16327	19.140	14407
20.856	15316	20.346	13405	15.689	13181	19.331	12371
21.276	13180	20.382	12721	15.736	14804	19.639	15471
21.435	13084	20.499	17138	16.059	22215	19.746	13478
21.649	17803	20.562	12684	16.746	71946	20.165	16222
21.767	15416	20.642	12897	17.388	22492	20.408	16779
21.853	15721	20.964	13266	17.565	13745	20.466	16170
21.972	14007	21.030	19081	17.749	20244	20.586	14617
22.128	12476	21.073	14136	17.931	38791		
22.176	13458	21.186	14935	18.042	17996		
22.369	12662	21.280	14732	18.251	48512		
22.438	13598	21.320	12182	18.422	13385		
22.499	12319	21.377	14673	18.497	17246		
22.868	17755	21.464	12570	18.574	20861		
22.925	16006	21.509	16202	18.608	14838		
23.179	14641	21.695	13838	18.691	35099		
23.276	13183	21.806	19363	18.757	12277		
23.358	16403	21.911	16476	18.835	26379		
23.469	14297	21.939	16443	18.910	25625		
23.574	14275	21.990	18756	18.985	21787		
23.730	13883	22.036	15749	19.071	19939		
23.790	13009	22.173	15561	19.125	19953		
23.871	12991	22.210	13053	19.187	17314		
23.999	18150	22.275	13963	19.266	17133		
24.179	17654	22.315	13016	19.308	26900		
24.330	20912	22.370	13146	19.375	14909		
24.479	16498	22.449	17742	19.399	13474		
24.553	12006	22.499	14762	19.497	25411		
24.702	13807	22.566	23324	19.586	13345		
24.742	16145	22.647	15856	19.659	18007		
24.814	16245	22.683	14425	19.727	14926		
24.886	13093	22.834	16060	19.791	12660		
24.997	13834	22.915	20418	19.861	13934		
25.026	16223	22.952	14758	19.953	17726		
25.189	12157	23.025	22699	20.022	21645		
25.267	13683	23.096	19255	20.111	20567		
25.428	19271	23.179	24942	20.158	16104		

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"	
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
14.022	52080	14.700	36141	10.681	16557	16.750	13971	16.607	22147	16.607	229858
16.048	32329	15.678	20517	14.005	18325	18.830	12193	17.990	25823	19.112	13459
16.775	14391	15.718	16470	14.698	33312	18.901	12213	18.523	17584	20.347	12149
16.975	27841	16.058	33205	15.162	20831	19.017	13540	18.877	16679	20.523	14693
17.350	16248	16.747	15367	15.292	16327	19.140	14407	19.142	30172	20.706	12724
20.692	19950	17.231	21316	15.689	13181	19.331	12371	19.329	13188	20.856	15316
20.910	13151	17.798	14810	15.736	14804	19.639	15471	19.394	15374	21.276	13180
21.454	18398	18.921	19582	16.059	22215	19.746	13478	19.464	13455	21.435	13084
21.598	14305	19.421	27235	16.746	71946	20.165	16222	19.597	20503	21.649	17803
21.818	12060	20.101	15598	17.388	22492	20.408	16779	19.937	13138	21.767	15416
22.456	12141	20.402	17138	17.565	13745	20.466	16170	20.053	16647	21.853	15721
22.740	13323	20.571	20460	17.749	20244	20.586	14617	20.175	23367	21.972	14007
22.947	12044	21.401	14264	17.931	38791			20.270	13358	22.128	12476
23.076	16467	21.717	12814	18.042	17996			20.452	31631	22.176	13458
23.384	15084	22.224	14014	18.251	48512			20.521	14487	22.369	12662
23.502	12011	22.546	12160	18.422	13385			20.688	15828	22.438	13598
23.537	14185	23.202	13175	18.497	17246			20.768	13538	22.499	12319
23.781	17307	23.331	12073	18.574	20861			20.923	12119	22.868	17755
25.890	12389	23.358	13630	18.608	14838			20.965	13270	22.925	16006
		23.460	12973	18.691	35099			21.048	16938	23.179	14641
		23.959	14140	18.757	12277			21.112	15563	23.276	13183
		24.282	21069	18.835	26379			21.208	26240	23.358	16403
		24.547	12351	18.910	25625			21.276	12600	23.469	14297
		25.725	12028	18.985	21787			21.386	17352	23.574	14275
		26.904	12505	19.071	19939			21.428	16173	23.730	13883
				19.125	19953			21.598	12582	23.790	13009
				19.187	17314			21.627	15467	23.871	12991
				19.266	17133			21.769	14609	23.999	18150
				19.308	26900			21.838	17819	24.179	17654
				19.375	14909			22.166	12892	24.330	20912
				19.399	13474			22.264	15091	24.479	16498
				19.497	25411			22.517	13397	24.553	12006
				19.586	13345			22.750	12607	24.702	13807
				19.659	18007			22.849	12397	24.742	16145
				19.727	14926			22.920	14095	24.814	16245
				19.791	12660			23.022	16229	24.886	13093
				19.861	13934			23.169	12487	24.997	13834
				19.953	17726			23.418	12695	25.026	16223
				20.022	21645			24.073	12725	25.189	12157
				20.111	20567			24.571	12968	25.267	13683
				20.158	16104			25.292	15105	25.428	19271

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102109"		"M03102109"		"M03102109"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
18.529	14602	16.542	20730	9.689	13411
19.134	21293	19.004	15254	13.714	19315
19.269	12132	19.148	13567	14.023	272107
19.327	12045	19.429	16867	15.175	19445
19.390	14134	19.496	14047	15.606	41872
19.433	13936	19.734	12121	15.726	39889
19.564	12522	19.828	12582	16.019	23896
19.700	15328	20.059	18532	16.238	14393
19.760	15230	20.137	12891	16.410	14463
19.802	18144	20.337	18089	16.587	28118
19.861	14221	20.416	16862	16.768	53075
19.923	12112	20.588	28058	16.919	23953
19.954	12319	20.626	18033	16.983	42965
19.986	13722	20.867	18110	17.134	30316
20.081	17717	21.031	22890	17.225	32931
20.124	24842	21.145	18820	17.352	51527
20.199	15578	21.245	19542	17.446	12130
20.271	12728	21.401	28908	17.735	31235
20.311	18069	21.447	14760	17.836	28736
20.473	15329	21.758	18980	18.073	28435
20.546	31379	21.980	14735	18.352	15657
20.599	24737	22.075	17296	18.564	41659
20.666	14407	22.144	15279	19.050	21161
20.704	12808	22.268	12435	19.215	17861
20.755	17555	22.682	12568	19.388	12299
20.817	18266	23.023	102933	19.441	16856
20.899	12776	23.193	19444	19.573	14178
20.961	28967	23.554	12876	19.794	12359
21.001	14378	23.952	14584	19.894	12892
21.047	23124	24.029	13738	19.974	14402
21.101	20216	24.437	14832	20.425	14357
21.137	13786	24.525	22150	20.467	13749
21.196	20400	25.003	15406	20.565	12609
21.262	20029	26.000	23810	20.701	31173
21.308	14827	26.216	12418	20.739	19399
21.413	239801			20.813	12024
21.500	22633			20.914	47420
21.551	15293			21.007	18471
21.635	12100			21.061	14221
21.728	21239			21.154	21346
21.820	13311			21.321	13931

Extracted Ion Current Profiles

20.218	15128	25.798	12958	25.582	13447
20.351	17844			25.650	12323
20.399	16725			25.715	15415
20.454	20724			25.835	12152
20.500	13969			26.106	16793
20.558	21564			26.219	12320
20.600	22724			26.261	15414
				26.526	17639
				26.763	16249
				26.880	14621
				27.244	21867
				27.651	16317
				28.143	12185
				28.285	14501

Extracted Ion Current Profiles

21.866	20739	21.441	27677
21.897	20853	21.495	29440
21.950	15017	21.561	14953
21.992	13887	21.645	20595
22.022	13622	21.743	15139
22.078	28833	21.835	19062
22.135	24403	22.005	12493
22.199	14698	22.072	13225
22.258	15507	22.119	20644
22.313	14818	22.213	14465
22.368	29742	22.472	13065
22.481	20748	22.572	16381
22.668	23829	22.698	16774
22.739	12092	22.756	15311
22.777	19599	22.885	17404
22.836	14471	22.936	13696
22.971	16599	22.981	19362
22.996	13672	23.129	21792

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"	
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
18.529	14602	16.542	20730	16.607	22147	16.607	229858				
19.134	21293	19.004	15254	17.990	25823	19.112	13459				
19.269	12132	19.148	13567	18.523	17584	20.347	12149				
19.327	12045	19.429	16867	18.877	16679	20.523	14693				
19.390	14134	19.496	14047	19.142	30172	20.706	12724				
19.433	13936	19.734	12121	19.329	13188	20.856	15316				
19.564	12522	19.828	12582	19.394	15374	21.276	13180				
19.700	15328	20.059	18532	19.464	13455	21.435	13084				
19.760	15230	20.137	12891	19.597	20503	21.649	17803				
19.802	18144	20.337	18089	19.937	13138	21.767	15416				
19.861	14221	20.416	16862	20.053	16647	21.853	15721				
19.923	12112	20.588	28058	20.175	23367	21.972	14007				
19.954	12319	20.626	18033	20.270	13358	22.128	12476				
19.986	13722	20.867	18110	20.452	31631	22.176	13458				
20.081	17717	21.031	22890	20.521	14487	22.369	12662				
20.124	24842	21.145	18820	20.688	15828	22.438	13598				
20.199	15578	21.245	19542	20.768	13538	22.499	12319				
20.271	12728	21.401	28908	20.923	12119	22.868	17755				
20.311	18069	21.447	14760	20.965	13270	22.925	16006				
20.473	15329	21.758	18980	21.048	16938	23.179	14641				
20.546	31379	21.980	14735	21.112	15563	23.276	13183				
20.599	24737	22.075	17296	21.208	26240	23.358	16403				
20.666	14407	22.144	15279	21.276	12600	23.469	14297				
20.704	12808	22.268	12435	21.386	17352	23.574	14275				
20.755	17555	22.682	12568	21.428	16173	23.730	13883				
20.817	18266	23.023	102933	21.598	12582	23.790	13009				
20.899	12776	23.193	19444	21.627	15467	23.871	12991				
20.961	28967	23.554	12876	21.769	14609	23.999	18150				
21.001	14378	23.952	14584	21.838	17819	24.179	17654				
21.047	23124	24.029	13738	22.166	12892	24.330	20912				
21.101	20216	24.437	14832	22.264	15091	24.479	16498				
21.137	13786	24.525	22150	22.517	13397	24.553	12006				
21.196	20400	25.003	15406	22.750	12607	24.702	13807				
21.262	20029	26.000	23810	22.849	12397	24.742	16145				
21.308	14827	26.216	12418	22.920	14095	24.814	16245				
21.413	239801			23.022	16229	24.886	13093				
21.500	22633			23.169	12487	24.997	13834				
21.551	15293			23.418	12695	25.026	16223				
21.635	12100			24.073	12725	25.189	12157				
21.728	21239			24.571	12968	25.267	13683				
21.820	13311			25.292	15105	25.428	19271				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"	
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
		20.006	12071	25.149	15437			27.419	12133	18.973	13933
		20.370	19013					29.157	13668	19.127	12141
		20.423	17826							19.394	12026
		20.522	12871							19.793	12337
		20.589	20782							19.898	13930
		20.636	15651							20.082	16678
		20.803	12936							20.189	16642
		20.854	12397							20.241	12305
		20.951	12290							20.293	18768
		21.063	12576							20.392	12612
		21.170	15562							20.452	14177
		21.246	26397							20.491	12909
		21.274	13148							20.594	13226
		21.437	17673							20.625	12616
		21.493	16870							20.687	18360
		21.545	17965							20.777	23623
		21.637	20189							20.879	13213
		21.673	13421							20.947	15048
		21.729	18478							21.011	15619
		21.768	24027							21.063	14574
		21.822	15757							21.202	22719
		21.859	15723							21.250	22285
		21.952	15103							21.300	15331
		21.993	19570							21.371	19589
		22.038	15099							21.401	48285
		22.128	18934							21.447	23669
		22.176	16669							21.499	27710
		22.214	16689							21.552	16173
		22.242	16560							21.586	23164
		22.294	16385							21.633	15142
		22.315	16786							21.704	15147
		22.364	17821							21.744	16134
		22.413	16026							21.773	12733
		22.476	21641							21.796	27419
		22.588	28151							21.849	24432
		22.659	19989							21.894	20822
		22.703	20500							21.953	16428
		22.776	15718							21.988	13643
		22.795	15651							22.030	16741
		22.863	15488							22.068	22458
		22.906	19954							22.113	15751

Extracted Ion Current Profiles

21.866	20739	25.798	12958	25.582	13447
21.897	20853			25.650	12323
21.950	15017			25.715	15415
21.992	13887			25.835	12152
22.022	13622			26.106	16793
22.078	28833			26.219	12320
22.135	24403			26.261	15414
22.199	14698			26.526	17639
22.258	15507			26.763	16249
22.313	14818			26.880	14621
22.368	29742			27.244	21867
22.481	20748			27.651	16317
22.668	23829			28.143	12185
22.739	12092			28.285	14501
22.777	19599				
22.836	14471				
22.971	16599				
22.996	13672				
23.070	18790				
23.109	12376				
23.166	19048				
23.208	30092				
23.262	33749				
23.315	12951				
23.480	12090				
23.541	12295				
23.711	14905				
23.751	13905				
23.788	14442				
23.911	23362				
23.970	14123				
24.066	13291				
24.189	19859				
24.271	13357				
24.457	26305				
24.495	14267				
24.721	12400				
24.770	18144				
25.001	13864				
25.979	18577				
26.011	17172				
26.208	12357				
26.284	13159				

Extracted Ion Current Profiles

22.953	14002
22.987	15316
23.129	16415
23.197	25153
23.244	22946
23.269	15118
23.292	23636
23.359	13438
23.382	15152
23.421	15831
23.546	21821
23.639	14698
23.716	15929
23.800	22184
23.840	21942
23.879	17591
23.962	20745
23.986	15460
24.027	17465
24.096	20705
24.179	15211
24.213	15823
24.251	16239
24.309	14018
24.421	15583
24.459	21167
24.512	16216
24.605	15284
24.631	12293
24.697	18723
24.759	23757
24.831	12259
24.992	15517
25.071	22170
25.174	28182
25.201	13107
25.387	14538
25.447	12334
25.590	17585
25.668	16013
25.750	23544
25.859	16507
25.913	16031
25.968	12902
26.056	17758
26.108	16700

22.156	15222
22.182	12015
22.211	25504
22.254	12138
22.281	12111
22.327	31632
22.376	18632
22.414	16479
22.484	38830
22.541	17337
22.563	17843
22.601	12724
22.625	12400
22.684	26824
22.747	16611
22.776	17156
22.818	23372
22.883	32341
22.943	25073
22.998	28754
23.061	29399
23.124	16980
23.170	18626
23.196	13989
23.269	160276
23.404	21905
23.445	18086
23.485	18488
23.517	18338
23.602	25195
23.649	21930
23.690	18788
23.724	25226
23.768	29207
23.829	18053
23.883	23825
23.981	28999
24.036	21577
24.108	23280
24.153	18822
24.187	17583
24.226	18236
24.276	28533
24.309	26732
24.396	23175
24.422	26626

Extracted Ion Current Profiles

26.678	16241
27.647	12495

24.458	20653
24.529	17700
24.557	12268
24.587	22871
24.634	21523
24.682	16245
24.745	20427
24.809	19906
24.888	19480
24.939	38912
25.009	12825
25.070	23382
25.161	24480
25.239	13572
25.287	22862
25.340	12270
25.382	12783
25.439	21953
25.462	24269
25.556	21041
25.610	12205
25.714	17299
25.760	19067
25.820	22360
25.845	14864
25.887	13390
25.993	33520
26.059	14424
26.147	14929
26.201	12053
26.259	13097
26.349	16474
26.387	18849
26.611	13030
26.651	15104
26.884	14834
26.995	17777
27.246	28902
27.643	12343
27.694	12940
27.900	13730
28.228	12297
28.435	12278
28.498	12945
28.611	14038
28.818	12522

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"	
m/z 292		m/z 290		m/z 220		m/z 222		m/z 360		m/z 362	
		25.149	15437	9.690	67976	14.022	52080				
				18.228	12208	16.048	32329				
				19.976	22000	16.775	14391				
				20.447	13306	16.975	27841				
				21.495	24635	17.350	16248				
				23.272	14483	20.692	19950				
				24.064	14867	20.910	13151				
				24.359	13053	21.454	18398				
				24.562	12682	21.598	14305				
				25.164	13507	21.818	12060				
				25.783	14690	22.456	12141				
				25.925	12815	22.740	13323				
				26.101	18807	22.947	12044				
				26.616	18561	23.076	16467				
				26.986	19041	23.384	15084				
				27.033	15283	23.502	12011				
				27.541	15444	23.537	14185				
				27.702	12816	23.781	17307				
				28.210	14122	25.890	12389				

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"	
m/z 288		m/z 324		m/z 326		m/z 328		m/z 289	
23.104	16155							23.925	13792
23.690	16133							24.358	12747
23.943	16866							25.087	14096
24.253	12083							25.472	17622
24.557	12294							26.329	14323
24.949	12306							26.521	13918
25.013	16388							26.690	12174
25.051	13542							28.103	12084
25.199	13369								
25.365	13672								
25.491	30969								
25.673	14207								
26.152	12921								
26.707	13744								

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258	m/z 392
				20.006	12071	18.529	14602	16.542	20730
				20.370	19013	19.134	21293	19.004	15254
				20.423	17826	19.269	12132	19.148	13567
				20.522	12871	19.327	12045	19.429	16867
				20.589	20782	19.390	14134	19.496	14047
				20.636	15651	19.433	13936	19.734	12121
				20.803	12936	19.564	12522	19.828	12582
				20.854	12397	19.700	15328	20.059	18532
				20.951	12290	19.760	15230	20.137	12891
				21.063	12576	19.802	18144	20.337	18089
				21.170	15562	19.861	14221	20.416	16862
				21.246	26397	19.923	12112	20.588	28058
				21.274	13148	19.954	12319	20.626	18033
				21.437	17673	19.986	13722	20.867	18110
				21.493	16870	20.081	17717	21.031	22890
				21.545	17965	20.124	24842	21.145	18820
				21.637	20189	20.199	15578	21.245	19542
				21.673	13421	20.271	12728	21.401	28908
				21.729	18478	20.311	18069	21.447	14760
				21.768	24027	20.473	15329	21.758	18980
				21.822	15757	20.546	31379	21.980	14735
				21.859	15723	20.599	24737	22.075	17296
				21.952	15103	20.666	14407	22.144	15279
				21.993	19570	20.704	12808	22.268	12435
				22.038	15099	20.755	17555	22.682	12568
				22.128	18934	20.817	18266	23.023	102933
				22.176	16669	20.899	12776	23.193	19444
				22.214	16689	20.961	28967	23.554	12876
				22.242	16560	21.001	14378	23.952	14584
				22.294	16385	21.047	23124	24.029	13738
				22.315	16786	21.101	20216	24.437	14832
				22.364	17821	21.137	13786	24.525	22150
				22.413	16026	21.196	20400	25.003	15406
				22.476	21641	21.262	20029	26.000	23810
				22.588	28151	21.308	14827	26.216	12418
				22.659	19989	21.413	239801		
				22.703	20500	21.500	22633		
				22.776	15718	21.551	15293		
				22.795	15651	21.635	12100		
				22.863	15488	21.728	21239		
				22.906	19954	21.820	13311		
				22.953	14002	21.866	20739		

Extracted Ion Current Profiles

22.987	15316	21.897	20853
23.129	16415	21.950	15017
23.197	25153	21.992	13887
23.244	22946	22.022	13622
23.269	15118	22.078	28833
23.292	23636	22.135	24403
23.359	13438	22.199	14698
23.382	15152	22.258	15507
23.421	15831	22.313	14818
23.546	21821	22.368	29742
23.639	14698	22.481	20748
23.716	15929	22.668	23829
23.800	22184	22.739	12092
23.840	21942	22.777	19599
23.879	17591	22.836	14471
23.962	20745	22.971	16599
23.986	15460	22.996	13672
24.027	17465	23.070	18790
24.096	20705	23.109	12376
24.179	15211	23.166	19048
24.213	15823	23.208	30092
24.251	16239	23.262	33749
24.309	14018	23.315	12951
24.421	15583	23.480	12090
24.459	21167	23.541	12295
24.512	16216	23.711	14905
24.605	15284	23.751	13905
24.631	12293	23.788	14442
24.697	18723	23.911	23362
24.759	23757	23.970	14123
24.831	12259	24.066	13291
24.992	15517	24.189	19859
25.071	22170	24.271	13357
25.174	28182	24.457	26305
25.201	13107	24.495	14267
25.387	14538	24.721	12400
25.447	12334	24.770	18144
25.590	17585	25.001	13864
25.668	16013	25.979	18577
25.750	23544	26.011	17172
25.859	16507	26.208	12357
25.913	16031	26.284	13159
25.968	12902		
26.056	17758		
26.108	16700		
26.678	16241		

Extracted Ion Current Profiles

27.647	12495

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03102109"		"M03102109"		"M03102109"		"M03102109"		"M03102109"	
m/z 360		m/z 362		m/z 288		m/z 290		m/z 426	m/z 428
				23.104	16155	25.149	15437		
				23.690	16133				
				23.943	16866				
				24.253	12083				
				24.557	12294				
				24.949	12306				
				25.013	16388				
				25.051	13542				
				25.199	13369				
				25.365	13672				
				25.491	30969				
				25.673	14207				
				26.152	12921				
				26.707	13744				

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03102109"	"M03102109"	"M03102109"	"M03102109"	"M03102109"	"M03102109"	"M03102109"	"M03102109"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
		20.915 31561					20.914 23951

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102109"	"M03102109"	"M03102109"	"M03102109"	"M03102109"	"M03102109"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
		20.915 31561			

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102109"		"M03102109"				"M03102109"		"M03102109"			"M03102109"		"M03102109"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
11.053	407	11.055	1254	424	240	19.412	18208	17.712	14946	188	16.607	229858	9.689	27180
11.932	9590	11.937	842	426	241	19.682	16714	18.023	18032	189	19.112	13459	16.613	52816
12.605	946	12.625	731	428		19.845	16788	18.374	16060		20.347	12149	16.976	13908
12.749	14241	12.772	633	430		20.002	12683	18.520	54494		20.523	14693	17.405	15431
13.037	1896	13.759	1167	498		20.073	13766	18.679	14055		20.706	12724	17.910	17921
13.383	419	13.836	505	500		20.167	16604	18.762	14644		20.856	15316	18.016	15953
13.476	479	13.887	402			20.557	12874	18.868	43211		21.276	13180	18.146	17054
13.518	502	13.926	422			35.331	301241	18.888	32084		21.435	13084	18.241	22386
13.727	865	14.251	604					19.003	14712		21.649	17803	18.336	18615
13.753	639	14.370	745					19.107	12249		21.767	15416	18.576	19388
13.813	871	14.447	634					19.165	17600		21.853	15721	18.622	18603
13.842	799	14.472	1356					19.197	13523		21.972	14007	18.808	14660
13.878	746	14.553	559					19.317	18040		22.128	12476	18.862	13097
13.913	498	14.594	617					19.423	20824		22.176	13458	18.910	14056
13.960	404	14.625	1336					19.487	17262		22.369	12662	18.964	14564
14.049	772	14.681	714					19.604	23879		22.438	13598	19.000	15746
14.125	503	14.722	689					19.635	21707		22.499	12319	19.133	12670
14.173	610	14.765	817					19.704	18180		22.868	17755	19.242	24541
14.207	1057	14.803	423					19.743	14733		22.925	16006	19.316	15495
14.247	533	14.836	614					19.769	13696		23.179	14641	19.373	21076
14.271	635	14.867	1165					19.819	14894		23.276	13183	19.473	22013
14.335	1451	14.927	444					19.856	19759		23.358	16403	19.542	15503
14.380	895	14.949	732					19.897	16067		23.469	14297	19.664	25086
14.406	462	14.993	912					19.960	14699		23.574	14275	19.745	38711
14.431	639	15.037	1074					20.019	40531		23.730	13883	19.796	20024
14.468	887	15.074	878					20.072	13747		23.790	13009	19.854	24949
14.498	572	15.111	636					20.105	16495		23.871	12991	19.942	13508
14.519	716	15.145	1215					20.147	22766		23.999	18150	19.976	16093
14.539	836	15.169	1280					20.195	23743		24.179	17654	20.015	31490
14.591	535	15.231	889					20.283	27313		24.330	20912	20.168	28462
14.632	620	15.260	1118					20.338	30888		24.479	16498	20.214	15753
14.664	893	15.297	757					20.445	18432		24.553	12006	20.264	18387
14.718	1821	15.319	1110					20.478	14575		24.702	13807	20.307	26716
14.785	1898	15.343	936					20.511	29397		24.742	16145	20.385	50603
14.816	770	15.368	756					20.551	25358		24.814	16245	20.452	18944
14.839	1187	15.396	735					20.638	39349		24.886	13093	20.500	33916
14.890	1744	15.417	758					21.074	12225		24.997	13834	20.535	17093
14.936	1441	15.441	1555					21.215	20576		25.026	16223	20.641	53048
14.973	999	15.496	754					22.245	14266		25.189	12157	20.702	18799
15.014	1135	15.525	2046					23.684	12978		25.267	13683	20.738	14938
15.060	1091	15.589	1690					35.323	73915		25.428	19271	21.304	32086

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	33.104	566	32.910	482
512	33.160	464	35.215	449
	33.600	439	35.338	500
	34.304	471	43.702	6491(M)
	35.299	511		
	35.748	412		
	43.701	8329		

8685(M)

Analytical Sample Results

Job Number: 14100477

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: BG-34
Lab Sample ID: 14100477-10 (AR39381)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-10	PCBs by EPA Method TO-4A/680	10/21/2014 12:05	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	281.90m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000180	1.00	U	MS03-473-10
Dichlorobiphenyl	25512-42-9	**0.000104**	0.0000180	1.00		MS03-473-10
Trichlorobiphenyl	25323-68-6	ND	0.0000180	1.00	U	MS03-473-10
Tetrachlorobiphenyl	26914-33-0	ND	0.0000350	1.00	U	MS03-473-10
Pentachlorobiphenyl	25429-29-2	ND	0.0000350	1.00	U	MS03-473-10
Hexachlorobiphenyl	26601-64-9	ND	0.0000350	1.00	U	MS03-473-10
Heptachlorobiphenyl	28655-71-2	ND	0.0000530	1.00	U	MS03-473-10
Octachlorobiphenyl	55722-26-4	ND	0.0000530	1.00	U	MS03-473-10
Nonachlorobiphenyl	53742-07-7	ND	0.0000890	1.00	U	MS03-473-10
Decachlorobiphenyl	2051-24-3	ND	0.0000890	1.00	U	MS03-473-10
Total PCB	1336-36-3	**0.000104**		1.00		MS03-473-10

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	72.6	42.5-134		MS03-473-10
Tetrachloro-meta-xylene	877-09-8	63.8	17.9-137		MS03-473-10

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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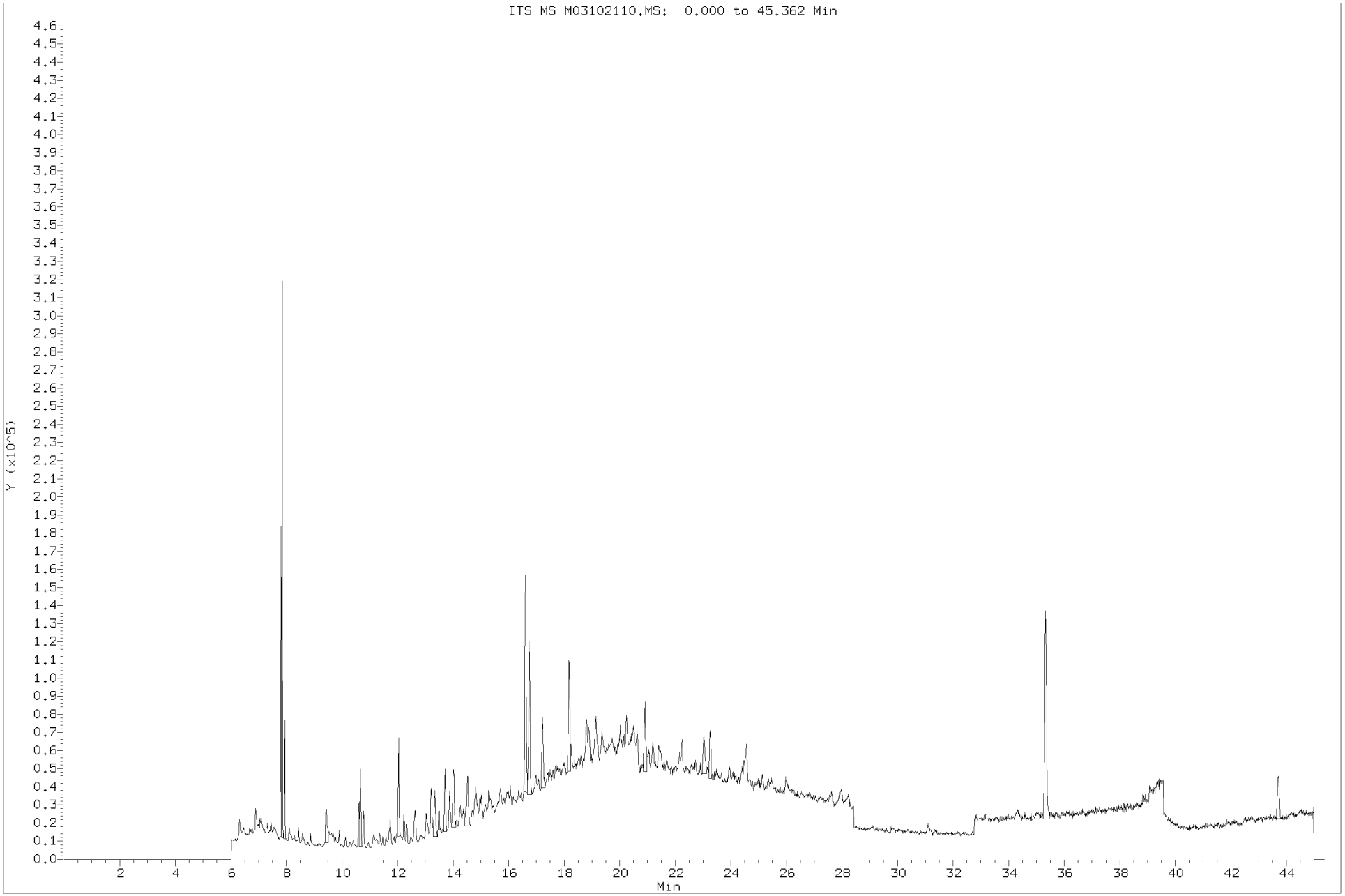
Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102110.d/M03102110.MS
Injection Date: 21-OCT-2014 12:05
Instrument: GCMS03.i
Client Sample ID: BG-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	BG-34
Matrix:	TO-4A PUF	Lab Sample ID:	AR39381
Sample weight:	281.9 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/18/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	1	Time Analyzed:	12:05

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:		0.0000177	0.0000177	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	
12.233	9206	12.236	5934	1.6	0.8733	0.0000177	0.0000177	0.000104	
				Di Total:		0.0000177	0.0000177	0.000104	

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	
				Tri Total:		0.0000177	0.0000177	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/m^3	ug/m^3	ug/m^3	
				Tetra Total:		0.0000355	0.0000355	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/m^3	ug/m^3	ug/m^3	
				Penta Total:		0.0000355	0.0000355	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:		0.0000355	0.0000355	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:		0.0000532	0.0000532	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:		0.0000532	0.0000532	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:		0.0000887	0.0000887	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:		0.0000887	0.0000887	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	
12.621	1743	12.616	1215	1.4	0.3809		0.0128	
				TCMX Total:			0.0128	

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	
43.710	17235	43.700	14444	1.2	0.6617		0.0726	
				Deca Total:			0.0726	

TCMX Recovery %	63.8 %
Deca Recovery	72.6 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.329	287054	35.329	61995	4.6	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102110"		"M03102110"		"M03102110"		"M03102110"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.606	210752	19.736	5174	11.738	5987	16.741	8067
		20.017	7818	12.233	7113		
		20.394	11388	12.636	7221		
		25.149	5078	15.289	5833		
				15.947	6154		
				16.750	56046		
				17.747	7191		
				17.938	8385		
				18.250	5138		
				18.694	9651		
				18.805	5071		
				19.362	5444		

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102110"		"M03102110"		"M03102110"		"M03102110"		"M03102110"		"M03102110"	
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
12.233	9206	12.236	5934	11.738	5987	16.741	8067	14.666	6650	16.606	210752
13.708	8049	15.720	8072	12.233	7113			16.616	19204		
14.022	11599			12.636	7221			21.189	11736		
17.218	6919			15.289	5833			22.736	5552		
				15.947	6154						
				16.750	56046						
				17.747	7191						
				17.938	8385						
				18.250	5138						
				18.694	9651						
				18.805	5071						
				19.362	5444						

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102110"		"M03102110"		"M03102110"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
21.397	18381	18.177	29781	6.315	5726
23.258	11165	18.801	13063	6.478	5752
		19.153	10345	6.909	9804
		23.015	23717	7.110	6743
				7.276	5645
				7.446	6003
				7.812	7010
				7.848	8011
				7.940	5328
				8.108	5377
				9.439	7480
				10.660	13166
				13.714	29428
				14.023	56839
				14.910	5493
				17.223	27298
				20.910	12657
				24.484	6552

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102110"		"M03102110"		"M03102110"		"M03102110"		"M03102110"		"M03102110"	
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
21.397	18381	18.177	29781	14.666	6650	16.606	210752				
23.258	11165	18.801	13063	16.616	19204						
		19.153	10345	21.189	11736						
		23.015	23717	22.736	5552						

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102110"		"M03102110"		"M03102110"		"M03102110"		"M03102110"		"M03102110"	
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
		23.259	8772					7.846	9262	23.256	45657
										24.407	11220

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03102110"	"M03102110"	"M03102110"	"M03102110"	"M03102110"	"M03102110"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362
		7.846 5818	12.233 9206		
			13.708 8049		
			14.022 11599		
			17.218 6919		

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102110"		"M03102110"		"M03102110"		"M03102110"		"M03102110"		"M03102110"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258		m/z 392	
				23.259	8772	21.397	18381	18.177	29781		
						23.258	11165	18.801	13063		
								19.153	10345		
								23.015	23717		

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03102110"	"M03102110"	"M03102110"	"M03102110"	"M03102110"	"M03102110"	"M03102110"	"M03102110"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357
		20.906 12227					20.909 7916

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102110"	"M03102110"	"M03102110"	"M03102110"	"M03102110"	"M03102110"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462
		20.906 12227			

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102110"		"M03102110"				"M03102110"		"M03102110"			"M03102110"		"M03102110"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.621	1743	7.814	615	424	240	35.329	287054	7.847	5089	188	16.606	210752	16.607	40277
13.044	453	7.846	1164	426	241			18.526	11769	189			18.194	5405
14.208	649	12.616	1215	428				35.329	61995				18.586	5853
14.260	502	12.662	473	430									19.019	5771
14.356	615	14.773	493	498									19.735	6651
14.520	513	14.983	439	500									19.851	6832
14.616	428	15.061	701										20.017	9995
14.653	429	15.144	812										20.147	5005
14.698	963	15.230	560										20.333	5057
14.780	556	15.299	532										20.401	7212
14.842	648	15.338	554										20.501	9627
14.903	425	15.419	422										20.558	5229
15.012	622	15.444	487										20.624	10494
15.078	597	15.490	449										20.734	5406
15.119	662	15.533	615										20.886	6438
15.257	1145	15.575	721										21.042	11941
15.308	548	15.633	549										21.195	12986
15.348	1026	15.656	402										21.333	8324
15.387	649	15.695	1083										21.740	6093
15.445	603	15.739	699										21.818	7213
15.504	642	15.837	1355										22.038	5995
15.534	573	15.888	1250										22.151	8378
15.584	609	15.938	948										22.266	6715
15.606	489	15.995	1235										22.379	11718
15.647	964	16.068	1124										22.665	6691
15.715	1048	16.109	892										23.106	6085
15.765	1027	16.167	2364										23.398	7685
15.809	801	16.244	971										23.645	6340
15.839	568	16.270	727										23.764	7825
15.870	1047	16.294	652										24.074	6522
15.898	951	16.320	896										24.130	5557
15.942	897	16.362	597										24.485	7258
15.991	653	16.384	707										25.477	11288
16.020	710	16.407	841										26.559	7407
16.062	550	16.446	888										26.704	5722
16.079	609	16.508	1211										26.892	5154
16.114	930	16.531	712										27.627	9558
16.144	467	16.577	1529											
16.170	698	16.635	557											
16.204	672	16.657	613											
16.265	1664	16.680	721											

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	43.710	17235	43.700	14444
512				

Analytical Sample Results

Job Number: 14100477

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: BG-34-DUP
Lab Sample ID: 14100477-11 (AR39382)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-11	PCBs by EPA Method TO-4A/680	10/21/2014 12:54	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	276.60m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000180	1.00	U	MS03-473-11
Dichlorobiphenyl	25512-42-9	ND	0.0000180	1.00	U	MS03-473-11
Trichlorobiphenyl	25323-68-6	ND	0.0000180	1.00	U	MS03-473-11
Tetrachlorobiphenyl	26914-33-0	ND	0.0000360	1.00	U	MS03-473-11
Pentachlorobiphenyl	25429-29-2	ND	0.0000360	1.00	U	MS03-473-11
Hexachlorobiphenyl	26601-64-9	ND	0.0000360	1.00	U	MS03-473-11
Heptachlorobiphenyl	28655-71-2	ND	0.0000540	1.00	U	MS03-473-11
Octachlorobiphenyl	55722-26-4	ND	0.0000540	1.00	U	MS03-473-11
Nonachlorobiphenyl	53742-07-7	ND	0.0000900	1.00	U	MS03-473-11
Decachlorobiphenyl	2051-24-3	ND	0.0000900	1.00	U	MS03-473-11
Total PCB	1336-36-3	ND		1.00	U	MS03-473-11

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	68.9	42.5-134		MS03-473-11
Tetrachloro-meta-xylene	877-09-8	60.2	17.9-137		MS03-473-11

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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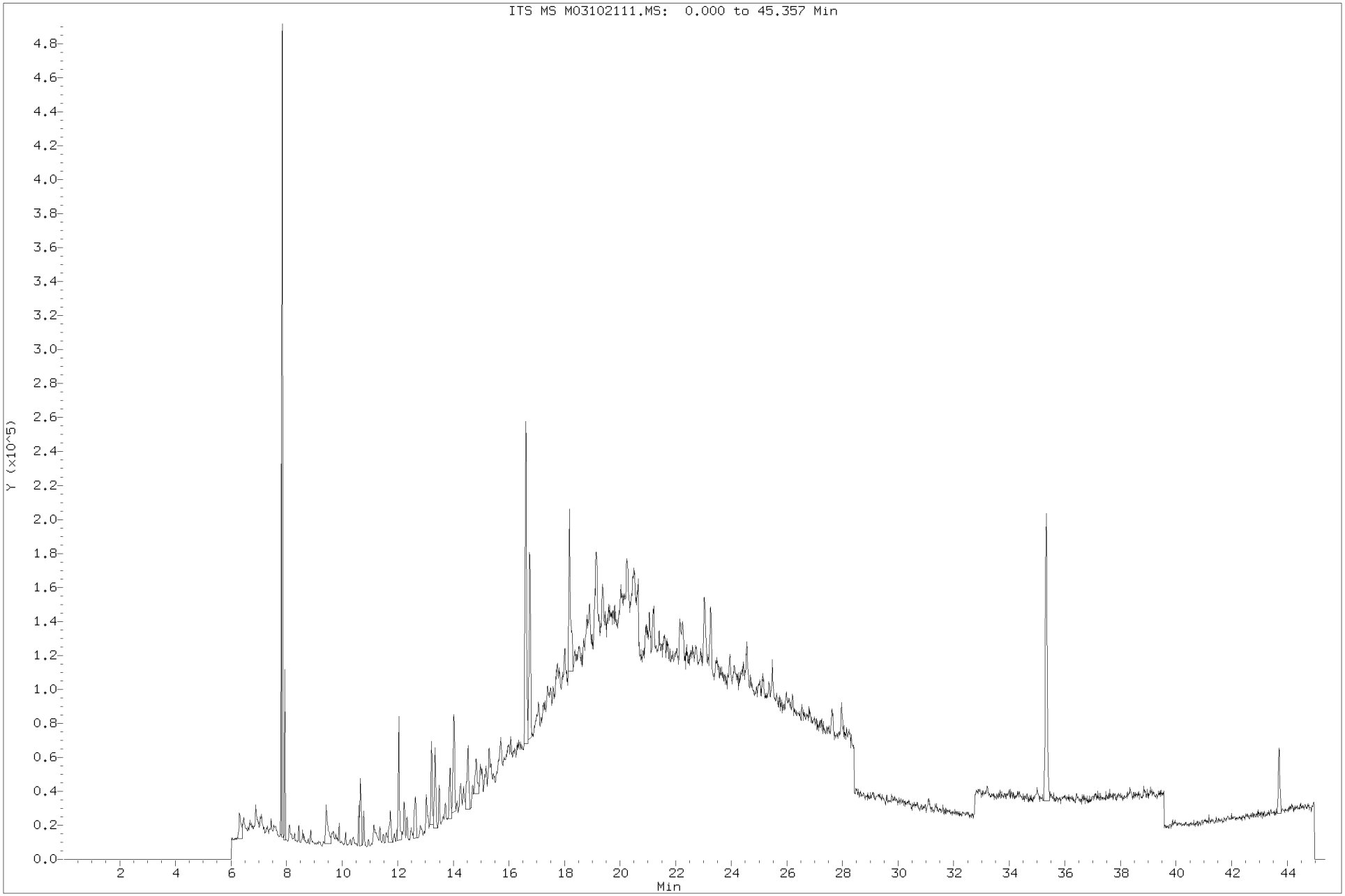
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102111.d/M03102111.MS
Injection Date: 21-OCT-2014 12:54
Instrument: GCMS03.i
Client Sample ID: BG-34-DUP



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	BG-34-DUP
Matrix:	TO-4A PUF	Lab Sample ID:	AR39382
Sample weight:	276.6 cubic m	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/18/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	1	Time Analyzed:	12:54

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:		0.0000181	0.0000181	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	
				Di Total:		0.0000181	0.0000181	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/m^3	ug/m^3	ug/m^3	
				Tri Total:		0.0000181	0.0000181	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/m^3	ug/m^3	ug/m^3	
				Tetra Total:		0.0000362	0.0000362	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/m^3	ug/m^3	ug/m^3	
				Penta Total:		0.0000362	0.0000362	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:		0.0000362	0.0000362	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:		0.0000542	0.0000542	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:		0.0000542	0.0000542	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:		0.0000904	0.0000904	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:		0.0000904	0.0000904	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	
12.608	2483	12.612	1970	1.3	0.3809		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	
43.700	24683	43.705	21149	1.2	0.6617		0.0689	
				Deca Total:			0.0689	

TCMX Recovery %	60.2 %
Deca Recovery	68.9 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.330	433032	35.325	91754	4.7	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102111"		"M03102111"		"M03102111"		"M03102111"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.611	329467	16.608	8194	9.896	5452	16.605	6525
18.180	7010	17.689	6282	11.731	8491	16.739	8516
18.899	5336	18.180	6258	12.037	5655	16.749	7877
19.160	5920	18.974	5460	12.231	9795	17.572	5314
20.822	6103	19.129	7786	12.633	10362	18.537	5244
21.117	7648	19.224	5804	13.029	6198	19.153	8880
22.542	5752	19.287	5897	13.880	5346	19.305	5654
22.730	5846	19.360	6314	14.263	5772	20.165	6314
23.448	5080	19.587	5751	14.537	5696	20.419	5312
23.979	5059	19.650	5944	14.813	5744		
25.492	5694	19.743	8149	15.293	10856		
		19.867	5247	15.590	7416		
		20.017	9561	16.355	6431		
		20.300	6003	16.585	5591		
		20.411	8942	16.752	84064		
		20.460	5039	17.041	5927		
		20.497	5464	17.073	5915		
		20.645	12114	17.136	5878		
		20.776	5087	17.318	5624		
		20.846	6457	17.400	9956		
		20.920	5005	17.739	11622		
		21.008	8162	17.853	5206		
		21.062	8357	17.936	21545		
		21.195	5293	18.027	13206		
		21.231	6628	18.090	8180		
		21.381	5251	18.190	11522		
		21.479	5062	18.242	18936		
		21.508	5136	18.403	6462		
		21.573	5099	18.453	5778		
		21.615	7464	18.534	13128		
		21.760	5317	18.575	10946		
		21.896	5013	18.694	21569		
		22.043	5455	18.764	7350		
		22.224	5964	18.839	6499		
		22.270	5742	18.858	5339		
		22.346	7566	18.921	8443		
		22.386	8301	18.978	5487		
		22.469	6024	19.047	5612		
		22.593	9389	19.083	6079		
		22.733	8536	19.130	9908		
		22.777	5742	19.167	8125		

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102111"		"M03102111"		"M03102111"		"M03102111"		"M03102111"		"M03102111"	
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
12.233	13077	12.233	8626	9.896	5452	16.605	6525	14.671	9957	16.611	329467
14.023	19072	15.683	5913	11.731	8491	16.739	8516	14.904	5356	18.180	7010
16.050	5265	15.716	8441	12.037	5655	16.749	7877	15.569	5040	18.899	5336
17.219	6454	16.359	5811	12.231	9795	17.572	5314	16.389	5439	19.160	5920
23.486	5088	17.086	5562	12.633	10362	18.537	5244	16.612	44086	20.822	6103
		17.243	6033	13.029	6198	19.153	8880	17.060	6345	21.117	7648
		17.487	6821	13.880	5346	19.305	5654	17.375	9983	22.542	5752
		17.789	7001	14.263	5772	20.165	6314	17.481	5250	22.730	5846
		18.903	5267	14.537	5696	20.419	5312	17.731	5598	23.448	5080
		19.413	5159	14.813	5744			17.995	14855	23.979	5059
		19.453	5385	15.293	10856			18.852	6909	25.492	5694
		20.588	6928	15.590	7416			19.075	8999		
				16.355	6431			19.130	15509		
				16.585	5591			19.372	9432		
				16.752	84064			19.938	5704		
				17.041	5927			20.028	7987		
				17.073	5915			20.135	6525		
				17.136	5878			20.235	7446		
				17.318	5624			20.378	5316		
				17.400	9956			20.450	8022		
				17.739	11622			20.720	9403		
				17.853	5206			20.942	9944		
				17.936	21545			21.055	7065		
				18.027	13206			21.194	23954		
				18.090	8180			21.611	7968		
				18.190	11522			21.964	6276		
				18.242	18936			22.113	5803		
				18.403	6462			22.219	6901		
				18.453	5778			22.246	13962		
				18.534	13128			22.523	6856		
				18.575	10946			22.735	19595		
				18.694	21569			23.252	8266		
				18.764	7350						
				18.839	6499						
				18.858	5339						
				18.921	8443						
				18.978	5487						
				19.047	5612						
				19.083	6079						
				19.130	9908						
				19.167	8125						

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102111"		"M03102111"		"M03102111"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
18.150	6300	18.178	44600	6.320	10155
18.851	6241	18.809	15391	6.616	5625
18.995	6422	18.913	5664	6.771	5209
19.201	5546	18.994	5913	6.896	10268
19.386	9338	19.122	6053	7.058	6382
19.472	5188	19.151	12598	7.103	5349
19.521	10203	19.368	5467	7.199	5134
19.686	5614	19.632	6119	7.588	8754
19.970	8184	19.768	6290	7.808	6742
20.133	6473	20.063	5837	7.844	12878
20.300	6116	20.268	5876	7.942	5077
20.402	7798	20.609	5751	8.104	6218
20.528	7229	20.657	6088	9.438	10188
20.602	5849	20.729	6847	10.658	7336
20.660	6867	20.982	7008	11.146	5161
20.834	5027	21.010	5652	13.716	12010
20.887	5072	21.082	6377	14.022	102941
20.921	7020	21.151	5305	14.897	8089
20.975	8847	21.200	5919	16.058	10687
21.040	5443	21.326	5794	16.214	6133
21.174	6599	22.298	7962	16.771	10168
21.404	23562	23.029	38310	16.990	9361
21.500	6978			17.218	11357
21.531	5021			18.419	6668
21.677	6205			18.670	5672
21.708	9642			18.774	8253
21.792	5922			18.903	5936
21.958	5819			18.992	8632
22.060	8957			19.559	6223
22.134	5825			19.692	5432
22.272	5266			19.821	7856
22.373	6020			20.028	5729
22.598	8965			20.423	6638
22.793	5218			20.871	5348
23.198	8368			21.016	5743
23.263	22788			21.195	5249
23.623	6770			21.641	6168
23.741	5576			22.074	6709
23.809	5719			22.339	5338
24.047	5738			22.726	5716
24.454	11649			22.910	5310

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102111"		"M03102111"		"M03102111"		"M03102111"		"M03102111"		"M03102111"	
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
18.150	6300	18.178	44600	14.671	9957	16.611	329467				
18.851	6241	18.809	15391	14.904	5356	18.180	7010				
18.995	6422	18.913	5664	15.569	5040	18.899	5336				
19.201	5546	18.994	5913	16.389	5439	19.160	5920				
19.386	9338	19.122	6053	16.612	44086	20.822	6103				
19.472	5188	19.151	12598	17.060	6345	21.117	7648				
19.521	10203	19.368	5467	17.375	9983	22.542	5752				
19.686	5614	19.632	6119	17.481	5250	22.730	5846				
19.970	8184	19.768	6290	17.731	5598	23.448	5080				
20.133	6473	20.063	5837	17.995	14855	23.979	5059				
20.300	6116	20.268	5876	18.852	6909	25.492	5694				
20.402	7798	20.609	5751	19.075	8999						
20.528	7229	20.657	6088	19.130	15509						
20.602	5849	20.729	6847	19.372	9432						
20.660	6867	20.982	7008	19.938	5704						
20.834	5027	21.010	5652	20.028	7987						
20.887	5072	21.082	6377	20.135	6525						
20.921	7020	21.151	5305	20.235	7446						
20.975	8847	21.200	5919	20.378	5316						
21.040	5443	21.326	5794	20.450	8022						
21.174	6599	22.298	7962	20.720	9403						
21.404	23562	23.029	38310	20.942	9944						
21.500	6978			21.055	7065						
21.531	5021			21.194	23954						
21.677	6205			21.611	7968						
21.708	9642			21.964	6276						
21.792	5922			22.113	5803						
21.958	5819			22.219	6901						
22.060	8957			22.246	13962						
22.134	5825			22.523	6856						
22.272	5266			22.735	19595						
22.373	6020			23.252	8266						
22.598	8965										
22.793	5218										
23.198	8368										
23.263	22788										
23.623	6770										
23.741	5576										
23.809	5719										
24.047	5738										
24.454	11649										

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102111"		"M03102111"		"M03102111"		"M03102111"		"M03102111"		"M03102111"	
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
		19.435	5303					7.817	5635	18.990	5559
		19.683	5282					7.846	14418	19.159	6977
		20.156	6226							19.368	5225
		20.281	6019							19.543	9265
		20.369	6090							19.958	6510
		20.803	5033							20.081	6695
		21.092	7459							20.114	6348
		21.249	6702							20.217	5598
		21.537	5277							20.395	5435
		21.680	5247							20.502	9163
		22.121	5687							20.565	6103
		22.285	5558							20.663	5486
		22.416	5363							20.750	11903
		22.684	7789							20.930	12766
		22.770	5768							20.996	6568
		23.108	6025							21.033	5047
		23.262	15610							21.135	5089
		23.427	7557							21.190	5110
		23.558	7999							21.289	5268
		24.396	5707							21.312	5111
		24.795	5784							21.402	6969
										21.499	6221
										21.639	6322
										21.741	8656
										21.784	7414
										21.866	5404
										22.021	5115
										22.224	5030
										22.273	8114
										22.313	7104
										22.364	5435
										22.549	7113
										22.603	5050
										22.642	6518
										22.851	7249
										22.943	6376
										23.001	6400
										23.258	78215
										23.408	7323
										23.540	7926
										23.613	7046

Extracted Ion Current Profiles

25.984	7136

Extracted Ion Current Profiles

23.694	14107
24.084	5703
24.265	7081
24.314	6500
24.400	12128
24.438	6059
24.501	6317
24.781	5014
24.915	8684
25.223	5014
25.289	5146
25.493	5526
25.589	6073
25.691	5296
25.785	6008

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03102111"		"M03102111"		"M03102111"		"M03102111"		"M03102111"		"M03102111"	
m/z 292		m/z 290		m/z 220		m/z 222		m/z 360		m/z 362	
				7.845	9403	12.233	13077				
				21.029	5624	14.023	19072				
				23.264	5227	16.050	5265				
				24.187	6332	17.219	6454				
						23.486	5088				

Extracted Ion Current Profiles

Tetrachlorobiphenyls				
"M03102111"	"M03102111"	"M03102111"	"M03102111"	"M03102111"
m/z 288	m/z 324	m/z 326	m/z 328	m/z 289

23.770	5318
25.474	6407

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03102111"		"M03102111"		"M03102111"		"M03102111"		"M03102111"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258		m/z 392
				19.435	5303	18.150	6300	18.178	44600	
				19.683	5282	18.851	6241	18.809	15391	
				20.156	6226	18.995	6422	18.913	5664	
				20.281	6019	19.201	5546	18.994	5913	
				20.369	6090	19.386	9338	19.122	6053	
				20.803	5033	19.472	5188	19.151	12598	
				21.092	7459	19.521	10203	19.368	5467	
				21.249	6702	19.686	5614	19.632	6119	
				21.537	5277	19.970	8184	19.768	6290	
				21.680	5247	20.133	6473	20.063	5837	
				22.121	5687	20.300	6116	20.268	5876	
				22.285	5558	20.402	7798	20.609	5751	
				22.416	5363	20.528	7229	20.657	6088	
				22.684	7789	20.602	5849	20.729	6847	
				22.770	5768	20.660	6867	20.982	7008	
				23.108	6025	20.834	5027	21.010	5652	
				23.262	15610	20.887	5072	21.082	6377	
				23.427	7557	20.921	7020	21.151	5305	
				23.558	7999	20.975	8847	21.200	5919	
				24.396	5707	21.040	5443	21.326	5794	
				24.795	5784	21.174	6599	22.298	7962	
						21.404	23562	23.029	38310	
						21.500	6978			
						21.531	5021			
						21.677	6205			
						21.708	9642			
						21.792	5922			
						21.958	5819			
						22.060	8957			
						22.134	5825			
						22.272	5266			
						22.373	6020			
						22.598	8965			
						22.793	5218			
						23.198	8368			
						23.263	22788			
						23.623	6770			
						23.741	5576			
						23.809	5719			
						24.047	5738			
						24.454	11649			
						25.984	7136			

Extracted Ion Current Profiles

Hexachlorobiphenyls					
"M03102111"	"M03102111"	"M03102111"	"M03102111"	"M03102111"	"M03102111"
m/z 360	m/z 362	m/z 288	m/z 290	m/z 426	m/z 428
		23.770 5318			
		25.474 6407			

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102111"		"M03102111"				"M03102111"		"M03102111"			"M03102111"		"M03102111"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.608	2483	7.844	2641	424	240	19.069	6026	7.846	8206	188	16.611	329467	7.444	5070
13.033	738	12.612	1970	426	241	19.094	6805	16.488	7696	189	18.180	7010	12.230	5368
13.713	497	14.022	415	428		19.387	5969	17.440	5380		18.899	5336	16.607	62458
13.849	526	14.272	411	430		20.004	5798	17.598	8369		19.160	5920	17.052	6308
14.026	503	14.379	714	498		20.074	6825	17.725	8229		20.822	6103	17.273	5854
14.094	466	14.423	636	500		20.151	5417	17.756	5118		21.117	7648	17.539	6539
14.158	423	14.505	1011			35.330	433032	17.946	6043		22.542	5752	17.625	5355
14.224	639	14.568	411					18.073	7467		22.730	5846	17.763	5785
14.317	563	14.609	430					18.152	5721		23.448	5080	17.832	7445
14.373	1249	14.730	514					18.209	5016		23.979	5059	17.906	9582
14.448	507	14.792	979					18.261	8253		25.492	5694	18.179	11530
14.470	506	14.831	403					18.431	6523				18.244	7639
14.503	685	14.905	400					18.525	25293				18.310	5699
14.601	750	14.927	495					18.588	6556				18.347	5499
14.649	974	14.959	762					18.757	5921				18.403	5035
14.703	1130	14.994	795					18.798	10639				18.577	12144
14.739	856	15.047	950					18.888	16944				18.614	6470
14.767	457	15.077	605					18.945	5282				18.703	10616
14.791	543	15.095	905					18.982	9769				18.783	6380
14.827	1131	15.137	869					19.083	7558				18.798	5103
14.860	1241	15.167	899					19.144	9779				18.857	7491
14.899	1109	15.196	573					19.247	9746				18.892	5038
14.962	1207	15.242	1172					19.291	5874				18.955	7274
14.993	691	15.277	1146					19.366	9448				19.017	11053
15.022	865	15.306	613					19.428	12590				19.083	5854
15.048	704	15.335	549					19.565	6620				19.121	5469
15.072	1009	15.404	3849					19.628	7519				19.173	6971
15.121	654	15.462	807					19.694	9022				19.212	5999
15.157	934	15.494	1193					19.762	6646				19.248	8858
15.195	799	15.524	777					19.835	13046				19.298	6186
15.219	550	15.551	849					19.868	7433				19.342	5651
15.245	830	15.574	953					19.939	6790				19.358	5216
15.281	2362	15.597	1003					19.976	5784				19.432	10626
15.343	715	15.645	2567					20.029	8540				19.489	5824
15.366	850	15.705	2063					20.075	6482				19.534	5910
15.389	1240	15.735	771					20.103	6481				19.559	6318
15.427	744	15.762	1143					20.177	5138				19.609	7389
15.454	892	15.780	1607					20.238	6702				19.646	5931
15.481	1565	15.846	2639					20.297	8649				19.680	5983
15.513	867	15.881	1764					20.331	6188				19.726	17463
15.536	774	15.924	1735					35.325	91754				20.318	8329

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	35.333	1582	35.347	431
512	43.700	24683	43.705	21149

8685(M)

