Analytical Resources, Incorporated
Analytical Chemists and Consultants

18 October 2019

Janet Knox
Pacific Groundwater Group
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102

RE: Swan Island Lagoon Sediment Investigation

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
19J0249	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kelly Bottem, Client Services Manager

Cert# 100006-012

PJLA Testing
Accreditation # 66169

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date:9/12/2019	COC No:
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	____ of ____ COCs
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			19J0249
206 329 0141 Phone	TAT if different from Below _____			
206 329 6968 FAX	[X] standard			SDG No.
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Relinquish to ARI	Sample Specific Notes:
J3-SC-00to10-102218	10/22/2018	12:40:00		S	1	x	580-81308-8
D6-SC-0to1-102118	10/21/2018	16:00:00		S	1	x	580-81257-26
R4-SC-0to1-102118	10/21/2018	18:40:00		S	1	x	580-81257-12

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] *Non-Hazard* [ ] *Flammable* [ ] *Skin Irritant* *Poison B* [ ] *Unknown* [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] *Return To Client* [ ] *Disposal By Lab* [X] *Archive For* _____ *Months*

TA to relinquish 3 samples to ARI.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	10/2/19 14:35	[signature]	ARI	10/15/19 1043
B. Farell	SKA TA	1043 10.15.19			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 10/15/2019 11:42:03AM

WORK ORDER

19J0249

Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Project Manager: Kelly Bottem
Project Number: Portland Harbor

Report To:
Pacific Groundwater Group
Janet Knox
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102
Phone: (206) 329-0141
Fax: -

Invoice To:
Pacific Groundwater Group
Janet Knox
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102
Phone :(206) 329-0141
Fax: -

Date Due:	29-Oct-2019 18:00 (10 day TAT)		
Received By:	Kenny Dang	Date Received:	15-Oct-2019 10:43
Logged In By:	Kenny Dang	Date Logged In:	15-Oct-2019 11:35

Samples Received at: **0.9°C**

Intact, properly signed and dated custody seals attached to outside of cooler(s)	No	Custody papers included with the cooler	Yes
Custody papers properly filled out (in, signed, analyses requested, etc)	Yes	Was a temperature blank included in the cooler	No
Was sufficient ice used (if appropriate)	Yes	All bottles sealed in individual plastic bags	Yes
All bottles arrived in good condition (unbroken)	Yes	All bottle labels complete and legible	Yes
Number of containers listed on COC match number received	Yes	Bottle labels and tags agree with COC	Yes
Correct bottles used for the requested analyses	Yes	All VOC vials free of air bubbles	No
Analyses/bottles require preservation (attach preservation sheet excluding VOC)	No	Sufficient amount of sample sent in each bottle	Yes
Sample split at ARI	No		

Analysis	Due	TAT	Expires	Comments
19J0249-01 J3-SC-00to10-102218 [Solid] Sampled 22-Oct-2018 12:40 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, amber, 4 oz.				
Freeze and Hold Extractions Container	29-Oct-2019 15:00	10	22-Oct-2019 12:40	
19J0249-02 D6-SC-0to1-102118 [Solid] Sampled 21-Oct-2018 16:00 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, Clear, 4 oz				
Freeze and Hold Extractions Container	29-Oct-2019 15:00	10	21-Oct-2019 16:00	
19J0249-03 R4-SC-0to1-102118 [Solid] Sampled 21-Oct-2018 18:40 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass WM, amber, 4 oz.				
Freeze and Hold Extractions Container	29-Oct-2019 15:00	10	21-Oct-2019 18:40	

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: PGG

Project Name: Swan Island Lagoon

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 19J0249

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1043 0.9 ____ ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOO S206

Cooler Accepted by: KD Date: 10/15/19 Time: 1043

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI.....	NA	_____	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: KD Date: 10/15/19 Time: 1135 Labels checked by: KD

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

Case Narrative

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The matrix spike/matrix spike duplicate recoveries and RPD were within limits with the exception of analytes flagged on the associated forms.

Pacific Groundwater Group	Project: Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number: Portland Harbor	**Reported:**
Seattle WA, 98102	Project Manager: Janet Knox	18-Oct-2019 17:27

Case Narrative

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation	
2377 Eastlake Ave. E. Suite 200	Project Number:	Portland Harbor	**Reported:**
Seattle, WA 98102	Project Manager:	Janet Knox	10/18/2019 17:27

ANALYTICAL REPORT FOR SAMPLES

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
19J0249-01	J3-SC-00to10-102218	Solid	10/22/18 12:40	10/15/19 10:43
19J0249-02	D6-SC-0to1-102118	Solid	10/21/18 16:00	10/15/19 10:43
19J0249-03	R4-SC-0to1-102118	Solid	10/21/18 18:40	10/15/19 10:43

QUALIFIERS AND NOTES

Qualifier	Definition
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
NRS	This surrogate not reported due to chromatographic interference
J	Estimated concentration value detected below the reporting limit.
D	The reported value is from a dilution
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Analytical Resources, Incorporated
Analytical Chemists and Consultants

J3-SC-00to10-102218

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	19J0249
Client:	Pacific Groundwater Group				
Project:	Swan Island Lagoon Sediment Investigation				
Matrix:	Solid	Laboratory ID:	19J0249-01 A	File ID:	19101725ECD7.D
Sampled:	10/22/18 12:40	Prepared:	10/16/19 12:20	Analyzed:	10/17/19 22:32
% Solids:	73.81	Preparation:	EPA 3546 (Microwave)	Initial/Final:	16.98 g Wet / 2.5 mL
Batch:	BHJ0482	Sequence:	SHJ0299	Calibration:	CI00052
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	U
12672-29-6	Aroclor 1248	1	1	10.4	1.6	4.0	
11097-69-1	Aroclor 1254	2	1	28.5	1.6	4.0	
11096-82-5	Aroclor 1260	2	1	16.0	0.6	4.0	
37324-23-5	Aroclor 1262	1	1	4.0	0.6	4.0	U
11100-14-4	Aroclor 1268	1	1	4.0	0.6	4.0	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9790*	*7.52*	*94.3*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9790*	*5.29*	*66.3*	*44 - 120*	
Decachlorobiphenyl	*2*	*7.9790*	*6.17*	*77.4*	*40 - 126*	
Tetrachlorometaxylene	*2*	*7.9790*	*5.24*	*65.6*	*44 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101725ECD7.D
Data file 2: /20191017.b/20191017.b/19101725ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0249-01
Client ID:
Injection Date: 17-OCT-2019 22:32
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.338	0.001	86242	5.063	-0.000	310158	26.5	26.2	1.1	Tetrachloro-m-xylene
13.604	-0.041	83287	13.677	-0.041	613166	37.7	31.0	19.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	66.3	65.6
Decachlorobiphenyl	94.3	77.4

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	262420	-0.2
Hexabromobiphenyl	382688	218227	-43.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	994748	-8.1
Hexabromobiphenyl	1006687	1032602	2.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.904	-0.018	2356	29.6	1	6.769	0.008	4298	8.7
Aroclor-1016	2	7.310	-0.002	2842	10.0	2	7.374	-0.010	16824	16.3
Aroclor-1016	3	7.466	0.009	1462	13.7	3	7.585	0.002	4373	10.5
Aroclor-1016	4	8.260	-0.004	3162	36.1	4	7.693	-0.058	8252	31.7
Total Col1Ave (4 peaks):				22.3		Total Col2Ave (4 peaks):			16.8	RPD = 28
Corrected Ave (3 peaks):				17.8		Corrected Ave (3 peaks):			11.8	RPD = 40*
Aroclor-1221	1	---			0.0	1	4.228	-0.055	8813	124.8
Aroclor-1221	2	---			0.0	2	5.759	0.001	9294	63.0
Aroclor-1221	3	---			0.0	3	6.111	0.007	14972	60.7
Col1Ave: <3 Quant Peaks						Col2Ave:			82.8	
Aroclor-1232	1	---			0.0	1	4.228	-0.054	8813	209.3
Aroclor-1232	2	6.904	-0.021	2356	79.0	2	6.769	-0.008	4298	20.5
Aroclor-1232	3	7.310	-0.003	2842	26.7	3	7.374	-0.023	16824	40.1
Aroclor-1232	4	7.466	0.006	1462	36.6	4	8.706	-0.023	27205	195.2
Total Col1Ave (3 peaks):				47.4		Total Col2Ave (4 peaks):			116.3	RPD = 84*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			85.3	
Aroclor-1242	1	6.904	-0.018	2356	36.5	1	6.769	0.007	4298	11.4
Aroclor-1242	2	7.310	-0.001	2842	12.2	2	7.374	-0.011	16824	20.7
Aroclor-1242	3	8.626	-0.005	5945	77.3	3	7.693	-0.059	8252	39.7
Aroclor-1242	4	8.914	-0.005	8288	101.0	4	8.777	-0.011	16054	62.2
Total Col1Ave (4 peaks):				56.7		Total Col2Ave (4 peaks):			33.5	RPD = 52*
Corrected Ave (3 peaks):				42.0		Corrected Ave (3 peaks):			23.9	RPD = 55*
Aroclor-1248	1	8.089	-0.006	6547	55.5	1	7.374	-0.011	16824	31.1
Aroclor-1248	2	8.626	-0.005	5945	40.5	2	8.255	-0.007	15575	38.2
Aroclor-1248	3	8.914	-0.005	8288	60.7	3	8.777	-0.011	16054	39.1
Aroclor-1248	4	9.498	-0.007	28499	324.9	4	9.103	-0.020	55676	104.7
Total Col1Ave (4 peaks):				120.4		Total Col2Ave (4 peaks):			53.3	RPD = 77*
Corrected Ave (3 peaks):				52.2		Corrected Ave (3 peaks):			36.1	RPD = 36
Aroclor-1254	1	8.996	-0.005	23552	106.5	1	9.014	-0.008	80084	145.3
Aroclor-1254	2	9.072	-0.005	9525	139.7	2	9.103	-0.011	55676	198.6
Aroclor-1254	3	9.383	0.012	33724	265.1	3	9.481	-0.049	238134	551.0
Aroclor-1254	4	9.498	-0.006	28499	104.7	4	9.667	-0.010	90112	104.2
Aroclor-1254	5	10.199	-0.012	15027	82.7	5	10.439	-0.013	65701	123.0
Total Col1Ave (5 peaks):				139.7		Total Col2Ave (5 peaks):			224.4	RPD = 46*
Corrected Ave (4 peaks):				108.4		Corrected Ave (4 peaks):			142.8	RPD = 27
Aroclor-1260	1	10.753	-0.009	10396	103.2	1	10.769	-0.010	48368	74.5
Aroclor-1260	2	11.069	-0.010	8763	90.7	2	11.202	-0.014	63827	97.3
Aroclor-1260	3	11.439	-0.009	26523	108.2	3	11.485	-0.010	123335	75.0
Aroclor-1260	4	11.838	-0.010	12210	110.4	4	11.996	-0.012	37523	73.3
Aroclor-1260	5	11.955	-0.010	5747	109.7	NS	---			----
Total Col1Ave (5 peaks):				104.4		Total Col2Ave (4 peaks):			80.0	RPD = 26
Corrected Ave (4 peaks):				102.9		Corrected Ave (3 peaks):			74.3	RPD = 32
Aroclor-1262	1	11.069	-0.011	8763	76.7	1	10.769	-0.025	48368	54.0
Aroclor-1262	2	11.439	-0.010	26523	93.7	2	11.202	-0.032	63827	83.3
Aroclor-1262	3	11.838	-0.011	12210	145.3	3	11.485	-0.026	123335	70.2
Aroclor-1262	4	11.955	-0.010	5747	54.0	4	12.051	0.027	83873	97.9
Total Col1Ave (4 peaks):				92.4		Total Col2Ave (4 peaks):			76.3	RPD = 19
Corrected Ave (3 peaks):				74.8		Corrected Ave (3 peaks):			69.2	RPD = 8
Aroclor-1268	1	11.955	-0.010	5747	17.1	1	11.996	-0.027	37523	16.9
Aroclor-1268	2	12.029	-0.007	6180	20.4	2	12.051	-0.039	83873	37.6
Aroclor-1268	3	12.422	-0.000	4043	15.8	3	12.454	-0.027	11458	5.7
Aroclor-1268	4	13.197	-0.010	4973	6.1	4	13.269	-0.028	34209	4.8
Total Col1Ave (4 peaks):				14.9		Total Col2Ave (4 peaks):			16.2	RPD = 9
Corrected Ave (3 peaks):				13.0		Corrected Ave (3 peaks):			9.1	RPD = 35

Total PCB Area Col1 (5.436 - 13.545) = 543872 Col1 Total PCB = 0.2 ppm*

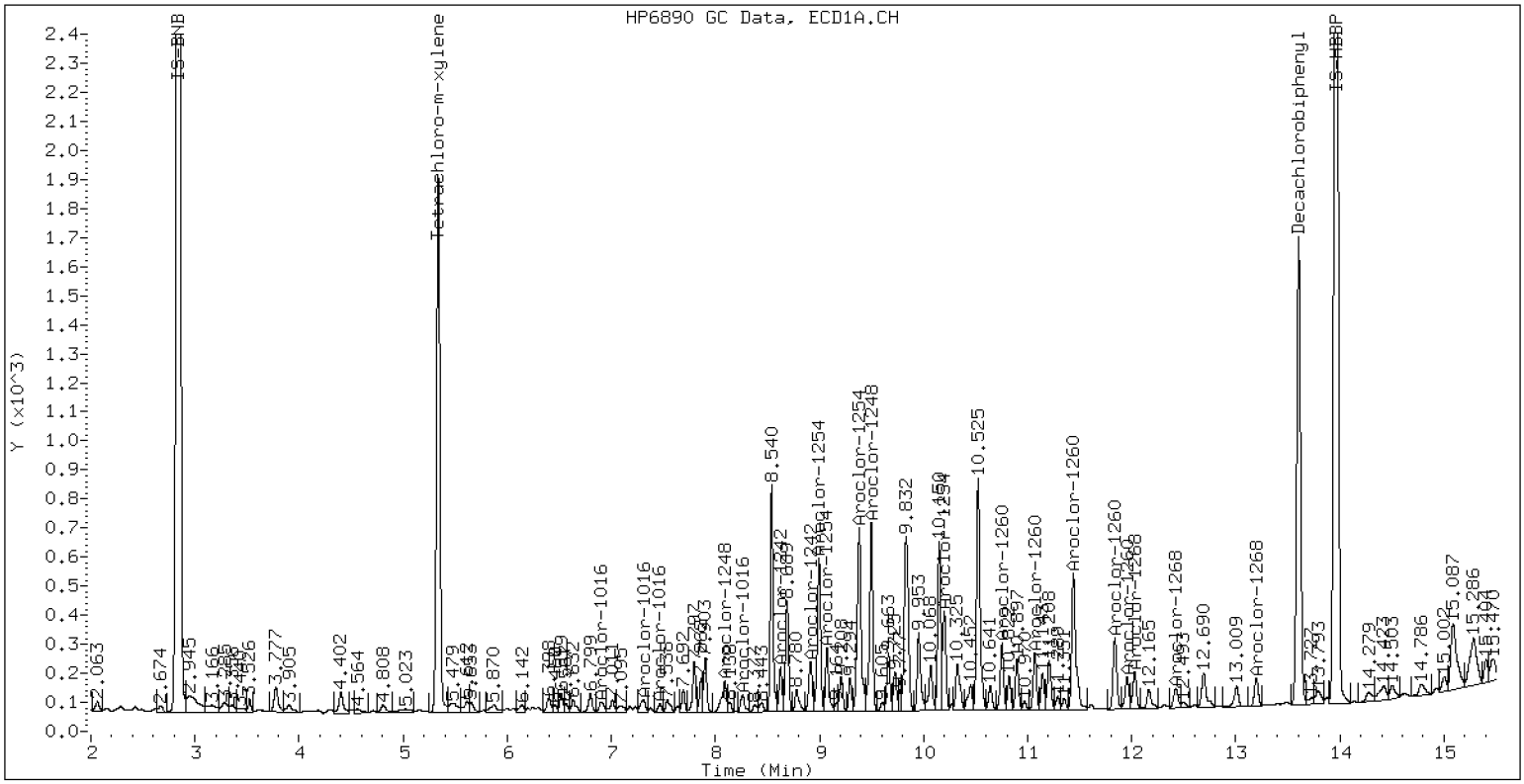
Total PCB Area Col2 (5.436 - 13.545) = 2412227 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

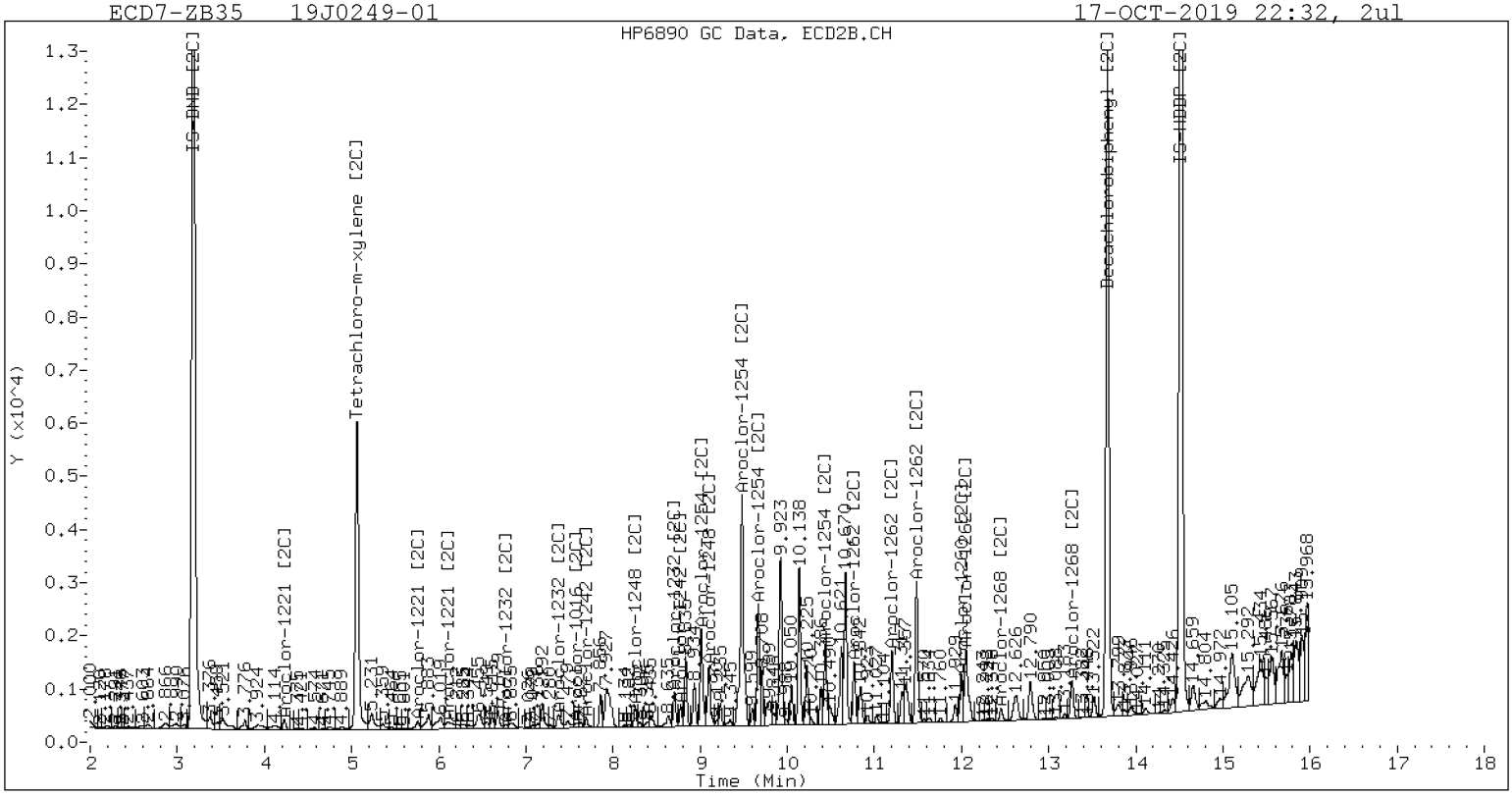
PCB Dual Column Chromatograms

ECD7-ZB5 19J0249-01 17-OCT-2019 22:32, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0249-01 17-OCT-2019 22:32, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

D6-SC-0to1-102118

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	19J0249
Client:	Pacific Groundwater Group				
Project:	Swan Island Lagoon Sediment Investigation				
Matrix:	Solid	Laboratory ID:	19J0249-02 A	File ID:	19101806ECD7.D
Sampled:	10/21/18 16:00	Prepared:	10/16/19 12:20	Analyzed:	10/18/19 14:36
% Solids:	41.75	Preparation:	EPA 3546 (Microwave)	Initial/Final:	29.94 g Wet / 2.5 mL
Batch:	BHJ0482	Sequence:	SHJ0314	Calibration:	CI00052
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	10	40.0	15.6	40.0	U
11104-28-2	Aroclor 1221	1	10	40.0	15.6	40.0	U
11141-16-5	Aroclor 1232	1	10	40.0	15.6	40.0	U
53469-21-9	Aroclor 1242	1	10	40.0	15.6	40.0	U
12672-29-6	Aroclor 1248	1	10	190	15.6	40.0	P1, D
11097-69-1	Aroclor 1254	2	10	708	15.6	40.0	D
11096-82-5	Aroclor 1260	1	10	634	5.9	40.0	D
37324-23-5	Aroclor 1262	1	10	40.0	5.9	40.0	U
11100-14-4	Aroclor 1268	1	10	40.0	5.9	40.0	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*8.0000*	*7.96*	*99.6*	*40 - 126*	
Tetrachlorometaxylene	*1*	*8.0000*	*5.07*	*63.4*	*44 - 120*	
Decachlorobiphenyl	*2*	*8.0000*	*7.21*	*90.1*	*40 - 126*	
Tetrachlorometaxylene	*2*	*8.0000*	*6.70*	*83.7*	*44 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191018.b/19101806ECD7.D
Data file 2: /20191018.b/20191018.b/19101806ECD7.D
Method: \\target\share\chem4\ecd7.i\20191018.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0249-02RE1
Client ID:
Injection Date: 18-OCT-2019 14:36
Report Date: 10/18/2019 15:33
Matrix: NONE
Dilution Factor: 10.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.334	-0.003	14517	5.061	-0.002	39670	2.5	3.3	27.7	Tetrachloro-m-xylene
13.608	-0.006	19541	13.679	-0.008	72659	4.0	3.6	10.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	63.4	83.7
Decachlorobiphenyl	99.6	90.1

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	462416	75.9
Hexabromobiphenyl	382688	484981	26.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	997031	-7.8
Hexabromobiphenyl	1006687	1050791	4.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	6.918	0.003	2944	21.0	1	6.769	0.016	7676	15.5
Aroclor-1016	2	7.313	0.008	4056	8.1	2	7.383	0.006	9834	9.5
Aroclor-1016	3	7.468	0.017	5808	30.9	3	7.631	0.054	14729	35.3
Aroclor-1016	4	8.259	-0.002	10979	71.0	4	7.695	-0.051	28010	107.4
Total Col1Ave (4 peaks):					32.8	Total Col2Ave (4 peaks):				41.9 RPD = 25
Corrected Ave (3 peaks):					20.0	Corrected Ave (3 peaks):				20.1 RPD = 0
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	5.758	0.000	2088	14.1
Aroclor-1221	3	---			0.0	3	6.113	0.009	4207	17.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.918	-0.007	2944	56.0	2	6.769	-0.008	7676	36.5
Aroclor-1232	3	7.313	0.000	4056	21.6	3	7.383	-0.014	9834	23.4
Aroclor-1232	4	7.468	0.008	5808	82.4	4	8.711	-0.018	54511	390.2
Total Col1Ave (3 peaks):					53.3	Total Col2Ave (3 peaks):				150.0 RPD = 95*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.918	-0.007	2944	25.9	1	6.769	-0.009	7676	20.3
Aroclor-1242	2	7.313	-0.001	4056	9.9	2	7.383	-0.015	9834	12.0
Aroclor-1242	3	8.629	-0.003	22548	166.3	3	7.695	-0.072	28010	134.6
Aroclor-1242	4	8.922	0.002	29678	205.3	4	8.779	-0.021	26436	102.1
Total Col1Ave (4 peaks):					101.8	Total Col2Ave (4 peaks):				67.3 RPD = 41*
Corrected Ave (3 peaks):					67.4	Corrected Ave (3 peaks):				44.8 RPD = 40*
Aroclor-1248	1	8.093	-0.004	15414	74.2	1	7.383	-0.002	9834	18.1
Aroclor-1248	2	8.629	-0.003	22548	87.2	2	8.258	-0.004	37471	91.7
Aroclor-1248	3	8.922	0.002	29678	123.3	3	8.779	-0.010	26436	64.2
Aroclor-1248	4	9.502	-0.005	157803	1021.0	4	9.108	-0.016	115806	217.4
Total Col1Ave (4 peaks):					326.4	Total Col2Ave (4 peaks):				97.8 RPD = 108*
Corrected Ave (3 peaks):					94.9	Corrected Ave (3 peaks):				58.0 RPD = 48*
Aroclor-1254	1	9.000	0.000	133572	342.8	1	9.019	-0.003	211493	382.8
Aroclor-1254	2	9.075	-0.001	48080	400.3	2	9.108	-0.003	115806	412.1
Aroclor-1254	3	9.368	-0.001	72358	322.8	3	9.523	-0.005	122772	283.4
Aroclor-1254	4	9.502	-0.002	157803	328.9	4	9.671	-0.006	256240	295.7
Aroclor-1254	5	10.203	-0.007	102175	319.0	5	10.444	-0.008	211600	395.2
Total Col1Ave (5 peaks):					342.8	Total Col2Ave (5 peaks):				353.8 RPD = 3
Corrected Ave (4 peaks):					328.4	Corrected Ave (4 peaks):				339.3 RPD = 3
Aroclor-1260	1	10.758	-0.003	69363	309.7	1	10.774	-0.003	175775	265.9
Aroclor-1260	2	11.075	-0.004	57625	268.4	2	11.208	-0.006	217130	325.1
Aroclor-1260	3	11.445	-0.004	184059	337.7	3	11.489	-0.004	462285	276.3
Aroclor-1260	4	11.844	-0.004	100081	407.0	4	12.001	-0.005	132392	254.2
Aroclor-1260	5	11.960	-0.004	30445	261.5	NS	---			----
Total Col1Ave (5 peaks):					316.9	Total Col2Ave (4 peaks):				280.4 RPD = 12
Corrected Ave (4 peaks):					294.3	Corrected Ave (3 peaks):				265.5 RPD = 10
Aroclor-1262	1	11.075	-0.005	57625	226.8	1	10.774	-0.021	175775	192.8
Aroclor-1262	2	11.445	-0.005	184059	292.6	2	11.208	-0.027	217130	278.5
Aroclor-1262	3	11.844	-0.006	100081	535.9	3	11.489	-0.021	462285	258.6
Aroclor-1262	4	11.960	-0.005	30445	128.6	4	12.001	-0.022	132392	151.8
Total Col1Ave (4 peaks):					296.0	Total Col2Ave (4 peaks):				220.4 RPD = 29
Corrected Ave (3 peaks):					216.0	Corrected Ave (3 peaks):				201.1 RPD = 7
Aroclor-1268	1	11.960	-0.005	30445	40.8	1	12.001	-0.022	132392	58.5
Aroclor-1268	2	12.033	-0.003	41404	61.5	2	12.056	-0.035	322893	142.2
Aroclor-1268	3	12.433	0.010	18646	32.8	3	12.459	-0.021	7720	3.8
Aroclor-1268	4	13.201	-0.005	8555	4.8	4	13.272	-0.025	33315	4.6
Total Col1Ave (4 peaks):					35.0	Total Col2Ave (4 peaks):				52.2 RPD = 40
Corrected Ave (3 peaks):					26.1	Corrected Ave (3 peaks):				22.3 RPD = 16

Total PCB Area Col1 (5.437 - 13.514) = 2567963 Col1 Total PCB = 0.7 ppm*

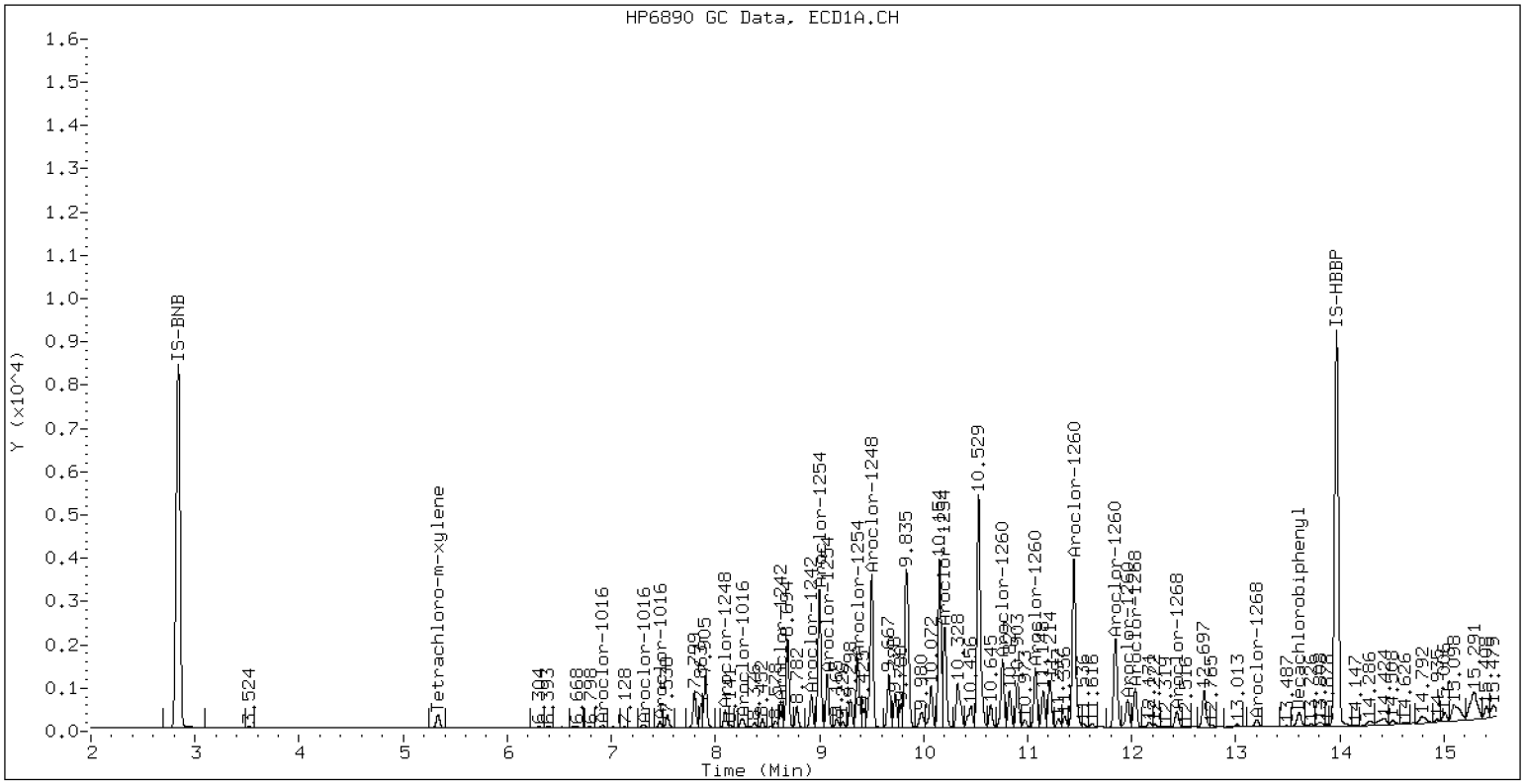
Total PCB Area Col2 (5.437 - 13.514) = 5939464 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

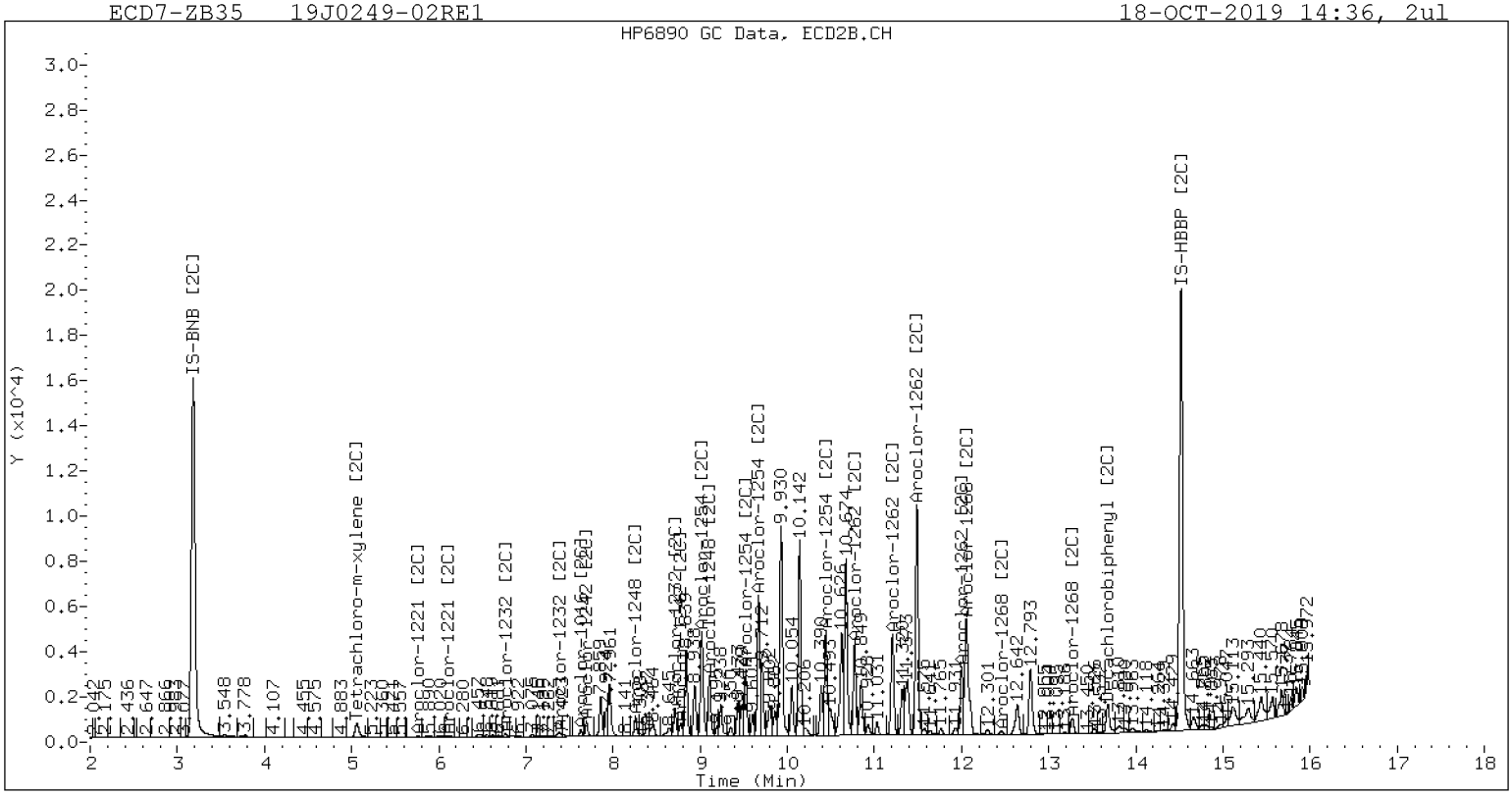
PCB Dual Column Chromatograms

ECD7-ZB5 19J0249-02RE1 18-OCT-2019 14:36, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0249-02RE1 18-OCT-2019 14:36, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

R4-SC-0to1-102118

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	19J0249
Client:	Pacific Groundwater Group				
Project:	Swan Island Lagoon Sediment Investigation				
Matrix:	Solid	Laboratory ID:	19J0249-03 A	File ID:	19101731ECD7.D
Sampled:	10/21/18 18:40	Prepared:	10/16/19 12:20	Analyzed:	10/18/19 00:38
% Solids:	49.62	Preparation:	EPA 3546 (Microwave)	Initial/Final:	25.19 g Wet / 2.5 mL
Batch:	BHJ0482	Sequence:	SHJ0299	Calibration:	CI00052
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	U
12672-29-6	Aroclor 1248	2	1	42.9	1.6	4.0	
11097-69-1	Aroclor 1254	2	1	102	1.6	4.0	
11096-82-5	Aroclor 1260	2	1	76.9	0.6	4.0	
37324-23-5	Aroclor 1262	1	1	4.0	0.6	4.0	U
11100-14-4	Aroclor 1268	1	1	4.0	0.6	4.0	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*8.0005*	*8.24*	*103*	*40 - 126*	
Tetrachlorometaxylene	*1*	*8.0005*	*4.94*	*61.8*	*44 - 120*	
Decachlorobiphenyl	*2*	*8.0005*	*5.16*	*64.5*	*40 - 126*	
Tetrachlorometaxylene	*2*	*8.0005*	*5.67*	*70.9*	*44 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101731ECD7.D
Data file 2: /20191017.b/20191017.b/19101731ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0249-03
Client ID:
Injection Date: 18-OCT-2019 00:38
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.334	-0.003	75633	5.057	-0.006	281915	24.7	28.3	13.7	Tetrachloro-m-xylene
13.604	-0.040	82704	13.676	-0.042	511129	41.2	25.8	46.0*	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	61.8	70.9
Decachlorobiphenyl	103.0	64.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	247149	-6.0
Hexabromobiphenyl	382688	198320	-48.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	837269	-22.6
Hexabromobiphenyl	1006687	1032217	2.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.903	-0.019	7341	97.9	1	6.758	-0.003	17017	40.9
Aroclor-1016	2	7.309	-0.002	17161	64.3	2	7.379	-0.004	84217	96.8
Aroclor-1016	3	7.457	0.001	7149	71.1	3	7.575	-0.007	19756	56.3
Aroclor-1016	4	8.256	-0.008	13054	158.0	4	7.742	-0.009	6879	31.4
Total Col1Ave (4 peaks):					97.8	Total Col2Ave (4 peaks):				56.4 RPD = 54*
Corrected Ave (3 peaks):					77.8	Corrected Ave (3 peaks):				42.9 RPD = 58*
Aroclor-1221	1	4.188	0.004	1506	83.2	1	4.297	0.014	2983	50.2
Aroclor-1221	2	---			0.0	2	5.748	-0.010	15189	122.4
Aroclor-1221	3	5.984	0.001	3468	48.7	3	6.110	0.006	30662	147.6
Col1Ave: <3 Quant Peaks						Col2Ave: 106.7				
Aroclor-1232	1	4.188	0.005	1506	141.5	1	4.297	0.015	2983	84.2
Aroclor-1232	2	6.903	-0.022	7341	261.3	2	6.758	-0.019	17017	96.5
Aroclor-1232	3	7.309	-0.003	17161	170.9	3	7.379	-0.018	84217	238.6
Aroclor-1232	4	7.457	-0.003	7149	189.9	4	8.703	-0.026	119100	1015.2
Total Col1Ave (4 peaks):					190.8	Total Col2Ave (4 peaks):				358.6 RPD = 61*
Corrected Ave (3 peaks):					167.4	Corrected Ave (3 peaks):				139.8 RPD = 18
Aroclor-1242	1	6.903	-0.019	7341	120.7	1	6.758	-0.004	17017	53.6
Aroclor-1242	2	7.309	-0.001	17161	78.1	2	7.379	-0.005	84217	122.9
Aroclor-1242	3	8.624	-0.007	25479	351.7	3	7.742	-0.010	6879	39.4
Aroclor-1242	4	8.913	-0.006	33702	436.2	4	8.774	-0.014	98133	451.4
Total Col1Ave (4 peaks):					246.7	Total Col2Ave (4 peaks):				166.8 RPD = 39
Corrected Ave (3 peaks):					183.5	Corrected Ave (3 peaks):				71.9 RPD = 87*
Aroclor-1248	1	8.085	-0.010	19127	172.2	1	7.379	-0.006	84217	185.0
Aroclor-1248	2	8.624	-0.008	25479	184.3	2	8.251	-0.011	59854	174.4
Aroclor-1248	3	8.913	-0.007	33702	261.9	3	8.774	-0.014	98133	283.8
Aroclor-1248	4	9.495	-0.010	115584	1399.2	4	9.101	-0.022	216531	404.0
Total Col1Ave (4 peaks):					504.4	Total Col2Ave (4 peaks):				281.8 RPD = 57*
Corrected Ave (3 peaks):					206.1	Corrected Ave (3 peaks):				214.4 RPD = 4
Aroclor-1254	1	8.994	-0.007	89926	431.8	1	9.011	-0.011	323632	697.6
Aroclor-1254	2	9.069	-0.008	38135	594.0	2	9.101	-0.012	216531	917.5
Aroclor-1254	3	9.379	0.009	120984	1009.9	3	9.516	-0.014	99893	274.6
Aroclor-1254	4	9.495	-0.009	115584	450.7	4	9.664	-0.013	362486	498.1
Aroclor-1254	5	10.196	-0.015	55642	325.1	5	10.435	-0.016	253973	564.9
Total Col1Ave (5 peaks):					562.3	Total Col2Ave (5 peaks):				590.5 RPD = 5
Corrected Ave (4 peaks):					450.4	Corrected Ave (4 peaks):				508.8 RPD = 12
Aroclor-1260	1	10.753	-0.010	48508	529.6	1	10.768	-0.011	255241	393.1
Aroclor-1260	2	11.065	-0.014	43260	492.7	2	11.201	-0.015	282348	430.4
Aroclor-1260	3	11.439	-0.010	125507	563.1	3	11.484	-0.011	603666	367.3
Aroclor-1260	4	11.835	-0.013	61499	611.6	4	11.995	-0.013	177253	346.5
Aroclor-1260	5	11.955	-0.011	26763	562.2	NS	---			----
Total Col1Ave (5 peaks):					551.8	Total Col2Ave (4 peaks):				384.3 RPD = 36
Corrected Ave (4 peaks):					536.9	Corrected Ave (3 peaks):				368.9 RPD = 37
Aroclor-1262	1	11.065	-0.015	43260	416.4	1	10.768	-0.027	255241	285.0
Aroclor-1262	2	11.439	-0.011	125507	488.0	2	11.201	-0.033	282348	368.7
Aroclor-1262	3	11.835	-0.014	61499	805.2	3	11.484	-0.027	603666	343.7
Aroclor-1262	4	11.955	-0.011	26763	276.5	4	12.052	0.028	396647	463.0
Total Col1Ave (4 peaks):					496.5	Total Col2Ave (4 peaks):				365.1 RPD = 31
Corrected Ave (3 peaks):					393.6	Corrected Ave (3 peaks):				332.5 RPD = 17
Aroclor-1268	1	11.955	-0.011	26763	87.8	1	11.995	-0.028	177253	79.7
Aroclor-1268	2	12.027	-0.009	30215	109.8	2	12.052	-0.038	396647	177.8
Aroclor-1268	3	12.426	0.003	17856	76.8	3	12.453	-0.028	45476	22.5
Aroclor-1268	4	13.198	-0.009	14772	20.1	4	13.269	-0.029	91331	12.7
Total Col1Ave (4 peaks):					73.6	Total Col2Ave (4 peaks):				73.2 RPD = 1
Corrected Ave (3 peaks):					61.6	Corrected Ave (3 peaks):				38.3 RPD = 47*