Analytical Sample Results

Job Number: 14100477

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: TB-34
Lab Sample ID: 14100477-12 (AR39383)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-23	PCBs by EPA Method TO-4A/680	10/21/2014 02:15	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	0.00m³	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	MS03-472-23
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-472-23
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-472-23
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-472-23
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-472-23
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-472-23
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-472-23
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-472-23
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-472-23
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-472-23
Total PCB	1336-36-3	ND		1.00	U	MS03-472-23

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	54.8	42.5-134		MS03-472-23
Tetrachloro-meta-xylene	877-09-8	63.7	17.9-137		MS03-472-23

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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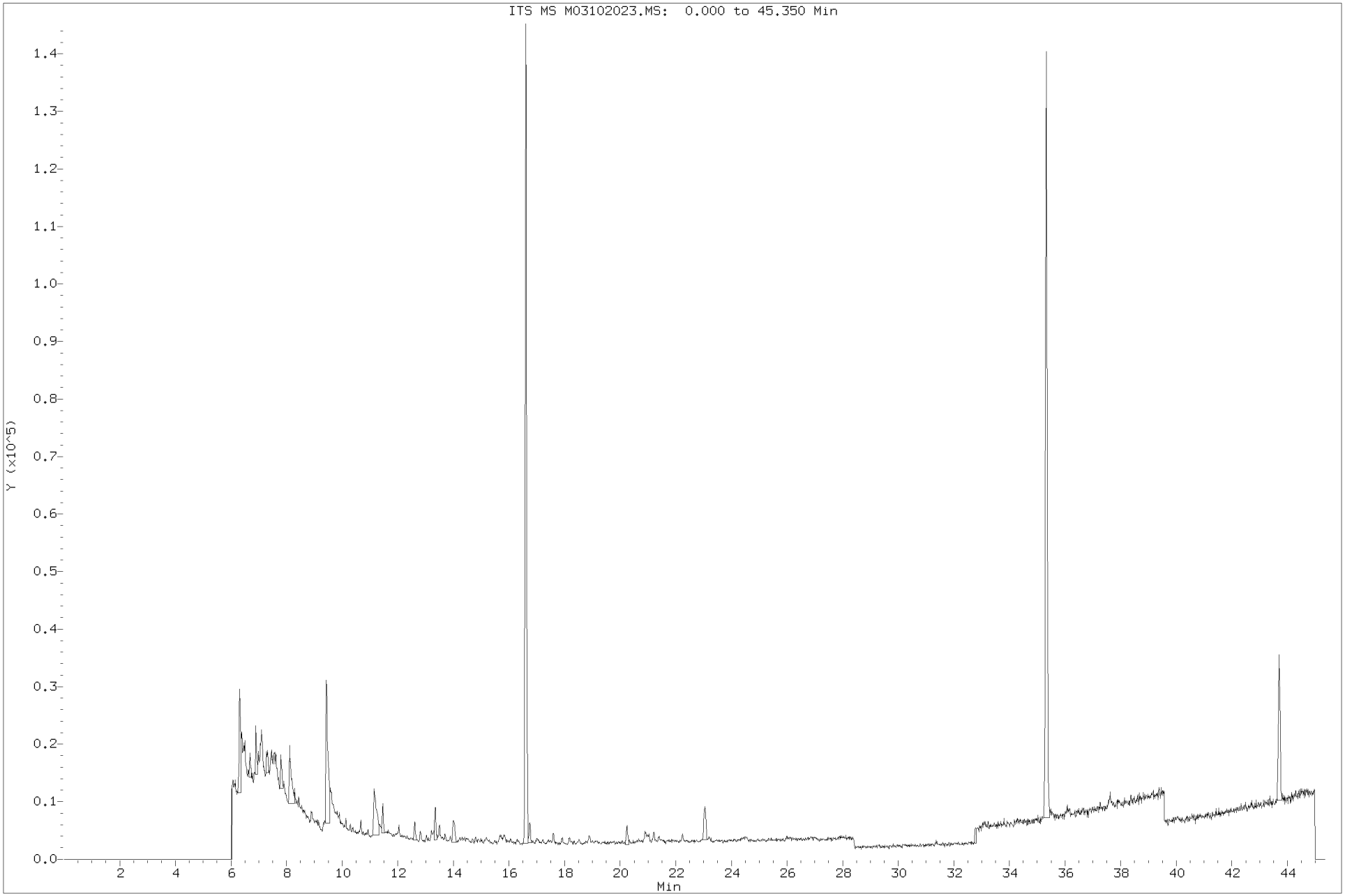
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102023.d/M03102023.MS
Injection Date: 21-OCT-2014 02:15
Instrument: GCMS03.i
Client Sample ID: TB-34



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	TB-34
Matrix:	TO-4A PUF	Lab Sample ID:	AR39383
Sample weight:	NA	Date Received:	10/14/2014
% Moisture	0 %	Date Extracted:	10/18/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	1	Time Analyzed:	2:15

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

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	Reporting Limit ug	Report Amount ug	Flag
				Mono Total:		0.00500	0.00500	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	Reporting Limit ug	Report Amount ug	Flag
				Di Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tri Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tetra Total:		0.0100	0.0100	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Penta Total:		0.0100	0.0100	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	Reporting Limit ug	Report Amount ug	Flag
					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 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
12.611	2008	12.611	1491	1.3	0.3809		0.0127	
					TCMX Total:		0.0127	

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
43.699	14964	43.703	16115	0.9	0.6594		0.0548	
					Deca Total:		0.0548	

TCMX Recovery %	63.7 %
Deca Recovery	54.8 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.326	331165	35.333	71107	4.7	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102023"		"M03102023"		"M03102023"		"M03102023"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.604	244370	16.613	2567				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102023"		"M03102023"		"M03102023"		"M03102023"		"M03102023"		"M03102023"	
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
								16.606	24178	16.604	244370

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102023"		"M03102023"		"M03102023"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.063	3768
				6.178	3643
				6.219	3135
				6.321	9405
				6.388	6845
				6.459	3898
				6.500	3420
				6.549	3847
				6.620	4123
				6.684	4948
				6.715	3161
				6.772	3983
				6.904	6679
				6.973	3614
				7.043	3569
				7.098	4502
				7.155	6127
				7.203	2677
				7.284	3037
				7.326	5880
				7.413	4399
				7.461	4089
				7.514	3284
				7.579	8815
				7.661	4030
				7.799	5999
				7.907	3781
				7.992	2747
				8.110	5953
				8.172	3893
				8.275	2908
				8.379	3268
				8.558	2529
				8.651	3924
				9.436	14769
				11.156	2697
				14.021	4870

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102023"		"M03102023"		"M03102023"		"M03102023"		"M03102023"		"M03102023"	
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
				16.606	24178	16.604	244370				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102023"		"M03102023"				"M03102023"		"M03102023"			"M03102023"		"M03102023"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.611	2008	12.611	1491	424	240	35.326	331165	35.333	71107	188	16.604	244370	16.606	38130
33.106	3297	35.323	4249	426	241				44916(M)	189				
		35.349	2160	428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	43.699	14964(M)	35.309	443
512	43.731	4268	43.703	16115
	43.765	514		

Internal Standard Area Summary

8B

EPA 680 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Pace Analytical Services, Inc. Contract: TRC-KEITH

Lab Code: 11078 Case No.: NA SAS No: NA SDG No: 14100477

Sample Name: CCV3-1020C

Lab File ID (Standard): MS03-472-45396

Instrument ID: MS03

Date Analyzed: 10/20/2014

Time Analyzed: 6:06:00 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	358868	35.33	261851	16.60		
UPPER LIMIT	466528.4	35.50	340406.3	16.76		
LOWER LIMIT	251207.6	35.17	183295.7	16.43		
EPA SAMPLE NO.						
AR39372B	280343	35.32	200508	16.60		
AR39372L	279886	35.32	202157	16.60		
AR39372S	258087	35.33	196792	16.60		
AR39372	275574	35.32	206110	16.60		
AR39373	280969	35.33	206768	16.60		
AR39374	278373	35.33	210674	16.60		
AR39375	279666	35.32	199599	16.60		
AR39376	270998	35.32	204558	16.60		
AR39377	263670	35.33	197476	16.60		
AR39383	331165	35.33	244370	16.60		

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: TRC-KEITH

Lab Code: 11078 Case No.: NA SAS No: NA SDG No: 14100477

Sample Name: CCV3-1021A

Lab File ID (Standard): MS03-473-45415

Instrument ID: MS03

Date Analyzed: 10/21/2014

Time Analyzed: 6:23:00 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	362496	35.33	272827	16.60		
UPPER LIMIT	471244.8	35.49	354675.1	16.76		
LOWER LIMIT	253747.2	35.16	190978.9	16.43		
EPA SAMPLE NO.						
AR39378B	283265	35.33	208132	16.60		
AR39378L	377175	35.33	275453	16.61		
AR39378S	287700	35.32	211045	16.60		
AR39378	417147	35.33	324627	16.61		
AR39379	393603	35.33	288299	16.61		
AR39380	301241	35.33	229858	16.61		
AR39381	287054	35.33	210752	16.61		
AR39382	433032	35.33	329467	16.61		

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

Window Defining Mix

Pace Analytical - NY Lab

PCB REPORT EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100702.d
Lab Smp Id: WDM3-1007A Client Smp ID: WDM3-1007A
Inj Date : 07-OCT-2014 07:43
Operator : RMS Inst ID: GCMS03.i
Smp Info : WDM3-1007A
Misc Info : RMS M03100702
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680WDM3.m
Meth Date : 07-Oct-2014 10:07 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 07:43 Cal File: M03100702.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 680WDM.sub
Target Version: 4.14
Processing Host: NEA88

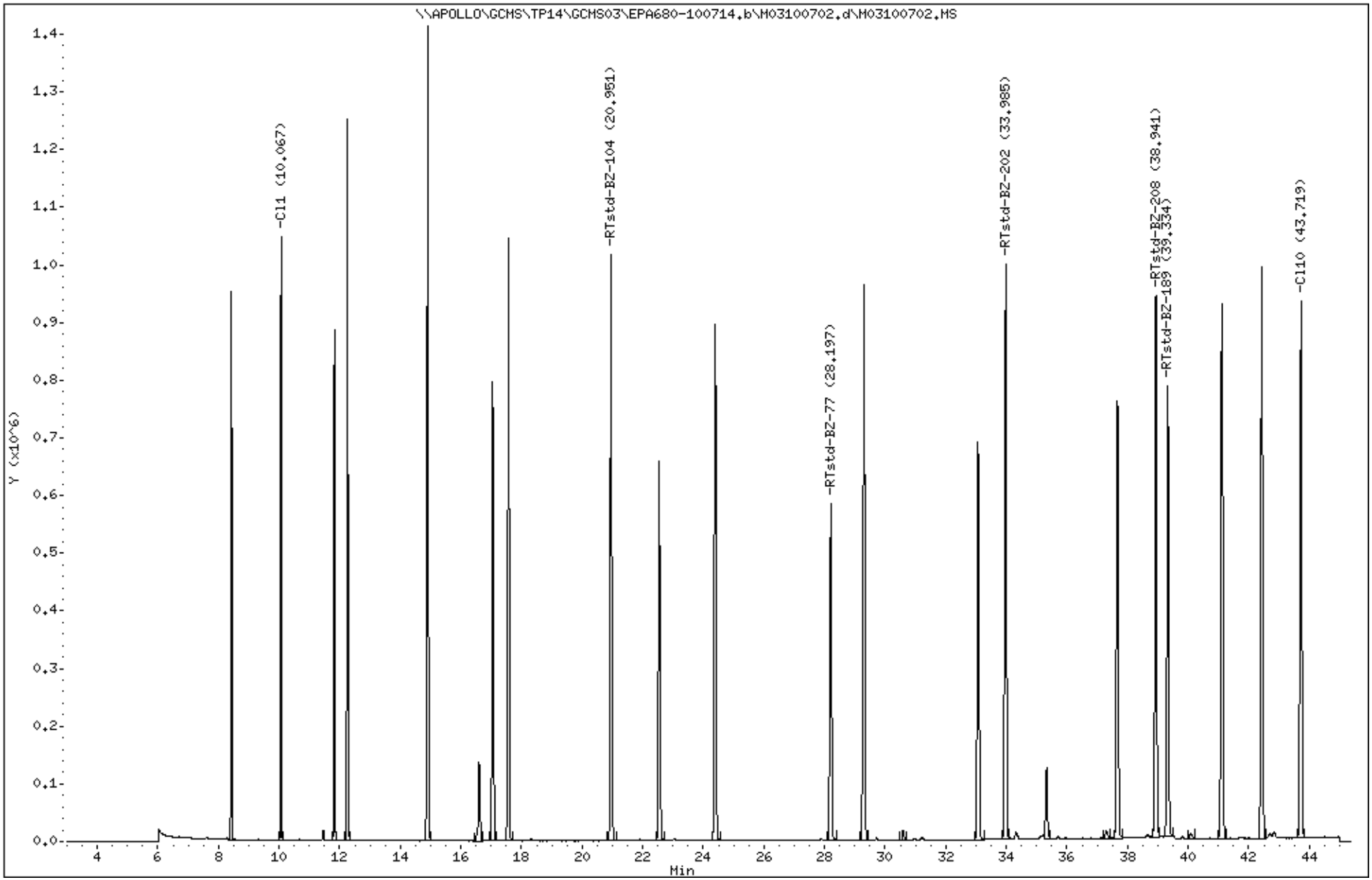
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188	16.599	16.599	(1.000)	237317	0.80000	
* 6 Chrysene-d12	240	35.330	35.330	(1.000)	316490	0.80000	
1 Cl1	188	10.067	10.067	(0.285)	905553	2.50000	2.50
3 RTstd-BZ-104	326	20.950	20.950	(0.593)	773199	2.50000	2.50
4 RTstd-BZ-77	292	28.197	28.197	(0.798)	603293	2.50000	2.50
5 RTstd-BZ-202	430	33.973	33.973	(0.962)	665558	2.50000	2.50
7 RTstd-BZ-208	464	38.941	38.941	(1.102)	624563	2.50000	2.50
8 RTstd-BZ-189	394	39.333	39.333	(1.113)	588990	2.50000	2.50
9 Cl10	498	43.730	43.730	(1.238)	605175	2.50000	2.50

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100702.d
Date : 07-OCT-2014 07:43
Client ID: WDM3-1007A
Sample Info: WDM3-1007A
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\TP14\GCMS03\102014-680b.b\M03102012.d
Lab Smp Id: WDM3-1020B Client Smp ID: WDM3-1020B
Inj Date : 20-OCT-2014 17:17
Operator : RMS Inst ID: GCMS03.i
Smp Info : WDM3-1020B
Misc Info : RMS M03102012
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\680WDM3.m
Meth Date : 20-Oct-2014 14:29 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 07:43 Cal File: M03100702.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 680WDM.sub
Target Version: 4.14
Processing Host: NEA88

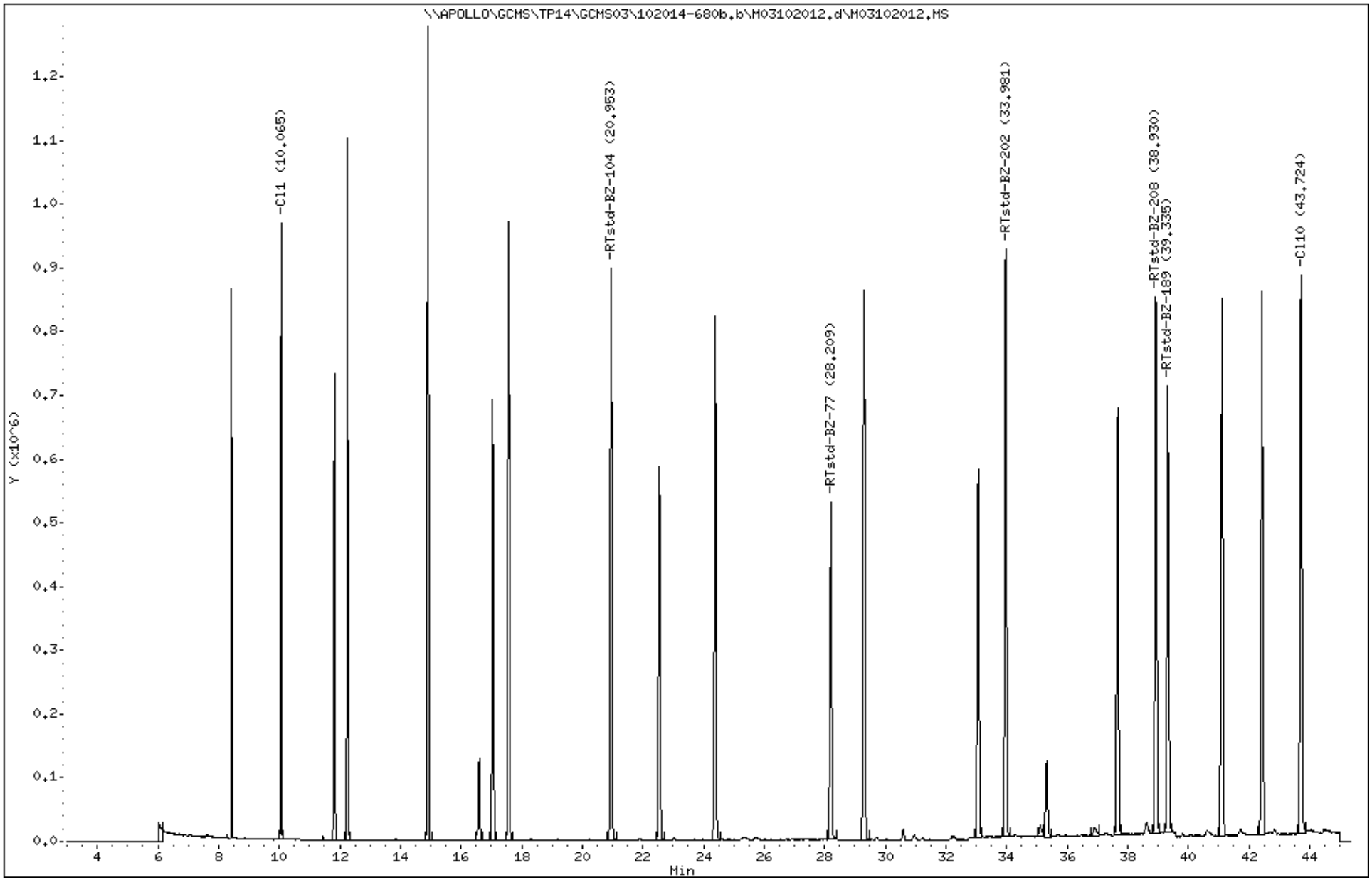
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188	16.607	16.599	(1.000)	226941	0.80000	
* 6 Chrysene-d12	240	35.323	35.330	(1.000)	295428	0.80000	
1 Cl1	188	10.064	10.067	(0.285)	829387	2.45297	2.45
3 RTstd-BZ-104	326	20.953	20.950	(0.593)	695230	2.40816	2.41
4 RTstd-BZ-77	292	28.208	28.197	(0.799)	510839	2.26780	2.27
5 RTstd-BZ-202	430	33.980	33.973	(0.962)	597387	2.40391	2.40
7 RTstd-BZ-208	464	38.930	38.941	(1.102)	564627	2.42122	2.42
8 RTstd-BZ-189	394	39.334	39.333	(1.114)	498905	2.26860	2.27
9 Cl10	498	43.723	43.730	(1.238)	540583	2.39238	2.39

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102012.d
Date : 20-OCT-2014 17:17
Client ID: WDM3-1020B
Sample Info: WDM3-1020B
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\TP14\GCMS03\102114-680.b\M03102102.d
Lab Smp Id: WDM3-1021A Client Smp ID: WDM3-1021A
Inj Date : 21-OCT-2014 05:34
Operator : RMS Inst ID: GCMS03.i
Smp Info : WDM3-1021A
Misc Info : RMS M03102102
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\680WDM3.m
Meth Date : 20-Oct-2014 14:29 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 07:43 Cal File: M03100702.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

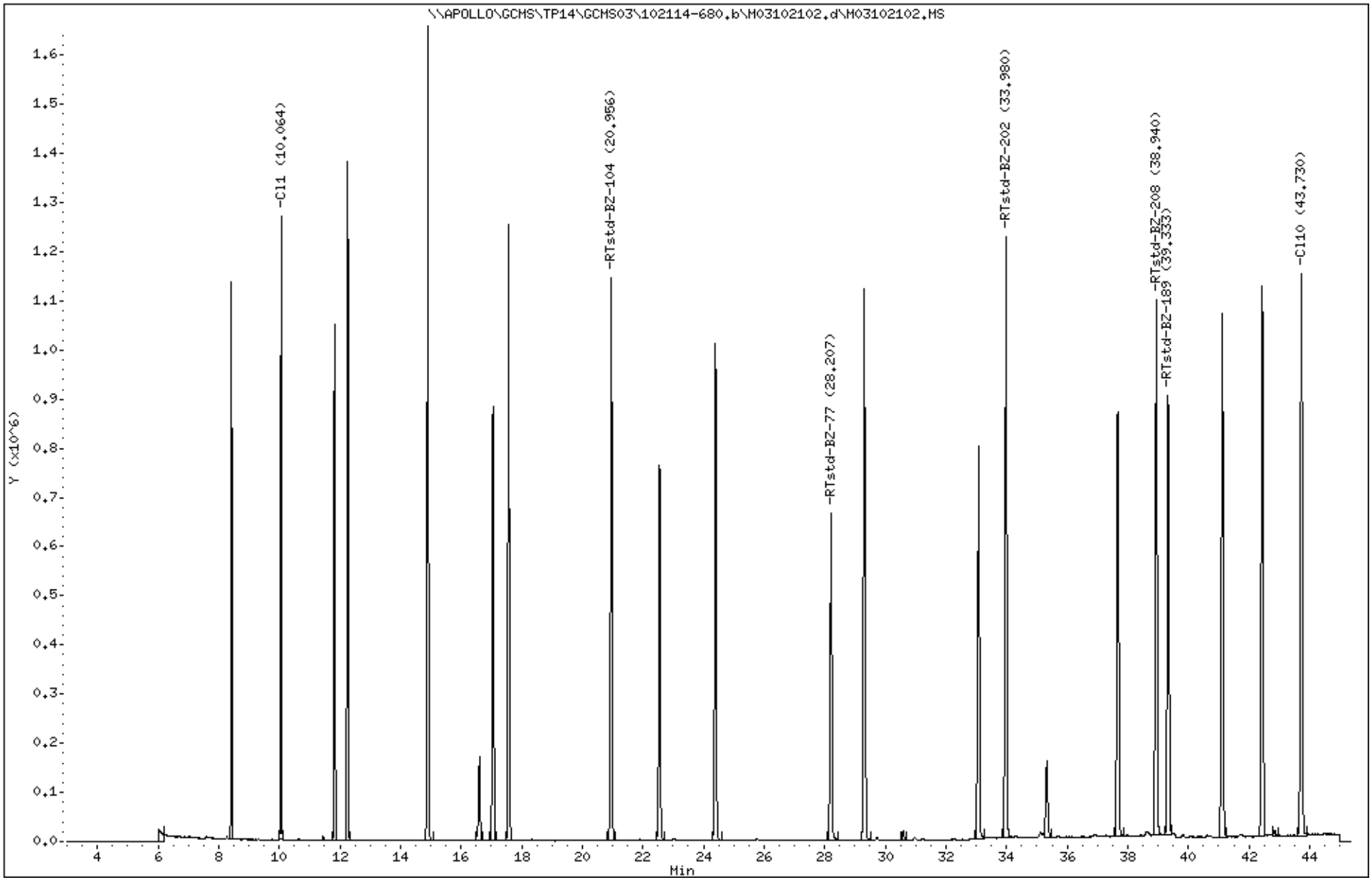
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188	16.603	16.599	(1.000)	292374	0.80000	
* 6 Chrysene-d12	240	35.324	35.330	(1.000)	375132	0.80000	
1 Cl1	188	10.063	10.067	(0.285)	1095329	2.55121	2.55
3 RTstd-BZ-104	326	20.955	20.950	(0.593)	901724	2.45979	2.46
4 RTstd-BZ-77	292	28.207	28.197	(0.799)	687470	2.40348	2.40
5 RTstd-BZ-202	430	33.979	33.973	(0.962)	808985	2.56372	2.56
7 RTstd-BZ-208	464	38.952	38.941	(1.103)	696481	2.35206	2.35(Q)
8 RTstd-BZ-189	394	39.333	39.333	(1.113)	654536	2.34391	2.34
9 Cl10	498	43.729	43.730	(1.238)	744136	2.59351	2.59

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102102.d
Date : 21-OCT-2014 05:34
Client ID: WDM3-1021A
Sample Info: WDM3-1021A
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.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: 10/07/14 Time: 8:31
End Cal Date: 10/07/14 Time: 13:25

Calibration File Names:
Level 1: \\M03100709
Level 2: \\M03100708
Level 3: \\M03100707
Level 4: \\M03100706
Level 5: \\M03100705
Level 6: \\M03100704
Level 7: \\M03100703

PACE File ID: S:\Lab Data\DataPackages\CURVES_2014\680\680 100714 Calibration 7pt\[100714_680CLP_6B.xls]680CLP-6B

COMPOUND	RRF Level1	RRF Level2	RRF Level3	RRF Level4	RRF Level5	RRF Level6	RRF Level7	MEAN RRF	% RSD
Cl1	1.0869	1.0241	0.8980	0.9175	0.9838	0.9484	0.9544	0.973	6.68%
Cl2	1.0430	0.9051	0.8000	0.8217	0.8586	0.8441	0.8404	0.873	9.35%
Cl3	0.7284	0.6168	0.5895	0.6204	0.6442	0.6123	0.6166	0.633	7.14%
Cl4	0.7366	0.6146	0.6098	0.6185	0.6391	0.6245	0.6241	0.638	6.96%
Cl5	0.6382	0.5685	0.5372	0.5651	0.5946	0.5800	0.5954	0.583	5.42%
Cl6	0.5829	0.5530	0.5339	0.5442	0.5770	0.5767	0.5840	0.565	3.62%
Cl7	0.6667	0.5974	0.6062	0.6297	0.6373	0.6419	0.6662	0.635	4.22%
Cl8	0.8093	0.7319	0.6414	0.6553	0.6889	0.6475	0.6894	0.695	8.56%
Cl9	0.7142	0.6277	0.5956	0.6372	0.6694	0.6587	0.7133	0.659	6.66%
Cl10	0.7142	0.6277	0.5956	0.6372	0.6694	0.6587	0.7133	0.659	6.66%
Chyrsene-d12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	0.00%
TCMX	0.4281	0.4028	0.3308	0.3551	0.3786	0.3732	0.3980	0.381	8.46%
$D^{13}C_{12}BP$	0.6419	0.6494	0.6268	0.6684	0.6648	0.7190	**	0.662	4.83%

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
$D^{13}C_{12}BP$ = Decachlorobiphenyl (13C labeled)

FORM VI-CLP-EPA 680 -1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100709.d
Lab Smp Id: iCAL-1 Client Smp ID: iCAL-1
Inj Date : 07-OCT-2014 13:25
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-1
Misc Info : RMS M03100709
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 13:25 Cal File: M03100709.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

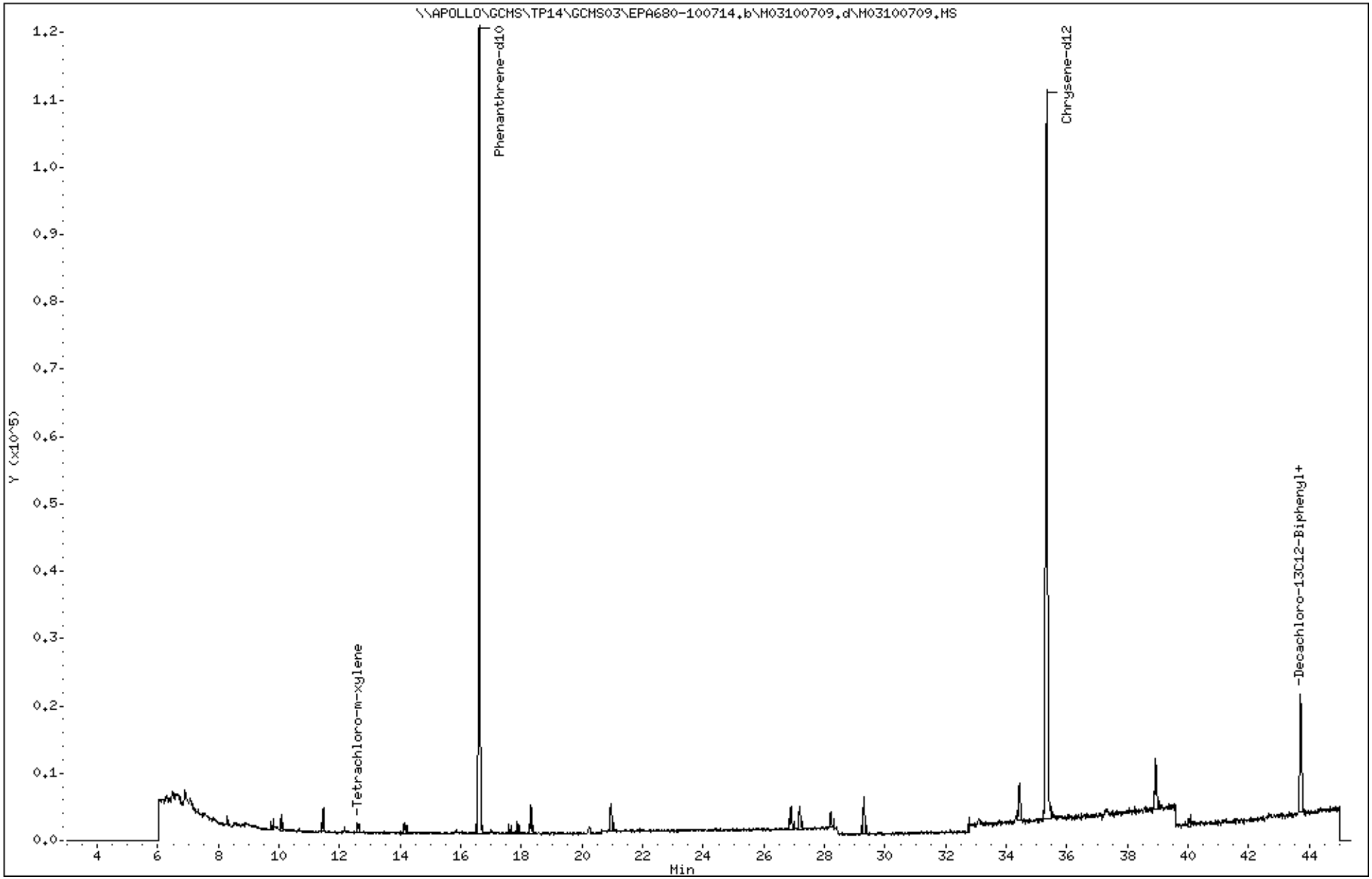
Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.596	16.598	(1.000)	213995	0.80000	
* 13 Chrysene-d12	240	35.338	35.323	(1.000)	287346	0.80000	
1 Cl1	188	10.074	10.059	(0.285)	1992	0.00500	0.00564
$ 2 Tetrachloro-m-xylene	244	12.613	12.598	(0.357)	806	0.00500	0.00585
3 Cl2	222	14.163	14.150	(0.401)	1883	0.00500	0.00601
5 Cl3	256	17.848	17.864	(0.505)	1354	0.00500	0.00595
6 Cl4	292	18.311	18.308	(0.518)	2710	0.01000	0.0118
7 RTstd-BZ-104	326	20.956	20.956	(0.593)	3134	0.01000	0.0110
8 Cl5	326	26.882	26.897	(0.761)	2316	0.01000	0.0109
9 Cl6	360	27.176	27.193	(0.769)	2188	0.01000	0.0106
10 RTstd-BZ-77	292	28.203	28.204	(0.798)	2400	0.01000	0.0108
11 Cl7	394	29.297	29.309	(0.829)	3742	0.01500	0.0160
12 Cl8	430	34.417	34.434	(0.974)	3973	0.01500	0.0161
14 RTstd-BZ-208	464	38.932	38.943	(1.102)	4829	0.02000	0.0215
15 Cl10	498	43.723	43.734	(1.237)	6549	0.02500	0.0274
$ 16 Decachloro-13C12-Biphenyl	510	43.698	43.709	(1.237)	5885	0.02500	0.0245(a)

QC Flag Legend

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

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100709.d
Date : 07-OCT-2014 13:25
Client ID: iCAL-1
Instrument: GCMS03.i
Sample Info: iCAL-1
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



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PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100708.d
Lab Smp Id: iCAL-2 Client Smp ID: iCAL-2
Inj Date : 07-OCT-2014 12:36
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-2
Misc Info : RMS M03100708
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 12:36 Cal File: M03100708.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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.597	16.598	(1.000)	212518	0.80000	
* 13 Chrysene-d12	240	35.316	35.323	(1.000)	290243	0.80000	
1 Cl1	188	10.064	10.059	(0.285)	3842	0.01000	0.0110
$ 2 Tetrachloro-m-xylene	244	12.605	12.598	(0.357)	1466	0.01000	0.0108
3 Cl2	222	14.147	14.150	(0.401)	3330	0.01000	0.0109
5 Cl3	256	17.861	17.864	(0.506)	2283	0.01000	0.0103
6 Cl4	292	18.302	18.308	(0.518)	4602	0.02000	0.0204
7 RTstd-BZ-104	326	20.943	20.956	(0.593)	5668	0.02000	0.0200
8 Cl5	326	26.893	26.897	(0.761)	4229	0.02000	0.0200
9 Cl6	360	27.176	27.193	(0.770)	4101	0.02000	0.0198
10 RTstd-BZ-77	292	28.198	28.204	(0.798)	4542	0.02000	0.0204
11 Cl7	394	29.290	29.309	(0.829)	6704	0.03000	0.0287
12 Cl8	430	34.430	34.434	(0.975)	7702	0.03000	0.0313
14 RTstd-BZ-208	464	38.931	38.943	(1.102)	8346	0.04000	0.0373
15 Cl10	498	43.713	43.734	(1.238)	11474	0.05000	0.0482
$ 16 Decachloro-13C12-Biphenyl	510	43.701	43.709	(1.237)	11880	0.05000	0.0488

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100708.d

Date : 07-OCT-2014 12:36

Client ID: iCAL-2

Instrument: GCMS03.i

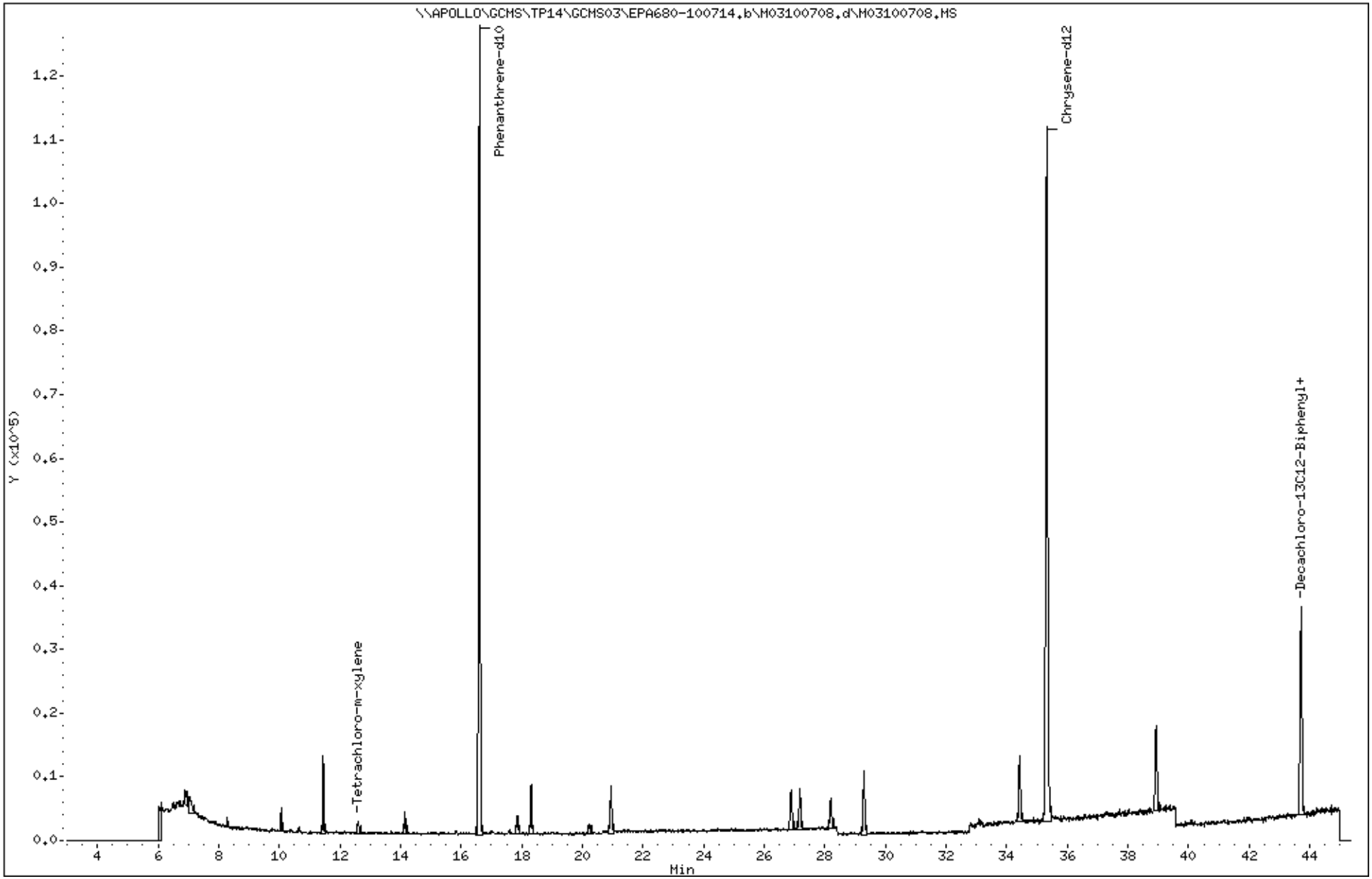
Sample Info: iCAL-2

Volume Injected (uL): 2.0

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100707.d
Lab Smp Id: iCAL-3 Client Smp ID: iCAL-3
Inj Date : 07-OCT-2014 11:47
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-3
Misc Info : RMS M03100707
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 11:47 Cal File: M03100707.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

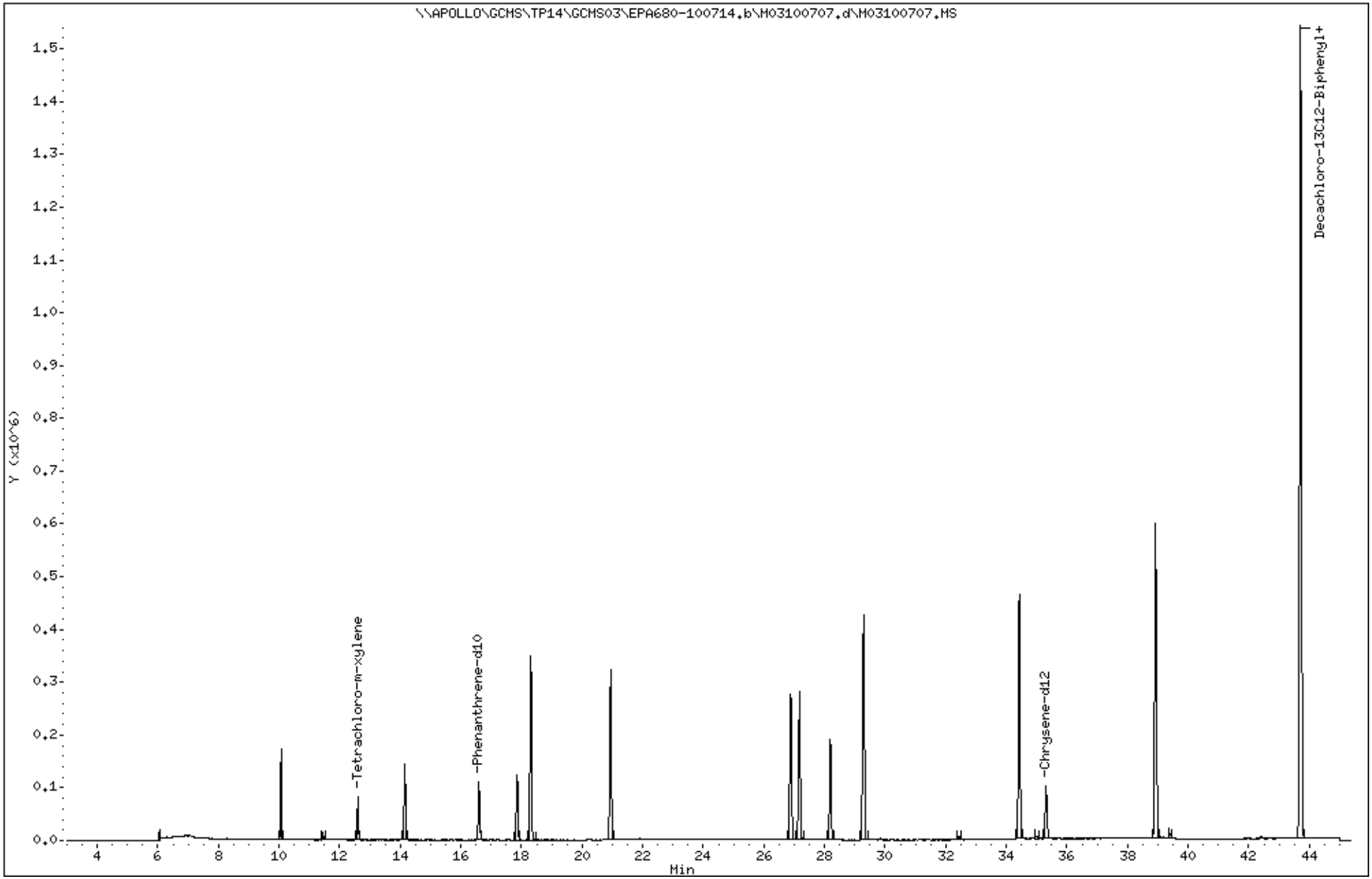
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.587	16.598	(1.000)	188869	0.80000	
* 13 Chrysene-d12	240	35.312	35.323	(1.000)	269175	0.80000	
1 Cl1	188	10.063	10.059	(0.285)	149905	0.50000	0.472
$ 2 Tetrachloro-m-xylene	244	12.604	12.598	(0.357)	55896	0.50000	0.453
3 Cl2	222	14.142	14.150	(0.401)	131945	0.50000	0.473
5 Cl3	256	17.852	17.864	(0.506)	97576	0.50000	0.475
6 Cl4	292	18.305	18.308	(0.518)	203089	1.00000	0.972
7 RTstd-BZ-104	326	20.937	20.956	(0.593)	248561	1.00000	0.944
8 Cl5	326	26.889	26.897	(0.761)	180823	1.00000	0.922
9 Cl6	360	27.174	27.193	(0.770)	177557	1.00000	0.922
10 RTstd-BZ-77	292	28.190	28.204	(0.798)	185171	1.00000	0.902
11 Cl7	394	29.294	29.309	(0.830)	313568	1.50000	1.43
12 Cl8	430	34.427	34.434	(0.975)	322075	1.50000	1.42
14 RTstd-BZ-208	464	38.918	38.943	(1.102)	387248	2.00000	1.84
15 Cl10	498	43.726	43.734	(1.238)	498805	2.50000	2.25
$ 16 Decachloro-13C12-Biphenyl	510	43.702	43.709	(1.238)	523758	2.50000	2.31

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100707.d
Date : 07-OCT-2014 11:47
Client ID: iCAL-3
Sample Info: iCAL-3
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.i
Operator: RMS
Column diameter: 0.25



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PCB Report EPA 680

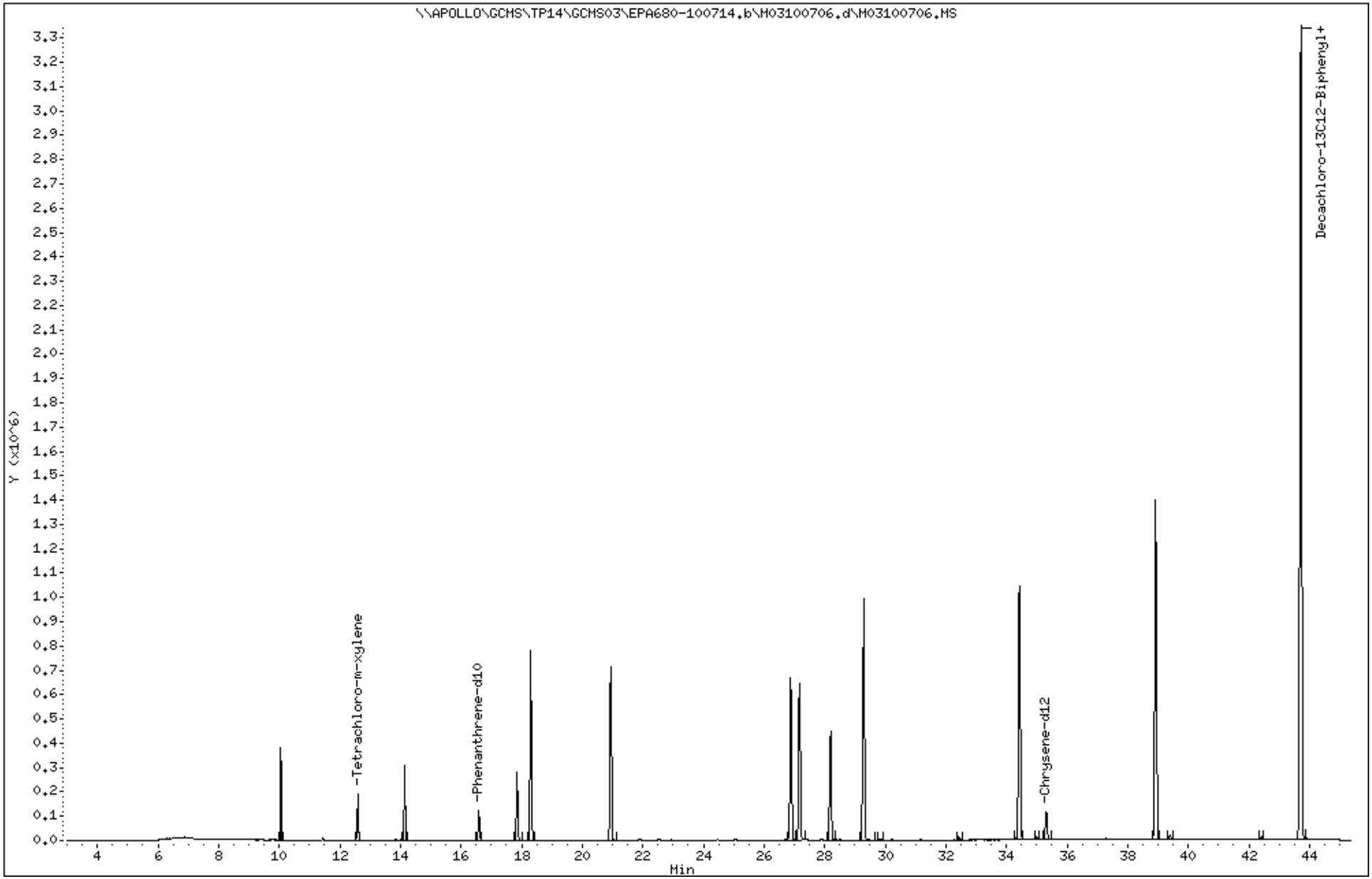
Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100706.d
Lab Smp Id: iCAL-4 Client Smp ID: iCAL-4
Inj Date : 07-OCT-2014 10:58
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-4
Misc Info : RMS M03100706
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 10:58 Cal File: M03100706.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

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.587	16.598	(1.000)	206552	0.80000	
* 13 Chrysene-d12	240	35.311	35.323	(1.000)	284137	0.80000	
1 Cl1	188	10.053	10.059	(0.285)	327516	1.00000	0.964
$ 2 Tetrachloro-m-xylene	244	12.599	12.598	(0.357)	126574	1.00000	0.951
3 Cl2	222	14.149	14.150	(0.401)	290254	1.00000	0.974
5 Cl3	256	17.848	17.864	(0.505)	219395	1.00000	0.999
6 Cl4	292	18.302	18.308	(0.518)	440435	2.00000	1.98
7 RTstd-BZ-104	326	20.941	20.956	(0.593)	562255	2.00000	1.99
8 Cl5	326	26.884	26.897	(0.761)	410031	2.00000	1.94
9 Cl6	360	27.169	27.193	(0.769)	391358	2.00000	1.89
10 RTstd-BZ-77	292	28.197	28.204	(0.799)	432283	2.00000	1.95
11 Cl7	394	29.293	29.309	(0.830)	682189	3.00000	2.92
12 Cl8	430	34.417	34.434	(0.975)	704610	3.00000	2.91
14 RTstd-BZ-208	464	38.918	38.943	(1.102)	889417	4.00000	3.92
15 Cl10	498	43.727	43.734	(1.238)	1147445	5.00000	4.77
$ 16 Decachloro-13C12-Biphenyl	510	43.702	43.709	(1.238)	1201358	5.00000	4.89

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100706.d
Date : 07-OCT-2014 10:58
Client ID: iCAL-4
Instrument: GCMS03.i
Sample Info: iCAL-4
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



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PCB Report EPA 680

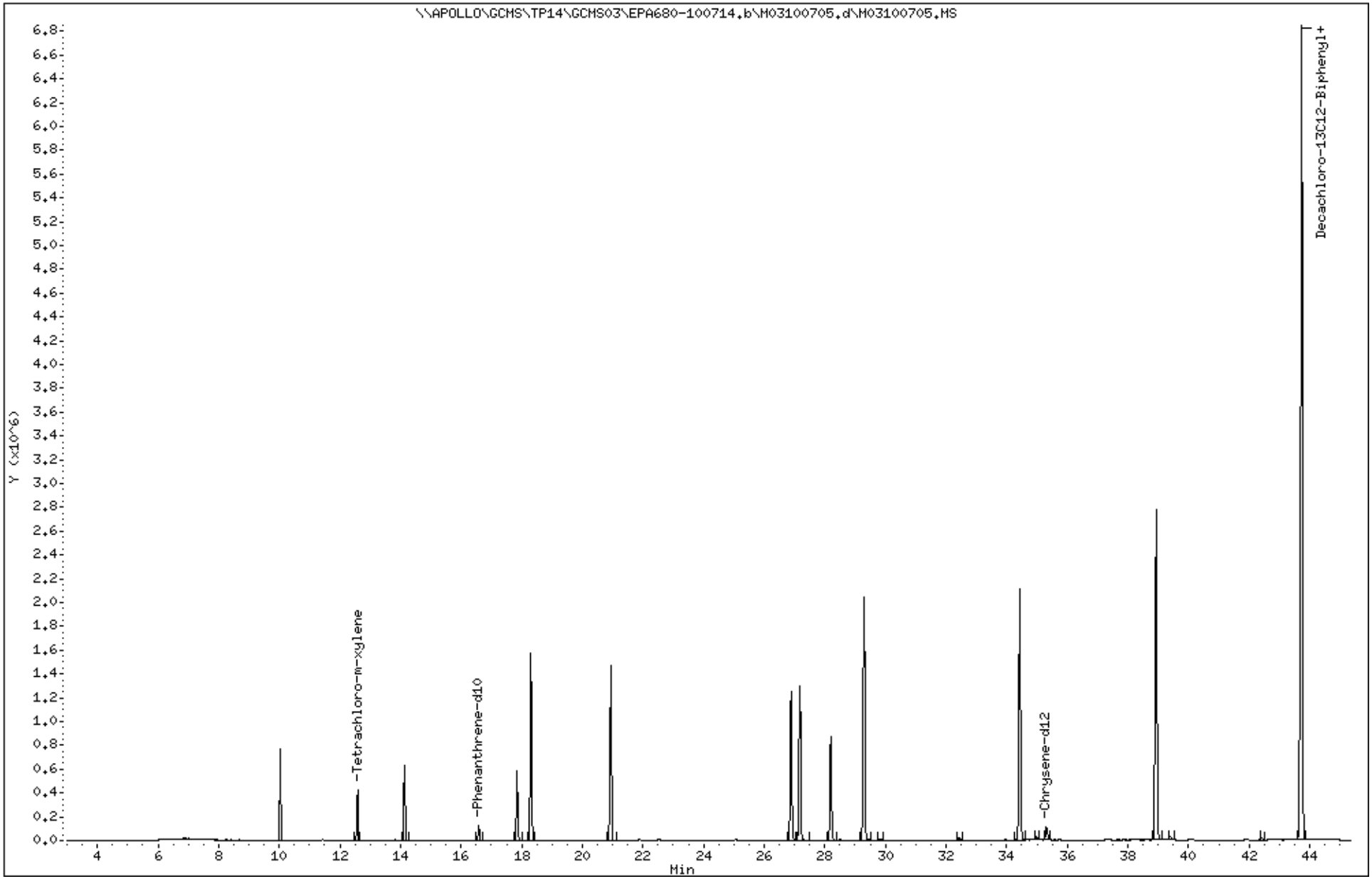
Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100705.d
Lab Smp Id: iCAL-5 Client Smp ID: iCAL-5
Inj Date : 07-OCT-2014 10:09
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-5
Misc Info : RMS M03100705
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 10:09 Cal File: M03100705.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

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.580	16.598	(1.000)	209831	0.80000	
* 13 Chrysene-d12	240	35.312	35.323	(1.000)	276752	0.80000	
1 Cl1	188	10.037	10.059	(0.284)	685143	2.00000	2.05
$ 2 Tetrachloro-m-xylene	244	12.586	12.598	(0.356)	263396	2.00000	2.00
3 Cl2	222	14.126	14.150	(0.400)	598286	2.00000	2.04
5 Cl3	256	17.843	17.864	(0.505)	440998	2.00000	2.06
6 Cl4	292	18.307	18.308	(0.518)	888046	4.00000	4.09
7 RTstd-BZ-104	326	20.942	20.956	(0.593)	1102594	4.00000	4.01
8 Cl5	326	26.886	26.897	(0.761)	846316	4.00000	4.07
9 Cl6	360	27.172	27.193	(0.769)	822952	4.00000	4.01
10 RTstd-BZ-77	292	28.193	28.204	(0.798)	873562	4.00000	4.01
11 Cl7	394	29.293	29.309	(0.830)	1365447	6.00000	5.95
12 Cl8	430	34.442	34.434	(0.975)	1479189	6.00000	6.22
14 RTstd-BZ-208	464	38.938	38.943	(1.103)	1798454	8.00000	8.10
15 Cl10	498	43.728	43.734	(1.238)	2345441	10.0000	9.87
$ 16 Decachloro-13C12-Biphenyl	510	43.728	43.709	(1.238)	2327517	10.0000	9.61

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100705.d
Date : 07-OCT-2014 10:09
Client ID: iCAL-5
Instrument: GCMS03.i
Sample Info: iCAL-5
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



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PCB Report EPA 680

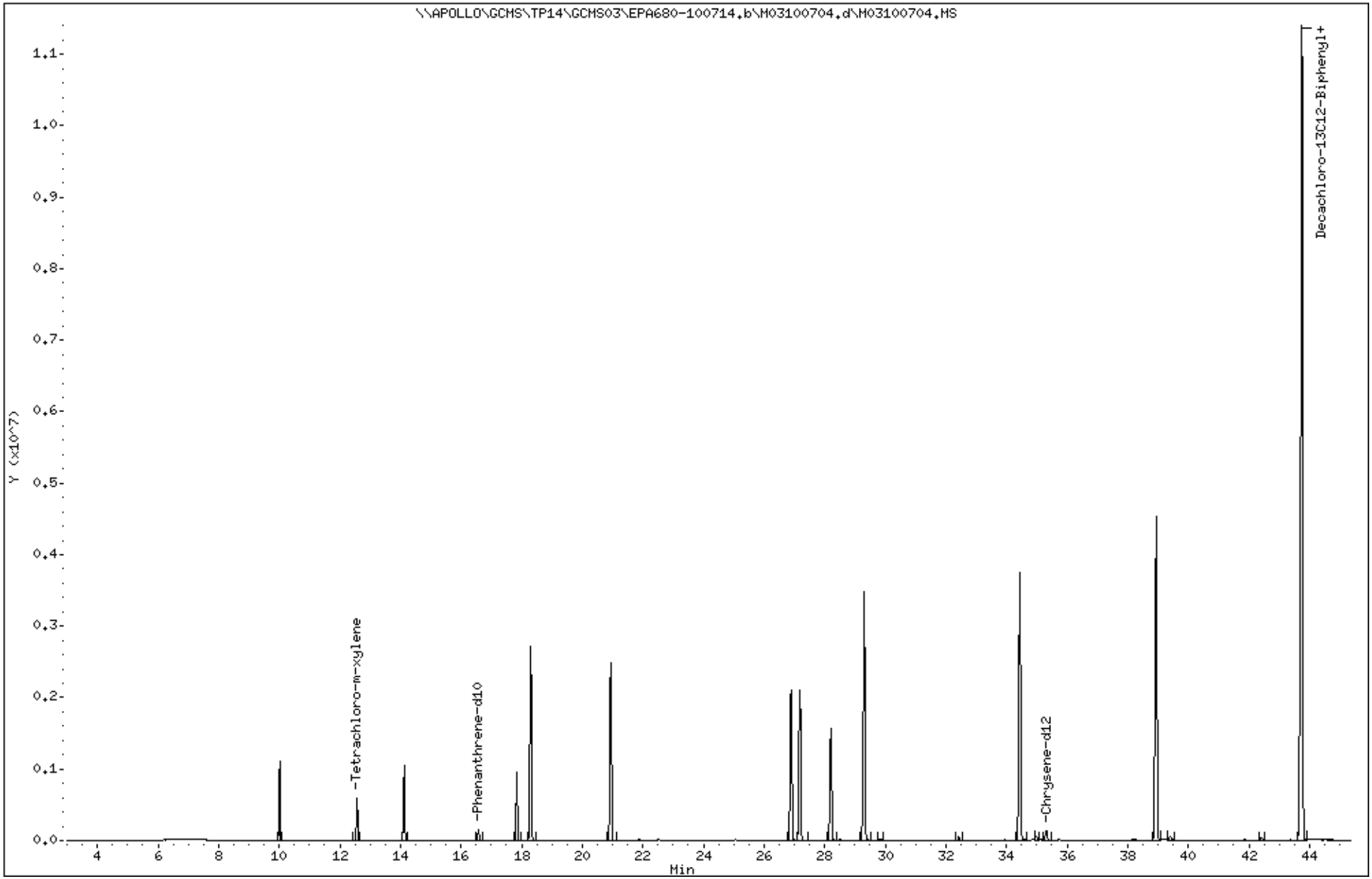
Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100704.d
Lab Smp Id: iCAL-6 Client Smp ID: iCAL-6
Inj Date : 07-OCT-2014 09:20
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-6
Misc Info : RMS M03100704
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 09:20 Cal File: M03100704.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