Total PCB Area Col1 (5.436 - 13.545) = 2081202 Col1 Total PCB = 1.0 ppm*

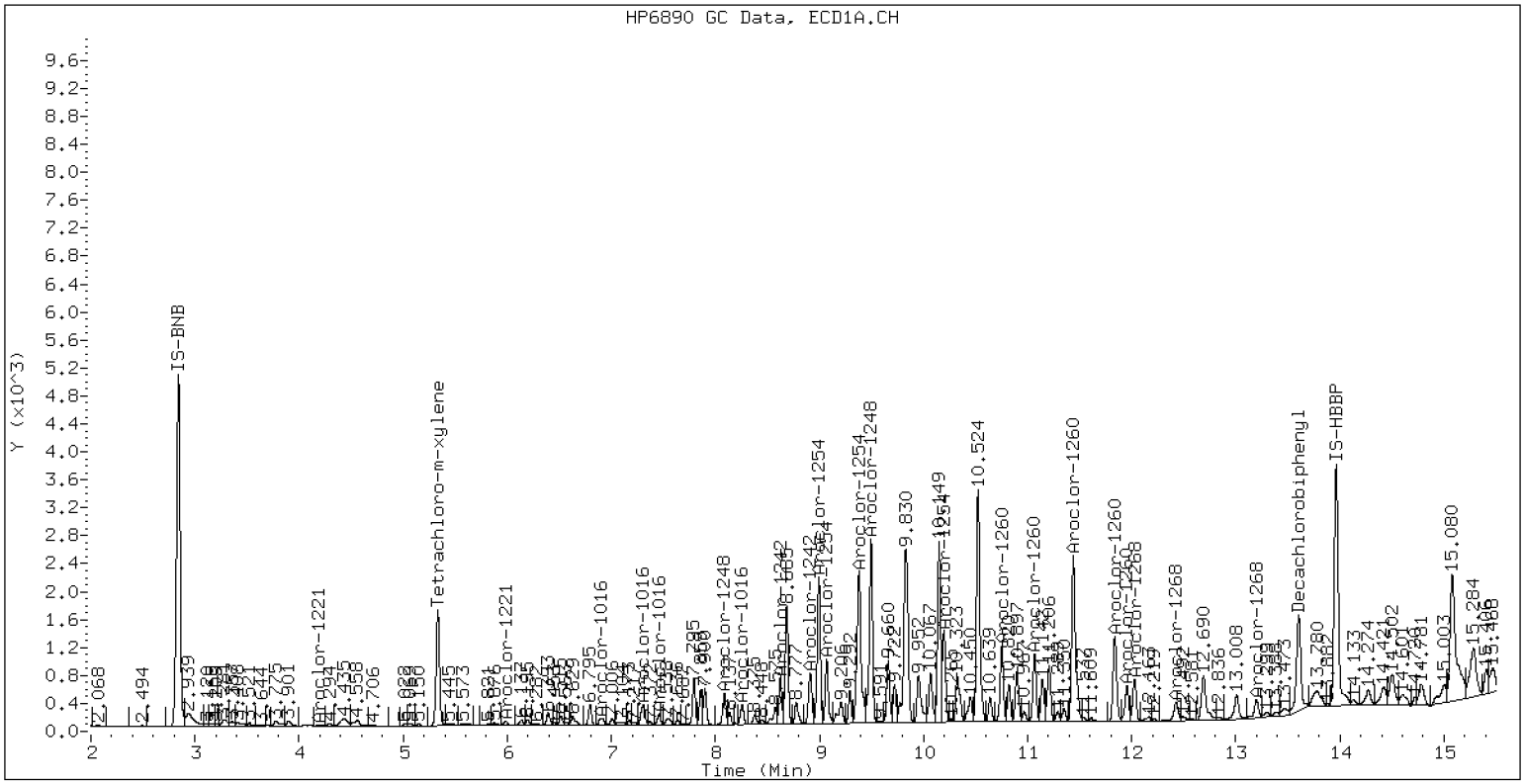
Total PCB Area Col2 (5.436 - 13.545) = 9351524 Col2 Total PCB = 1.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

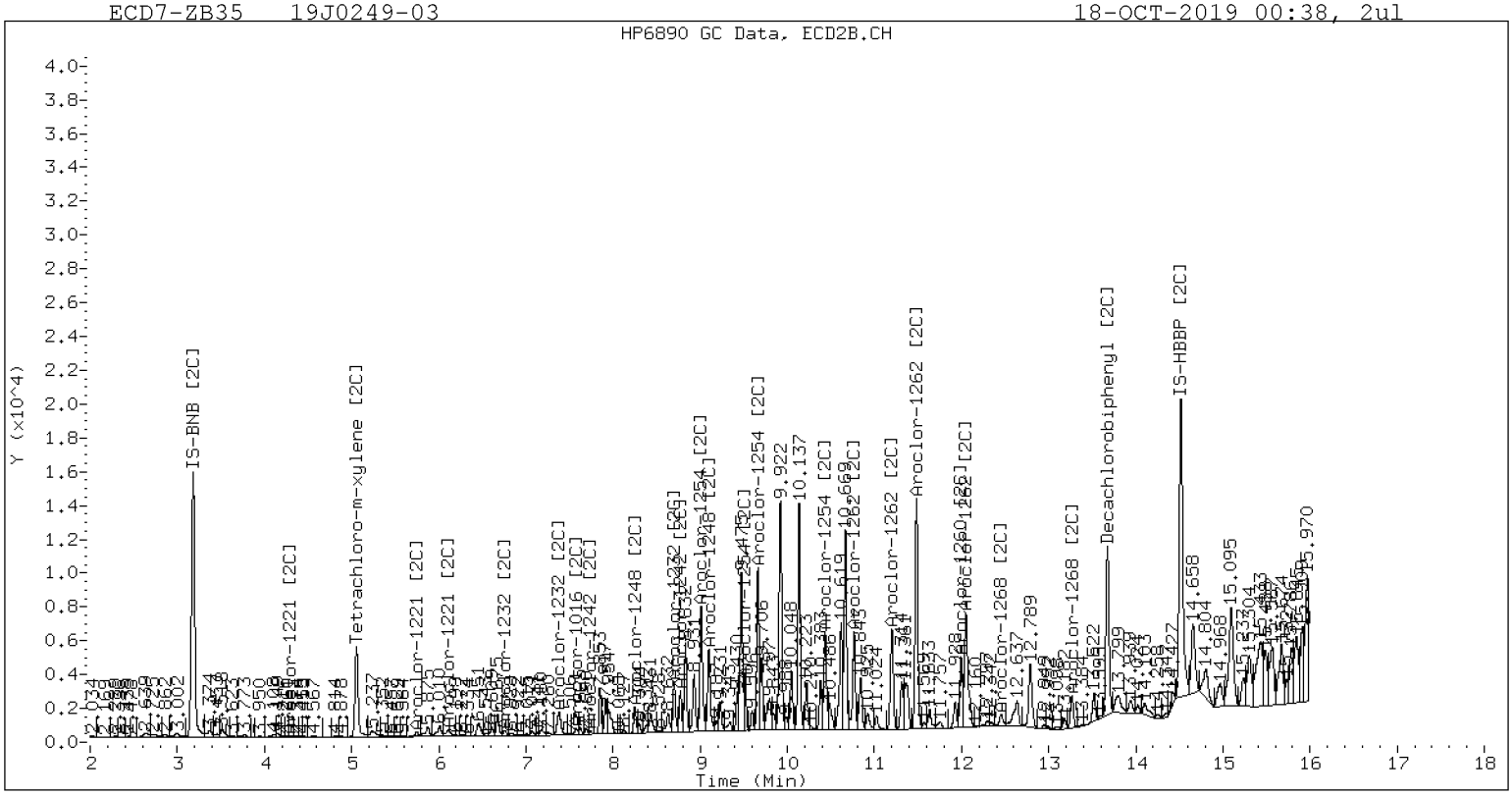
PCB Dual Column Chromatograms

ECD7-ZB5 19J0249-03 18-OCT-2019 00:38, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 19J0249-03 18-OCT-2019 00:38, 2ul

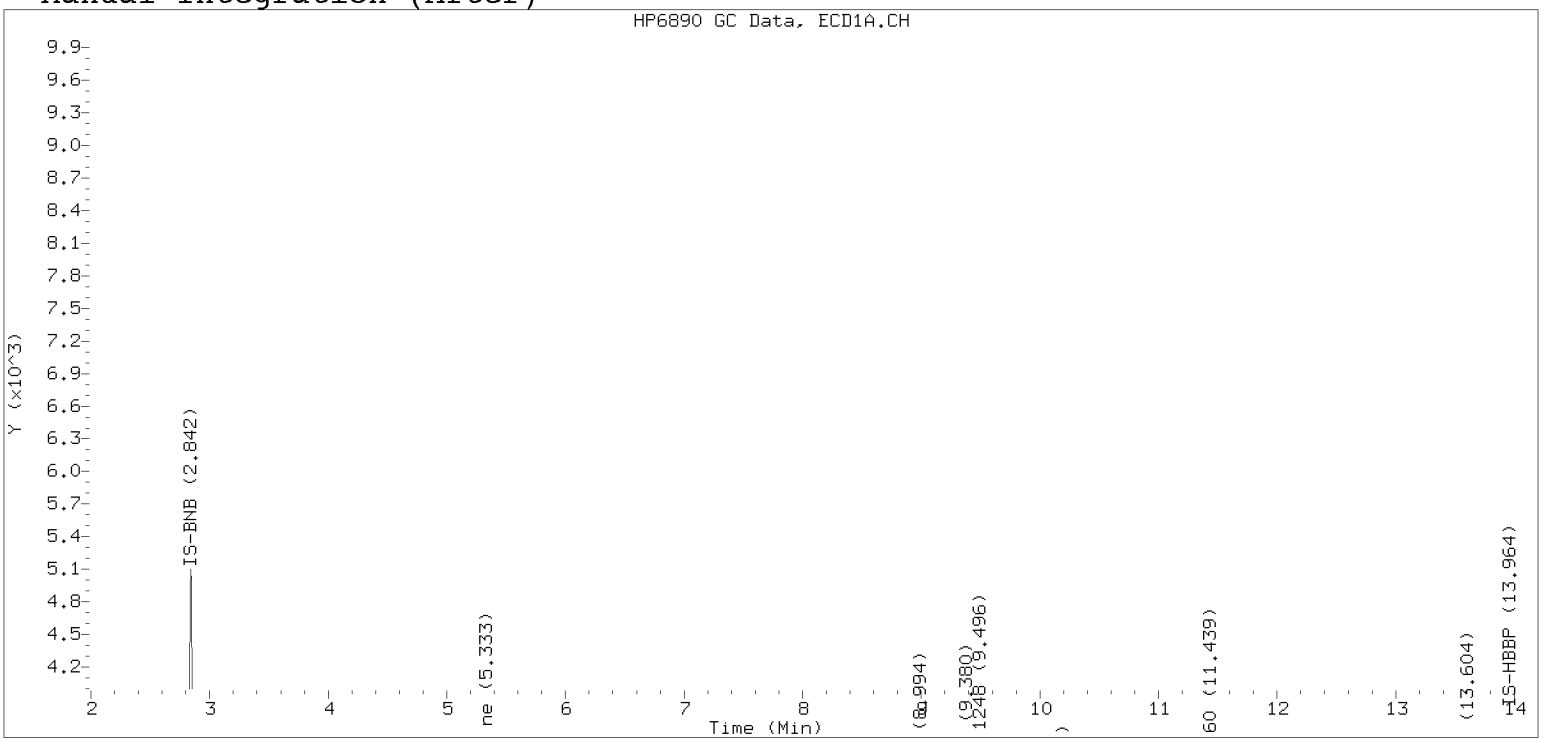


ZB-35 Manual Integration: YES

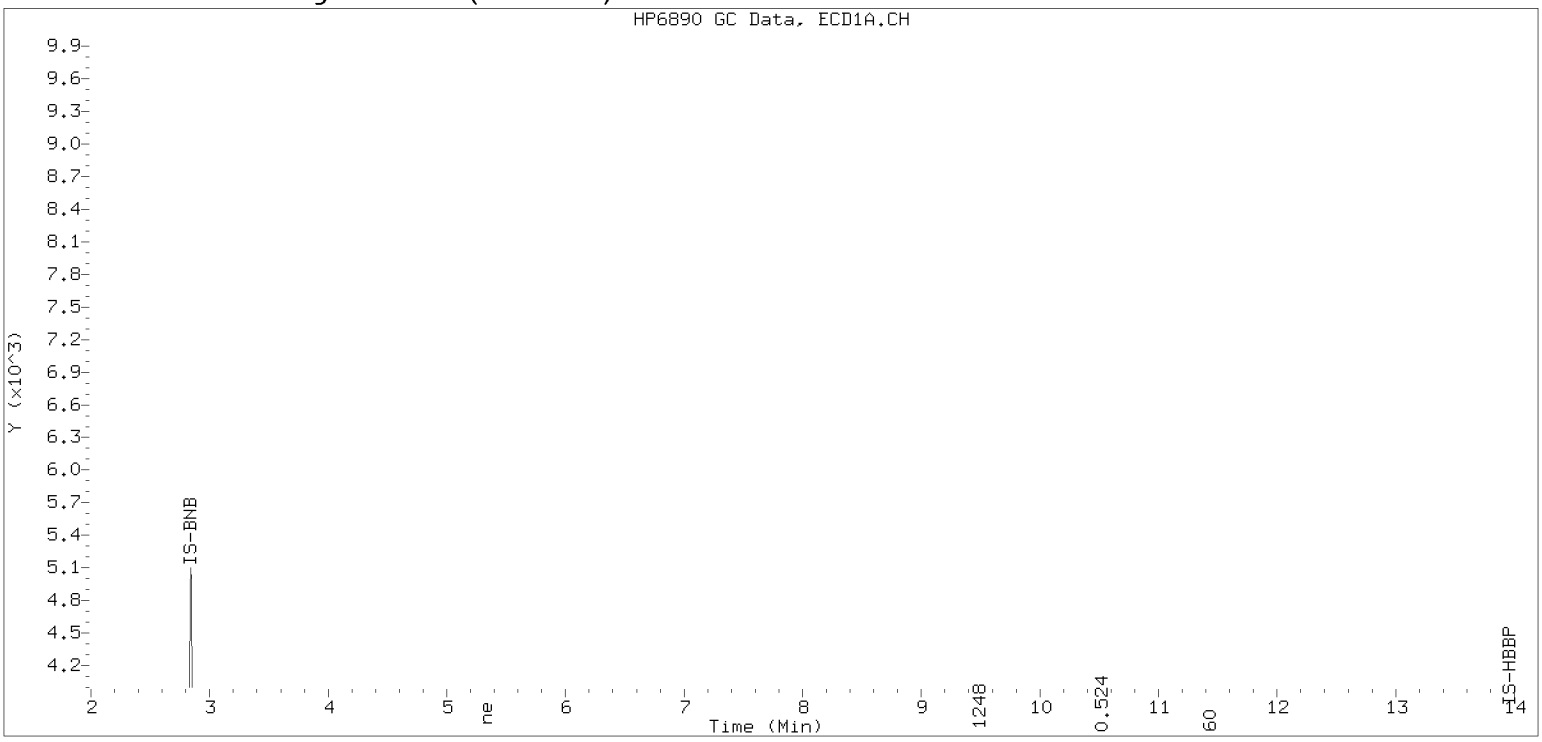
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/20191017.b/19101731ECD7.D Injection Date: 18-OCT-2019 00:3

Manual Integration (After)



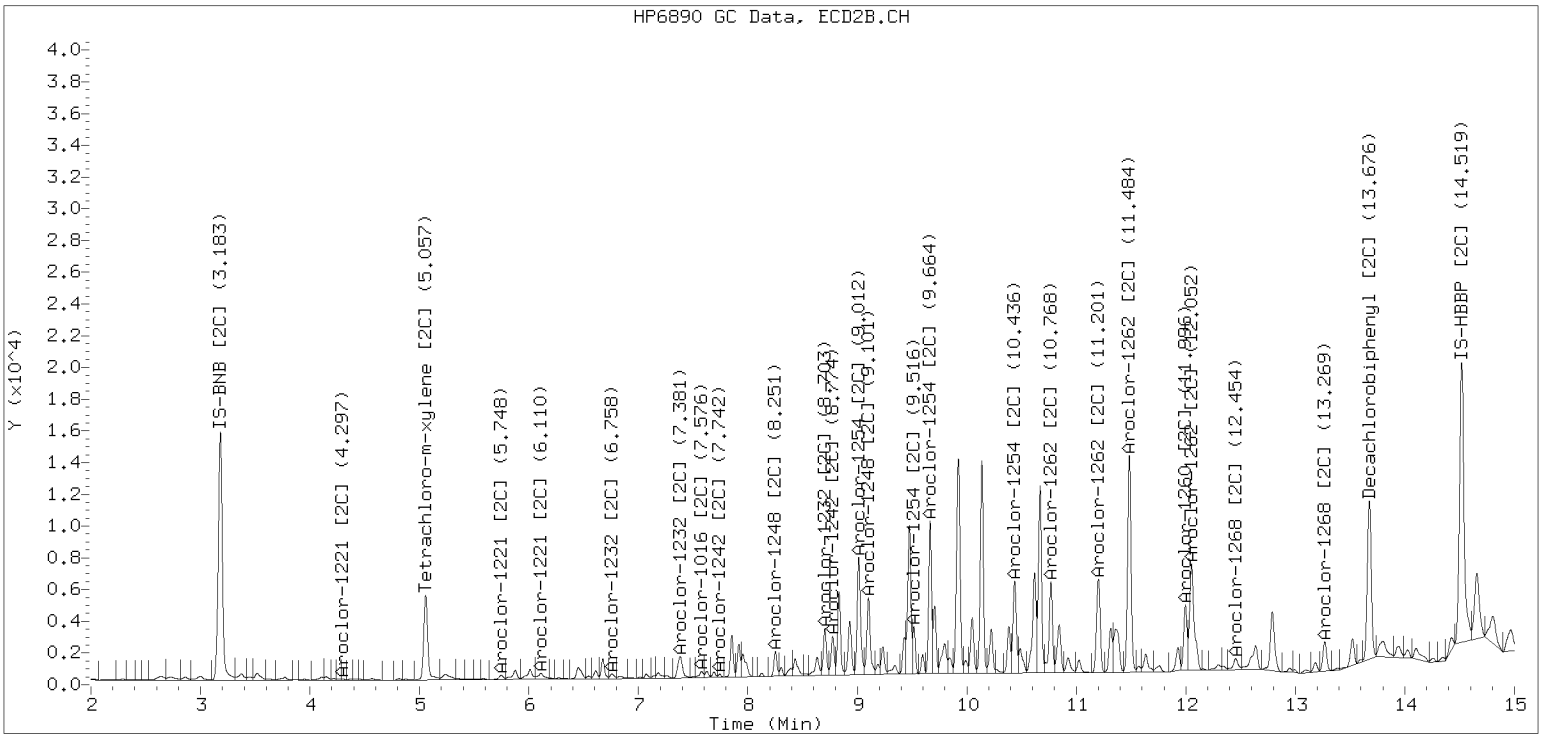
Processed Integration (Before)



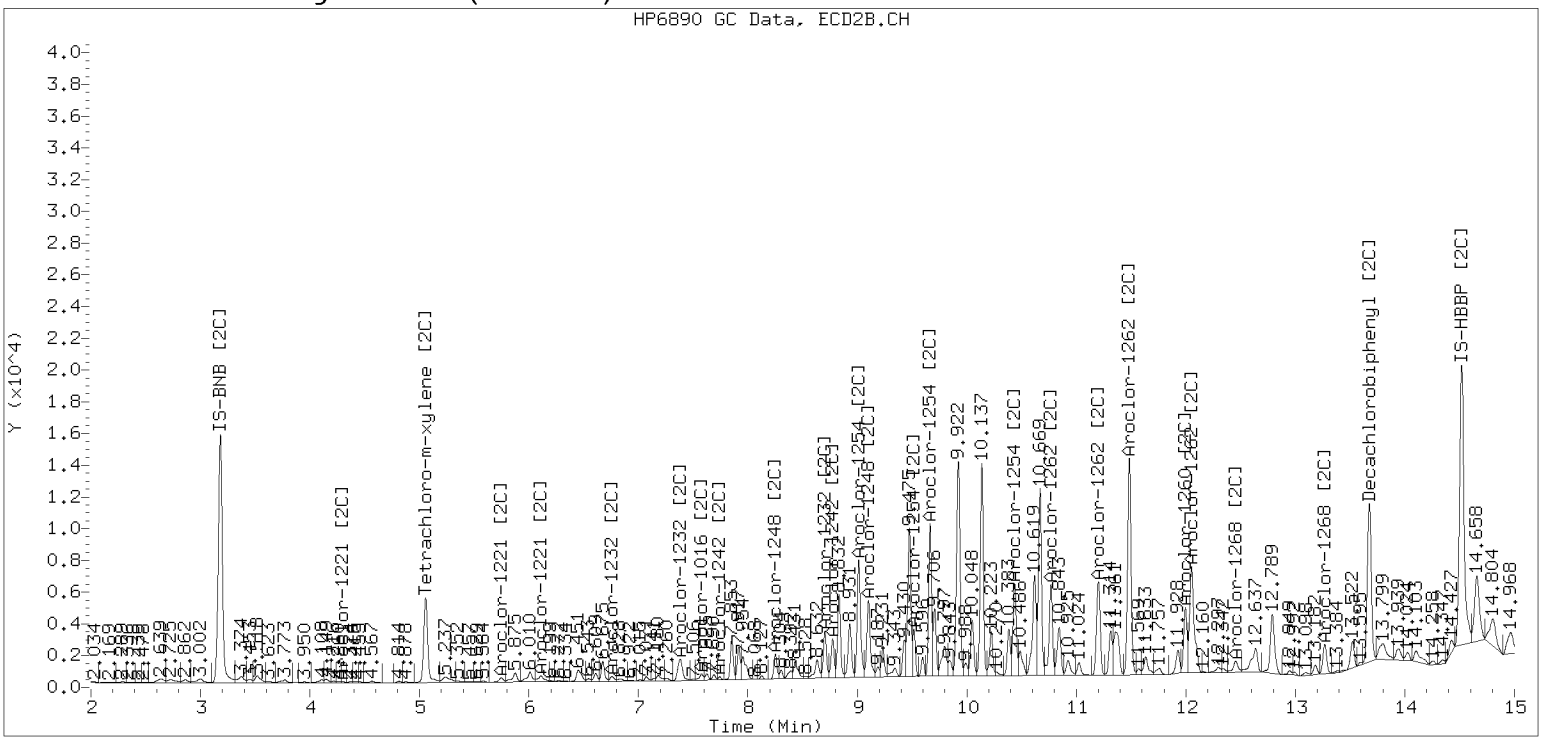
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/20191017.b/20191017.b/19101731ECD7.D Injection Date: 18-OCT-2

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	19J0249
Client:	Pacific Groundwater Group			Project:	Swan Island Lagoon Sediment Investigation
Batch:	BHJ0482	Batch Matrix:	Solid	Preparation:	EPA 3546 (Microwave)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
J3-SC-00to10-102218	19J0249-01	19101725ECD7.D	10/16/19 12:20	
D6-SC-0to1-102118	19J0249-02	19101806ECD7.D	10/16/19 12:20	
R4-SC-0to1-102118	19J0249-03	19101731ECD7.D	10/16/19 12:20	
Blank	BHJ0482-BLK1	19101721ECD7.D	10/16/19 12:20	
LCS	BHJ0482-BS1	19101722ECD7.D	10/16/19 12:20	
LCS Dup	BHJ0482-BSD1	19101723ECD7.D	10/16/19 12:20	
J3-SC-00to10-102218	BHJ0482-MS1	19101726ECD7.D	10/16/19 12:20	
J3-SC-00to10-102218	BHJ0482-MSD1	19101727ECD7.D	10/16/19 12:20	
Reference	BHJ0482-SRM1	19101724ECD7.D	10/16/19 12:20	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BHJ0482

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid

Matrix: Solid **Date Prepared:** 10/16/19 **Balance ID:** B146462614 **Set Up By:** R 10/16/19

The following standards may be missing from this batch!

Designator	Description
~~1~~	~~Spike~~
QLS 5	QLS Spike

RW

Analysis: 8082A PCB Solid 4

Lab Number & Container	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL) 1 2 3	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
19J0249-01 A	73.8	(16.94) 16.98	5mL	5mL	2mL	2.5	1.0	
19J0249-02 A	41.8	(29.94) 29.94	5mL	5mL	2mL	2.5	1.0	
19J0249-03 A	49.6	(25.19) 25.19	5mL	5mL	2mL	2.5	1.0	

Batch QC

Lab Number	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL) 1 2 3	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
BHJ0482-BLK1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BHJ0482-BS1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BHJ0482-BSD1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BHJ0482-MS1	73.8	(16.94) 16.94	5mL	5mL	2mL	2.5	1.0	Use 19J0249-01
BHJ0482-MSD1	73.8	(16.94) 16.94	5mL	5mL	2mL	2.5	1.0	Use 19J0249-01
BHJ0482-SRM1	100.0	~~(12.50)~~ 1g 1.00	5mL	5mL	~~2mL~~ 0.5 mL	10	1.0	Use H002054

Mp 10/16/19
Client ID verified By Date

Se 10-17-19
Preparation Reviewed By Date

10/16/19 12:20
Extraction Date and Time

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BHJ0482

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid

Prep Steps

Microwave
CT
1 (2) 3
NL 10/16/19
Analyst/Date

KD
100°C
Hexane Exchange
(2 X 20 mL)
1 2 3 (4) (5) 6
BH 10/17/19
Analyst/Date

TurboVap
Pre Cleanups
(1) 2 3 4 5
SP 10-17-19
Analyst/Date

TurboVap
Post Cleanups
1 2 (3) 4 5
SP 10-17-19
Analyst/Date

Vialing
SP, 10-17-19
Analyst/Date

Reagents Used

Station/Reagent	Standard ID
Microwave Analyst: NL/CT Date: 10/16/19	
Anhydrous Sodium Sulfate	H009525
Neutral Glass Wool	H008801
1:1 Hexane/Acetone	H009934
80:20 Hexane/Acetone	H009973
Hexane	H007064
KD Analyst: BH Date: 10/17/19	
Hexane	H007064
Anhydrous Sodium Sulfate	N/A
Vialing Analyst: SP Date: 10-17-19	
Hexane	H007064
Concentrated Sulfuric Acid	F009222
Tetrabutylammonium hydrogensulfate (TBAS)	H009398
Sodium Sulfite	H009014
Silica Gel (SPE) Darts	H007013

Surrogates & Spike Standards Used

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate 2µg/mL	N (H009790) Exp: 08/20/2020	50µL	CT	NL

(V) indicates a virtual standard combining two or more physical standards. In these cases the Standard ID refers to the virtual standard, not the parent standards.

If a Standard ID is missing, but should be present, check the standard definition in Element LIMS to be sure Standard Info 6 has the correct letter or number designator matching the vial designator inthe Standard ID column. If it is correct, check the batch and bench sheet in Element LIMS to be sure the correct standards are selected for surrogate(s) and spike(s).

Spike	1 H009584 5/17/20	63	Analyst CT	Witness NL

~~Spike won't propogate on bench sheet.~~ NL 10/16/19 NL 10/16/19

Spike 1	H008743 9/10/2020	63	Analyst CT	Witness NL

Analytical Resources, Incorporated
Analytical Chemists and Consultants

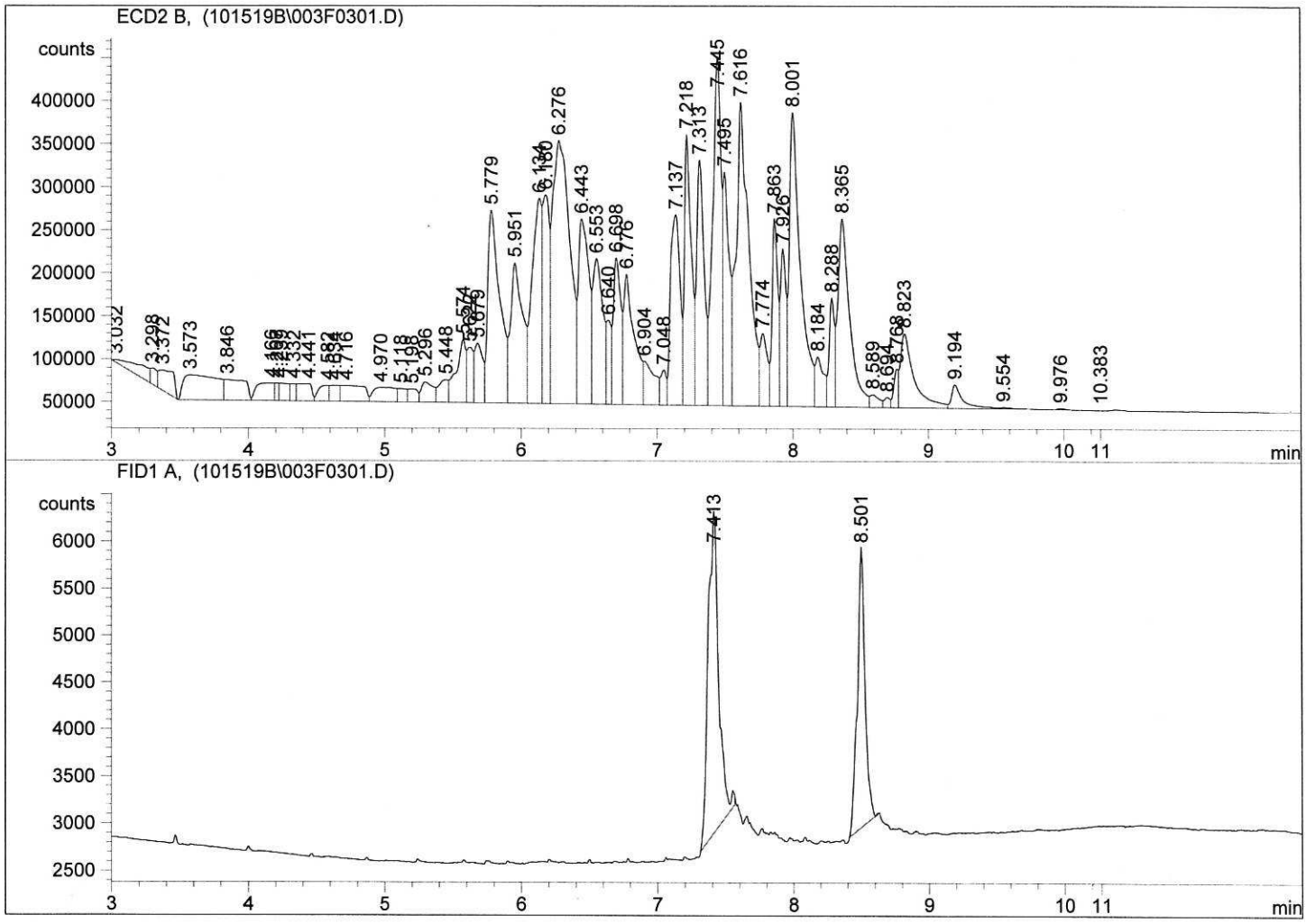
Organic Extractions Laboratory Analyst Notes

Extraction Parameter: PCB Extraction Batch: BHJ0482

Total Solids Batch: BHJ0465 Work Order(s): 19J0249

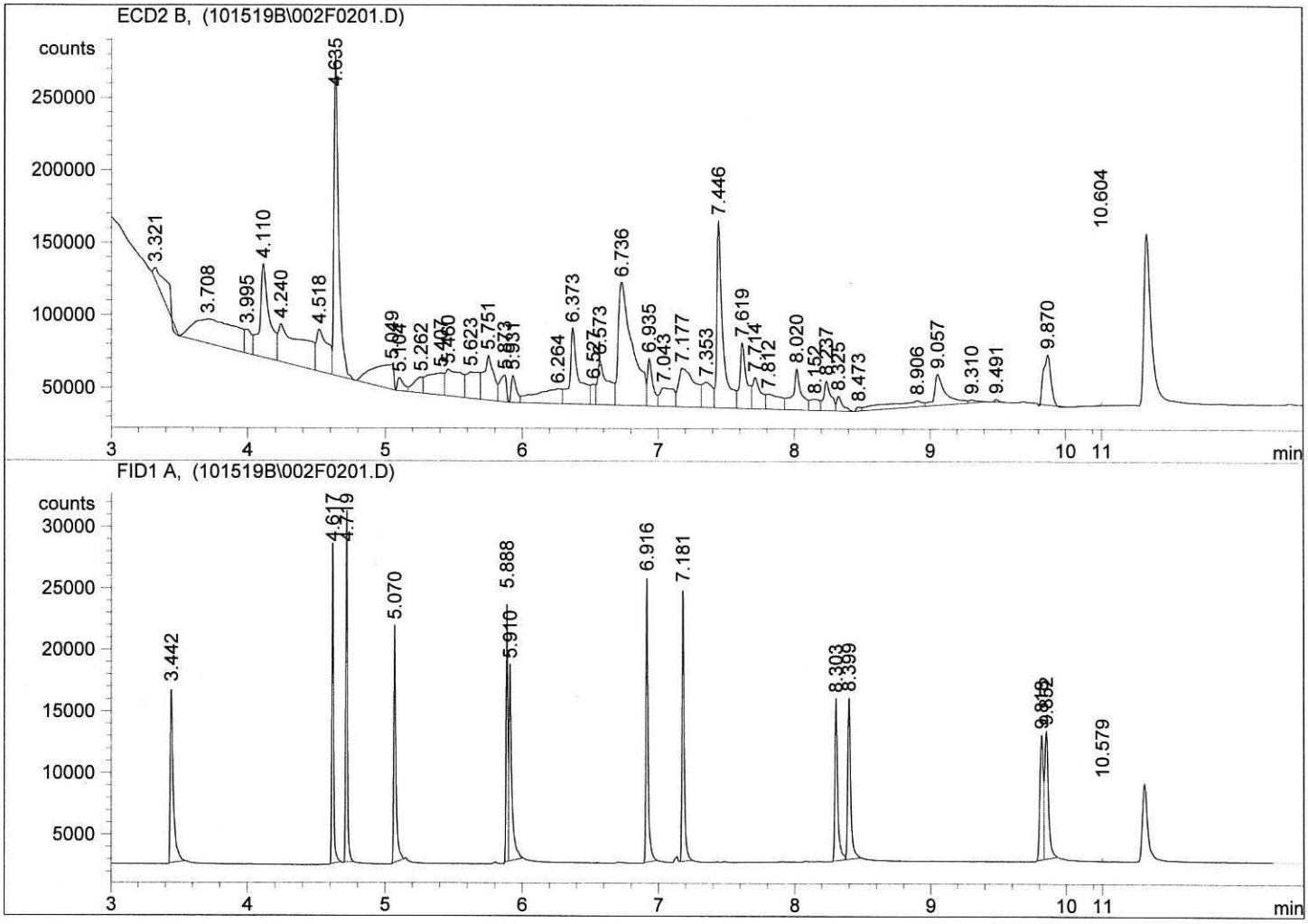
Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☒ No Anomalies (standard soil/wet sediment/sand/gravel)= Φ1, Φ3.	Φ 10/15/19
☒ Standing Water Decanted (Not shared)= Φ1.	Φ 10/15/19
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☒ Oily, obvious fuel/sulfur odors= sulfur odor = Φ2	Φ 10/15/19
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☒ Other (Details)= Φ2. 70% liquidy.	Φ 10/15/19
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Received in 1.0L Bottle(s)=No Bottle Rinse=	
☒ Other Notes/Comments= (Note problems, concerns, corrective actions).	
Limited Vol = Φ1, Φ2, Φ3.	Φ 10/15/19
Second Spike added.	10/16/19
☒ Share Samples Y / N	Φ 10/15/19
☒ Multiple Jars Y / N	Φ 10/15/19
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Injection Date	: 10/15/2019 4:42:10 PM	Seq. Line :	3
Sample Name	: AR1660 1PPM	Location :	Vial 3
Acq. Operator	: YL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\101519B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		



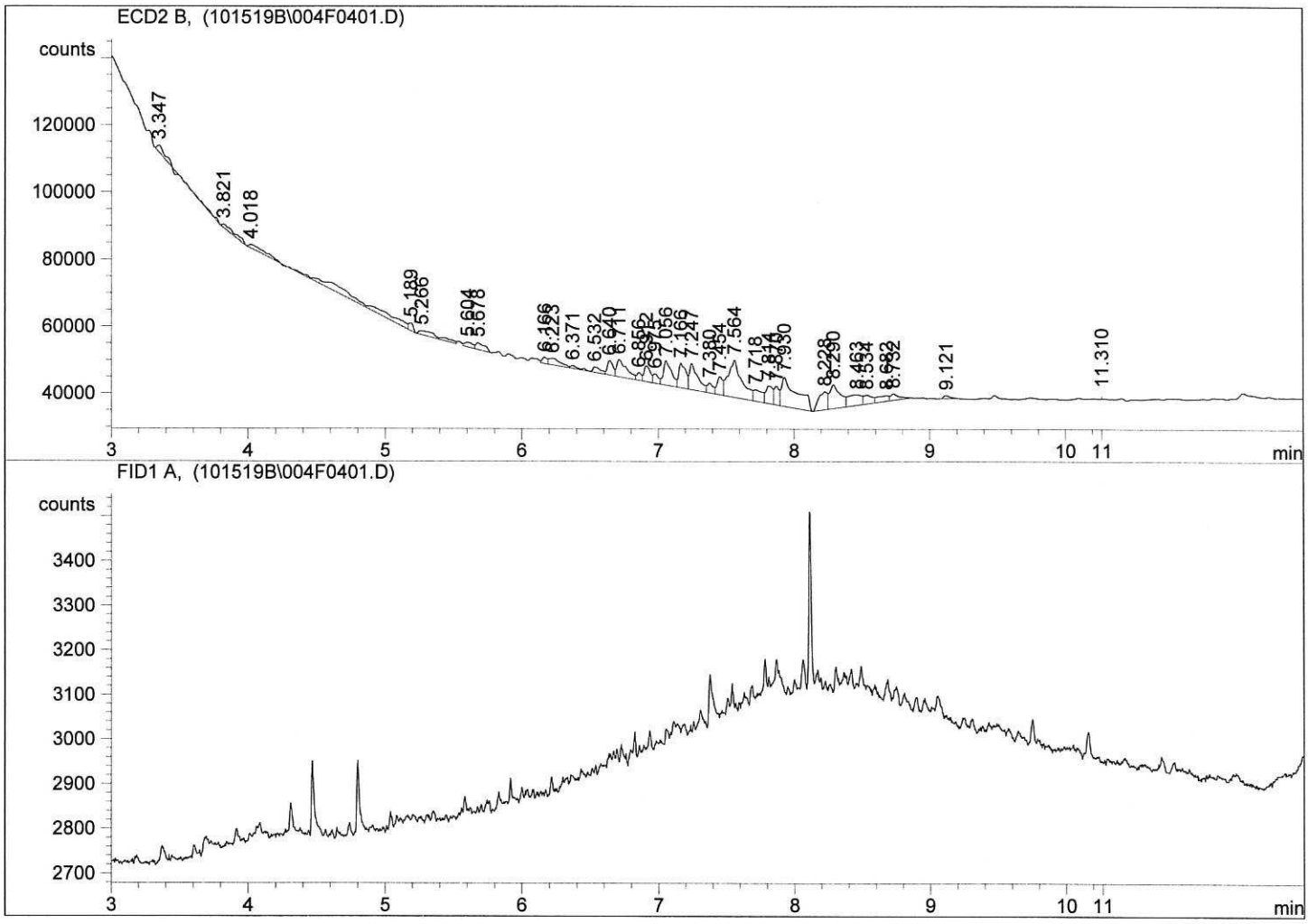
*** End of Report ***

Injection Date	: 10/15/2019 4:26:32 PM	Seq. Line :	2
Sample Name	: PNA STD 10PPM	Location :	Vial 2
Acq. Operator	: YL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\101519B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		



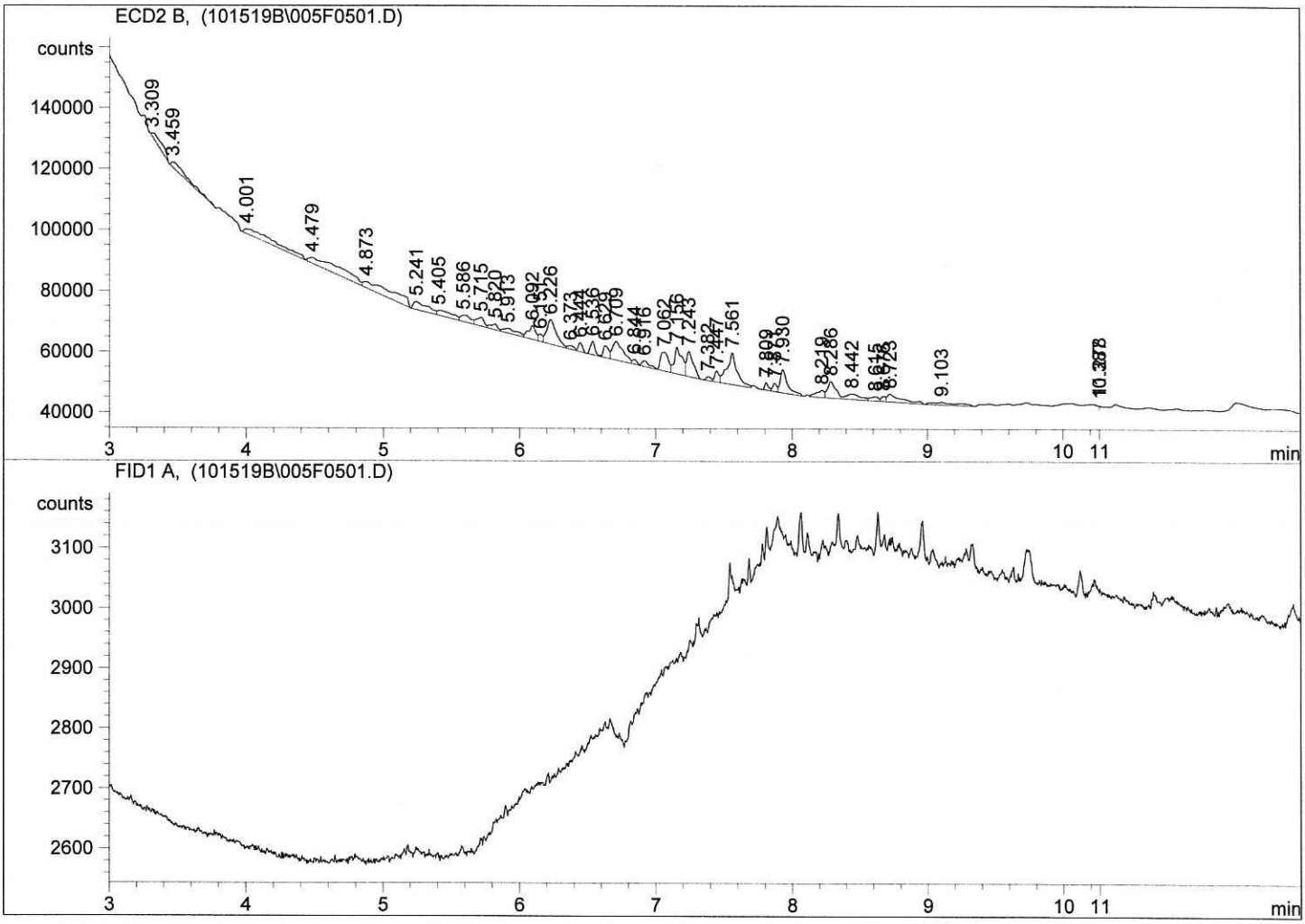
*** End of Report ***

Injection Date	: 10/15/2019 4:57:49 PM	Seq. Line :	4
Sample Name	: 19J0249 01	Location :	Vial 4
Acq. Operator	: YL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\101519B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		



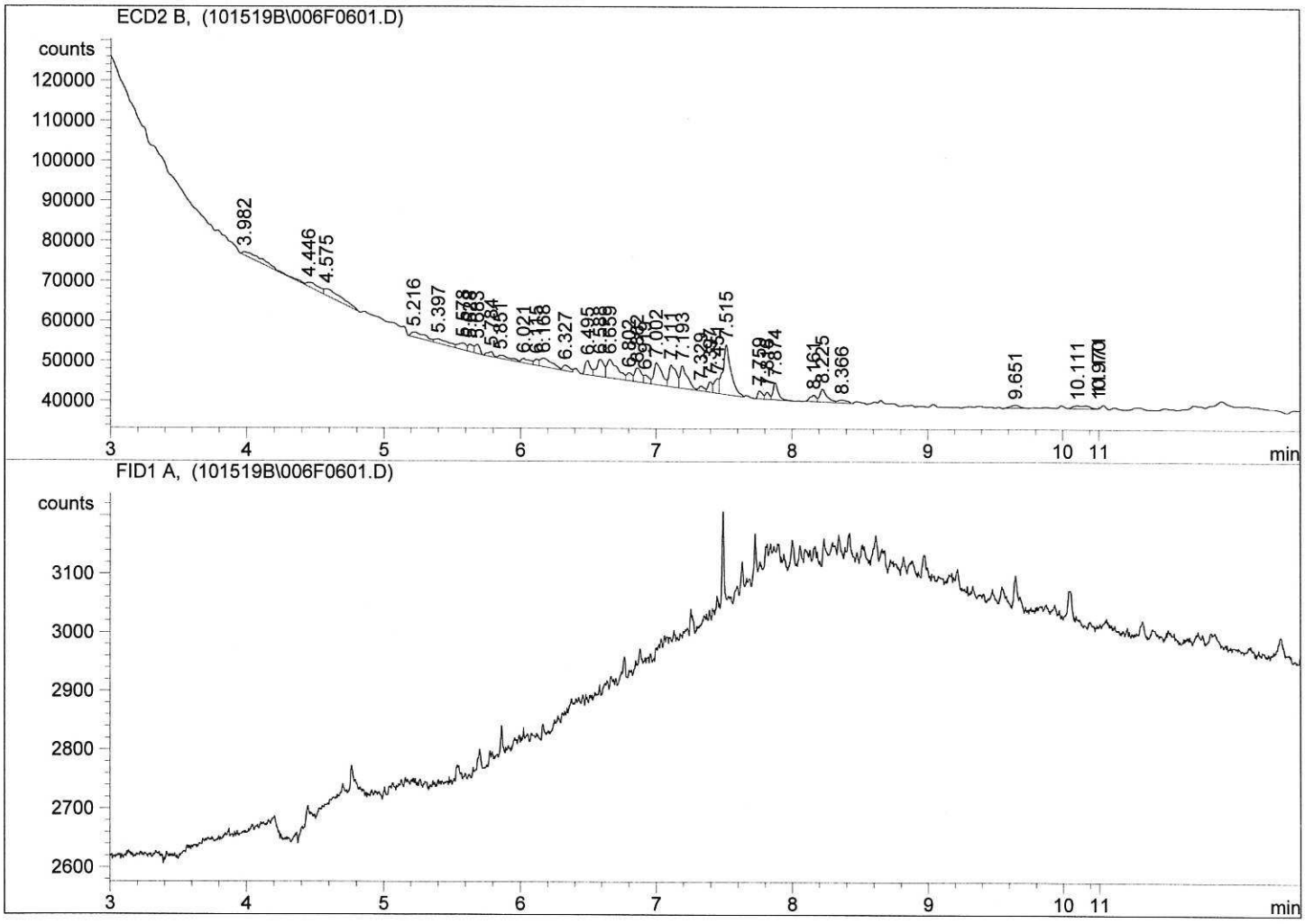
*** End of Report ***

Injection Date	: 10/15/2019 5:13:23 PM	Seq. Line :	5
Sample Name	: 19J0249 02	Location :	Vial 5
Acq. Operator	: YL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\101519B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		



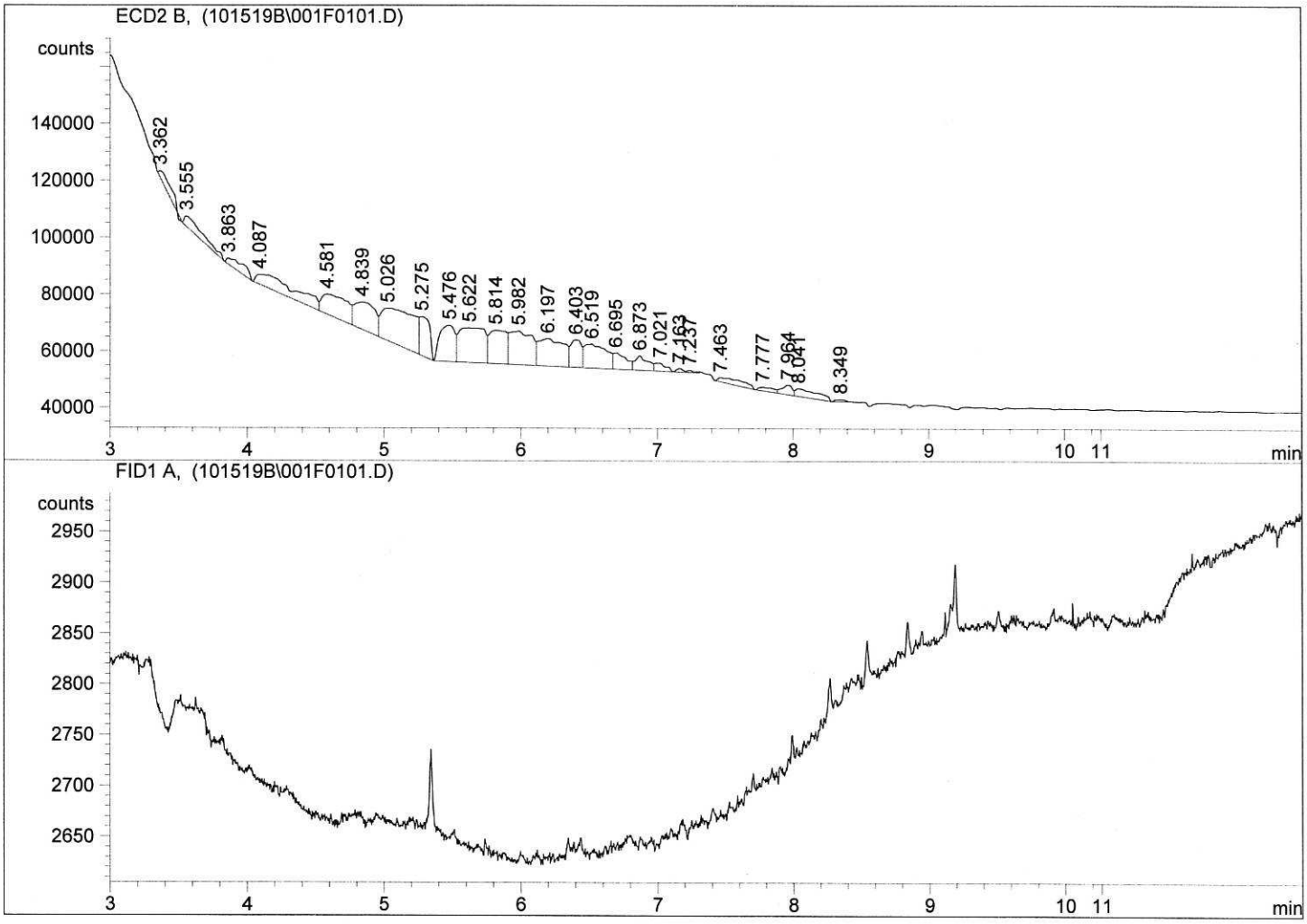
*** End of Report ***

Injection Date	: 10/15/2019 5:28:58 PM	Seq. Line :	6
Sample Name	: 19J0249 03	Location :	Vial 6
Acq. Operator	: YL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\101519B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		



*** End of Report ***

Injection Date	: 10/15/2019 4:11:07 PM	Seq. Line :	1
Sample Name	: DCM RINSE	Location :	Vial 1
Acq. Operator	: YL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\101519B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		



*** End of Report ***

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BHJ0482

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. Weigh soil/sed into beakers-lightly dry with sodium sulfate. 2. Transfer to microwave vessel(s). Note: (do not fill vessels more than 2/3rd full. Some samples may require two vessels). 3. Add 1:1 Hexane/Acetone until the solvent layer is 3 inches above the soil layer after homogenization. 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-Re-homogenize while hot then cool vessels in R-05 15 minutes. Re-homogenize while cool. 7. Decant 1:1 Hex/Ace into Erlenmeyer flask with sodium sulfate in bottom and funnel with neutral glasswool plug. 8. Rinse with Hexane. 9. Add 8:2 Hexane/Acetone to the vessel 3 inches above the soil layer after homogenization. Microwave a 2nd time. 10. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 11. KD on 100° bath. 12. Exchange (2 X with 20mL) Hexane. 13. TurboVap. 14. Clean-ups. 15. TurboVap. 16. Vial with Hexane. A. Need Total Solids Y / N B. Archive/Freeze Y / N	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigat
Cleanup Batch:	CHJ0145	Cleanup Type:	Sulfuric Acid
Cleanup Method:	EPA 3665A Sulfuric Acid Cleanup	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Matrix Spike	BHJ0482-MS1	19101726ECD7.D	10/17/2019	
Matrix Spike Dup	BHJ0482-MSD1	19101727ECD7.D	10/17/2019	
D6-SC-0to1-102118	19J0249-02	19101806ECD7.D	10/17/2019	
LCS Dup	BHJ0482-BSD1	19101723ECD7.D	10/17/2019	
LCS	BHJ0482-BS1	19101722ECD7.D	10/17/2019	
Blank	BHJ0482-BLK1	19101721ECD7.D	10/17/2019	
R4-SC-0to1-102118	19J0249-03	19101731ECD7.D	10/17/2019	
J3-SC-00to10-102218	19J0249-01	19101725ECD7.D	10/17/2019	
Reference	BHJ0482-SRM1	19101724ECD7.D	10/17/2019	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CHJ0145

Matrix: Solid **Cleanup using: Organics - EPA 3665A Sulfuric Acid Cleanup** **Printed: 10/17/2019 9:24:50AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
19J0249-01	A	J3-SC-00to10-102218	A 01	2.5	2.5	8082A PCB Solid 4	10/17/2019	SDP	
19J0249-02	A	D6-SC-0to1-102118	A 01	2.5	2.5	8082A PCB Solid 4	10/17/2019	SDP	
19J0249-03	A	R4-SC-0to1-102118	A 01	2.5	2.5	8082A PCB Solid 4	10/17/2019	SDP	
BHJ0482-BLK1	-	Blank	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-BS1	-	LCS	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-BSD1	-	LCS Dup	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-MS1	-	Matrix Spike	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-SRM1	-	Reference	-	10	10	-	10/17/2019	SDP	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigat
Cleanup Batch:	CHJ0147	Cleanup Type:	Sulfur
Cleanup Method:	EPA 3660B Sulfur Cleanup	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
R4-SC-0to1-102118	19J0249-03	19101731ECD7.D	10/17/2019	
J3-SC-00to10-102218	19J0249-01	19101725ECD7.D	10/17/2019	
D6-SC-0to1-102118	19J0249-02	19101806ECD7.D	10/17/2019	
Matrix Spike	BHJ0482-MS1	19101726ECD7.D	10/17/2019	
Reference	BHJ0482-SRM1	19101724ECD7.D	10/17/2019	
Matrix Spike Dup	BHJ0482-MSD1	19101727ECD7.D	10/17/2019	
Blank	BHJ0482-BLK1	19101721ECD7.D	10/17/2019	
LCS	BHJ0482-BS1	19101722ECD7.D	10/17/2019	
LCS Dup	BHJ0482-BSD1	19101723ECD7.D	10/17/2019	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CHJ0147

Matrix: Solid **Cleanup using: Organics - EPA 3660B Sulfur Cleanup** **Printed: 10/17/2019 11:52:58AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
19J0249-01	A	J3-SC-00to10-102218	A 01	2.5	2.5	8082A PCB Solid 4	10/17/2019	SDP	
19J0249-02	A	D6-SC-0to1-102118	A 01	2.5	2.5	8082A PCB Solid 4	10/17/2019	SDP	
19J0249-03	A	R4-SC-0to1-102118	A 01	2.5	2.5	8082A PCB Solid 4	10/17/2019	SDP	
BHJ0482-BLK1	-	Blank	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-BS1	-	LCS	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-BSD1	-	LCS Dup	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-MS1	-	Matrix Spike	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-SRM1	-	Reference	-	10	10	-	10/17/2019	SDP	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigat
Cleanup Batch:	CHJ0148	Cleanup Type:	Silica Gel
Cleanup Method:	EPA 3630C Silica Gel Cleanup	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
R4-SC-0to1-102118	19J0249-03	19101731ECD7.D	10/17/2019	
Reference	BHJ0482-SRM1	19101724ECD7.D	10/17/2019	
Blank	BHJ0482-BLK1	19101721ECD7.D	10/17/2019	
LCS Dup	BHJ0482-BSD1	19101723ECD7.D	10/17/2019	
J3-SC-00to10-102218	19J0249-01	19101725ECD7.D	10/17/2019	
D6-SC-0to1-102118	19J0249-02	19101806ECD7.D	10/17/2019	
Matrix Spike	BHJ0482-MS1	19101726ECD7.D	10/17/2019	
Matrix Spike Dup	BHJ0482-MSD1	19101727ECD7.D	10/17/2019	
LCS	BHJ0482-BS1	19101722ECD7.D	10/17/2019	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CHJ0148

Matrix: Solid **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup** **Printed: 10/17/2019 11:53:43AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
19J0249-01	A	J3-SC-00to10-102218	A 01	2.5	2.5	8082A PCB Solid 4	10/17/2019	SDP	
19J0249-02	A	D6-SC-0to1-102118	A 01	2.5	2.5	8082A PCB Solid 4	10/17/2019	SDP	
19J0249-03	A	R4-SC-0to1-102118	A 01	2.5	2.5	8082A PCB Solid 4	10/17/2019	SDP	
BHJ0482-BLK1	-	Blank	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-BS1	-	LCS	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-BSD1	-	LCS Dup	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-MS1	-	Matrix Spike	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	10/17/2019	SDP	
BHJ0482-SRM1	-	Reference	-	10	10	-	10/17/2019	SDP	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
METHOD BLANK DATA SHEET
EPA 8082A

Blank

Laboratory:	Analytical Resources, Inc.			SDG:	19J0249
Client:	Pacific Groundwater Group			Project:	Swan Island Lagoon Sediment Inv
Matrix:	Solid	Laboratory ID:	BHJ0482-BLK1	File ID:	19101721ECD7.D
Sampled:	N/A	Prepared:	10/16/19 12:20	Analyzed:	10/17/19 21:09
Solids:		Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.5 g / 2.5 mL
Batch:	BHJ0482	Sequence:	SHJ0299	Calibration:	CI00052
Instrument:	ECD7	Column:	ZB5	Cleanups:	Silica Gel, Sulfur, Sulfuric Acid

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg wet)	Q	DL	RL
12674-11-2	Aroclor 1016	1	4.0	U	1.6	4.0
11104-28-2	Aroclor 1221	1	4.0	U	1.6	4.0
11141-16-5	Aroclor 1232	1	4.0	U	1.6	4.0
53469-21-9	Aroclor 1242	1	4.0	U	1.6	4.0
12672-29-6	Aroclor 1248	1	4.0	U	1.6	4.0
11097-69-1	Aroclor 1254	1	4.0	U	1.6	4.0
11096-82-5	Aroclor 1260	1	4.0	U	0.6	4.0
37324-23-5	Aroclor 1262	1	4.0	U	0.6	4.0
11100-14-4	Aroclor 1268	1	4.0	U	0.6	4.0

SURROGATES	ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl	8.0000	6.93	86.6	40 - 126	
Tetrachlorometaxylene	8.0000	5.52	69.0	44 - 120	
Decachlorobiphenyl [2C]	8.0000	6.53	81.6	40 - 126	
Tetrachlorometaxylene [2C]	8.0000	4.95	61.8	44 - 120	

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101721ECD7.D
Data file 2: /20191017.b/20191017.b/19101721ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0482-BLK1
Client ID:
Injection Date: 17-OCT-2019 21:09
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.340	0.004	91697	5.066	0.003	341891	27.6	24.7	10.9	Tetrachloro-m-xylene
13.613	-0.032	133936	13.685	-0.033	743330	34.7	32.6	6.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	69.0	61.8
Decachlorobiphenyl	86.6	81.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	268324	2.1
Hexabromobiphenyl	382688	382020	-0.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1163447	7.5
Hexabromobiphenyl	1006687	1186925	17.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	7.001	0.079	1289	15.8	1	6.762	0.001	742	1.3
Aroclor-1016	2	7.324	0.013	25626	88.5	2	7.373	-0.010	10338	8.6
Aroclor-1016	3	7.485	0.029	1360	12.5	3	7.537	-0.045	3021	6.2
Aroclor-1016	4	8.331	0.066	4813	53.7	4	7.718	-0.033	3395	11.2
Total Col1Ave (4 peaks):				42.6		Total Col2Ave (4 peaks):			6.8	RPD = 145*
Corrected Ave (3 peaks):				27.3		Corrected Ave (3 peaks):			5.3	RPD = 135*
Aroclor-1221	1	4.157	-0.027	13027	663.3	1	4.227	-0.057	5128	62.1
Aroclor-1221	2	5.661	-0.051	3644	119.5	2	5.776	0.018	3699	21.4
Aroclor-1221	3	6.081	0.097	4503	58.2	3	6.105	0.001	26457	91.7
Total Col1Ave (3 peaks):				280.3		Total Col2Ave (3 peaks):			58.4	RPD = 131*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.157	-0.026	13027	1127.2	1	4.227	-0.055	5128	104.1
Aroclor-1232	2	7.001	0.076	1289	42.3	2	6.762	-0.015	742	3.0
Aroclor-1232	3	7.324	0.012	25626	235.1	3	7.373	-0.024	10338	21.1
Aroclor-1232	4	7.485	0.026	1360	33.3	4	8.766	0.037	25305	155.2
Total Col1Ave (4 peaks):				359.5		Total Col2Ave (4 peaks):			70.9	RPD = 134*
Corrected Ave (3 peaks):				103.5		Corrected Ave (3 peaks):			42.7	RPD = 83*
Aroclor-1242	1	7.001	0.079	1289	19.5	1	6.762	0.000	742	1.7
Aroclor-1242	2	7.324	0.014	25626	107.4	2	7.373	-0.011	10338	10.9
Aroclor-1242	3	8.635	0.004	2451	31.2	3	7.718	-0.034	3395	14.0
Aroclor-1242	4	8.931	0.012	4758	56.7	4	8.802	0.014	21013	69.6
Total Col1Ave (4 peaks):				53.7		Total Col2Ave (4 peaks):			24.0	RPD = 76*
Corrected Ave (3 peaks):				35.8		Corrected Ave (3 peaks):			8.8	RPD = 121*
Aroclor-1248	1	8.061	-0.034	2020	16.8	1	7.373	-0.012	10338	16.3
Aroclor-1248	2	8.635	0.003	2451	16.3	2	8.218	-0.044	59293	124.3
Aroclor-1248	3	8.931	0.011	4758	34.1	3	8.802	0.014	21013	43.7
Aroclor-1248	4	9.477	-0.028	1861	20.8	4	9.163	0.040	706	1.1
Total Col1Ave (4 peaks):				22.0		Total Col2Ave (4 peaks):			46.4	RPD = 71*
Corrected Ave (3 peaks):				17.9		Corrected Ave (3 peaks):			20.4	RPD = 13
Aroclor-1254	1	9.045	0.044	1243	5.5	1	9.012	-0.011	4210	6.5
Aroclor-1254	2	---			0.0	2	9.163	0.050	706	2.2
Aroclor-1254	3	---			0.0	3	9.530	0.000	3235	6.4
Aroclor-1254	4	9.477	-0.027	1861	6.7	4	9.672	-0.005	2603	2.6
Aroclor-1254	5	---			0.0	5	---			0.0
Col1Ave: <3 Quant Peaks						Col2Ave:			4.4	
Aroclor-1260	1	---			0.0	1	10.843	0.064	1054	1.4
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	11.528	0.033	1551	0.8
Aroclor-1260	4	---			0.0	4	11.944	-0.064	14270	24.3
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave:			8.8	
Aroclor-1262	1	---			0.0	1	10.843	0.048	1054	1.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	11.528	0.018	1551	0.8
Aroclor-1262	4	---			0.0	4	11.944	-0.080	14270	14.5
Col1Ave: <3 Quant Peaks						Col2Ave:			5.4	
Aroclor-1268	1	---			0.0	1	11.944	-0.079	14270	5.6
Aroclor-1268	2	---			0.0	2	12.186	0.095	381	0.1
Aroclor-1268	3	12.325	-0.098	1775	4.0	3	12.464	-0.017	2099	0.9
Aroclor-1268	4	13.202	-0.005	2001	1.4	4	13.278	-0.019	4617	0.6
Col1Ave: <3 Quant Peaks						Col2Ave:			1.8	

Total PCB Area Col1 (5.436 - 13.545) = 154787 Col1 Total PCB = 0.1 ppm*

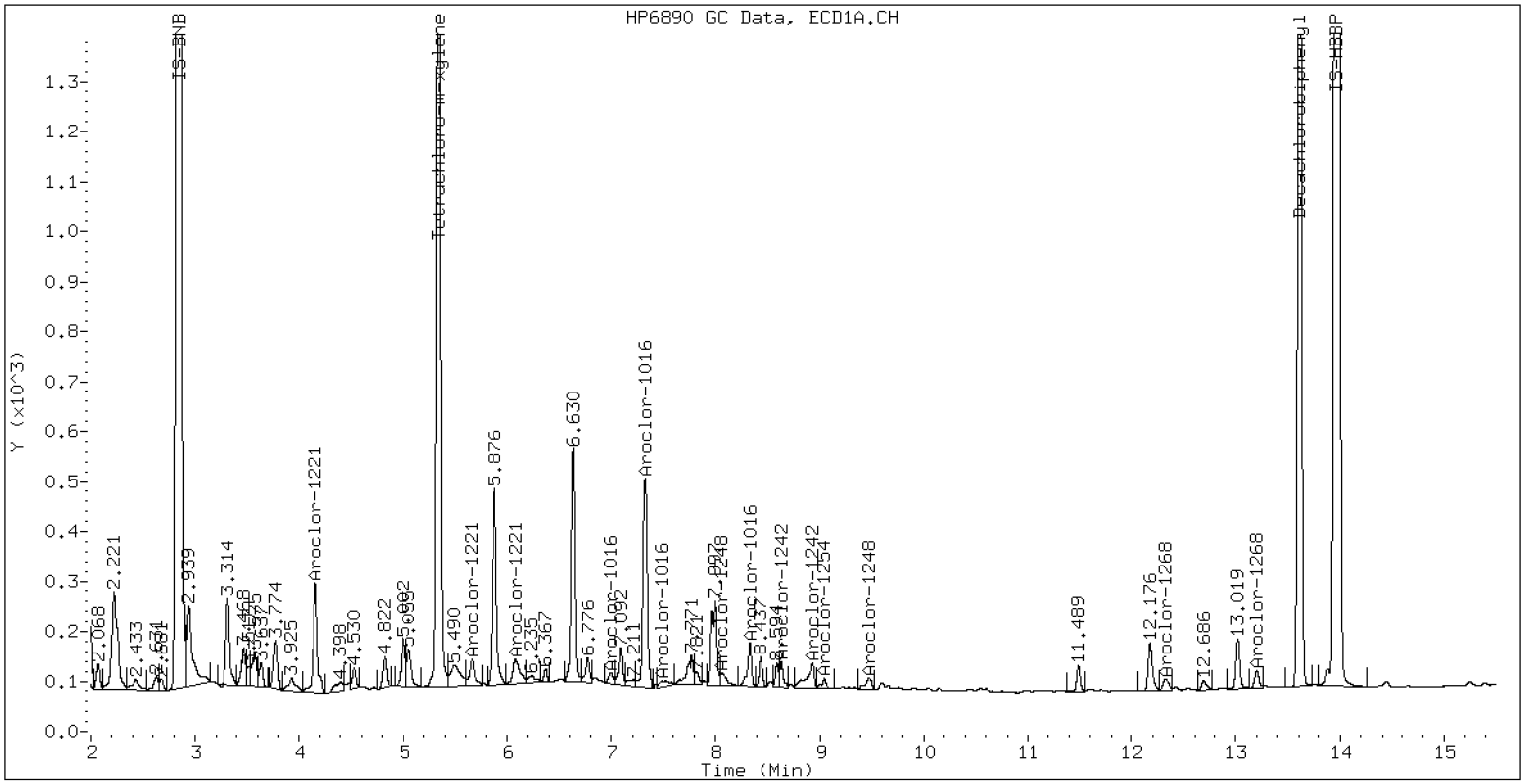
Total PCB Area Col2 (5.436 - 13.545) = 572920 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

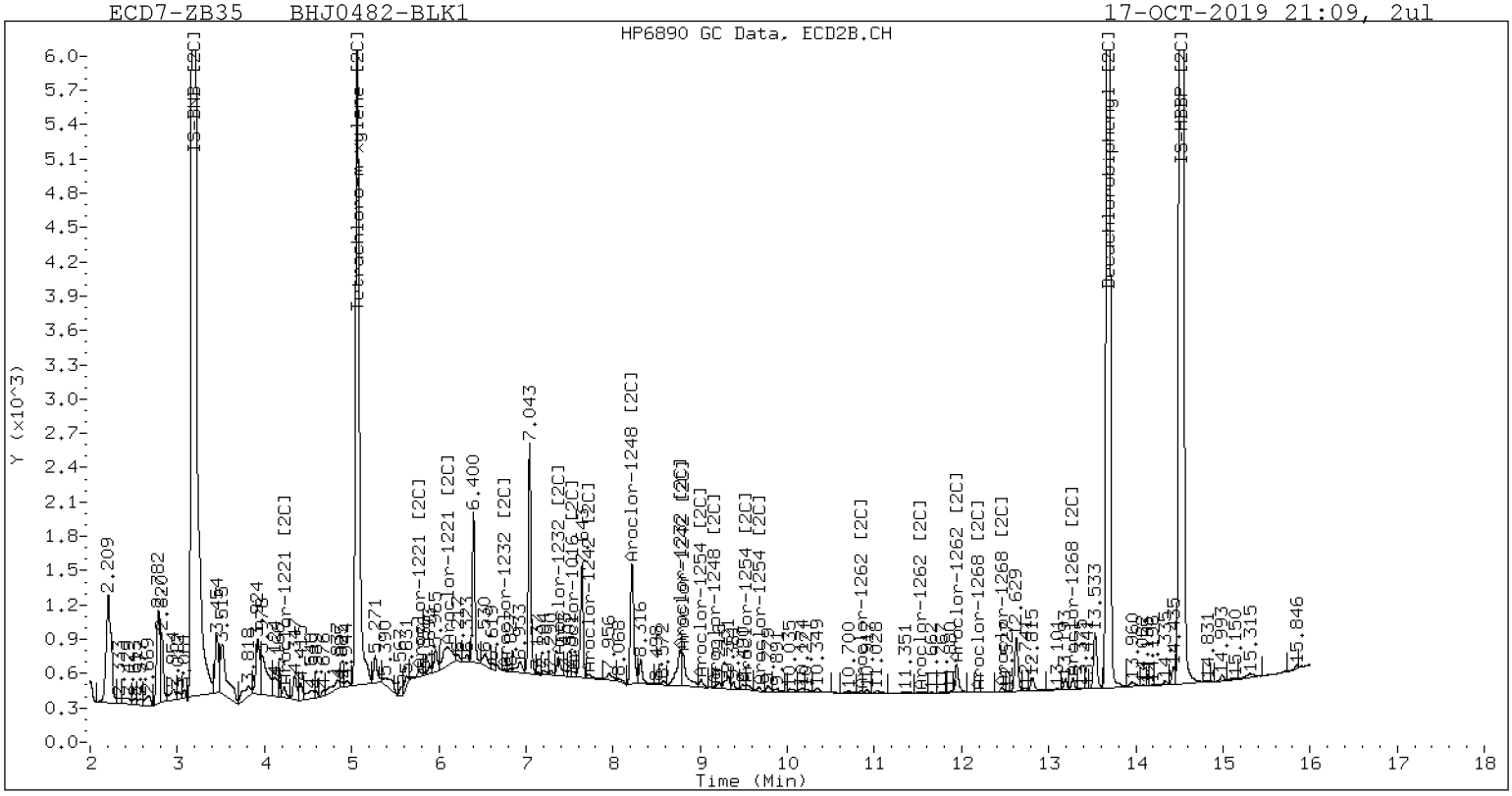
PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0482-BLK1 17-OCT-2019 21:09, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0482-BLK1 17-OCT-2019 21:09, 2ul

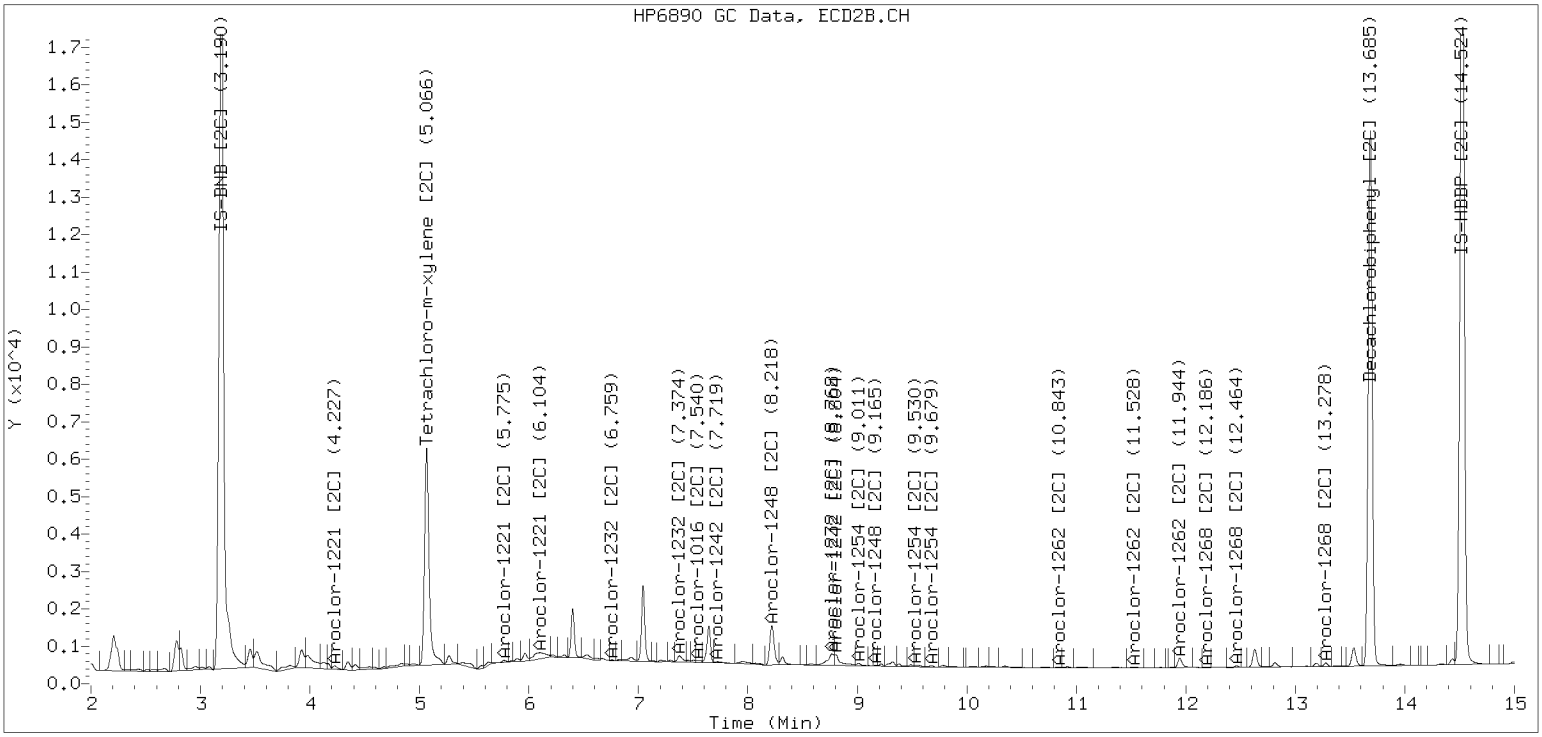


ZB-35 Manual Integration: YES

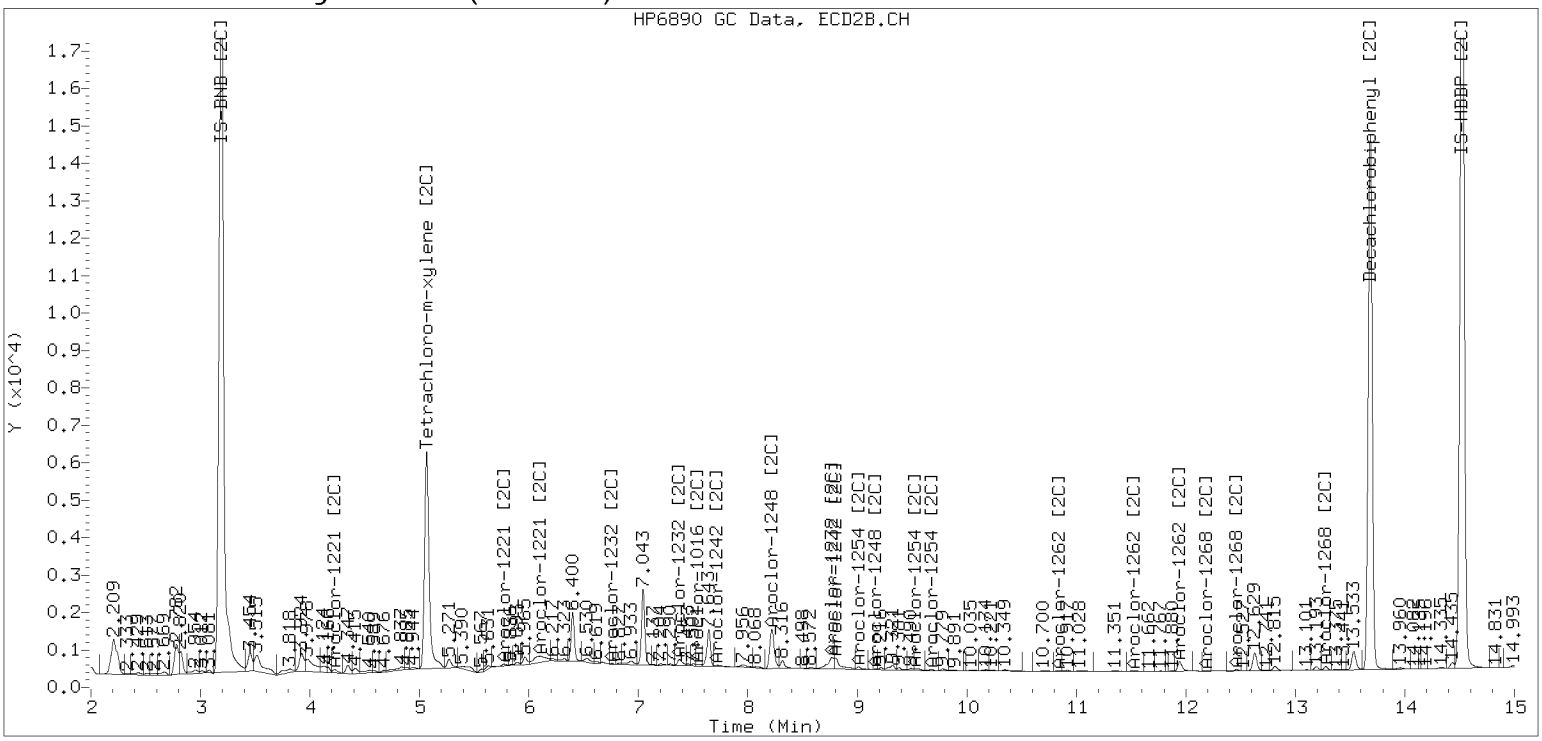
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/20191017.b/20191017.b/19101721ECD7.D Injection Date: 17-OCT-2