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.579	16.598	(1.000)	241123	0.80000	
* 13 Chrysene-d12	240	35.324	35.323	(1.000)	324401	0.80000	
1 Cl1	188	10.016	10.059	(0.284)	1161084	3.00000	2.99
$ 2 Tetrachloro-m-xylene	244	12.566	12.598	(0.356)	451200	3.00000	2.92
3 Cl2	222	14.122	14.150	(0.400)	1020390	3.00000	3.01
5 Cl3	256	17.850	17.864	(0.505)	742407	3.00000	3.01
6 Cl4	292	18.295	18.308	(0.518)	1513482	6.00000	6.02
7 RTstd-BZ-104	326	20.941	20.956	(0.593)	1892363	6.00000	5.88
8 Cl5	326	26.883	26.897	(0.761)	1429280	6.00000	5.93
9 Cl6	360	27.177	27.193	(0.769)	1444248	6.00000	6.00
10 RTstd-BZ-77	292	28.203	28.204	(0.798)	1534523	6.00000	6.01
11 Cl7	394	29.300	29.309	(0.829)	2391046	9.00000	8.85
12 Cl8	430	34.440	34.434	(0.975)	2393976	9.00000	8.74
14 RTstd-BZ-208	464	38.945	38.943	(1.102)	3029335	12.0000	11.7
15 Cl10	498	43.764	43.734	(1.239)	4052283	15.0000	14.4
$ 16 Decachloro-13C12-Biphenyl	510	43.751	43.709	(1.239)	4422861	15.0000	15.0

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100704.d
Date : 07-OCT-2014 09:20
Client ID: iCAL-6
Instrument: GCMS03.i
Sample Info: iCAL-6
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



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PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100703.d
Lab Smp Id: iCAL-7 Client Smp ID: iCAL-7
Inj Date : 07-OCT-2014 08:31
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-7
Misc Info : RMS M03100703
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 08:31 Cal File: M03100703.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

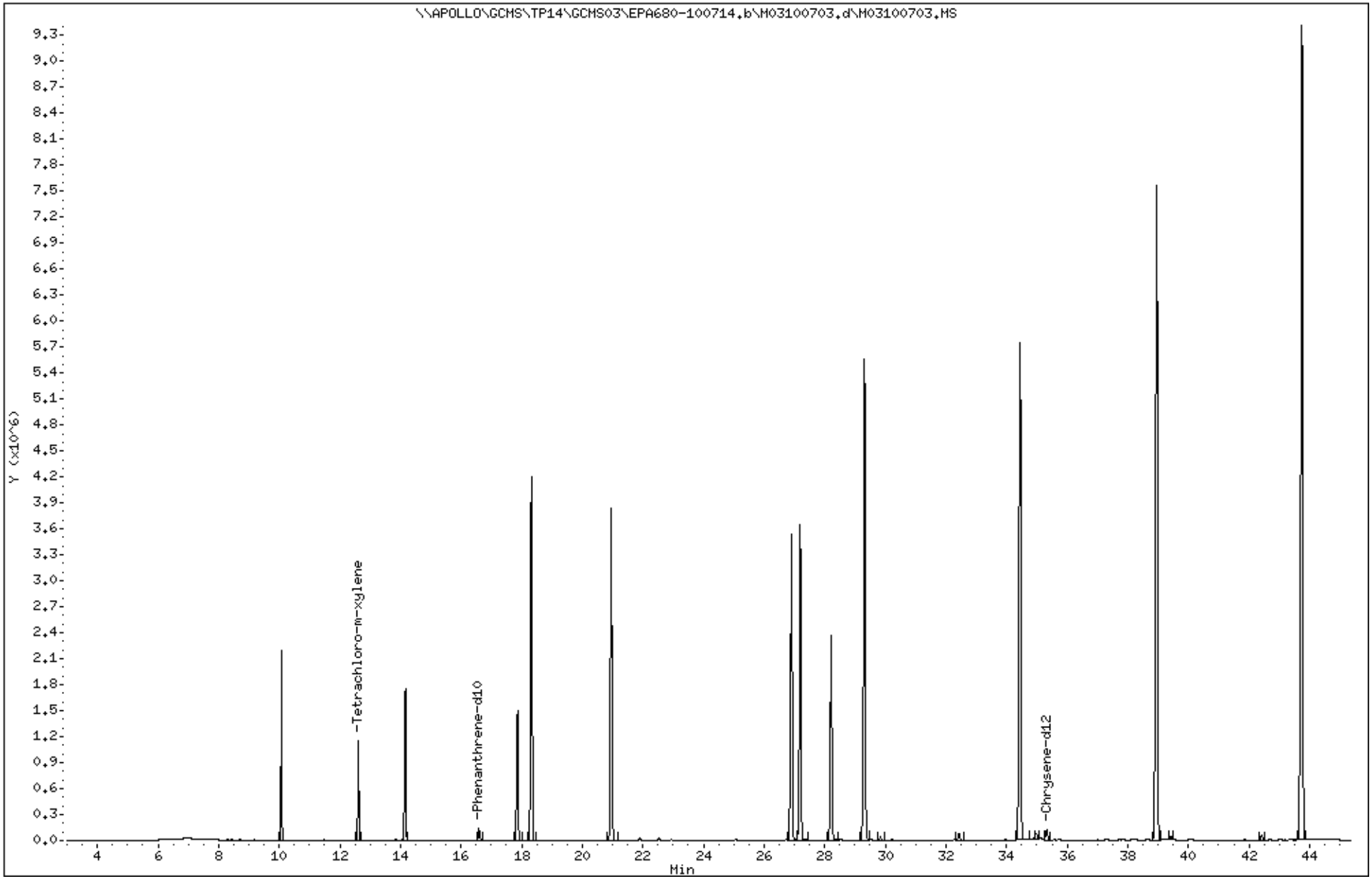
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.599	16.598	(1.000)	216327	0.80000	
* 13 Chrysene-d12	240	35.320	35.323	(1.000)	304567	0.80000	
1 Cl1	188	10.073	10.059	(0.285)	1824783	5.00000	5.01(A)
$ 2 Tetrachloro-m-xylene	244	12.612	12.598	(0.357)	745335	5.00000	5.14(A)
3 Cl2	222	14.153	14.150	(0.401)	1591271	5.00000	4.99
5 Cl3	256	17.868	17.864	(0.506)	1155671	5.00000	4.99
6 Cl4	292	18.324	18.308	(0.519)	2352399	10.0000	9.97
7 RTstd-BZ-104	326	20.961	20.956	(0.593)	3079821	10.0000	10.2(A)
8 Cl5	326	26.897	26.897	(0.762)	2292299	10.0000	10.1(A)
9 Cl6	360	27.193	27.193	(0.770)	2259607	10.0000	10.0
10 RTstd-BZ-77	292	28.223	28.204	(0.799)	2392577	10.0000	9.98
11 Cl7	394	29.312	29.309	(0.830)	3869458	15.0000	15.3(A)
12 Cl8	430	34.452	34.434	(0.975)	3969197	15.0000	15.4(A)
14 RTstd-BZ-208	464	38.948	38.943	(1.103)	4979211	20.0000	20.5(A)
15 Cl10	498	43.747	43.734	(1.239)	6824096	25.0000	25.9(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100703.d
Date : 07-OCT-2014 08:31
Client ID: iCAL-7
Sample Info: iCAL-7
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.i
Operator: RMS
Column diameter: 0.25



Standards Summary Tables

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc. SDG No.: 14100477

Instrument ID:	GCMS03	Calibration Date:	10/20/2014	Time:	18:06
Lab File ID:	M03102013	Start Cal Date:	10/7/2014	Time:	8:31
Client ID:	CCV3-1020C	End Cal Date:	10/7/2014	Time:	13:25
GC Column:	DB-XLB				

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\PACE_LRF14100567\[CCV3-1020C.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 CI1	0.973	0.903	0.005	-7.17	20
$ 2 Tetrachloro-m-xylene	0.381	0.332	0.005	-12.9	20
3 CI2	0.873	0.823	0.005	-5.73	20
5 CI3	0.633	0.615	0.005	-2.79	20
6 CI4	0.638	0.609	0.005	-4.55	20
8 CI5	0.583	0.570	0.005	-2.18	20
9 CI6	0.565	0.517	0.005	-8.36	20
11 CI7	0.635	0.603	0.005	-4.97	20
13 CI8	0.695	0.667	0.005	-4.07	20
17 CI10	0.659	0.638	0.005	-3.29	20
$ 13C-DCBP	0.662	0.632	0.005	-4.47	20

FORM VII-CLP-EPA 680-1

Pace Analytical - NY Lab

PCB Report EPA 680

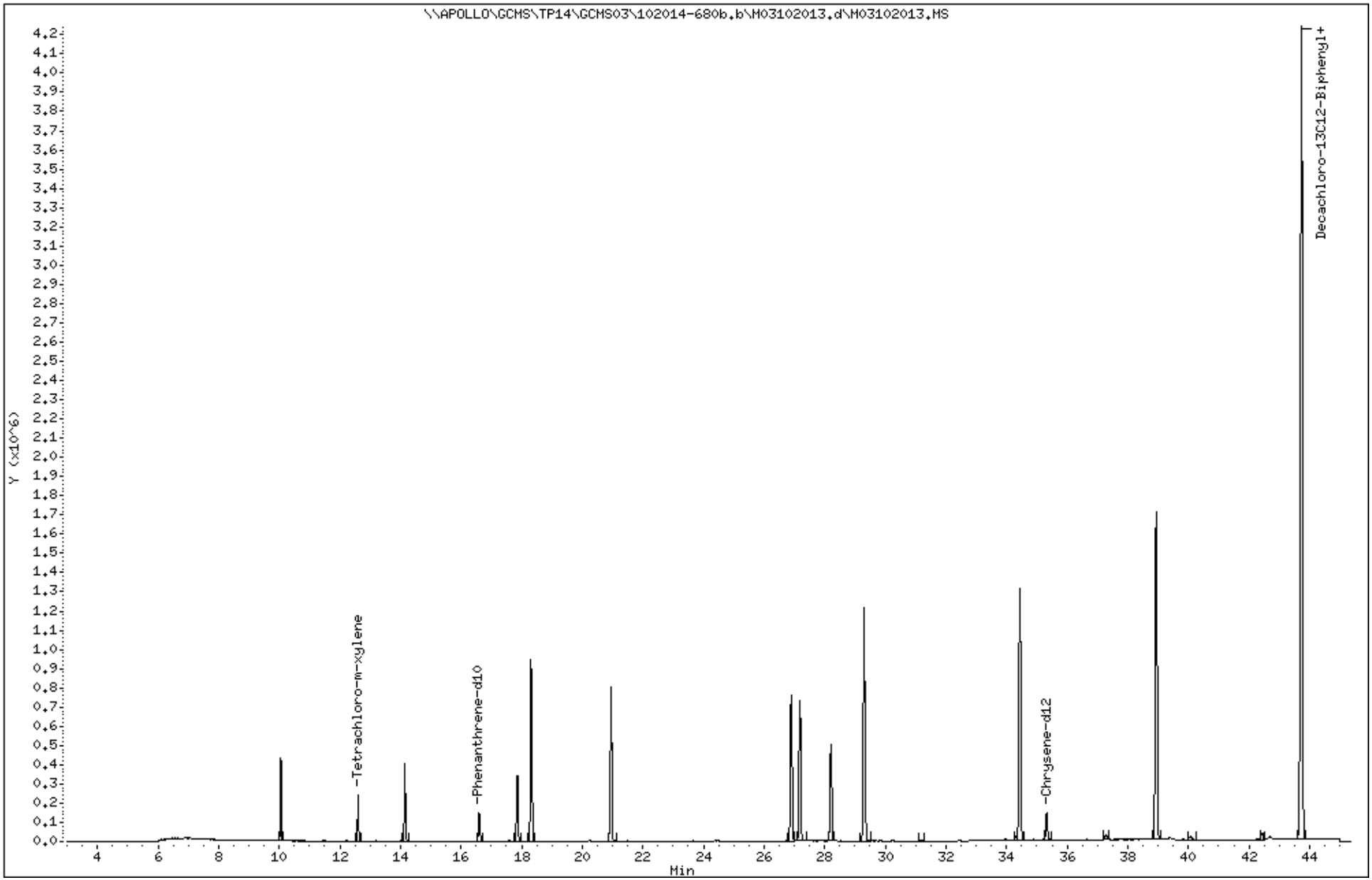
Data file : \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102013.d
Lab Smp Id: CCV3-1020C Client Smp ID: CCV3-1020C
Inj Date : 20-OCT-2014 18:06
Operator : RMS Inst ID: GCMS03.i
Smp Info : CCV3-1020C
Misc Info : RMS M03102013
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\680low.m
Meth Date : 21-Oct-2014 09:01 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 13:25 Cal File: M03100709.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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.598	16.602	(1.000)	256758	0.80000	
* 13 Chrysene-d12	240	35.337	35.320	(1.000)	354062	0.80000	
1 Cl1	188	10.051	10.056	(0.284)	399854	1.00000	0.919
$ 2 Tetrachloro-m-xylene	244	12.598	12.598	(0.357)	145027	1.00000	0.854
3 Cl2	222	14.147	14.154	(0.400)	357745	1.00000	0.926
5 Cl3	256	17.865	17.858	(0.506)	269642	1.00000	0.961
6 Cl4	292	18.308	18.314	(0.518)	532090	2.00000	1.87
7 RTstd-BZ-104	326	20.944	20.951	(0.593)	668807	2.00000	1.90
8 Cl5	326	26.893	26.890	(0.761)	513960	2.00000	1.96
9 Cl6	360	27.178	27.187	(0.769)	464103	2.00000	1.82
10 RTstd-BZ-77	292	28.213	28.211	(0.798)	497596	2.00000	1.81
11 Cl7	394	29.305	29.291	(0.829)	814037	3.00000	2.82
12 Cl8	430	34.449	34.442	(0.975)	886089	3.00000	2.91
14 RTstd-BZ-208	464	38.937	38.930	(1.102)	1109108	4.00000	4.01
15 Cl10	498	43.741	43.752	(1.238)	1427218	5.00000	4.84
$ 16 Decachloro-13C12-Biphenyl	510	43.729	43.727	(1.238)	1414389	5.00000	4.78

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102013.d
Date : 20-OCT-2014 18:06
Client ID: CCV3-1020C
Instrument: GCMS03.i
Sample Info: CCV3-1020C
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102013"		"M03102013"		"M03102013"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.057	405292	10.059	136436				
14.156	10922						
16.597	261851						
17.860	50772						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102013"		"M03102013"		"M03102013"						"M03102013"	
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
14.150	369293	14.150	251063							10.057	405292
17.863	10708	18.317	29844							14.156	10922
18.313	171301	28.214	23636							16.597	261851
20.964	3565									17.860	50772
27.193	7152										
28.211	130933										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102013"		"M03102013"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.861	275848	17.861	276448		
18.313	51091	18.310	42748		
20.956	177683	20.950	62281		
26.902	178847	26.897	61138		
27.190	4680				
28.180	2984				
28.205	6943				
29.306	26912				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102013"		"M03102013"				"M03102013"		"M03102013"		"M03102013"	
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
17.861	275848	17.861	276448			10.057	405292	20.952	402406	20.951	666685
18.313	51091	18.310	42748			14.156	10922	26.895	301214	26.895	511420
20.956	177683	20.950	62281			16.597	261851	27.174	17491	27.183	27173
26.902	178847	26.897	61138			17.860	50772	29.304	263261	29.304	164421
27.190	4680							34.422	2766	34.406	3751
28.180	2984							34.457	7888	34.436	3492
28.205	6943							38.936	72296	34.464	2618
29.306	26912							38.974	16679	38.914	18137
										38.949	15811

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03102013"		"M03102013"					
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
				18.312	417434	18.313	546483				
				20.951	19891	20.948	12007				
				26.887	17553	20.982	4246				
				26.903	19172	26.883	19844				
				27.186	165608	26.906	19005				
				28.206	384320	27.187	83714				
				29.265	2945	28.210	499167				
				29.291	4730	29.296	4331				
				29.322	5187	34.436	3827				
				34.439	36054	34.464	2920				
				34.462	19053						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102013"		"M03102013"			"M03102013"		"M03102013"		"M03102013"		
m/z 292		m/z 290		m/z 220	m/z 222		m/z 360		m/z 362		
18.313	546483	18.312	417434		14.150	369293	27.185	464112	27.184	383111	
20.948	12007	20.951	19891		17.863	10708	29.293	17902	29.291	8634	
20.982	4246	26.887	17553		18.313	171301	34.437	197803	29.316	7448	
26.883	19844	26.903	19172		20.964	3565	38.915	5507	34.440	85212	
26.906	19005	27.186	165608		27.193	7152	38.937	3345	43.717	4076	
27.187	83714	28.206	384320		28.211	130933	43.741	80337	43.768	3987	
28.210	499167	29.265	2945								
29.296	4331	29.291	4730								
34.436	3827	29.322	5187								
34.464	2920	34.439	36054								
		34.462	19053								

Extracted Ion Current Profiles

Tetrachlorobiphenyls								
	"M03102013"		"M03102013"					
m/z 288	m/z 324		m/z 326		m/z 328		m/z 289	
	20.952	402406	20.951	666685				
	26.895	301214	26.895	511420				
	27.174	17491	27.183	27173				
	29.304	263261	29.304	164421				
	34.422	2766	34.406	3751				
	34.457	7888	34.436	3492				
	38.936	72296	34.464	2618				
	38.974	16679	38.914	18137				
			38.949	15811				

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03102013"		"M03102013"			"M03102013"		"M03102013"		"M03102013"
m/z 326		m/z 324		m/z 254	m/z 256		m/z 258		m/z 392
20.951	666685	20.952	402406		17.861	275848	17.861	276448	
26.895	511420	26.895	301214		18.313	51091	18.310	42748	
27.183	27173	27.174	17491		20.956	177683	20.950	62281	
29.304	164421	29.304	263261		26.902	178847	26.897	61138	
34.406	3751	34.422	2766		27.190	4680			
34.436	3492	34.457	7888		28.180	2984			
34.464	2618	38.936	72296		28.205	6943			
38.914	18137	38.974	16679		29.306	26912			
38.949	15811								

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102013"		"M03102013"					"M03102013"		"M03102013"		
m/z 394		m/z 396		m/z 398		m/z 322	m/z 360		m/z 362		m/z 323
29.303	812087	29.303	845548				27.185	464112	27.184	383111	
34.415	6693	34.438	15518				29.293	17902	29.291	8634	
34.438	6790	38.921	58717				34.437	197803	29.316	7448	
34.462	5178	38.953	69483				38.915	5507	34.440	85212	
38.936	173634	42.426	3234				38.937	3345	43.717	4076	
38.962	84506	43.752	10339				43.741	80337	43.768	3987	
42.434	5628										
43.729	5143										
43.755	4980										

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03102013"		"M03102013"			"M03102013"			"M03102013"	
m/z 360		m/z 362		m/z 288	m/z 290		m/z 426	m/z 428	
27.185	464112	27.184	383111		18.312	417434		33.972	3199
29.293	17902	29.291	8634		20.951	19891		34.439	773315
34.437	197803	29.316	7448		26.887	17553		38.944	18490
38.915	5507	34.440	85212		26.903	19172		43.734	351324
38.937	3345	43.717	4076		27.186	165608			
43.741	80337	43.768	3987		28.206	384320			
					29.265	2945			
					29.291	4730			
					29.322	5187			
					34.439	36054			
					34.462	19053			

Extracted Ion Current Profiles

Hexachlorobiphenyls													
"M03102013"								"M03102013"		"M03102013"			
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398	m/z 357
33.974	3002							29.303	812087	29.303	845548		
34.316	5440							34.415	6693	34.438	15518		
34.434	897020							34.438	6790	38.921	58717		
37.271	11157							34.462	5178	38.953	69483		
38.930	10993							38.936	173634	42.426	3234		
38.959	5423							38.962	84506	43.752	10339		
40.069	11494							42.434	5628				
42.683	8505							43.729	5143				
42.752	3942							43.755	4980				
43.741	245605												

Extracted Ion Current Profiles

Heptachlorobiphenyls									
"M03102013"		"M03102013"			"M03102013"		"M03102013"		
m/z 394		m/z 396		m/z 322	m/z 324		m/z 326		m/z 462
29.303	812087	29.303	845548		20.952	402406	20.951	666685	
34.415	6693	34.438	15518		26.895	301214	26.895	511420	
34.438	6790	38.921	58717		27.174	17491	27.183	27173	
34.462	5178	38.953	69483		29.304	263261	29.304	164421	
38.936	173634	42.426	3234		34.422	2766	34.406	3751	
38.962	84506	43.752	10339		34.457	7888	34.436	3492	
42.434	5628				38.936	72296	34.464	2618	
43.729	5143				38.974	16679	38.914	18137	
43.755	4980						38.949	15811	

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03102013"		"M03102013"			"M03102013"		"M03102013"				
m/z 464		m/z 466		m/z 390	m/z 428		m/z 430		m/z 432	m/z 391	
38.937	1121662	38.941	875812		33.972	3199	33.974	3002			
42.431	20903	42.430	15798		34.439	773315	34.316	5440			
43.689	3586	43.744	10699		38.944	18490	34.434	897020			
43.720	7057				43.734	351324	37.271	11157			
43.743	12546						38.930	10993			
							38.959	5423			
							40.069	11494			
							42.683	8505			
							42.752	3942			
							43.741	245605			

Extracted Ion Current Profiles

Octachlorobiphenyls									
"M03102013"		"M03102013"				"M03102013"			
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462
33.974	3002	33.972	3199				27.185	464112	
34.316	5440	34.439	773315				29.293	17902	
34.434	897020	38.944	18490				34.437	197803	
37.271	11157	43.734	351324				38.915	5507	
38.930	10993						38.937	3345	
38.959	5423						43.741	80337	
40.069	11494								
42.683	8505								
42.752	3942								
43.741	245605								

Extracted Ion Current Profiles

Octachlorobiphenyls				
"M03102013"		"M03102013"		
m/z 464		m/z 466		m/z 425
38.937	1121662	38.941	875812	
42.431	20903	42.430	15798	
43.689	3586	43.744	10699	
43.720	7057			
43.743	12546			

Extracted Ion Current Profiles

Nonachlorobiphenyls							
"M03102013"		"M03102013"				"M03102013"	
m/z 464		m/z 466		m/z 390	m/z 392	m/z 394	
38.937	1121662	38.941	875812			29.303	812087
42.431	20903	42.430	15798			34.415	6693
43.689	3586	43.744	10699			34.438	6790
43.720	7057					34.462	5178
43.743	12546					38.936	173634
						38.962	84506
						42.434	5628
						43.729	5143
						43.755	4980

Extracted Ion Current Profiles

Decachlorobiphenyl									
"M03102013"		"M03102013"				"M03102013"		"M03102013"	
m/z 498		m/z 500		m/z 424	m/z 426	m/z 428		m/z 430	
43.741	1430421	43.741	1247131			33.972	3199	33.974	3002
						34.439	773315	34.316	5440
						38.944	18490	34.434	897020
						43.734	351324	37.271	11157
								38.930	10993
								38.959	5423
								40.069	11494
								42.683	8505
								42.752	3942
								43.741	245605

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102013"		"M03102013"				"M03102013"		"M03102013"			"M03102013"		"M03102013"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.600	148863	12.598	114081	424	240	34.453	3557	12.601	8894	188	10.057	405292	10.058	58941
33.104	3569	35.313	3336	426	241	35.333	358868	29.311	3039	189	14.156	10922	14.153	12549
				428		38.934	3415	34.456	4881		16.597	261851	16.591	40315
				430				35.326	77359		17.860	50772	17.858	6602
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	43.725	1417850	43.719	1210228
512	43.797	2875		

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc. SDG No.: 14100477

Instrument ID:	GCMS03	Calibration Date:	10/21/2014	Time:	3:04
Lab File ID:	M03102024	Start Cal Date:	10/7/2014	Time:	8:31
Client ID:	CCV3-1020D	End Cal Date:	10/7/2014	Time:	13:25
GC Column:	DB-XLB				

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\PACE_LRF14100567\[CCV3-1020D.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 CI1	0.973	0.902	0.005	-7.29	20
$ 2 Tetrachloro-m-xylene	0.381	0.335	0.005	-12.1	20
3 CI2	0.873	0.828	0.005	-5.23	20
5 CI3	0.633	0.585	0.005	-7.58	20
6 CI4	0.638	0.594	0.005	-6.86	20
8 CI5	0.583	0.552	0.005	-5.26	20
9 CI6	0.565	0.515	0.005	-8.80	20
11 CI7	0.635	0.601	0.005	-5.39	20
13 CI8	0.695	0.631	0.005	-9.16	20
17 CI10	0.659	0.609	0.005	-7.64	20
$ 13C-DCBP	0.662	0.619	0.005	-6.45	20

FORM VII-CLP-EPA 680-1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102024.d
Lab Smp Id: CCV3-1020D Client Smp ID: CCV3-1020D
Inj Date : 21-OCT-2014 03:04
Operator : RMS Inst ID: GCMS03.i
Smp Info : CCV3-1020D
Misc Info : RMS M03102024
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\680low.m
Meth Date : 21-Oct-2014 09:01 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 13:25 Cal File: M03100709.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

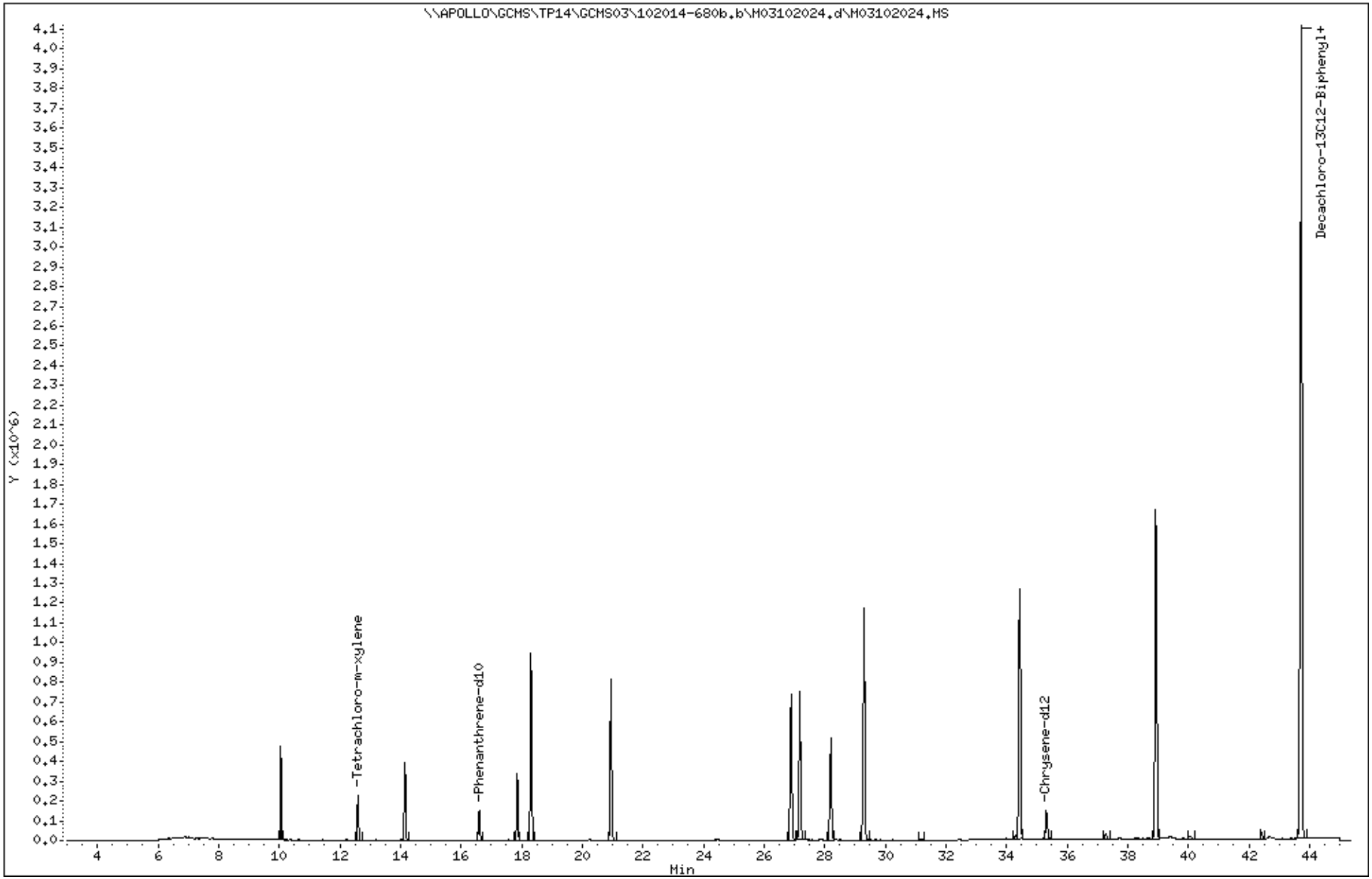
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.602	16.602	(1.000)	256655	0.80000	
* 13 Chrysene-d12	240	35.320	35.320	(1.000)	354719	0.80000	
1 Cl1	188	10.056	10.056	(0.285)	402077	1.00000	0.922
$ 2 Tetrachloro-m-xylene	244	12.598	12.598	(0.357)	146311	1.00000	0.860
3 Cl2	222	14.154	14.154	(0.401)	364718	1.00000	0.943
5 Cl3	256	17.858	17.858	(0.506)	257819	1.00000	0.918
6 Cl4	292	18.314	18.314	(0.519)	523381	2.00000	1.84
7 RTstd-BZ-104	326	20.951	20.951	(0.593)	614166	2.00000	1.74
8 Cl5	326	26.890	26.890	(0.761)	495737	2.00000	1.89
9 Cl6	360	27.187	27.187	(0.770)	462289	2.00000	1.81
10 RTstd-BZ-77	292	28.211	28.211	(0.799)	499421	2.00000	1.82
11 Cl7	394	29.291	29.291	(0.829)	819639	3.00000	2.84
12 Cl8	430	34.442	34.442	(0.975)	843100	3.00000	2.77
14 RTstd-BZ-208	464	38.930	38.930	(1.102)	1106794	4.00000	3.99
15 Cl10	498	43.752	43.752	(1.239)	1356703	5.00000	4.59
$ 16 Decachloro-13C12-Biphenyl	510	43.727	43.727	(1.238)	1370750	5.00000	4.63

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102024.d
Date : 21-OCT-2014 03:04
Client ID: CCV3-1020D
Sample Info: CCV3-1020D
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.i
Operator: RMS
Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102024"		"M03102024"		"M03102024"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.059	404816	10.061	139399				
14.143	7006	16.614	3718				
14.166	6143						
16.600	262203						
17.859	48491						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102024"		"M03102024"		"M03102024"						"M03102024"	
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
14.152	371262	14.153	249050							10.059	404816
17.858	10341	18.306	28019							14.143	7006
18.318	169373	28.203	14747							14.166	6143
20.960	8010	28.224	10100							16.600	262203
28.204	129527									17.859	48491

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102024"		"M03102024"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.859	262297	17.859	263575		
18.312	50312	18.314	45993		
20.949	171906	20.947	58648		
26.899	183137	26.889	37415		
27.184	3910	26.916	22485		
28.203	10877	28.193	4422		
29.259	3757				
29.313	26591				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102024"		"M03102024"				"M03102024"		"M03102024"		"M03102024"	
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
17.859	262297	17.859	263575			10.059	404816	20.946	382785	20.952	623851
18.312	50312	18.314	45993			14.143	7006	26.900	298881	26.896	495342
20.949	171906	20.947	58648			14.166	6143	27.154	4560	27.188	29422
26.899	183137	26.889	37415			16.600	262203	27.180	13412	29.301	177003
27.184	3910	26.916	22485			17.859	48491	29.295	247744	34.455	4181
28.203	10877	28.193	4422					34.445	14999	38.922	16307
29.259	3757							38.925	45316	38.945	20728
29.313	26591							38.954	33276		

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03102024"		"M03102024"					
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
				18.315	413312	18.315	533315				
				20.962	15352	20.944	7153				
				26.902	33469	20.964	8238				
				27.185	163398	26.894	40094				
				28.208	370025	27.184	80298				
				29.279	5072	28.209	495407				
				29.308	8938	34.410	4325				
				34.444	61157	34.450	4533				
				38.957	2876	34.480	2593				

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102024"		"M03102024"			"M03102024"		"M03102024"		"M03102024"		
m/z 292		m/z 290		m/z 220	m/z 222		m/z 360		m/z 362		
18.315	533315	18.315	413312		14.152	371262	27.183	461958	27.184	373931	
20.944	7153	20.962	15352		17.858	10341	29.283	6690	29.305	17714	
20.964	8238	26.902	33469		18.318	169373	29.306	10452	34.420	32763	
26.894	40094	27.185	163398		20.960	8010	34.437	178150	34.444	52628	
27.184	80298	28.208	370025		28.204	129527	38.943	8498	38.916	3751	
28.209	495407	29.279	5072				43.724	44232	43.736	25884	
34.410	4325	29.308	8938				43.752	30258			
34.450	4533	34.444	61157								
34.480	2593	38.957	2876								

Extracted Ion Current Profiles

Tetrachlorobiphenyls								
	"M03102024"		"M03102024"					
m/z 288	m/z 324		m/z 326		m/z 328		m/z 289	
	20.946	382785	20.952	623851				
	26.900	298881	26.896	495342				
	27.154	4560	27.188	29422				
	27.180	13412	29.301	177003				
	29.295	247744	34.455	4181				
	34.445	14999	38.922	16307				
	38.925	45316	38.945	20728				
	38.954	33276						

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03102024"		"M03102024"			"M03102024"		"M03102024"		"M03102024"
m/z 326		m/z 324		m/z 254	m/z 256		m/z 258		m/z 392
20.952	623851	20.946	382785		17.859	262297	17.859	263575	
26.896	495342	26.900	298881		18.312	50312	18.314	45993	
27.188	29422	27.154	4560		20.949	171906	20.947	58648	
29.301	177003	27.180	13412		26.899	183137	26.889	37415	
34.455	4181	29.295	247744		27.184	3910	26.916	22485	
38.922	16307	34.445	14999		28.203	10877	28.193	4422	
38.945	20728	38.925	45316		29.259	3757			
		38.954	33276		29.313	26591			

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102024"		"M03102024"					"M03102024"		"M03102024"		
m/z 394		m/z 396		m/z 398		m/z 322	m/z 360		m/z 362		m/z 323
29.297	808565	29.301	809066				27.183	461958	27.184	373931	
32.450	3014	32.445	2930				29.283	6690	29.305	17714	
34.432	8814	34.428	14930				29.306	10452	34.420	32763	
34.455	7604	38.924	57227				34.437	178150	34.444	52628	
38.935	249940	38.940	43053				38.943	8498	38.916	3751	
42.435	6017	38.968	30667				43.724	44232	43.736	25884	
43.743	13116	43.756	5877				43.752	30258			

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03102024"		"M03102024"			"M03102024"			"M03102024"	
m/z 360		m/z 362		m/z 288	m/z 290		m/z 426	m/z 428	
27.183	461958	27.184	373931		18.315	413312		33.972	3052
29.283	6690	29.305	17714		20.962	15352		34.438	770767
29.306	10452	34.420	32763		26.902	33469		38.928	8602
34.437	178150	34.444	52628		27.185	163398		38.954	2940
38.943	8498	38.916	3751		28.208	370025		43.740	336514
43.724	44232	43.736	25884		29.279	5072			
43.752	30258				29.308	8938			
					34.444	61157			
					38.957	2876			

Extracted Ion Current Profiles

Hexachlorobiphenyls													
"M03102024"						"M03102024"		"M03102024"					
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398	m/z 357
33.971	4000							29.297	808565	29.301	809066		
34.326	5625							32.450	3014	32.445	2930		
34.434	849502							34.432	8814	34.428	14930		
37.256	3289							34.455	7604	38.924	57227		
37.286	5531							38.935	249940	38.940	43053		
38.902	3804							42.435	6017	38.968	30667		
38.937	16257							43.743	13116	43.756	5877		
40.064	9220												
42.654	2602												
42.691	4404												
42.763	2604												
43.745	224348												

Extracted Ion Current Profiles

Heptachlorobiphenyls									
"M03102024"		"M03102024"			"M03102024"		"M03102024"		
m/z 394		m/z 396		m/z 322	m/z 324		m/z 326		m/z 462
29.297	808565	29.301	809066		20.946	382785	20.952	623851	
32.450	3014	32.445	2930		26.900	298881	26.896	495342	
34.432	8814	34.428	14930		27.154	4560	27.188	29422	
34.455	7604	38.924	57227		27.180	13412	29.301	177003	
38.935	249940	38.940	43053		29.295	247744	34.455	4181	
42.435	6017	38.968	30667		34.445	14999	38.922	16307	
43.743	13116	43.756	5877		38.925	45316	38.945	20728	
					38.954	33276			

Extracted Ion Current Profiles

Heptachlorobiphenyls												
"M03102024"		"M03102024"			"M03102024"		"M03102024"					
m/z 464		m/z 466		m/z 390	m/z 428		m/z 430		m/z 432		m/z 391	
38.936	1111767	38.893	85171		33.972	3052	33.971	4000				
42.423	19298	38.938	678041		34.438	770767	34.326	5625				
43.701	3585	42.431	15585		38.928	8602	34.434	849502				
		43.721	19692		38.954	2940	37.256	3289				
		43.752	12325		43.740	336514	37.286	5531				
							38.902	3804				
							38.937	16257				
							40.064	9220				
							42.654	2602				
							42.691	4404				
							42.763	2604				
							43.745	224348				

Extracted Ion Current Profiles

Octachlorobiphenyls									
"M03102024"		"M03102024"				"M03102024"			
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462
33.971	4000	33.972	3052				27.183	461958	
34.326	5625	34.438	770767				29.283	6690	
34.434	849502	38.928	8602				29.306	10452	
37.256	3289	38.954	2940				34.437	178150	
37.286	5531	43.740	336514				38.943	8498	
38.902	3804						43.724	44232	
38.937	16257						43.752	30258	
40.064	9220								
42.654	2602								
42.691	4404								
42.763	2604								
43.745	224348								

Extracted Ion Current Profiles

Octachlorobiphenyls				
"M03102024"		"M03102024"		
m/z 464		m/z 466		m/z 425
38.936	1111767	38.893	85171	
42.423	19298	38.938	678041	
43.701	3585	42.431	15585	
		43.721	19692	
		43.752	12325	

Extracted Ion Current Profiles

Nonachlorobiphenyls							
"M03102024"		"M03102024"				"M03102024"	
m/z 464		m/z 466		m/z 390	m/z 392	m/z 394	
38.936	1111767	38.893	85171			29.297	808565
42.423	19298	38.938	678041			32.450	3014
43.701	3585	42.431	15585			34.432	8814
		43.721	19692			34.455	7604
		43.752	12325			38.935	249940
						42.435	6017
						43.743	13116

Extracted Ion Current Profiles

Decachlorobiphenyl									
"M03102024"		"M03102024"				"M03102024"		"M03102024"	
m/z 498		m/z 500		m/z 424	m/z 426	m/z 428		m/z 430	
38.951	2610	43.733	1209163(M)			33.972	3052	33.971	4000
43.737	1366267	43.747	515745			34.438	770767	34.326	5625
						38.928	8602	34.434	849502
						38.954	2940	37.256	3289
						43.740	336514	37.286	5531
								38.902	3804
								38.937	16257
								40.064	9220
								42.654	2602
								42.691	4404
								42.763	2604
								43.745	224348

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102024"		"M03102024"				"M03102024"		"M03102024"			"M03102024"		"M03102024"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.602	150185	12.603	114931	424	240	35.324	358902	12.605	7046	188	10.059	404816	10.060	61060
33.099	3475	35.331	7164	426	241	38.918	2629	34.446	4274	189	14.143	7006	14.148	11715
				428				35.323	71941		14.166	6143	16.596	41178
				430							16.600	262203	17.854	7459
				498							17.859	48491		
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	43.729	1388664	43.716	1216214
512				

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc. SDG No.: 14100477

Instrument ID:	GCMS03	Calibration Date:	10/21/2014	Time:	6:23
Lab File ID:	M03102103	Start Cal Date:	10/7/2014	Time:	8:31
Client ID:	CCV3-1021A	End Cal Date:	10/7/2014	Time:	13:25
GC Column:	DB-XLB				

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\TRC_LRF14100477\[CCV3-1021A.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 Cl1	0.973	0.897	0.005	-7.88	20
$ 2 Tetrachloro-m-xylene	0.381	0.340	0.005	-10.8	20
3 Cl2	0.873	0.825	0.005	-5.57	20
5 Cl3	0.633	0.599	0.005	-5.31	20
6 Cl4	0.638	0.602	0.005	-5.68	20
8 Cl5	0.583	0.540	0.005	-7.39	20
9 Cl6	0.565	0.532	0.005	-5.69	20
11 Cl7	0.635	0.613	0.005	-3.39	20
13 Cl8	0.695	0.674	0.005	-2.94	20
17 Cl10	0.659	0.643	0.005	-2.54	20
$ 13C-DCBP	0.662	0.620	0.005	-6.23	20

FORM VII-CLP-EPA 680-1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102103.d
Lab Smp Id: CCV3-1021A Client Smp ID: CCV3-1021A
Inj Date : 21-OCT-2014 06:23
Operator : RMS Inst ID: GCMS03.i
Smp Info : CCV3-1021A
Misc Info : RMS M03102103
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\680low.m
Meth Date : 21-Oct-2014 07:28 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 13:25 Cal File: M03100709.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

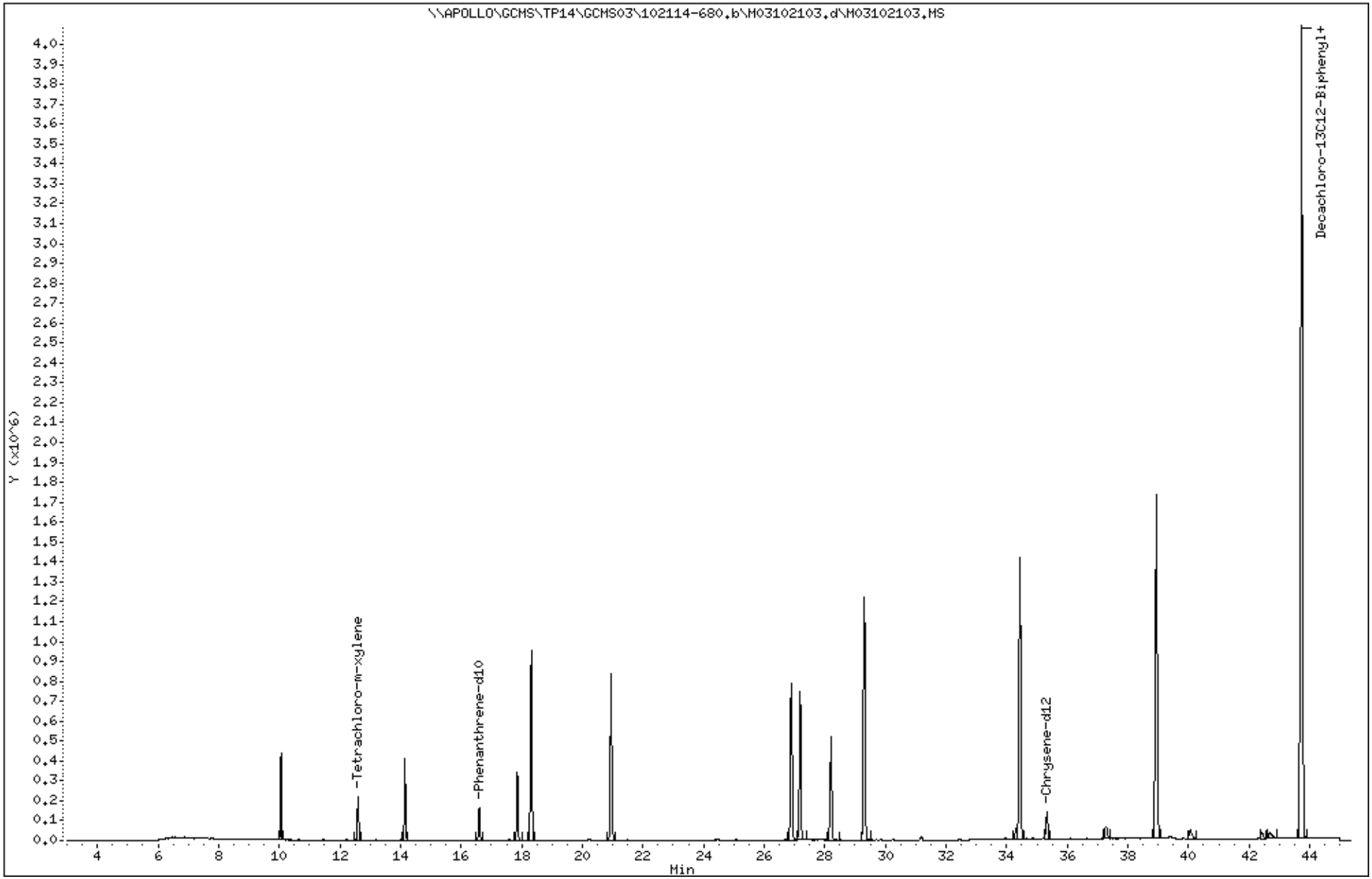
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.603	16.603	(1.000)	266418	0.80000	
* 13 Chrysene-d12	240	35.327	35.327	(1.000)	355898	0.80000	
1 Cl1	188	10.061	10.061	(0.285)	399174	1.00000	0.912
$ 2 Tetrachloro-m-xylene	244	12.604	12.604	(0.357)	149514	1.00000	0.876
3 Cl2	222	14.145	14.145	(0.400)	366541	1.00000	0.944
5 Cl3	256	17.855	17.855	(0.505)	266825	1.00000	0.947
6 Cl4	292	18.312	18.312	(0.518)	533613	2.00000	1.87
7 RTstd-BZ-104	326	20.946	20.946	(0.593)	677895	2.00000	1.92
8 Cl5	326	26.903	26.903	(0.762)	489192	2.00000	1.86
9 Cl6	360	27.188	27.188	(0.770)	482063	2.00000	1.88
10 RTstd-BZ-77	292	28.203	28.203	(0.798)	514902	2.00000	1.87
11 Cl7	394	29.307	29.307	(0.830)	832470	3.00000	2.87
12 Cl8	430	34.436	34.436	(0.975)	906022	3.00000	2.96
14 RTstd-BZ-208	464	38.938	38.938	(1.102)	1117992	4.00000	4.02
15 Cl10	498	43.730	43.730	(1.238)	1453770	5.00000	4.91
$ 16 Decachloro-13C12-Biphenyl	510	43.719	43.719	(1.238)	1399423	5.00000	4.71

Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102103.d
Date : 21-OCT-2014 06:23
Client ID: CCV3-1021A
Sample Info: CCV3-1021A
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.i
Operator: RMS
Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102103"		"M03102103"		"M03102103"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.058	406275	10.057	142636				
14.151	12054	16.605	3606				
16.598	272827						
17.865	50411						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102103"		"M03102103"		"M03102103"						"M03102103"	
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
14.151	373651	14.148	255306							10.058	406275
17.862	9303	18.306	15591							14.151	12054
18.310	173666	18.320	16395							16.598	272827
20.950	4211	28.191	12759							17.865	50411
26.878	6464	28.216	11512								
27.187	9778										
28.202	131497										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102103"		"M03102103"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.859	271410	17.857	280026		
18.311	52499	18.321	43990		
20.950	182966	20.948	57365		
26.897	178025	26.892	63176		
27.188	8113				
28.181	3291				
28.215	6327				
29.285	10946				
29.307	19042				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102103"		"M03102103"				"M03102103"		"M03102103"		"M03102103"	
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
17.859	271410	17.857	280026			10.058	406275	20.953	406861	20.950	680118
18.311	52499	18.321	43990			14.151	12054	26.894	303152	26.899	489073
20.950	182966	20.948	57365			16.598	272827	27.176	10892	27.170	10372
26.897	178025	26.892	63176			17.865	50411	27.200	9199	27.189	15784
27.188	8113							29.302	258113	29.302	180041
28.181	3291							34.411	4901	34.417	5156
28.215	6327							34.440	2866	34.464	2993
29.285	10946							34.462	3540	38.919	17281
29.307	19042							38.907	17389	38.949	9946
								38.949	77420	38.976	7481

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03102103"		"M03102103"					
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
				18.312	423609	18.312	545487				
				20.932	6695	20.941	11750				
				20.960	7594	20.971	6423				
				26.891	35435	26.893	43191				
				27.188	170155	27.187	85490				
				28.211	385597	28.204	513181				
				29.295	13446	34.409	3790				
				34.416	16141	34.442	10801				
				34.440	39762						
				38.951	2595						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102103"		"M03102103"			"M03102103"		"M03102103"		"M03102103"		
m/z 292		m/z 290		m/z 220	m/z 222		m/z 360		m/z 362		
18.312	545487	18.312	423609		14.151	373651	27.184	482493	27.180	386178	
20.941	11750	20.932	6695		17.862	9303	29.272	4102	29.297	18481	
20.971	6423	20.960	7594		18.310	173666	29.310	12695	34.439	50533	
26.893	43191	26.891	35435		20.950	4211	34.437	202111	34.462	31178	
27.187	85490	27.188	170155		26.878	6464	38.926	5387	43.750	12401	
28.204	513181	28.211	385597		27.187	9778	38.954	8125			
34.409	3790	29.295	13446		28.202	131497	43.731	42451			
34.442	10801	34.416	16141				43.756	19121			
		34.440	39762								
		38.951	2595								

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
	"M03102103"		"M03102103"		
m/z 288	m/z 324		m/z 326		m/z 328	m/z 289
	20.953	406861	20.950	680118		
	26.894	303152	26.899	489073		
	27.176	10892	27.170	10372		
	27.200	9199	27.189	15784		
	29.302	258113	29.302	180041		
	34.411	4901	34.417	5156		
	34.440	2866	34.464	2993		
	34.462	3540	38.919	17281		
	38.907	17389	38.949	9946		
	38.949	77420	38.976	7481		

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03102103"		"M03102103"			"M03102103"		"M03102103"		"M03102103"
m/z 326		m/z 324		m/z 254	m/z 256		m/z 258		m/z 392
20.950	680118	20.953	406861		17.859	271410	17.857	280026	
26.899	489073	26.894	303152		18.311	52499	18.321	43990	
27.170	10372	27.176	10892		20.950	182966	20.948	57365	
27.189	15784	27.200	9199		26.897	178025	26.892	63176	
29.302	180041	29.302	258113		27.188	8113			
34.417	5156	34.411	4901		28.181	3291			
34.464	2993	34.440	2866		28.215	6327			
38.919	17281	34.462	3540		29.285	10946			
38.949	9946	38.907	17389		29.307	19042			
38.976	7481	38.949	77420						

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102103"		"M03102103"					"M03102103"		"M03102103"		
m/z 394		m/z 396		m/z 398		m/z 322	m/z 360		m/z 362		m/z 323
29.305	833935	29.304	819642				27.184	482493	27.180	386178	
32.444	3071	34.426	9328				29.272	4102	29.297	18481	
34.415	5506	34.449	8647				29.310	12695	34.439	50533	
34.437	4781	38.939	144482				34.437	202111	34.462	31178	
34.463	3891	42.420	2874				38.926	5387	43.750	12401	
38.940	283565	43.743	3703				38.954	8125			
42.423	5850						43.731	42451			
43.694	4095						43.756	19121			
43.732	4113										
43.758	6396										

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03102103"		"M03102103"			"M03102103"			"M03102103"	
m/z 360		m/z 362		m/z 288	m/z 290		m/z 426	m/z 428	
27.184	482493	27.180	386178		18.312	423609		33.975	3369
29.272	4102	29.297	18481		20.932	6695		34.440	770889
29.310	12695	34.439	50533		20.960	7594		38.920	9894
34.437	202111	34.462	31178		26.891	35435		38.958	5437
38.926	5387	43.750	12401		27.188	170155		43.742	337198
38.954	8125				28.211	385597			
43.731	42451				29.295	13446			
43.756	19121				34.416	16141			
					34.440	39762			
					38.951	2595			

Extracted Ion Current Profiles

Hexachlorobiphenyls													
"M03102103"								"M03102103"		"M03102103"			
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398	m/z 357
33.972	4311							29.305	833935	29.304	819642		
34.309	15404							32.444	3071	34.426	9328		
34.434	916708							34.415	5506	34.449	8647		
37.271	22137							34.437	4781	38.939	144482		
38.924	5073							34.463	3891	42.420	2874		
38.957	9713							38.940	283565	43.743	3703		
40.062	22364							42.423	5850				
42.434	3118							43.694	4095				
42.671	9875							43.732	4113				
42.704	10101							43.758	6396				
43.736	227755												

Extracted Ion Current Profiles

Heptachlorobiphenyls									
"M03102103"		"M03102103"			"M03102103"		"M03102103"		
m/z 394		m/z 396		m/z 322	m/z 324		m/z 326		m/z 462
29.305	833935	29.304	819642		20.953	406861	20.950	680118	
32.444	3071	34.426	9328		26.894	303152	26.899	489073	
34.415	5506	34.449	8647		27.176	10892	27.170	10372	
34.437	4781	38.939	144482		27.200	9199	27.189	15784	
34.463	3891	42.420	2874		29.302	258113	29.302	180041	
38.940	283565	43.743	3703		34.411	4901	34.417	5156	
42.423	5850				34.440	2866	34.464	2993	
43.694	4095				34.462	3540	38.919	17281	
43.732	4113				38.907	17389	38.949	9946	
43.758	6396				38.949	77420	38.976	7481	

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03102103"		"M03102103"			"M03102103"		"M03102103"				
m/z 464		m/z 466		m/z 390	m/z 428		m/z 430		m/z 432	m/z 391	
38.940	1128297	38.946	849375		33.975	3369	33.972	4311			
42.432	21285	42.426	16486		34.440	770889	34.309	15404			
43.717	15620	43.692	4475		38.920	9894	34.434	916708			
43.746	17069	43.732	5142		38.958	5437	37.271	22137			
		43.759	5371		43.742	337198	38.924	5073			
							38.957	9713			
							40.062	22364			
							42.434	3118			
							42.671	9875			
							42.704	10101			
							43.736	227755			

Extracted Ion Current Profiles

Octachlorobiphenyls									
"M03102103"		"M03102103"				"M03102103"			
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462
33.972	4311	33.975	3369				27.184	482493	
34.309	15404	34.440	770889				29.272	4102	
34.434	916708	38.920	9894				29.310	12695	
37.271	22137	38.958	5437				34.437	202111	
38.924	5073	43.742	337198				38.926	5387	
38.957	9713						38.954	8125	
40.062	22364						43.731	42451	
42.434	3118						43.756	19121	
42.671	9875								
42.704	10101								
43.736	227755								

Extracted Ion Current Profiles

Octachlorobiphenyls				
"M03102103"		"M03102103"		
m/z 464		m/z 466		m/z 425
38.940	1128297	38.946	849375	
42.432	21285	42.426	16486	
43.717	15620	43.692	4475	
43.746	17069	43.732	5142	
		43.759	5371	

Extracted Ion Current Profiles

Nonachlorobiphenyls							
"M03102103"		"M03102103"				"M03102103"	
m/z 464		m/z 466		m/z 390	m/z 392	m/z 394	
38.940	1128297	38.946	849375			29.305	833935
42.432	21285	42.426	16486			32.444	3071
43.717	15620	43.692	4475			34.415	5506
43.746	17069	43.732	5142			34.437	4781
		43.759	5371			34.463	3891
						38.940	283565
						42.423	5850
						43.694	4095
						43.732	4113
						43.758	6396

Extracted Ion Current Profiles

Decachlorobiphenyl									
"M03102103"		"M03102103"				"M03102103"		"M03102103"	
m/z 498		m/z 500		m/z 424	m/z 426	m/z 428		m/z 430	
34.447	2954	38.953	3291			33.975	3369	33.972	4311
43.736	1456062	43.734	1278559			34.440	770889	34.309	15404
						38.920	9894	34.434	916708
						38.958	5437	37.271	22137
						43.742	337198	38.924	5073
								38.957	9713
								40.062	22364
								42.434	3118
								42.671	9875
								42.704	10101
								43.736	227755

Extracted Ion Current Profiles

TCMX				TCMX	chrysene - d_{12}	Chrysene-d12				phenanthrene - d_{10}	Phenanthrene-d10			
"M03102103"		"M03102103"				"M03102103"		"M03102103"			"M03102103"		"M03102103"	
m/z 244		m/z 242				m/z 240		m/z 241			m/z 188		m/z 189	
12.600	154005	12.600	118682	424	240	35.327	362496	12.605	7298	188	10.058	406275	10.054	55483
33.101	3303	35.326	6023	426	241	38.954	4370	34.428	6047	189	14.151	12054	14.159	11039
				428				34.449	3470		16.598	272827	16.596	42598
				430				35.338	75511		17.865	50411	17.851	6665
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	34.433	4989	38.923	2966
512	38.942	5073	43.723	1277183
	43.719	1405750		

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc. SDG No.: 14100477

Instrument ID:	GCMS03	Calibration Date:	10/21/2014	Time:	13:43
Lab File ID:	M03102112	Start Cal Date:	10/7/2014	Time:	8:31
Client ID:	CCV3-1021B	End Cal Date:	10/7/2014	Time:	13:25
GC Column:	DB-XLB				

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\TRC_LRF14100477\[CCV3-1021B.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 CI1	0.973	0.870	0.005	-10.58	20
$ 2 Tetrachloro-m-xylene	0.381	0.330	0.005	-13.4	20
3 CI2	0.873	0.838	0.005	-3.98	20
5 CI3	0.633	0.600	0.005	-5.08	20
6 CI4	0.638	0.604	0.005	-5.30	20
8 CI5	0.583	0.543	0.005	-6.76	20
9 CI6	0.565	0.526	0.005	-6.76	20
11 CI7	0.635	0.595	0.005	-6.29	20
13 CI8	0.695	0.652	0.005	-6.15	20
17 CI10	0.659	0.619	0.005	-6.11	20
$ 13C-DCBP	0.662	0.640	0.005	-3.24	20

FORM VII-CLP-EPA 680-1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102112.d
Lab Smp Id: CCV3-1021B Client Smp ID: CCV3-1021B
Inj Date : 21-OCT-2014 13:43
Operator : RMS Inst ID: GCMS03.i
Smp Info : CCV3-1021B
Misc Info : RMS M03102112
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\680low.m
Meth Date : 21-Oct-2014 14:24 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 13:25 Cal File: M03100709.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