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

LCS / LCS DUPLICATE RECOVERY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Matrix:	Solid	Analyzed:	10/17/19 21:30
Batch:	BHJ0482	Laboratory ID:	BHJ0482-BS1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	LCS
Initial/Final:	12.5 g / 2.5 mL		

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Aroclor 1016 [2C]	101	86.9		86.2	56 - 120
Aroclor 1260	101	80.7		80.0	58 - 120

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Aroclor 1016 [2C]	101	86.4		85.7	0.523	30	56 - 120
Aroclor 1260	101	81.3		80.6	0.776	30	58 - 120

* Indicates values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101722ECD7.D
Data file 2: /20191017.b/20191017.b/19101722ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0482-BS1
Client ID:
Injection Date: 17-OCT-2019 21:30
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.338	0.002	104791	5.066	0.003	417737	32.2	30.8	4.7	Tetrachloro-m-xylene
13.612	-0.032	143850	13.685	-0.033	802117	34.8	33.7	3.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	80.6	76.9
Decachlorobiphenyl	87.0	84.3

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	262294	-0.2
Hexabromobiphenyl	382688	408450	6.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1142686	5.6
Hexabromobiphenyl	1006687	1239318	23.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.924	0.002	32450	407.8	1	6.763	0.002	225792	397.2
Aroclor-1016	2	7.314	0.002	120463	425.6	2	7.384	0.001	521580	439.3
Aroclor-1016	3	7.459	0.002	44713	418.9	3	7.584	0.002	209860	438.6
Aroclor-1016	4	8.266	0.002	37173	424.1	4	7.753	0.002	138019	461.9
Total Col1Ave (4 peaks):					419.1	Total Col2Ave (4 peaks):				434.3 RPD = 4
Corrected Ave (3 peaks):					416.9	Corrected Ave (3 peaks):				425.1 RPD = 2
Aroclor-1221	1	4.183	-0.002	1853	96.5	1	4.360	0.077	6157	75.9
Aroclor-1221	2	5.706	-0.005	3753	125.9	2	5.743	-0.016	41538	245.2
Aroclor-1221	3	5.978	-0.005	18145	240.0	3	6.088	-0.016	129574	457.1
Total Col1Ave (3 peaks):					154.2	Total Col2Ave (3 peaks):				259.4 RPD = 51*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.183	-0.001	1853	164.0	1	4.360	0.078	6157	127.3
Aroclor-1232	2	6.924	-0.001	32450	1088.2	2	6.763	-0.014	225792	937.8
Aroclor-1232	3	7.314	0.001	120463	1130.4	3	7.384	-0.013	521580	1082.9
Aroclor-1232	4	7.459	-0.001	44713	1119.0	4	8.716	-0.013	31821	198.7
Total Col1Ave (4 peaks):					875.4	Total Col2Ave (4 peaks):				586.7 RPD = 39
Corrected Ave (3 peaks):					790.4	Corrected Ave (3 peaks):				421.3 RPD = 61*
Aroclor-1242	1	6.924	0.003	32450	502.8	1	6.763	0.002	225792	521.2
Aroclor-1242	2	7.314	0.003	120463	516.5	2	7.384	-0.000	521580	557.5
Aroclor-1242	3	8.631	0.000	5539	72.0	3	7.753	0.001	138019	578.7
Aroclor-1242	4	8.924	0.005	5193	63.3	4	8.788	-0.000	19121	64.4
Total Col1Ave (4 peaks):					288.7	Total Col2Ave (4 peaks):				430.5 RPD = 39
Corrected Ave (3 peaks):					212.7	Corrected Ave (3 peaks):				381.1 RPD = 57*
Aroclor-1248	1	8.095	-0.000	33822	286.9	1	7.384	-0.001	521580	839.5
Aroclor-1248	2	8.631	-0.000	5539	37.8	2	8.261	-0.001	162399	346.6
Aroclor-1248	3	8.924	0.004	5193	38.0	3	8.788	-0.001	19121	40.5
Aroclor-1248	4	9.503	-0.002	30233	344.9	4	9.121	-0.002	16918	27.7
Total Col1Ave (4 peaks):					176.9	Total Col2Ave (4 peaks):				313.6 RPD = 56*
Corrected Ave (3 peaks):					120.9	Corrected Ave (3 peaks):				138.3 RPD = 13
Aroclor-1254	1	9.003	0.002	30398	137.5	1	9.022	-0.000	125846	198.8
Aroclor-1254	2	---			0.0	2	9.121	0.008	16918	52.5
Aroclor-1254	3	9.369	-0.002	5767	45.4	3	9.530	-0.000	34034	68.5
Aroclor-1254	4	9.503	-0.002	30233	111.1	4	9.718	0.041	277830	279.8
Aroclor-1254	5	10.202	-0.009	32233	177.4	5	10.453	0.001	134279	218.8
Total Col1Ave (4 peaks):					117.9	Total Col2Ave (5 peaks):				163.7 RPD = 33
Corrected Ave (3 peaks):					98.0	Corrected Ave (4 peaks):				134.7 RPD = 32
Aroclor-1260	1	10.763	0.000	69876	370.4	1	10.780	0.001	304201	390.2
Aroclor-1260	2	11.080	0.001	73167	404.6	2	11.218	0.002	325825	413.7
Aroclor-1260	3	11.449	0.000	189777	413.4	3	11.497	0.002	825239	418.2
Aroclor-1260	4	11.848	-0.000	99336	479.7	4	12.008	-0.001	240328	391.3
Aroclor-1260	5	11.965	-0.001	35617	363.3	NS	---			----
Total Col1Ave (5 peaks):					406.3	Total Col2Ave (4 peaks):				403.3 RPD = 1
Corrected Ave (4 peaks):					387.9	Corrected Ave (3 peaks):				398.4 RPD = 3
Aroclor-1262	1	11.080	-0.000	73167	342.0	1	10.780	-0.015	304201	282.9
Aroclor-1262	2	11.449	-0.001	189777	358.3	2	11.218	-0.017	325825	354.4
Aroclor-1262	3	11.848	-0.001	99336	631.5	3	11.497	-0.013	825239	391.4
Aroclor-1262	4	11.965	-0.001	35617	178.7	4	12.008	-0.016	240328	233.7
Total Col1Ave (4 peaks):					377.6	Total Col2Ave (4 peaks):				315.6 RPD = 18
Corrected Ave (3 peaks):					293.0	Corrected Ave (3 peaks):				290.3 RPD = 1
Aroclor-1268	1	11.965	-0.001	35617	56.7	1	12.008	-0.015	240328	90.0
Aroclor-1268	2	12.037	0.002	42685	75.3	2	12.062	-0.028	537357	200.6
Aroclor-1268	3	12.437	0.014	19210	40.1	3	12.463	-0.017	18381	7.6
Aroclor-1268	4	13.205	-0.001	13033	8.6	4	13.278	-0.019	78106	9.1
Total Col1Ave (4 peaks):					45.2	Total Col2Ave (4 peaks):				76.8 RPD = 52*

Corrected Ave (3 peaks): 35.1 Corrected Ave (3 peaks): 35.6 RPD = 1

Total PCB Area Col1 (5.436 - 13.545) = 1936334 Col1 Total PCB = 0.9 ppm*

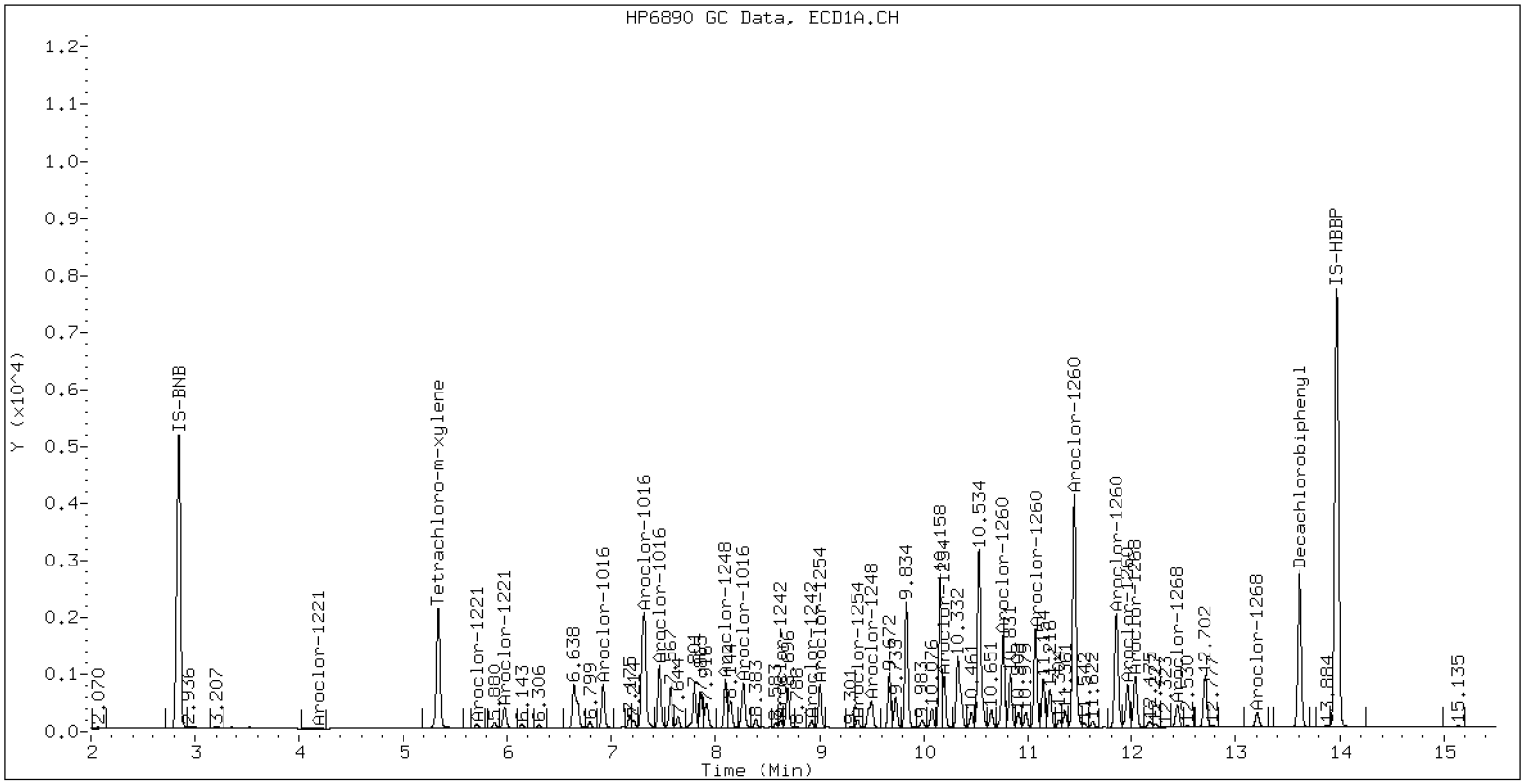
Total PCB Area Col2 (5.436 - 13.545) = 8689850 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

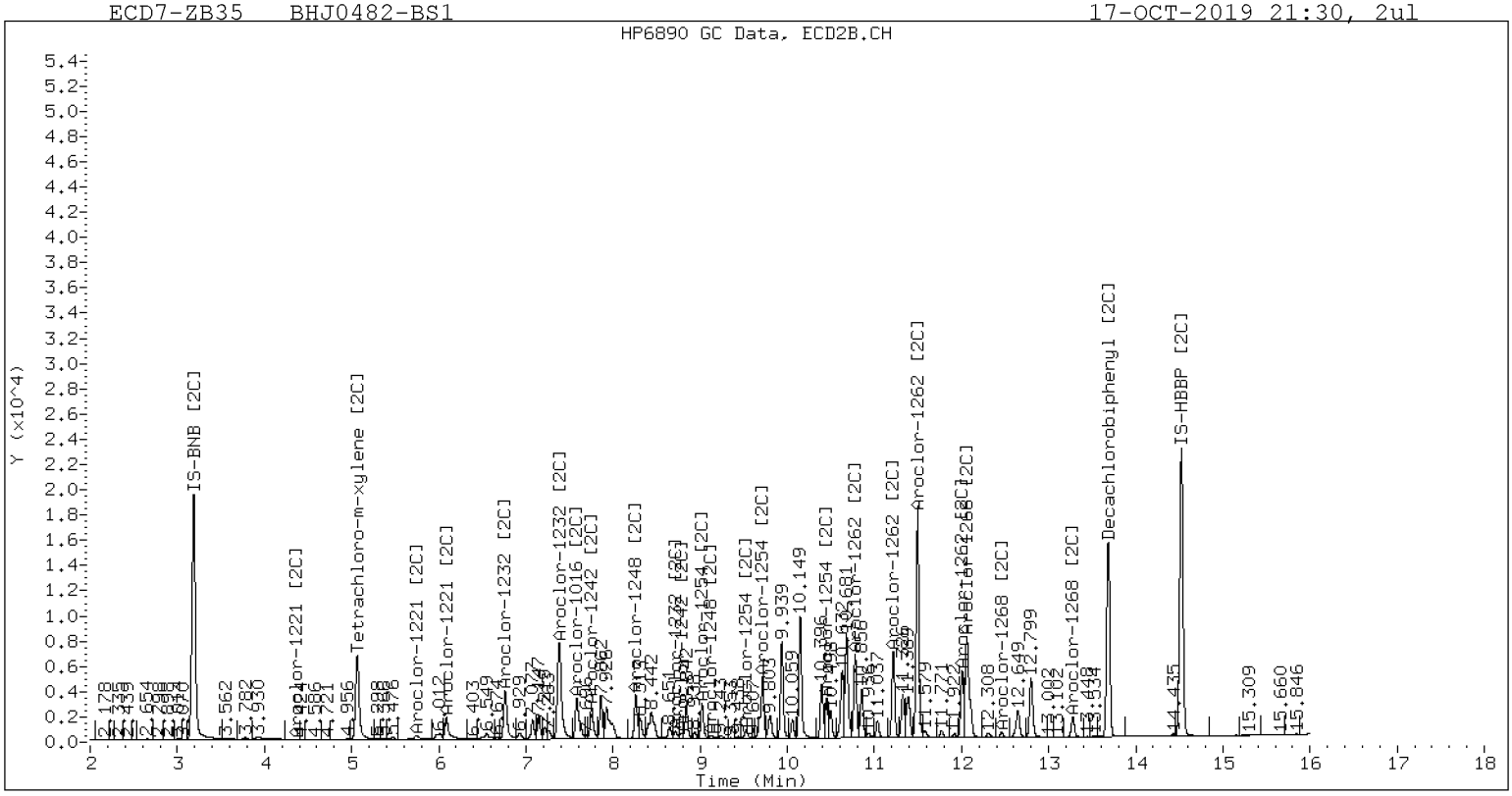
PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0482-BS1 17-OCT-2019 21:30, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0482-BS1 17-OCT-2019 21:30, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101723ECD7.D
Data file 2: /20191017.b/20191017.b/19101723ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0482-BSD1
Client ID:
Injection Date: 17-OCT-2019 21:51
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.337	0.001	106476	5.063	-0.000	433236	31.8	31.0	2.7	Tetrachloro-m-xylene
13.613	-0.031	154685	13.689	-0.029	901092	35.1	34.9	0.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	79.5	77.4
Decachlorobiphenyl	87.7	87.3

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	270222	2.8
Hexabromobiphenyl	382688	435743	13.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1177944	8.9
Hexabromobiphenyl	1006687	1345078	33.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.923	0.002	33837	412.7	1	6.761	0.001	227345	388.0
Aroclor-1016	2	7.311	-0.000	124923	428.4	2	7.384	0.001	539089	440.5
Aroclor-1016	3	7.458	0.002	46242	420.5	3	7.584	0.001	214601	435.1
Aroclor-1016	4	8.265	0.001	38907	430.8	4	7.752	0.001	143060	464.4
Total Col1Ave (4 peaks):				423.1		Total Col2Ave (4 peaks):			432.0	RPD = 2
Corrected Ave (3 peaks):				420.5		Corrected Ave (3 peaks):			421.2	RPD = 0
Aroclor-1221	1	4.178	-0.006	1175	59.4	1	---			0.0
Aroclor-1221	2	5.705	-0.007	3828	124.7	2	5.740	-0.018	39338	225.2
Aroclor-1221	3	5.977	-0.006	19031	244.4	3	6.086	-0.018	124646	426.5
Total Col1Ave (3 peaks):				142.8		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.178	-0.005	1175	101.0	1	---			0.0
Aroclor-1232	2	6.923	-0.002	33837	1101.4	2	6.761	-0.016	227345	916.0
Aroclor-1232	3	7.311	-0.001	124923	1137.9	3	7.384	-0.013	539089	1085.7
Aroclor-1232	4	7.458	-0.001	46242	1123.3	4	8.715	-0.014	33749	204.5
Total Col1Ave (4 peaks):				865.9		Total Col2Ave (3 peaks):			735.4	RPD = 16
Corrected Ave (3 peaks):				775.2		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.923	0.002	33837	508.9	1	6.761	-0.000	227345	509.1
Aroclor-1242	2	7.311	0.001	124923	519.9	2	7.384	-0.001	539089	559.0
Aroclor-1242	3	8.631	-0.000	5828	73.6	3	7.752	0.000	143060	581.9
Aroclor-1242	4	8.923	0.004	5488	65.0	4	8.787	-0.001	20839	68.1
Total Col1Ave (4 peaks):				291.8		Total Col2Ave (4 peaks):			429.5	RPD = 38
Corrected Ave (3 peaks):				215.8		Corrected Ave (3 peaks):			378.8	RPD = 55*
Aroclor-1248	1	8.095	-0.001	35652	293.6	1	7.384	-0.001	539089	841.7
Aroclor-1248	2	8.631	-0.001	5828	38.6	2	8.260	-0.002	169713	351.4
Aroclor-1248	3	8.923	0.004	5488	39.0	3	8.787	-0.002	20839	42.8
Aroclor-1248	4	9.502	-0.003	32234	356.9	4	9.121	-0.002	18666	29.7
Total Col1Ave (4 peaks):				182.0		Total Col2Ave (4 peaks):			316.4	RPD = 54*
Corrected Ave (3 peaks):				123.7		Corrected Ave (3 peaks):			141.3	RPD = 13
Aroclor-1254	1	9.002	0.001	32159	141.2	1	9.021	-0.002	132993	203.8
Aroclor-1254	2	---			0.0	2	9.121	0.007	18666	56.2
Aroclor-1254	3	9.369	-0.002	6195	47.3	3	9.529	-0.001	35999	70.3
Aroclor-1254	4	9.502	-0.003	32234	115.0	4	9.717	0.040	293974	287.1
Aroclor-1254	5	10.157	-0.054	153945	822.5	5	10.452	-0.000	144644	228.7
Total Col1Ave (4 peaks):				281.5		Total Col2Ave (5 peaks):			169.2	RPD = 50*
Corrected Ave (3 peaks):				101.2		Corrected Ave (4 peaks):			139.7	RPD = 32
Aroclor-1260	1	10.763	0.000	75369	374.5	1	10.780	0.001	330857	391.0
Aroclor-1260	2	11.079	-0.000	79201	410.5	2	11.217	0.002	355666	416.1
Aroclor-1260	3	11.448	0.000	206004	420.7	3	11.496	0.001	901841	421.0
Aroclor-1260	4	11.848	-0.000	107907	488.4	4	12.008	-0.000	265156	397.8
Aroclor-1260	5	11.965	-0.000	38554	368.6	NS	---			----
Total Col1Ave (5 peaks):				412.5		Total Col2Ave (4 peaks):			406.5	RPD = 1
Corrected Ave (4 peaks):				393.6		Corrected Ave (3 peaks):			401.6	RPD = 2
Aroclor-1262	1	11.079	-0.001	79201	347.0	1	10.780	-0.015	330857	283.5
Aroclor-1262	2	11.448	-0.001	206004	364.5	2	11.217	-0.017	355666	356.4
Aroclor-1262	3	11.848	-0.001	107907	643.0	3	11.496	-0.014	901841	394.1
Aroclor-1262	4	11.965	-0.001	38554	181.3	4	12.008	-0.016	265156	237.5
Total Col1Ave (4 peaks):				384.0		Total Col2Ave (4 peaks):			317.9	RPD = 19
Corrected Ave (3 peaks):				297.6		Corrected Ave (3 peaks):			292.5	RPD = 2
Aroclor-1268	1	11.965	-0.001	38554	57.6	1	12.008	-0.015	265156	91.5
Aroclor-1268	2	12.038	0.002	46338	76.6	2	12.063	-0.027	583712	200.8
Aroclor-1268	3	12.437	0.014	21032	41.1	3	12.463	-0.018	19228	7.3
Aroclor-1268	4	13.205	-0.002	15059	9.3	4	13.278	-0.020	86616	9.3
Total Col1Ave (4 peaks):				46.2		Total Col2Ave (4 peaks):			77.2	RPD = 50*
Corrected Ave (3 peaks):				36.0		Corrected Ave (3 peaks):			36.0	RPD = 0

Total PCB Area Col1 (5.436 - 13.545) = 2067852 Col1 Total PCB = 0.9 ppm*

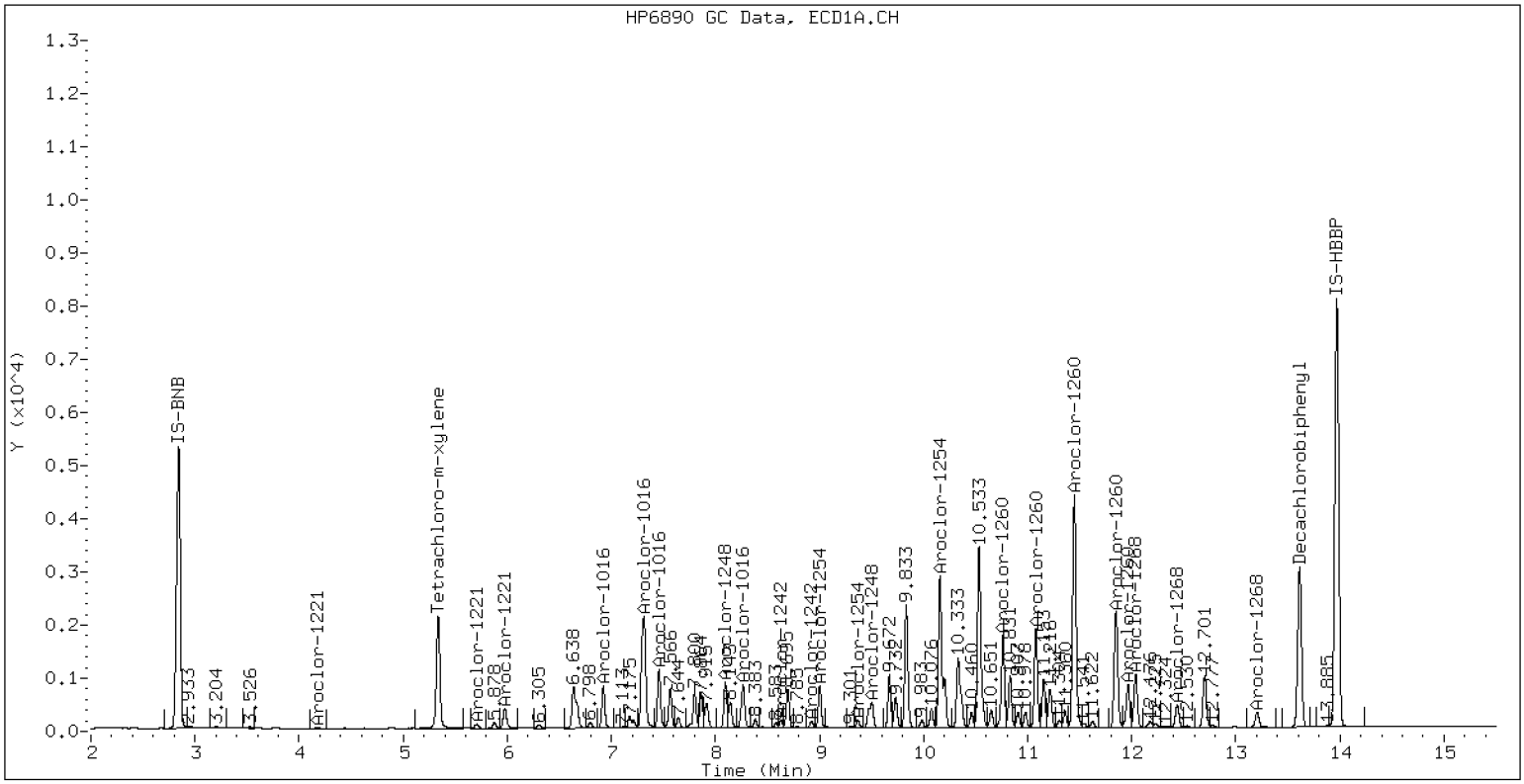
Total PCB Area Col2 (5.436 - 13.545) = 9250043 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

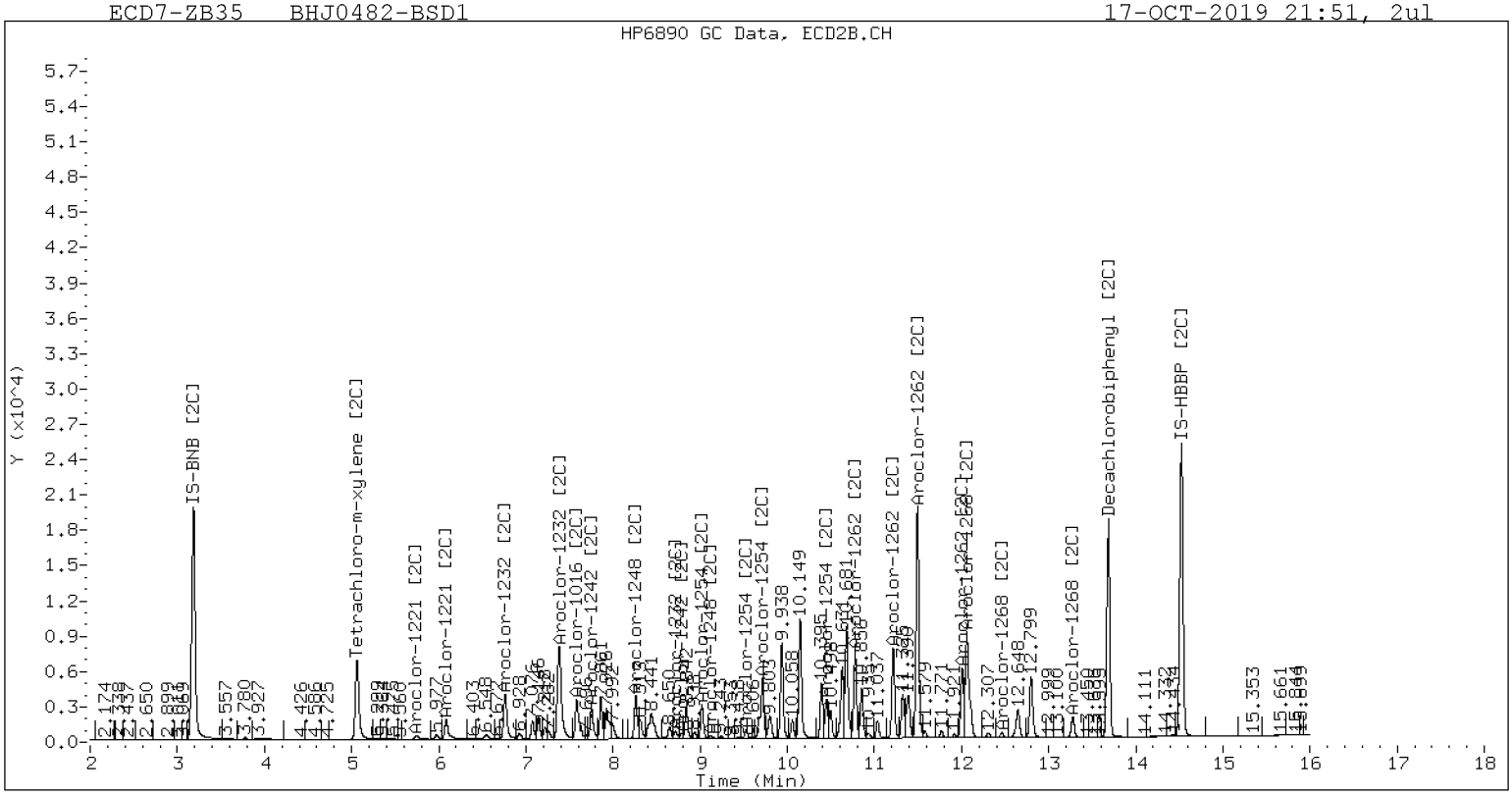
PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0482-BSD1 17-OCT-2019 21:51, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0482-BSD1 17-OCT-2019 21:51, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

J3-SC-00to10-102218

MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Matrix:	Solid	Analyzed:	10/17/19 22:53
Batch:	BHJ0482	Laboratory ID:	BHJ0482-MS1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	Matrix Spike
Initial/Final:	16.94 g / 2.5 mL	Source Sample:	J3-SC-00to10-102218

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	Q	MS CONCENTRATION (ug/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Aroclor 1016	101	ND	U	62.5		62.0	56 - 120
Aroclor 1260 [2C]	101	16.0		77.9		61.5	58 - 120

* Values outside of QC limits

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

J3-SC-00to10-102218

MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Matrix:	Solid	Analyzed:	10/17/19 23:14
Batch:	BHJ0482	Laboratory ID:	BHJ0482-MSD1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	Matrix Spike Dup
Initial/Final:	16.94 g / 2.5 mL	Source Sample:	J3-SC-00to10-102218

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	Q	MSD % REC. #		% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor 1016	101	56.4	*	55.8	*	10.4	30	56 - 120
Aroclor 1260 [2C]	101	69.8	*	53.5	*	11.0	30	58 - 120

* Values outside of QC limits

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101726ECD7.D
Data file 2: /20191017.b/20191017.b/19101726ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0482-MS1
Client ID:
Injection Date: 17-OCT-2019 22:53
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.339	0.002	86383	5.063	0.000	307899	27.3	27.5	0.7	Tetrachloro-m-xylene
13.604	-0.041	83619	13.676	-0.042	590302	38.3	30.8	21.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	68.3	68.8
Decachlorobiphenyl	95.8	77.0

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	255257	-2.9
Hexabromobiphenyl	382688	215605	-43.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	942362	-12.9
Hexabromobiphenyl	1006687	998466	-0.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	6.922	0.000	25461	328.8	1	6.760	-0.001	151026	322.2
Aroclor-1016	2	7.309	-0.002	85612	310.8	2	7.379	-0.005	324869	331.8
Aroclor-1016	3	7.456	-0.000	30769	296.2	3	7.578	-0.005	121981	309.1
Aroclor-1016	4	8.261	-0.004	26883	315.1	4	7.746	-0.006	72461	294.0
Total Col1Ave (4 peaks):					312.7	Total Col2Ave (4 peaks):				314.3 RPD = 0
Corrected Ave (3 peaks):					307.4	Corrected Ave (3 peaks):				308.4 RPD = 0
Aroclor-1221	1	---			0.0	1	4.379	0.096	2138	32.0
Aroclor-1221	2	5.706	-0.006	3286	113.3	2	5.744	-0.014	16453	117.8
Aroclor-1221	3	5.978	-0.005	17047	231.7	3	6.085	-0.019	71244	304.7
Col1Ave: <3 Quant Peaks						Col2Ave: 151.5				
Aroclor-1232	1	---			0.0	1	4.379	0.097	2138	53.6
Aroclor-1232	2	6.922	-0.003	25461	877.3	2	6.760	-0.017	151026	760.6
Aroclor-1232	3	7.309	-0.003	85612	825.5	3	7.379	-0.018	324869	817.9
Aroclor-1232	4	7.456	-0.003	30769	791.3	4	8.705	-0.024	50655	383.6
Total Col1Ave (3 peaks):					831.4	Total Col2Ave (4 peaks):				503.9 RPD = 49*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				399.3
Aroclor-1242	1	6.922	0.000	25461	405.4	1	6.760	-0.002	151026	422.7
Aroclor-1242	2	7.309	-0.001	85612	377.2	2	7.379	-0.006	324869	421.1
Aroclor-1242	3	8.626	-0.005	12076	161.4	3	7.746	-0.006	72461	368.4
Aroclor-1242	4	8.916	-0.003	12690	159.0	4	8.777	-0.011	30038	122.8
Total Col1Ave (4 peaks):					275.7	Total Col2Ave (4 peaks):				333.8 RPD = 19
Corrected Ave (3 peaks):					232.5	Corrected Ave (3 peaks):				304.1 RPD = 27
Aroclor-1248	1	8.091	-0.005	27493	239.6	1	7.379	-0.006	324869	634.1
Aroclor-1248	2	8.626	-0.005	12076	84.6	2	8.254	-0.008	113579	294.0
Aroclor-1248	3	8.916	-0.004	12690	95.5	3	8.777	-0.012	30038	77.2
Aroclor-1248	4	9.497	-0.008	55653	652.3	4	9.103	-0.020	67309	133.7
Total Col1Ave (4 peaks):					268.0	Total Col2Ave (4 peaks):				284.7 RPD = 6
Corrected Ave (3 peaks):					139.9	Corrected Ave (3 peaks):				168.3 RPD = 18
Aroclor-1254	1	8.996	-0.005	48645	226.2	1	9.013	-0.009	166736	319.3
Aroclor-1254	2	9.071	-0.005	11635	175.5	2	9.103	-0.010	67309	253.4
Aroclor-1254	3	9.376	0.005	42040	339.8	3	9.518	-0.012	66494	162.4
Aroclor-1254	4	9.497	-0.008	55653	210.1	4	9.666	-0.011	163107	199.1
Aroclor-1254	5	10.195	-0.016	36211	204.8	5	10.439	-0.012	162957	322.0
Total Col1Ave (5 peaks):					231.3	Total Col2Ave (5 peaks):				251.2 RPD = 8
Corrected Ave (4 peaks):					204.1	Corrected Ave (4 peaks):				233.6 RPD = 13
Aroclor-1260	1	10.754	-0.009	48097	483.0	1	10.768	-0.011	226961	361.3
Aroclor-1260	2	11.069	-0.010	48764	510.8	2	11.205	-0.010	259777	409.4
Aroclor-1260	3	11.440	-0.009	129746	535.5	3	11.484	-0.011	641691	403.6
Aroclor-1260	4	11.838	-0.010	64304	588.2	4	11.997	-0.012	190452	384.9
Aroclor-1260	5	11.955	-0.010	24297	469.5	NS	---			----
Total Col1Ave (5 peaks):					517.4	Total Col2Ave (4 peaks):				389.8 RPD = 28
Corrected Ave (4 peaks):					499.7	Corrected Ave (3 peaks):				383.3 RPD = 26
Aroclor-1262	1	11.069	-0.011	48764	431.8	1	10.768	-0.026	226961	262.0
Aroclor-1262	2	11.440	-0.010	129746	464.0	2	11.205	-0.029	259777	350.7
Aroclor-1262	3	11.838	-0.011	64304	774.5	3	11.484	-0.026	641691	377.7
Aroclor-1262	4	11.955	-0.011	24297	230.9	4	11.997	-0.027	190452	229.8
Total Col1Ave (4 peaks):					475.3	Total Col2Ave (4 peaks):				305.1 RPD = 44*
Corrected Ave (3 peaks):					375.6	Corrected Ave (3 peaks):				280.8 RPD = 29
Aroclor-1268	1	11.955	-0.010	24297	73.3	1	11.997	-0.026	190452	88.6
Aroclor-1268	2	12.028	-0.008	28244	94.4	2	12.051	-0.039	415869	192.7
Aroclor-1268	3	12.427	0.004	14158	56.0	3	12.454	-0.027	22795	11.7
Aroclor-1268	4	13.197	-0.010	11519	14.4	4	13.268	-0.029	76850	11.1
Total Col1Ave (4 peaks):					59.5	Total Col2Ave (4 peaks):				76.0 RPD = 24
Corrected Ave (3 peaks):					47.9	Corrected Ave (3 peaks):				37.1 RPD = 25