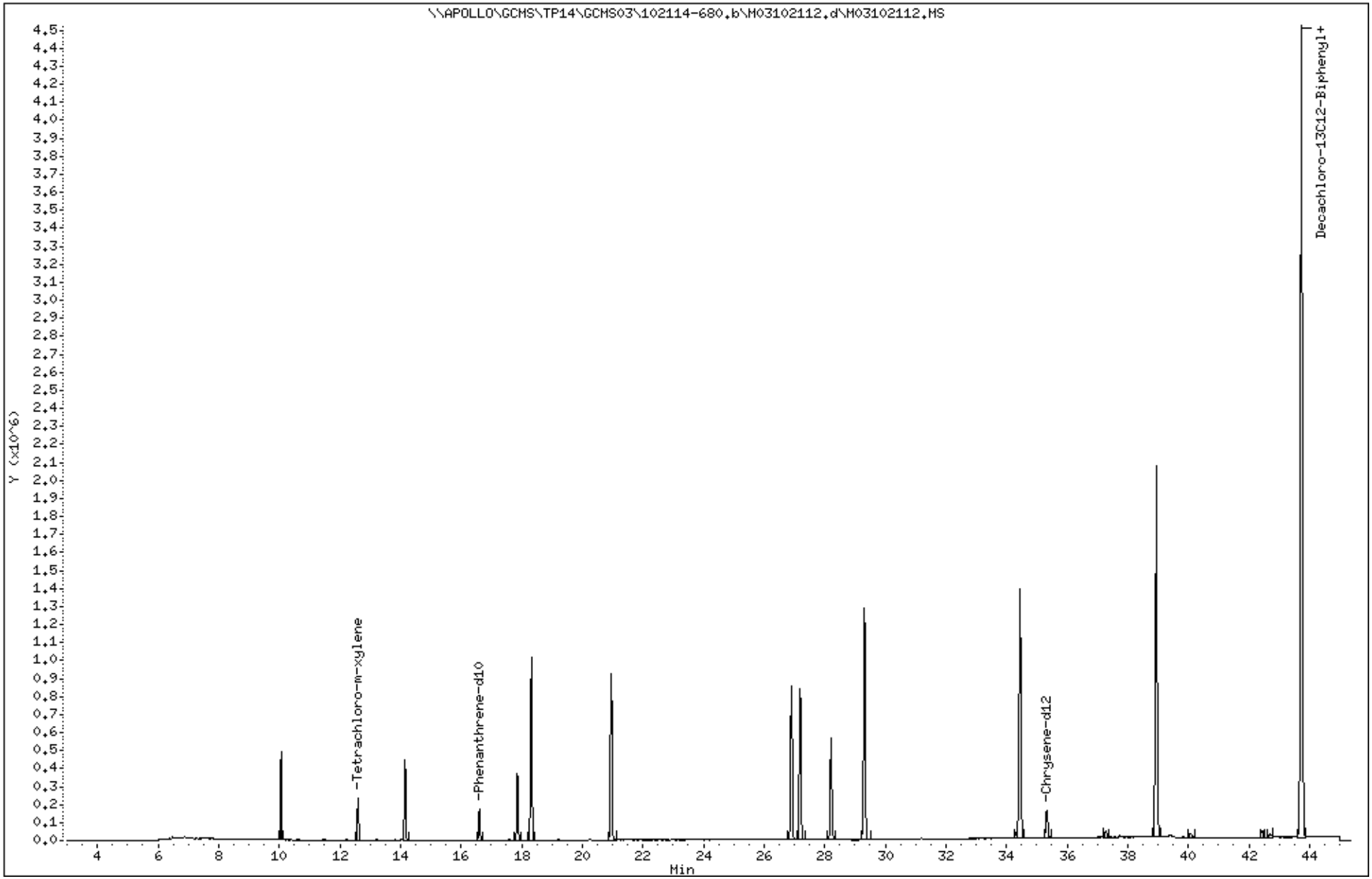
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.606	16.606	(1.000)	286004	0.80000	
* 13 Chrysene-d12	240	35.346	35.346	(1.000)	380246	0.80000	
1 Cl1	188	10.065	10.065	(0.285)	416303	1.00000	0.891
$ 2 Tetrachloro-m-xylene	244	12.610	12.610	(0.357)	158769	1.00000	0.871
3 Cl2	222	14.155	14.155	(0.400)	402384	1.00000	0.970
5 Cl3	256	17.858	17.858	(0.505)	289129	1.00000	0.960
6 Cl4	292	18.317	18.317	(0.518)	586914	2.00000	1.92
7 RTstd-BZ-104	326	20.954	20.954	(0.593)	717826	2.00000	1.90
8 Cl5	326	26.907	26.907	(0.761)	536541	2.00000	1.91
9 Cl6	360	27.191	27.191	(0.769)	519425	2.00000	1.90
10 RTstd-BZ-77	292	28.212	28.212	(0.798)	584149	2.00000	1.98
11 Cl7	394	29.313	29.313	(0.829)	887041	3.00000	2.86
12 Cl8	430	34.448	34.448	(0.975)	950850	3.00000	2.91
14 RTstd-BZ-208	464	38.945	38.945	(1.102)	1179810	4.00000	3.97
15 Cl10	498	43.742	43.742	(1.238)	1522649	5.00000	4.81
$ 16 Decachloro-13C12-Biphenyl	510	43.729	43.729	(1.237)	1571496	5.00000	4.95

Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102112.d
Date : 21-OCT-2014 13:43
Client ID: CCV3-1021B
Sample Info: CCV3-1021B
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.i
Operator: RMS
Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102112"		"M03102112"		"M03102112"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.063	429693	10.063	142621				
14.155	12548	16.614	3687				
16.604	291965						
17.864	52941						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102112"		"M03102112"		"M03102112"						"M03102112"	
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
14.157	413998	14.158	275062							10.063	429693
17.867	11675	17.865	2570							14.155	12548
18.319	184832	18.321	36662							16.604	291965
20.949	6483	28.224	23174							17.864	52941
26.908	6174										
27.201	7608										
28.214	150811										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102112"		"M03102112"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.864	296477	17.862	293120		
18.319	50891	18.322	44245		
20.963	186366	20.958	67730		
26.900	196416	26.898	36231		
27.181	5194	26.920	29652		
27.198	3853	29.313	6064		
28.191	4412				
28.223	7852				
29.310	18992				
29.337	8989				
38.962	2902				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102112"		"M03102112"				"M03102112"		"M03102112"		"M03102112"	
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
17.864	296477	17.862	293120			10.063	429693	20.964	438308	20.960	725201
18.319	50891	18.322	44245			14.155	12548	26.903	330524	26.907	536554
20.963	186366	20.958	67730			16.604	291965	27.181	17307	27.189	30211
26.900	196416	26.898	36231			17.864	52941	29.309	286277	29.304	196701
27.181	5194	26.920	29652					34.427	7346	34.433	4579
27.198	3853	29.313	6064					34.446	6033	38.931	25080
28.191	4412							38.910	16188	38.967	11378
28.223	7852							38.943	50341		
29.310	18992							38.970	37445		
29.337	8989										
38.962	2902										

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03102112"		"M03102112"					
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
				18.319	431720	18.321	596774				
				20.954	20339	20.958	19910				
				26.896	36298	26.907	42646				
				27.192	179096	27.193	89387				
				28.212	418294	28.212	579106				
				29.311	12516	34.409	2737				
				29.337	4506	34.456	16786				
				34.450	70549						
				38.918	2584						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102112"		"M03102112"			"M03102112"		"M03102112"		"M03102112"		
m/z 292		m/z 290		m/z 220	m/z 222		m/z 360		m/z 362		
18.321	596774	18.319	431720		14.157	413998	27.192	519760	27.194	426347	
20.958	19910	20.954	20339		17.867	11675	29.291	7898	29.291	13288	
26.907	42646	26.896	36298		18.319	184832	29.323	13199	29.337	4701	
27.193	89387	27.192	179096		20.949	6483	34.435	118365	34.446	103085	
28.212	579106	28.212	418294		26.908	6174	34.461	96643	38.933	2749	
34.409	2737	29.311	12516		27.201	7608	38.917	5479	43.752	9313	
34.456	16786	29.337	4506		28.214	150811	38.945	3813	43.781	2974	
		34.450	70549				43.698	8874			
		38.918	2584				43.738	66546			

Extracted Ion Current Profiles

Tetrachlorobiphenyls						
	"M03102112"		"M03102112"			
m/z 288	m/z 324		m/z 326		m/z 328	m/z 289
	20.964	438308	20.960	725201		
	26.903	330524	26.907	536554		
	27.181	17307	27.189	30211		
	29.309	286277	29.304	196701		
	34.427	7346	34.433	4579		
	34.446	6033	38.931	25080		
	38.910	16188	38.967	11378		
	38.943	50341				
	38.970	37445				

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03102112"		"M03102112"			"M03102112"		"M03102112"		"M03102112"
m/z 326		m/z 324		m/z 254	m/z 256		m/z 258		m/z 392
20.960	725201	20.964	438308		17.864	296477	17.862	293120	
26.907	536554	26.903	330524		18.319	50891	18.322	44245	
27.189	30211	27.181	17307		20.963	186366	20.958	67730	
29.304	196701	29.309	286277		26.900	196416	26.898	36231	
34.433	4579	34.427	7346		27.181	5194	26.920	29652	
38.931	25080	34.446	6033		27.198	3853	29.313	6064	
38.967	11378	38.910	16188		28.191	4412			
		38.943	50341		28.223	7852			
		38.970	37445		29.310	18992			
					29.337	8989			
					38.962	2902			

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102112"		"M03102112"					"M03102112"		"M03102112"		
m/z 394		m/z 396		m/z 398		m/z 322	m/z 360		m/z 362		m/z 323
29.308	881426	29.312	909040				27.192	519760	27.194	426347	
32.453	3462	32.449	3250				29.291	7898	29.291	13288	
34.433	9059	34.424	6721				29.323	13199	29.337	4701	
34.461	3989	34.459	10028				34.435	118365	34.446	103085	
38.927	85314	38.898	6791				34.461	96643	38.933	2749	
38.955	169843	38.946	147192				38.917	5479	43.752	9313	
42.442	7610	42.441	2540				38.945	3813	43.781	2974	
43.705	4634	43.722	10221				43.698	8874			
43.734	12763						43.738	66546			
43.772	7515										

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03102112"		"M03102112"			"M03102112"			"M03102112"	
m/z 360		m/z 362		m/z 288	m/z 290		m/z 426	m/z 428	
27.192	519760	27.194	426347		18.319	431720		33.977	3985
29.291	7898	29.291	13288		20.954	20339		34.448	834090
29.323	13199	29.337	4701		26.896	36298		38.941	10177
34.435	118365	34.446	103085		27.192	179096		38.970	3454
34.461	96643	38.933	2749		28.212	418294		43.721	122894
38.917	5479	43.752	9313		29.311	12516		43.752	247904
38.945	3813	43.781	2974		29.337	4506			
43.698	8874				34.450	70549			
43.738	66546				38.918	2584			

Extracted Ion Current Profiles

Hexachlorobiphenyls													
"M03102112"						"M03102112"		"M03102112"					
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398	m/z 357
34.324	8388							29.308	881426	29.312	909040		
34.446	965929							32.453	3462	32.449	3250		
37.276	13432							34.433	9059	34.424	6721		
38.943	22908							34.461	3989	34.459	10028		
40.054	5979							38.927	85314	38.898	6791		
40.076	5448							38.955	169843	38.946	147192		
40.137	2947							42.442	7610	42.441	2540		
42.682	6996							43.705	4634	43.722	10221		
42.718	4971							43.734	12763				
42.814	2653							43.772	7515				
43.743	283292												

Extracted Ion Current Profiles

Heptachlorobiphenyls									
"M03102112"		"M03102112"			"M03102112"		"M03102112"		
m/z 394		m/z 396		m/z 322	m/z 324		m/z 326		m/z 462
29.308	881426	29.312	909040		20.964	438308	20.960	725201	
32.453	3462	32.449	3250		26.903	330524	26.907	536554	
34.433	9059	34.424	6721		27.181	17307	27.189	30211	
34.461	3989	34.459	10028		29.309	286277	29.304	196701	
38.927	85314	38.898	6791		34.427	7346	34.433	4579	
38.955	169843	38.946	147192		34.446	6033	38.931	25080	
42.442	7610	42.441	2540		38.910	16188	38.967	11378	
43.705	4634	43.722	10221		38.943	50341			
43.734	12763				38.970	37445			
43.772	7515								

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03102112"		"M03102112"			"M03102112"		"M03102112"				
m/z 464		m/z 466		m/z 390	m/z 428		m/z 430		m/z 432	m/z 391	
38.948	1190031	38.940	617956		33.977	3985	34.324	8388			
42.427	11242	38.986	107684		34.448	834090	34.446	965929			
42.450	9091	42.430	17413		38.941	10177	37.276	13432			
43.717	3441	43.733	21387		38.970	3454	38.943	22908			
43.780	2940	43.755	9130		43.721	122894	40.054	5979			
					43.752	247904	40.076	5448			
							40.137	2947			
							42.682	6996			
							42.718	4971			
							42.814	2653			
							43.743	283292			

Extracted Ion Current Profiles

Octachlorobiphenyls									
"M03102112"		"M03102112"				"M03102112"			
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462
34.324	8388	33.977	3985				27.192	519760	
34.446	965929	34.448	834090				29.291	7898	
37.276	13432	38.941	10177				29.323	13199	
38.943	22908	38.970	3454				34.435	118365	
40.054	5979	43.721	122894				34.461	96643	
40.076	5448	43.752	247904				38.917	5479	
40.137	2947						38.945	3813	
42.682	6996						43.698	8874	
42.718	4971						43.738	66546	
42.814	2653								
43.743	283292								

Extracted Ion Current Profiles

Octachlorobiphenyls				
"M03102112"		"M03102112"		
m/z 464		m/z 466		m/z 425
38.948	1190031	38.940	617956	
42.427	11242	38.986	107684	
42.450	9091	42.430	17413	
43.717	3441	43.733	21387	
43.780	2940	43.755	9130	

Extracted Ion Current Profiles

Nonachlorobiphenyls							
"M03102112"		"M03102112"				"M03102112"	
m/z 464		m/z 466		m/z 390	m/z 392	m/z 394	
38.948	1190031	38.940	617956			29.308	881426
42.427	11242	38.986	107684			32.453	3462
42.450	9091	42.430	17413			34.433	9059
43.717	3441	43.733	21387			34.461	3989
43.780	2940	43.755	9130			38.927	85314
						38.955	169843
						42.442	7610
						43.705	4634
						43.734	12763
						43.772	7515

Extracted Ion Current Profiles

Decachlorobiphenyl									
"M03102112"		"M03102112"				"M03102112"		"M03102112"	
m/z 498		m/z 500		m/z 424	m/z 426	m/z 428		m/z 430	
34.434	2514	38.931	3354			33.977	3985	34.324	8388
43.745	1528580	43.744	1310770			34.448	834090	34.446	965929
						38.941	10177	37.276	13432
						38.970	3454	38.943	22908
						43.721	122894	40.054	5979
						43.752	247904	40.076	5448
								40.137	2947
								42.682	6996
								42.718	4971
								42.814	2653
								43.743	283292

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102112"		"M03102112"				"M03102112"		"M03102112"			"M03102112"		"M03102112"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.604	162953	12.603	122840	424	240	35.341	394992	12.605	8130	188	10.063	429693	10.063	65530
		35.316	7634	426	241	38.916	3423	34.459	6962	189	14.155	12548	14.155	15256
				428				35.332	74053		16.604	291965	16.602	46669
				430				38.933	2520		17.864	52941	17.864	7539
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	34.450	6494	34.460	4335
512	43.730	1580678	38.927	3435
			43.724	1394782

QC Sample Raw Data

Quality Control Results
Method Blank

Job Number: 14100477

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 (AR39372B)
Lab Sample ID: SBLK-01

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:	MS03-472-14	PCBs by EPA Method TO-10A/680	10/20/2014 18:55	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	0.00m³	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	MS03-472-14
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-472-14
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-472-14
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-472-14
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-472-14
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-472-14
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-472-14
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-472-14
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-472-14
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-472-14
Total PCB	1336-36-3	ND		1.00	U	MS03-472-14

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	82.2	70.1-116		MS03-472-14
Tetrachloro-meta-xylene	877-09-8	63.4	44.4-104		MS03-472-14

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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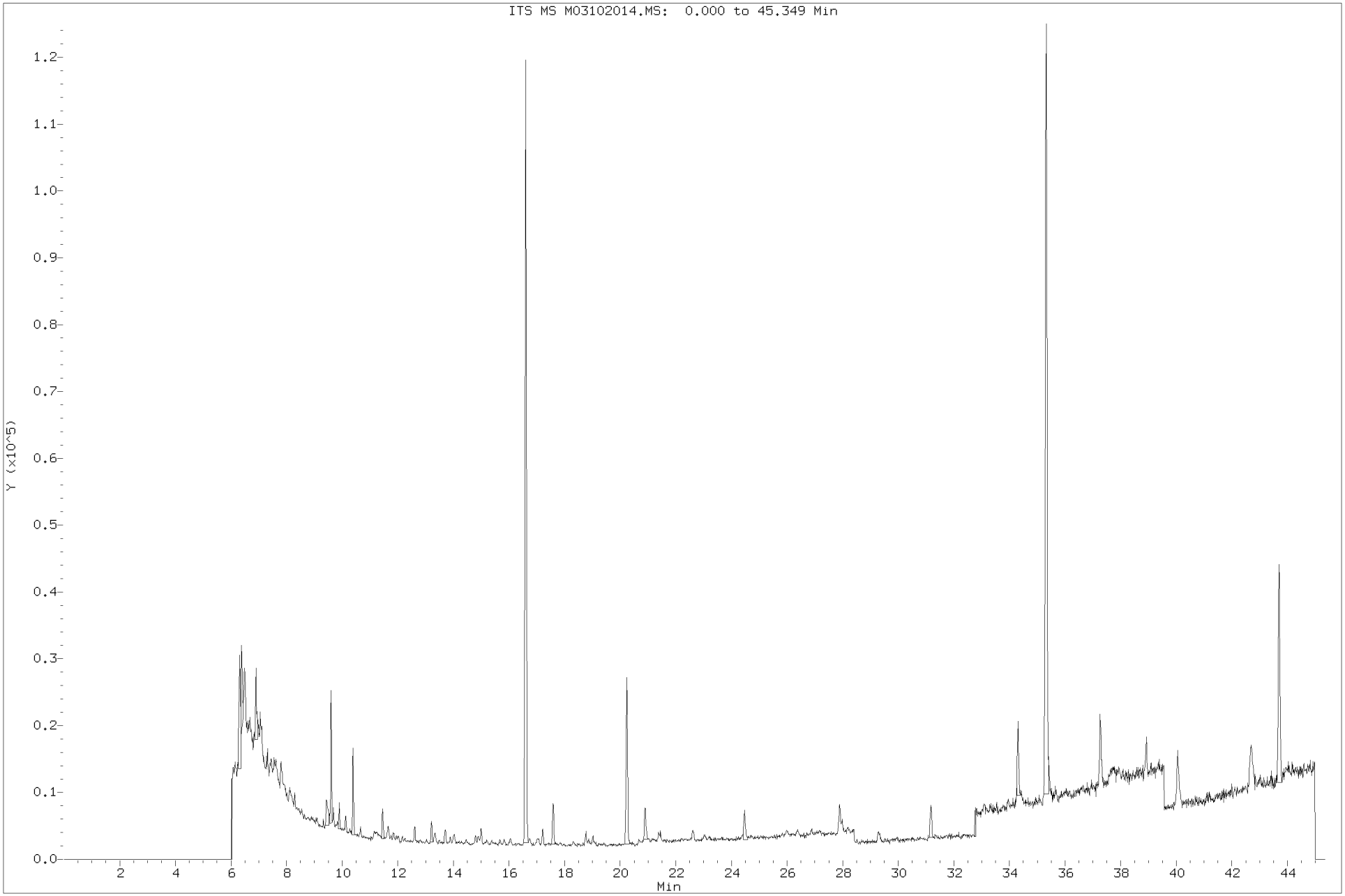
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102014.d/M03102014.MS
Injection Date: 20-OCT-2014 18:55
Instrument: GCMS03.i
Client Sample ID: AR39372BLANK



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	Method Blank
Matrix:	TO-10A PUF	Lab Sample ID:	AR39372B
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	18:55

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

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	Reporting Limit ug	Report Amount ug	Flag
					Mono Total:	0.00500	0.00500	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	Reporting Limit ug	Report Amount ug	Flag
					Di Total:	0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
					Tri Total:	0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
					Tetra Total:	0.0100	0.0100	ND	

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	Reporting Limit ug	Report Amount ug	Flag
					Penta Total:	0.0100	0.0100	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	Reporting Limit ug	Report Amount ug	Flag
					Hexa Total:	0.0100	0.0100	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	ug	ug	
				Hepta Total:		0.0150	0.0150	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	ug	ug	
				Octa Total:		0.0150	0.0150	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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
				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	Flag
m/z 244		m/z 242		1.1 - 1.5			ug/mL	
12.610	1693	12.610	1264	1.3	0.3809		0.0127	
				TCMX Total:			0.0127	

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	
43.696	18990	43.695	16936	1.1	0.6594		0.0822	
				Deca Total:			0.0822	

TCMX Recovery %	63.4 %
Deca Recovery	82.2 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.324	280343	35.309	58794	4.8	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102014"		"M03102014"		"M03102014"		"M03102014"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.599	200508						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"	
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
								16.597	20033	16.599	200508

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102014"		"M03102014"		"M03102014"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.032	2574
				6.083	3791
				6.148	3768
				6.180	2573
				6.322	11719
				6.386	7526
				6.436	3267
				6.475	16266
				6.612	3340
				6.658	6076
				6.702	5353
				6.788	6947
				6.854	4296
				6.898	4942
				6.919	5488
				6.990	4101
				7.046	7097
				7.110	7345
				7.214	2607
				7.323	3620
				7.410	4941
				7.447	3283
				7.546	3811
				7.618	5397
				7.701	4357
				7.794	4572
				8.002	2551
				8.115	5455
				14.999	2664

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"	
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
				16.597	20033	16.599	200508				

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03102014"	"M03102014"	"M03102014"	"M03102014"	"M03102014"	"M03102014"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362

10.391 2573

Extracted Ion Current Profiles

Hexachlorobiphenyls															
"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"	
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398		m/z 357	
34.306	4190			31.177	2744									37.281	2627
37.281	2866			34.301	3203										
				37.266	3779										
				40.052	3105										
				42.666	2552										

Extracted Ion Current Profiles

Heptachlorobiphenyls						
"M03102014"	"M03102014"	"M03102014"	"M03102014"	"M03102014"	"M03102014"	"M03102014"
m/z 464	m/z 466	m/z 390	m/z 428	m/z 430	m/z 432	m/z 391
				34.306 4190		
				37.281 2866		

Extracted Ion Current Profiles

Octachlorobiphenyls											
"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"	
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462	
34.306	4190			31.177	2744						
37.281	2866			34.301	3203						
				37.266	3779						
				40.052	3105						
				42.666	2552						

Extracted Ion Current Profiles

Decachlorobiphenyl									
"M03102014"		"M03102014"		"M03102014"		"M03102014"		"M03102014"	
m/z 498		m/z 500		m/z 424		m/z 426		m/z 428		m/z 430	
43.725	2530	43.714	2739							34.306	4190
										37.281	2866

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102014"		"M03102014"				"M03102014"		"M03102014"			"M03102014"		"M03102014"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.610	1693	12.610	1264	424	240	35.324	280343	35.309	58794(M)	188	16.599	200508	16.601	33007
33.092	2923	35.307	5939	426	241			35.326	31474	189				
				428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	35.319	436	35.312	422
512	43.696	18990	43.695	16936

Quality Control Results
Lab Control Sample (LCS)
Job Number: 14100477

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 (AR39372L)
Lab Sample ID: LCS-01

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:	MS03-472-15	PCBs by EPA Method TO-10A/680	10/20/2014 19:44	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	0.00m³	1.00 mL	NA

Analyte Spiked	CAS No.	Added (ug)	LCS (ug)	LCS % Rec.	Q[1]	Limits (%)
Monochlorobiphenyl	27323-18-8	1.00	0.638	63.8		28.7-78.9
Dichlorobiphenyl	25512-42-9	1.00	0.649	64.9		30.8-82.6
Trichlorobiphenyl	25323-68-6	1.00	0.695	69.5		34.4-86.8
Tetrachlorobiphenyl	26914-33-0	2.00	1.41	70.3		34.6-86.9
Pentachlorobiphenyl	25429-29-2	2.00	1.48	74.1		37.8-91.9
Hexachlorobiphenyl	26601-64-9	2.00	1.53	76.4		40.9-94.8
Heptachlorobiphenyl	28655-71-2	3.00	2.28	76.0		41.7-98.0
Octachlorobiphenyl	55722-26-4	3.00	2.36	78.7		43.2-102
Decachlorobiphenyl	2051-24-3	5.00	4.09	81.9		46.4-102

[1]Qualifier 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	66.0	70.1-116	*	MS03-472-15
Tetrachloro-meta-xylene	877-09-8	56.6	44.4-104		MS03-472-15

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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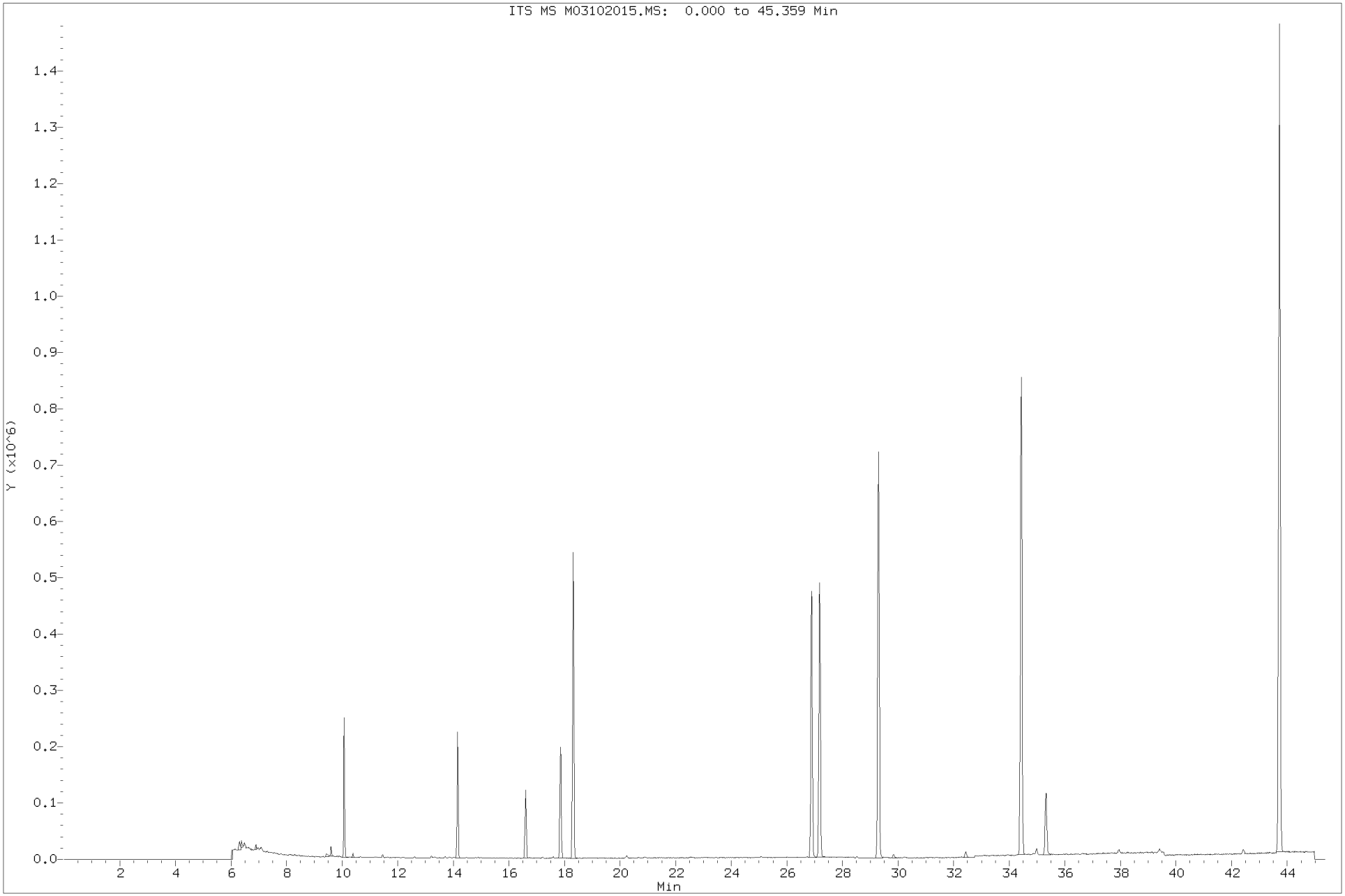
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102015.d/M03102015.MS
Injection Date: 20-OCT-2014 19:44
Instrument: GCMS03.i
Client Sample ID: AR39372LCS



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	LCS
Matrix:	TO-10A PUF	Lab Sample ID:	AR39372L
Sample volume:	N/A	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	19:44

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

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	Reporting Limit ug	Report Amount ug	Flag
10.072	217105	10.073	71091	3.1	0.9733	0.00500	0.00500	0.638	
				Mono Total:		0.00500	0.00500	0.638	

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	Reporting Limit ug	Report Amount ug	Flag
14.156	198429	14.156	136771	1.5	0.8733	0.00500	0.00500	0.649	
				Di Total:		0.00500	0.00500	0.649	

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	Reporting Limit ug	Report Amount ug	Flag
17.859	153893	17.858	152638	1.0	0.6326	0.00500	0.00500	0.695	
				Tri Total:		0.00500	0.00500	0.695	

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	Reporting Limit ug	Report Amount ug	Flag
18.314	313739	18.314	236091	1.3	0.6382	0.0100	0.0100	1.41	
				Tetra Total:		0.0100	0.0100	1.41	

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	Reporting Limit ug	Report Amount ug	Flag
26.886	302267	26.891	188301	1.6	0.5827	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
27.179	301662	27.181	253905	1.2	0.5645	0.0100	0.0100	1.53	
				Hexa Total:		0.0100	0.0100	1.53	

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
29.298	506241	29.292	545451	0.9	0.6350	0.0150	0.0150	2.28	
				Hepta Total:		0.0150	0.0150	2.28	

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
34.434	574231	34.436	472595	1.2	0.6948	0.0150	0.0150	2.36	
				Octa Total:		0.0150	0.0150	2.36	

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
43.723	944228	43.720	809498	1.2	0.6594	0.0250	0.0250	4.09	
				Deca Total:		0.0250	0.0250	4.09	

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
12.609	1508	12.610	1335	1.1	0.3809		0.0113		
				TCMX Total:			0.0113		

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	
43.692	15221	43.709	14457	1.1	0.6594		0.0660	
				Deca Total:			0.0660	

TCMX Recovery % 56.6 %

Deca Recovery 66.0 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.322	279886	35.317	57562	4.9	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.072	217105	10.073	71091	10.073	78752	10.073	47390
14.163	7520			14.158	97157	14.154	13585
16.601	202157						
17.859	26910						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
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
6.489	2784	14.156	136771	10.073	78752	10.073	47390	14.163	13166	10.072	217105
14.156	198429	18.316	20277	14.158	97157	14.154	13585	16.600	19863	14.163	7520
17.857	5938							17.861	85615	16.601	202157
18.310	102273							18.309	6020	17.859	26910
26.894	4865							18.324	5626		
27.169	4940							26.893	16577		

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102015"		"M03102015"		"M03102015"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.859	153893	17.858	152638	6.083	3259
18.314	28970	18.313	25132	6.096	2621
26.891	109473	26.888	37468	6.137	3056
27.174	4404			6.189	2539
29.299	16324			6.219	3296
29.327	4068			6.307	9338
				6.342	3033
				6.386	9462
				6.486	7658
				6.525	7139
				6.579	3339
				6.626	4245
				6.661	6709
				6.732	4450
				6.796	6719
				6.895	11971
				6.995	4818
				7.064	5330
				7.094	2813
				7.126	2777
				7.157	3235
				7.268	2540
				7.301	2524
				7.328	2570
				7.393	5651
				7.480	3133
				7.526	4139
				7.622	3827
				7.756	3485
				7.837	2525
				8.298	2719
				14.164	2993
				17.861	10305
				18.316	23740
				26.878	9671
				26.905	7309
				27.177	5265

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
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
17.859	153893	17.858	152638	14.163	13166	10.072	217105	26.891	188301	26.886	302267
18.314	28970	18.313	25132	16.600	19863	14.163	7520	27.162	5295	27.169	9552
26.891	109473	26.888	37468	17.861	85615	16.601	202157	27.188	8363	27.193	8346
27.174	4404			18.309	6020	17.859	26910	29.296	165830	29.293	114837
29.299	16324			18.324	5626			34.415	3727	34.410	2770
29.327	4068			26.893	16577			34.445	4038	34.439	3219

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
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
26.887	213063	18.314	5629	18.314	236091	18.314	313739	18.314	153017	18.315	175282
27.162	4467	26.895	118122	26.888	17391	26.893	25915	26.899	12451	26.891	18744
27.182	7705	27.185	11986	26.923	4200	27.179	53438	27.173	14387	27.174	19371
29.296	40251	29.298	63368	27.177	107265	34.435	9157			29.304	11434
		34.426	7628	29.280	5910					34.425	6047
				29.324	2936						
				34.439	39069						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 292		m/z 290		m/z 220		m/z 222		m/z 360		m/z 362	
18.314	313739	18.314	236091	17.862	7890	6.489	2784	27.179	301662	27.181	253905
26.893	25915	26.888	17391	18.314	157558	14.156	198429	29.268	3357	29.302	10768
27.179	53438	26.923	4200	26.895	15073	17.857	5938	29.294	8194	29.838	3110
34.435	9157	27.177	107265	27.185	26256	18.310	102273	29.839	3849	34.434	35236
		29.280	5910			26.894	4865	34.437	133355	34.462	11424
		29.324	2936			27.169	4940	43.692	9291	43.723	7272
		34.439	39069					43.715	29087		

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 288		m/z 324		m/z 326		m/z 328		m/z 289	
27.180	80930	26.891	188301	26.886	302267	26.887	213063	26.889	122393
29.306	13996	27.162	5295	27.169	9552	27.162	4467	27.163	8812
34.433	72599	27.188	8363	27.193	8346	27.182	7705	27.193	6198
		29.296	165830	29.293	114837	29.296	40251	29.302	34777
		34.415	3727	34.410	2770			34.439	20519
		34.445	4038	34.439	3219				

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258		m/z 392	
26.886	302267	26.891	188301	18.314	5629	17.859	153893	17.858	152638	29.297	229359
27.169	9552	27.162	5295	26.895	118122	18.314	28970	18.313	25132	32.440	2834
27.193	8346	27.188	8363	27.185	11986	26.891	109473	26.888	37468	34.422	3727
29.293	114837	29.296	165830	29.298	63368	27.174	4404			43.699	5988
34.410	2770	34.415	3727	34.426	7628	29.299	16324			43.749	3726
34.439	3219	34.445	4038			29.327	4068				

Extracted Ion Current Profiles

Pentachlorobiphenyls													
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360		m/z 362		m/z 323	
29.298	506241	29.292	545451	29.298	287374	29.291	94809	27.179	301662	27.181	253905	27.181	68777
32.439	5951	32.435	6061	32.434	3432	34.414	5423	29.268	3357	29.302	10768	29.278	7977
34.415	3949	34.450	3337			34.437	7371	29.294	8194	29.838	3110	29.307	9888
34.438	7575	43.697	2844					29.839	3849	34.434	35236	34.436	37740
43.712	8252	43.741	3797					34.437	133355	34.462	11424		
								43.692	9291	43.723	7272		
								43.715	29087				

Extracted Ion Current Profiles

Hexachlorobiphenyls											
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 360		m/z 362		m/z 288		m/z 290		m/z 426		m/z 428	
27.179	301662	27.181	253905	27.180	80930	18.314	236091	34.435	187052	34.436	472595
29.268	3357	29.302	10768	29.306	13996	26.888	17391	43.716	189586	43.677	22362
29.294	8194	29.838	3110	34.433	72599	26.923	4200			43.724	197052
29.839	3849	34.434	35236			27.177	107265				
34.437	133355	34.462	11424			29.280	5910				
43.692	9291	43.723	7272			29.324	2936				
43.715	29087					34.439	39069				

Extracted Ion Current Profiles

Hexachlorobiphenyls															
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398		m/z 357	
34.434	574231	34.438	369528	34.435	79562	29.297	229359	29.298	506241	29.292	545451	29.298	287374	29.281	13533
43.724	148094	43.724	64739	43.716	121985	32.440	2834	32.439	5951	32.435	6061	32.434	3432	29.309	17466
						34.422	3727	34.415	3949	34.450	3337			34.414	8183
						43.699	5988	34.438	7575	43.697	2844			34.437	10476
						43.749	3726	43.712	8252	43.741	3797			43.703	17056
														43.745	12666

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 394		m/z 396		m/z 322		m/z 324		m/z 326		m/z 462	
29.298	506241	29.292	545451	29.291	94809	26.891	188301	26.886	302267	39.414	3065
32.439	5951	32.435	6061	34.414	5423	27.162	5295	27.169	9552	42.417	3441
34.415	3949	34.450	3337	34.437	7371	27.188	8363	27.193	8346	43.704	3278
34.438	7575	43.697	2844			29.296	165830	29.293	114837	43.727	5823
43.712	8252	43.741	3797			34.415	3727	34.410	2770		
						34.445	4038	34.439	3219		

Extracted Ion Current Profiles

Heptachlorobiphenyls													
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 464		m/z 466		m/z 390		m/z 428		m/z 430		m/z 432		m/z 391	
39.406	2843	42.424	4093	43.711	4771	34.436	472595	34.434	574231	34.438	369528	34.428	29349
42.405	2554					43.677	22362	43.724	148094	43.724	64739	43.718	51610
43.690	4217					43.724	197052						
43.719	7464												

Extracted Ion Current Profiles

Octachlorobiphenyls											
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462	
34.434	574231	34.436	472595	34.435	79562	27.176	157475	27.179	301662	39.414	3065
43.724	148094	43.677	22362	43.716	121985	29.278	7544	29.268	3357	42.417	3441
		43.724	197052			34.427	156936	29.294	8194	43.704	3278
						43.687	19289	29.839	3849	43.727	5823
						43.722	72509	34.437	133355		
								43.692	9291		
								43.715	29087		

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102015"		"M03102015"		"M03102015"	
m/z 464		m/z 466		m/z 425	
39.406	2843	42.424	4093	34.420	5908
42.405	2554			43.733	21809
43.690	4217				
43.719	7464				

Extracted Ion Current Profiles

Nonachlorobiphenyls									
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 464		m/z 466		m/z 390		m/z 392		m/z 394	
39.406	2843	42.424	4093	43.711	4771	29.297	229359	29.298	506241
42.405	2554					32.440	2834	32.439	5951
43.690	4217					34.422	3727	34.415	3949
43.719	7464					43.699	5988	34.438	7575
						43.749	3726	43.712	8252

FALSE

Extracted Ion Current Profiles

Decachlorobiphenyl											
"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"		"M03102015"	
m/z 498		m/z 500		m/z 424		m/z 426		m/z 428		m/z 430	
43.723	944228	43.720	809498	43.719	77635	34.435	187052	34.436	472595	34.434	574231
						43.716	189586	43.677	22362	43.724	148094
								43.724	197052		

Extracted Ion Current Profiles

TCMX				TCMX
"M03102015"		"M03102015"		
m/z 244		m/z 242		
12.609	1508	12.610	1335	424
33.093	2610	29.273	1467	426
		29.315	605	428
		35.297	1751	430
		35.317	2164	498
		35.342	1670	500
		35.367	540	

chrysene - d_{12}	Chrysene-d12				phenanthrene - d_{10}	Phenanthrene-d10			
	"M03102015"		"M03102015"			"M03102015"		"M03102015"	
	m/z 240		m/z 241			m/z 188		m/z 189	
240	29.284	2704	34.422	2943	188	10.072	217105	10.073	33726
241	35.322	279886	34.453	2844	189	14.163	7520	14.163	7289
			35.317	57562		16.601	202157	16.606	30908
						17.859	26910	17.859	4639

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	34.433	1847	34.426	2147
512	34.480	437	35.312	502
	35.322	871	43.652	1194
	43.692	15221	43.709	14457(M)
	43.739	4108	43.739	4334
	43.766	719		

Quality Control Results
Lab Control Sample - Duplicate (LCSD)
Job Number: 14100477

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 (AR39372S)
Lab Sample ID: LCSD-01

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:	MS03-472-16	PCBs by EPA Method TO-10A/680	10/20/2014 20:33	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	0.00m³	1.00 mL	NA

Analyte Spiked	CAS No.	Added (ug)	LCSD (ug)	LCSD % Rec.	Q[1]	Limits (%)	Precision: LCS % Rec.	Precision: RPD	Precision: Q[1]	Precision: Limits (%)
Monochlorobiphenyl	27323-18-8	1.00	0.684	68.4		28.7-78.9	63.8	6.96		40
Dichlorobiphenyl	25512-42-9	1.00	0.701	70.1		30.8-82.6	64.9	7.70		40
Trichlorobiphenyl	25323-68-6	1.00	0.763	76.3		34.4-86.8	69.5	9.33		40
Tetrachlorobiphenyl	26914-33-0	2.00	1.50	75.1		34.6-86.9	70.3	6.60		40
Pentachlorobiphenyl	25429-29-2	2.00	1.70	85.1		37.8-91.9	74.1	13.8		40
Hexachlorobiphenyl	26601-64-9	2.00	1.70	84.8		40.9-94.8	76.4	10.4		40
Heptachlorobiphenyl	28655-71-2	3.00	2.56	85.3		41.7-98.0	76.0	11.5		40
Octachlorobiphenyl	55722-26-4	3.00	2.57	85.6		43.2-102	78.7	8.40		40
Decachlorobiphenyl	2051-24-3	5.00	4.55	91.1		46.4-102	81.9	10.6		40

[1]Qualifier 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	110	70.1-116		MS03-472-16
Tetrachloro-meta-xylene	877-09-8	60.5	44.4-104		MS03-472-16

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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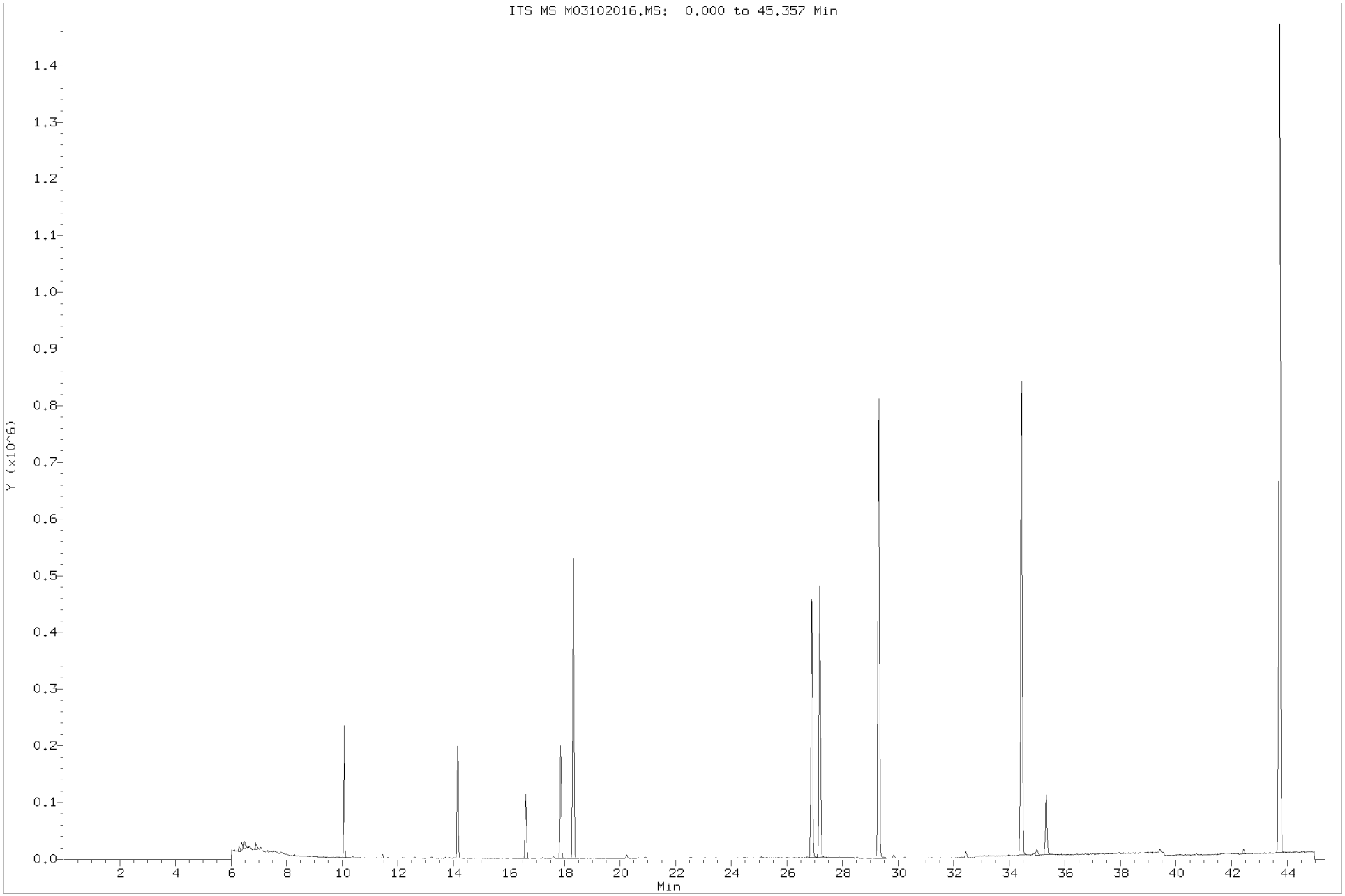
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680b.b\M03102016.d/M03102016.MS
Injection Date: 20-OCT-2014 20:33
Instrument: GCMS03.i
Client Sample ID: AR39372S



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	LCSD
Matrix:	TO-10A PUF	Lab Sample ID:	AR39372S
Sample volume:	N/A	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	20:33

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

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	Reporting Limit ug	Report Amount ug	Flag
10.074	214658	10.075	73558	2.9	0.9733	0.00500	0.00500	0.684	
				Mono Total:		0.00500	0.00500	0.684	

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	Reporting Limit ug	Report Amount ug	Flag
14.160	197578	14.161	128644	1.5	0.8733	0.00500	0.00500	0.701	
				Di Total:		0.00500	0.00500	0.701	

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	Reporting Limit ug	Report Amount ug	Flag
17.863	155660	17.863	148212	1.1	0.6326	0.00500	0.00500	0.763	
				Tri Total:		0.00500	0.00500	0.763	

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	Reporting Limit ug	Report Amount ug	Flag
18.316	309372	18.318	235636	1.3	0.6382	0.0100	0.0100	1.50	
				Tetra Total:		0.0100	0.0100	1.50	

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	Reporting Limit ug	Report Amount ug	Flag
26.899	320073	26.896	187345	1.7	0.5827	0.0100	0.0100	1.70	
				Penta Total:		0.0100	0.0100	1.70	

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	
27.181	308917	27.180	252304	1.2	0.5645	0.0100	0.0100	1.70	
				Hexa Total:		0.0100	0.0100	1.70	

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	ug	ug	
29.300	523970	29.302	528460	1.0	0.6350	0.0150	0.0150	2.56	
				Hepta Total:		0.0150	0.0150	2.56	

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	ug	ug	
34.443	575487	34.434	484276	1.2	0.6948	0.0150	0.0150	2.57	
				Octa Total:		0.0150	0.0150	2.57	

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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
43.732	968934	43.730	818267	1.2	0.6594	0.0250	0.0250	4.55	
				Deca Total:		0.0250	0.0250	4.55	

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	
12.612	1488	12.611	1197	1.2	0.3809		0.0121	
				TCMX Total:			0.0121	

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	
43.705	23409	43.725	18010	1.3	0.6594		0.110	
				Deca Total:			0.110	

TCMX Recovery %	60.5 %
Deca Recovery	110 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.325	258087	35.330	57366	4.5	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.074	214658	10.075	73558	10.075	75193	10.075	46960
14.155	5886	16.617	3086	14.159	95151	14.157	13533
16.604	196792						
17.863	27682						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
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
14.160	197578	14.161	128644	10.075	75193	10.075	46960	14.170	12076	10.074	214658
17.863	5418	18.318	16635	14.159	95151	14.157	13533	16.610	18686	14.155	5886
18.316	97340							17.865	83958	16.604	196792
26.889	2906							18.307	5178	17.863	27682
27.190	5606							18.331	5833		
								26.892	12427		

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102016"		"M03102016"		"M03102016"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.863	155660	17.863	148212	6.031	2953
18.326	28062	18.318	24690	6.075	4644
26.897	113165	26.889	37681	6.128	2574
29.302	13694			6.192	4368
29.328	4748			6.233	3031
				6.293	7392
				6.389	6968
				6.431	3583
				6.491	14408
				6.583	3025
				6.637	8037
				6.705	3113
				6.735	4476
				6.819	3069
				6.852	2818
				6.903	7252
				6.949	2663
				6.979	6375
				7.058	8022
				7.133	3621
				7.325	4654
				7.401	3064
				7.452	4467
				7.679	2818
				7.791	2729
				7.861	3117
				7.996	3051
				8.067	3065
				14.165	3228
				17.870	9209
				18.325	26088
				26.890	19323
				27.174	4745

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
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
17.863	155660	17.863	148212	14.170	12076	10.074	214658	26.896	187345	26.899	320073
18.326	28062	18.318	24690	16.610	18686	14.155	5886	27.187	12979	27.176	18331
26.897	113165	26.889	37681	17.865	83958	16.604	196792	29.299	174792	29.302	109570
29.302	13694			18.307	5178	17.863	27682	34.419	3529	34.449	2843
29.328	4748			18.331	5833			34.449	3827		
				26.892	12427						

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
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
26.898	206887	18.317	3463	18.318	235636	18.316	309372	18.317	154173	18.320	162483
27.177	11183	26.897	112611	26.891	11351	26.903	26716	26.884	4801	26.900	19639
29.285	14184	27.182	11491	26.917	7258	27.194	55848	26.906	6824	27.190	18947
29.304	25414	29.296	35503	27.182	111630	34.427	8132	27.185	7216	29.297	7903
		29.316	28256	29.290	7035			27.211	3489	29.316	3355
				34.432	36407					34.441	7497

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 292		m/z 290		m/z 220		m/z 222		m/z 360		m/z 362	
18.316	309372	18.318	235636	17.864	7214	14.160	197578	27.181	308917	27.180	252304
26.903	26716	26.891	11351	18.320	150890	17.863	5418	29.296	10686	29.315	7100
27.194	55848	26.917	7258	26.907	14230	18.316	97340	29.846	3974	29.845	3038
34.427	8132	27.182	111630	27.177	14427	26.889	2906	34.423	55097	34.424	23916
		29.290	7035	27.199	13264	27.190	5606	34.447	67481	34.446	30482
		34.432	36407					43.725	44554	43.727	11523
										43.760	3559

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 288		m/z 324		m/z 326		m/z 328		m/z 289	
27.180	84189	26.896	187345	26.899	320073	26.898	206887	26.893	119964
29.298	10700	27.187	12979	27.176	18331	27.177	11183	27.185	17168
29.328	2925	29.299	174792	29.302	109570	29.285	14184	29.302	33687
34.428	39601	34.419	3529	34.449	2843	29.304	25414	34.453	13862
34.459	26467	34.449	3827						

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258		m/z 392	
26.899	320073	26.896	187345	18.317	3463	17.863	155660	17.863	148212	29.303	227269
27.176	18331	27.187	12979	26.897	112611	18.326	28062	18.318	24690	32.437	2999
29.302	109570	29.299	174792	27.182	11491	26.897	113165	26.889	37681	43.713	5456
34.449	2843	34.419	3529	29.296	35503	29.302	13694			43.730	2988
		34.449	3827	29.316	28256	29.328	4748				

Extracted Ion Current Profiles

Pentachlorobiphenyls													
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360		m/z 362		m/z 323	
29.300	523970	29.302	528460	29.303	297549	29.302	103320	27.181	308917	27.180	252304	27.188	68218
32.443	6323	32.438	6267	32.438	3148	34.445	9393	29.296	10686	29.315	7100	29.294	26112
34.417	3552	34.434	11632	34.447	2643			29.846	3974	29.845	3038	34.401	5612
34.449	3962							34.423	55097	34.424	23916	34.434	26093
43.720	4806							34.447	67481	34.446	30482		
43.754	3665							43.725	44554	43.727	11523		
										43.760	3559		

Extracted Ion Current Profiles

Hexachlorobiphenyls											
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 360		m/z 362		m/z 288		m/z 290		m/z 426		m/z 428	
27.181	308917	27.180	252304	27.180	84189	18.318	235636	34.432	184965	34.434	484276
29.296	10686	29.315	7100	29.298	10700	26.891	11351	43.714	90119	43.727	181767
29.846	3974	29.845	3038	29.328	2925	26.917	7258	43.733	113575	43.767	29707
34.423	55097	34.424	23916	34.428	39601	27.182	111630				
34.447	67481	34.446	30482	34.459	26467	29.290	7035				
43.725	44554	43.727	11523			34.432	36407				
		43.760	3559								

Extracted Ion Current Profiles

Hexachlorobiphenyls															
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398		m/z 357	
34.443	575487	34.438	384520	34.446	88434	29.303	227269	29.300	523970	29.302	528460	29.303	297549	29.298	37402
34.896	3143	43.729	69765	43.727	111702	32.437	2999	32.443	6323	32.438	6267	32.438	3148	34.427	9215
43.728	156170					43.713	5456	34.417	3552	34.434	11632	34.447	2643	34.461	9397
						43.730	2988	34.449	3962					43.730	23760
								43.720	4806						
								43.754	3665						

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 394		m/z 396		m/z 322		m/z 324		m/z 326		m/z 462	
29.300	523970	29.302	528460	29.302	103320	26.896	187345	26.899	320073	42.435	4680
32.443	6323	32.438	6267	34.445	9393	27.187	12979	27.176	18331	43.707	4522
34.417	3552	34.434	11632			29.299	174792	29.302	109570	43.738	4925
34.449	3962					34.419	3529	34.449	2843		
43.720	4806					34.449	3827				
43.754	3665										

Extracted Ion Current Profiles

Heptachlorobiphenyls													
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 464		m/z 466		m/z 390		m/z 428		m/z 430		m/z 432		m/z 391	
42.427	5509	42.426	3981	43.737	3452	34.434	484276	34.443	575487	34.438	384520	34.446	22338
43.701	4989	43.714	3613			43.727	181767	34.896	3143	43.729	69765	43.722	46381
43.724	6244					43.767	29707	43.728	156170				
43.760	3054												

Extracted Ion Current Profiles

Octachlorobiphenyls											
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462	
34.443	575487	34.434	484276	34.446	88434	27.186	154315	27.181	308917	42.435	4680
34.896	3143	43.727	181767	43.727	111702	29.295	2859	29.296	10686	43.707	4522
43.728	156170	43.767	29707			29.312	2538	29.846	3974	43.738	4925
						34.435	162168	34.423	55097		
						43.732	98629	34.447	67481		
								43.725	44554		

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102016"		"M03102016"		"M03102016"	
m/z 464		m/z 466		m/z 425	
42.427	5509	42.426	3981	34.447	4204
43.701	4989	43.714	3613	43.701	6817
43.724	6244			43.730	15123
43.760	3054				

Extracted Ion Current Profiles

Nonachlorobiphenyls									
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 464		m/z 466		m/z 390		m/z 392		m/z 394	
42.427	5509	42.426	3981	43.737	3452	29.303	227269	29.300	523970
43.701	4989	43.714	3613			32.437	2999	32.443	6323
43.724	6244					43.713	5456	34.417	3552
43.760	3054					43.730	2988	34.449	3962
								43.720	4806
								43.754	3665

FALSE

Extracted Ion Current Profiles

Decachlorobiphenyl											
"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"		"M03102016"	
m/z 498		m/z 500		m/z 424		m/z 426		m/z 428		m/z 430	
43.732	968934	43.730	818267	43.725	74887	34.432	184965	34.434	484276	34.443	575487
						43.714	90119	43.727	181767	34.896	3143
						43.733	113575	43.767	29707	43.728	156170

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102016"		"M03102016"				"M03102016"		"M03102016"			"M03102016"		"M03102016"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.612	1488	12.611	1197	424	240	35.325	258087	34.455	2982	188	10.074	214658	10.074	30490
33.101	1539	29.292	1108	426	241			35.330	57366	189	14.155	5886	14.157	7406
33.121	1076	34.447	1480	428							16.604	196792	16.602	29061
		35.278	605	430							17.863	27682	17.869	3002
		35.324	5554	498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	34.412	502	34.407	708
512	34.466	1140	34.438	1106
	43.705	23409(M)	34.454	592
	43.731	10075	43.665	1166
			43.725	18010(M)

Quality Control Results
Method Blank

Job Number: 14100477

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 (AR39378B)
Lab Sample ID: SBLK-05

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:	MS03-473-4	PCBs by EPA Method TO-4A/680	10/21/2014 07:12	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	0.00m³	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	MS03-473-4
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-473-4
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-473-4
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-473-4
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-473-4
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-473-4
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-473-4
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-473-4
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-473-4
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-473-4
Total PCB	1336-36-3	ND		1.00	U	MS03-473-4

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	68.9	42.5-134		MS03-473-4
Tetrachloro-meta-xylene	877-09-8	58.9	17.9-137		MS03-473-4