Total PCB Area Col1 (5.436 - 13.545) = 1704131 Col1 Total PCB = 0.8 ppm*

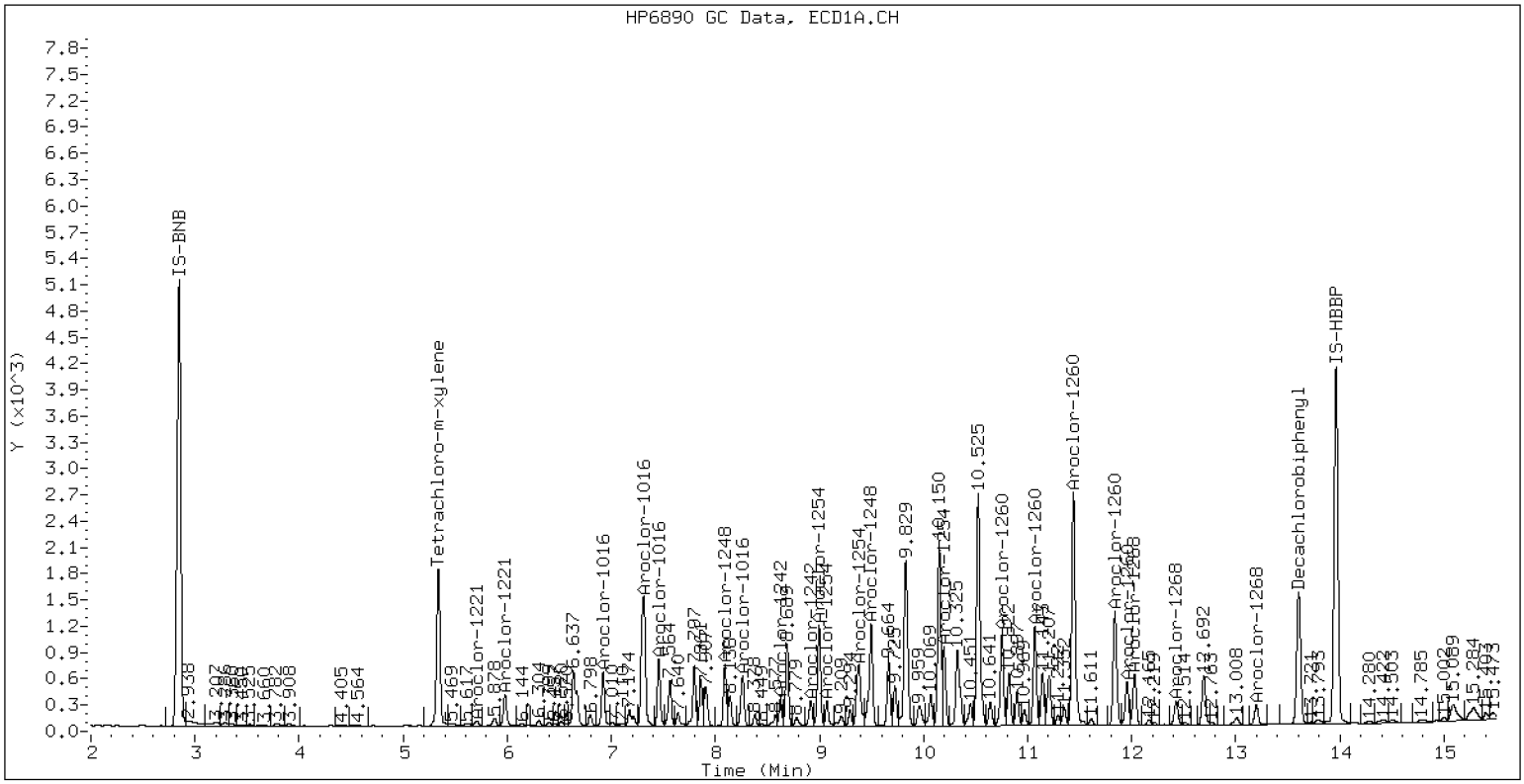
Total PCB Area Col2 (5.436 - 13.545) = 7426969 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

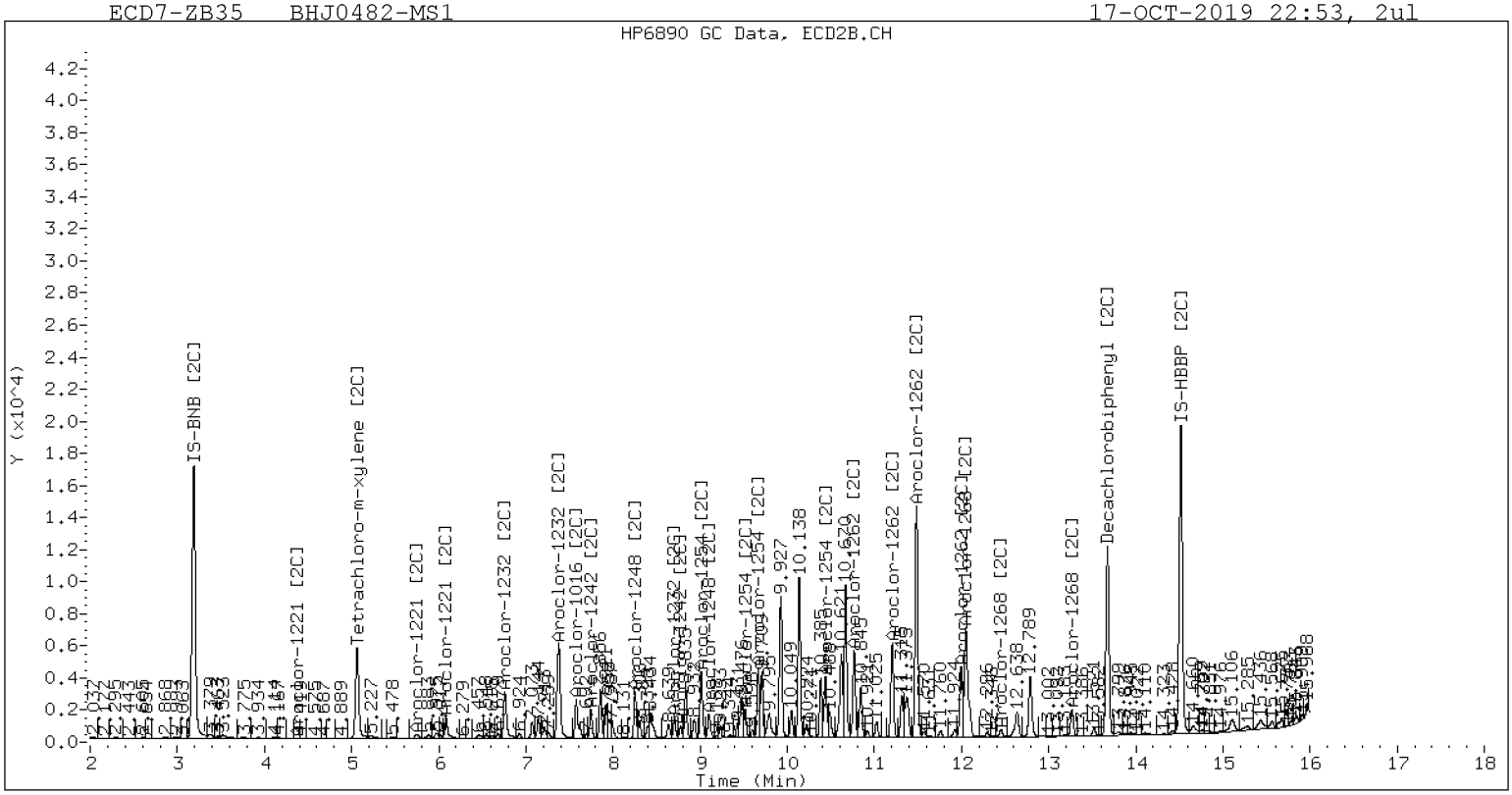
PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0482-MS1 17-OCT-2019 22:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0482-MS1 17-OCT-2019 22:53, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101727ECD7.D
Data file 2: /20191017.b/20191017.b/19101727ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0482-MSD1
Client ID:
Injection Date: 17-OCT-2019 23:14
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.337	0.000	111484	5.061	-0.002	396855	25.0	25.0	0.2	Tetrachloro-m-xylene
13.604	-0.040	109275	13.676	-0.042	793401	37.0	29.2	23.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	62.5	62.6
Decachlorobiphenyl	92.4	73.1

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	360165	37.0
Hexabromobiphenyl	382688	292246	-23.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1334103	23.3
Hexabromobiphenyl	1006687	1414989	40.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	6.920	-0.002	34125	312.3	1	6.758	-0.002	184697	278.3
Aroclor-1016	2	7.310	-0.002	107098	275.6	2	7.377	-0.007	418217	301.7
Aroclor-1016	3	7.455	-0.001	38927	265.6	3	7.576	-0.006	152975	273.8
Aroclor-1016	4	8.261	-0.004	33022	274.3	4	7.745	-0.007	90873	260.5
Total Col1Ave (4 peaks):					281.9	Total Col2Ave (4 peaks):				278.6 RPD = 1
Corrected Ave (3 peaks):					271.8	Corrected Ave (3 peaks):				270.9 RPD = 0
Aroclor-1221	1	---			0.0	1	4.230	-0.053	1858	19.6
Aroclor-1221	2	5.703	-0.008	3493	85.4	2	5.744	-0.014	25074	126.8
Aroclor-1221	3	5.976	-0.007	21228	204.5	3	6.083	-0.021	91823	277.4
Col1Ave: <3 Quant Peaks						Col2Ave: 141.3				
Aroclor-1232	1	---			0.0	1	4.230	-0.052	1858	32.9
Aroclor-1232	2	6.920	-0.005	34125	833.4	2	6.758	-0.019	184697	657.1
Aroclor-1232	3	7.310	-0.003	107098	731.9	3	7.377	-0.020	418217	743.7
Aroclor-1232	4	7.455	-0.005	38927	709.5	4	8.705	-0.025	52183	279.2
Total Col1Ave (3 peaks):					758.2	Total Col2Ave (4 peaks):				428.2 RPD = 56*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				323.0
Aroclor-1242	1	6.920	-0.002	34125	385.1	1	6.758	-0.003	184697	365.2
Aroclor-1242	2	7.310	-0.001	107098	334.4	2	7.377	-0.008	418217	382.9
Aroclor-1242	3	8.625	-0.005	12301	116.5	3	7.745	-0.007	90873	326.4
Aroclor-1242	4	8.915	-0.004	14427	128.1	4	8.776	-0.012	35616	102.8
Total Col1Ave (4 peaks):					241.0	Total Col2Ave (4 peaks):				294.3 RPD = 20
Corrected Ave (3 peaks):					193.0	Corrected Ave (3 peaks):				264.8 RPD = 31
Aroclor-1248	1	8.090	-0.005	32397	200.1	1	7.377	-0.008	418217	576.6
Aroclor-1248	2	8.625	-0.006	12301	61.1	2	8.253	-0.009	134952	246.7
Aroclor-1248	3	8.915	-0.005	14427	76.9	3	8.776	-0.013	35616	64.6
Aroclor-1248	4	9.497	-0.008	60309	501.0	4	9.103	-0.020	74592	104.6
Total Col1Ave (4 peaks):					209.8	Total Col2Ave (4 peaks):				248.1 RPD = 17
Corrected Ave (3 peaks):					112.7	Corrected Ave (3 peaks):				138.7 RPD = 21
Aroclor-1254	1	8.996	-0.005	53810	177.3	1	9.013	-0.010	188048	254.4
Aroclor-1254	2	9.070	-0.006	12720	136.0	2	9.103	-0.011	74592	198.4
Aroclor-1254	3	9.379	0.008	47201	270.4	3	9.518	-0.012	64812	111.8
Aroclor-1254	4	9.497	-0.007	60309	161.4	4	9.665	-0.012	169309	146.0
Aroclor-1254	5	10.195	-0.016	39730	159.3	5	10.440	-0.012	176519	246.4
Total Col1Ave (5 peaks):					180.9	Total Col2Ave (5 peaks):				191.4 RPD = 6
Corrected Ave (4 peaks):					158.5	Corrected Ave (4 peaks):				175.6 RPD = 10
Aroclor-1260	1	10.754	-0.009	60366	447.3	1	10.768	-0.011	284876	320.0
Aroclor-1260	2	11.068	-0.011	60273	465.8	2	11.206	-0.010	323823	360.1
Aroclor-1260	3	11.439	-0.009	166226	506.1	3	11.486	-0.009	828572	367.7
Aroclor-1260	4	11.838	-0.010	82006	553.4	4	11.997	-0.012	244761	349.0
Aroclor-1260	5	11.954	-0.011	31179	444.4	NS	---			----
Total Col1Ave (5 peaks):					483.4	Total Col2Ave (4 peaks):				349.2 RPD = 32
Corrected Ave (4 peaks):					465.9	Corrected Ave (3 peaks):				343.0 RPD = 30
Aroclor-1262	1	11.068	-0.012	60273	393.7	1	10.768	-0.026	284876	232.0
Aroclor-1262	2	11.439	-0.010	166226	438.6	2	11.206	-0.029	323823	308.5
Aroclor-1262	3	11.838	-0.011	82006	728.6	3	11.486	-0.025	828572	344.2
Aroclor-1262	4	11.954	-0.011	31179	218.6	4	11.997	-0.027	244761	208.4
Total Col1Ave (4 peaks):					444.9	Total Col2Ave (4 peaks):				273.3 RPD = 48*
Corrected Ave (3 peaks):					350.3	Corrected Ave (3 peaks):				249.6 RPD = 34
Aroclor-1268	1	11.954	-0.011	31179	69.4	1	11.997	-0.027	244761	80.3
Aroclor-1268	2	12.028	-0.008	36174	89.2	2	12.051	-0.039	534507	174.8
Aroclor-1268	3	12.427	0.004	18375	53.6	3	12.453	-0.027	27842	10.0
Aroclor-1268	4	13.196	-0.010	13678	12.6	4	13.269	-0.029	100677	10.2
Total Col1Ave (4 peaks):					56.2	Total Col2Ave (4 peaks):				68.8 RPD = 20
Corrected Ave (3 peaks):					45.2	Corrected Ave (3 peaks):				33.5 RPD = 30

Total PCB Area Col1 (5.436 - 13.545) = 2078261 Col1 Total PCB = 0.7 ppm*

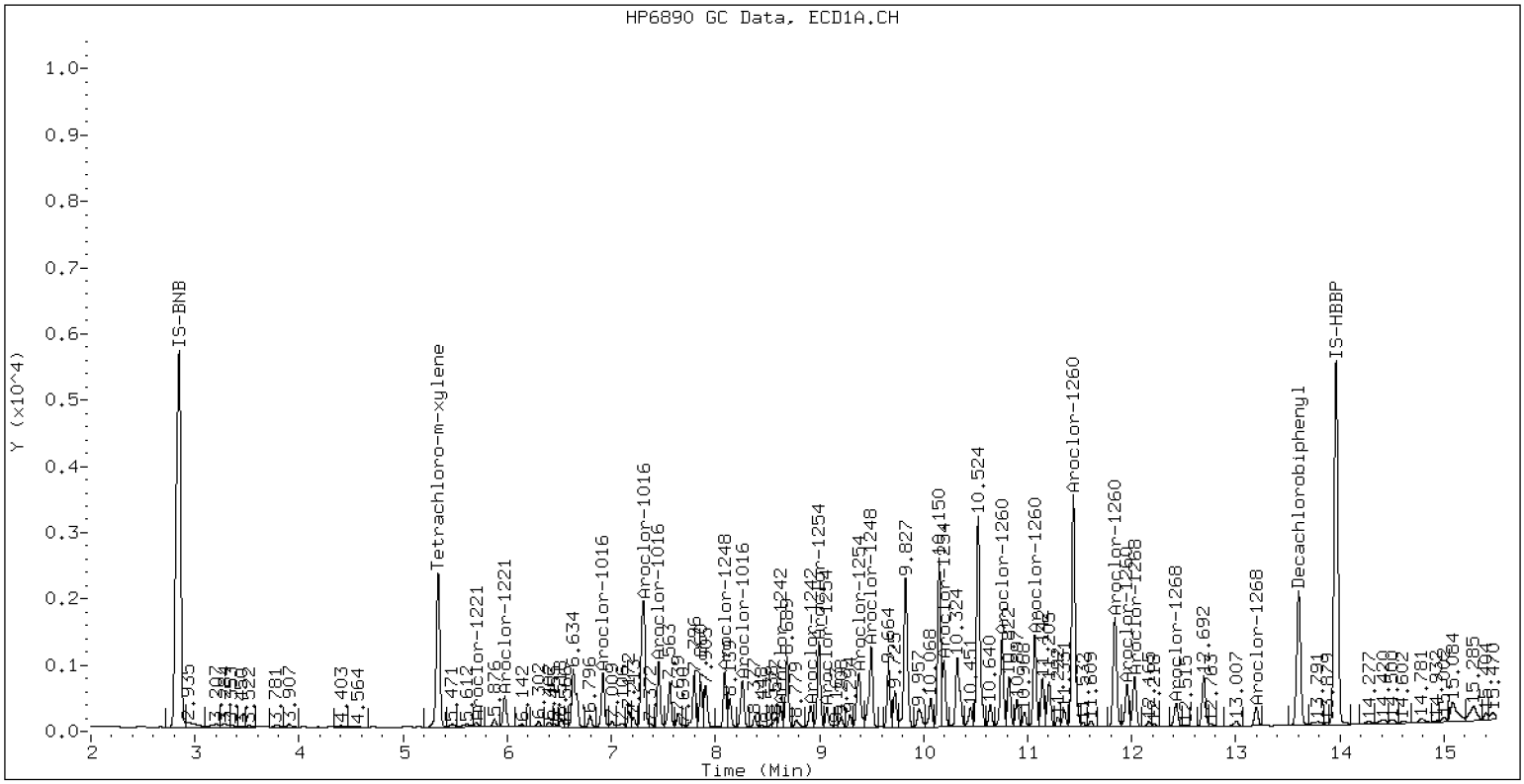
Total PCB Area Col2 (5.436 - 13.545) = 9143546 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

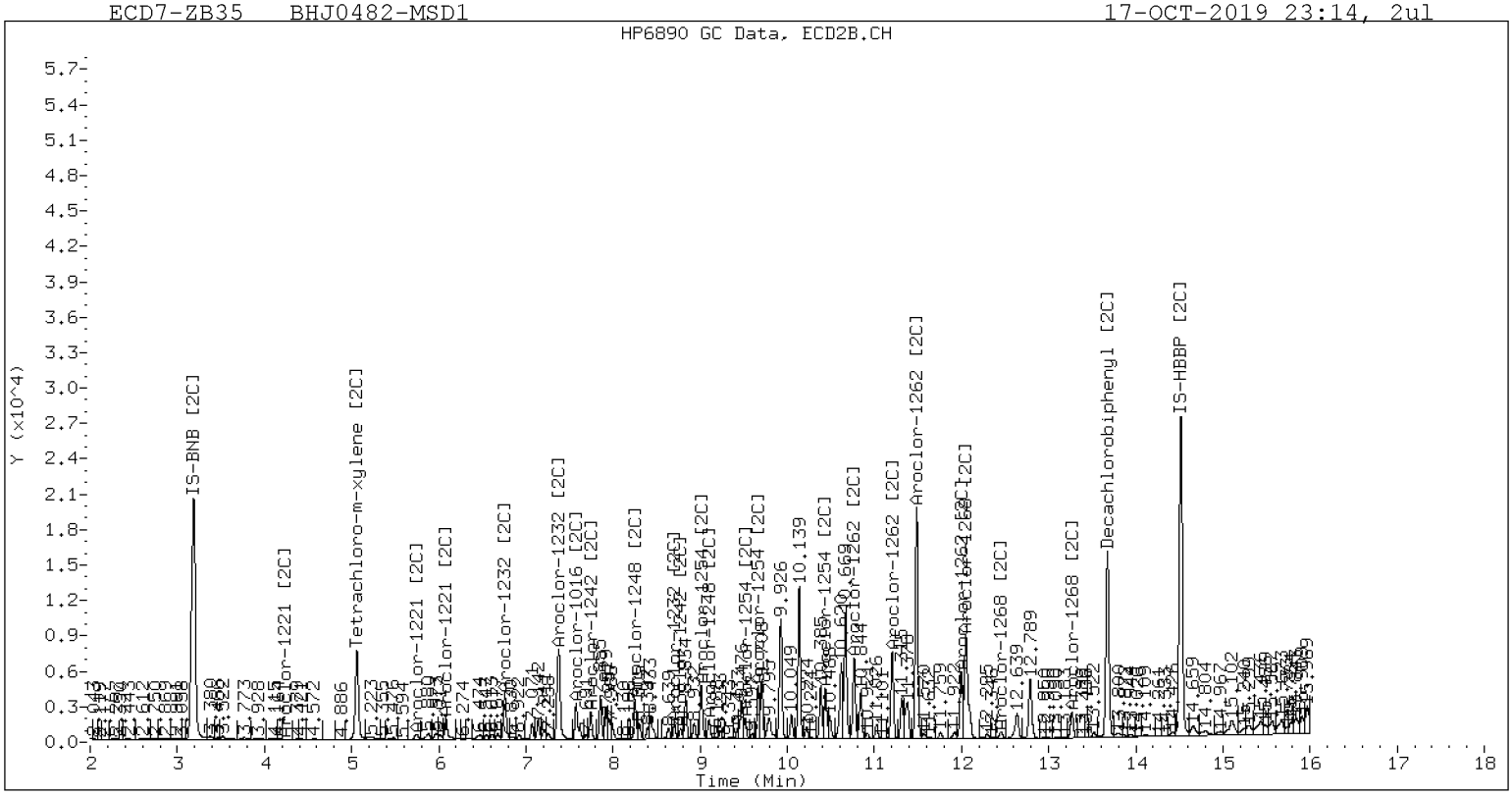
PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0482-MSD1 17-OCT-2019 23:14, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0482-MSD1 17-OCT-2019 23:14, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 19J0249
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Matrix: Solid
Laboratory ID: BHJ0482-SRM1
Batch: BHJ0482
Initial/Final: 1 g / 10 mL
Preparation: EPA 3546 (Microwave)
Analyzed: 10/17/2019 22:11
Standard ID: H002054
Description: PCB 1254 - Loam
Expires: 12/31/2021

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Aroclor 1254	5930.0	4760	78.0	200		80.3	41.3 - 158.7
Aroclor 1254 [2C]	5930.0	4980	78.0	200		84.0	41.3 - 158.7

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101724ECD7.D
Data file 2: /20191017.b/20191017.b/19101724ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0482-SRM1
Client ID:
Injection Date: 17-OCT-2019 22:11
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.337	0.001	25080	5.065	0.002	118910	7.4	8.0	7.5	Tetrachloro-m-xylene
13.612	-0.033	36552	13.683	-0.035	228639	8.3	8.8	6.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	18.5	19.9
Decachlorobiphenyl	20.7	22.1

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	273629	4.1
Hexabromobiphenyl	382688	436850	14.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1254904	16.0
Hexabromobiphenyl	1006687	1346815	33.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	6.760	-0.000	5642	9.0
Aroclor-1016	2	7.303	-0.008	2831	9.6	2	7.382	-0.002	18499	14.2
Aroclor-1016	3	7.466	0.009	1414	12.7	3	7.586	0.004	2821	5.4
Aroclor-1016	4	8.266	0.002	8227	90.0	4	7.756	0.004	3614	11.0
Total Col1Ave (3 peaks):					37.4	Total Col2Ave (4 peaks):				9.9 RPD = 116*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				8.5
Aroclor-1221	1	4.203	0.019	1716	85.7	1	---			0.0
Aroclor-1221	2	5.613	-0.099	1108	35.6	2	5.772	0.014	9488	51.0
Aroclor-1221	3	---			0.0	3	6.016	-0.088	41850	134.4
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.203	0.020	1716	145.6	1	---			0.0
Aroclor-1232	2	---			0.0	2	6.760	-0.017	5642	21.3
Aroclor-1232	3	7.303	-0.009	2831	25.5	3	7.382	-0.016	18499	35.0
Aroclor-1232	4	7.466	0.006	1414	33.9	4	8.717	-0.012	127717	726.3
Total Col1Ave (3 peaks):					68.3	Total Col2Ave (3 peaks):				260.9 RPD = 117*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	---			0.0	1	6.760	-0.001	5642	11.9
Aroclor-1242	2	7.303	-0.007	2831	11.6	2	7.382	-0.003	18499	18.0
Aroclor-1242	3	8.632	0.001	35744	445.6	3	7.756	0.004	3614	13.8
Aroclor-1242	4	8.924	0.005	20947	244.9	4	8.786	-0.002	40321	123.8
Total Col1Ave (3 peaks):					234.1	Total Col2Ave (4 peaks):				41.9 RPD = 139*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				14.6
Aroclor-1248	1	8.095	-0.000	18687	152.0	1	7.382	-0.004	18499	27.1
Aroclor-1248	2	8.632	0.001	35744	233.5	2	8.262	0.000	91464	177.8
Aroclor-1248	3	8.924	0.004	20947	147.0	3	8.786	-0.002	40321	77.8
Aroclor-1248	4	9.505	-0.000	132509	1448.9	4	9.113	-0.010	171219	255.3
Total Col1Ave (4 peaks):					495.3	Total Col2Ave (4 peaks):				134.5 RPD = 115*
Corrected Ave (3 peaks):					177.5	Corrected Ave (3 peaks):				94.2 RPD = 61*
Aroclor-1254	1	9.002	0.001	102320	443.8	1	9.023	0.001	329815	474.3
Aroclor-1254	2	9.077	0.001	32290	454.3	2	9.113	-0.000	171219	484.0
Aroclor-1254	3	9.370	-0.001	67329	507.6	3	9.529	-0.000	280201	513.9
Aroclor-1254	4	9.505	0.000	132509	466.7	4	9.678	0.001	542727	497.6
Aroclor-1254	5	10.211	-0.001	96567	509.5	5	10.450	-0.002	351935	522.2
Total Col1Ave (5 peaks):					476.4	Total Col2Ave (5 peaks):				498.4 RPD = 5
Corrected Ave (4 peaks):					468.1	Corrected Ave (4 peaks):				492.5 RPD = 5
Aroclor-1260	1	10.762	-0.001	7535	37.3	1	10.779	-0.000	39388	46.5
Aroclor-1260	2	11.080	0.001	8826	45.6	2	11.208	-0.008	180640	211.0
Aroclor-1260	3	11.448	0.000	22799	46.4	3	11.495	-0.000	144856	67.5
Aroclor-1260	4	11.848	-0.001	21102	95.3	4	12.059	0.050	117513	176.1
Aroclor-1260	5	12.038	0.073	1230	11.7	NS	---			----
Total Col1Ave (5 peaks):					47.3	Total Col2Ave (4 peaks):				125.3 RPD = 90*
Corrected Ave (4 peaks):					35.3	Corrected Ave (3 peaks):				96.7 RPD = 93*
Aroclor-1262	1	11.080	0.000	8826	38.6	1	10.779	-0.016	39388	33.7
Aroclor-1262	2	11.448	-0.001	22799	40.2	2	11.208	-0.027	180640	180.8
Aroclor-1262	3	11.848	-0.001	21102	125.4	3	11.495	-0.016	144856	63.2
Aroclor-1262	4	12.038	0.073	1230	5.8	4	12.059	0.035	117513	105.1
Total Col1Ave (4 peaks):					52.5	Total Col2Ave (4 peaks):				95.7 RPD = 58*
Corrected Ave (3 peaks):					28.2	Corrected Ave (3 peaks):				67.4 RPD = 82*
Aroclor-1268	1	12.038	0.073	1230	1.8	1	12.059	0.036	117513	40.5
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.324	-0.099	1258	2.5	3	12.465	-0.016	1292	0.5
Aroclor-1268	4	---			0.0	4	13.278	-0.019	1860	0.2
Col1Ave: <3 Quant Peaks						Col2Ave: 13.7				

Total PCB Area Col1 (5.436 - 13.545) = 1365031 Col1 Total PCB = 0.6 ppm*

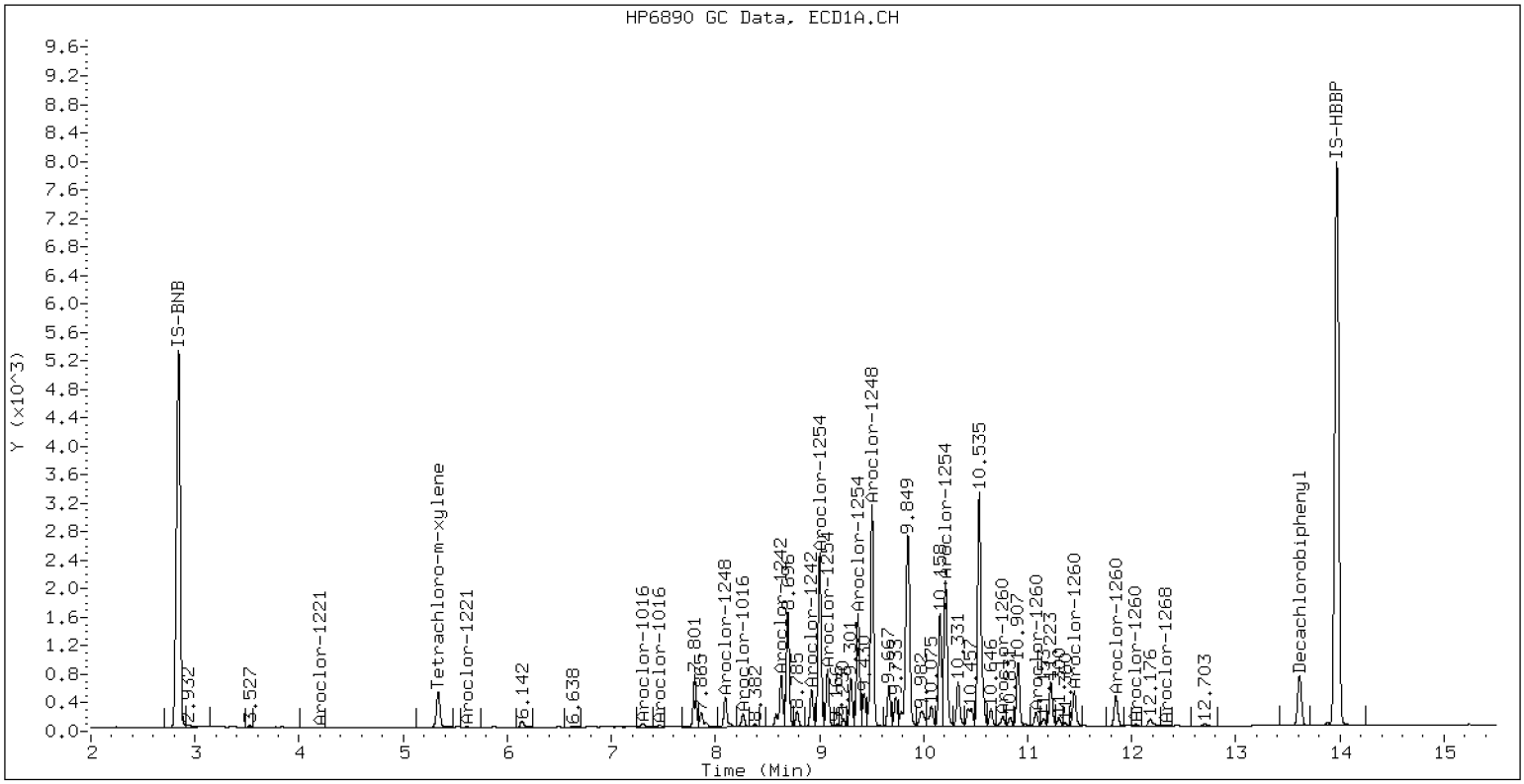
Total PCB Area Col2 (5.436 - 13.545) = 5882673 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

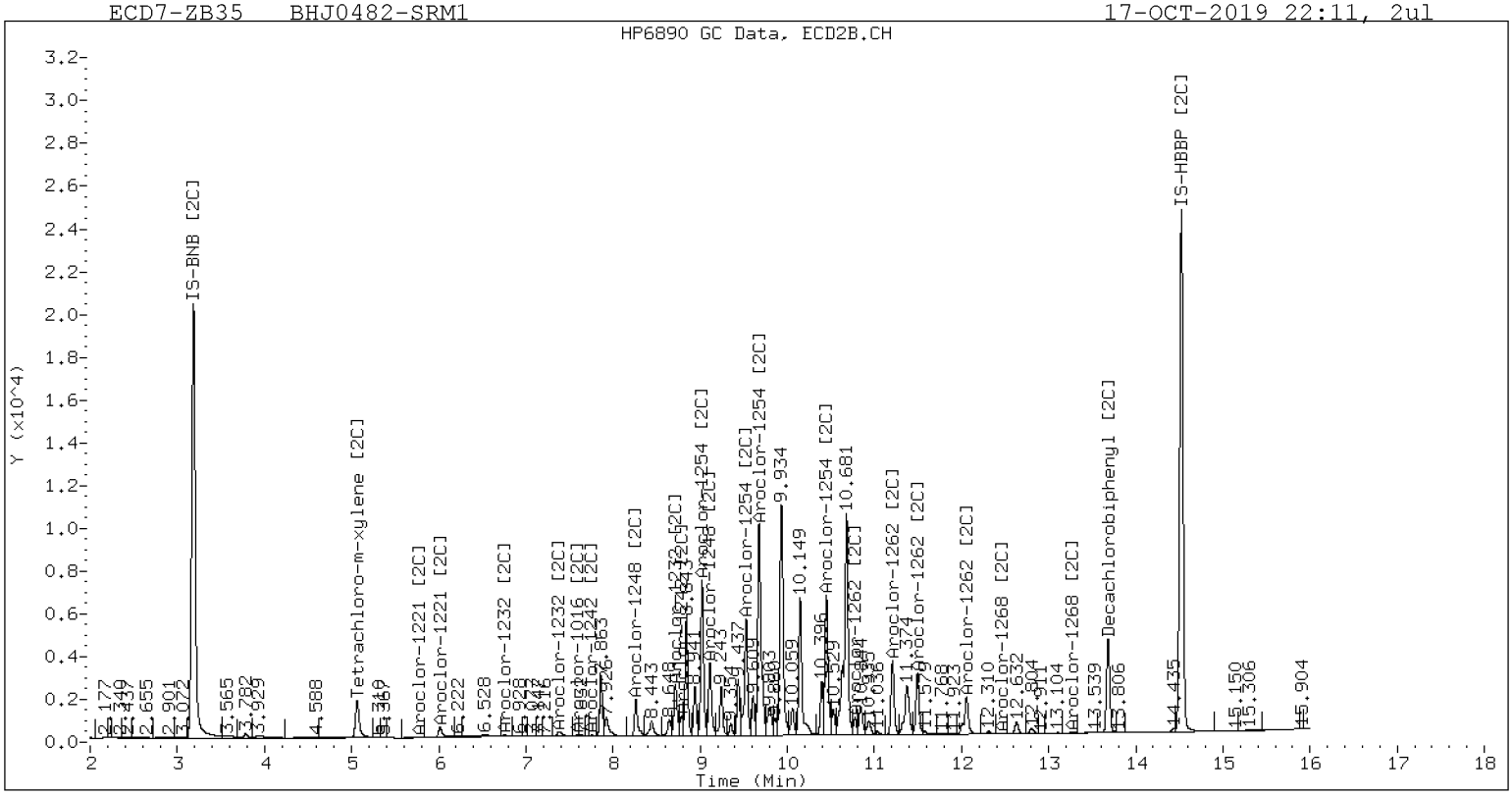
PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0482-SRM1 17-OCT-2019 22:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0482-SRM1 17-OCT-2019 22:11, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (1):	ZB5

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016	250	4.393413E-02	20	4.133584E-02	50	4.065482E-02	1000	4.338323E-02	100	4.194711E-02	500	4.358601E-02
Aroclor 1260	250	4.582507E-02	20	4.276971E-02	50	4.122985E-02	1000	4.728331E-02	100	4.268391E-02	500	4.665315E-02
Decachlorobiphenyl	40	0.8401204	3.2	0.7991349	8	0.7733589	160	0.8186171	16	0.8066353	80	0.8186529
Tetrachlorometaxylene	40	1.066771	3.2	0.8590354	8	0.9013762	160	1.064691	16	0.9899642	80	1.064505

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221							250	1.266709E-02				
Aroclor 1232									250	1.430781E-02		
Aroclor 1242	250	3.482001E-02										
Aroclor 1248			250	3.727312E-02								
Aroclor 1254					250	5.307811E-02						
Aroclor 1262							250	5.387845E-02				
Aroclor 1268									250	0.1561223		

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016	4.247352E-02	3.2			RSD (20)	
Aroclor 1221		0.0			RSD (20)	
Aroclor 1232		0.0			RSD (20)	
Aroclor 1242		0.0			RSD (20)	
Aroclor 1248		0.0			RSD (20)	
Aroclor 1254		0.0			RSD (20)	
Aroclor 1260	0.0444075	5.6			RSD (20)	
Aroclor 1262		0.0			RSD (20)	
Aroclor 1268		0.0			RSD (20)	
Decachlorobiphenyl	0.8094199	2.8			RSD (20)	
Tetrachlorometaxylene	0.9910571	9.3			RSD (20)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (2):	ZB35

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016 [2C]	250	0.0430825	20	5.212481E-02	50	4.627794E-02	1000	3.914649E-02	100	4.501848E-02	500	4.034643E-02
Aroclor 1260 [2C]	250	6.602228E-02	20	6.989316E-02	50	0.0682598	1000	6.690031E-02	100	6.708502E-02	500	6.415865E-02
Decachlorobiphenyl [2C]	40	1.452851	3.2	1.517032	8	1.464417	160	1.7641	16	1.455763	80	1.554568
Tetrachlorometaxylene [2C]	40	0.9337294	3.2	0.9631729	8	0.9329121	160	0.9977537	16	0.9491359	80	0.9252393

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (2):	ZB35

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221 [2C]							250	1.246263E-02				
Aroclor 1232 [2C]									250	1.629326E-02		
Aroclor 1242 [2C]	250	3.332238E-02										
Aroclor 1248 [2C]			250	3.802171E-02								
Aroclor 1254 [2C]					250	4.282625E-02						
Aroclor 1262 [2C]							250	8.281786E-02				
Aroclor 1268 [2C]									250	0.2642944		

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016 [2C]	4.433277E-02	10.5			RSD (20)	
Aroclor 1221 [2C]		0.0			RSD (20)	
Aroclor 1232 [2C]		0.0			RSD (20)	
Aroclor 1242 [2C]		0.0			RSD (20)	
Aroclor 1248 [2C]		0.0			RSD (20)	
Aroclor 1254 [2C]		0.0			RSD (20)	
Aroclor 1260 [2C]	0.0670532	2.9			RSD (20)	
Aroclor 1262 [2C]		0.0			RSD (20)	
Aroclor 1268 [2C]		0.0			RSD (20)	
Decachlorobiphenyl [2C]	1.534789	7.8			RSD (20)	
Tetrachlorometaxylene [2C]	0.9503239	2.8			RSD (20)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 9/16/2019 11:22:17AM

ANALYSIS SEQUENCE

SHI0216

Instrument: ECD7 Element Column ID: g2294g2295
Calibration ID: CI00052

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHI0216-CAL1	0.25PPM AR1660	QC		1	G010781	H001058	
SHI0216-CAL2	0.02PPM AR1660	QC		2	G010784	H001058	
SHI0216-CAL3	0.05PPM AR1660	QC		3	G010783	H001058	
SHI0216-CAL4	1.0PPM AR1660	QC		4	G010124	H001058	
SHI0216-CAL5	0.1PPM AR1660	QC		5	G010782	H001058	
SHI0216-CAL6	0.5PPM AR1660	QC		6	G010780	H001058	
SHI0216-CAL7	0.25PPM AR1242	QC		7	G010125	H001058	
SHI0216-CAL8	0.25PPM AR1248	QC		8	G010126	H001058	
SHI0216-CAL9	0.25PPM AR1254	QC		9	G010127	H001058	
SHI0216-CALA	0.25PPM AR2162	QC		10	H006284	H001058	
SHI0216-CALB	0.25PPM AR3268	QC		11	G010129	H001058	
SHI0216-SCV1	AR1660SCV1	QC		12	H004289	H001058	
SHI0216-SCV2	AR1242SCV2	QC		13	H004290	H001058	
SHI0216-SCV3	AR1248SCV3	QC		14	H004291	H001058	
SHI0216-SCV4	AR1254SCV4	QC		15	H004292	H001058	
SHI0216-SCV5	AR2162SCV5	QC		16	H004293	H001058	
SHI0216-SCV6	AR3268SCV6	QC		17	H004294	H001058	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20190915.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	15-SEP-2019 12:14	19091501ECD7.D	1	RINSE	
2	15-SEP-2019 12:35	19091502ECD7.D	1	RINSE	
3	15-SEP-2019 12:56	19091503ECD7.D	1	RINSE	
4	15-SEP-2019 13:17	19091504ECD7.D	1	IB	
5	15-SEP-2019 13:38	19091505ECD7.D	1	0.25PPMAR1660	
6	15-SEP-2019 13:59	19091506ECD7.D	1	0.02PPMAR1660	
7	15-SEP-2019 14:20	19091507ECD7.D	1	0.05PPMAR1660	
8	15-SEP-2019 14:41	19091508ECD7.D	1	1PPMAR1660	
9	15-SEP-2019 15:02	19091509ECD7.D	1	0.1PPMAR1660	
10	15-SEP-2019 15:23	19091510ECD7.D	1	0.5PPMAR1660	
11	15-SEP-2019 15:44	19091511ECD7.D	1	AR1242	
12	15-SEP-2019 16:05	19091512ECD7.D	1	AR1248	
13	15-SEP-2019 16:26	19091513ECD7.D	1	AR1254	
14	15-SEP-2019 16:47	19091514ECD7.D	1	AR2162	
15	15-SEP-2019 17:08	19091515ECD7.D	1	AR3268	
16	15-SEP-2019 17:29	19091516ECD7.D	1	AR1660SCV1	
17	15-SEP-2019 17:50	19091517ECD7.D	1	AR1242SCV2	
18	15-SEP-2019 18:11	19091518ECD7.D	1	AR1248SCV3	
19	15-SEP-2019 18:32	19091519ECD7.D	1	AR1254SCV4	
20	15-SEP-2019 18:53	19091520ECD7.D	1	AR2162SCV5	
21	15-SEP-2019 19:14	19091521ECD7.D	1	AR3268SCV6	
22	15-SEP-2019 19:35	19091522ECD7.D	1	0.1 PPM DDTS	
23	15-SEP-2019 19:56	19091523ECD7.D	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20190915.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 15-SEP-2019

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1214	19091501ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1235	19091502ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1256	19091503ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1317	19091504ECD7.D	IB		1	NO MANUAL INTEGRATION
1338	19091505ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1359	19091506ECD7.D	0.02PPMAR1660		1	NO MANUAL INTEGRATION
1420	19091507ECD7.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1441	19091508ECD7.D	1PPMAR1660		1	NO MANUAL INTEGRATION
1502	19091509ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1523	19091510ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1544	19091511ECD7.D	AR1242		1	NO MANUAL INTEGRATION
1605	19091512ECD7.D	AR1248		1	NO MANUAL INTEGRATION
1626	19091513ECD7.D	AR1254		1	NO MANUAL INTEGRATION
1647	19091514ECD7.D	AR2162		1	NO MANUAL INTEGRATION
1708	19091515ECD7.D	AR3268		1	NO MANUAL INTEGRATION
1729	19091516ECD7.D	AR1660SCV1		1	NO MANUAL INTEGRATION
1750	19091517ECD7.D	AR1242SCV2		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20190915.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1811	19091518ECD7.D	AR1248SCV3		1	NO MANUAL INTEGRATION
1832	19091519ECD7.D	AR1254SCV4		1	NO MANUAL INTEGRATION
1853	19091520ECD7.D	AR2162SCV5		1	NO MANUAL INTEGRATION
1914	19091521ECD7.D	AR3268SCV6		1	NO MANUAL INTEGRATION
1935	19091522ECD7.D	0.1 PPM DDTS		1	NO MANUAL INTEGRATION
1956	19091523ECD7.D	DDT BD		1	NO MANUAL INTEGRATION

Security Status Report

Date: 16-Sep-2019 09:50

19091501ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091502ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091503ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091504ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091505ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091506ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091507ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091508ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091509ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091510ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091511ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091512ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091513ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091514ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091515ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091516ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091517ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091518ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091519ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091520ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091521ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091522ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50
19091523ECD7.D	Data Locked	jrains, 16-Sep-2019 09:50

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-SEP-2019 13:38
End Cal Date : 15-SEP-2019 19:35
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Last Edit : 16-Sep-2019 09:45 jrains
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\20190915.b\19091506.D
Level 2: \\target\share\chem4\ecd7.i\20190915.b\19091507.D
Level 3: \\target\share\chem4\ecd7.i\20190915.b\19091509.D
Level 4: \\target\share\chem4\ecd7.i\20190915.b\19091505.D
Level 5: \\target\share\chem4\ecd7.i\20190915.b\19091510.D
Level 6: \\target\share\chem4\ecd7.i\20190915.b\19091508.D
Level 7: \\target\share\chem4\ecd7.i\20190915.b\19091515.D
Level 8: \\target\share\chem4\ecd7.i\20190915.b\19091522.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00586	+++++					0.00586	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00909	+++++					0.00909	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02306	+++++					0.02306	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01968	+++++					0.01968	0.000

(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.07114	+++++					0.07114	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02345	+++++					0.02345	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02501	+++++					0.02501	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00345	+++++					0.00345	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Last Edit : 16-Sep-2019 09:45 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00910	+++++					0.00910	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03250	+++++					0.03250	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01219	+++++					0.01219	0.000
7 Aroclor-1016(1)	0.02501	0.02388	0.02379	0.02472	0.02429	0.02395		
	+++++	+++++					0.02427	2.043
(2)	0.08107	0.08185	0.08597	0.09070	0.08986	0.08851		
	+++++	+++++					0.08633	4.754
(3)	0.03264	0.03147	0.03210	0.03333	0.03295	0.03286		
	+++++	+++++					0.03256	2.064
(4)	0.02663	0.02543	0.02592	0.02698	0.02724	0.02821		
	+++++	+++++					0.02674	3.698
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++		

	0.03596	+++++					0.03596	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04475	+++++					0.04475	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04165	+++++					0.04165	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02674	+++++					0.02674	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Last Edit : 16-Sep-2019 09:45 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06741	+++++					0.06741	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02078	+++++					0.02078	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03878	+++++					0.03878	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.08302	+++++					0.08302	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05541	+++++					0.05541	0.000
9 Aroclor-1260(1)	0.04093	0.03572	0.03469	0.03640	0.03634	0.03759		
	+++++	+++++					0.03695	5.871
(2)	0.03620	0.03327	0.03363	0.03589	0.03605	0.03750		
	+++++	+++++					0.03542	4.615
(3)	0.08304	0.08205	0.08686	0.09414	0.09794	0.09539		

	+++++	+++++					0.08990	7.556
(4)	0.03577	0.03704	0.03945	0.04286	0.04321	0.04504		
	+++++	+++++					0.04056	9.153
(5)	0.01791	0.01806	0.01879	0.01984	0.01973	0.02089		
	+++++	+++++					0.01920	6.013
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04191	+++++					0.04191	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-SEP-2019 13:38
End Cal Date : 15-SEP-2019 19:35
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Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Last Edit : 16-Sep-2019 09:45 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.10375	+++++					0.10375	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03081	+++++					0.03081	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03905	+++++					0.03905	0.000
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12295	+++++					0.12295	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.11102	+++++					0.11102	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.09384	+++++					0.09384	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.29668	+++++					0.29668	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		

	+++++	768					768	0.000
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	804					804	0.000
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	873					873	0.000
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1368					1368	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-SEP-2019 13:38
End Cal Date : 15-SEP-2019 19:35
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Last Edit : 16-Sep-2019 09:45 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6		___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8							
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	1250						1250	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	1181						1181	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++						+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++						+++++	+++++
$ 1 Tetrachloro-m-xylene	0.85904	0.90138	0.98996	1.06677	1.06450	1.06469			
	+++++	+++++						0.99106	9.250
$ 13 Decachlorobiphenyl	0.79913	0.77336	0.80664	0.84012	0.81865	0.81862			
	+++++	+++++						0.80942	2.777

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-SEP-2019 13:38
End Cal Date : 15-SEP-2019 19:35
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Last Edit : 16-Sep-2019 09:42 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091506.D
Level 2: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091507.D
Level 3: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091509.D
Level 4: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091505.D
Level 5: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091510.D
Level 6: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091508.D
Level 7: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091515.D
Level 8: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091522.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
1 Aroclor-1221 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00568	+++++					0.00568	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01186	+++++					0.01186	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01985	+++++					0.01985	0.000
4 Aroclor-1232 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00339	+++++					0.00339	0.000

(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01686	+++++					0.01686	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03372	+++++					0.03372	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01121	+++++					0.01121	0.000
3 Aroclor-1242 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03033	+++++					0.03033	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-SEP-2019 13:38
End Cal Date : 15-SEP-2019 19:35
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Last Edit : 16-Sep-2019 09:42 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06549	+++++					0.06549	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01670	+++++					0.01670	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02077	+++++					0.02077	0.000
6 Aroclor-1248 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04350	+++++					0.04350	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03280	+++++					0.03280	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03304	+++++					0.03304	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04275	+++++					0.04275	0.000
7 Aroclor-1016 [2C](1)	0.05210	0.04213	0.03999	0.03777	0.03441	0.03238		

	+++++	+++++					0.03980	17.592
(2)	0.09411	0.08652	0.08487	0.08137	0.07659	0.07524		
	+++++	+++++					0.08312	8.391
(3)	0.03876	0.03514	0.03421	0.03262	0.03067	0.02959		
	+++++	+++++					0.03350	9.898
(4)	0.02353	0.02132	0.02100	0.02058	0.01972	0.01938		
	+++++	+++++					0.02092	7.061

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Last Edit : 16-Sep-2019 09:42 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
8 Aroclor-1254 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04433	+++++					0.04433	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02255	+++++					0.02255	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03476	+++++					0.03476	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06953	+++++					0.06953	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04296	+++++					0.04296	0.000
10 Aroclor-1262 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06941	+++++					0.06941	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05935	+++++					0.05935	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		

	0.13611	+++++					0.13611	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06640	+++++					0.06640	0.000
9 Aroclor-1260 [2C](1)	0.05495	0.05253	0.05112	0.04984	0.04690	0.04664		
	+++++	+++++					0.05033	6.433
(2)	0.05522	0.05293	0.05160	0.05035	0.04759	0.04736		
	+++++	+++++					0.05084	6.036

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-SEP-2019 13:38
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Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Last Edit : 16-Sep-2019 09:42 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(3)	0.12911	0.12706	0.12563	0.12377	0.12332	0.13548		
	++++++	++++++					0.12739	3.532
(4)	0.04030	0.04051	0.03999	0.04013	0.03883	0.03813		
	++++++	++++++					0.03965	2.392
11 Aroclor-1268 [2C](1)	++++++	++++++	++++++	++++++	++++++	++++++		
	0.17229	++++++					0.17229	0.000
(2)	++++++	++++++	++++++	++++++	++++++	++++++		
	0.17291	++++++					0.17291	0.000
(3)	++++++	++++++	++++++	++++++	++++++	++++++		
	0.15665	++++++					0.15665	0.000
(4)	++++++	++++++	++++++	++++++	++++++	++++++		
	0.55532	++++++					0.55532	0.000
41 2,4-DDE [2C]	++++++	++++++	++++++	++++++	++++++	++++++		
	++++++	1405					1405	0.000
42 2,4-DDD [2C]	++++++	++++++	++++++	++++++	++++++	++++++		

	+++++	734					734	0.000
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	735					735	0.000
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1002					1002	0.000
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1068					1068	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-SEP-2019 13:38
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Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Last Edit : 16-Sep-2019 09:42 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
$ 2 Tetrachloro-m-xylene [2C]	0.96317	0.93291	0.94914	0.93373	0.92524	0.99775		
	+++++	+++++					0.95032	2.833
$ 13 Decachlorobiphenyl [2C]	1.51703	1.46442	1.45576	1.45285	1.55457	1.76410		
	+++++	+++++					1.53479	7.775

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\20190915.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	19091505ECD7	19091506ECD7	19091507ECD7	19091508ECD7	19091509ECD7	19091510ECD7
INJ.DATE:	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019
INJ.TIME:	13:38	13:59	14:20	14:41	15:02	15:23

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.847	2.847	2.848	2.844	2.848	2.847	2.841	2.741-2.941	2.847	0.002
$ 1 Tetrachloro-m-xylene	5.342	5.342	5.342	5.339	5.342	5.342	5.341	5.241-5.441	5.342	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.185	4.085-4.285	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.926	6.826-7.026	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.184	4.084-4.284	+++++	+++++
7 Aroclor-1016	6.926	6.927	6.927	6.925	6.927	6.926	6.926	6.826-7.026	6.926	0.001
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.097	7.997-8.197	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	9.002	8.902-9.102	+++++	+++++
9 Aroclor-1260	10.764	10.764	10.764	10.764	10.764	10.764	10.764	10.664-10.864	10.764	0.000
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	11.080	10.980-11.180	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.965	11.865-12.065	+++++	+++++
$ 13 Decachlorobiphenyl	13.613	13.613	13.613	13.614	13.614	13.614	13.614	13.514-13.714	13.614	0.001
* 12 IS-HBBP	13.971	13.970	13.972	13.970	13.971	13.970	13.971	13.871-14.071	13.971	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.970	8.920-9.020	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.514	9.464-9.564	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.017	9.967-10.067	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.394	9.293-9.494	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\20190915.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.962	9.862-10.062	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.474	10.374-10.574	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\20190915.b\20190915.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	19091505ECD7	19091506ECD7	19091507ECD7	19091508ECD7	19091509ECD7	19091510ECD7
INJ.DATE:	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019
INJ.TIME:	13:38	13:59	14:20	14:41	15:02	15:23

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB [2C]	3.203	3.203	3.204	3.199	3.203	3.202	3.197	3.097-3.297	3.202	0.002
$ 2 Tetrachloro-m-xylene [	5.082	5.082	5.082	5.080	5.082	5.084	5.080	4.980-5.180	5.082	0.001
1 Aroclor-1221 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	4.283	4.183-4.383	+++++	+++++
4 Aroclor-1232 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	4.282	4.182-4.382	+++++	+++++
3 Aroclor-1242 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	6.778	6.678-6.878	+++++	+++++
6 Aroclor-1248 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	7.396	7.296-7.496	+++++	+++++
7 Aroclor-1016 [2C]	6.779	6.779	6.779	6.778	6.779	6.778	6.778	6.678-6.878	6.779	0.001
8 Aroclor-1254 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.037	8.937-9.137	+++++	+++++
10 Aroclor-1262 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	10.795	10.695-10.895	+++++	+++++
9 Aroclor-1260 [2C]	10.795	10.795	10.795	10.795	10.794	10.795	10.795	10.695-10.895	10.795	0.000
11 Aroclor-1268 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	12.023	11.923-12.123	+++++	+++++
$ 13 Decachlorobiphenyl [2C	13.701	13.702	13.701	13.714	13.700	13.704	13.702	13.602-13.802	13.704	0.005
* 12 IS-HBBP [2C]	14.542	14.543	14.543	14.542	14.542	14.542	14.544	14.444-14.644	14.542	0.001
41 2,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.507	9.457-9.557	+++++	+++++
42 2,4-DDD [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.118	9.068-9.168	+++++	+++++
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.789	9.689-9.889	+++++	+++++
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	10.254	10.154-10.354	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\20190915.b\20190915.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	10.685	10.585-10.785	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.178	7.078-7.278	+++++	+++++

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091504ECD7.D
Data file 2: /20190915.b/20190915.b/19091504ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 15-SEP-2019 13:17
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.340	-0.000	140495	5.079	-0.001	509475	43.6	40.3	7.8	Tetrachloro-m-xylene
13.613	-0.001	162482	13.702	-0.000	721743	42.1	37.9	10.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	108.9	100.7
Decachlorobiphenyl	105.4	94.7

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	260313	-1.0
Hexabromobiphenyl	382688	381006	-0.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1064650	-1.6
Hexabromobiphenyl	1006687	993418	-1.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	5.782	0.023	5111	32.4
Aroclor-1221	3	---			0.0	3	6.119	0.015	1300	4.9
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	8.742	-0.058	2464	5.6
Aroclor-1248	4	---			0.0	4	9.246	0.111	9703	17.1
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	9.639	0.096	6442	13.9
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	10.518	0.055	674	1.2
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1260	1	---			0.0	1	10.865	0.070	1938	3.1
Aroclor-1260	2	---			0.0	2	11.236	0.003	781	1.2
Aroclor-1260	3	---			0.0	3	11.569	0.057	1673	1.1
Aroclor-1260	4	---			0.0	4	11.961	-0.061	4910	10.0
Aroclor-1260	5	---			0.0	NS	---			----
		Col1Ave: <3 Quant Peaks					Col2Ave:	3.8		
Aroclor-1262	1	---			0.0	1	10.865	0.070	1938	2.2
Aroclor-1262	2	---			0.0	2	11.236	0.002	781	1.1
Aroclor-1262	3	---			0.0	3	11.569	0.059	1673	1.0
Aroclor-1262	4	---			0.0	4	11.961	-0.062	4910	6.0
		Col1Ave: <3 Quant Peaks					Col2Ave:	2.6		
Aroclor-1268	1	---			0.0	1	11.961	-0.062	4910	2.3
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	12.481	0.000	1033	0.5
Aroclor-1268	4	---			0.0	4	13.296	-0.001	1200	0.2
		Col1Ave: <3 Quant Peaks					Col2Ave:	1.0		

Total PCB Area Col1 (5.441 - 13.514) = 19486 Col1 Total PCB = 0.0 ppm*

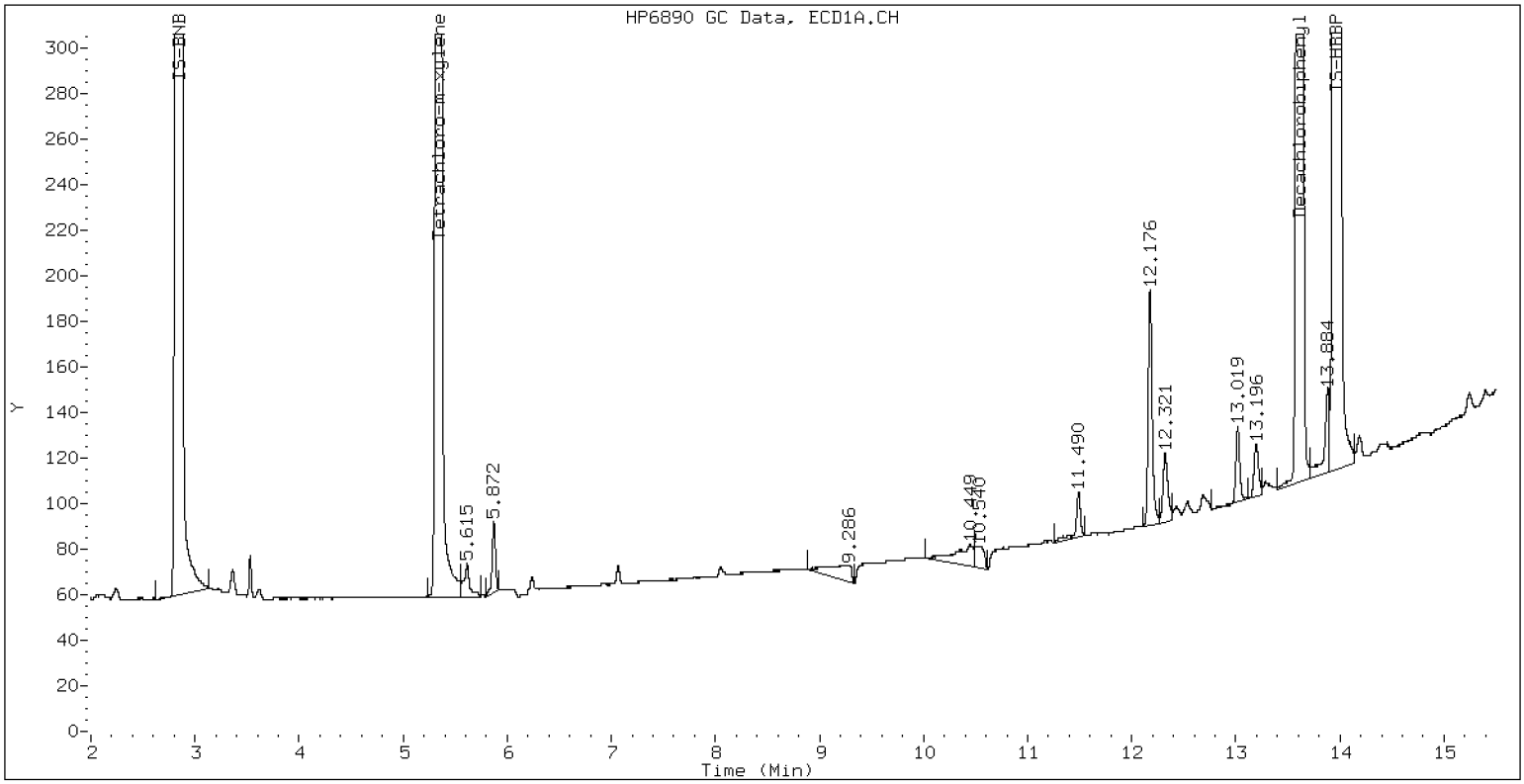
Total PCB Area Col2 (5.441 - 13.514) = 107673 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

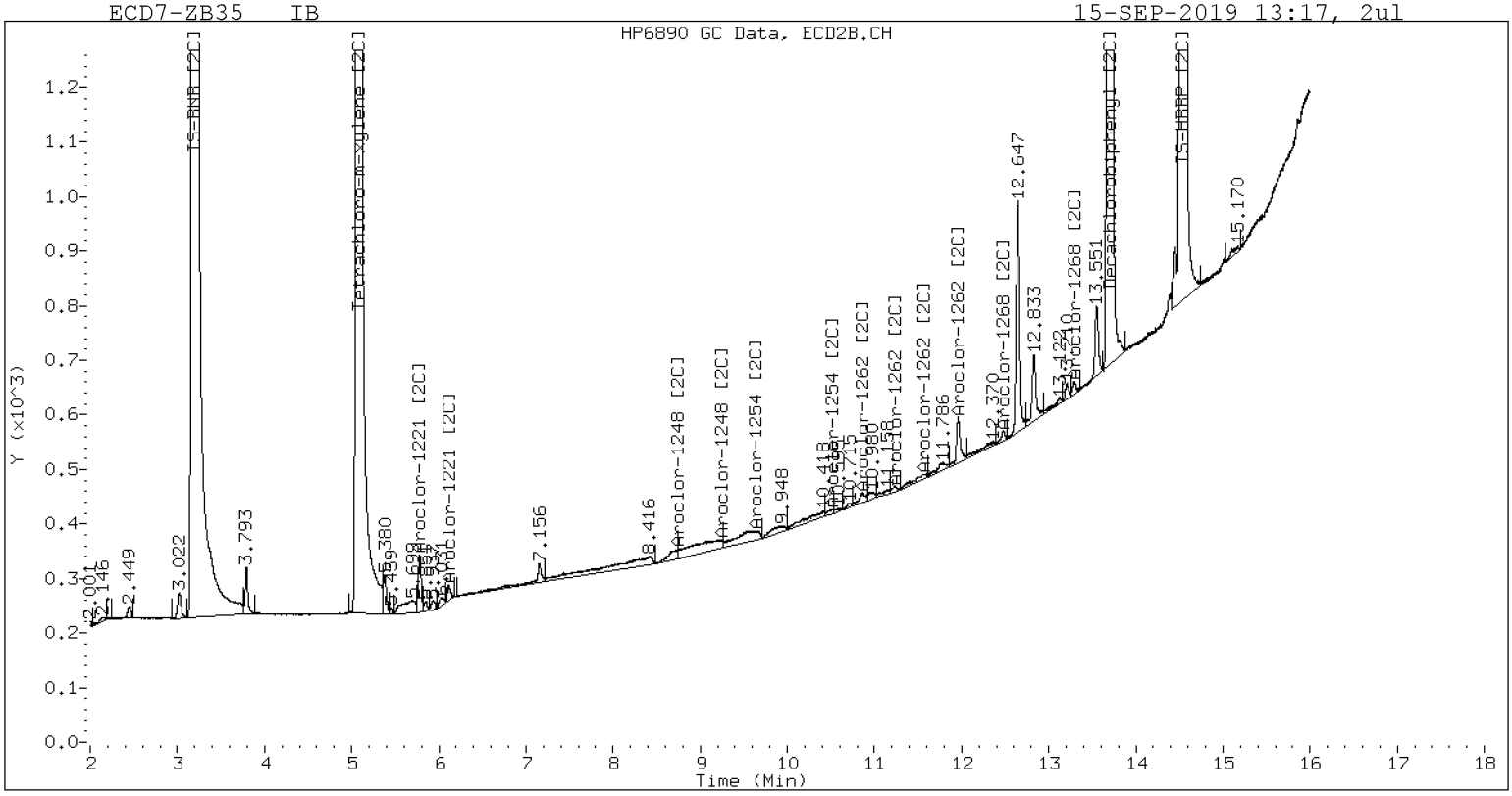
PCB Dual Column Chromatograms

ECD7-ZB5 IB 15-SEP-2019 13:17, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 IB 15-SEP-2019 13:17, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091505ECD7.D
Data file 2: /20190915.b/20190915.b/19091505ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 15-SEP-2019 13:38
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.002	140243	5.082	0.002	505114	43.1	39.3	9.1	Tetrachloro-m-xylene
13.613	-0.001	160752	13.701	-0.001	731283	41.5	37.9	9.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	107.6	98.3
Decachlorobiphenyl	103.8	94.7

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	262930	0.0
Hexabromobiphenyl	382688	382688	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1081928	0.0
Hexabromobiphenyl	1006687	1006687	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	6.926	0.000	20314	254.6	1	6.779	0.000	127685	237.2
Aroclor-1016	2	7.314	0.001	74523	262.7	2	7.400	0.001	275117	244.8
Aroclor-1016	3	7.461	0.001	27386	255.9	3	7.598	0.000	110282	243.4
Aroclor-1016	4	8.268	0.001	22172	252.3	4	7.768	0.001	69568	245.9
Total Col1Ave (4 peaks):					256.4	Total Col2Ave (4 peaks):				242.8 RPD = 5
Corrected Ave (3 peaks):					254.3	Corrected Ave (3 peaks):				241.8 RPD = 5
CalAmt %D:					2.6	CalAmt %D:				-2.9
Aroclor-1260	1	10.764	0.000	43533	246.3	1	10.795	0.000	156793	247.6
Aroclor-1260	2	11.080	-0.000	42915	253.3	2	11.233	-0.000	158404	247.6
Aroclor-1260	3	11.449	-0.001	112582	261.8	3	11.510	-0.002	389357	242.9
Aroclor-1260	4	11.848	-0.000	51257	264.2	4	12.023	0.001	126243	253.0
Aroclor-1260	5	11.965	-0.001	23724	258.3	NS	---			----
Total Col1Ave (5 peaks):					256.8	Total Col2Ave (4 peaks):				247.8 RPD = 4
Corrected Ave (4 peaks):					254.9	Corrected Ave (3 peaks):				246.0 RPD = 4
CalAmt %D:					2.7	CalAmt %D:				-0.9

Total PCB Area Col1 (5.441 - 13.514) = 1102687 Col1 Total PCB = 0.5 ppm*

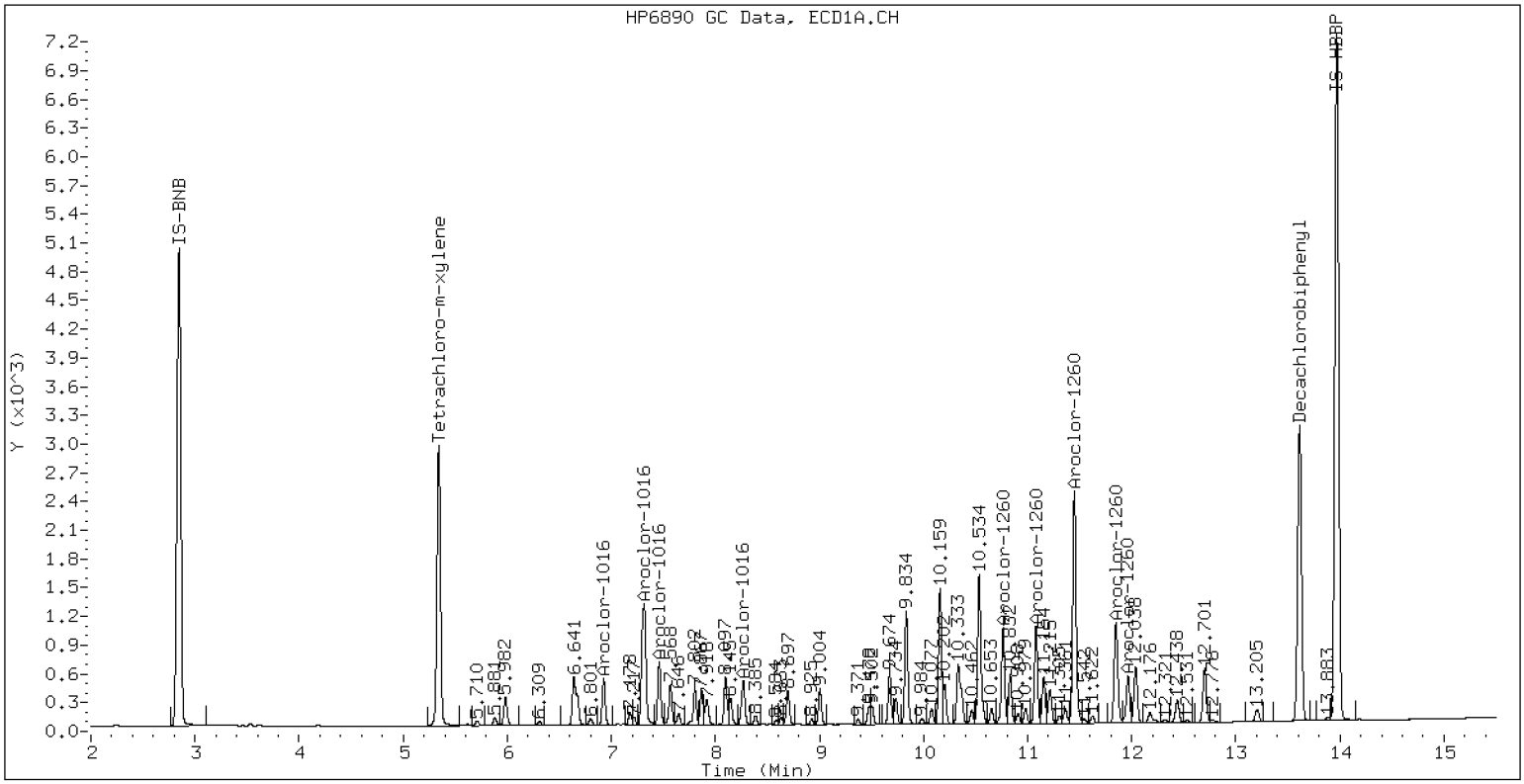
Total PCB Area Col2 (5.441 - 13.514) = 4071056 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

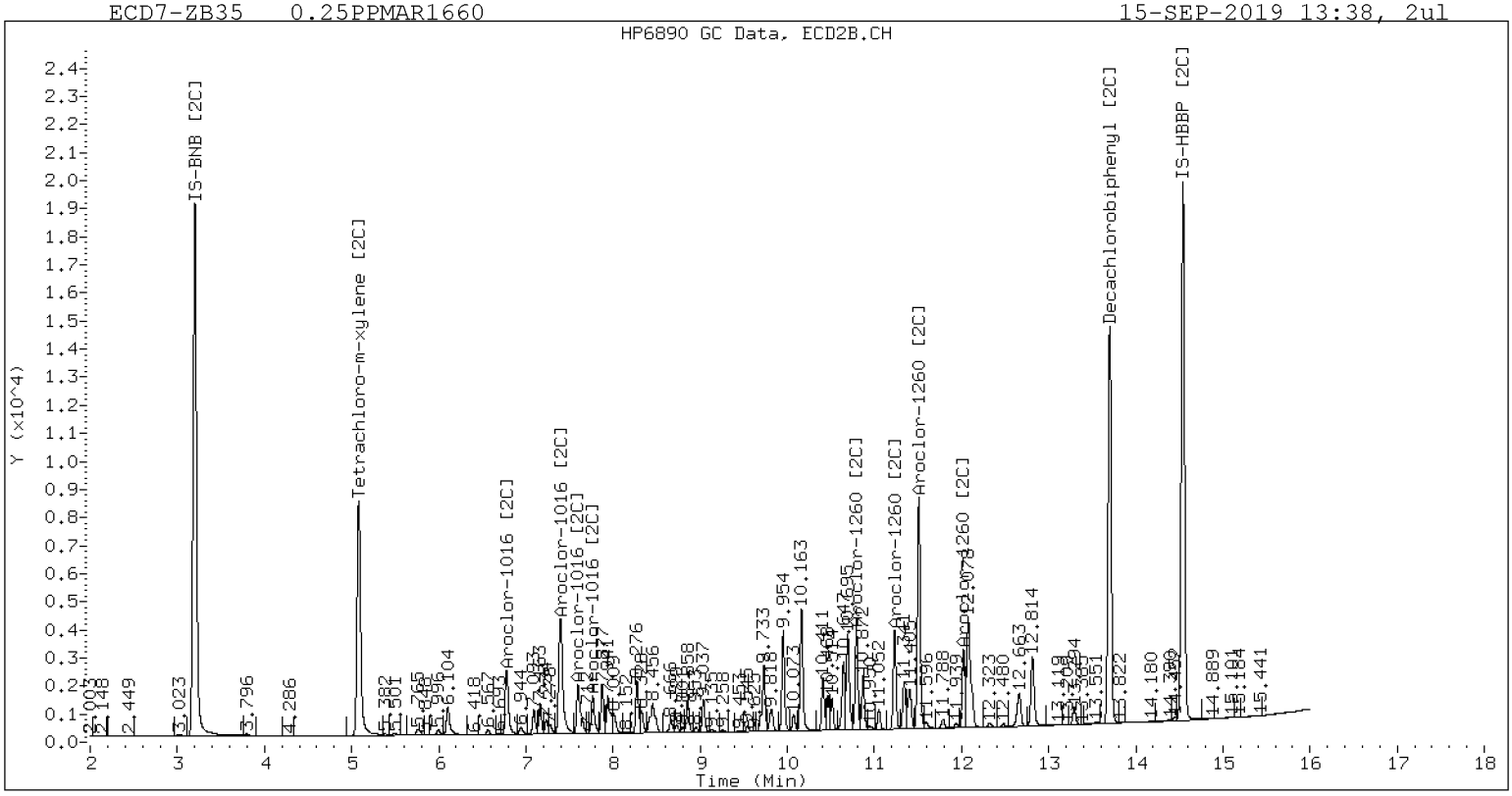
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1660 15-SEP-2019 13:38, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1660 15-SEP-2019 13:38, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091506ECD7.D
Data file 2: /20190915.b/20190915.b/19091506ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 15-SEP-2019 13:59
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.002	9218	5.082	0.002	42610	2.8	3.2	15.6	Tetrachloro-m-xylene
13.613	-0.000	12571	13.702	0.000	62915	3.2	3.2	0.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	6.9	8.1
Decachlorobiphenyl	7.9	7.9

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	268266	2.0
Hexabromobiphenyl	382688	393269	2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1105980	2.2
Hexabromobiphenyl	1006687	1036811	3.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	6.927	0.001	1677	20.6	1	6.779	0.001	14405	26.2
Aroclor-1016	2	7.314	0.001	5437	18.8	2	7.399	0.001	26020	22.6
Aroclor-1016	3	7.461	0.001	2189	20.0	3	7.600	0.003	10718	23.1
Aroclor-1016	4	8.268	0.001	1786	19.9	4	7.769	0.002	6506	22.5

Total Col1Ave (4 peaks): 19.8 Total Col2Ave (4 peaks): 23.6 RPD = 17
Corrected Ave (3 peaks): 19.6 Corrected Ave (3 peaks): 22.8 RPD = 15

CalAmt %D: -0.8 CalAmt %D: 18.1

Aroclor-1260	1	10.764	0.000	4024	22.2	1	10.795	0.000	14242	21.8
Aroclor-1260	2	11.080	0.000	3559	20.4	2	11.234	0.001	14313	21.7
Aroclor-1260	3	11.450	0.000	8164	18.5	3	11.511	-0.001	33465	20.3
Aroclor-1260	4	11.849	0.001	3517	17.6	4	12.024	0.001	10446	20.3
Aroclor-1260	5	11.966	0.001	1761	18.7	NS	---			----

Total Col1Ave (5 peaks): 19.5 Total Col2Ave (4 peaks): 21.0 RPD = 8
Corrected Ave (4 peaks): 18.8 Corrected Ave (3 peaks): 20.8 RPD = 10

CalAmt %D: -2.6 CalAmt %D: 5.2

Total PCB Area Col1 (5.441 - 13.514) = 90637 Col1 Total PCB = 0.0 ppm*

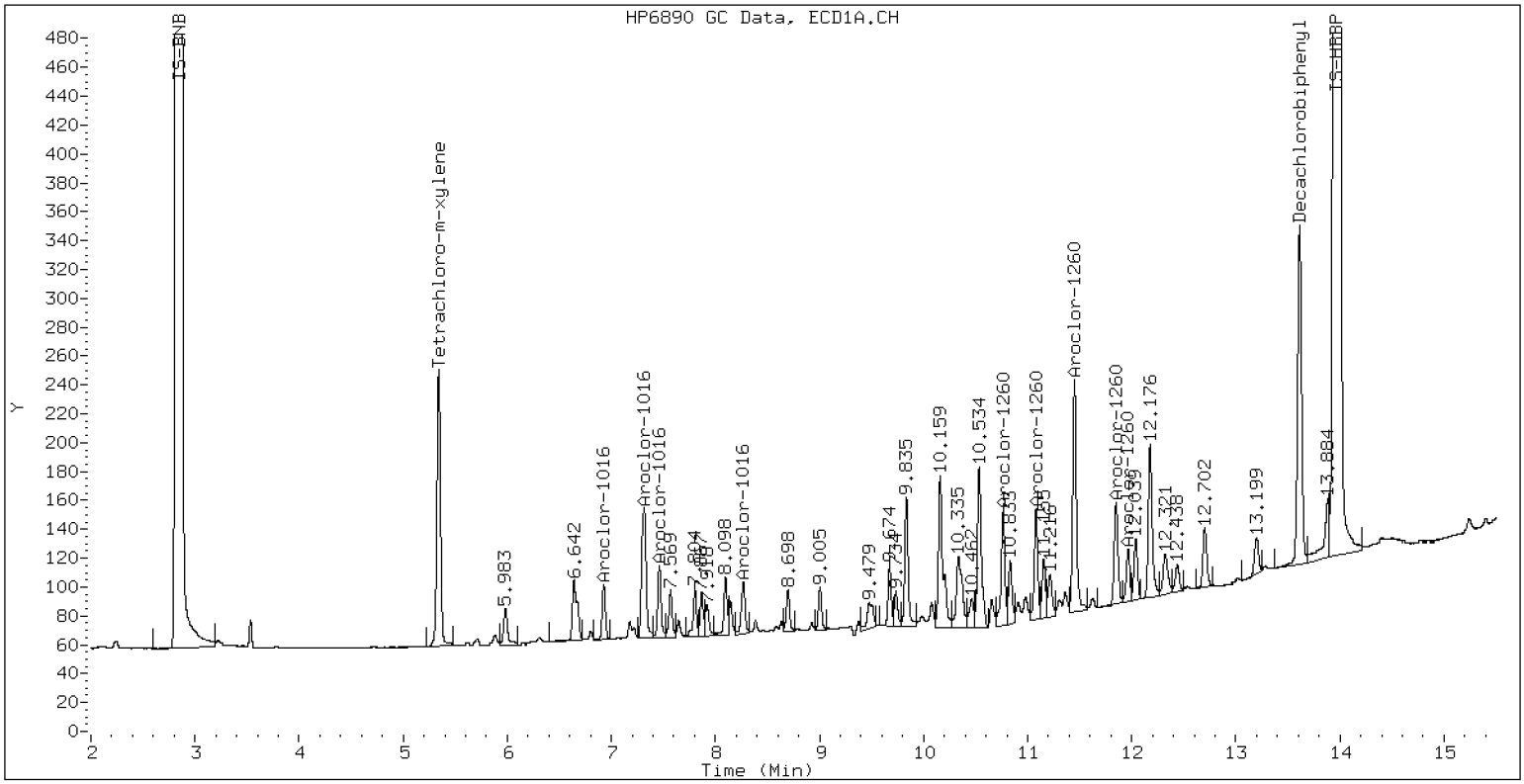
Total PCB Area Col2 (5.441 - 13.514) = 411136 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