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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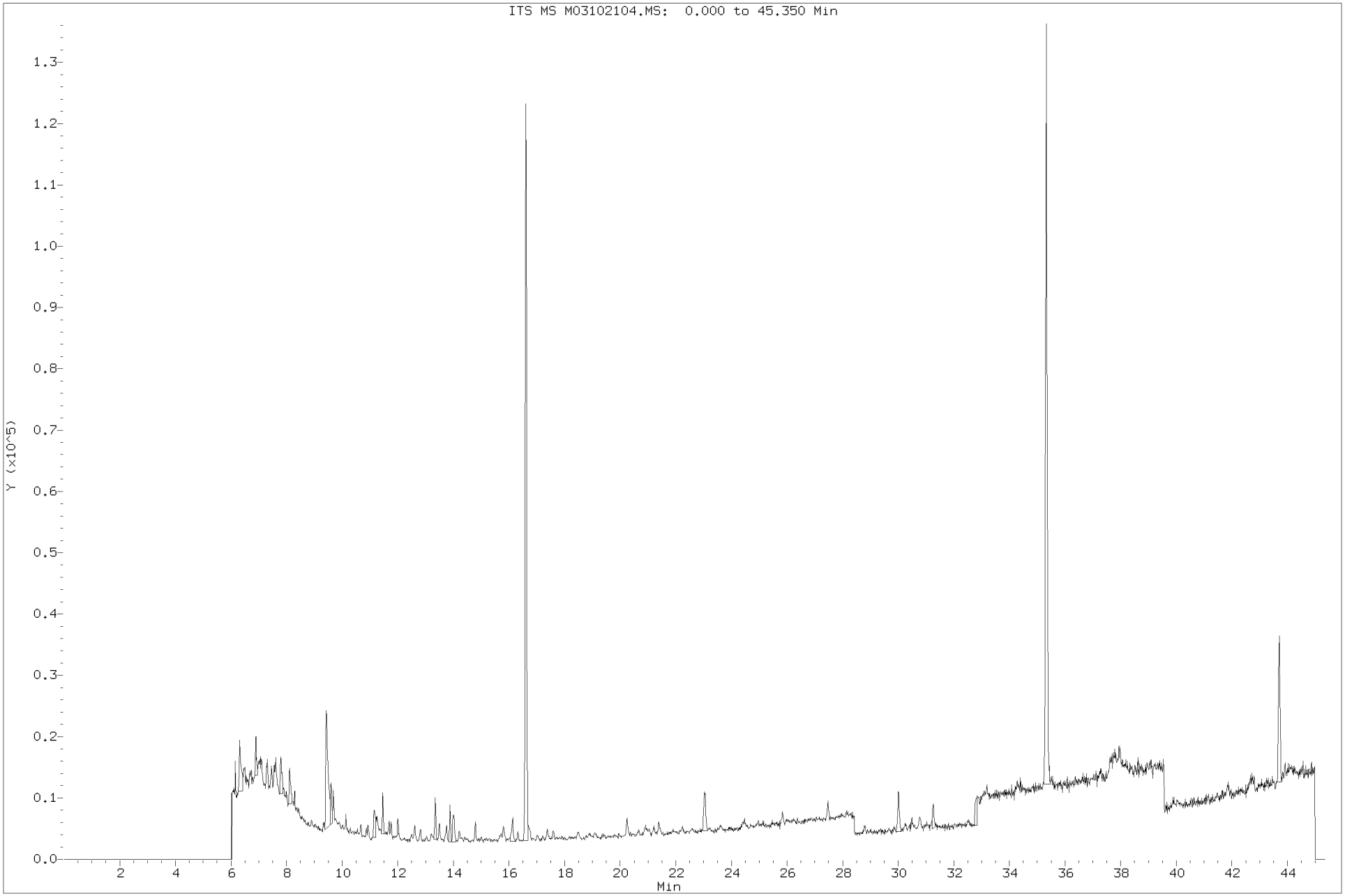
Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102104.d/M03102104.MS
Injection Date: 21-OCT-2014 07:12
Instrument: GCMS03.i
Client Sample ID: AR39378BLANK



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	Method Blank
Matrix:	TO-4A PUF	Lab Sample ID:	AR39378B
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/18/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	1	Time Analyzed:	7:12

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	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	ug	ug	
				Hepta Total:		0.0150	0.0150	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	ug	ug	
				Octa Total:		0.0150	0.0150	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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
				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	Flag
m/z 244		m/z 242		1.1 - 1.5			ug/mL	
12.611	1589	12.611	1082	1.5	0.3809		0.0118	
				TCMX Total:			0.0118	

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	
43.709	16080	43.708	13635	1.2	0.6594		0.0689	
				Deca Total:			0.0689	

TCMX Recovery %	58.9 %
Deca Recovery	68.9 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.326	283265	35.322	60115	4.7	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102104"		"M03102104"		"M03102104"		"M03102104"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.604	208132	10.932	4107				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102104"		"M03102104"		"M03102104"		"M03102104"		"M03102104"		"M03102104"	
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
								16.608	20367	16.604	208132

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102104"		"M03102104"		"M03102104"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.031	2938
				6.099	2759
				6.323	7843
				6.381	2514
				6.442	3745
				6.481	4191
				6.570	2964
				6.615	2744
				6.692	4175
				6.771	5952
				6.897	3218
				6.927	3117
				7.051	3769
				7.093	3719
				7.133	3239
				7.220	2554
				7.317	4068
				7.398	3371
				7.453	3887
				7.560	4356
				7.625	5206
				7.798	8408
				8.110	3169
				8.153	2756
				8.290	2933
				8.572	3082
				9.433	9125
				14.024	5400

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102104"		"M03102104"		"M03102104"		"M03102104"		"M03102104"		"M03102104"	
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
				16.608	20367	16.604	208132				

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102104"		"M03102104"				"M03102104"		"M03102104"			"M03102104"		"M03102104"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.611	1589	12.611	1082	424	240	35.326	283265	35.322	60115	188	16.604	208132	13.881	3669
33.114	2335	35.324	5654	426	241				44916(M)	189			16.133	3063
33.143	574			428									16.604	33453
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	35.291	503	35.320	549
512	35.321	620	43.708	13635
	43.709	16080		

Quality Control Results
Lab Control Sample (LCS)
Job Number: 14100477

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 (AR39378L)
Lab Sample ID: LCS-05

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:	MS03-473-5	PCBs by EPA Method TO-4A/680	10/21/2014 08:01	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	0.00m³	1.00 mL	NA

Analyte Spiked	CAS No.	Added (ug)	LCS (ug)	LCS % Rec.	Q[1]	Limits (%)
Monochlorobiphenyl	27323-18-8	1.00	0.680	68.0		28.7-78.9
Dichlorobiphenyl	25512-42-9	1.00	0.716	71.6		30.8-82.6
Trichlorobiphenyl	25323-68-6	1.00	0.745	74.5		34.4-86.8
Tetrachlorobiphenyl	26914-33-0	2.00	1.53	76.5		34.6-86.9
Pentachlorobiphenyl	25429-29-2	2.00	1.66	83.2		37.8-91.9
Hexachlorobiphenyl	26601-64-9	2.00	1.66	82.8		40.9-94.8
Heptachlorobiphenyl	28655-71-2	3.00	2.46	82.0		41.7-98.0
Octachlorobiphenyl	55722-26-4	3.00	2.48	82.6		43.2-102
Decachlorobiphenyl	2051-24-3	5.00	4.30	86.0		46.4-102

[1]Qualifier 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	98.1	42.5-134		MS03-473-5
Tetrachloro-meta-xylene	877-09-8	61.0	17.9-137		MS03-473-5

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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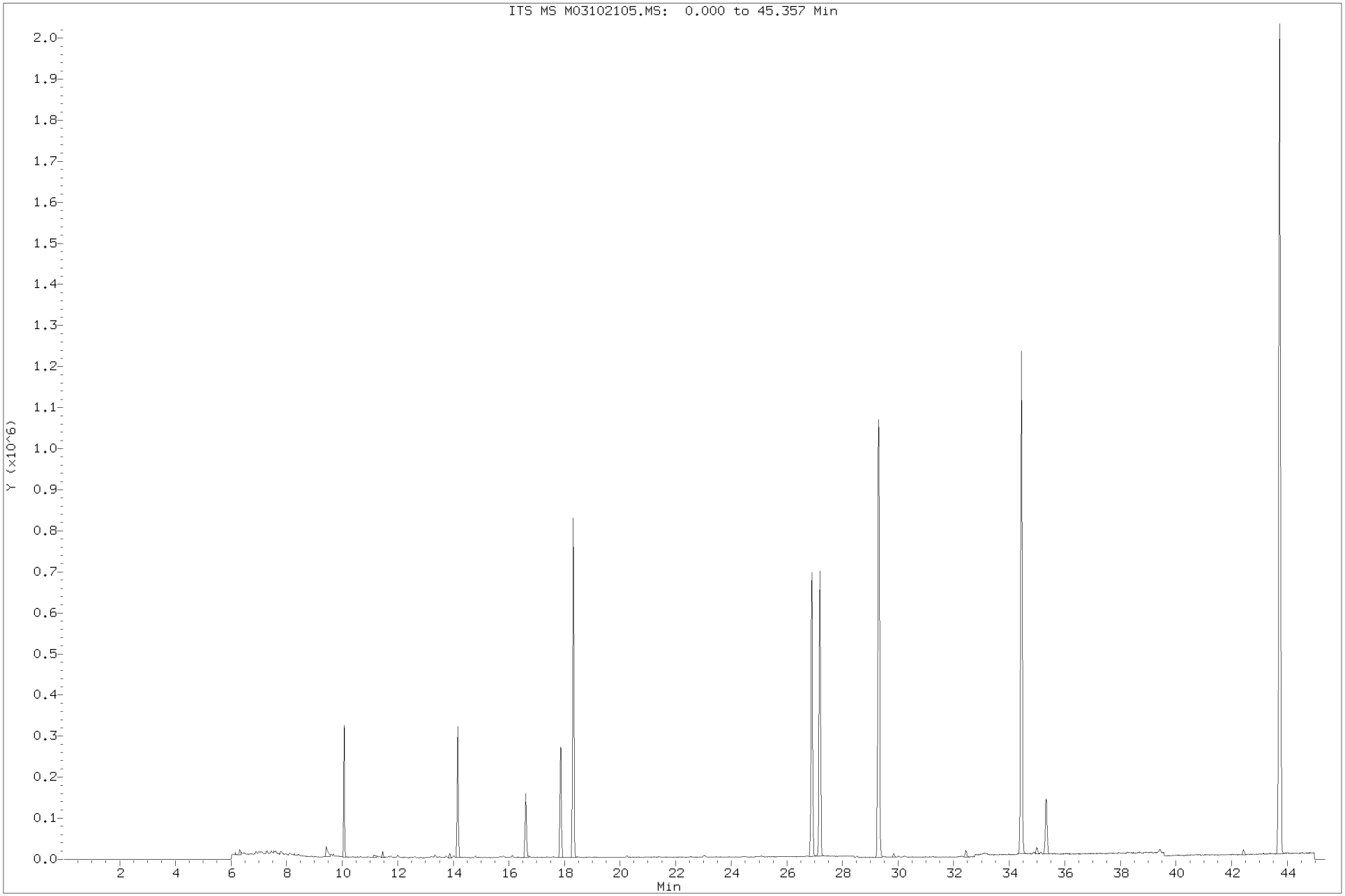
Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102105.d/M03102105.MS
Injection Date: 21-OCT-2014 08:01
Instrument: GCMS03.i
Client Sample ID: AR39378LCS



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	LCS
Matrix:	TO-4A PUF	Lab Sample ID:	AR39378L
Sample volume:	N/A	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/18/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	1	Time Analyzed:	8:01

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

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	Reporting Limit ug	Report Amount ug	Flag
10.074	312192	10.074	106680	2.9	0.9733	0.00500	0.00500	0.680	
				Mono Total:		0.00500	0.00500	0.680	

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	Reporting Limit ug	Report Amount ug	Flag
14.157	294984	14.159	199413	1.5	0.8733	0.00500	0.00500	0.716	
				Di Total:		0.00500	0.00500	0.716	

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	Reporting Limit ug	Report Amount ug	Flag
17.864	222124	17.860	219626	1.0	0.6326	0.00500	0.00500	0.745	
				Tri Total:		0.00500	0.00500	0.745	

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	Reporting Limit ug	Report Amount ug	Flag
18.317	460418	18.316	354972	1.3	0.6382	0.0100	0.0100	1.53	
				Tetra Total:		0.0100	0.0100	1.53	

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	Reporting Limit ug	Report Amount ug	Flag
26.896	456904	26.896	269212	1.7	0.5827	0.0100	0.0100	1.66	
				Penta Total:		0.0100	0.0100	1.66	

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
27.186	440518	27.185	359503	1.2	0.5645	0.0100	0.0100	1.66	
				Hexa Total:		0.0100	0.0100	1.66	

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
29.301	736288	29.301	739769	1.0	0.6350	0.0150	0.0150	2.46	
				Hepta Total:		0.0150	0.0150	2.46	

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
34.439	812031	34.432	702240	1.2	0.6948	0.0150	0.0150	2.48	
				Octa Total:		0.0150	0.0150	2.48	

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
43.731	1337089	43.726	1160867	1.2	0.6594	0.0250	0.0250	4.30	
				Deca Total:		0.0250	0.0250	4.30	

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
12.607	2190	12.606	1654	1.3	0.3809		0.0122		
				TCMX Total:			0.0122		

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	
43.715	30492	43.710	27112	1.1	0.6594		0.0981	
				Deca Total:			0.0981	

TCMX Recovery % 61.0 %

Deca Recovery 98.1 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.325	377175	35.329	76909	4.9	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.074	312192	10.074	106680	10.074	116633	10.074	64907
14.162	10178	10.933	2872	14.159	139795	14.152	21227
16.606	275453	16.596	4324	17.873	4059		
17.862	41960						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
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
13.854	2637	14.159	199413	10.074	116633	10.074	64907	14.155	19257	10.074	312192
14.157	294984	18.320	25438	14.159	139795	14.152	21227	16.610	26977	14.162	10178
17.857	3761			17.873	4059			17.865	122860	16.606	275453
17.870	4901							18.318	14518	17.862	41960
18.319	146223							26.896	24153		
26.904	4088										
27.172	2549										
27.200	3263										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102105"		"M03102105"		"M03102105"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.864	222124	17.860	219626	6.196	3637
18.315	42980	18.325	34903	6.324	8603
26.891	163222	26.900	55377	6.375	4924
27.188	6377			6.458	2807
29.291	11489			6.486	4593
29.313	13258			6.559	2615
				6.694	2571
				6.792	3469
				6.894	4723
				7.015	5117
				7.057	3145
				7.105	8364
				7.224	4194
				7.278	2947
				7.311	6506
				7.461	6900
				7.486	3061
				7.552	3887
				7.608	5919
				7.665	3656
				7.733	3595
				7.794	3824
				7.819	2921
				7.954	5237
				8.117	4912
				8.175	2744
				8.229	2786
				8.291	3335
				8.367	3110
				9.439	7735
				9.494	3855
				9.676	2760
				14.023	6535
				14.151	5144
				17.864	14618
				18.314	42193
				26.897	24502
				27.185	7536

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
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
17.864	222124	17.860	219626	14.155	19257	10.074	312192	26.896	269212	26.896	456904
18.315	42980	18.325	34903	16.610	26977	14.162	10178	27.184	11834	27.180	28290
26.891	163222	26.900	55377	17.865	122860	16.606	275453	27.210	5171	29.304	161554
27.188	6377			18.318	14518	17.862	41960	29.308	239977	32.443	2691
29.291	11489			26.896	24153			32.436	3646	34.437	8180
29.313	13258							34.407	3871		
								34.434	9797		

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
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
26.897	303029	18.296	2744	18.316	354972	18.317	460418	18.317	225537	18.318	250262
27.195	17350	18.318	4583	26.888	29967	25.089	2628	26.875	6836	26.892	20863
29.290	26232	26.893	164792	27.188	158472	26.888	19928	26.905	9835	26.925	6744
29.309	29446	27.163	5975	29.298	10461	26.909	14791	27.184	18156	27.177	27457
		27.193	10286	29.327	3984	27.189	76572			29.301	18613
		29.306	86251	29.843	2591	34.459	3694			34.457	4697
		34.417	4626	34.425	29154						
		34.443	8810	34.454	19434						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 292		m/z 290		m/z 220		m/z 222		m/z 360		m/z 362	
18.317	460418	18.316	354972	9.689	2720	13.854	2637	27.186	440518	27.185	359503
25.089	2628	26.888	29967	17.855	10073	14.157	294984	29.293	14961	29.290	6343
26.888	19928	27.188	158472	18.316	225640	17.857	3761	29.336	2855	29.311	6987
26.909	14791	29.298	10461	26.896	19626	17.870	4901	29.840	5375	29.840	4533
27.189	76572	29.327	3984	27.188	38922	18.319	146223	34.421	64243	34.438	84684
34.459	3694	29.843	2591			26.904	4088	34.445	112489	43.706	7999
		34.425	29154			27.172	2549	43.707	21898	43.741	11570
		34.454	19434			27.200	3263	43.739	25891		
								43.768	7461		

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 288		m/z 324		m/z 326		m/z 328		m/z 289	
27.179	114984	26.896	269212	26.896	456904	26.897	303029	26.899	174794
29.299	17115	27.184	11834	27.180	28290	27.195	17350	27.179	11170
34.432	97380	27.210	5171	29.304	161554	29.290	26232	27.193	10151
		29.308	239977	32.443	2691	29.309	29446	29.288	21622
		32.436	3646	34.437	8180			29.312	21062
		34.407	3871					34.409	5247
		34.434	9797					34.433	9823
								34.466	5520

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258		m/z 392	
26.896	456904	26.896	269212	18.296	2744	17.864	222124	17.860	219626	29.307	314628
27.180	28290	27.184	11834	18.318	4583	18.315	42980	18.325	34903	32.436	4074
29.304	161554	27.210	5171	26.893	164792	26.891	163222	26.900	55377	34.425	6006
32.443	2691	29.308	239977	27.163	5975	27.188	6377			34.459	2854
34.437	8180	32.436	3646	27.193	10286	29.291	11489			43.729	12454
		34.407	3871	29.306	86251	29.313	13258			43.755	5092
		34.434	9797	34.417	4626						
				34.443	8810						

Extracted Ion Current Profiles

Pentachlorobiphenyls													
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360		m/z 362		m/z 323	
29.301	736288	29.301	739769	29.304	402333	29.300	138983	27.186	440518	27.185	359503	27.185	97743
32.432	9586	32.438	8505	32.445	5012	29.360	3590	29.293	14961	29.290	6343	29.312	26110
34.406	6603	34.441	9744	34.410	3476	34.443	10321	29.336	2855	29.311	6987	34.431	40202
34.443	11420	43.704	3392					29.840	5375	29.840	4533	34.466	12277
43.723	15761							34.421	64243	34.438	84684		
								34.445	112489	43.706	7999		
								43.707	21898	43.741	11570		
								43.739	25891				
								43.768	7461				

Extracted Ion Current Profiles

Hexachlorobiphenyls											
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 360		m/z 362		m/z 288		m/z 290		m/z 426		m/z 428	
27.186	440518	27.185	359503	27.179	114984	18.316	354972	34.439	216234	34.432	702240
29.293	14961	29.290	6343	29.299	17115	26.888	29967	34.480	18535	34.871	3337
29.336	2855	29.311	6987	34.432	97380	27.188	158472	43.727	271760	43.723	319374
29.840	5375	29.840	4533			29.298	10461				
34.421	64243	34.438	84684			29.327	3984				
34.445	112489	43.706	7999			29.843	2591				
43.707	21898	43.741	11570			34.425	29154				
43.739	25891					34.454	19434				
43.768	7461										

Extracted Ion Current Profiles

Hexachlorobiphenyls															
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398		m/z 357	
34.439	812031	34.438	522957	34.444	118999	29.307	314628	29.301	736288	29.301	739769	29.304	402333	29.307	47355
34.874	4517	43.715	51494	43.718	175646	32.436	4074	32.432	9586	32.438	8505	32.445	5012	32.441	2624
43.728	220413	43.749	32409			34.425	6006	34.406	6603	34.441	9744	34.410	3476	34.430	18085
						34.459	2854	34.443	11420	43.704	3392			34.454	5422
						43.729	12454	43.723	15761					34.984	2783
						43.755	5092							43.739	28294
														43.769	4082

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 394		m/z 396		m/z 322		m/z 324		m/z 326		m/z 462	
29.301	736288	29.301	739769	29.300	138983	26.896	269212	26.896	456904	39.416	4656
32.432	9586	32.438	8505	29.360	3590	27.184	11834	27.180	28290	42.427	5953
34.406	6603	34.441	9744	34.443	10321	27.210	5171	29.304	161554	43.736	17827
34.443	11420	43.704	3392			29.308	239977	32.443	2691		
43.723	15761					32.436	3646	34.437	8180		
						34.407	3871				
						34.434	9797				

Extracted Ion Current Profiles

Heptachlorobiphenyls													
"M03102105"		"M03102105"		"M03102105"	"M03102105"		"M03102105"		"M03102105"		"M03102105"		
m/z 464		m/z 466		m/z 390	m/z 428		m/z 430		m/z 432		m/z 391		
39.408	4889	39.418	3060		34.432	702240	34.439	812031	34.438	522957	34.437	27272	
42.432	7564	42.436	5797		34.871	3337	34.874	4517	43.715	51494	34.466	9661	
43.717	11815	43.703	4809		43.723	319374	43.728	220413	43.749	32409	43.729	82539	
43.750	5862	43.733	10669										

Extracted Ion Current Profiles

Octachlorobiphenyls											
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462	
34.439	812031	34.432	702240	34.444	118999	27.186	225084	27.186	440518	39.416	4656
34.874	4517	34.871	3337	43.718	175646	29.303	9318	29.293	14961	42.427	5953
43.728	220413	43.723	319374			29.850	3356	29.336	2855	43.736	17827
						34.437	212681	29.840	5375		
						43.734	143207	34.421	64243		
								34.445	112489		
								43.707	21898		
								43.739	25891		
								43.768	7461		

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102105"		"M03102105"		"M03102105"	
m/z 464		m/z 466		m/z 425	
39.408	4889	39.418	3060	34.428	5575
42.432	7564	42.436	5797	43.714	13812
43.717	11815	43.703	4809	43.744	7149
43.750	5862	43.733	10669	43.767	4146

Extracted Ion Current Profiles

Nonachlorobiphenyls								
"M03102105"		"M03102105"		"M03102105"	"M03102105"		"M03102105"	
m/z 464		m/z 466		m/z 390	m/z 392		m/z 394	
39.408	4889	39.418	3060		29.307	314628	29.301	736288
42.432	7564	42.436	5797		32.436	4074	32.432	9586
43.717	11815	43.703	4809		34.425	6006	34.406	6603
43.750	5862	43.733	10669		34.459	2854	34.443	11420
					43.729	12454	43.723	15761
					43.755	5092		

FALSE

Extracted Ion Current Profiles

Decachlorobiphenyl											
"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"		"M03102105"	
m/z 498		m/z 500		m/z 424		m/z 426		m/z 428		m/z 430	
34.439	2956	43.726	1160867	43.719	62114	34.439	216234	34.432	702240	34.439	812031
43.731	1337089			43.742	46107	34.480	18535	34.871	3337	34.874	4517
						43.727	271760	43.723	319374	43.728	220413

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102105"		"M03102105"				"M03102105"		"M03102105"			"M03102105"		"M03102105"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.607	2190	12.606	1654	424	240	35.325	377175	34.431	3146	188	10.074	312192	10.072	46614
33.109	4144	27.173	612	426	241			35.329	76909	189	14.162	10178	12.002	3955
35.220	403	29.288	1312	428							16.606	275453	13.877	5518
35.937	445	29.318	912	430							17.862	41960	14.156	11379
		34.456	1764	498									16.130	4470
		35.284	1126	500									16.609	44311
		35.321	3434										17.861	7282
		35.345	4851											

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	34.424	2761	34.457	725
512	34.469	581	35.323	439
	35.317	1002	43.710	27112
	43.715	30492(M)		
	43.749	6325		

Quality Control Results
Lab Control Sample - Duplicate (LCSD)
Job Number: 14100477

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 (AR39378S)
Lab Sample ID: LCSD-05

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:	MS03-473-6	PCBs by EPA Method TO-4A/680	10/21/2014 08:49	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	0.00m³	1.00 mL	NA

Analyte Spiked	CAS No.	Added (ug)	LCSD (ug)	LCSD % Rec.	Q[1]	Limits (%)	Precision: LCS % Rec.	Precision: RPD	Precision: Q[1]	Precision: Limits (%)
Monochlorobiphenyl	27323-18-8	1.00	0.649	64.9		28.7-78.9	68.0	4.67		40
Dichlorobiphenyl	25512-42-9	1.00	0.691	69.1		30.8-82.6	71.6	3.55		40
Trichlorobiphenyl	25323-68-6	1.00	0.724	72.4		34.4-86.8	74.5	2.86		40
Tetrachlorobiphenyl	26914-33-0	2.00	1.45	72.4		34.6-86.9	76.5	5.51		40
Pentachlorobiphenyl	25429-29-2	2.00	1.58	79.2		37.8-91.9	83.2	4.93		40
Hexachlorobiphenyl	26601-64-9	2.00	1.61	80.4		40.9-94.8	82.8	2.94		40
Heptachlorobiphenyl	28655-71-2	3.00	2.36	78.7		41.7-98.0	82.0	4.11		40
Octachlorobiphenyl	55722-26-4	3.00	2.44	81.4		43.2-102	82.6	1.46		40
Decachlorobiphenyl	2051-24-3	5.00	4.26	85.2		46.4-102	86.0	0.935		40

[1]Qualifier 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	63.0	42.5-134		MS03-473-6
Tetrachloro-meta-xylene	877-09-8	63.4	17.9-137		MS03-473-6

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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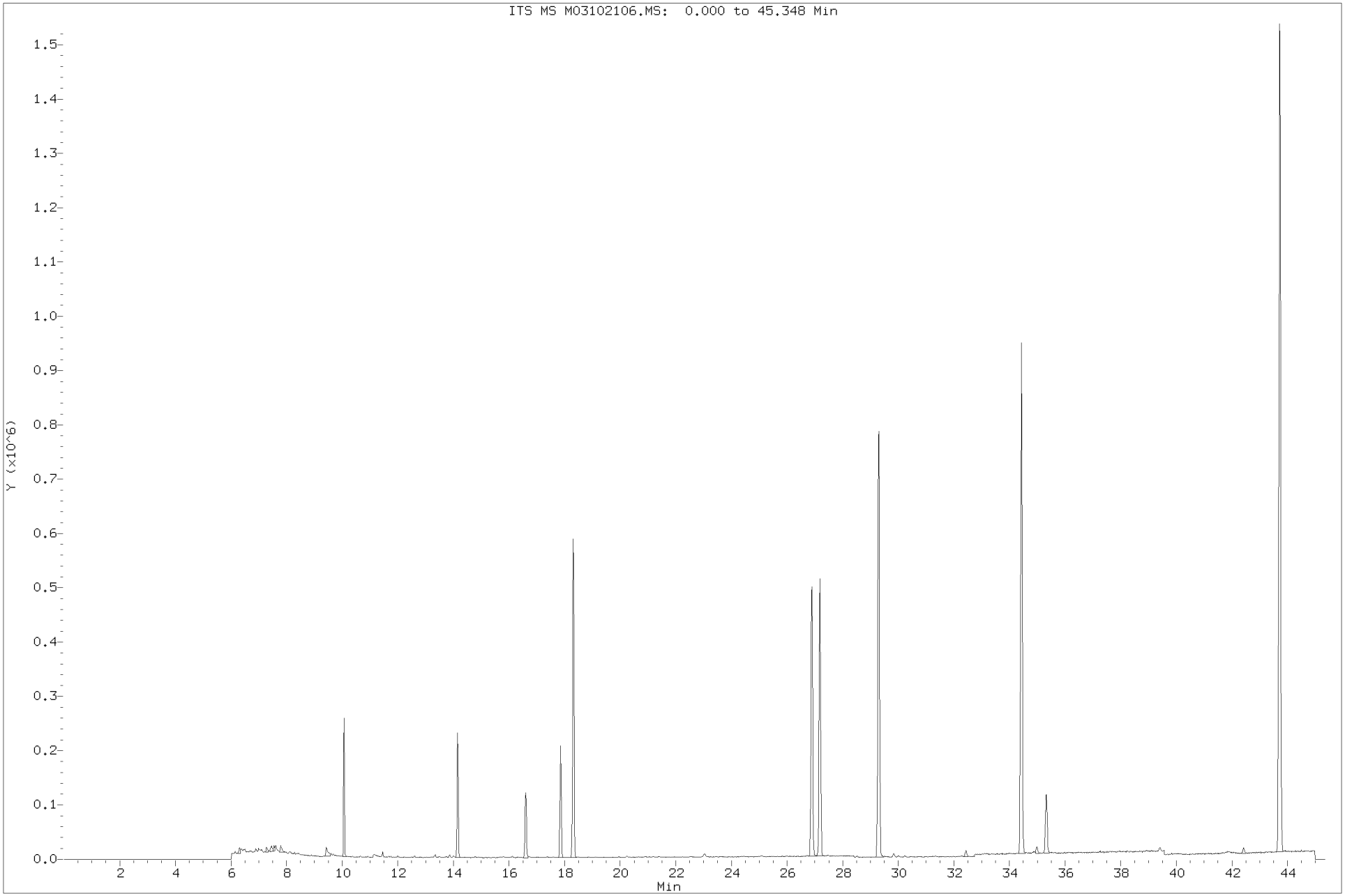
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102114-680.b\M03102106.d/M03102106.MS
Injection Date: 21-OCT-2014 08:49
Instrument: GCMS03.i
Client Sample ID: AR39378S



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100477
ELAP ID No.:	11078	Client ID:	LCSD
Matrix:	TO-4A PUF	Lab Sample ID:	AR39378S
Sample volume:	N/A	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/18/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/21/2014
Dilution Factor:	1	Time Analyzed:	8:49

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

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	Reporting Limit ug	Report Amount ug	Flag
10.067	227242	10.069	77262	2.9	0.9733	0.00500	0.00500	0.649	
				Mono Total:		0.00500	0.00500	0.649	

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	Reporting Limit ug	Report Amount ug	Flag
14.154	216944	14.155	147480	1.5	0.8733	0.00500	0.00500	0.691	
				Di Total:		0.00500	0.00500	0.691	

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	Reporting Limit ug	Report Amount ug	Flag
17.857	164784	17.855	166775	1.0	0.6326	0.00500	0.00500	0.724	
				Tri Total:		0.00500	0.00500	0.724	

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	Reporting Limit ug	Report Amount ug	Flag
18.310	332346	18.314	254168	1.3	0.6382	0.0100	0.0100	1.45	
				Tetra Total:		0.0100	0.0100	1.45	

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	Reporting Limit ug	Report Amount ug	Flag
26.890	332003	26.890	198873	1.7	0.5827	0.0100	0.0100	1.58	
				Penta Total:		0.0100	0.0100	1.58	

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
27.181	326396	27.181	271374	1.2	0.5645	0.0100	0.0100	1.61	
				Hexa Total:		0.0100	0.0100	1.61	

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
29.299	539374	29.295	549467	1.0	0.6350	0.0150	0.0150	2.36	
				Hepta Total:		0.0150	0.0150	2.36	

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
34.432	610520	34.433	506659	1.2	0.6948	0.0150	0.0150	2.44	
				Octa Total:		0.0150	0.0150	2.44	

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
43.722	1009998	43.722	872925	1.2	0.6594	0.0250	0.0250	4.26	
				Deca Total:		0.0250	0.0250	4.26	

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
12.607	1738	12.604	1396	1.2	0.3809		0.0127		
				TCMX Total:			0.0127		

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	
43.709	14929	43.708	14643	1.0	0.6594		0.0630	
				Deca Total:			0.0630	

TCMX Recovery % 63.4 %

Deca Recovery 63.0 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.322	287700	35.328	56807	5.1	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.067	227242	10.069	77262	10.069	83700	10.068	50335
14.149	6656	10.929	2597	14.154	104603	14.154	13830
16.598	211045	16.601	2540				
17.861	31333						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
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
14.154	216944	14.155	147480	10.069	83700	10.068	50335	14.153	13300	10.067	227242
17.865	6080	18.310	19006	14.154	104603	14.154	13830	16.606	19641	14.149	6656
18.315	106523							17.857	90719	16.598	211045
26.895	2896							18.316	11641	17.861	31333
27.172	3618							26.884	9093		
								26.910	6883		

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102106"		"M03102106"		"M03102106"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.857	164784	17.855	166775	6.074	3374
18.308	32467	18.311	26744	6.185	4240
26.895	118636	26.891	41838	6.323	6922
27.189	6132			6.372	4218
29.278	10224			6.455	3312
29.301	14367			6.495	7167
				6.592	3545
				6.707	5314
				6.892	3164
				6.930	3687
				7.003	6312
				7.057	2945
				7.105	5794
				7.195	3536
				7.295	9534
				7.458	10925
				7.550	5329
				7.604	9674
				7.695	3675
				7.794	9008
				7.922	2798
				7.961	3575
				8.036	3490
				8.104	3171
				8.138	3531
				8.226	2889
				8.290	3377
				9.439	10191
				9.674	2773
				14.018	3585
				14.147	3428
				17.853	9954
				18.319	28994
				26.889	20413
				27.168	5504

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
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
17.857	164784	17.855	166775	14.153	13300	10.067	227242	26.890	198873	26.890	332003
18.308	32467	18.311	26744	16.606	19641	14.149	6656	27.172	12528	27.160	6893
26.895	118636	26.891	41838	17.857	90719	16.598	211045	29.300	175059	27.180	12120
27.189	6132			18.316	11641	17.861	31333	32.434	2941	29.296	117586
29.278	10224			26.884	9093			34.437	8679	34.439	5511
29.301	14367			26.910	6883						

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
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
26.892	215378	18.309	3745	18.314	254168	18.310	332346	18.311	161487	18.314	182537
27.182	12336	26.896	118923	26.876	10607	26.895	26428	26.894	12878	26.905	22281
29.294	42421	27.174	12357	26.897	12117	27.182	55807	27.190	13369	27.184	20528
		29.300	60027	27.180	111123	29.311	3422			29.280	6070
		34.422	3903	29.281	4693	34.409	3092			29.313	4245
				29.299	3755	34.440	3532			34.422	3497
				34.390	3743					34.448	4675
				34.423	19056						
				34.446	21587						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 292		m/z 290		m/z 220		m/z 222		m/z 360		m/z 362	
18.310	332346	18.314	254168	17.861	7549	14.154	216944	27.181	326396	27.181	271374
26.895	26428	26.876	10607	18.313	165321	17.865	6080	29.280	4967	29.272	2635
27.182	55807	26.897	12117	26.890	13496	18.315	106523	29.303	7187	29.292	8298
29.311	3422	27.180	111123	27.186	31550	26.895	2896	29.835	4133	29.837	3467
34.409	3092	29.281	4693			27.172	3618	34.433	133708	34.438	62089
34.440	3532	29.299	3755					34.485	6000	43.715	7979
		34.390	3743					43.732	46478	43.740	2729
		34.423	19056								
		34.446	21587								

Extracted Ion Current Profiles

Tetrachlorobiphenyls									
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 288		m/z 324		m/z 326		m/z 328		m/z 289	
27.178	86963	26.890	198873	26.890	332003	26.892	215378	26.895	130833
29.282	8513	27.172	12528	27.160	6893	27.182	12336	27.157	5379
29.315	6205	29.300	175059	27.180	12120	29.294	42421	27.190	10325
34.402	13704	32.434	2941	29.296	117586			29.309	36183
34.435	57174	34.437	8679	34.439	5511			34.412	3903
								34.445	7641

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 326		m/z 324		m/z 254		m/z 256		m/z 258		m/z 392	
26.890	332003	26.890	198873	18.309	3745	17.857	164784	17.855	166775	29.294	228965
27.160	6893	27.172	12528	26.896	118923	18.308	32467	18.311	26744	32.437	2782
27.180	12120	29.300	175059	27.174	12357	26.895	118636	26.891	41838	34.444	7222
29.296	117586	32.434	2941	29.300	60027	27.189	6132			43.739	10054
34.439	5511	34.437	8679	34.422	3903	29.278	10224				
						29.301	14367				

Extracted Ion Current Profiles

Pentachlorobiphenyls													
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360		m/z 362		m/z 323	
29.299	539374	29.295	549467	29.299	303395	29.294	110154	27.181	326396	27.181	271374	27.182	67393
32.434	4002	32.439	6336	32.436	3367	34.435	3300	29.280	4967	29.272	2635	29.287	20963
32.459	2577	34.422	7728	34.429	5268	34.460	2922	29.303	7187	29.292	8298	34.423	23958
34.440	3871	34.457	3087					29.835	4133	29.837	3467	34.447	17679
43.729	11480	43.703	6552					34.433	133708	34.438	62089		
		43.738	3899					34.485	6000	43.715	7979		
								43.732	46478	43.740	2729		

Extracted Ion Current Profiles

Hexachlorobiphenyls											
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 360		m/z 362		m/z 288		m/z 290		m/z 426		m/z 428	
27.181	326396	27.181	271374	27.178	86963	18.314	254168	34.434	206071	34.433	506659
29.280	4967	29.272	2635	29.282	8513	26.876	10607	43.718	214995	34.870	2868
29.303	7187	29.292	8298	29.315	6205	26.897	12117			43.716	244105
29.835	4133	29.837	3467	34.402	13704	27.180	111123				
34.433	133708	34.438	62089	34.435	57174	29.281	4693				
34.485	6000	43.715	7979			29.299	3755				
43.732	46478	43.740	2729			34.390	3743				
						34.423	19056				
						34.446	21587				

Extracted Ion Current Profiles

Hexachlorobiphenyls															
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398		m/z 357	
34.432	610520	34.432	403189	34.434	86947	29.294	228965	29.299	539374	29.295	549467	29.299	303395	29.297	31732
34.877	3711	43.726	73667	43.717	126810	32.437	2782	32.434	4002	32.439	6336	32.436	3367	34.418	16460
43.718	151655					34.444	7222	32.459	2577	34.422	7728	34.429	5268	43.716	17018
						43.739	10054	34.440	3871	34.457	3087			43.765	2650
								43.729	11480	43.703	6552				
										43.738	3899				

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 394		m/z 396		m/z 322		m/z 324		m/z 326		m/z 462	
29.299	539374	29.295	549467	29.294	110154	26.890	198873	26.890	332003	39.395	3319
32.434	4002	32.439	6336	34.435	3300	27.172	12528	27.160	6893	42.418	4596
32.459	2577	34.422	7728	34.460	2922	29.300	175059	27.180	12120	43.713	4979
34.440	3871	34.457	3087			32.434	2941	29.296	117586	43.744	2578
43.729	11480	43.703	6552			34.437	8679	34.439	5511		
		43.738	3899								

Extracted Ion Current Profiles

Heptachlorobiphenyls													
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 464		m/z 466		m/z 390		m/z 428		m/z 430		m/z 432		m/z 391	
39.412	4974	43.700	3799	43.718	2940	34.433	506659	34.432	610520	34.432	403189	34.396	5434
42.425	6264	43.728	2864	43.747	5246	34.870	2868	34.877	3711	43.726	73667	34.434	21044
43.710	5619					43.716	244105	43.718	151655			43.688	15547
43.750	4350											43.720	37810

Extracted Ion Current Profiles

Octachlorobiphenyls											
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462	
34.432	610520	34.433	506659	34.434	86947	27.171	163511	27.181	326396	39.395	3319
34.877	3711	34.870	2868	43.717	126810	29.292	8317	29.280	4967	42.418	4596
43.718	151655	43.716	244105			34.432	160998	29.303	7187	43.713	4979
						43.678	11760	29.835	4133	43.744	2578
						43.707	24450	34.433	133708		
						43.725	27886	34.485	6000		
						43.754	21229	43.732	46478		

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102106"		"M03102106"		"M03102106"	
m/z 464		m/z 466		m/z 425	
39.412	4974	43.700	3799	43.696	5573
42.425	6264	43.728	2864	43.716	8013
43.710	5619			43.748	7972
43.750	4350				

Extracted Ion Current Profiles

Nonachlorobiphenyls									
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 464		m/z 466		m/z 390		m/z 392		m/z 394	
39.412	4974	43.700	3799	43.718	2940	29.294	228965	29.299	539374
42.425	6264	43.728	2864	43.747	5246	32.437	2782	32.434	4002
43.710	5619					34.444	7222	32.459	2577
43.750	4350					43.739	10054	34.440	3871
								43.729	11480

FALSE

Extracted Ion Current Profiles

Decachlorobiphenyl											
"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"		"M03102106"	
m/z 498		m/z 500		m/z 424		m/z 426		m/z 428		m/z 430	
43.722	1009998	43.722	872925	43.694	24021	34.434	206071	34.433	506659	34.432	610520
				43.718	57227	43.718	214995	34.870	2868	34.877	3711
								43.716	244105	43.718	151655

Extracted Ion Current Profiles

TCMX				TCMX
"M03102106"		"M03102106"		
m/z 244		m/z 242		
12.607	1738	12.604	1396	424
29.290	615	29.308	1359	426
33.109	3327	35.319	5999	428
				430
				498
				500

chrysene - d_{12}	Chrysene-d12			
	"M03102106"		"M03102106"	
	m/z 240		m/z 241	
240	35.322	287700	35.328	56807
241				

phenanthrene - d_{10}	Phenanthrene-d10			
	"M03102106"		"M03102106"	
	m/z 188		m/z 189	
188	10.067	227242	10.068	32087
189	14.149	6656	13.877	2935
	16.598	211045	14.152	7428
	17.861	31333	16.598	35022
			17.869	4528

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	34.428	2426	34.429	1389
512	35.310	553	34.464	455
	43.681	6205	35.315	785
	43.709	14929	43.680	4378
			43.708	14643

Date Issued: November 07, 2014

Pace Analytical e-Report

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

Project ID: VERIFICATION PUF
Sampling Date(s): October 16, 2014
Lab Report ID: 14100567_568
Client Service Contact: Peggy Siegfried (518) 346-4592 ext. 3838

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.

Dan Pfalzer
Laboratory Director

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

Pace Analytical Services, Inc.| 2190 Technology Drive | Schenectady, NY 12308
Phone: 518.346.4592 | internet: www.pacelabs.com

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Case Narrative

November 07, 2014

CASE NARRATIVE

This data package (SDG ID: 14100567 and 14100568) consists of 1 filter sample and 1 polyurethane foam (TO-10A) sample and 1 polyurethane foam sample generated by Pace Analytical Services, Inc. on 10/16/2014 for PCB analysis.

This sample delivery group consists of the following samples:

Lab Sample ID	Client ID	Collection Date
AR39883	VER PUF LOT # 55120	10/16/2014
AR39884	VER PUF LOT # 092514-1	10/16/2014
AR39885	VER FILTER LOT # 092514-4	10/16/2014

Sample Delivery and Receipt Conditions

(1.) Not applicable, samples generated by the laboratory.

PCB Homolog Analysis (TO-4A)

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-4A. The following technical and administrative items were noted for the analysis:

(1.) All quality assurance parameters were met for this analysis, unless otherwise noted.

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.) The percent recovery for decachloro[13c12]biphenyl surrogate was below quality acceptance limits for the method blank sample (LAB ID: AR39883B. The alternate surrogate was within limits. Please see associated form 2 for details.

Respectfully submitted,

Chelsea L. Farmer
Project Manager

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Qualifier Definitions

Organic Laboratory Qualifiers

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

D - Surrogate recovery not evaluated against control limits due to sample dilution.

E - Denotes analyte concentration exceeded calibration range of instrument. Sample could not be re-analyzed 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).

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 %.

U - Denotes analyte not detected at concentration greater than the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

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

* - Value not within control limits.

Inorganic Laboratory Qualifiers

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

E - Denotes analyte concentration exceeded calibration range of instrument. Sample could not be re-analyzed 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).

U - Denotes analyte not detected at concentration greater than the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

* - Value not within control limits.

Sample Chain Of Custody

<14100567P1>

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

141005671

Pace Analytical Services, Inc.
2190 Technology Drive, Schenectady, NY 12308
Telephone (518) 346-4592 Fax (518) 381-6055
www.pacelabs.com

LRF # 14100567
(LAB USE ONLY)

DISPOSAL REQUIREMENTS: (To be filled in by Client)

- ○ RETURN TO CLIENT
- ● DISPOSAL BY RECEIVING LAB
- ○ ARCHIVAL BY RECEIVING LAB

Additional charges incurred for disposal (if hazardous) or archival. Call for details.

CLIENT (REPORTS TO BE SENT TO): PACE

PROJECT MANAGER: Peggy Siegfried

SAMPLED BY: (Please Print)

SAMPLING FIRM:

PROJECT#/PROJECT NAME: 14100567

LOCATION (CITY/STATE) ADDRESS: NY

REQUIRED TURN AROUND TIME: ASAP

NAME OF COURIER (IF USED):

ELECTRONIC RESULTS

FAXED RESULTS — FAX #:

ENTER ANALYSIS AND METHOD NUMBER REQUESTED

SAMPLE ID	DATE	TIME	MATRIX	GRAB/ COMP	LAB SAMPLE ID (LAB USE ONLY)	NUMBER OF CONTAINERS	PCBs 680							REMARKS:
PRESERVATIVE CODE:														
BOTTLE TYPE:														
BOTTLE SIZE:														
ER PUF LOT # 55120	10/16/14		PF10	GRAB	AR39883	1	X							

PRESERVATIVE KEY
0 - ICE
1 - HCL
2 - HNO3
3 - H2SO4
4 - NaOH
5 - Zn. Acetate
6 - MeOH
7 - NaHSO4
8 - Other (Na2SO3)

IBIENT OR CHILLED: TEMP: COC TAPE: Y N PROPERLY PRESERVED: Y N

CEIVED BROKEN OR LEAKING: Y N COC DISCREPANCIES: Y N RECVD W/I HOLDING TIMES: Y N

OTHER NOTES: Data Package [LEVEL-4] EDD: None

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
NATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
NTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME
MPANY	COMPANY	COMPANY	COMPANY	COMPANY	COMPANY
E/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME

S:\LOGIN\MDLCOCS

<14100568P1>

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

141005681

Pace Analytical Services, Inc.
2190 Technology Drive, Schenectady, NY 12308
Telephone (518) 346-4592 Fax (518) 381-6055
www.pacelabs.com

LRF # 14100568
(LAB USE ONLY)

DISPOSAL REQUIREMENTS: (To be filled in by Client)

- ○ RETURN TO CLIENT
- ● DISPOSAL BY RECEIVING LAB
- ○ ARCHIVAL BY RECEIVING LAB

Additional charges incurred for disposal (if hazardous) or archival. Call for details.

CLIENT (REPORTS TO BE SENT TO): PACE	PROJECT#/PROJECT NAME: 14100568
PROJECT MANAGER: Peggy Siegfried	LOCATION (CITY/STATE) ADDRESS: NY
SAMPLED BY: (Please Print)	REQUIRED TURN AROUND TIME: ASAP
SAMPLING FIRM:	NAME OF COURIER (IF USED):

ENTER ANALYSIS AND METHOD NUMBER REQUESTED

PRESERVATIVE KEY: 0 - ICE; 1 - HCL; 2 - HNO3; 3 - H2SO4; 4 - NaOH; 5 - Zn. Acetate; 6 - MeOH; 7 - NaHSO4; 8 - Other (Na2SO3)

ELECTRONIC RESULTS
FAXED RESULTS — FAX #:

SAMPLE ID	DATE	TIME	MATRIX	GRAB/ COMP	LAB SAMPLE ID (LAB USE ONLY)	NUMBER OF CONTAINERS	PCBs 680							REMARKS:
PRESERVATIVE CODE:														
BOTTLE TYPE:														
BOTTLE SIZE:														
VER PUF LOT # 092514-1	10/16/14		PF4	GRAB	AR39884	1	X							
VER FILTER LOT # 092514-4	10/16/14		F	GRAB	AR39885	1	X							

AMBIENT OR CHILLED: TEMP: COC TAPE: Y N PROPERLY PRESERVED: Y N OTHER NOTES: Data Package [LEVEL-4] EDD: None

RECEIVED BROKEN OR LEAKING: Y N COC DISCREPANCIES: Y N RECVD W/I HOLDING TIMES: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME
COMPANY	COMPANY	COMPANY	COMPANY	COMPANY	COMPANY
DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME

S:\LOGIN\MDLCOCS

Internal Sample Tracking Record

Signal/Noise Report

Date : 07-Oct-2014 15:35
Data File : ITS MS M03100709.MS, Ion 241.00
Inj. Date : 07-OCT-2014 13:25

RMS Noise : 9.67359
RMS Noise time window: 33.130 to 35.130 min.
Number of peaks: 1

Time	Start Time	End Time	Area	Area%	Height	Height%	Peak Type	S/N
35.326	35.202	35.448	60002	100.00	14669	100.00	**	1516.4

Signal/Noise Report

Date : 07-Oct-2014 15:35
Data File : ITS MS M03100709.MS, Ion 499.00
Inj. Date : 07-OCT-2014 13:25

RMS Noise : 8.43941
RMS Noise time window: 41.500 to 43.500 min.
Number of peaks: 1

Time	Start Time	End Time	Area	Area%	Height	Height%	Peak Type	S/N
43.712	43.648	43.811	1231	100.00	291	100.00	**	34.5

EXTRACTION LOG

Pace Analytical®

Prep Date: 10/16/14 **Batch ID: 29032** **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	289068	SBLK-03	AR39883B	Solvent		E 680 A	SOX-PF10	N/A	1	17:50	09:50	NA	NA	1	10/17	NA
2	289064	14100567-01	AR39883	PF10		E 680 A	SOX-PF10	N/A	1	17:50	09:50	NA	NA	1	10/17	Lot: 55120(14100567)

Solvent, Surrogate, Spike, and Acid Information

Item	Lot Number	Amount (uL)	Conc (ug/mL)	B	L	LD	S	D	M	K
Sulfuric Acid CURRENT	**0000054026**	**NA**		p	..	..	p	..	..	..
Ethyl Ether (fisher) CURRENT	**134083**	**NA**		p	..	..	p	..	..	..
TCMX Surrogate STD	**070314P85B BXI**	**100**	**0.20**	p	..	..	p	..	..	..
Mercury CURRENT	**082414**	**NA**		p	..	..	p	..	..	..
Hexane (Dewar)	**DL307**	**NA**		p	..	..	p	..	..	..
DCBP-C13	**090214P93C BXI**	**100**	**1.0**	p	..	..	p	..	..	..
10% Florisil	**110214MLB3P85A**	**NA**		p	..	..	p	..	..	..