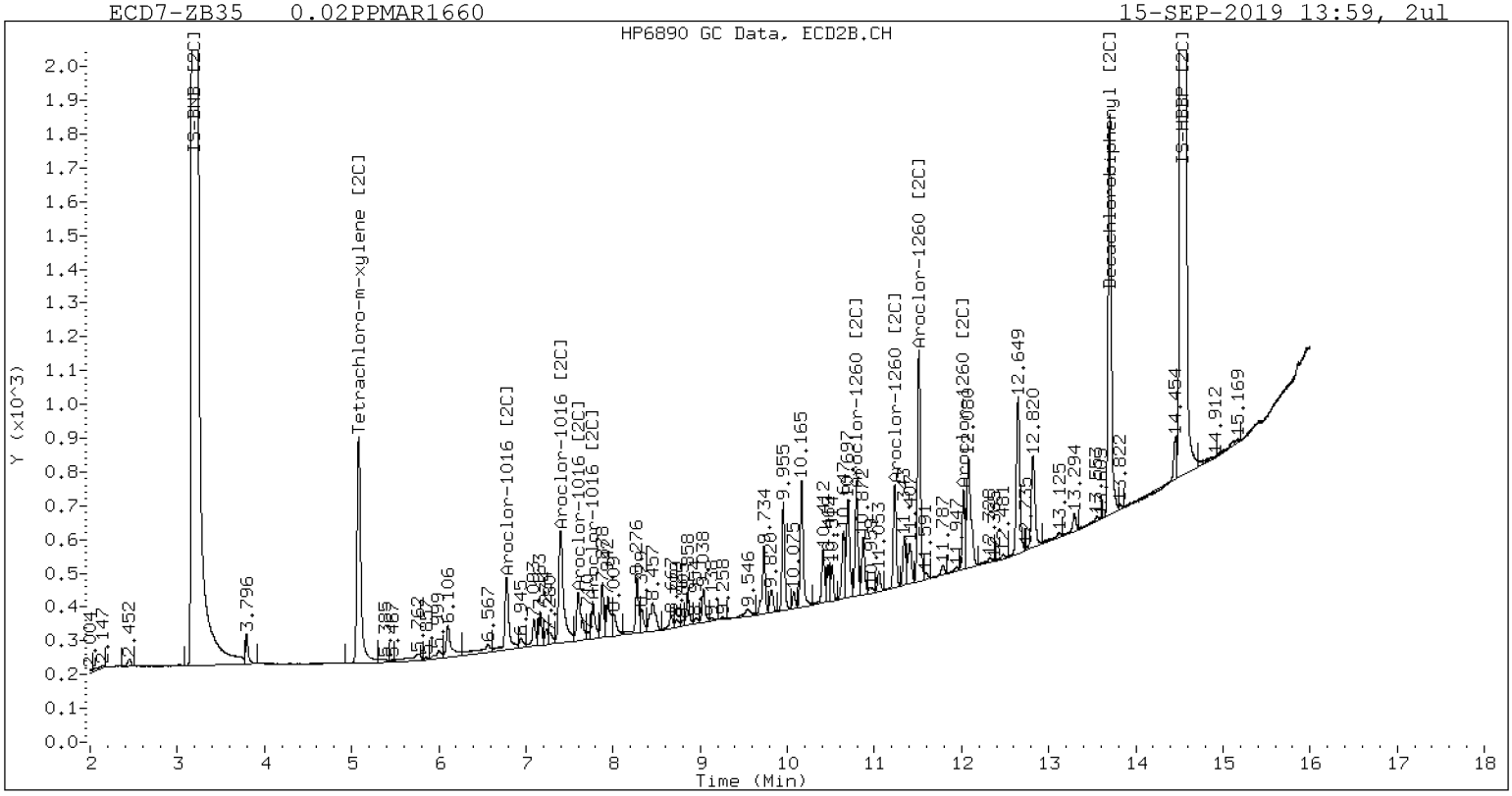
PCB Dual Column Chromatograms

ECD7-ZB5 0.02PPMAR1660 15-SEP-2019 13:59, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.02PPMAR1660 15-SEP-2019 13:59, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091507ECD7.D
Data file 2: /20190915.b/20190915.b/19091507ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 15-SEP-2019 14:20
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.002	24260	5.082	0.002	103145	7.3	7.9	7.6	Tetrachloro-m-xylene
13.613	-0.000	30493	13.701	-0.001	150296	7.6	7.6	0.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	18.2	19.6
Decachlorobiphenyl	19.1	19.1

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	269144	2.4
Hexabromobiphenyl	382688	394293	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1105624	2.2
Hexabromobiphenyl	1006687	1026320	2.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.927	0.001	4017	49.2	1	6.779	0.001	29114	52.9
Aroclor-1016	2	7.314	0.001	13768	47.4	2	7.400	0.002	59787	52.0
Aroclor-1016	3	7.461	0.001	5293	48.3	3	7.600	0.002	24285	52.5
Aroclor-1016	4	8.268	0.000	4277	47.5	4	7.769	0.002	14729	50.9

Total Col1Ave (4 peaks): 48.1 Total Col2Ave (4 peaks): 52.1 RPD = 8
Corrected Ave (3 peaks): 47.8 Corrected Ave (3 peaks): 51.8 RPD = 8

CalAmt %D: -3.8 CalAmt %D: 4.2

Aroclor-1260	1	10.764	0.000	8802	48.3	1	10.795	0.001	33695	52.2
Aroclor-1260	2	11.080	0.000	8200	47.0	2	11.233	-0.000	33955	52.1
Aroclor-1260	3	11.449	-0.000	20220	45.6	3	11.510	-0.002	81504	49.9
Aroclor-1260	4	11.849	0.000	9129	45.7	4	12.023	0.001	25987	51.1
Aroclor-1260	5	11.966	0.001	4451	47.0	NS	---			----

Total Col1Ave (5 peaks): 46.7 Total Col2Ave (4 peaks): 51.3 RPD = 9
Corrected Ave (4 peaks): 46.3 Corrected Ave (3 peaks): 51.0 RPD = 10

CalAmt %D: -6.5 CalAmt %D: 2.6

Total PCB Area Col1 (5.441 - 13.514) = 223134 Col1 Total PCB = 0.1 ppm*

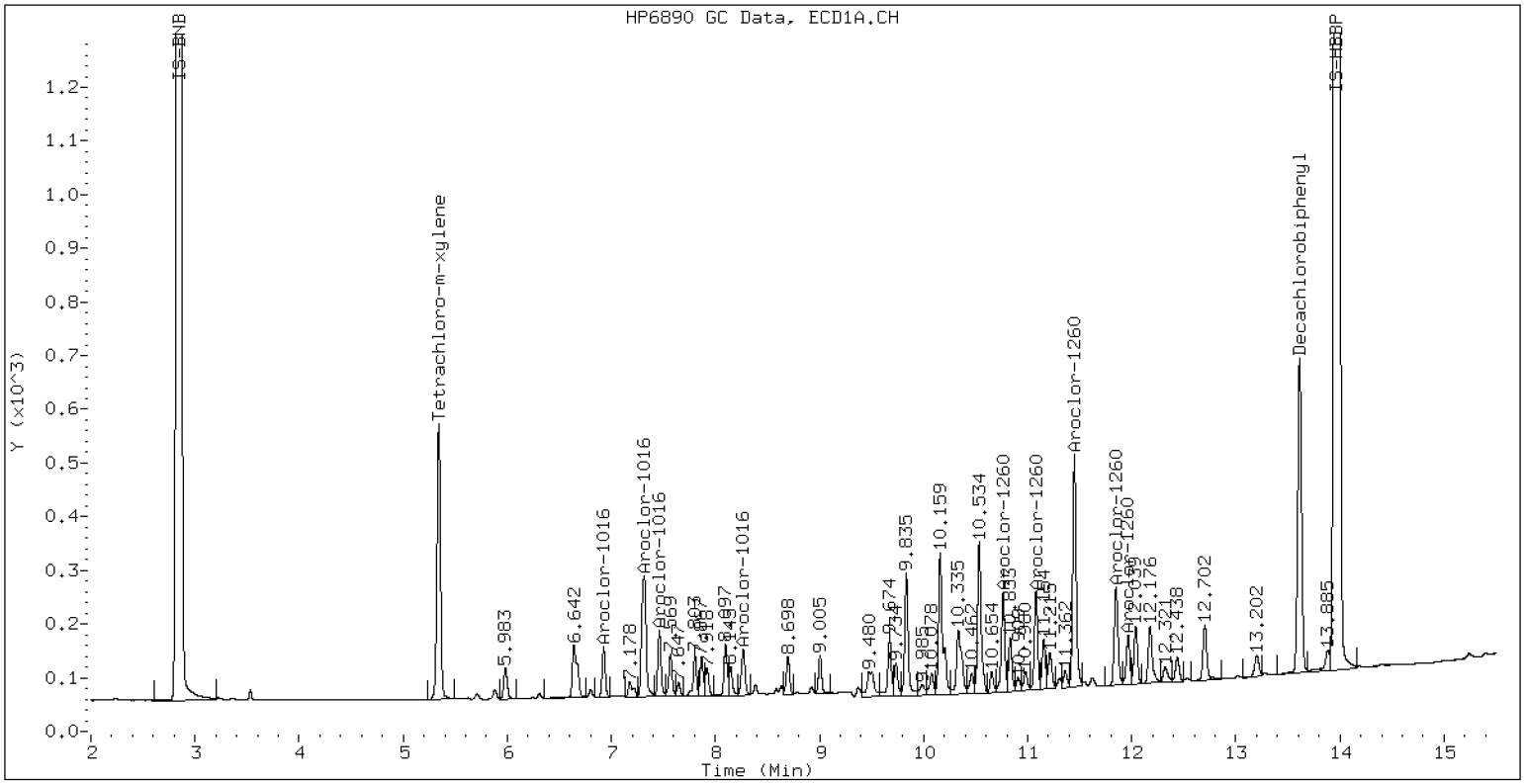
Total PCB Area Col2 (5.441 - 13.514) = 897380 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

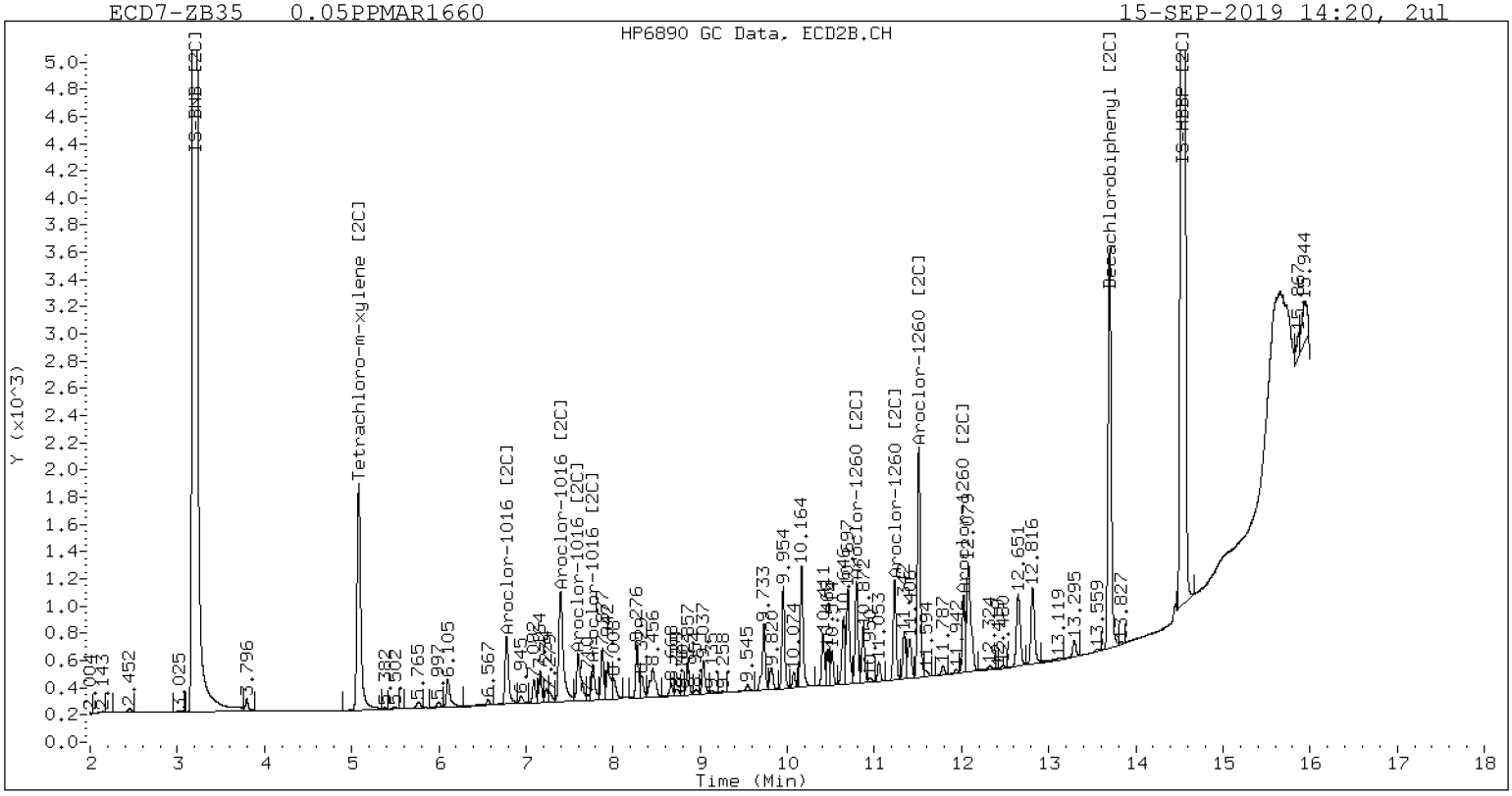
PCB Dual Column Chromatograms

ECD7-ZB5 0.05PPMAR1660 15-SEP-2019 14:20, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.05PPMAR1660 15-SEP-2019 14:20, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091508ECD7.D
Data file 2: /20190915.b/20190915.b/19091508ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1PPMAR1660
Client ID:
Injection Date: 15-SEP-2019 14:41
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.339	-0.001	566141	5.080	0.001	2145374	171.9	168.0	2.3	Tetrachloro-m-xylene
13.614	0.001	636203	13.714	0.012	3682799	161.8	183.9	12.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	429.7	420.0
Decachlorobiphenyl	404.5	459.8

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	265871	1.1
Hexabromobiphenyl	382688	388584	1.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1075102	-0.6
Hexabromobiphenyl	1006687	1043818	3.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	6.925	-0.001	79588	986.6	1	6.778	-0.001	435097	813.6
Aroclor-1016	2	7.313	0.000	294144	1025.3	2	7.398	-0.000	1011124	905.2
Aroclor-1016	3	7.459	-0.000	109222	1009.4	3	7.597	-0.001	397715	883.4
Aroclor-1016	4	8.267	-0.001	93763	1055.2	4	7.766	-0.001	260387	926.2

Total Col1Ave (4 peaks): 1019.1 Total Col2Ave (4 peaks): 882.1 RPD = 14
Corrected Ave (3 peaks): 1007.1 Corrected Ave (3 peaks): 867.4 RPD = 15

CalAmt %D: 1.9 CalAmt %D: -11.8

Aroclor-1260	1	10.764	0.000	182595	1017.5	1	10.795	0.000	608497	926.6
Aroclor-1260	2	11.080	0.000	182146	1058.7	2	11.233	0.000	617920	931.5
Aroclor-1260	3	11.449	-0.000	463339	1061.0	3	11.513	0.001	1767672	1063.5
Aroclor-1260	4	11.849	0.001	218785	1110.4	4	12.023	0.001	497498	961.7
Aroclor-1260	5	11.966	0.000	101481	1087.9	NS	---			----

Total Col1Ave (5 peaks): 1067.1 Total Col2Ave (4 peaks): 970.8 RPD = 9
Corrected Ave (4 peaks): 1056.3 Corrected Ave (3 peaks): 939.9 RPD = 12

CalAmt %D: 6.7 CalAmt %D: -2.9

Total PCB Area Col1 (5.441 - 13.514) = 4570560 Col1 Total PCB = 2.0 ppm*

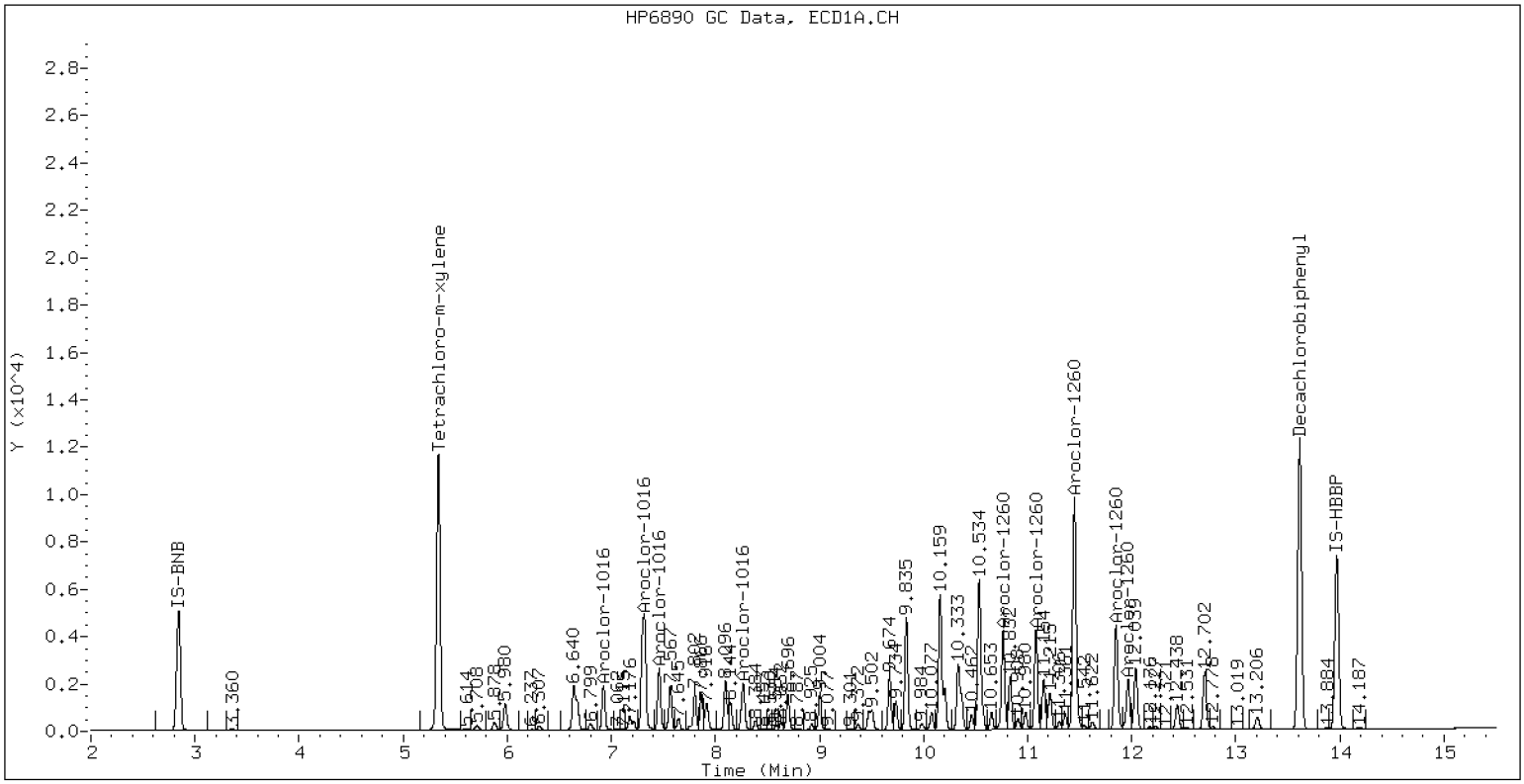
Total PCB Area Col2 (5.441 - 13.514) = 15664627 Col2 Total PCB = 1.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

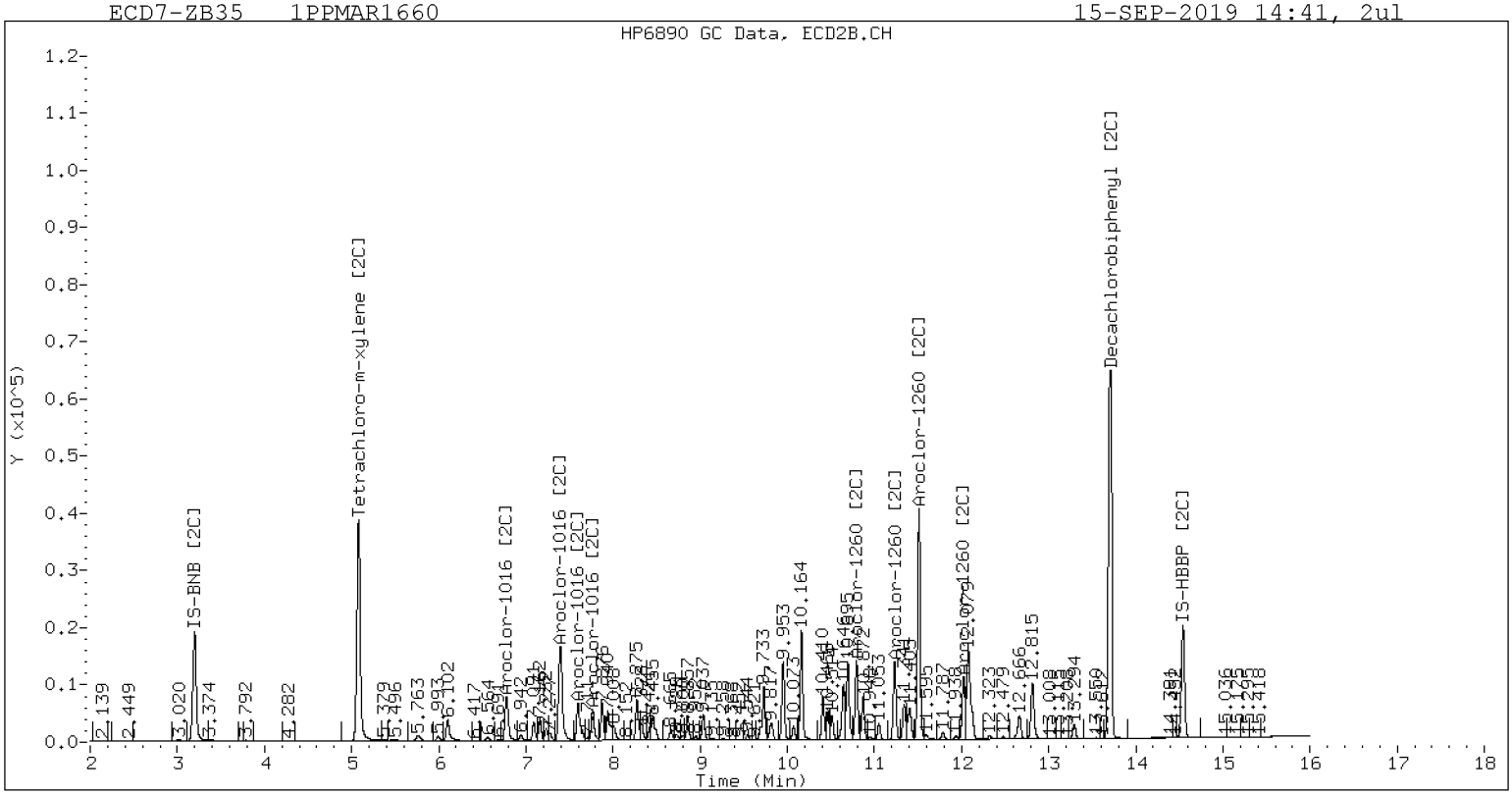
PCB Dual Column Chromatograms

ECD7-ZB5 1PPMAR1660 15-SEP-2019 14:41, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 1PPMAR1660 15-SEP-2019 14:41, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091509ECD7.D
Data file 2: /20190915.b/20190915.b/19091509ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 15-SEP-2019 15:02
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.001	53938	5.082	0.002	214447	16.0	16.0	0.0	Tetrachloro-m-xylene
13.614	0.000	65175	13.700	-0.002	312668	15.9	15.2	4.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	40.0	39.9
Decachlorobiphenyl	39.9	37.9

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	272424	3.6
Hexabromobiphenyl	382688	403993	5.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1129696	4.4
Hexabromobiphenyl	1006687	1073897	6.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	6.927	0.001	8102	98.0	1	6.779	0.000	56470	100.5
Aroclor-1016	2	7.315	0.002	29277	99.6	2	7.399	0.001	119848	102.1
Aroclor-1016	3	7.461	0.001	10930	98.6	3	7.599	0.001	48310	102.1
Aroclor-1016	4	8.267	0.000	8828	97.0	4	7.768	0.001	29658	100.4

Total Col1Ave (4 peaks): 98.3 Total Col2Ave (4 peaks): 101.3 RPD = 3
Corrected Ave (3 peaks): 97.9 Corrected Ave (3 peaks): 101.0 RPD = 3

CalAmt %D: -1.7 CalAmt %D: 1.3

Aroclor-1260	1	10.764	0.000	17520	93.9	1	10.794	-0.000	68622	101.6
Aroclor-1260	2	11.080	0.000	16981	94.9	2	11.233	-0.001	69269	101.5
Aroclor-1260	3	11.449	-0.000	43863	96.6	3	11.510	-0.002	168645	98.6
Aroclor-1260	4	11.848	0.000	19920	97.2	4	12.023	0.001	53676	100.9
Aroclor-1260	5	11.965	-0.000	9491	97.9	NS	---			----

Total Col1Ave (5 peaks): 96.1 Total Col2Ave (4 peaks): 100.6 RPD = 5
Corrected Ave (4 peaks): 95.7 Corrected Ave (3 peaks): 100.3 RPD = 5

CalAmt %D: -3.9 CalAmt %D: 0.6

Total PCB Area Col1 (5.441 - 13.514) = 443991 Col1 Total PCB = 0.2 ppm*

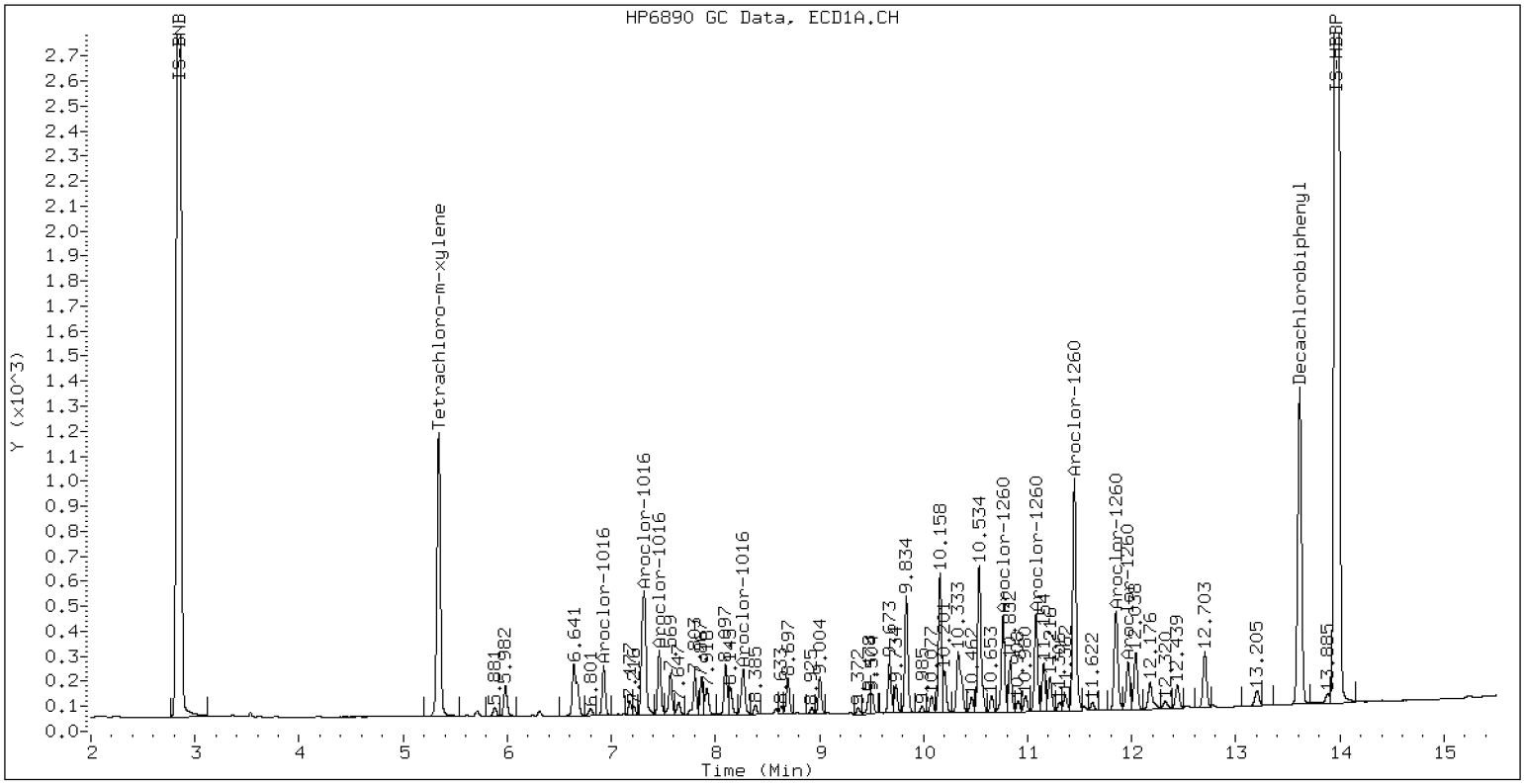
Total PCB Area Col2 (5.441 - 13.514) = 1784841 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

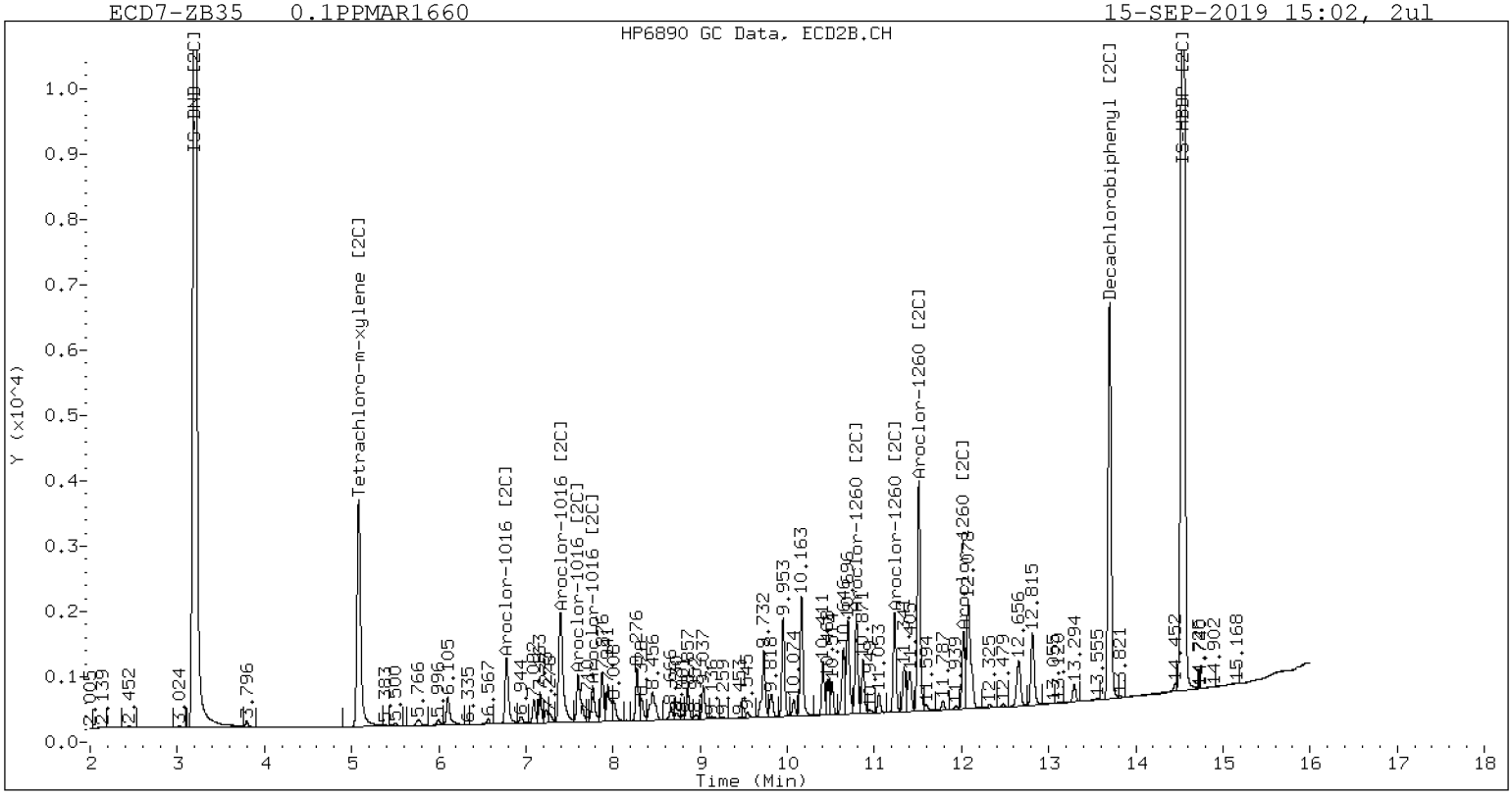
PCB Dual Column Chromatograms

ECD7-ZB5 0.1PPMAR1660 15-SEP-2019 15:02, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.1PPMAR1660 15-SEP-2019 15:02, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091510ECD7.D
Data file 2: /20190915.b/20190915.b/19091510ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 15-SEP-2019 15:23
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.001	293287	5.084	0.004	1056342	85.9	77.9	9.8	Tetrachloro-m-xylene
13.614	0.000	335899	13.704	0.002	1707377	80.9	81.0	0.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	214.8	194.7
Decachlorobiphenyl	202.3	202.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	275515	4.8
Hexabromobiphenyl	382688	410307	7.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1141696	5.5
Hexabromobiphenyl	1006687	1098297	9.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	6.926	0.000	41823	500.3	1	6.778	0.000	245531	432.3
Aroclor-1016	2	7.313	0.000	154739	520.5	2	7.398	0.000	546487	460.7
Aroclor-1016	3	7.460	0.000	56742	506.0	3	7.598	0.000	218828	457.7
Aroclor-1016	4	8.267	0.000	46911	509.5	4	7.767	0.000	140738	471.4

Total Col1Ave (4 peaks): 509.1 Total Col2Ave (4 peaks): 455.5 RPD = 11
Corrected Ave (3 peaks): 505.3 Corrected Ave (3 peaks): 450.3 RPD = 12

CalAmt %D: 1.8 CalAmt %D: -8.9

Aroclor-1260	1	10.764	0.000	93198	491.8	1	10.795	0.000	321938	465.9
Aroclor-1260	2	11.080	0.000	92438	508.8	2	11.233	0.000	326652	468.0
Aroclor-1260	3	11.450	0.000	251165	544.7	3	11.512	0.000	846506	484.0
Aroclor-1260	4	11.848	0.000	110806	532.6	4	12.023	0.000	266535	489.7
Aroclor-1260	5	11.965	0.000	50584	513.6	NS	---			----

Total Col1Ave (5 peaks): 518.3 Total Col2Ave (4 peaks): 476.9 RPD = 8
Corrected Ave (4 peaks): 511.7 Corrected Ave (3 peaks): 472.6 RPD = 8

CalAmt %D: 3.7 CalAmt %D: -4.6

Total PCB Area Col1 (5.441 - 13.514) = 2356970 Col1 Total PCB = 1.0 ppm*

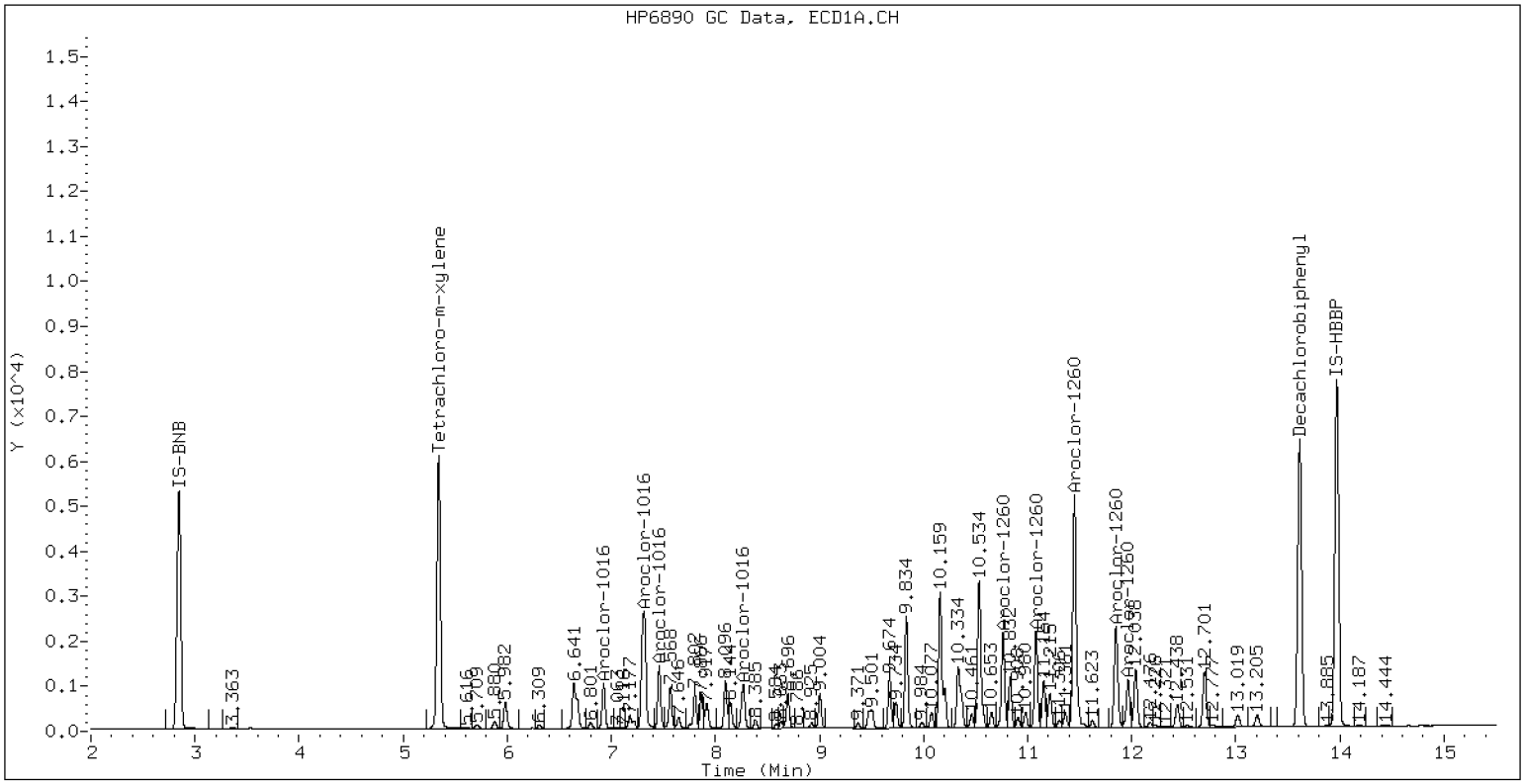
Total PCB Area Col2 (5.441 - 13.514) = 8349101 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