Analyst Review: _____
Kudakwashe Chinhoyi

Peer Review: _____
Diyana Azhari

Print Date: 11/7/2014
Lims Version : 5.0.8.7

EXTRACTION LOG

Pace Analytical®

Prep Date: 10/16/14 **Batch ID: 29033** **Method: EPA TO-4A**

	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	289067	SBLK-02	AR39884B	Solvent		E 680 A	SOX-PF4	N/A	1	17:50	09:50	NA	NA	1	10/17	NA
2	289065	14100568-01	AR39884	PF4		E 680 A	SOX-PF4	N/A	1	17:50	09:50	NA	NA	1	10/17	Lot: 092514-1(14100568)
3	289066	14100568-02	AR39885	Filter		E 680 A	SOX-PF4	N/A	1	17:50	09:50	NA	NA	1	10/17	Lot: 092514-4(14100568)

Solvent, Surrogate, Spike, and Acid Information

Item	Lot Number	Amount (uL)	Conc (ug/mL)	B	L	LD	S	D	M	K
Sulfuric Acid CURRENT	0000054026	NA		b	¨	¨	b	¨	¨	¨
Ethyl Ether (fisher) CURRENT	134083	NA		b	¨	¨	b	¨	¨	¨
TCMX Surrogate STD	070314P85B BXI	100	0.20	b	¨	¨	b	¨	¨	¨
Mercury CURRENT	082414	NA		b	¨	¨	b	¨	¨	¨
Hexane (Dewar)	DL307	NA		b	¨	¨	b	¨	¨	¨
DCBP-C13	090214P93C BXI	100	1.0	b	¨	¨	b	¨	¨	¨
10% Florisil	110214MLB3P85A	NA		b	¨	¨	b	¨	¨	¨

Analyst Review: _____
Kudakwashe Chinhoyi

Peer Review: _____
Diyana Azhari

Print Date: 11/7/2014
Lims Version : 5.0.8.7

PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: EPA680 - 100714.b

	Method #	PACE Sample ID	Saturn File ID	Date Analyzed	DIL	COMMENTS
1	dftpp	DFTPP7	M03100701	10-7-14		
2	EPA 680	WDM3-1007A	02			
3		iCAL-7	03			
4		iCAL-6	04			
5		iCAL-5	05			
6		iCAL-4	06			
7		iCAL-3	07			
8		iCAL-2	08			
9		iCAL-1	09			
10		ICV3-1007A	10			
11						
12						
13						
14						
15						
16						
17						
18						10-7-14
19						
20						

CAL STD:	031114P68B B	CCC STD:	100614P101A B	WDM STD:	100614P101B B
Tune STD:	053014P80A B	Internal STD:	030714P66C B		

STANDARD CODES REFER TO STANDARD PREP BOOK

BOOK: 22
PAGE: 64

PACE ANALYTICAL, INC. GCMS 03 INJECTION LOG

TARGET QUANT. FILE: 102014-680.b

	Method #	PACE Sample ID	Saturn File ID	Date Analyzed	DIL	COMMENTS
1	dftpp	DFTPP-1	M03102001	10-20-14		
2	b	DFTPP-2	02			
3	EPA 680	WDM3-1020A	03			
4		CCV3-1020A	04			
5		AR39883B	05			
6		AR39883	06			
7		AR39884B	07			
8		AR39884	08			
9		AR39885	09			
10		CCV3-1020B	10			
11						
12						
13						
14						
15						
16						
17						AS 10-20-14
18						
19						
20						

CAL STD:	031114P68B BD	CCC STD:	~~0903149930 BD~~
Tune STD:	053014P80A BD	Internal STD:	030714P66C BD
			WDM STD: 100614P101B BD

CCV STD: 100614P101A BD

STANDARD CODES REFER TO STANDARD PREP BOOK

BOOK: 22
PAGE: 71

Surrogate Recovery Summary

2D-1
SURROGATE RECOVERY

Laboratory Name: Pace Analytical Services, Inc. SDG: 14100567_568

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-03	AR39883B	MS03-471-5	61.6	69.1 *			1
14100567-01	AR39883	MS03-471-6	61.8	70.2			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)

Form II-CLP-680(PACE)

Print Date: 11/7/2014
Lims Version : 5.0.8.7

2D-1
SURROGATE RECOVERY

Laboratory Name: Pace Analytical Services, Inc. SDG: 14100567_568

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-02	AR39884B	MS03-471-7	66.3	75.0			0
14100568-01	AR39884	MS03-471-8	58.2	71.5			0
14100568-02	AR39885	MS03-471-9	60.2	71.3			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	(17.9-137)
SURR2 = DECACHLORO[13C12]BIPHENYL	(42.5-134)

Form II-CLP-680(PACE)

Print Date: 11/7/2014
Lims Version : 5.0.8.7

Method Blank Summary

FORM 4
EPA 680 METHOD BLANK SUMMARY

Laboratory Name:	Pace Analytical Services, Inc.	SDG No:	14100567_568
ELAP ID No:	11078	Blank Sample ID:	SBLK-03
Matrix:	Solvent	Method Blank ID:	AR39883B
Instrument ID:	MS03	Lab File ID:	MS03-471-5
Extraction Type:	TO-10A	Date Extracted:	10/16/2014
GC Column (1):	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm	Date Analyzed:	10/20/2014
		Time Analyzed:	11:32:00

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE / TIME ANALYZED
VER PUF LOT # 55120	AR39883	MS03-471-6	10/20/2014 12:21:00

FORM 4
EPA 680 METHOD BLANK SUMMARY

Laboratory Name:	Pace Analytical Services, Inc.	SDG No:	14100567_568
ELAP ID No:	11078	Blank Sample ID:	SBLK-02
Matrix:	Solvent	Method Blank ID:	AR39884B
Instrument ID:	MS03	Lab File ID:	MS03-471-7
Extraction Type:	TO-4A	Date Extracted:	10/16/2014
GC Column (1):	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm	Date Analyzed:	10/20/2014
		Time Analyzed:	13:10:00

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE / TIME ANALYZED
VER PUF LOT # 092514-1	AR39884	MS03-471-8	10/20/2014 13:58:00
VER FILTER LOT # 092514-4	AR39885	MS03-471-9	10/20/2014 14:47:00

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.: EPA680-100714.B

Lab File ID: M03100701 DFTPP Injection Date: 10/07/14

Instrument ID: GCMS03 DFTPP Injection Time: 0714

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	49.3
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	6.5
275	10.0 - 30.0% of mass 198	11.2
365	Greater than 1.0% of mass 198	4.35
441	Present, but less than mass 443	5.1
442	40.0 - 110.0% of mass 198	72.8
443	17.0 - 23.0% of mass 442	14.1 (19.4)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	WDM3-1007A	WDM3-1007A	M03100702	10/07/14	0743
02	ICAL-7	ICAL-7	M03100703	10/07/14	0831
03	ICAL-6	ICAL-6	M03100704	10/07/14	0920
04	ICAL-5	ICAL-5	M03100705	10/07/14	1009
05	ICAL-4	ICAL-4	M03100706	10/07/14	1058
06	ICAL-3	ICAL-3	M03100707	10/07/14	1147
07	ICAL-2	ICAL-2	M03100708	10/07/14	1236
08	ICAL-1	ICAL-1	M03100709	10/07/14	1325
09	ICV3-1007A	ICV3-1007A	M03100710	10/07/14	1442
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22					

page 1 of 1

FORM V SV

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100701.d Page 1

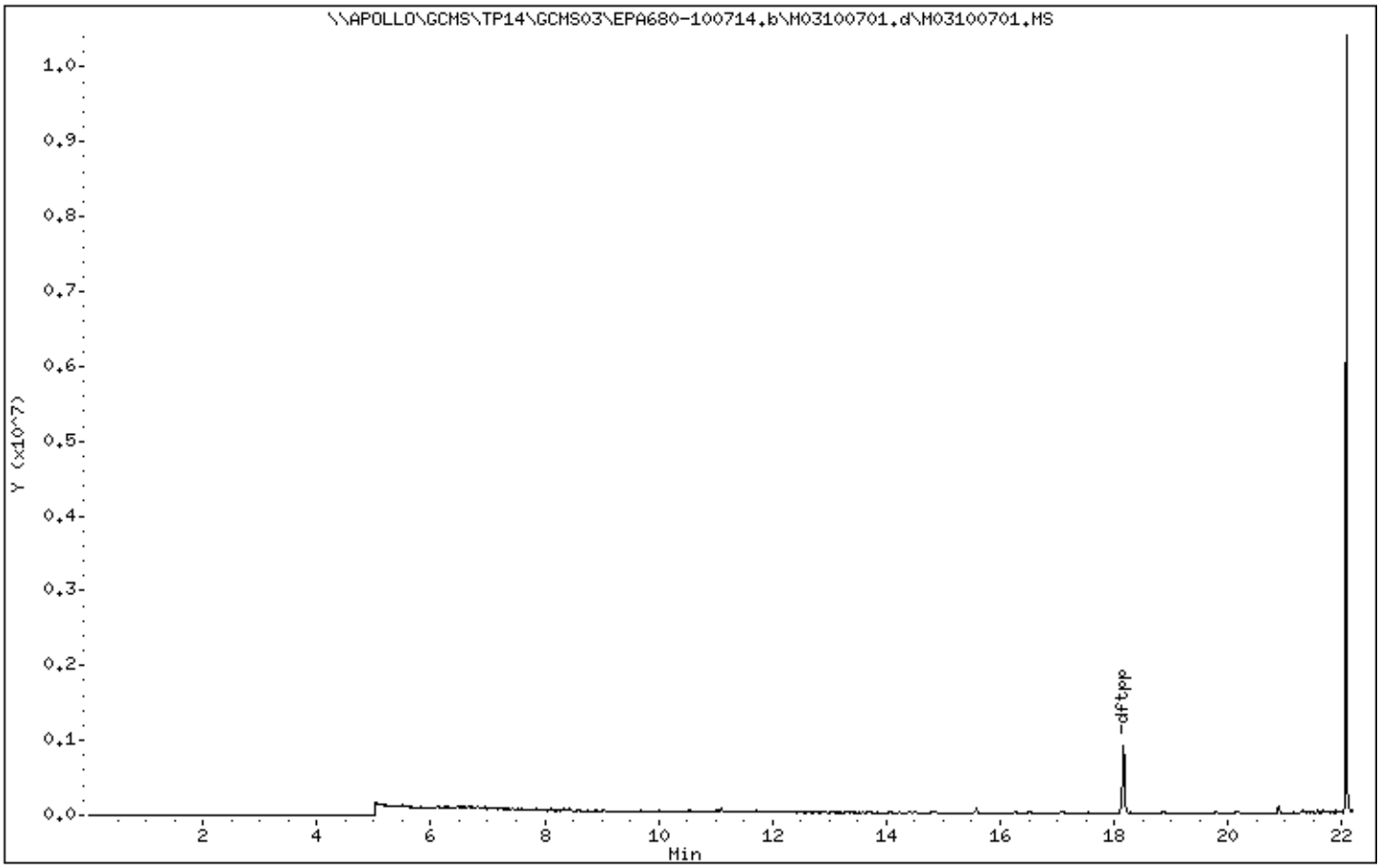
Date : 07-OCT-2014 07:14

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25



Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100701.d

Date : 07-OCT-2014 07:14

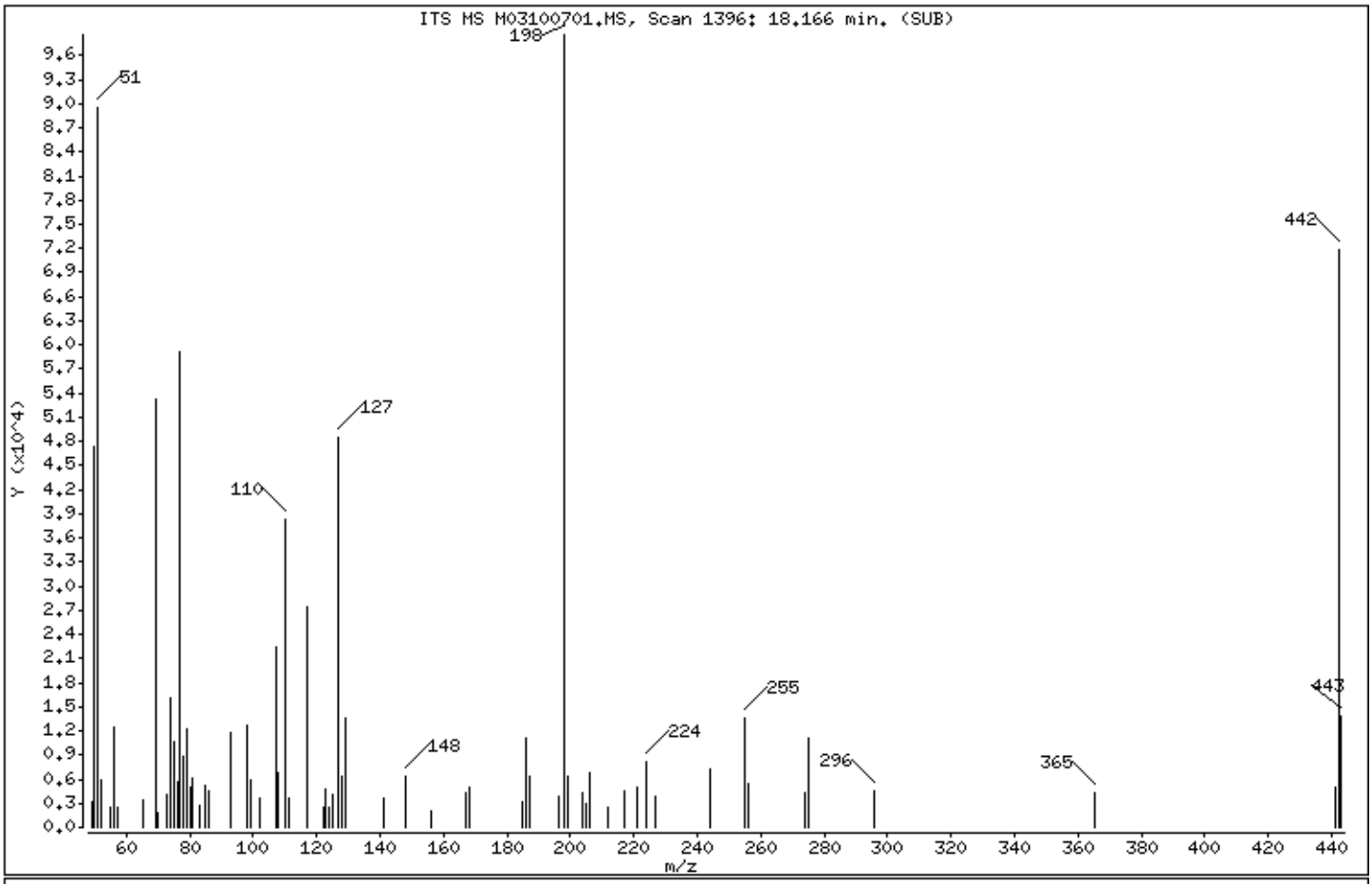
Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

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	49.28
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.52
275	10.00 - 30.00% of mass 198	11.23
365	Greater than 1.00% of mass 198	4.35
441	Present, but less than mass 443	5.07
442	40.00 - 110.00% of mass 198	72.83
443	17.00 - 23.00% of mass 442	14.13 (19.40)

Date : 07-OCT-2014 07:14

Client ID: 20ng DFTPP-1 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-1

Operator: RMS

Column phase: DBXLB Column diameter: 0.25

Data File: M03100701.d
Spectrum: ITS MS M03100701.MS, Scan 1396: 18.166 min. (SUB)
Location of Maximum: 198.00
Number of points: 67

m/z	Y	m/z	Y	m/z	Y	m/z	Y
49.00	3112	80.00	5000	125.00	4177	206.00	6785
50.00	47456	81.00	6140	127.00	48568	212.00	2456
51.00	89584	83.00	2715	128.00	6428	217.00	4642
52.00	5988	85.00	5258	129.00	13514	221.00	5000
55.00	2466	86.00	4642	141.00	3571	224.00	8214
56.00	12402	93.00	11785	148.00	6428	227.00	3928
57.00	2554	98.00	12710	156.00	2142	244.00	7142
65.00	3399	99.00	5918	167.00	4285	255.00	13571
69.00	53256	102.00	3571	168.00	5000	256.00	5357
70.00	1847	107.00	22384	185.00	3214	274.00	4285
73.00	4023	108.00	6734	186.00	11071	275.00	11071
74.00	16071	110.00	38384	187.00	6428	296.00	4642
75.00	10714	111.00	3595	196.00	3890	365.00	4285
76.00	5631	117.00	27496	198.00	98568	441.00	5000
77.00	59136	122.00	2424	199.00	6428	442.00	71784
78.00	8864	123.00	4821	204.00	4285	443.00	13928
79.00	12270	124.00	2398	205.00	2857		

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.: 14100567NEA

Lab File ID: M03102002 DFTPP Injection Date: 10/20/14

Instrument ID: GCMS03 DFTPP Injection Time: 0850

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	53.7
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	8.7
275	10.0 - 30.0% of mass 198	21.0
365	Greater than 1.0% of mass 198	4.79
441	Present, but less than mass 443	9.2
442	40.0 - 110.0% of mass 198	45.4
443	17.0 - 23.0% of mass 442	10.0 (22.1)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	WDM3-1020A	WDM3-1020A	M03102003	10/20/14	0930
02	CCV3-1020A	CCV3-1020A	M03102004	10/20/14	1031
03	AR39883BLANK	AR39883B	M03102005	10/20/14	1132
04	VERPUFLOT#55	AR39883	M03102006	10/20/14	1221
05	CCV3-1020B	CCV3-1020B	M03102010	10/20/14	1536
06					
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FORM V SV

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.: 14100568NEA

Lab File ID: M03102002 DFTPP Injection Date: 10/20/14

Instrument ID: GCMS03 DFTPP Injection Time: 0850

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
127	40.0 - 60.0% of mass 198	53.7
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	8.7
275	10.0 - 30.0% of mass 198	21.0
365	Greater than 1.0% of mass 198	4.79
441	Present, but less than mass 443	9.2
442	40.0 - 110.0% of mass 198	45.4
443	17.0 - 23.0% of mass 442	10.0 (22.1)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	WDM3-1020A	WDM3-1020A	M03102003	10/20/14	0930
02	CCV3-1020A	CCV3-1020A	M03102004	10/20/14	1031
03	AR39884BLANK	AR39884B	M03102007	10/20/14	1310
04	VERPUFLOT#09	AR39884	M03102008	10/20/14	1358
05	VERFILTERLOT	AR39885	M03102009	10/20/14	1447
06	CCV3-1020B	CCV3-1020B	M03102010	10/20/14	1536
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page 1 of 1

FORM V SV

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102002.d Page 1

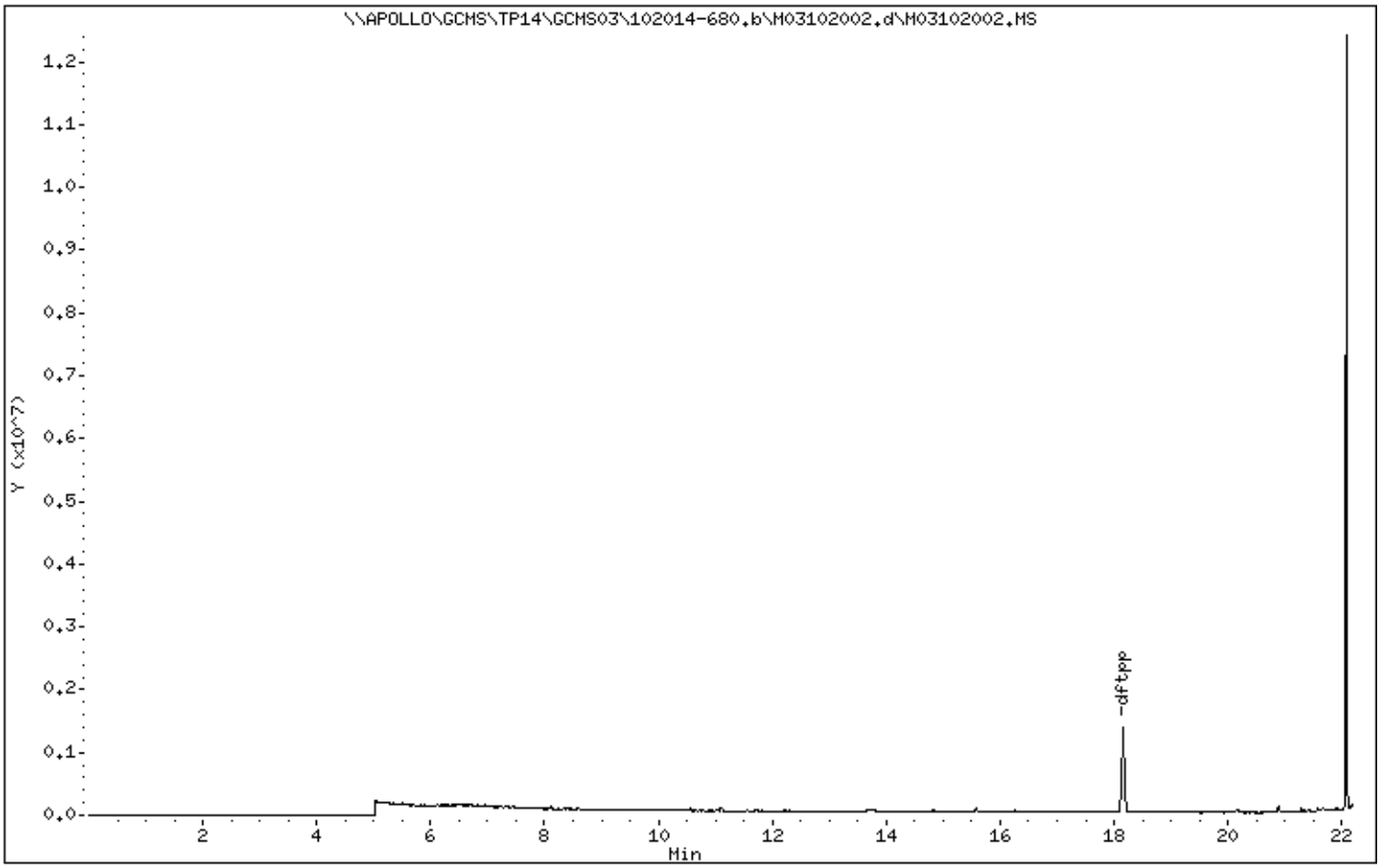
Date : 20-OCT-2014 08:50

Client ID: 20ng DFTPP-2 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-2

Operator: RMS

Column phase: DBXLB Column diameter: 0.25



Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102002.d

Date : 20-OCT-2014 08:50

Client ID: 20ng DFTPP-2

Instrument: GCMS03.i

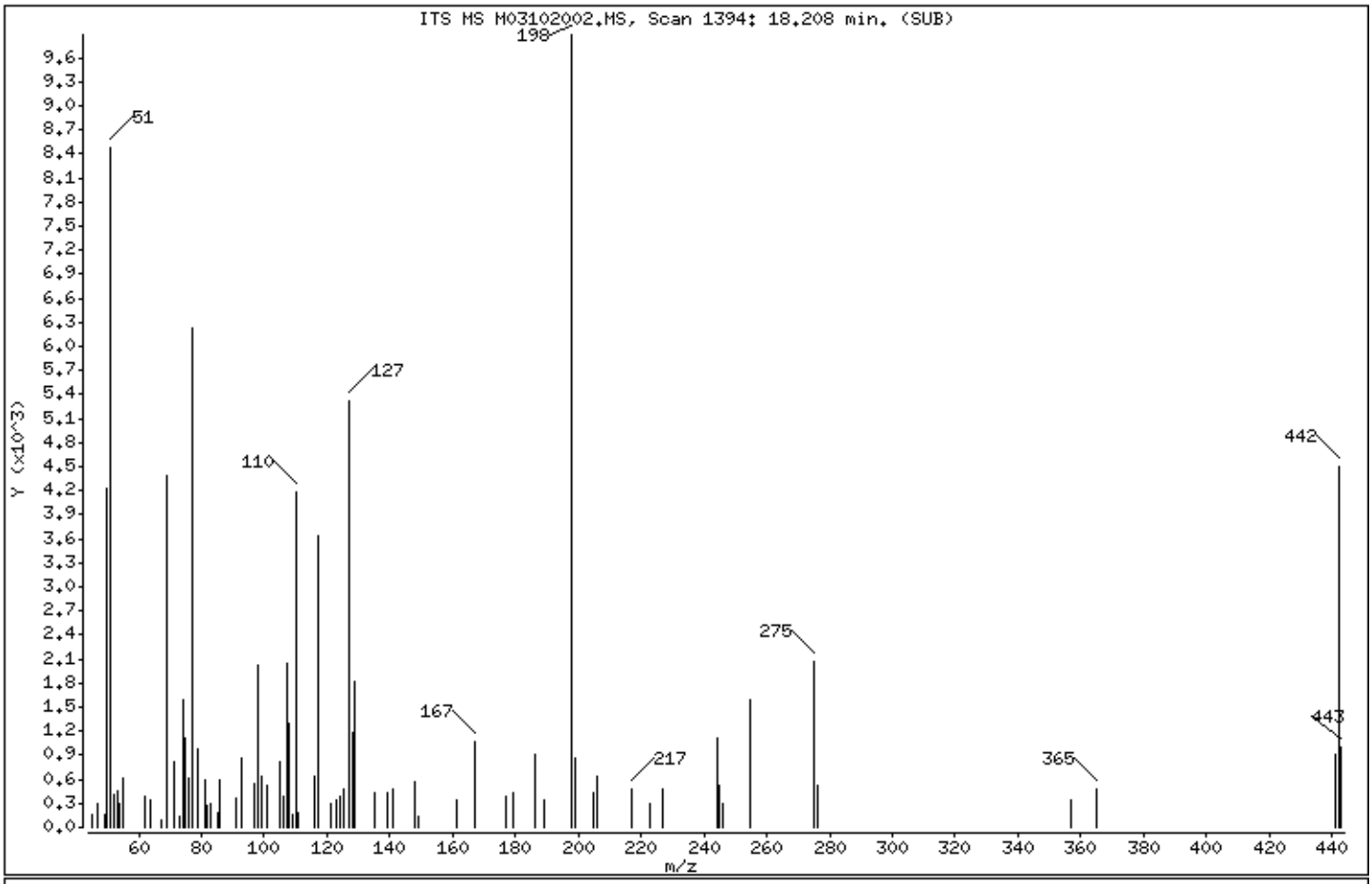
Sample Info: 20ng DFTPP-2

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	53.71
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	8.73
275	10.00 - 30.00% of mass 198	20.96
365	Greater than 1.00% of mass 198	4.79
441	Present, but less than mass 443	9.16
442	40.00 - 110.00% of mass 198	45.41
443	17.00 - 23.00% of mass 442	10.04 (22.12)

Date : 20-OCT-2014 08:50

Client ID: 20ng DFTPP-2 Instrument: GCMS03.i

Sample Info: 20ng DFTPP-2

Operator: RMS

Column phase: DBXLB Column diameter: 0.25

Data File: M03102002.d
Spectrum: ITS MS M03102002.MS, Scan 1394: 18.208 min. (SUB)
Location of Maximum: 198.00
Number of points: 76

m/z	Y	m/z	Y	m/z	Y	m/z	Y
45.00	150	81.00	583	121.00	302	205.00	431
47.00	302	82.00	265	123.00	349	206.00	647
49.00	156	83.00	291	124.00	383	217.00	474
50.00	4228	85.00	174	125.00	485	223.00	302
51.00	8483	86.00	582	127.00	5310	227.00	474
52.00	401	91.00	357	128.00	1193	244.00	1122
53.00	461	93.00	858	129.00	1815	245.00	518
54.00	290	97.00	554	135.00	431	246.00	302
55.00	617	98.00	2016	139.00	431	255.00	1597
62.00	390	99.00	647	141.00	474	275.00	2072
64.00	345	101.00	518	148.00	561	276.00	518
67.00	81	105.00	820	149.00	133	357.00	345
69.00	4382	106.00	388	161.00	345	365.00	474
71.00	811	107.00	2040	167.00	1079	441.00	906
73.00	145	108.00	1295	177.00	388	442.00	4490
74.00	1597	109.00	151	179.00	431	443.00	993
75.00	1115	110.00	4190	186.00	906		
76.00	604	111.00	181	189.00	345		
77.00	6237	116.00	647	198.00	9887		
79.00	979	117.00	3626	199.00	863		

Sample Analysis Data

Analytical Sample Results

Job Number: 14100567

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: VER PUF LOT # 55120
Lab Sample ID: 14100567-01 (AR39883)

Collection Date: 10/16/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/16/2014 17:28
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-471-6	PCBs by EPA Method TO-10A/680	10/20/2014 12:21	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29032	TO-10A	10/16/2014 17:40	MXR	0.00m³	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	MS03-471-6
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-471-6
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-471-6
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-471-6
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-471-6
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-471-6
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-471-6
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-471-6
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-471-6
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-471-6
Total PCB	1336-36-3	ND		1.00	U	MS03-471-6

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	70.2	70.1-116		MS03-471-6
Tetrachloro-meta-xylene	877-09-8	61.8	44.4-104		MS03-471-6

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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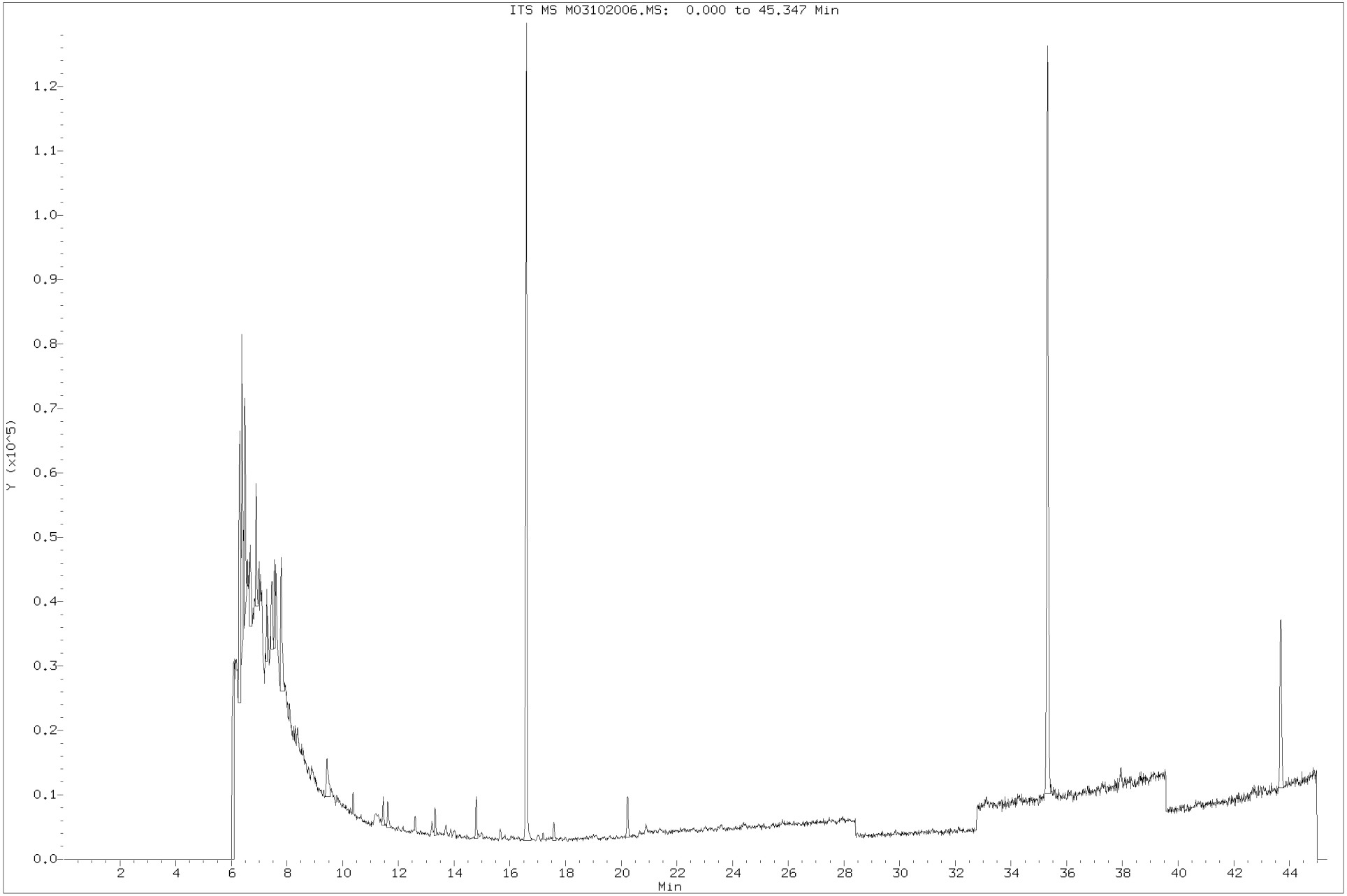
Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102006.d/M03102006.MS
Injection Date: 20-OCT-2014 12:21
Instrument: GCMS03.i
Client Sample ID: VERPUFLOT#55120



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100567
ELAP ID No.:	11078	Client ID:	VER PUF LOT #55120
Matrix:	TO-10A PUF	Lab Sample ID:	AR39883
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	12:21

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 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
12.609	1735	12.603	1389	1.2	0.3809		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
43.686	17133	43.688	15883	1.1	0.6617		0.0702	
				Deca Total:			0.0702	

TCMX Recovery %	61.8 %
Deca Recovery	70.2 %

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
35.310	294948	35.315	62231	4.7	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102006"		"M03102006"		"M03102006"		"M03102006"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.594	215465	16.592	3270				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102006"		"M03102006"		"M03102006"		"M03102006"		"M03102006"		"M03102006"	
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
6.311	5238							16.599	21473	16.594	215465
6.388	2933										
6.647	3232										
6.871	2923										
6.958	3916										
7.036	2987										
7.088	3749										
7.472	3175										
7.551	3877										
7.616	2502										
7.837	3090										
8.041	2895										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102006"		"M03102006"		"M03102006"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.039	3010
				6.086	10805
				6.119	4879
				6.155	3958
				6.199	10530
				6.292	10156
				6.315	12547
				6.384	19800
				6.461	11367
				6.499	20449
				6.581	13863
				6.635	7984
				6.681	11676
				6.712	6770
				6.737	3860
				6.775	5342
				6.810	7209
				6.850	8123
				6.894	23298
				7.000	9303
				7.031	5074
				7.060	11952
				7.105	6961
				7.136	3364
				7.181	6962
				7.219	6005
				7.273	9488
				7.313	16847
				7.405	3371
				7.437	10887
				7.482	10744
				7.564	13020
				7.612	20463
				7.708	4555
				7.749	3466
				7.793	14285
				7.846	8187
				7.905	8175
				7.953	8660
				8.020	5273
				8.054	3540

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102006"		"M03102006"		"M03102006"		"M03102006"		"M03102006"		"M03102006"	
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
				16.599	21473	16.594	215465				

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362
			6.311 5238		
			6.388 2933		
			6.647 3232		
			6.871 2923		
			6.958 3916		
			7.036 2987		
			7.088 3749		
			7.472 3175		
			7.551 3877		
			7.616 2502		
			7.837 3090		
			8.041 2895		

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357

43.935 2693

Extracted Ion Current Profiles

Heptachlorobiphenyls						
"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"
m/z 464	m/z 466	m/z 390	m/z 428	m/z 430	m/z 432	m/z 391
				43.935 2693		

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462

43.935 2693

Extracted Ion Current Profiles

Decachlorobiphenyl					
"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"	"M03102006"
m/z 498	m/z 500	m/z 424	m/z 426	m/z 428	m/z 430

43.935 2693

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102006"		"M03102006"				"M03102006"		"M03102006"			"M03102006"		"M03102006"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.609	1735	12.603	1389	424	240	35.310	294948	35.315	62231	188	16.594	215465	16.592	37046
27.454	975	35.310	6732	426	241					189				
33.062	677			428										
33.089	921			430										
33.108	1201			498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	43.686	17133	35.307	711
512	43.754	491	43.688	15883

Analytical Sample Results

Job Number: 14100568

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: VER PUF LOT # 092514-1
Lab Sample ID: 14100568-01 (AR39884)

Collection Date: 10/16/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/16/2014 17:28
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-471-8	PCBs by EPA Method TO-4A/680	10/20/2014 13:58	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29033	TO-4A	10/16/2014 17:40	MXR	0.00m³	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	MS03-471-8
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-471-8
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-471-8
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-471-8
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-471-8
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-471-8
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-471-8
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-471-8
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-471-8
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-471-8
Total PCB	1336-36-3	ND		1.00	U	MS03-471-8

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	71.5	42.5-134		MS03-471-8
Tetrachloro-meta-xylene	877-09-8	58.2	17.9-137		MS03-471-8

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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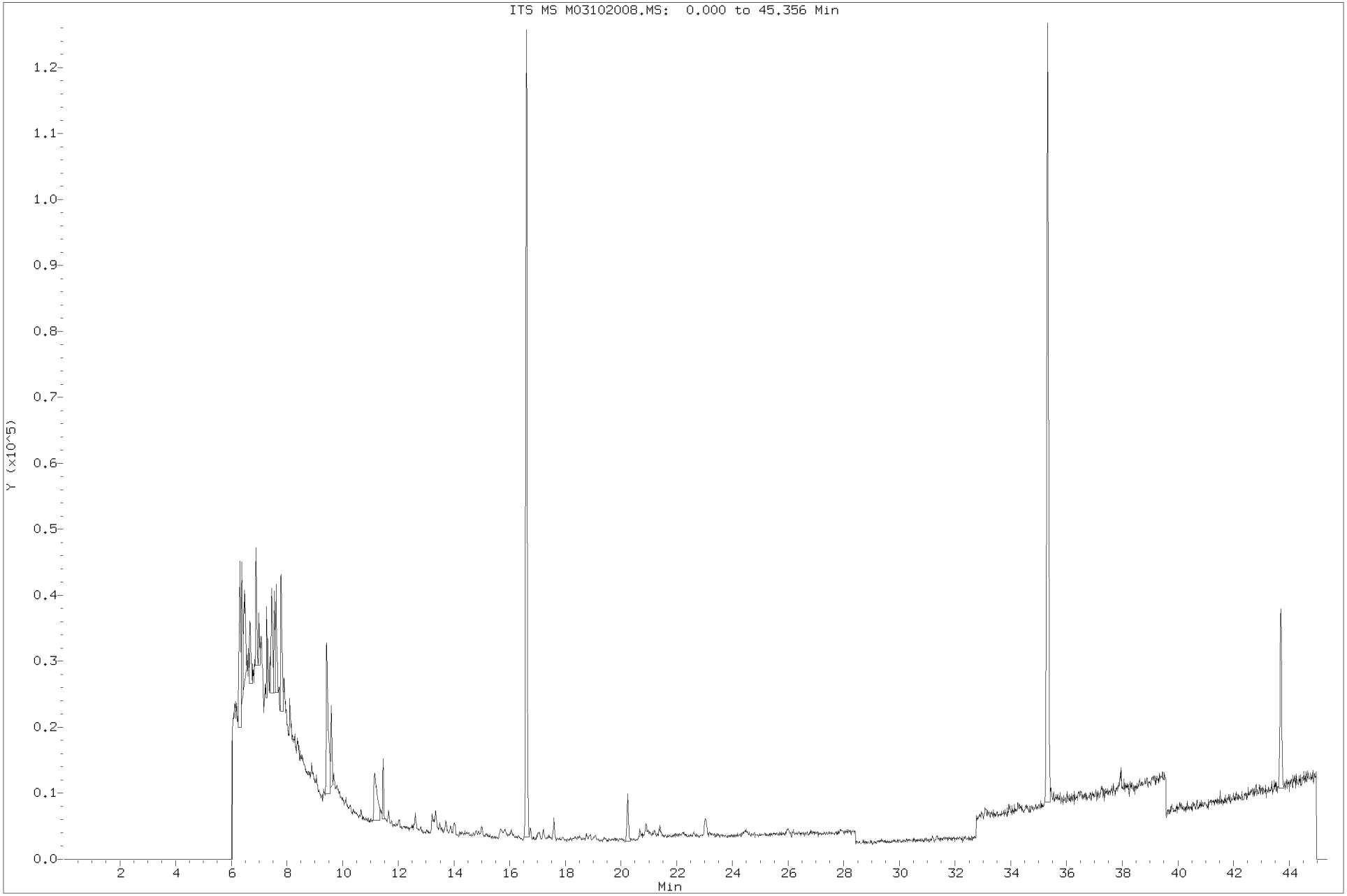
Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102008.d/M03102008.MS
Injection Date: 20-OCT-2014 13:58
Instrument: GCMS03.i
Client Sample ID: VERPUFLOT#09251



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100568
ELAP ID No.:	11078	Client ID:	VER PUF LOT#092514-1
Matrix:	TO-4A PUF	Lab Sample ID:	AR39884
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	13:58

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

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	Reporting Limit ug	Report Amount ug	Flag
				Mono Total:		0.00500	0.00500	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	Reporting Limit ug	Report Amount ug	Flag
				Di Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tri Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tetra Total:		0.0100	0.0100	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Penta Total:		0.0100	0.0100	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	Reporting Limit ug	Report Amount ug	Flag
				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 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
12.608	1624	12.608	1313	1.2	0.3809		0.0116	
				TCMX Total:			0.0116	

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
43.699	17320	43.705	14651	1.2	0.6617		0.0715	
				Deca Total:			0.0715	

TCMX Recovery %	58.2 %
Deca Recovery	71.5 %

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
35.321	293004	35.324	61101	4.8	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102008"		"M03102008"		"M03102008"		"M03102008"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.600	212198	16.608	3229				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102008"		"M03102008"		"M03102008"		"M03102008"		"M03102008"		"M03102008"	
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
6.321	4336							16.603	20261	16.600	212198
6.380	2849										
7.459	3236										
7.789	2605										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102008"		"M03102008"		"M03102008"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.032	2731
				6.060	4004
				6.125	7615
				6.168	5637
				6.226	5444
				6.298	7827
				6.321	8501
				6.388	11912
				6.454	6999
				6.486	13172
				6.573	6692
				6.627	8911
				6.689	13773
				6.760	4262
				6.791	4284
				6.847	7860
				6.893	15607
				7.003	12963
				7.055	6288
				7.100	14317
				7.219	9028
				7.278	9071
				7.318	7255
				7.393	9169
				7.446	6877
				7.468	5249
				7.505	5281
				7.549	9326
				7.610	18081
				7.715	6465
				7.791	20702
				7.892	5205
				7.946	11036
				8.019	3023
				8.048	3539
				8.118	9562
				8.192	6082
				8.272	4716
				8.304	4922
				8.377	5171
				8.427	5169

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102008"		"M03102008"		"M03102008"		"M03102008"		"M03102008"		"M03102008"	
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
				16.603	20261	16.600	212198				

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03102008"	"M03102008"	"M03102008"	"M03102008"	"M03102008"	"M03102008"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362
			6.321 4336		
			6.380 2849		
			7.459 3236		
			7.789 2605		

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102008"		"M03102008"				"M03102008"		"M03102008"			"M03102008"		"M03102008"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.608	1624	12.608	1313	424	240	35.321	293004	35.324	61101	188	16.600	212198	16.607	34602
33.094	2819	35.291	1356	426	241					189				
		35.325	2973	428										
		35.349	1950	430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	35.319	692	35.332	412
512	43.699	17320	43.705	14651

Analytical Sample Results

Job Number: 14100568

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: VER FILTER LOT # 092514-4
Lab Sample ID: 14100568-02 (AR39885)

Collection Date: 10/16/2014
Sample Matrix: FILTER
Received Date: 10/16/2014 17:28
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-471-9	PCBs by EPA Method TO-4A/680	10/20/2014 14:47	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29033	TO-4A	10/16/2014 17:40	MXR	0.00m³	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	MS03-471-9
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-471-9
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-471-9
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-471-9
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-471-9
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-471-9
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-471-9
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-471-9
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-471-9
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-471-9
Total PCB	1336-36-3	ND		1.00	U	MS03-471-9

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	71.3	42.5-134		MS03-471-9
Tetrachloro-meta-xylene	877-09-8	60.2	17.9-137		MS03-471-9

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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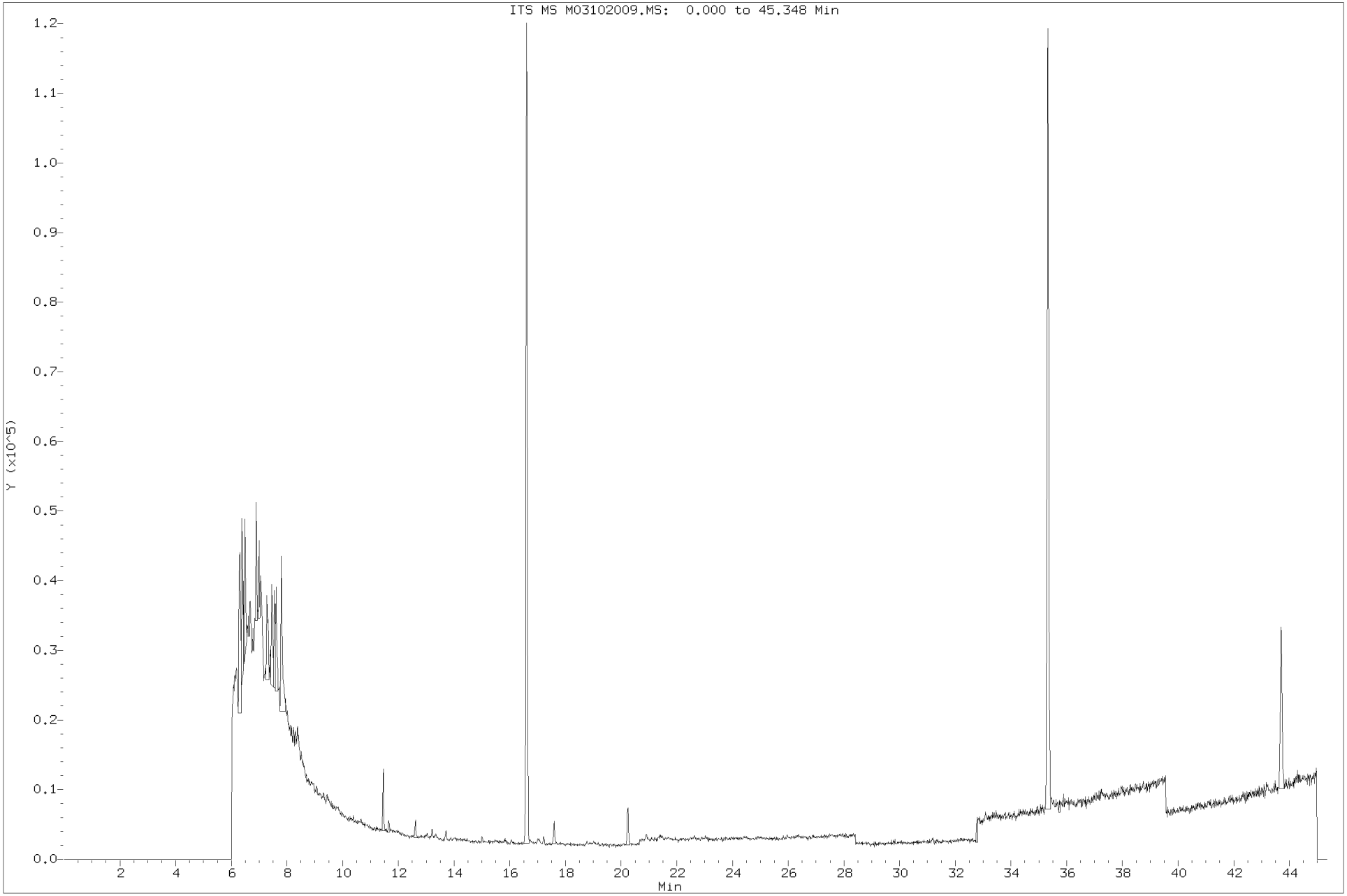
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102009.d/M03102009.MS
Injection Date: 20-OCT-2014 14:47
Instrument: GCMS03.i
Client Sample ID: VERFILTERLOT#09



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100568
ELAP ID No.:	11078	Client ID:	VER FILTER LOT#092514-4
Matrix:	TO-4A FILTER	Lab Sample ID:	AR39885
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	14:47

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 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
12.613	1555	12.613	1328	1.2	0.3809		0.0120	
				TCMX Total:			0.0120	

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
43.699	15990	43.701	13239	1.2	0.6617		0.0713	
				Deca Total:			0.0713	

TCMX Recovery %	60.2 %
Deca Recovery	71.3 %

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
35.325	271195	35.326	58352	4.6	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102009"		"M03102009"		"M03102009"		"M03102009"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.602	197937						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102009"		"M03102009"		"M03102009"		"M03102009"		"M03102009"		"M03102009"	
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
6.171	2518							16.602	19132	16.602	197937
6.297	3221										
6.383	3183										
6.492	4560										
6.671	2831										
6.908	3671										
7.113	2877										
7.550	3602										
7.795	3694										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102009"		"M03102009"		"M03102009"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.031	2965
				6.087	9852
				6.165	7214
				6.197	4547
				6.218	3330
				6.289	11884
				6.338	4939
				6.388	11229
				6.445	7742
				6.493	15124
				6.567	7021
				6.601	7475
				6.656	6019
				6.684	4872
				6.717	6164
				6.764	4302
				6.790	5340
				6.805	3964
				6.860	5605
				6.901	14995
				6.994	18491
				7.061	7761
				7.079	11356
				7.167	7029
				7.222	4238
				7.282	11831
				7.321	5918
				7.351	6217
				7.400	3931
				7.459	14145
				7.517	2984
				7.552	9420
				7.608	7471
				7.628	8342
				7.710	8400
				7.797	12940
				7.844	4566
				7.877	4357
				7.915	10740
				8.004	3060
				8.032	5653

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102009"		"M03102009"		"M03102009"		"M03102009"		"M03102009"		"M03102009"	
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
				16.602	19132	16.602	197937				

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03102009"	"M03102009"	"M03102009"	"M03102009"	"M03102009"	"M03102009"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362
			6.171 2518		
			6.297 3221		
			6.383 3183		
			6.492 4560		
			6.671 2831		
			6.908 3671		
			7.113 2877		
			7.550 3602		
			7.795 3694		

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102009"		"M03102009"				"M03102009"		"M03102009"			"M03102009"		"M03102009"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
12.613	1555	12.613	1328	424	240	35.325	271195	35.326	58352	188	16.602	197937	16.599	31191
33.094	1823	35.285	664	426	241					189				
33.121	1009	35.327	4425	428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	43.699	15990	43.701	13239
512				

Internal Standard Area Summary

8B

EPA 680 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Pace Analytical Services, Inc. Contract: NEA-VERPUF

Lab Code: 11078 Case No.: NA SAS No: NA SDG No: 14100567

Sample Name: CCV3-1020A

Lab File ID (Standard): MS03-471-45387

Instrument ID: MS03

Date Analyzed: 10/20/2014

Time Analyzed: 10:31:00 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	366370	35.31	277066	16.59		
UPPER LIMIT	476281	35.48	360185.8	16.76		
LOWER LIMIT	256459	35.14	193946.2	16.42		
EPA SAMPLE NO.						
AR39883B	301928	35.32	225319	16.60		
AR39883	294948	35.31	215465	16.59		
AR39884B	290551	35.31	208895	16.60		

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: NEA-VERPUF

Lab Code: 11078 Case No.: NA SAS No: NA SDG No: 14100568

Sample Name: CCV3-1020A

Lab File ID (Standard): MS03-471-45387

Instrument ID: MS03

Date Analyzed: 10/20/2014

Time Analyzed: 10:31:00 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	366370	35.31	277066	16.59		
UPPER LIMIT	476281	35.48	360185.8	16.76		
LOWER LIMIT	256459	35.14	193946.2	16.42		
EPA SAMPLE NO.						
AR39884	293004	35.32	212198	16.60		
AR39885	271195	35.33	197937	16.60		

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

Window Defining Mix

Pace Analytical - NY Lab

PCB REPORT EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100702.d
Lab Smp Id: WDM3-1007A Client Smp ID: WDM3-1007A
Inj Date : 07-OCT-2014 07:43
Operator : RMS Inst ID: GCMS03.i
Smp Info : WDM3-1007A
Misc Info : RMS M03100702
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680WDM3.m
Meth Date : 07-Oct-2014 10:07 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 07:43 Cal File: M03100702.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 680WDM.sub
Target Version: 4.14
Processing Host: NEA88

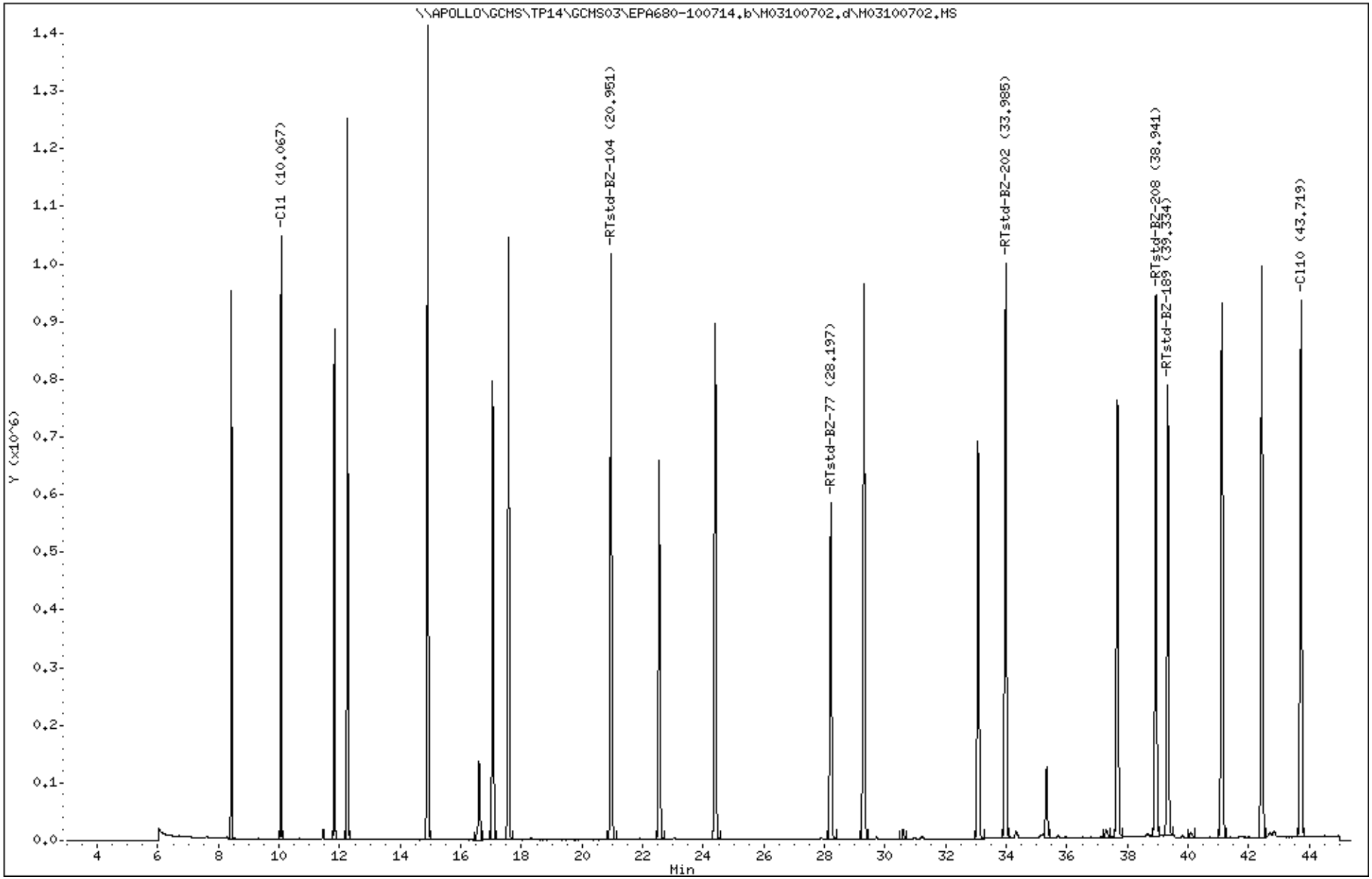
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188	16.599	16.599	(1.000)	237317	0.80000	
* 6 Chrysene-d12	240	35.330	35.330	(1.000)	316490	0.80000	
1 Cl1	188	10.067	10.067	(0.285)	905553	2.50000	2.50
3 RTstd-BZ-104	326	20.950	20.950	(0.593)	773199	2.50000	2.50
4 RTstd-BZ-77	292	28.197	28.197	(0.798)	603293	2.50000	2.50
5 RTstd-BZ-202	430	33.973	33.973	(0.962)	665558	2.50000	2.50
7 RTstd-BZ-208	464	38.941	38.941	(1.102)	624563	2.50000	2.50
8 RTstd-BZ-189	394	39.333	39.333	(1.113)	588990	2.50000	2.50
9 Cl10	498	43.730	43.730	(1.238)	605175	2.50000	2.50

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100702.d
Date : 07-OCT-2014 07:43
Client ID: WDM3-1007A
Sample Info: WDM3-1007A
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\TP14\GCMS03\102014-680.b\M03102003.d
Lab Smp Id: WDM3-1020A Client Smp ID: WDM3-1020A
Inj Date : 20-OCT-2014 09:30
Operator : RMS Inst ID: GCMS03.i
Smp Info : WDM3-1020A
Misc Info : RMS M03102003
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\680WDM3.m
Meth Date : 10-Oct-2014 10:45 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 07:43 Cal File: M03100702.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 680WDM.sub
Target Version: 4.14
Processing Host: NEA88

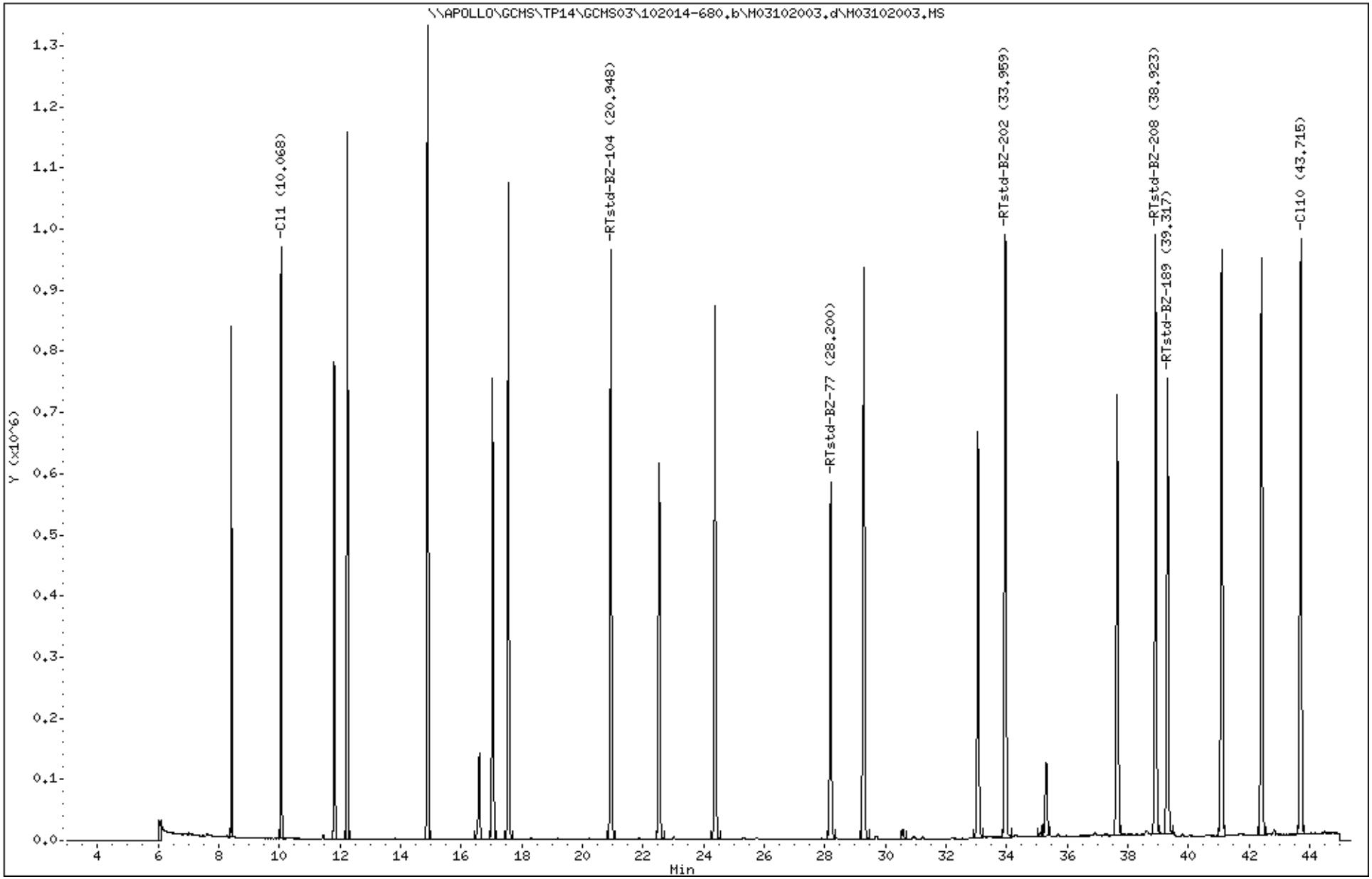
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/uL)	FINAL (ug/L)
* 2 Phenanthrene-d10	188	16.600	16.599	(1.000)	240937	0.80000	
* 6 Chrysene-d12	240	35.323	35.330	(1.000)	309116	0.80000	
1 Cl1	188	10.067	10.067	(0.285)	880445	2.48867	2.49
3 RTstd-BZ-104	326	20.947	20.950	(0.593)	738511	2.44480	2.44
4 RTstd-BZ-77	292	28.199	28.197	(0.798)	557996	2.36745	2.37
5 RTstd-BZ-202	430	33.959	33.973	(0.961)	605182	2.32744	2.33
7 RTstd-BZ-208	464	38.922	38.941	(1.102)	601125	2.46358	2.46
8 RTstd-BZ-189	394	39.316	39.333	(1.113)	561270	2.43917	2.44
9 Cl10	498	43.714	43.730	(1.238)	590939	2.49943	2.50

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102003.d
Date : 20-OCT-2014 09:30
Client ID: WDM3-1020A
Sample Info: WDM3-1020A
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.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: 10/07/14 Time: 8:31
End Cal Date: 10/07/14 Time: 13:25

Calibration File Names:
Level 1: \\M03100709
Level 2: \\M03100708
Level 3: \\M03100707
Level 4: \\M03100706
Level 5: \\M03100705
Level 6: \\M03100704
Level 7: \\M03100703

PACE File ID: S:\Lab Data\DataPackages\CURVES_2014\680\680 100714 Calibration 7pt\[100714_680CLP_6B.xls]680CLP-6B

COMPOUND	RRF Level1	RRF Level2	RRF Level3	RRF Level4	RRF Level5	RRF Level6	RRF Level7	MEAN RRF	% RSD
Cl1	1.0869	1.0241	0.8980	0.9175	0.9838	0.9484	0.9544	0.973	6.68%
Cl2	1.0430	0.9051	0.8000	0.8217	0.8586	0.8441	0.8404	0.873	9.35%
Cl3	0.7284	0.6168	0.5895	0.6204	0.6442	0.6123	0.6166	0.633	7.14%
Cl4	0.7366	0.6146	0.6098	0.6185	0.6391	0.6245	0.6241	0.638	6.96%
Cl5	0.6382	0.5685	0.5372	0.5651	0.5946	0.5800	0.5954	0.583	5.42%
Cl6	0.5829	0.5530	0.5339	0.5442	0.5770	0.5767	0.5840	0.565	3.62%
Cl7	0.6667	0.5974	0.6062	0.6297	0.6373	0.6419	0.6662	0.635	4.22%
Cl8	0.8093	0.7319	0.6414	0.6553	0.6889	0.6475	0.6894	0.695	8.56%
Cl9	0.7142	0.6277	0.5956	0.6372	0.6694	0.6587	0.7133	0.659	6.66%
Cl10	0.7142	0.6277	0.5956	0.6372	0.6694	0.6587	0.7133	0.659	6.66%
Chyrsene-d12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	0.00%
TCMX	0.4281	0.4028	0.3308	0.3551	0.3786	0.3732	0.3980	0.381	8.46%
$D^{13}C_{12}BP$	0.6419	0.6494	0.6268	0.6684	0.6648	0.7190	**	0.662	4.83%

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
$D^{13}C_{12}BP$ = Decachlorobiphenyl (13C labeled)

FORM VI-CLP-EPA 680 -1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100709.d
Lab Smp Id: iCAL-1 Client Smp ID: iCAL-1
Inj Date : 07-OCT-2014 13:25
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-1
Misc Info : RMS M03100709
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 13:25 Cal File: M03100709.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

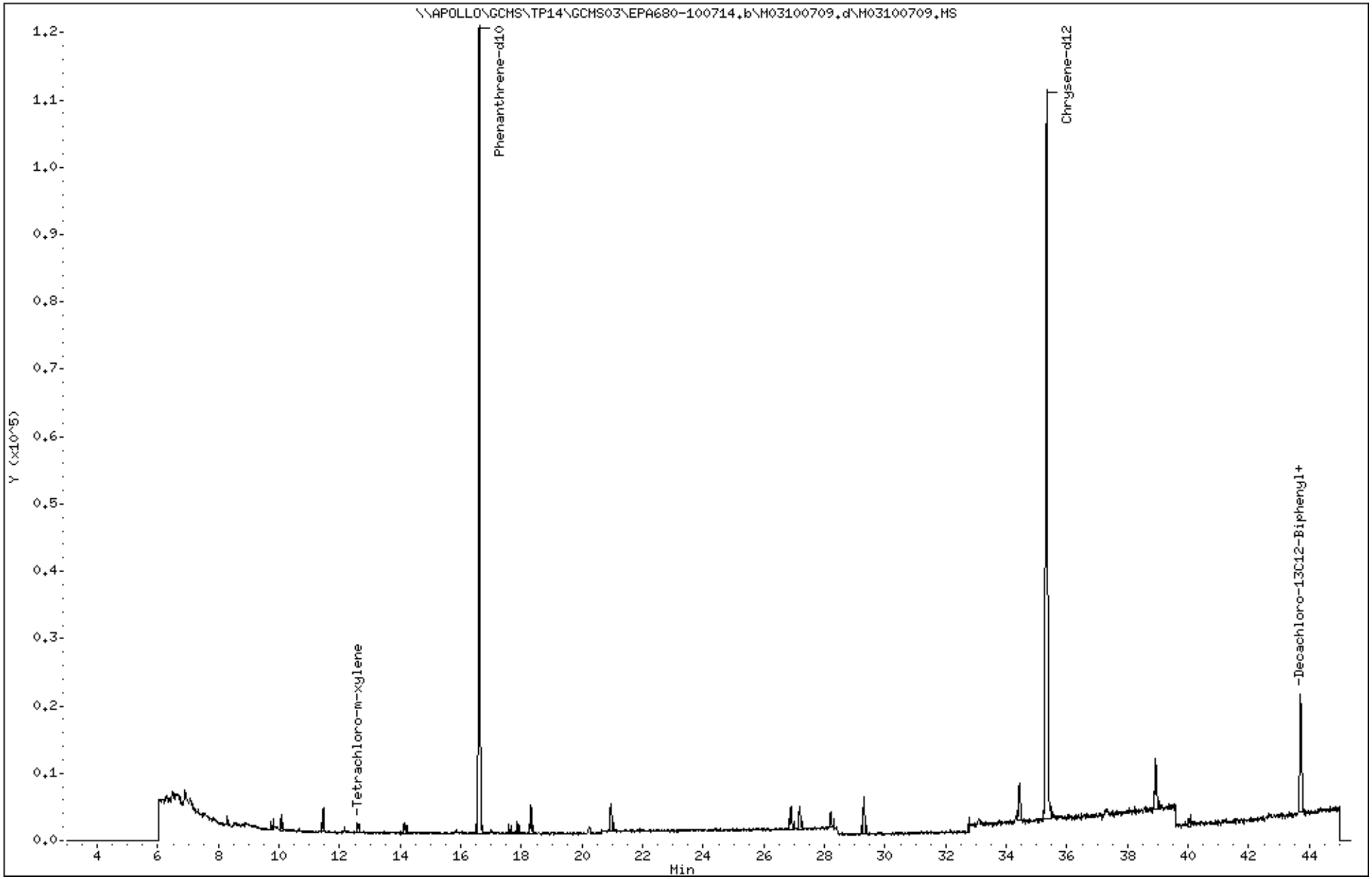
Name	Value	Description
DF	1.000	Dilution Factor
Uf	2.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	2.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.596	16.598	(1.000)	213995	0.80000	
* 13 Chrysene-d12	240	35.338	35.323	(1.000)	287346	0.80000	
1 Cl1	188	10.074	10.059	(0.285)	1992	0.00500	0.00564
$ 2 Tetrachloro-m-xylene	244	12.613	12.598	(0.357)	806	0.00500	0.00585
3 Cl2	222	14.163	14.150	(0.401)	1883	0.00500	0.00601
5 Cl3	256	17.848	17.864	(0.505)	1354	0.00500	0.00595
6 Cl4	292	18.311	18.308	(0.518)	2710	0.01000	0.0118
7 RTstd-BZ-104	326	20.956	20.956	(0.593)	3134	0.01000	0.0110
8 Cl5	326	26.882	26.897	(0.761)	2316	0.01000	0.0109
9 Cl6	360	27.176	27.193	(0.769)	2188	0.01000	0.0106
10 RTstd-BZ-77	292	28.203	28.204	(0.798)	2400	0.01000	0.0108
11 Cl7	394	29.297	29.309	(0.829)	3742	0.01500	0.0160
12 Cl8	430	34.417	34.434	(0.974)	3973	0.01500	0.0161
14 RTstd-BZ-208	464	38.932	38.943	(1.102)	4829	0.02000	0.0215
15 Cl10	498	43.723	43.734	(1.237)	6549	0.02500	0.0274
$ 16 Decachloro-13C12-Biphenyl	510	43.698	43.709	(1.237)	5885	0.02500	0.0245(a)

QC Flag Legend

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

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100709.d
Date : 07-OCT-2014 13:25
Client ID: iCAL-1
Instrument: GCMS03.i
Sample Info: iCAL-1
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100708.d
Lab Smp Id: iCAL-2 Client Smp ID: iCAL-2
Inj Date : 07-OCT-2014 12:36
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-2
Misc Info : RMS M03100708
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 12:36 Cal File: M03100708.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

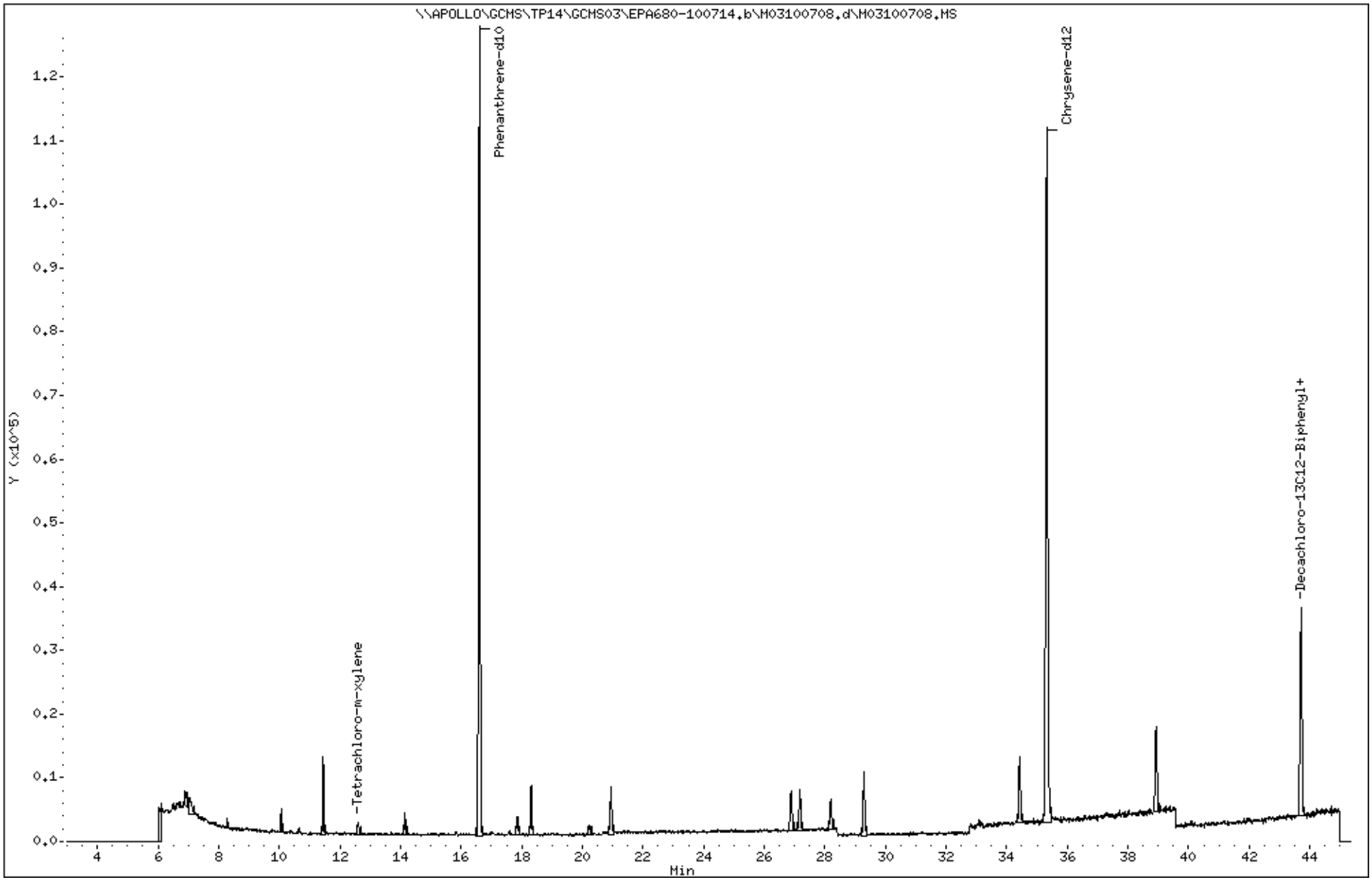
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.597	16.598	(1.000)	212518	0.80000	
* 13 Chrysene-d12	240	35.316	35.323	(1.000)	290243	0.80000	
1 Cl1	188	10.064	10.059	(0.285)	3842	0.01000	0.0110
$ 2 Tetrachloro-m-xylene	244	12.605	12.598	(0.357)	1466	0.01000	0.0108
3 Cl2	222	14.147	14.150	(0.401)	3330	0.01000	0.0109
5 Cl3	256	17.861	17.864	(0.506)	2283	0.01000	0.0103
6 Cl4	292	18.302	18.308	(0.518)	4602	0.02000	0.0204
7 RTstd-BZ-104	326	20.943	20.956	(0.593)	5668	0.02000	0.0200
8 Cl5	326	26.893	26.897	(0.761)	4229	0.02000	0.0200
9 Cl6	360	27.176	27.193	(0.770)	4101	0.02000	0.0198
10 RTstd-BZ-77	292	28.198	28.204	(0.798)	4542	0.02000	0.0204
11 Cl7	394	29.290	29.309	(0.829)	6704	0.03000	0.0287
12 Cl8	430	34.430	34.434	(0.975)	7702	0.03000	0.0313
14 RTstd-BZ-208	464	38.931	38.943	(1.102)	8346	0.04000	0.0373
15 Cl10	498	43.713	43.734	(1.238)	11474	0.05000	0.0482
$ 16 Decachloro-13C12-Biphenyl	510	43.701	43.709	(1.237)	11880	0.05000	0.0488

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100708.d
Date : 07-OCT-2014 12:36
Client ID: iCAL-2
Sample Info: iCAL-2
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\TP14\GCMS03\EPA680-100714.b\M03100707.d
Lab Smp Id: iCAL-3 Client Smp ID: iCAL-3
Inj Date : 07-OCT-2014 11:47
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-3
Misc Info : RMS M03100707
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 11:47 Cal File: M03100707.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

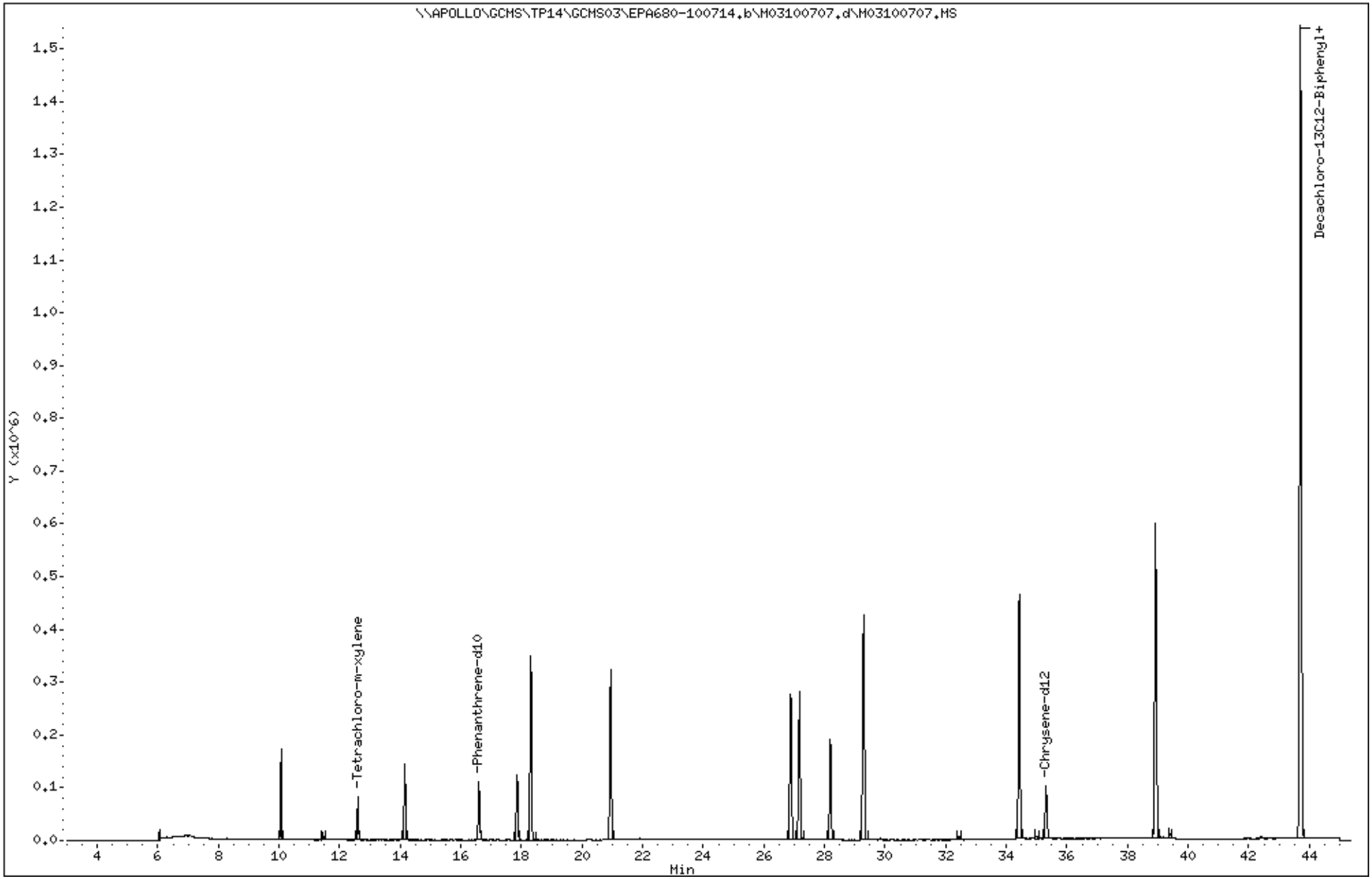
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.587	16.598	(1.000)	188869	0.80000	
* 13 Chrysene-d12	240	35.312	35.323	(1.000)	269175	0.80000	
1 Cl1	188	10.063	10.059	(0.285)	149905	0.50000	0.472
$ 2 Tetrachloro-m-xylene	244	12.604	12.598	(0.357)	55896	0.50000	0.453
3 Cl2	222	14.142	14.150	(0.401)	131945	0.50000	0.473
5 Cl3	256	17.852	17.864	(0.506)	97576	0.50000	0.475
6 Cl4	292	18.305	18.308	(0.518)	203089	1.00000	0.972
7 RTstd-BZ-104	326	20.937	20.956	(0.593)	248561	1.00000	0.944
8 Cl5	326	26.889	26.897	(0.761)	180823	1.00000	0.922
9 Cl6	360	27.174	27.193	(0.770)	177557	1.00000	0.922
10 RTstd-BZ-77	292	28.190	28.204	(0.798)	185171	1.00000	0.902
11 Cl7	394	29.294	29.309	(0.830)	313568	1.50000	1.43
12 Cl8	430	34.427	34.434	(0.975)	322075	1.50000	1.42
14 RTstd-BZ-208	464	38.918	38.943	(1.102)	387248	2.00000	1.84
15 Cl10	498	43.726	43.734	(1.238)	498805	2.50000	2.25
$ 16 Decachloro-13C12-Biphenyl	510	43.702	43.709	(1.238)	523758	2.50000	2.31

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100707.d
Date : 07-OCT-2014 11:47
Client ID: iCAL-3
Sample Info: iCAL-3
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

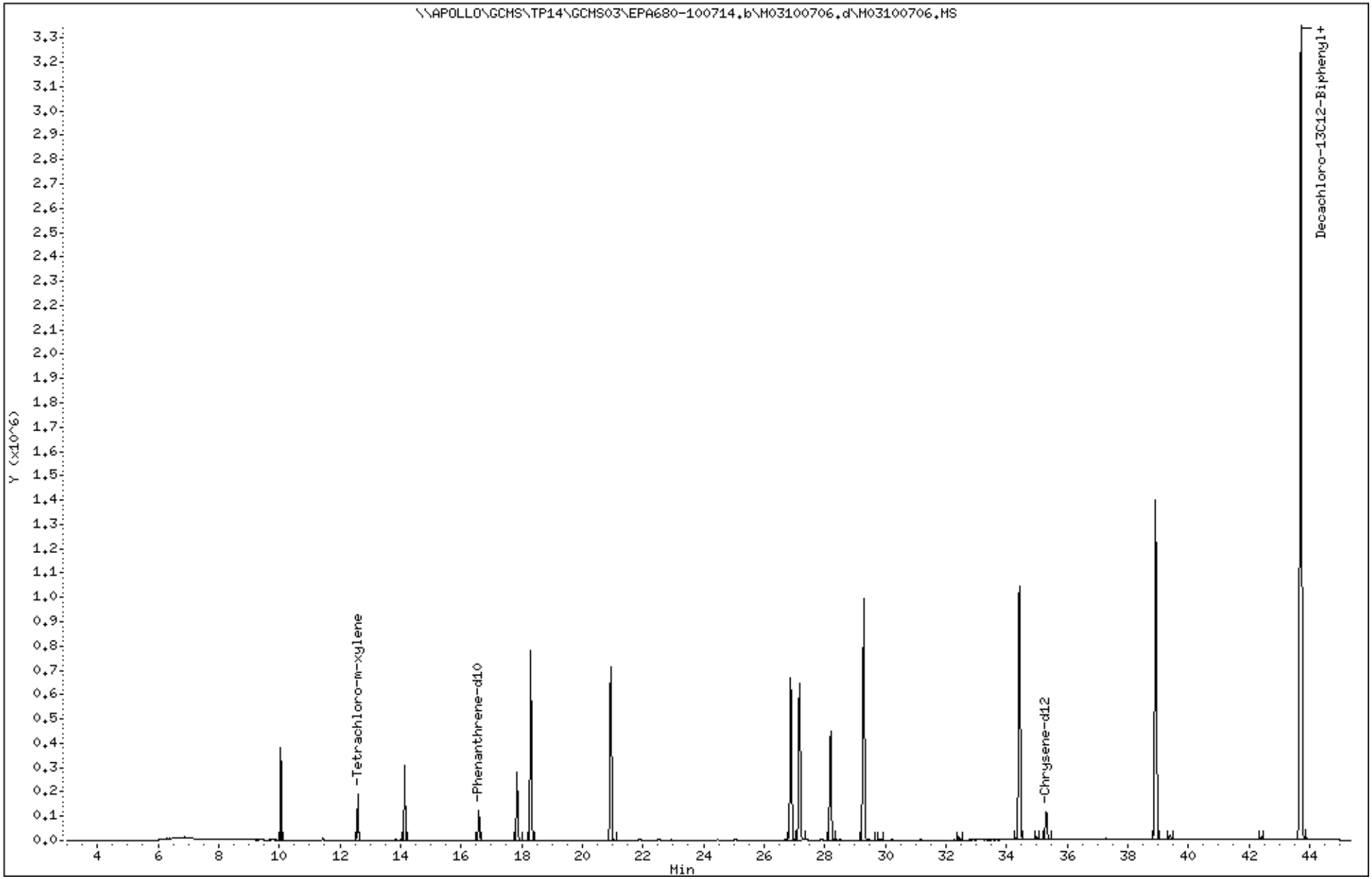
Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100706.d
Lab Smp Id: iCAL-4 Client Smp ID: iCAL-4
Inj Date : 07-OCT-2014 10:58
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-4
Misc Info : RMS M03100706
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 10:58 Cal File: M03100706.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

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.587	16.598	(1.000)	206552	0.80000	
* 13 Chrysene-d12	240	35.311	35.323	(1.000)	284137	0.80000	
1 Cl1	188	10.053	10.059	(0.285)	327516	1.00000	0.964
$ 2 Tetrachloro-m-xylene	244	12.599	12.598	(0.357)	126574	1.00000	0.951
3 Cl2	222	14.149	14.150	(0.401)	290254	1.00000	0.974
5 Cl3	256	17.848	17.864	(0.505)	219395	1.00000	0.999
6 Cl4	292	18.302	18.308	(0.518)	440435	2.00000	1.98
7 RTstd-BZ-104	326	20.941	20.956	(0.593)	562255	2.00000	1.99
8 Cl5	326	26.884	26.897	(0.761)	410031	2.00000	1.94
9 Cl6	360	27.169	27.193	(0.769)	391358	2.00000	1.89
10 RTstd-BZ-77	292	28.197	28.204	(0.799)	432283	2.00000	1.95
11 Cl7	394	29.293	29.309	(0.830)	682189	3.00000	2.92
12 Cl8	430	34.417	34.434	(0.975)	704610	3.00000	2.91
14 RTstd-BZ-208	464	38.918	38.943	(1.102)	889417	4.00000	3.92
15 Cl10	498	43.727	43.734	(1.238)	1147445	5.00000	4.77
$ 16 Decachloro-13C12-Biphenyl	510	43.702	43.709	(1.238)	1201358	5.00000	4.89

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100706.d
Date : 07-OCT-2014 10:58
Client ID: iCAL-4
Instrument: GCMS03.i
Sample Info: iCAL-4
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

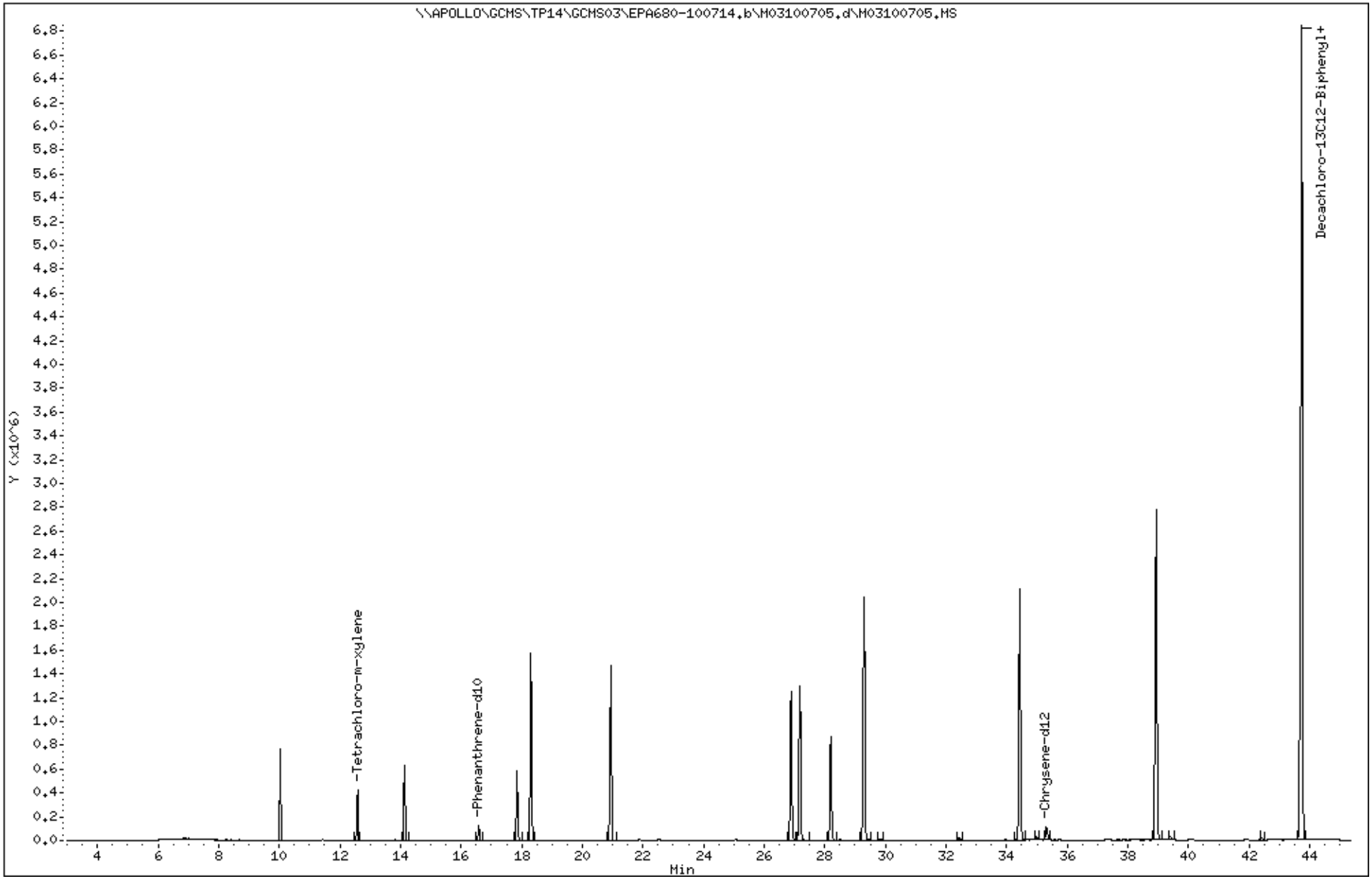
Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100705.d
Lab Smp Id: iCAL-5 Client Smp ID: iCAL-5
Inj Date : 07-OCT-2014 10:09
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-5
Misc Info : RMS M03100705
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 10:09 Cal File: M03100705.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

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.580	16.598	(1.000)	209831	0.80000	
* 13 Chrysene-d12	240	35.312	35.323	(1.000)	276752	0.80000	
1 Cl1	188	10.037	10.059	(0.284)	685143	2.00000	2.05
$ 2 Tetrachloro-m-xylene	244	12.586	12.598	(0.356)	263396	2.00000	2.00
3 Cl2	222	14.126	14.150	(0.400)	598286	2.00000	2.04
5 Cl3	256	17.843	17.864	(0.505)	440998	2.00000	2.06
6 Cl4	292	18.307	18.308	(0.518)	888046	4.00000	4.09
7 RTstd-BZ-104	326	20.942	20.956	(0.593)	1102594	4.00000	4.01
8 Cl5	326	26.886	26.897	(0.761)	846316	4.00000	4.07
9 Cl6	360	27.172	27.193	(0.769)	822952	4.00000	4.01
10 RTstd-BZ-77	292	28.193	28.204	(0.798)	873562	4.00000	4.01
11 Cl7	394	29.293	29.309	(0.830)	1365447	6.00000	5.95
12 Cl8	430	34.442	34.434	(0.975)	1479189	6.00000	6.22
14 RTstd-BZ-208	464	38.938	38.943	(1.103)	1798454	8.00000	8.10
15 Cl10	498	43.728	43.734	(1.238)	2345441	10.0000	9.87
$ 16 Decachloro-13C12-Biphenyl	510	43.728	43.709	(1.238)	2327517	10.0000	9.61

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100705.d
Date : 07-OCT-2014 10:09
Client ID: iCAL-5
Instrument: GCMS03.i
Sample Info: iCAL-5
Volume Injected (uL): 2.0
Operator: RMS
Column phase: DBXLB
Column diameter: 0.25



Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100704.d
Lab Smp Id: iCAL-6 Client Smp ID: iCAL-6
Inj Date : 07-OCT-2014 09:20
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-6
Misc Info : RMS M03100704
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 09:20 Cal File: M03100704.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

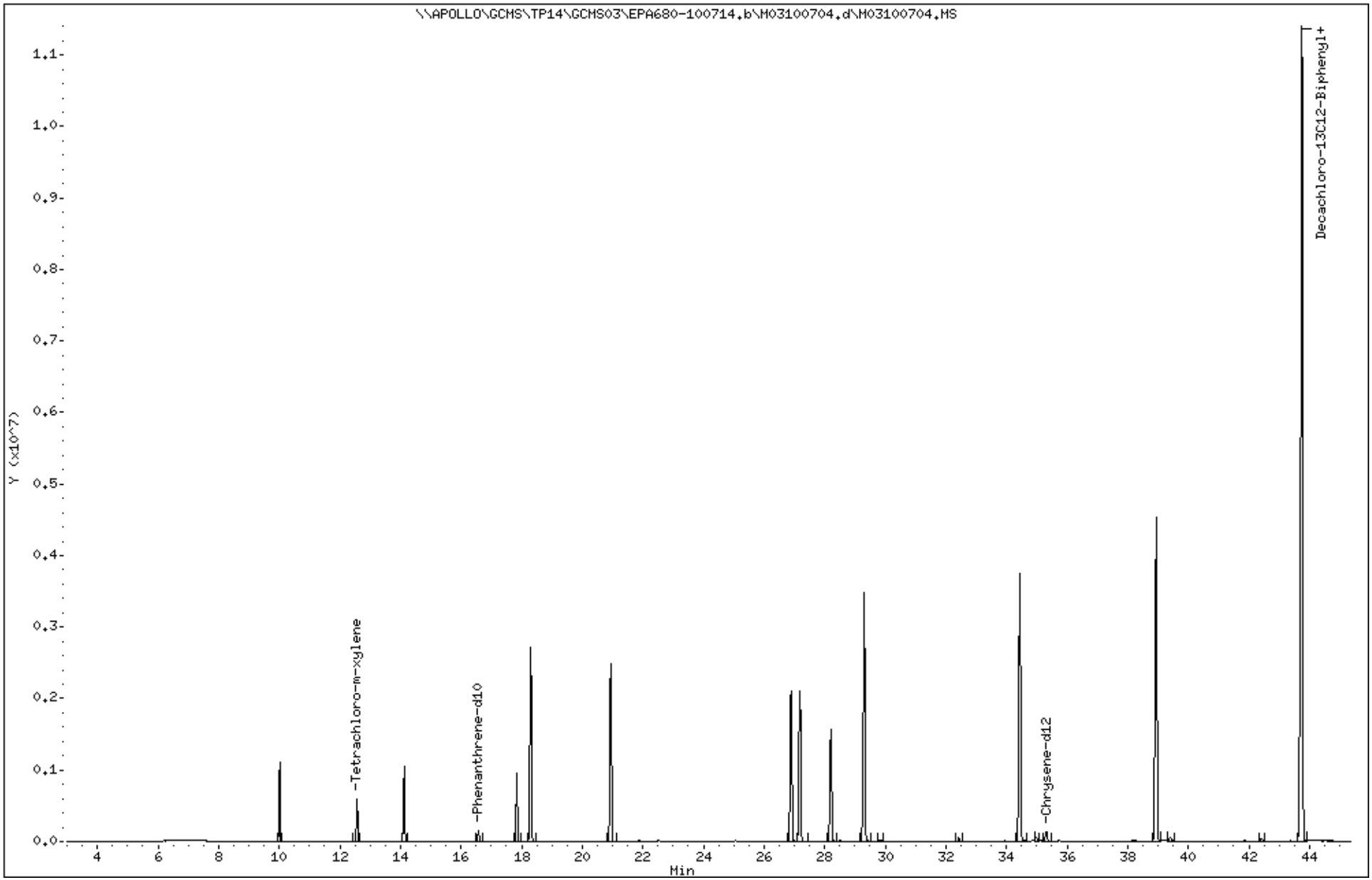
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.579	16.598	(1.000)	241123	0.80000	
* 13 Chrysene-d12	240	35.324	35.323	(1.000)	324401	0.80000	
1 Cl1	188	10.016	10.059	(0.284)	1161084	3.00000	2.99
$ 2 Tetrachloro-m-xylene	244	12.566	12.598	(0.356)	451200	3.00000	2.92
3 Cl2	222	14.122	14.150	(0.400)	1020390	3.00000	3.01
5 Cl3	256	17.850	17.864	(0.505)	742407	3.00000	3.01
6 Cl4	292	18.295	18.308	(0.518)	1513482	6.00000	6.02
7 RTstd-BZ-104	326	20.941	20.956	(0.593)	1892363	6.00000	5.88
8 Cl5	326	26.883	26.897	(0.761)	1429280	6.00000	5.93
9 Cl6	360	27.177	27.193	(0.769)	1444248	6.00000	6.00
10 RTstd-BZ-77	292	28.203	28.204	(0.798)	1534523	6.00000	6.01
11 Cl7	394	29.300	29.309	(0.829)	2391046	9.00000	8.85
12 Cl8	430	34.440	34.434	(0.975)	2393976	9.00000	8.74
14 RTstd-BZ-208	464	38.945	38.943	(1.102)	3029335	12.0000	11.7
15 Cl10	498	43.764	43.734	(1.239)	4052283	15.0000	14.4
$ 16 Decachloro-13C12-Biphenyl	510	43.751	43.709	(1.239)	4422861	15.0000	15.0

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100704.d
Date : 07-OCT-2014 09:20
Client ID: iCAL-6
Sample Info: iCAL-6
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\TP14\GCMS03\EPA680-100714.b\M03100703.d
Lab Smp Id: iCAL-7 Client Smp ID: iCAL-7
Inj Date : 07-OCT-2014 08:31
Operator : RMS Inst ID: GCMS03.i
Smp Info : iCAL-7
Misc Info : RMS M03100703
Comment :
Method : \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\680low.m
Meth Date : 07-Oct-2014 15:25 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 08:31 Cal File: M03100703.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

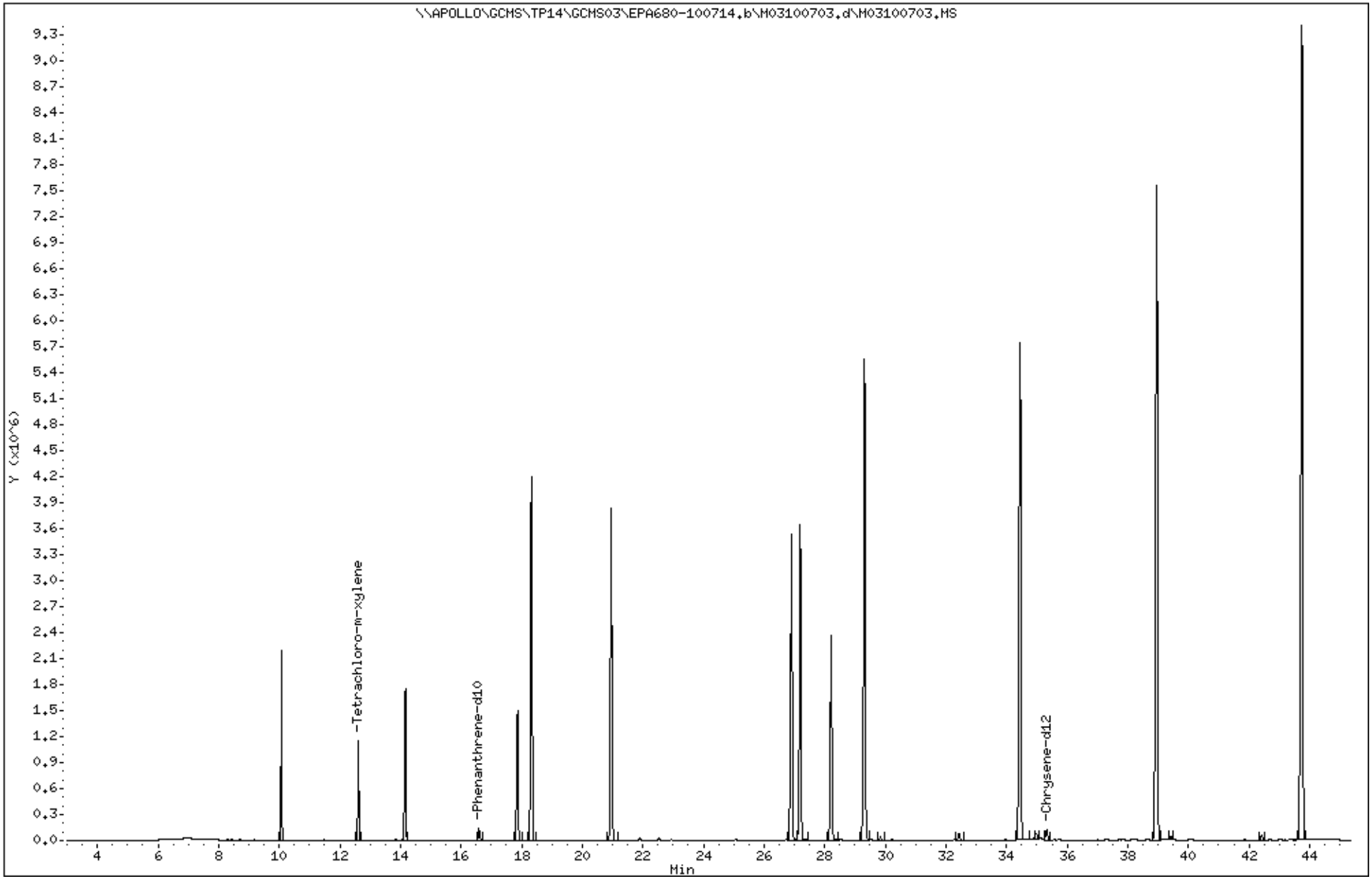
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.599	16.598	(1.000)	216327	0.80000	
* 13 Chrysene-d12	240	35.320	35.323	(1.000)	304567	0.80000	
1 Cl1	188	10.073	10.059	(0.285)	1824783	5.00000	5.01(A)
$ 2 Tetrachloro-m-xylene	244	12.612	12.598	(0.357)	745335	5.00000	5.14(A)
3 Cl2	222	14.153	14.150	(0.401)	1591271	5.00000	4.99
5 Cl3	256	17.868	17.864	(0.506)	1155671	5.00000	4.99
6 Cl4	292	18.324	18.308	(0.519)	2352399	10.0000	9.97
7 RTstd-BZ-104	326	20.961	20.956	(0.593)	3079821	10.0000	10.2(A)
8 Cl5	326	26.897	26.897	(0.762)	2292299	10.0000	10.1(A)
9 Cl6	360	27.193	27.193	(0.770)	2259607	10.0000	10.0
10 RTstd-BZ-77	292	28.223	28.204	(0.799)	2392577	10.0000	9.98
11 Cl7	394	29.312	29.309	(0.830)	3869458	15.0000	15.3(A)
12 Cl8	430	34.452	34.434	(0.975)	3969197	15.0000	15.4(A)
14 RTstd-BZ-208	464	38.948	38.943	(1.103)	4979211	20.0000	20.5(A)
15 Cl10	498	43.747	43.734	(1.239)	6824096	25.0000	25.9(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\APOLLO\GCMS\TP14\GCMS03\EPA680-100714.b\M03100703.d
Date : 07-OCT-2014 08:31
Client ID: iCAL-7
Sample Info: iCAL-7
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.i
Operator: RMS
Column diameter: 0.25



Standards Summary Tables

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc. SDG No.: 14100567

Instrument ID:	GCMS03	Calibration Date:	10/20/2014	Time:	10:31
Lab File ID:	M03102004	Start Cal Date:	10/7/2014	Time:	8:31
Client ID:	CCV3-1020A	End Cal Date:	10/7/2014	Time:	13:25
GC Column:	DB-XLB				

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\PACE_LRF14100567\[CCV3-1020B.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 Cl1	0.973	0.952	0.005	-2.17	20
$ 2 Tetrachloro-m-xylene	0.381	0.356	0.005	-6.56	20
3 Cl2	0.873	0.846	0.005	-3.11	20
5 Cl3	0.633	0.622	0.005	-1.62	20
6 Cl4	0.638	0.645	0.005	1.10	20
8 Cl5	0.583	0.574	0.005	-1.51	20
9 Cl6	0.565	0.556	0.005	-1.45	20
11 Cl7	0.635	0.645	0.005	1.62	20
13 Cl8	0.695	0.698	0.005	0.51	20
17 Cl10	0.659	0.665	0.005	0.86	20
$ 13C-DCBP	0.662	0.648	0.005	-2.13	20

FORM VII-CLP-EPA 680-1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102004.d
Lab Smp Id: CCV3-1020A Client Smp ID: CCV3-1020A
Inj Date : 20-OCT-2014 10:31
Operator : RMS Inst ID: GCMS03.i
Smp Info : CCV3-1020A
Misc Info : RMS M03102004
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\680low.m
Meth Date : 21-Oct-2014 07:28 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 13:25 Cal File: M03100709.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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.597	16.599	(1.000)	273383	0.80000	
* 13 Chrysene-d12	240	35.308	35.321	(1.000)	363089	0.80000	
1 Cl1	188	10.051	10.063	(0.285)	421336	1.00000	0.944
$ 2 Tetrachloro-m-xylene	244	12.591	12.600	(0.357)	162146	1.00000	0.932
3 Cl2	222	14.138	14.149	(0.400)	375185	1.00000	0.947
5 Cl3	256	17.856	17.854	(0.506)	282566	1.00000	0.982
6 Cl4	292	18.301	18.312	(0.518)	574621	2.00000	1.97
7 RTstd-BZ-104	326	20.938	20.950	(0.593)	701956	2.00000	1.94
8 Cl5	326	26.881	26.884	(0.761)	525296	2.00000	1.96
9 Cl6	360	27.178	27.193	(0.770)	510027	2.00000	1.95
10 RTstd-BZ-77	292	28.194	28.206	(0.799)	530691	2.00000	1.88
11 Cl7	394	29.294	29.309	(0.830)	885635	3.00000	2.99
12 Cl8	430	34.431	34.444	(0.975)	947976	3.00000	3.04
14 RTstd-BZ-208	464	38.920	38.944	(1.102)	1148497	4.00000	4.05
15 Cl10	498	43.724	43.741	(1.238)	1520235	5.00000	5.03
$ 16 Decachloro-13C12-Biphenyl	510	43.711	43.716	(1.238)	1488963	5.00000	4.91

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102004.d

Date : 20-OCT-2014 10:31

Client ID: CCV3-1020A

Instrument: GCMS03.i

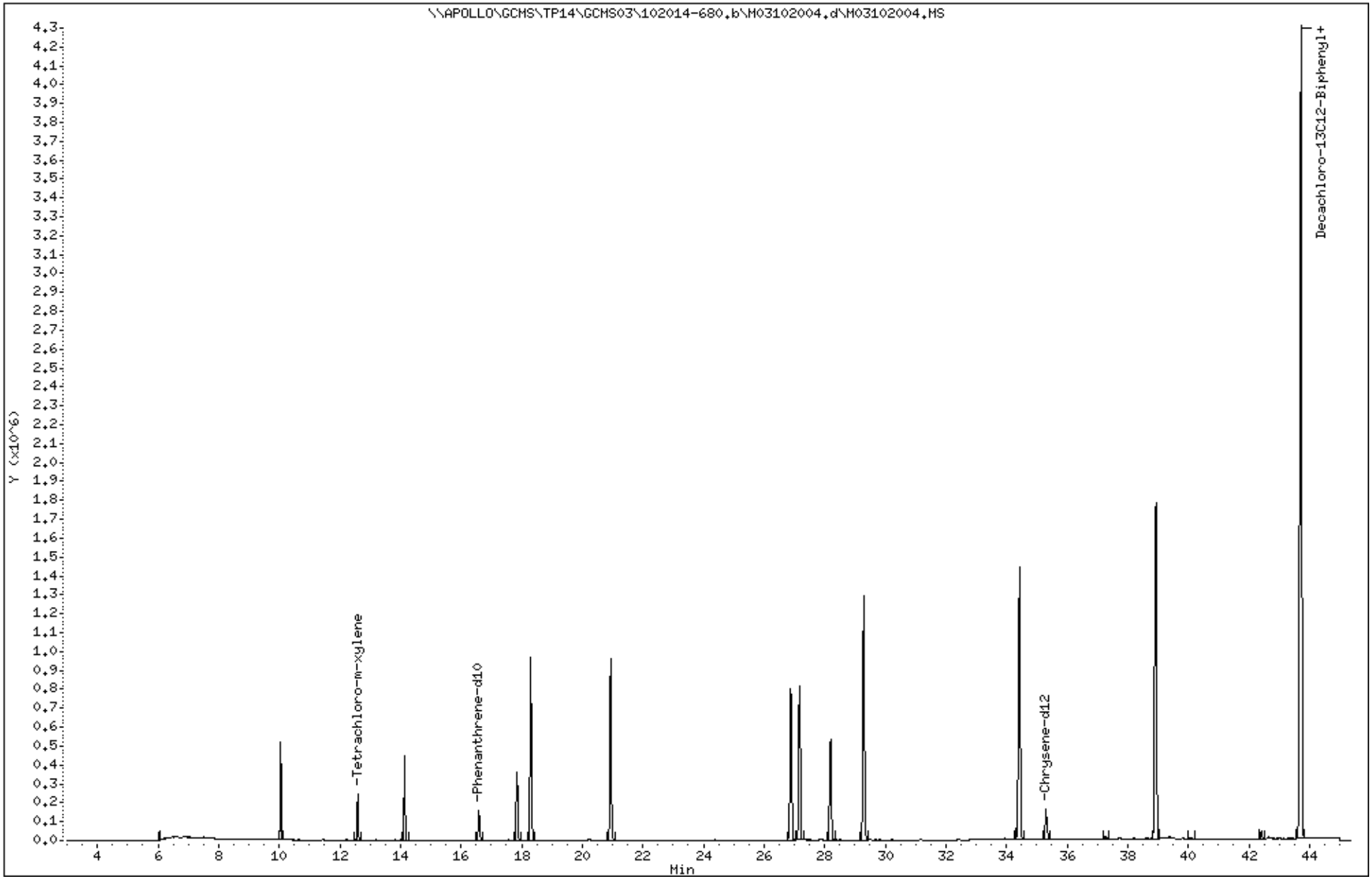
Sample Info: CCV3-1020A

Volume Injected (uL): 2.0

Operator: RMS

Column phase: DBXLB

Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102004"		"M03102004"		"M03102004"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.052	436070	10.054	143662				
14.148	14770	16.594	3348				
16.591	277066						
17.849	52932						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102004"		"M03102004"		"M03102004"						"M03102004"	
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
14.142	387478	14.142	273524							10.052	436070
17.846	11673	18.308	35805							14.148	14770
18.306	185212	28.184	12220							16.591	277066
20.941	8059	28.205	11719							17.849	52932
26.860	2889										
26.901	2604										
27.170	9743										
28.194	138478										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102004"		"M03102004"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.851	285011	17.848	291919		
18.314	50541	18.310	47637		
20.938	186695	20.936	64225		
26.890	186825	26.888	66551		
27.174	5626	28.198	3592		
28.193	11275				
29.280	29663				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102004"		"M03102004"				"M03102004"		"M03102004"		"M03102004"	
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
17.851	285011	17.848	291919			10.052	436070	20.939	426107	20.941	702453
18.314	50541	18.310	47637			14.148	14770	26.886	321114	26.883	525646
20.938	186695	20.936	64225			16.591	277066	27.166	19333	27.170	26078
26.890	186825	26.888	66551			17.849	52932	29.286	279028	29.290	184238
27.174	5626	28.198	3592					34.409	5264	34.438	3381
28.193	11275							34.432	9015	38.900	9453
29.280	29663							38.919	78433	38.920	8427
								38.957	17457	38.945	14209

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03102004"		"M03102004"					
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
				18.303	443580	18.303	590942				
				20.925	8493	20.948	22294				
				20.958	10670	26.882	41593				
				26.893	35436	27.175	87134				
				27.173	180162	28.190	530244				
				28.187	399797	34.431	15742				
				29.268	3058						
				29.294	4338						
				34.424	63669						
				38.933	4354						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102004"		"M03102004"			"M03102004"		"M03102004"		"M03102004"		
m/z 292		m/z 290		m/z 220	m/z 222		m/z 360		m/z 362		
18.303	590942	18.303	443580		14.142	387478	27.173	509546	27.171	429372	
20.948	22294	20.925	8493		17.846	11673	29.304	22949	29.283	15081	
26.882	41593	20.958	10670		18.306	185212	34.431	219188	34.419	62110	
27.175	87134	26.893	35436		20.941	8059	38.905	6207	34.444	35755	
28.190	530244	27.173	180162		26.860	2889	43.701	26007	43.751	6259	
34.431	15742	28.187	399797		26.901	2604	43.734	39201			
		29.268	3058		27.170	9743					
		29.294	4338		28.194	138478					
		34.424	63669								
		38.933	4354								

Extracted Ion Current Profiles

Tetrachlorobiphenyls						
	"M03102004"		"M03102004"			
m/z 288	m/z 324		m/z 326		m/z 328	m/z 289
	20.939	426107	20.941	702453		
	26.886	321114	26.883	525646		
	27.166	19333	27.170	26078		
	29.286	279028	29.290	184238		
	34.409	5264	34.438	3381		
	34.432	9015	38.900	9453		
	38.919	78433	38.920	8427		
	38.957	17457	38.945	14209		

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03102004"		"M03102004"			"M03102004"		"M03102004"		"M03102004"
m/z 326		m/z 324		m/z 254	m/z 256		m/z 258		m/z 392
20.941	702453	20.939	426107		17.851	285011	17.848	291919	
26.883	525646	26.886	321114		18.314	50541	18.310	47637	
27.170	26078	27.166	19333		20.938	186695	20.936	64225	
29.290	184238	29.286	279028		26.890	186825	26.888	66551	
34.438	3381	34.409	5264		27.174	5626	28.198	3592	
38.900	9453	34.432	9015		28.193	11275			
38.920	8427	38.919	78433		29.280	29663			
38.945	14209	38.957	17457						

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102004"		"M03102004"					"M03102004"		"M03102004"		
m/z 394		m/z 396		m/z 398		m/z 322	m/z 360		m/z 362		m/z 323
29.291	886565	29.292	868456				27.173	509546	27.171	429372	
32.430	3489	32.422	3397				29.304	22949	29.283	15081	
34.422	12837	34.409	18076				34.431	219188	34.419	62110	
34.440	8084	38.929	176641				38.905	6207	34.444	35755	
38.906	115456	42.422	3670				43.701	26007	43.751	6259	
38.936	126700	43.725	3684				43.734	39201			
42.420	5886										
43.716	13723										

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03102004"		"M03102004"			"M03102004"			"M03102004"	
m/z 360		m/z 362		m/z 288	m/z 290		m/z 426	m/z 428	
27.173	509546	27.171	429372		18.303	443580		34.422	826871
29.304	22949	29.283	15081		20.925	8493		38.900	3410
34.431	219188	34.419	62110		20.958	10670		38.927	9824
38.905	6207	34.444	35755		26.893	35436		43.703	147867
43.701	26007	43.751	6259		27.173	180162		43.726	222713
43.734	39201				28.187	399797			
					29.268	3058			
					29.294	4338			
					34.424	63669			
					38.933	4354			

Extracted Ion Current Profiles

Hexachlorobiphenyls													
"M03102004"						"M03102004"		"M03102004"					
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398	m/z 357
33.967	4571							29.291	886565	29.292	868456		
34.427	959489							32.430	3489	32.422	3397		
37.271	6279							34.422	12837	34.409	18076		
38.902	12635							34.440	8084	38.929	176641		
38.953	4863							38.906	115456	42.422	3670		
40.031	3624							38.936	126700	43.725	3684		
40.064	3296							42.420	5886				
42.388	3628							43.716	13723				
42.661	2563												
43.724	263067												

Extracted Ion Current Profiles

Heptachlorobiphenyls									
"M03102004"		"M03102004"			"M03102004"		"M03102004"		
m/z 394		m/z 396		m/z 322	m/z 324		m/z 326		m/z 462
29.291	886565	29.292	868456		20.939	426107	20.941	702453	
32.430	3489	32.422	3397		26.886	321114	26.883	525646	
34.422	12837	34.409	18076		27.166	19333	27.170	26078	
34.440	8084	38.929	176641		29.286	279028	29.290	184238	
38.906	115456	42.422	3670		34.409	5264	34.438	3381	
38.936	126700	43.725	3684		34.432	9015	38.900	9453	
42.420	5886				38.919	78433	38.920	8427	
43.716	13723				38.957	17457	38.945	14209	

Extracted Ion Current Profiles

Heptachlorobiphenyls											
"M03102004"		"M03102004"			"M03102004"		"M03102004"				
m/z 464		m/z 466		m/z 390	m/z 428		m/z 430		m/z 432	m/z 391	
38.923	1155856	38.921	910982		34.422	826871	33.967	4571			
42.413	22476	42.415	14769		38.900	3410	34.427	959489			
43.722	14837	43.688	2744		38.927	9824	37.271	6279			
43.752	4164	43.737	5180		43.703	147867	38.902	12635			
					43.726	222713	38.953	4863			
							40.031	3624			
							40.064	3296			
							42.388	3628			
							42.661	2563			
							43.724	263067			

Extracted Ion Current Profiles

Octachlorobiphenyls									
"M03102004"		"M03102004"				"M03102004"			
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462
33.967	4571	34.422	826871				27.173	509546	
34.427	959489	38.900	3410				29.304	22949	
37.271	6279	38.927	9824				34.431	219188	
38.902	12635	43.703	147867				38.905	6207	
38.953	4863	43.726	222713				43.701	26007	
40.031	3624						43.734	39201	
40.064	3296								
42.388	3628								
42.661	2563								
43.724	263067								

Extracted Ion Current Profiles

Octachlorobiphenyls				
"M03102004"		"M03102004"		
m/z 464		m/z 466		m/z 425
38.923	1155856	38.921	910982	
42.413	22476	42.415	14769	
43.722	14837	43.688	2744	
43.752	4164	43.737	5180	

Extracted Ion Current Profiles

Nonachlorobiphenyls							
"M03102004"		"M03102004"				"M03102004"	
m/z 464		m/z 466		m/z 390	m/z 392	m/z 394	
38.923	1155856	38.921	910982			29.291	886565
42.413	22476	42.415	14769			32.430	3489
43.722	14837	43.688	2744			34.422	12837
43.752	4164	43.737	5180			34.440	8084
						38.906	115456
						38.936	126700
						42.420	5886
						43.716	13723

Extracted Ion Current Profiles

Decachlorobiphenyl									
"M03102004"		"M03102004"				"M03102004"		"M03102004"	
m/z 498		m/z 500		m/z 424	m/z 426	m/z 428		m/z 430	
38.923	4782	38.934	2708			34.422	826871	33.967	4571
43.721	1522951	43.685	1173892(M)			38.900	3410	34.427	959489
		43.724	910511			38.927	9824	37.271	6279
						43.703	147867	38.902	12635
						43.726	222713	38.953	4863
								40.031	3624
								40.064	3296
								42.388	3628
								42.661	2563
								43.724	263067

Extracted Ion Current Profiles

TCMX				TCMX	chrysene - d_{12}	Chrysene-d12				phenanthrene - d_{10}	Phenanthrene-d10			
"M03102004"		"M03102004"				"M03102004"		"M03102004"			"M03102004"		"M03102004"	
m/z 244		m/z 242				m/z 240		m/z 241			m/z 188		m/z 189	
12.596	163009	12.595	125001	424	240	35.311	366370	12.595	8848	188	10.052	436070	10.052	62631
		35.308	2793	426	241	38.916	6501	29.284	2814	189	14.148	14770	14.136	13723
				428				29.306	2969		16.591	277066	16.592	43410
				430				35.306	80405		17.849	52932	17.857	6512
				498				38.916	7059					
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	34.422	5506	34.416	2647
512	38.943	3106	43.701	1313985
	43.708	1482935		

7B
EPA 680 Continuing Calibration Data

Pace Analytical Services, Inc. SDG No.: 14100567

Instrument ID:	GCMS03	Calibration Date:	10/20/2014	Time:	15:36
Lab File ID:	M03102010	Start Cal Date:	10/7/2014	Time:	8:31
Client ID:	CCV3-1020B	End Cal Date:	10/7/2014	Time:	13:25
GC Column:	DB-XLB				

NEA File ID: S:\Lab Data\GCMS-SV\EPA-680\PACE_LRF14100567\[CCV3-1020B.xls]Sheet1

COMPOUND	Average RRF	CCV RRF	MIN RRF	%D	MAX %D
1 CI1	0.973	0.917	0.005	-5.81	20
$ 2 Tetrachloro-m-xylene	0.381	0.334	0.005	-12.2	20
3 CI2	0.873	0.845	0.005	-3.28	20
5 CI3	0.633	0.615	0.005	-2.73	20
6 CI4	0.638	0.607	0.005	-4.95	20
8 CI5	0.583	0.573	0.005	-1.75	20
9 CI6	0.565	0.533	0.005	-5.63	20
11 CI7	0.635	0.639	0.005	0.58	20
13 CI8	0.695	0.681	0.005	-1.95	20
17 CI10	0.659	0.682	0.005	3.46	20
$ 13C-DCBP	0.662	0.646	0.005	-2.42	20

FORM VII-CLP-EPA 680-1

Pace Analytical - NY Lab

PCB Report EPA 680

Data file : \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102010.d
Lab Smp Id: CCV3-1020B Client Smp ID: CCV3-1020B
Inj Date : 20-OCT-2014 15:36
Operator : RMS Inst ID: GCMS03.i
Smp Info : CCV3-1020B
Misc Info : RMS M03102010
Comment   :
Method   : \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\680low.m
Meth Date : 21-Oct-2014 07:28 roys Quant Type: ISTD
Cal Date : 07-OCT-2014 13:25 Cal File: M03100709.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

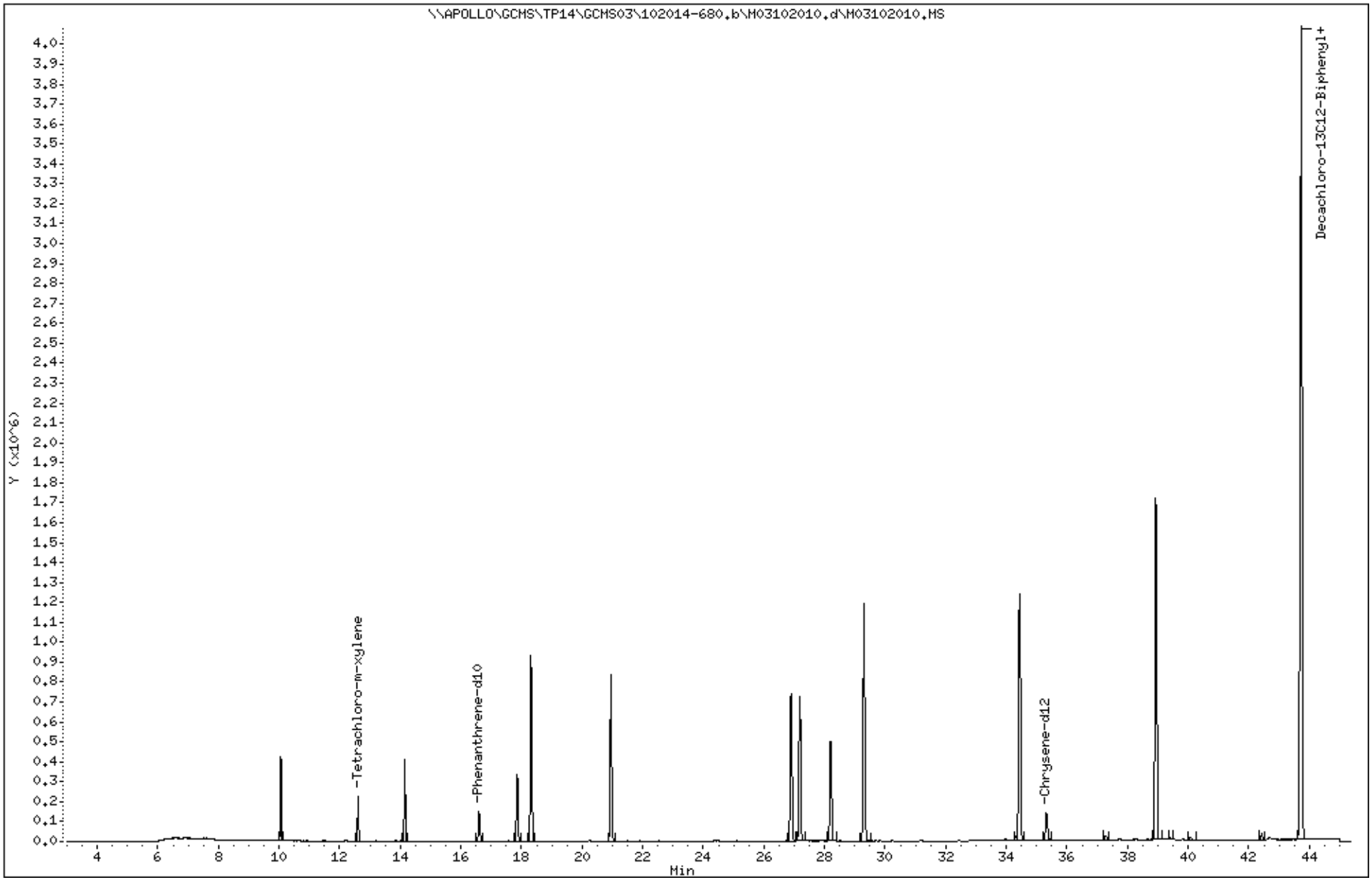
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

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 MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/uL)	AMOUNTS ON-COL (ng/uL)
* 4 Phenanthrene-d10	188	16.599	16.599	(1.000)	254327	0.80000	
* 13 Chrysene-d12	240	35.321	35.321	(1.000)	345044	0.80000	
1 Cl1	188	10.063	10.063	(0.285)	392719	1.00000	0.926
$ 2 Tetrachloro-m-xylene	244	12.600	12.600	(0.357)	143366	1.00000	0.867
3 Cl2	222	14.149	14.149	(0.401)	357854	1.00000	0.951
5 Cl3	256	17.854	17.854	(0.505)	261169	1.00000	0.956
6 Cl4	292	18.312	18.312	(0.518)	517265	2.00000	1.87
7 RTstd-BZ-104	326	20.950	20.950	(0.593)	649721	2.00000	1.89
8 Cl5	326	26.884	26.884	(0.761)	496044	2.00000	1.94
9 Cl6	360	27.193	27.193	(0.770)	464145	2.00000	1.87
10 RTstd-BZ-77	292	28.206	28.206	(0.799)	505241	2.00000	1.89
11 Cl7	394	29.309	29.309	(0.830)	828867	3.00000	2.95
12 Cl8	430	34.444	34.444	(0.975)	877013	3.00000	2.96
14 RTstd-BZ-208	464	38.944	38.944	(1.103)	1095304	4.00000	4.06
15 Cl10	498	43.741	43.741	(1.238)	1472596	5.00000	5.13
$ 16 Decachloro-13C12-Biphenyl	510	43.716	43.716	(1.238)	1402971	5.00000	4.87

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102010.d
Date : 20-OCT-2014 15:36
Client ID: CCV3-1020B
Sample Info: CCV3-1020B
Volume Injected (uL): 2.0
Column phase: DBXLB

Instrument: GCMS03.i
Operator: RMS
Column diameter: 0.25



Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102010"		"M03102010"		"M03102010"			
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
10.058	398230	10.058	142009				
14.147	13112	16.594	3561				
16.599	257135						
17.859	50830						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102010"		"M03102010"		"M03102010"						"M03102010"	
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
14.152	366914	14.152	248439							10.058	398230
17.854	10927	18.312	34207							14.147	13112
18.314	170946	28.198	22002							16.599	257135
20.962	3423									17.859	50830
26.907	3690										
27.179	7807										
28.202	131165										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102010"		"M03102010"			
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
17.857	267321	17.860	270257		
18.310	32386	18.312	41094		
18.319	19841	20.958	57110		
20.950	170644	26.887	57831		
26.896	172824				
27.169	3599				
28.197	9781				
29.287	15351				
29.311	21693				

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102010"		"M03102010"				"M03102010"		"M03102010"		"M03102010"	
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
17.857	267321	17.860	270257			10.058	398230	20.948	399712	20.951	648702
18.310	32386	18.312	41094			14.147	13112	26.896	298243	26.891	497433
18.319	19841	20.958	57110			16.599	257135	27.192	19056	27.172	12725
20.950	170644	26.887	57831			17.859	50830	29.301	264019	27.192	14882
26.896	172824							34.416	5554	29.295	111919
27.169	3599							34.454	7355	29.321	65178
28.197	9781							38.941	101504	34.448	6387
29.287	15351									38.910	6429
29.311	21693									38.945	22821

Extracted Ion Current Profiles

Trichlorobiphenyls											
				"M03102010"		"M03102010"					
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
				18.315	413528	18.313	527026				
				20.941	7880	20.948	16310				
				20.962	7888	26.887	41908				
				26.897	34122	27.183	79893				
				27.186	162736	28.204	502411				
				28.197	361813	34.423	6471				
				29.290	5967	34.445	9173				
				29.309	6568						
				29.326	2827						
				34.430	40983						
				34.457	17420						

Extracted Ion Current Profiles

Tetrachlorobiphenyls											
"M03102010"		"M03102010"			"M03102010"		"M03102010"		"M03102010"		
m/z 292		m/z 290		m/z 220	m/z 222		m/z 360		m/z 362		
18.313	527026	18.315	413528		14.152	366914	27.188	462881	27.189	381555	
20.948	16310	20.941	7880		17.854	10927	29.287	10710	29.299	14240	
26.887	41908	20.962	7888		18.314	170946	29.309	5502	34.421	28903	
27.183	79893	26.897	34122		20.962	3423	29.333	4242	34.448	46059	
28.204	502411	27.186	162736		26.907	3690	34.444	212024	38.948	4432	
34.423	6471	28.197	361813		27.179	7807	38.933	9547	43.689	2945	
34.445	9173	29.290	5967		28.202	131165	38.970	2933	43.744	14157	
		29.309	6568				43.736	66144			
		29.326	2827				43.766	20634			
		34.430	40983								
		34.457	17420								

Extracted Ion Current Profiles

Tetrachlorobiphenyls						
	"M03102010"		"M03102010"			
m/z 288	m/z 324		m/z 326		m/z 328	m/z 289
	20.948	399712	20.951	648702		
	26.896	298243	26.891	497433		
	27.192	19056	27.172	12725		
	29.301	264019	27.192	14882		
	34.416	5554	29.295	111919		
	34.454	7355	29.321	65178		
	38.941	101504	34.448	6387		
			38.910	6429		
			38.945	22821		

Extracted Ion Current Profiles

Pentachlorobiphenyls									
"M03102010"		"M03102010"			"M03102010"		"M03102010"		"M03102010"
m/z 326		m/z 324		m/z 254	m/z 256		m/z 258		m/z 392
20.951	648702	20.948	399712		17.857	267321	17.860	270257	
26.891	497433	26.896	298243		18.310	32386	18.312	41094	
27.172	12725	27.192	19056		18.319	19841	20.958	57110	
27.192	14882	29.301	264019		20.950	170644	26.887	57831	
29.295	111919	34.416	5554		26.896	172824			
29.321	65178	34.454	7355		27.169	3599			
34.448	6387	38.941	101504		28.197	9781			
38.910	6429				29.287	15351			
38.945	22821				29.311	21693			

Extracted Ion Current Profiles

Pentachlorobiphenyls											
"M03102010"		"M03102010"						"M03102010"		"M03102010"		
m/z 394		m/z 396		m/z 398		m/z 322		m/z 360		m/z 362		m/z 323
29.305	832390	29.299	819300					27.188	462881	27.189	381555	
32.439	3072	32.444	2776					29.287	10710	29.299	14240	
34.430	14867	34.413	4992					29.309	5502	34.421	28903	
38.931	268261	34.429	5847					29.333	4242	34.448	46059	
42.427	5645	34.469	2562					34.444	212024	38.948	4432	
43.740	8325	38.924	54613					38.933	9547	43.689	2945	
43.772	3118	38.948	82560					38.970	2933	43.744	14157	
		42.431	2964					43.736	66144			
		43.687	4690					43.766	20634			
		43.729	3999									
		43.753	5584									

Extracted Ion Current Profiles

Hexachlorobiphenyls									
"M03102010"		"M03102010"			"M03102010"			"M03102010"	
m/z 360		m/z 362		m/z 288	m/z 290		m/z 426	m/z 428	
27.188	462881	27.189	381555		18.315	413528		33.977	3294
29.287	10710	29.299	14240		20.941	7880		34.437	793974
29.309	5502	34.421	28903		20.962	7888		38.908	12117
29.333	4242	34.448	46059		26.897	34122		38.964	4740
34.444	212024	38.948	4432		27.186	162736		43.727	334167
38.933	9547	43.689	2945		28.197	361813			
38.970	2933	43.744	14157		29.290	5967			
43.736	66144				29.309	6568			
43.766	20634				29.326	2827			
					34.430	40983			
					34.457	17420			

Extracted Ion Current Profiles

Hexachlorobiphenyls													
"M03102010"						"M03102010"		"M03102010"					
m/z 430		m/z 432		m/z 356		m/z 392		m/z 394		m/z 396		m/z 398	m/z 357
34.309	2695							29.305	832390	29.299	819300		
34.435	887892							32.439	3072	32.444	2776		
37.280	7447							34.430	14867	34.413	4992		
38.922	8980							38.931	268261	34.429	5847		
38.955	6578							42.427	5645	34.469	2562		
40.066	6727							43.740	8325	38.924	54613		
42.672	4303							43.772	3118	38.948	82560		
42.726	2637									42.431	2964		
43.737	253755									43.687	4690		
										43.729	3999		
										43.753	5584		

Extracted Ion Current Profiles

Heptachlorobiphenyls									
"M03102010"		"M03102010"			"M03102010"		"M03102010"		
m/z 394		m/z 396		m/z 322	m/z 324		m/z 326		m/z 462
29.305	832390	29.299	819300		20.948	399712	20.951	648702	
32.439	3072	32.444	2776		26.896	298243	26.891	497433	
34.430	14867	34.413	4992		27.192	19056	27.172	12725	
38.931	268261	34.429	5847		29.301	264019	27.192	14882	
42.427	5645	34.469	2562		34.416	5554	29.295	111919	
43.740	8325	38.924	54613		34.454	7355	29.321	65178	
43.772	3118	38.948	82560		38.941	101504	34.448	6387	
		42.431	2964				38.910	6429	
		43.687	4690				38.945	22821	
		43.729	3999						
		43.753	5584						

Extracted Ion Current Profiles

Heptachlorobiphenyls												
"M03102010"		"M03102010"			"M03102010"		"M03102010"					
m/z 464		m/z 466		m/z 390	m/z 428		m/z 430		m/z 432		m/z 391	
38.940	1098913	38.934	733685		33.977	3294	34.309	2695				
42.427	20439	38.982	46034		34.437	793974	34.435	887892				
43.710	14118	39.007	7981		38.908	12117	37.280	7447				
43.750	10442	42.428	15439		38.964	4740	38.922	8980				
		43.738	16888		43.727	334167	38.955	6578				
							40.066	6727				
							42.672	4303				
							42.726	2637				
							43.737	253755				

Extracted Ion Current Profiles

Octachlorobiphenyls									
"M03102010"		"M03102010"				"M03102010"			
m/z 430		m/z 428		m/z 356		m/z 358		m/z 360		m/z 462
34.309	2695	33.977	3294				27.188	462881	
34.435	887892	34.437	793974				29.287	10710	
37.280	7447	38.908	12117				29.309	5502	
38.922	8980	38.964	4740				29.333	4242	
38.955	6578	43.727	334167				34.444	212024	
40.066	6727						38.933	9547	
42.672	4303						38.970	2933	
42.726	2637						43.736	66144	
43.737	253755						43.766	20634	

Extracted Ion Current Profiles

Octachlorobiphenyls				
"M03102010"		"M03102010"		
m/z 464		m/z 466		m/z 425
38.940	1098913	38.934	733685	
42.427	20439	38.982	46034	
43.710	14118	39.007	7981	
43.750	10442	42.428	15439	
		43.738	16888	

Extracted Ion Current Profiles

Nonachlorobiphenyls							
"M03102010"		"M03102010"				"M03102010"	
m/z 464		m/z 466		m/z 390	m/z 392	m/z 394	
38.940	1098913	38.934	733685			29.305	832390
42.427	20439	38.982	46034			32.439	3072
43.710	14118	39.007	7981			34.430	14867
43.750	10442	42.428	15439			38.931	268261
		43.738	16888			42.427	5645
						43.740	8325
						43.772	3118

Extracted Ion Current Profiles

Decachlorobiphenyl									
"M03102010"		"M03102010"				"M03102010"		"M03102010"	
m/z 498		m/z 500		m/z 424	m/z 426	m/z 428		m/z 430	
43.740	1481862	38.944	5081			33.977	3294	34.309	2695
		43.742	1166183			34.437	793974	34.435	887892
						38.908	12117	37.280	7447
						38.964	4740	38.922	8980
						43.727	334167	38.955	6578
								40.066	6727
								42.672	4303
								42.726	2637
								43.737	253755

Extracted Ion Current Profiles

TCMX				TCMX
"M03102010"		"M03102010"		
m/z 244		m/z 242		
12.601	145304	12.602	114191	424
33.106	2811	35.325	3540	426
				428
				430
				498
				500

chrysene - d_{12}	Chrysene-d12			
	"M03102010"		"M03102010"	
	m/z 240		m/z 241	
240	29.309	4553	12.603	8154
241	34.418	2551	34.458	6220
	35.325	347529	35.323	70209
			38.952	5316

phenanthrene - d_{10}	Phenanthrene-d10			
	"M03102010"		"M03102010"	
	m/z 188		m/z 189	
188	10.058	398230	10.058	53197
189	14.147	13112	14.152	13216
	16.599	257135	16.591	40975
	17.859	50830	17.863	7102

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	34.444	2707	43.717	1203367
512	43.719	1402551		

QC Sample Raw Data

Quality Control Results
Method Blank

Job Number: 14100567

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: Method Blank (AR39883B)
Lab Sample ID: SBLK-03

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:	MS03-471-5	PCBs by EPA Method TO-10A/680	10/20/2014 11:32	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29032	TO-10A	10/16/2014 17:40	MXR	0.00m³	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	MS03-471-5
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-471-5
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-471-5
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-471-5
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-471-5
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-471-5
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-471-5
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-471-5
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-471-5
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-471-5
Total PCB	1336-36-3	ND		1.00	U	MS03-471-5

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	69.1	70.1-116	*	MS03-471-5
Tetrachloro-meta-xylene	877-09-8	61.6	44.4-104		MS03-471-5

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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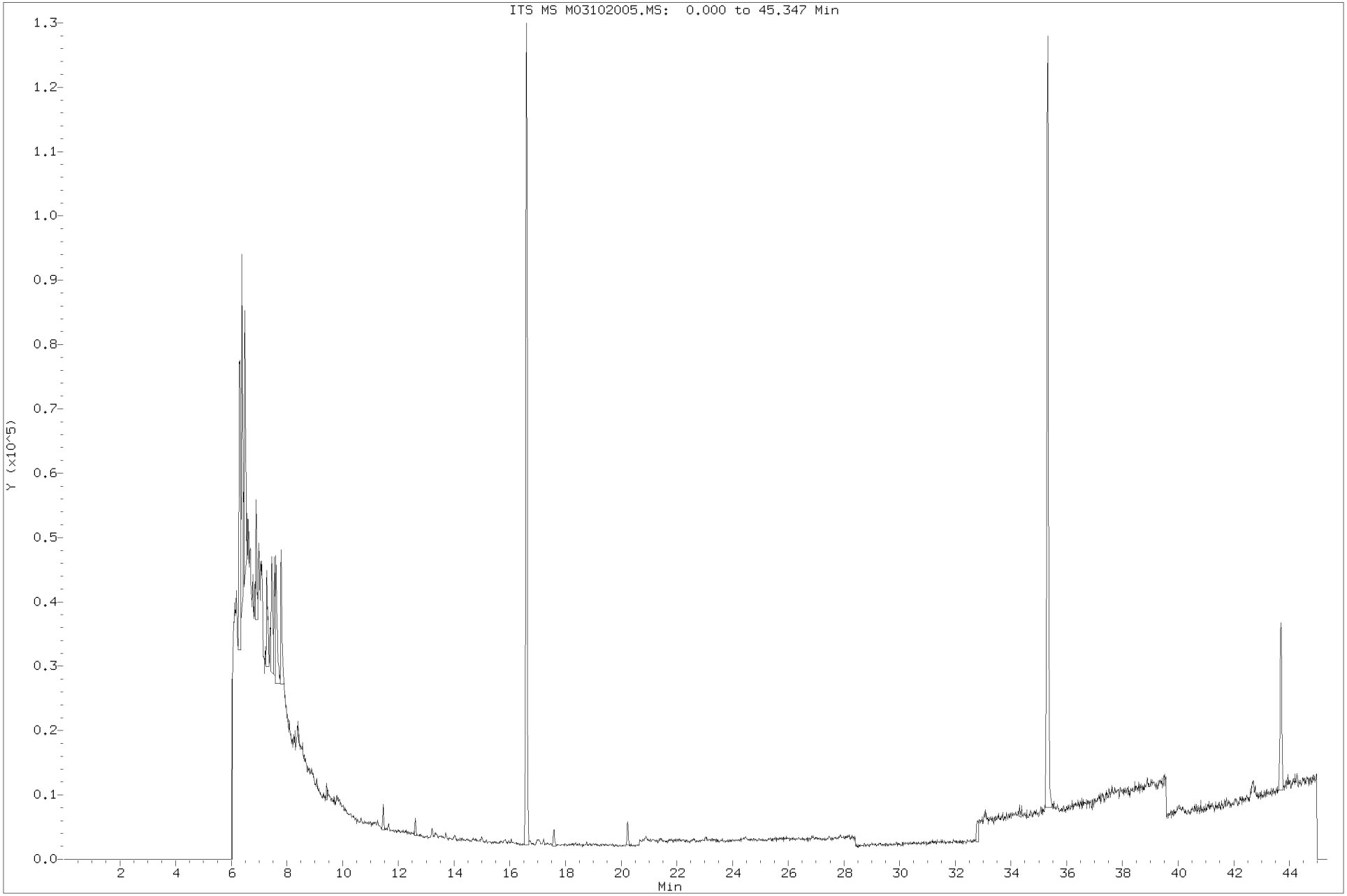
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102005.d/M03102005.MS
Injection Date: 20-OCT-2014 11:32
Instrument: GCMS03.i
Client Sample ID: AR39883BLANK



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100567
ELAP ID No.:	11078	Client ID:	Method Blank
Matrix:	TO-10A PUF	Lab Sample ID:	AR39883B
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	11:32

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	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	ug	ug	
				Hepta Total:		0.0150	0.0150	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	ug	ug	
				Octa Total:		0.0150	0.0150	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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
				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	Flag
m/z 244		m/z 242		1.1 - 1.5			ug/mL	
12.607	1772	12.604	1399	1.3	0.3809		0.0123	
				TCMX Total:			0.0123	

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	
43.694	17256	43.697	15703	1.1	0.6617		0.0691	
				Deca Total:			0.0691	

TCMX Recovery %	61.6 %
Deca Recovery	69.1 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.319	301928	35.310	65787	4.6	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102005"		"M03102005"		"M03102005"		"M03102005"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.598	225319	16.604	3242				

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102005"		"M03102005"		"M03102005"		"M03102005"		"M03102005"		"M03102005"	
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
6.302	6557							16.604	21241	16.598	225319
6.384	5294										
6.421	2668										
6.488	4054										
6.592	4499										
6.666	3515										
6.716	3438										
6.853	2738										
6.892	3708										
7.051	2578										
7.550	2873										
7.606	2846										
7.655	2601										
7.793	2673										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102005"		"M03102005"		"M03102005"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.031	4820
				6.086	9323
				6.112	3381
				6.166	12002
				6.204	5326
				6.218	4022
				6.297	29418
				6.383	26633
				6.459	6925
				6.493	26421
				6.573	12714
				6.624	12475
				6.679	16343
				6.744	6317
				6.775	7373
				6.811	6881
				6.848	8595
				6.894	12402
				6.934	7317
				6.986	16472
				7.049	5377
				7.102	20526
				7.167	9794
				7.232	6779
				7.288	12813
				7.313	8934
				7.397	9167
				7.459	14549
				7.496	5972
				7.553	12670
				7.603	24323
				7.720	7104
				7.791	15681
				7.842	4676
				7.876	6743
				7.912	8120
				7.982	6812
				8.011	4696
				8.068	4129
				8.121	8125
				8.177	4218

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102005"		"M03102005"		"M03102005"		"M03102005"		"M03102005"		"M03102005"	
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
				16.604	21241	16.598	225319				

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362
			6.302 6557		
			6.384 5294		
			6.421 2668		
			6.488 4054		
			6.592 4499		
			6.666 3515		
			6.716 3438		
			6.853 2738		
			6.892 3708		
			7.051 2578		
			7.550 2873		
			7.606 2846		
			7.655 2601		
			7.793 2673		

Extracted Ion Current Profiles

Hexachlorobiphenyls							
"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"
m/z 430	m/z 432	m/z 356	m/z 392	m/z 394	m/z 396	m/z 398	m/z 357

44.793 2538

Extracted Ion Current Profiles

Heptachlorobiphenyls						
"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"
m/z 464	m/z 466	m/z 390	m/z 428	m/z 430	m/z 432	m/z 391
				44.793 2538		

Extracted Ion Current Profiles

Octachlorobiphenyls					
"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"
m/z 430	m/z 428	m/z 356	m/z 358	m/z 360	m/z 462

44.793 2538

Extracted Ion Current Profiles

Decachlorobiphenyl					
"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"	"M03102005"
m/z 498	m/z 500	m/z 424	m/z 426	m/z 428	m/z 430

44.793 2538

Extracted Ion Current Profiles

TCMX				TCMX	chrysene - d_{12}	Chrysene-d12				phenanthrene - d_{10}	Phenanthrene-d10			
"M03102005"		"M03102005"				"M03102005"		"M03102005"			"M03102005"		"M03102005"	
m/z 244		m/z 242				m/z 240		m/z 241			m/z 188		m/z 189	
12.607	1772	12.604	1399	424	240	35.319	301928	35.310	65787	188	16.598	225319	16.595	33706
27.466	721	35.289	2188	426	241					189				
33.086	2667	35.336	4248	428										
				430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	43.694	17256	43.697	15703
512				

Quality Control Results
Method Blank

Job Number: 14100568

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

Client: PACE ANALYTICAL SERVICES INC.
Project: VERIFICATION PUF
Client Sample ID: Method Blank (AR39884B)
Lab Sample ID: SBLK-02

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:	MS03-471-7	PCBs by EPA Method TO-4A/680	10/20/2014 13:10	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29033	TO-4A	10/16/2014 17:40	MXR	0.00m³	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	MS03-471-7
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-471-7
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-471-7
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-471-7
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-471-7
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-471-7
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-471-7
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-471-7
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-471-7
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-471-7
Total PCB	1336-36-3	ND		1.00	U	MS03-471-7

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	75.0	42.5-134		MS03-471-7
Tetrachloro-meta-xylene	877-09-8	66.3	17.9-137		MS03-471-7

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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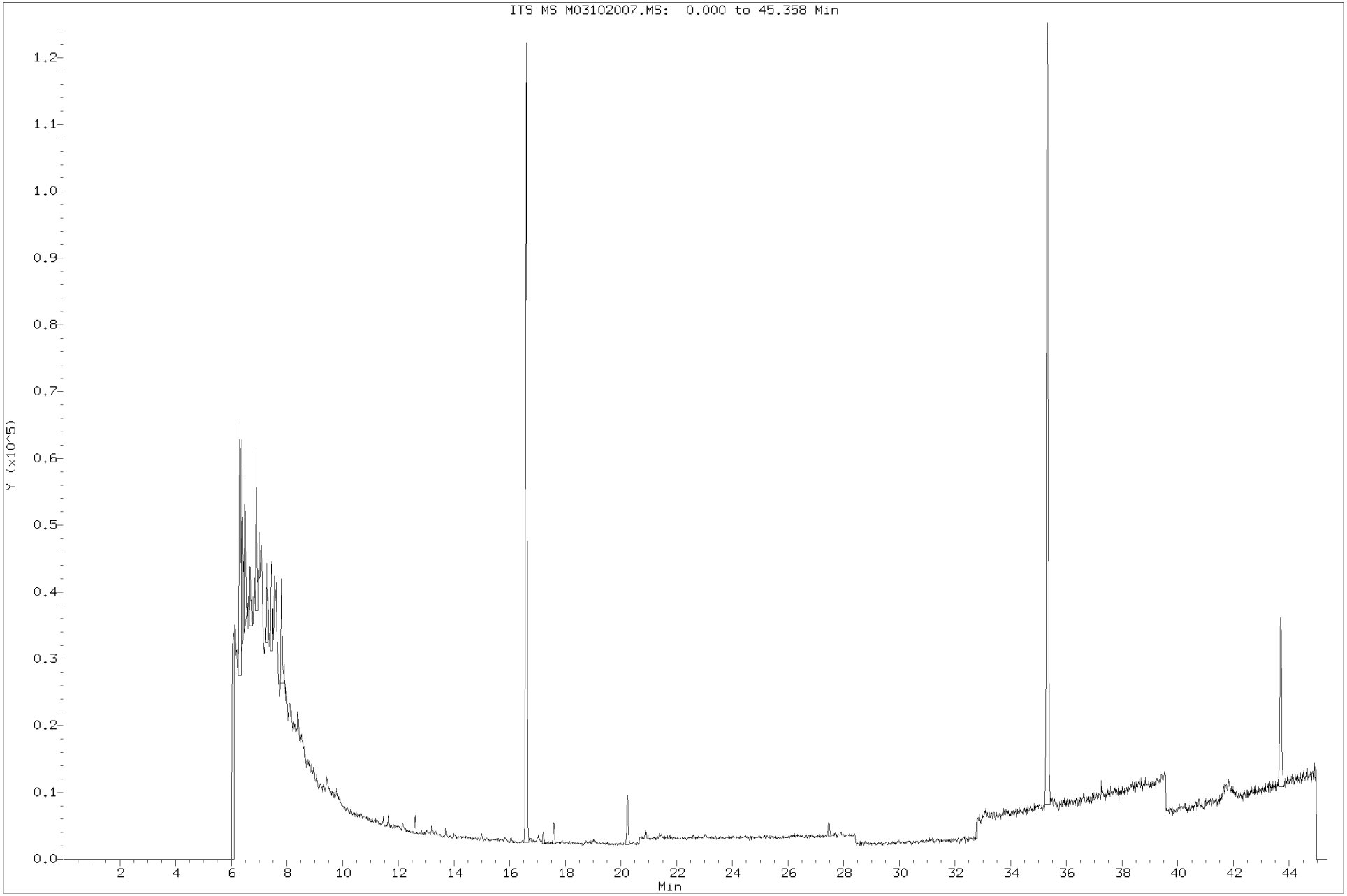
2190 Technology Drive | Schenectady, NY 12308 | Phone 518.346.4592 | Fax 518.381.6055 | www.pacelabs.com

Data File: \\APOLLO\GCMS\TP14\GCMS03\102014-680.b\M03102007.d/M03102007.MS
Injection Date: 20-OCT-2014 13:10
Instrument: GCMS03.i
Client Sample ID: AR39884BLANK



Form 1
PCB Homolog Report

Pace Analytical Services, Inc.

		SDG No.:	14100568
ELAP ID No.:	11078	Client ID:	Method Blank
Matrix:	TO-10A PUF	Lab Sample ID:	AR39884B
Sample weight:	NA	Date Received:	N/A
% Moisture	0 %	Date Extracted:	10/16/2014
Method:	EPA 680 (GC/MS)	Date Analyzed:	10/20/2014
Dilution Factor:	1	Time Analyzed:	13:10

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

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	Reporting Limit ug	Report Amount ug	Flag
				Mono Total:		0.00500	0.00500	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	Reporting Limit ug	Report Amount ug	Flag
				Di Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tri Total:		0.00500	0.00500	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Tetra Total:		0.0100	0.0100	ND	

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	Reporting Limit ug	Report Amount ug	Flag
				Penta Total:		0.0100	0.0100	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	Reporting Limit ug	Report Amount ug	Flag
				Hexa Total:		0.0100	0.0100	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	ug	ug	
				Hepta Total:		0.0150	0.0150	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	ug	ug	
				Octa Total:		0.0150	0.0150	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	ug	ug	
				Nona Total:		0.0250	0.0250	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	ug	ug	
				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	Flag
m/z 244		m/z 242		1.1 - 1.5			ug/mL	
12.606	1835	12.606	1339	1.4	0.3809		0.0133	
				TCMX Total:			0.0133	

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	
43.694	18014	43.694	16106	1.1	0.6617		0.0750	
				Deca Total:			0.0750	

TCMX Recovery %	66.3 %
Deca Recovery	75.0 %

Chrysene-d_{12} Internal Standard								
Quant Ion RT	Quant Ion Area	Confirm Ion RT	Confirm Ion Area	Ratio	Response Factor		Solution Concentration	Flag
m/z 240		m/z 241		4.3 - 5.9			ug/mL	
35.313	290551	35.305	60934	4.8	1.0000		0.800	
				Chrysene-d_{12}:			0.800	

Extracted Ion Current Profiles

Monochlorobiphenyls							
"M03102007"		"M03102007"		"M03102007"		"M03102007"	
m/z 188		m/z 190		m/z 152		m/z 153	
RT	Area	RT	Area	RT	Area	RT	Area
16.596	208895						

Extracted Ion Current Profiles

Dichlorobiphenyls											
"M03102007"		"M03102007"		"M03102007"		"M03102007"		"M03102007"		"M03102007"	
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
6.300	3644							16.593	21302	16.596	208895
6.385	3057										
6.497	5552										
6.621	2522										
6.718	2830										
6.820	2919										
6.887	2532										
6.918	3152										
6.995	3323										
7.132	2546										
7.269	2765										
7.387	2733										
7.460	3517										
7.546	2671										
7.602	2638										

Extracted Ion Current Profiles

Dichlorobiphenyls					
"M03102007"		"M03102007"		"M03102007"	
m/z 256		m/z 258		m/z 221	
RT	Area	RT	Area	RT	Area
				6.034	3777
				6.058	4778
				6.090	6872
				6.132	9895
				6.196	6733
				6.223	4280
				6.309	24728
				6.387	17525
				6.444	6684
				6.492	23829
				6.586	7314
				6.631	8182
				6.688	10870
				6.717	10396
				6.758	2767
				6.792	6861
				6.836	10001
				6.893	13431
				6.920	8247
				7.003	12680
				7.042	9964
				7.081	10250
				7.125	10692
				7.212	10601
				7.278	13522
				7.323	11539
				7.361	2770
				7.391	5488
				7.442	6986
				7.459	6639
				7.504	8398
				7.552	8581
				7.587	2855
				7.617	11338
				7.658	4178
				7.678	4285
				7.736	5906
				7.794	25011
				7.915	5085
				7.958	5421
				8.014	6904

Extracted Ion Current Profiles

Trichlorobiphenyls											
"M03102007"		"M03102007"		"M03102007"		"M03102007"		"M03102007"		"M03102007"	
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
				16.593	21302	16.596	208895				

Extracted Ion Current Profiles

Tetrachlorobiphenyls					
"M03102007"	"M03102007"	"M03102007"	"M03102007"	"M03102007"	"M03102007"
m/z 292	m/z 290	m/z 220	m/z 222	m/z 360	m/z 362

6.300	3644
6.385	3057
6.497	5552
6.621	2522
6.718	2830
6.820	2919
6.887	2532
6.918	3152
6.995	3323
7.132	2546
7.269	2765
7.387	2733
7.460	3517
7.546	2671
7.602	2638

Extracted Ion Current Profiles

TCMX						Chrysene-d12					Phenanthrene-d10			
"M03102007"		"M03102007"				"M03102007"		"M03102007"			"M03102007"		"M03102007"	
m/z 244		m/z 242		TCMX	chrysene - d_{12}	m/z 240		m/z 241		phenanthrene - d_{10}	m/z 188		m/z 189	
6.489	515	12.606	1339	424	240	35.313	290551	35.305	60934(M)	188	16.596	208895	16.598	33178
12.606	1835	35.304	7101	426	241			35.328	30748	189				
27.464	5431			428										
33.095	2636			430										
				498										
				500										

Extracted Ion Current Profiles

	Deca C13			
Deca C13	m/z 510		m/z 512	
510	35.297	425	43.694	16106
512	35.339	591		
	43.694	18014		

Analytical Sample Results

Job Number: 14100477

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: VS-10-34
Lab Sample ID: 14100477-01 (AR39372)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-17	PCBs by EPA Method TO-10A/680	10/20/2014 21:22	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.17m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00427	1.00	U J	MS03-472-17
Dichlorobiphenyl	25512-42-9	ND	0.00427	1.00	U	MS03-472-17
Trichlorobiphenyl	25323-68-6	ND	0.00427	1.00	U	MS03-472-17
Tetrachlorobiphenyl	26914-33-0	ND	0.00855	1.00	U	MS03-472-17
Pentachlorobiphenyl	25429-29-2	ND	0.00855	1.00	U	MS03-472-17
Hexachlorobiphenyl	26601-64-9	ND	0.00855	1.00	U	MS03-472-17
Heptachlorobiphenyl	28655-71-2	ND	0.0128	1.00	U	MS03-472-17
Octachlorobiphenyl	55722-26-4	ND	0.0128	1.00	U	MS03-472-17
Nonachlorobiphenyl	53742-07-7	ND	0.0214	1.00	U	MS03-472-17
Decachlorobiphenyl	2051-24-3	ND	0.0214	1.00	U	MS03-472-17
Total PCB	1336-36-3	ND		1.00	U J	MS03-472-17

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	59.0	70.1-116	*	MS03-472-17
Tetrachloro-meta-xylene	877-09-8	63.3	44.4-104		MS03-472-17

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
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Note: Concentration results based upon client supplied air volumes.

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dam 11/22/14

Analytical Sample Results

Job Number: 14100477

Pace Analytical Services, Inc.
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Fax: 518.381.6055

Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: VS-10-34-DUP
Lab Sample ID: 14100477-02 (AR39373)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-18	PCBs by EPA Method TO-10A/680	10/20/2014 22:11	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.16m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00431	1.00	U J	MS03-472-18
Dichlorobiphenyl	25512-42-9	ND	0.00431	1.00	U	MS03-472-18
Trichlorobiphenyl	25323-68-6	ND	0.00431	1.00	U	MS03-472-18
Tetrachlorobiphenyl	26914-33-0	ND	0.00862	1.00	U	MS03-472-18
Pentachlorobiphenyl	25429-29-2	ND	0.00862	1.00	U	MS03-472-18
Hexachlorobiphenyl	26601-64-9	ND	0.00862	1.00	U	MS03-472-18
Heptachlorobiphenyl	28655-71-2	ND	0.0129	1.00	U	MS03-472-18
Octachlorobiphenyl	55722-26-4	ND	0.0129	1.00	U	MS03-472-18
Nonachlorobiphenyl	53742-07-7	ND	0.0216	1.00	U	MS03-472-18
Decachlorobiphenyl	2051-24-3	ND	0.0216	1.00	U	MS03-472-18
Total PCB	1336-36-3	ND		1.00	U J	MS03-472-18

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	68.5	70.1-116	*	MS03-472-18
Tetrachloro-meta-xylene	877-09-8	61.7	44.4-104		MS03-472-18

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
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Note: Concentration results based upon client supplied air volumes.

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Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: VS-12-34
Lab Sample ID: 14100477-03 (AR39374)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-19	PCBs by EPA Method TO-10A/680	10/20/2014 22:59	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.01m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00495	1.00	U	MS03-472-19
Dichlorobiphenyl	25512-42-9	ND	0.00495	1.00	U	MS03-472-19
Trichlorobiphenyl	25323-68-6	ND	0.00495	1.00	U	MS03-472-19
Tetrachlorobiphenyl	26914-33-0	ND	0.00990	1.00	U	MS03-472-19
Pentachlorobiphenyl	25429-29-2	ND	0.00990	1.00	U	MS03-472-19
Hexachlorobiphenyl	26601-64-9	ND	0.00990	1.00	U	MS03-472-19
Heptachlorobiphenyl	28655-71-2	ND	0.0149	1.00	U	MS03-472-19
Octachlorobiphenyl	55722-26-4	ND	0.0149	1.00	U	MS03-472-19
Nonachlorobiphenyl	53742-07-7	ND	0.0248	1.00	U	MS03-472-19
Decachlorobiphenyl	2051-24-3	ND	0.0248	1.00	U	MS03-472-19
Total PCB	1336-36-3	ND		1.00	U	MS03-472-19

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	73.6	70.1-116		MS03-472-19
Tetrachloro-meta-xylene	877-09-8	66.0	44.4-104		MS03-472-19

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ND: Denotes analyte not detected at a concentration greater than the PQL.
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Note: Concentration results based upon client supplied air volumes.

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Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: VS-1-34
Lab Sample ID: 14100477-04 (AR39375)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-20	PCBs by EPA Method TO-10A/680	10/20/2014 23:48	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.20m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00417	1.00	U J	MS03-472-20
Dichlorobiphenyl	25512-42-9	ND	0.00417	1.00	U	MS03-472-20
Trichlorobiphenyl	25323-68-6	ND	0.00417	1.00	U	MS03-472-20
Tetrachlorobiphenyl	26914-33-0	ND	0.00833	1.00	U	MS03-472-20
Pentachlorobiphenyl	25429-29-2	ND	0.00833	1.00	U	MS03-472-20
Hexachlorobiphenyl	26601-64-9	ND	0.00833	1.00	U	MS03-472-20
Heptachlorobiphenyl	28655-71-2	ND	0.0125	1.00	U	MS03-472-20
Octachlorobiphenyl	55722-26-4	ND	0.0125	1.00	U	MS03-472-20
Nonachlorobiphenyl	53742-07-7	ND	0.0208	1.00	U	MS03-472-20
Decachlorobiphenyl	2051-24-3	ND	0.0208	1.00	U	MS03-472-20
Total PCB	1336-36-3	ND		1.00	U J	MS03-472-20

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	64.0	70.1-116	*	MS03-472-20
Tetrachloro-meta-xylene	877-09-8	57.8	44.4-104		MS03-472-20

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Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: VS-4-34
Lab Sample ID: 14100477-05 (AR39376)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-21	PCBs by EPA Method TO-10A/680	10/21/2014 00:37	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	1.20m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.00417	1.00	U J	MS03-472-21
Dichlorobiphenyl	25512-42-9	ND	0.00417	1.00	U	MS03-472-21
Trichlorobiphenyl	25323-68-6	ND	0.00417	1.00	U	MS03-472-21
Tetrachlorobiphenyl	26914-33-0	ND	0.00833	1.00	U	MS03-472-21
Pentachlorobiphenyl	25429-29-2	ND	0.00833	1.00	U	MS03-472-21
Hexachlorobiphenyl	26601-64-9	ND	0.00833	1.00	U	MS03-472-21
Heptachlorobiphenyl	28655-71-2	ND	0.0125	1.00	U	MS03-472-21
Octachlorobiphenyl	55722-26-4	ND	0.0125	1.00	U	MS03-472-21
Nonachlorobiphenyl	53742-07-7	ND	0.0208	1.00	U	MS03-472-21
Decachlorobiphenyl	2051-24-3	ND	0.0208	1.00	U	MS03-472-21
Total PCB	1336-36-3	ND		1.00	U J	MS03-472-21

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	63.5	70.1-116	*	MS03-472-21
Tetrachloro-meta-xylene	877-09-8	51.6	44.4-104		MS03-472-21

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Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: VS-TB-34
Lab Sample ID: 14100477-06 (AR39377)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-22	PCBs by EPA Method TO-10A/680	10/21/2014 01:26	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29027	TO-10A	10/16/2014 18:00	MXR	0.00m³	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 J	MS03-472-22
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-472-22
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-472-22
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-472-22
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-472-22
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-472-22
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-472-22
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-472-22
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-472-22
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-472-22
Total PCB	1336-36-3	ND		1.00	U J	MS03-472-22

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	66.8	70.1-116	*	MS03-472-22
Tetrachloro-meta-xylene	877-09-8	55.0	44.4-104		MS03-472-22

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Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: A-34
Lab Sample ID: 14100477-07 (AR39378)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-7	PCBs by EPA Method TO-4A/680	10/21/2014 09:38	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	240.60m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000420	2.00	U	MS03-473-7
Dichlorobiphenyl	25512-42-9	ND	0.0000420	2.00	U	MS03-473-7
Trichlorobiphenyl	25323-68-6	**0.0114**	0.0000420	2.00		MS03-473-7
Tetrachlorobiphenyl	26914-33-0	ND	0.0000830	2.00	U	MS03-473-7
Pentachlorobiphenyl	25429-29-2	ND	0.0000830	2.00	U	MS03-473-7
Hexachlorobiphenyl	26601-64-9	ND	0.0000830	2.00	U	MS03-473-7
Heptachlorobiphenyl	28655-71-2	ND	0.000125	2.00	U	MS03-473-7
Octachlorobiphenyl	55722-26-4	ND	0.000125	2.00	U	MS03-473-7
Nonachlorobiphenyl	53742-07-7	ND	0.000208	2.00	U	MS03-473-7
Decachlorobiphenyl	2051-24-3	ND	0.000208	2.00	U	MS03-473-7
Total PCB	1336-36-3	**0.0114**		2.00		MS03-473-7

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	53.6	42.5-134		MS03-473-7
Tetrachloro-meta-xylene	877-09-8	98.4	17.9-137		MS03-473-7

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Analytical Sample Results

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Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: B-34
Lab Sample ID: 14100477-08 (AR39379)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-8	PCBs by EPA Method TO-4A/680	10/21/2014 10:27	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	311.00m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000320	2.00	U	MS03-473-8
Dichlorobiphenyl	25512-42-9	ND	0.0000320	2.00	U	MS03-473-8
Trichlorobiphenyl	25323-68-6	**0.0100**	0.0000320	2.00		MS03-473-8
Tetrachlorobiphenyl	26914-33-0	**0.000358**	0.0000640	2.00		MS03-473-8
Pentachlorobiphenyl	25429-29-2	ND	0.0000640	2.00	U	MS03-473-8
Hexachlorobiphenyl	26601-64-9	ND	0.0000640	2.00	U	MS03-473-8
Heptachlorobiphenyl	28655-71-2	ND	0.0000960	2.00	U	MS03-473-8
Octachlorobiphenyl	55722-26-4	ND	0.0000960	2.00	U	MS03-473-8
Nonachlorobiphenyl	53742-07-7	ND	0.000161	2.00	U	MS03-473-8
Decachlorobiphenyl	2051-24-3	ND	0.000161	2.00	U	MS03-473-8
Total PCB	1336-36-3	**0.0104**		2.00		MS03-473-8

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	54.6	42.5-134		MS03-473-8
Tetrachloro-meta-xylene	877-09-8	79.7	17.9-137		MS03-473-8

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ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
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Analytical Sample Results

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Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: C-34
Lab Sample ID: 14100477-09 (AR39380)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-9	PCBs by EPA Method TO-4A/680	10/21/2014 11:16	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	320.80m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000310	2.00	U	MS03-473-9
Dichlorobiphenyl	25512-42-9	ND	0.0000310	2.00	U	MS03-473-9
Trichlorobiphenyl	25323-68-6	**0.00566**	0.0000310	2.00		MS03-473-9
Tetrachlorobiphenyl	26914-33-0	ND	0.0000620	2.00	U	MS03-473-9
Pentachlorobiphenyl	25429-29-2	ND	0.0000620	2.00	U	MS03-473-9
Hexachlorobiphenyl	26601-64-9	ND	0.0000620	2.00	U	MS03-473-9
Heptachlorobiphenyl	28655-71-2	ND	0.0000940	2.00	U	MS03-473-9
Octachlorobiphenyl	55722-26-4	ND	0.0000940	2.00	U	MS03-473-9
Nonachlorobiphenyl	53742-07-7	ND	0.000156	2.00	U	MS03-473-9
Decachlorobiphenyl	2051-24-3	ND	0.000156	2.00	U	MS03-473-9
Total PCB	1336-36-3	**0.00566**		2.00		MS03-473-9

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	66.9	42.5-134		MS03-473-9
Tetrachloro-meta-xylene	877-09-8	65.9	17.9-137		MS03-473-9

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Analytical Sample Results

Job Number: 14100477

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: BG-34
Lab Sample ID: 14100477-10 (AR39381)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-10	PCBs by EPA Method TO-4A/680	10/21/2014 12:05	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	281.90m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000180	1.00	U	MS03-473-10
Dichlorobiphenyl	25512-42-9	**0.000104**	0.0000180	1.00	J	MS03-473-10
Trichlorobiphenyl	25323-68-6	ND	0.0000180	1.00	U	MS03-473-10
Tetrachlorobiphenyl	26914-33-0	ND	0.0000350	1.00	U	MS03-473-10
Pentachlorobiphenyl	25429-29-2	ND	0.0000350	1.00	U	MS03-473-10
Hexachlorobiphenyl	26601-64-9	ND	0.0000350	1.00	U	MS03-473-10
Heptachlorobiphenyl	28655-71-2	ND	0.0000530	1.00	U	MS03-473-10
Octachlorobiphenyl	55722-26-4	ND	0.0000530	1.00	U	MS03-473-10
Nonachlorobiphenyl	53742-07-7	ND	0.0000890	1.00	U	MS03-473-10
Decachlorobiphenyl	2051-24-3	ND	0.0000890	1.00	U	MS03-473-10
Total PCB	1336-36-3	**0.000104**		1.00	J	MS03-473-10

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	72.6	42.5-134		MS03-473-10
Tetrachloro-meta-xylene	877-09-8	63.8	17.9-137		MS03-473-10

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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Analytical Sample Results

Job Number: 14100477

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

Client: TRC ENVIRONMENTAL
Project: 115058 KEITH MIDDLE SCHOOL
Client Sample ID: BG-34-DUP
Lab Sample ID: 14100477-11 (AR39382)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-473-11	PCBs by EPA Method TO-4A/680	10/21/2014 12:54	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	276.60m³	1.00 mL	NA

Analyte	CAS No.	Result (ug/m³)	PQL	Dilution Factor	Flags	File ID
Monochlorobiphenyl	27323-18-8	ND	0.0000180	1.00	U	MS03-473-11
Dichlorobiphenyl	25512-42-9	ND	0.0000180	1.00	U J	MS03-473-11
Trichlorobiphenyl	25323-68-6	ND	0.0000180	1.00	U	MS03-473-11
Tetrachlorobiphenyl	26914-33-0	ND	0.0000360	1.00	U	MS03-473-11
Pentachlorobiphenyl	25429-29-2	ND	0.0000360	1.00	U	MS03-473-11
Hexachlorobiphenyl	26601-64-9	ND	0.0000360	1.00	U	MS03-473-11
Heptachlorobiphenyl	28655-71-2	ND	0.0000540	1.00	U	MS03-473-11
Octachlorobiphenyl	55722-26-4	ND	0.0000540	1.00	U	MS03-473-11
Nonachlorobiphenyl	53742-07-7	ND	0.0000900	1.00	U	MS03-473-11
Decachlorobiphenyl	2051-24-3	ND	0.0000900	1.00	U	MS03-473-11
Total PCB	1336-36-3	ND		1.00	U J	MS03-473-11

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	68.9	42.5-134		MS03-473-11
Tetrachloro-meta-xylene	877-09-8	60.2	17.9-137		MS03-473-11

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.
Note: Concentration results based upon client supplied air volumes.

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Analytical Sample Results

Job Number: 14100477

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: TB-34
Lab Sample ID: 14100477-12 (AR39383)

Collection Date: 10/11/2014
Sample Matrix: POLYURETHANE FOAM
Received Date: 10/14/2014 10:00
Percent Solid: N/A

	Batch ID	Method	Date	Analyst	Init Wt./Vol.	Final Vol.	Column
Analysis 1:	MS03-472-23	PCBs by EPA Method TO-4A/680	10/21/2014 02:15	RMS	NA	NA	Agilent, J&W DB-XLB, 30 m, 0.25 mm ID, 0.25 µm
Prep 1:	29058	TO-4A	10/18/2014 16:00	LMB	0.00m³	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	MS03-472-23
Dichlorobiphenyl	25512-42-9	ND	0.00500	1.00	U	MS03-472-23
Trichlorobiphenyl	25323-68-6	ND	0.00500	1.00	U	MS03-472-23
Tetrachlorobiphenyl	26914-33-0	ND	0.0100	1.00	U	MS03-472-23
Pentachlorobiphenyl	25429-29-2	ND	0.0100	1.00	U	MS03-472-23
Hexachlorobiphenyl	26601-64-9	ND	0.0100	1.00	U	MS03-472-23
Heptachlorobiphenyl	28655-71-2	ND	0.0150	1.00	U	MS03-472-23
Octachlorobiphenyl	55722-26-4	ND	0.0150	1.00	U	MS03-472-23
Nonachlorobiphenyl	53742-07-7	ND	0.0250	1.00	U	MS03-472-23
Decachlorobiphenyl	2051-24-3	ND	0.0250	1.00	U	MS03-472-23
Total PCB	1336-36-3	ND		1.00	U	MS03-472-23

Surrogate	CAS No.	% Recovery	Limits (%)	Q[1]	File ID
Decachloro[13C12]biphenyl	105600-27-9	54.8	42.5-134		MS03-472-23
Tetrachloro-meta-xylene	877-09-8	63.7	17.9-137		MS03-472-23

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

ND: Denotes analyte not detected at a concentration greater than the PQL.
PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.
This is not a NYSDOH ELAP certified method for PCB Congeners.

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CHAIN OF CUSTODY RECORD

<14100477P1>

141004771

'roject Name: Keith Middle School
'roject No.: 223832
ampling Date(s): 10/11/14
aboratory: Pace
aboratory P.O.: **71178** please use this po#
hipping Date(s): 10/13/14
hipper's Name: TRC

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX	Description	ANALYSIS	Comments (volume m^3)
'S-10-34	10/11/14		G	PUF	vent stack air	TO-10A	1.17 AR39372
'S-10-34-DUP	10/11/14		G	PUF	vent stack air	TO-10A	1.16 AR39373
'S-12-34	10/11/14		G	PUF	vent stack air	TO-10A	1.01 AR39374
S-1-34	10/11/14		G	PUF	vent stack air	TO-10A	1.2 AR39375
S-4-34	10/11/14		G	PUF	vent stack air	TO-10A	1.2 AR39376
S-TB-34	10/11/14		G	PUF	trip blank	TO-10A	N/A AR39377
0				0	0	0	
0				0	0	0	
-34	10/11/14		G	PUF/filter	ambient air , Community rm hallway	TO-4A	240.6 AR39378
-34	10/11/14		G	PUF/filter	ambient air , Aud	TO-4A	311 AR39379
-34	10/11/14		G	PUF/filter	ambient air , Hallway (rm 169)	TO-4A	320.8 AR39380
G-34	10/11/14		G	PUF/filter	background	TO-4A	281.9 AR39381
G-34-DUP	10/11/14		G	PUF/filter	background	TO-4A	276.6 AR39382
B-34	10/11/14		G	PUF/filter	trip blank	TO-4A	N/A AR39383
0				0	0	0	
0				0	0	0	
2 UNUSED SPARE TO4A w/FILTER							
2 UNUSED SPARE TO10A							

elinquished by: [signature] Date/Time: 10/13/14 1500 Relinquished by: VIA FED EX →
eceived by: VIA FED EX → Date/Time: 10/14/14 10:00 Received by: [signature] (PACE)
emarks (*): **Normal TAT. Please send data to David Gill dgill@trcsolutions.com**

Temp: 1.6° C

TRC

SAMPLE RECEIPT REPORT
14100477

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
LRF: 14100477
REPORT: CLP-LIKE FORMS
EDD: YES
LRF TAT: 2 WEEK

RECEIVED DATE: 10/14/2014 10:00
SHIPPED VIA: FEDEX
SHIPPING ID: 6044 9263 9310
NUMBER OF COOLERS: 1
CUSTODY SEAL INTACT: NA
COOLER STATUS: CHILLED
TEMPERATURE(S): [5]1.6 °C

SAMPLE SEALS INTACT: NA
[1,2]**SAMPLES PRESERVED PER METHOD GUIDANCE:** YES
[3] **SAMPLES REC'D IN HOLDTIME:** YES
DISPOSAL: BY LAB (45 DAYS)
COC DISCREPANCY: NO

COMMENTS:
NO COLLECTION TIMES WRITTEN ON COC. CLIENT HAS CALCULATED OUT SAMPLE VOLUMES.

CLIENT ID (LAB ID)	TAT-DUE Date[4]	DATE-TIME SAMPLED	MATRIX	METHOD	TEST DESCRIPTION	QC REQUEST
VS-10-34 (AR39372)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-10-34-DUP (AR39373)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-12-34 (AR39374)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-1-34 (AR39375)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-4-34 (AR39376)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
VS-TB-34 (AR39377)	2 WEEK 10-28-14	10/11/2014	PF10	EPA 680	PCBs by GCMS	
A-34 (AR39378)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
B-34 (AR39379)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
C-34 (AR39380)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
BG-34 (AR39381)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
BG-34-DUP (AR39382)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	
TB-34 (AR39383)	2 WEEK 10-28-14	10/11/2014	PF4	EPA 680	PCBs by GCMS	

[1]The pH preservation check of Oil and Grease (Method 1664) is performed as soon as possible after sample receipt and may not be included in this report.
[2]The 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.
[3]Samples 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.
[4]Samples 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.
[5]All 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.

Reporting Parameters and Lists

EPA 680 - PCBs by GCMS - (ug)

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

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

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

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APPENDIX F

LABORATORY DATA VALIDATION MEMORANDA

Memo

To: David Sullivan

From: Lorie MacKinnon

CC:

Date: 11/25/14

Re: Data Validation Review: Air Samples: Keith Middle School/New Bedford, MA: SDG 14100477

SUMMARY

Limited (Tier II) validation was performed on the data for 10 air samples and two trip blank samples collected at the Keith Middle School in New Bedford, Massachusetts. The samples were collected on October 11, 2014 and submitted to Pace Analytical Services, Inc. in Schenectady, New York for analysis. All air vent samples were collected on polyurethane foam (PUF) cartridges in accordance with EPA method TO-10A; all ambient air samples were collected on particulate filters and PUF cartridges in accordance with EPA method TO-4A. The samples were analyzed for polychlorinated biphenyl (PCB) homologues using EPA method 680. NEA reported the results under job number 14100477.

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 low bias exists for results in samples VS-10-34, VS-10-34 DUP, VS-1-34, VS-4-34, and VS-TB-34 due to low surrogate recoveries. Potential uncertainty exists for the results for dichlorobiphenyl and total PCBs in samples BG-34 and BG-34 DUP due to high relative percent difference in the evaluation of the field duplicate pair. 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:

VS-10-34	VS-10-34-DUP[1]	VS-12-34
VS-1-34	VS-4-34	VS-TB-34
A-34	B-34	C-34

BG-34	BG-34-DUP[2]	TB-34

[1] - Field duplicate of VS-10-34
[2] - Field duplicate of BG-34

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 congeners used in the initial and continuing calibrations were within the acceptance criteria.

Blanks

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

Target compounds were not detected in the VER PUF samples (Lot #s 55120, 092514-1, 53993-1, 082014-0, 082014-1) and VER Filter sample (Lot #s 092514-4, 082014-4) which were analyzed and reported under job numbers 14100567, 14100568, 14081755, and 14081756.

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
VS-10-34	Criteria Met	59.0%	Estimate (UJ) the nondetect results for sample VS-10-34.
VS-10-34-DUP	Criteria Met	68.5%	Estimate (UJ) the nondetect results for sample VS-10-34-DUP.
VS-1-34	Criteria Met	64.0%	Estimate (UJ) the nondetect results for sample VS-1-34.
VS-4-34	Criteria Met	63.5%	Estimate (UJ) the nondetect results for sample VS-4-34.
VS-TB-34	Criteria Met	66.8%	Estimate (UJ) the nondetect results for sample VS-TB-34.

LCS Results

An LCS and LCSD was extracted and analyzed with each extraction batch. All recovery and precision criteria were met.

Internal Standard Performance

All criteria were met.

Field Duplicate Results

Samples VS-10-34/VS-10-34-DUP (PUF) and BG-34/BG-34 DUP (PUF/Filter) were submitted as the field duplicate (collocated) pairs with this sample set. PCBs were not detected in samples VS-10-34/VS-10-34-DUP (PUF).

The following table summarizes the RPDs of the detected analytes in sample pair BG-34/BG-34 DUP, which were not within the acceptance criteria of 20%RPD or the difference of <2 times the reporting limit (RL) for dichlorobiphenyl and total PCB. The positive and nondetect results for dichlorobiphenyl and total PCB in samples BG-34 and BG-34 DUP were estimated (J/UJ).

Parameter	BG-34 (ug/m3)	BG-34 DUP (ug/m3)	RPD (%)
Dichlorobiphenyl	0.000104	0.0000180 U	NC, Not within 2xRL
Total PCB	0.000104	0.0000180 U	NC, Not within 2xRL

NC - Not calculable

Quantitation Limits and Sample Results

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

Due to sample matrix, two fold dilutions were performed on samples A-34, B-34, and C-34. Quantitation limits were elevated accordingly in these samples.

APPENDIX G

DISCUSSION OF RISK-BASED COMPARISON CRITERIA

DISCUSSION OF RISK-BASED COMPARISON CRITERIA

Two PCB risk-based air concentrations (RBACs) have been developed for the KMS, assuming occupational exposures within the school (8 hours/day, 250 days/year, for 25 years). Both non-carcinogenic and carcinogenic health endpoints were considered in the calculation of the RBACs; however, RBACs are based on noncarcinogenic effects as the most sensitive endpoint. The first RBAC is the Action Level (AL; 0.05 ug/m^3) used as an initial indicator that PCB air concentrations above background levels have been detected. The risk basis for the AL is a noncarcinogenic hazard index of approximately 0.2. The second RBAC is the Acceptable Long-Term Average Exposure Concentration (ALTAEC; 0.3 ug/m^3), indicative of the maximum acceptable air concentration that should not be exceeded for an extended time period. The ALTAEC could be exceeded over the short-term and still result in acceptable risk levels. The risk basis for the ALTAEC is a noncarcinogenic hazard index of one.

Both RBACs were developed to be applied to a total PCB air concentration. PCB homologues have been quantified and summed to generate total PCB air concentrations. By quantifying PCB homologues, total PCB air data gathered at the KMS are directly comparable to total PCB air data gathered at the high school since both are based on homologues rather than congeners, which greatly facilitates communication and discussion with the general public on the results of analyses.

In September 2009, EPA published Public Health Levels (PHLs) for PCBs which are calculated indoor air concentrations that maintain PCB exposures below a level that EPA believes does not cause harm. PHLs were calculated for all ages of children from toddlers in day care to adolescents in high school as well as for adult school employees. In this report, indoor air PCB concentrations are compared to the PHL (0.45 ug/m^3) for adult school employees and children 12 to <15 years old, representative of the middle school age range. In calculating the PHL, EPA considered average PCB exposures from both school (e.g., school indoor and outdoor air, indoor dust and nearby outside soils) and non-school (e.g., diet, outside soils, indoor dust, and indoor and outdoor air) environments. EPA assumed that middle school children spend 6.5-hours per day at school (with 6 hours spent inside the school) for a 180-day school year.