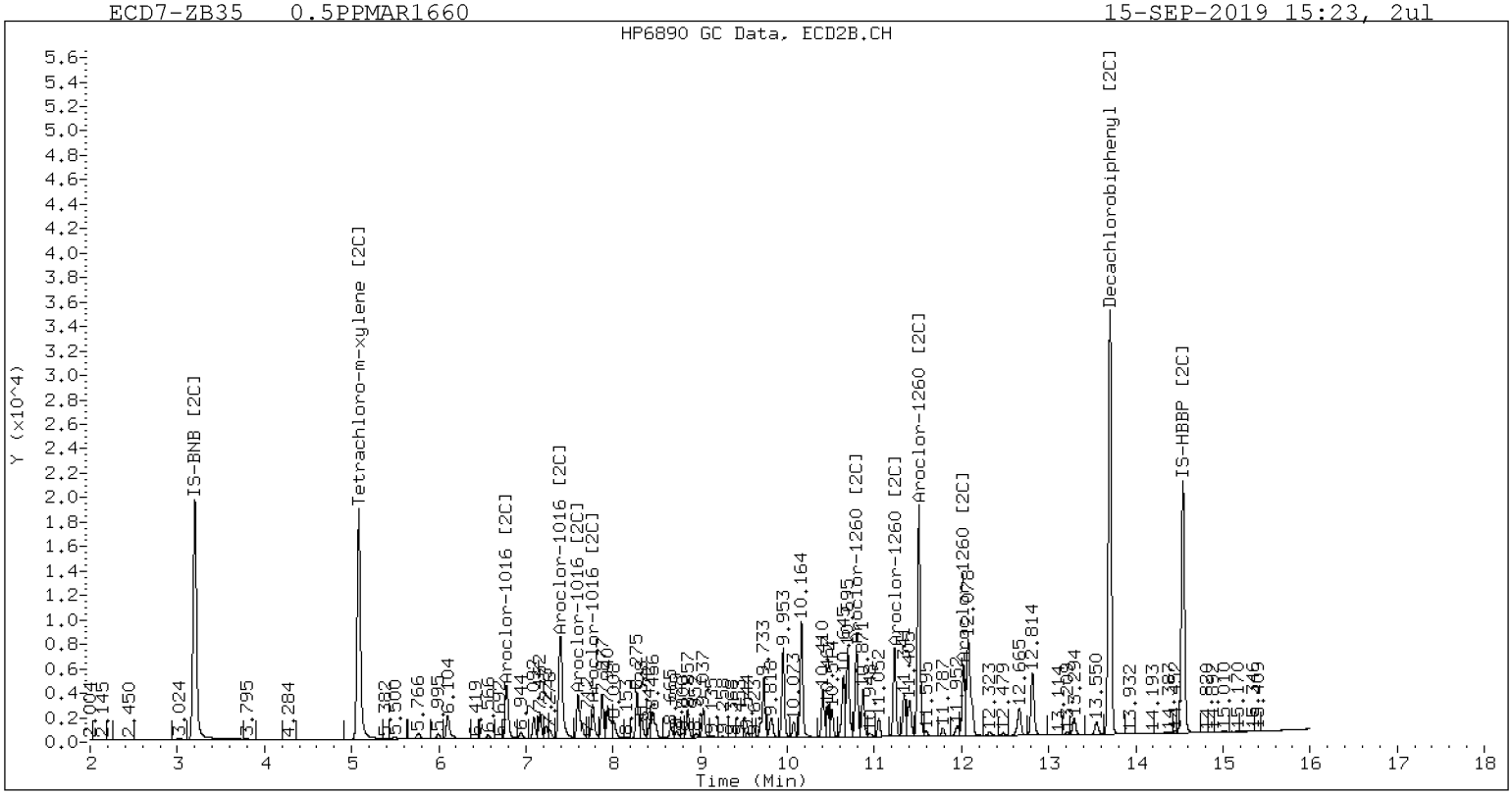
PCB Dual Column Chromatograms

ECD7-ZB5 0.5PPMAR1660 15-SEP-2019 15:23, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.5PPMAR1660 15-SEP-2019 15:23, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091511ECD7.D
Data file 2: /20190915.b/20190915.b/19091511ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 15-SEP-2019 15:44
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.001	143435	5.081	0.001	525613	42.7	39.3	8.1	Tetrachloro-m-xylene
13.614	0.000	161560	13.701	-0.000	747597	40.0	36.2	10.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	106.7	98.4
Decachlorobiphenyl	100.1	90.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	271375	3.2
Hexabromobiphenyl	382688	398948	4.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1124638	3.9
Hexabromobiphenyl	1006687	1075563	6.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1242	1	6.926	0.000	16693	250.0	1	6.778	0.000	106589	250.0
Aroclor-1242	2	7.314	0.000	60328	250.0	2	7.398	0.000	230178	250.0
Aroclor-1242	3	8.632	0.000	19888	250.0	3	7.767	0.000	58679	250.0
Aroclor-1242	4	8.920	0.000	21207	250.0	4	8.801	0.000	72999	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.441 - 13.514) = 412830 Col1 Total PCB = 0.2 ppm*

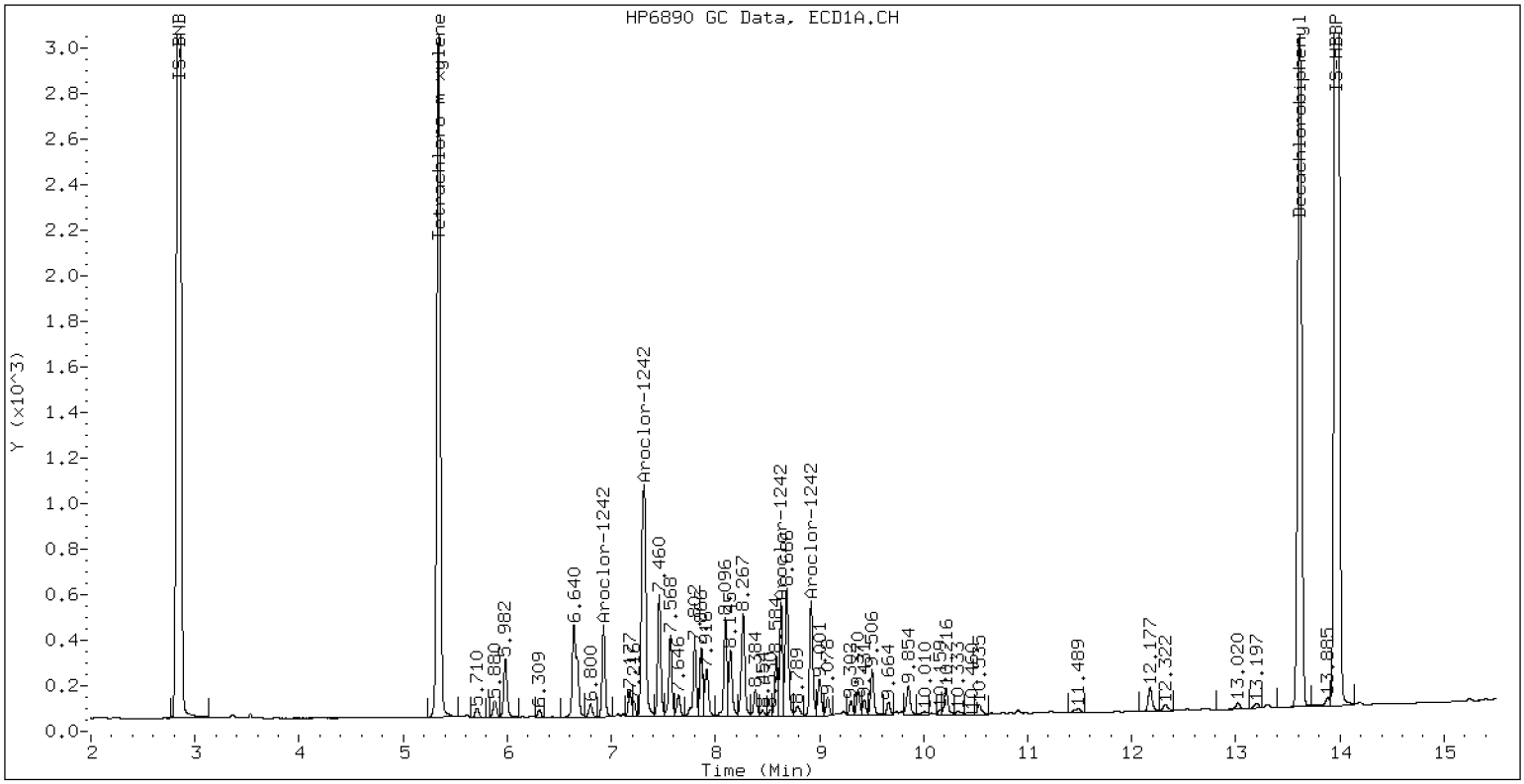
Total PCB Area Col2 (5.441 - 13.514) = 1643430 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

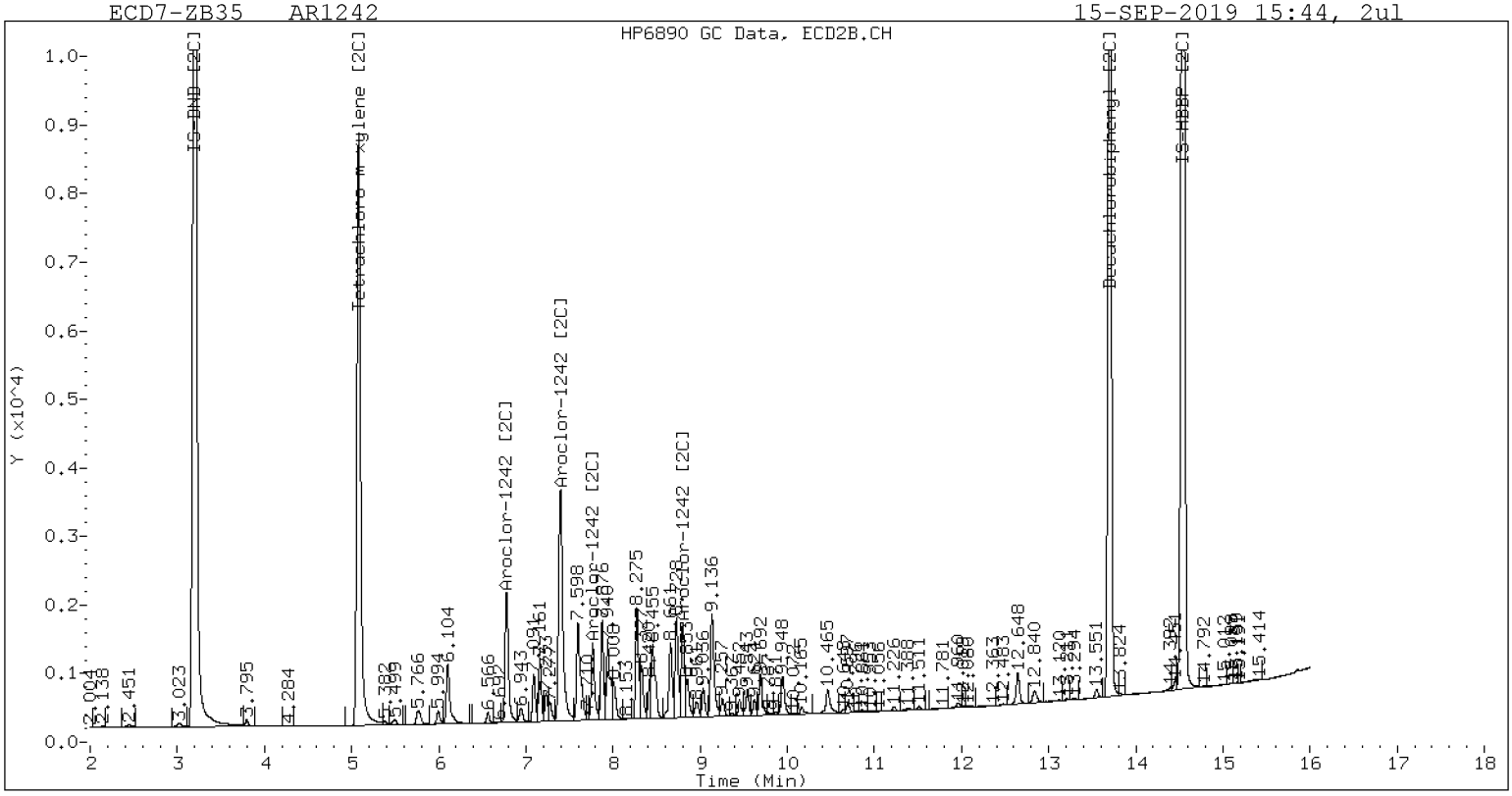
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242 15-SEP-2019 15:44, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242 15-SEP-2019 15:44, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091512ECD7.D
Data file 2: /20190915.b/20190915.b/19091512ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 15-SEP-2019 16:05
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	144294	5.080	0.001	529679	42.5	39.4	7.6	Tetrachloro-m-xylene
13.613	-0.000	160734	13.701	-0.001	753806	39.2	36.2	7.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	106.2	98.4
Decachlorobiphenyl	97.9	90.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	274306	4.3
Hexabromobiphenyl	382688	405673	6.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1132839	4.7
Hexabromobiphenyl	1006687	1084043	7.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1248	1	8.097	0.000	30821	250.0	1	7.396	0.000	153983	250.0
Aroclor-1248	2	8.632	0.000	38360	250.0	2	8.275	0.000	116115	250.0
Aroclor-1248	3	8.920	0.000	35701	250.0	3	8.801	0.000	116977	250.0
Aroclor-1248	4	9.506	0.000	22921	250.0	4	9.135	0.000	151331	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0
Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.441 - 13.514) = 533309 Col1 Total PCB = 0.2 ppm*

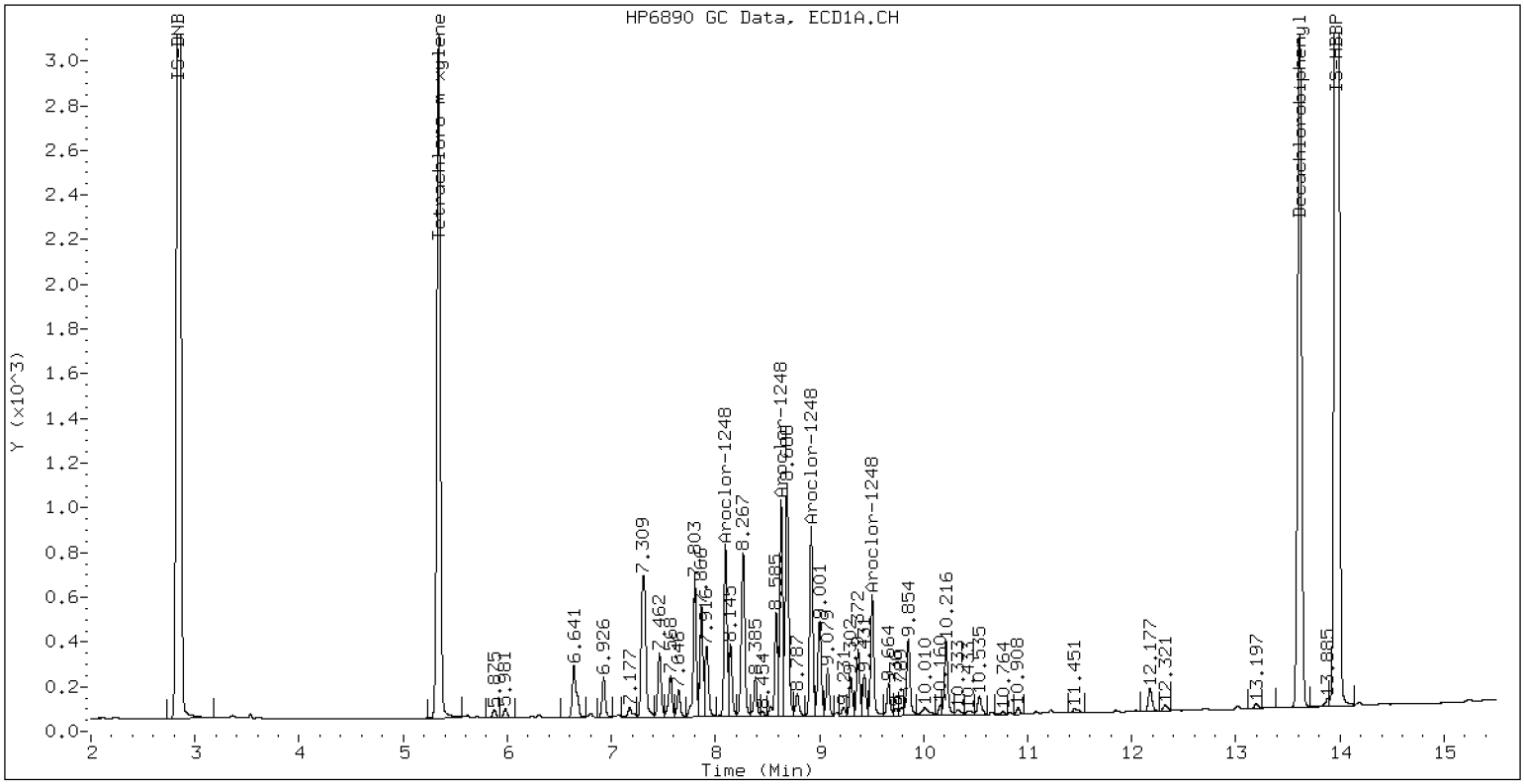
Total PCB Area Col2 (5.441 - 13.514) = 2031816 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

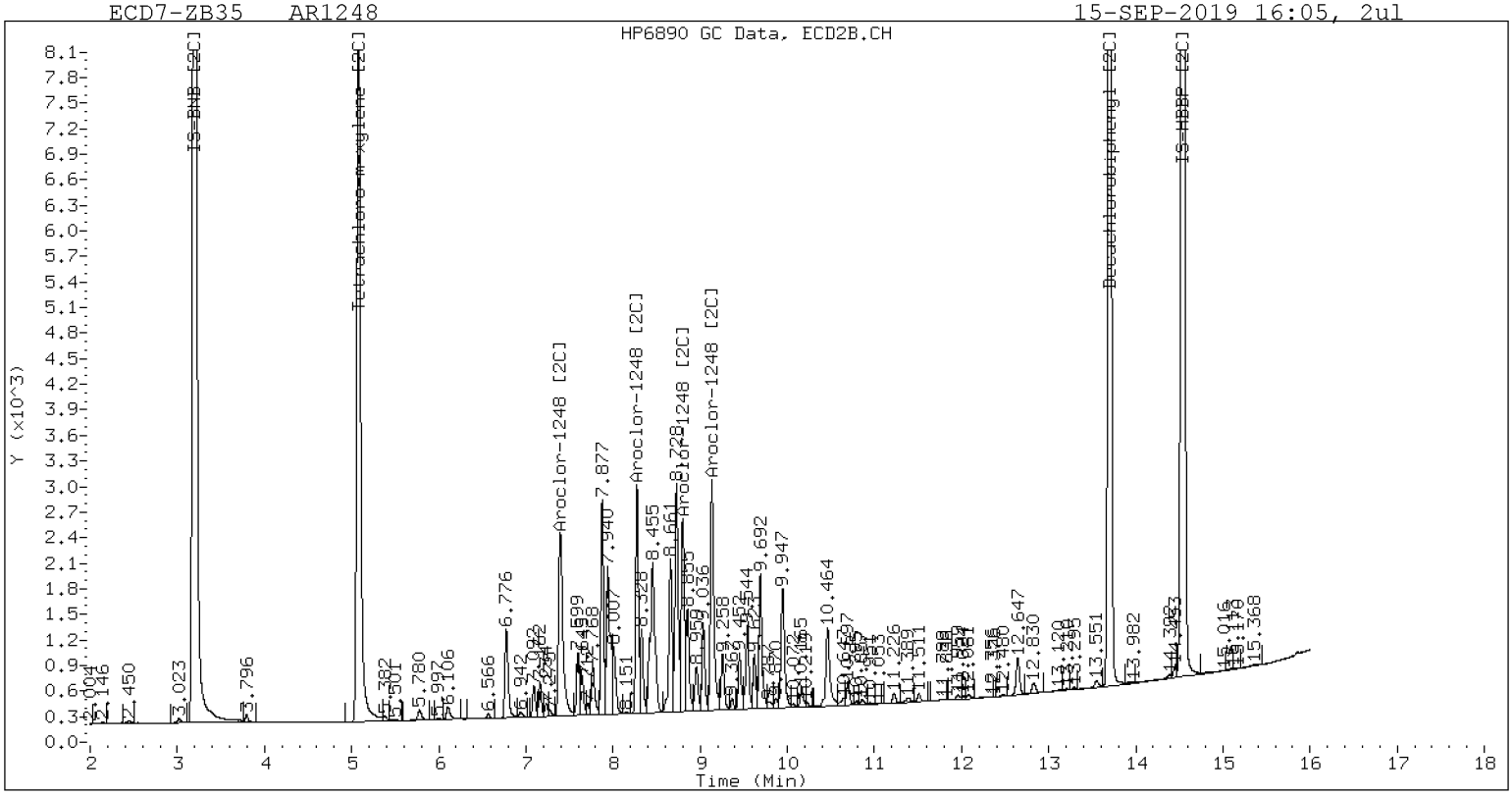
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248 15-SEP-2019 16:05, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248 15-SEP-2019 16:05, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091513ECD7.D
Data file 2: /20190915.b/20190915.b/19091513ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 15-SEP-2019 16:26
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.340	-0.000	141536	5.080	-0.000	519684	40.8	37.9	7.2	Tetrachloro-m-xylene
13.613	-0.000	155853	13.701	-0.001	730898	36.8	34.3	7.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	101.9	94.8
Decachlorobiphenyl	92.0	85.7

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	280268	6.6
Hexabromobiphenyl	382688	418567	9.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1153676	6.6
Hexabromobiphenyl	1006687	1111379	10.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1254	1	9.002	0.000	59038	250.0	1	9.037	0.000	159819	250.0
Aroclor-1254	2	9.078	0.000	18200	250.0	2	9.127	0.000	81300	250.0
Aroclor-1254	3	9.371	0.000	33962	250.0	3	9.543	0.000	125317	250.0
Aroclor-1254	4	9.505	0.000	72710	250.0	4	9.691	0.000	250672	250.0
Aroclor-1254	5	10.211	0.000	48529	250.0	5	10.464	0.000	154886	250.0

Total Col1Ave (5 peaks): 250.0 Total Col2Ave (5 peaks): 250.0 RPD = 0
Corrected Ave (4 peaks): 250.0 Corrected Ave (4 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.441 - 13.514) = 689571 Col1 Total PCB = 0.3 ppm*

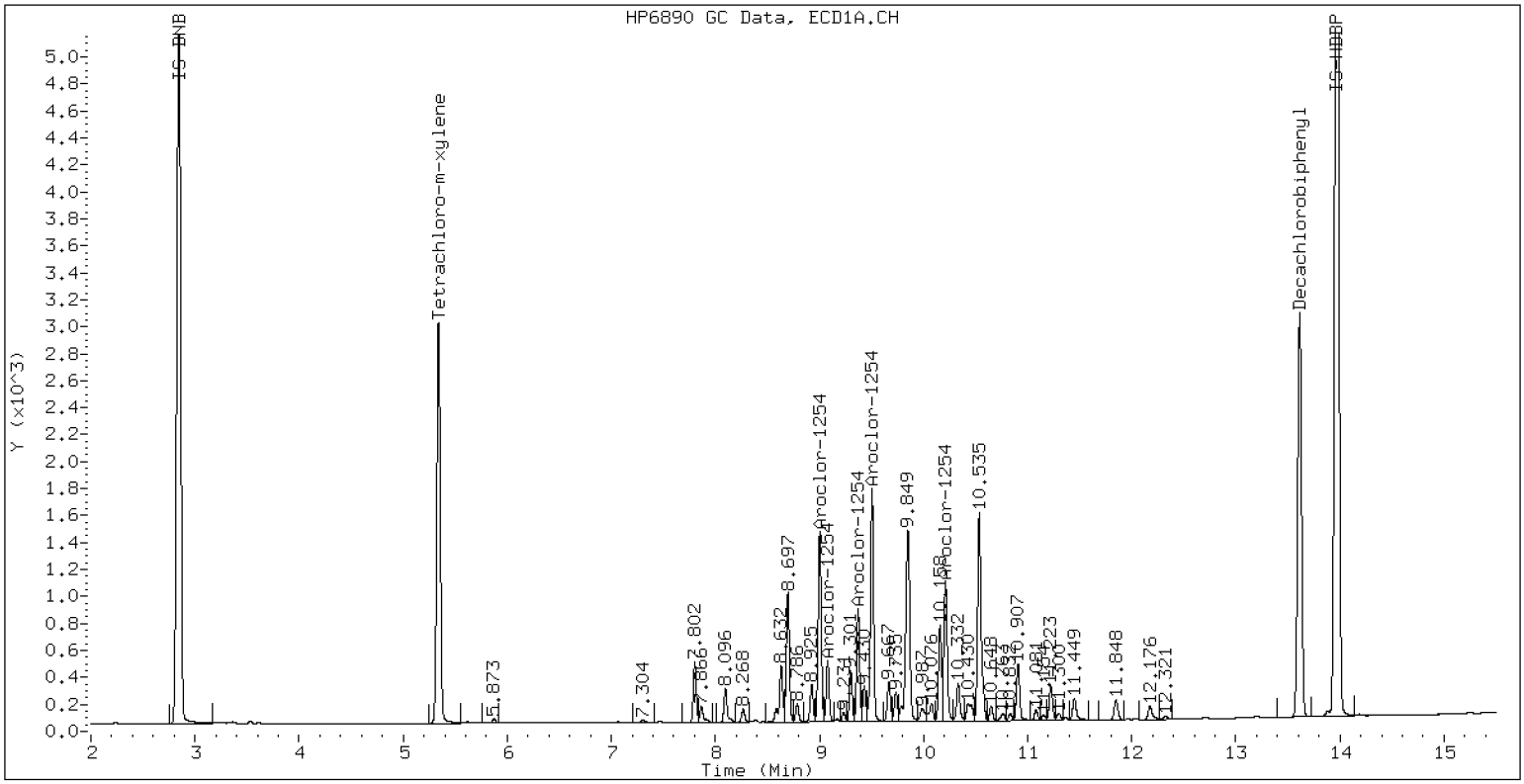
Total PCB Area Col2 (5.441 - 13.514) = 2524679 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

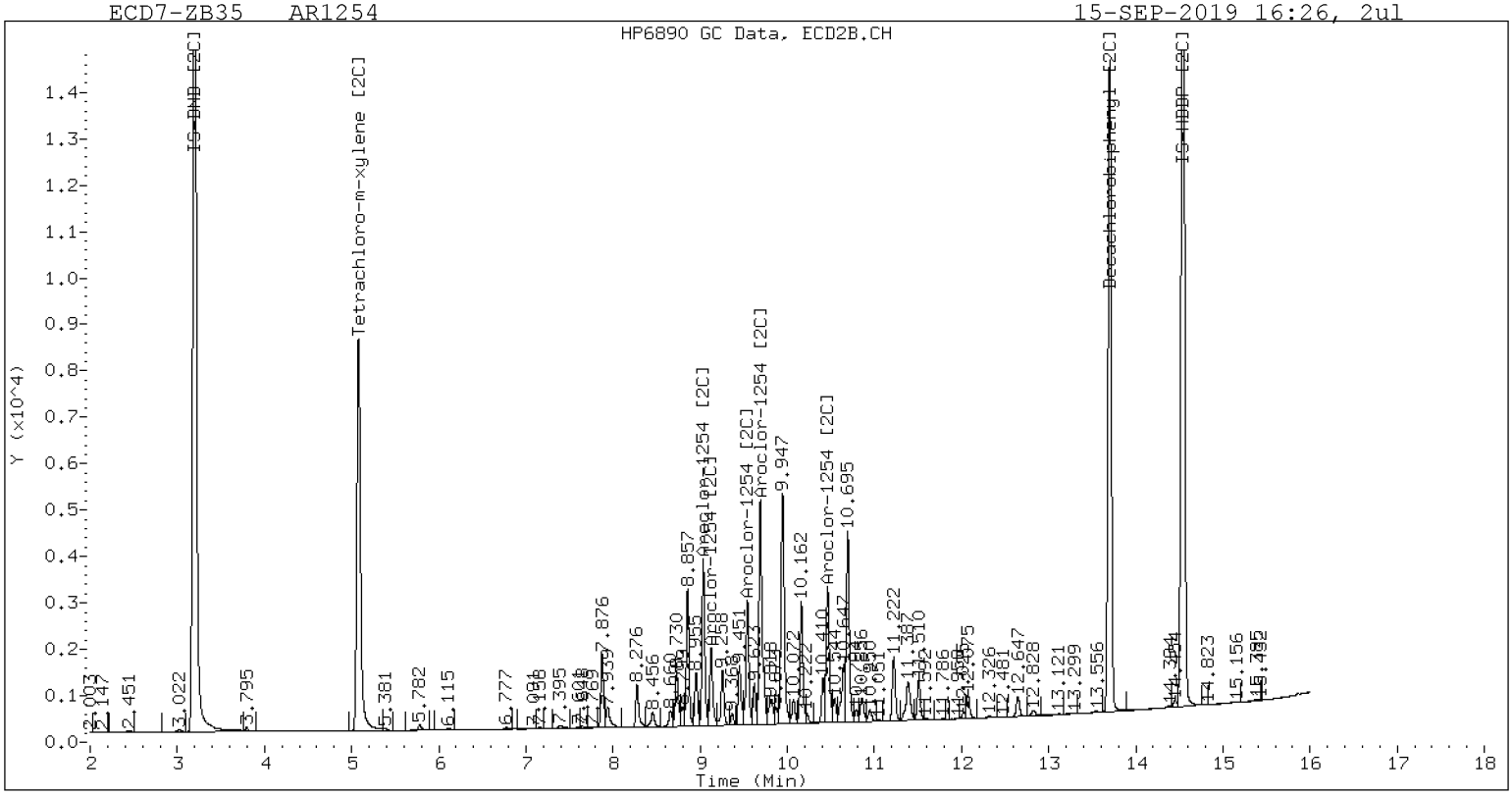
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254 15-SEP-2019 16:26, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254 15-SEP-2019 16:26, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091514ECD7.D
Data file 2: /20190915.b/20190915.b/19091514ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 15-SEP-2019 16:47
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	146495	5.081	0.002	527256	42.6	40.5	4.9	Tetrachloro-m-xylene
13.614	-0.000	153639	13.701	-0.001	729741	36.2	33.9	6.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	106.4	101.3
Decachlorobiphenyl	90.5	84.7

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	277818	5.7
Hexabromobiphenyl	382688	419387	9.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1094943	1.2
Hexabromobiphenyl	1006687	1123270	11.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1221	1	4.185	0.000	5084	250.0	1	4.283	0.000	19437	250.0
Aroclor-1221	2	5.711	0.000	7891	250.0	2	5.758	0.000	40584	250.0
Aroclor-1221	3	5.983	0.000	20017	250.0	3	6.104	0.000	67909	250.0
Total Col1Ave (3 peaks):				250.0		Total Col2Ave (3 peaks):			250.0	RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	11.080	0.000	54922	250.0	1	10.795	0.000	243640	250.0
Aroclor-1262	2	11.449	0.000	135976	250.0	2	11.234	0.000	208348	250.0
Aroclor-1262	3	11.849	0.000	40377	250.0	3	11.510	0.000	477786	250.0
Aroclor-1262	4	11.965	0.000	51174	250.0	4	12.024	0.000	233061	250.0
Total Col1Ave (4 peaks):				250.0		Total Col2Ave (4 peaks):			250.0	RPD = 0
Corrected Ave (3 peaks):				250.0		Corrected Ave (3 peaks):			250.0	RPD = 0

Total PCB Area Col1 (5.441 - 13.514) = 901492 Col1 Total PCB = 0.4 ppm*

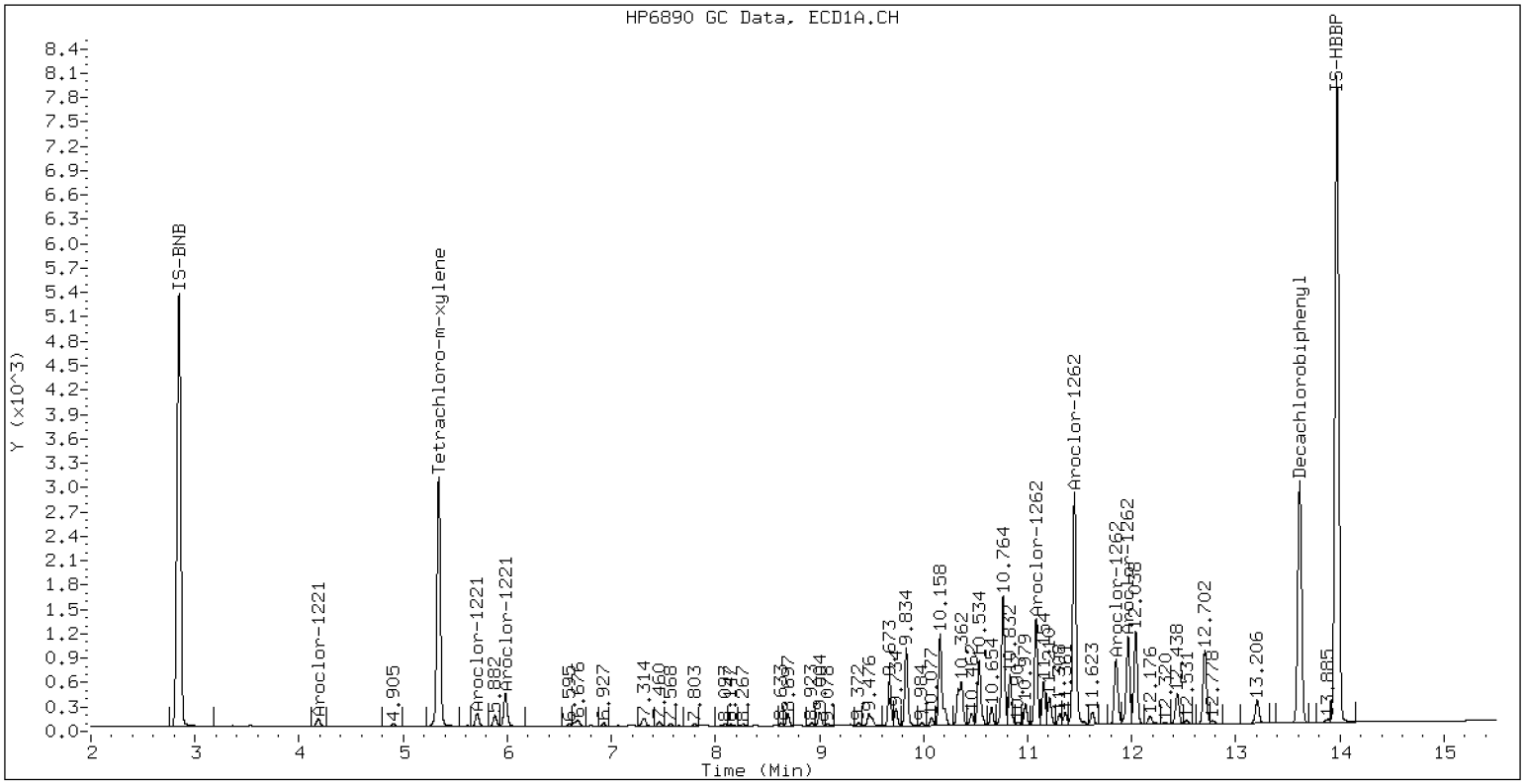
Total PCB Area Col2 (5.441 - 13.514) = 3465627 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

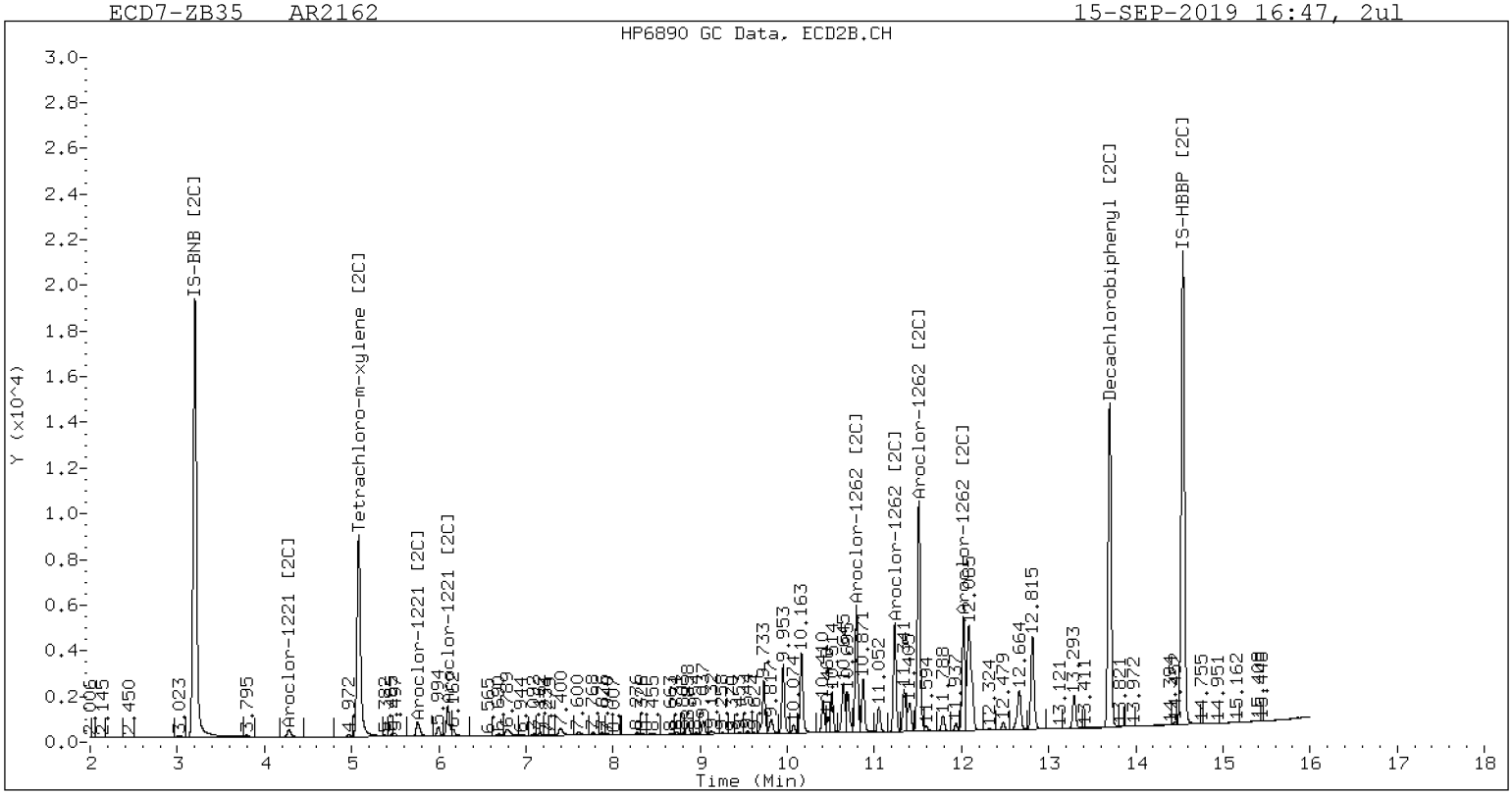
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162 15-SEP-2019 16:47, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162 15-SEP-2019 16:47, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091515ECD7.D
Data file 2: /20190915.b/20190915.b/19091515ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 15-SEP-2019 17:08
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000	145201	5.080	0.000	521977	41.4	38.9	6.2	Tetrachloro-m-xylene
13.614	0.000	243393	13.702	0.000	1150451	57.1	53.0	7.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	103.5	97.3
Decachlorobiphenyl	142.6	132.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	283079	7.7
Hexabromobiphenyl	382688	421623	10.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1129213	4.4
Hexabromobiphenyl	1006687	1131728	12.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1232	1	4.184	0.000	3048	250.0	1	4.282	0.000	11950	250.0
Aroclor-1232	2	6.925	0.000	8046	250.0	2	6.777	0.000	59481	250.0
Aroclor-1232	3	7.313	0.000	28753	250.0	3	7.397	0.000	118995	250.0
Aroclor-1232	4	7.460	0.000	10781	250.0	4	8.729	0.000	39556	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	11.965	0.000	161993	250.0	1	12.023	0.000	609338	250.0
Aroclor-1268	2	12.036	0.000	146279	250.0	2	12.090	0.000	611522	250.0
Aroclor-1268	3	12.423	0.000	123639	250.0	3	12.481	0.000	554024	250.0
Aroclor-1268	4	13.207	0.000	390898	250.0	4	13.297	0.000	1963983	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (5.441 - 13.514) = 1250376 Col1 Total PCB = 0.5 ppm*

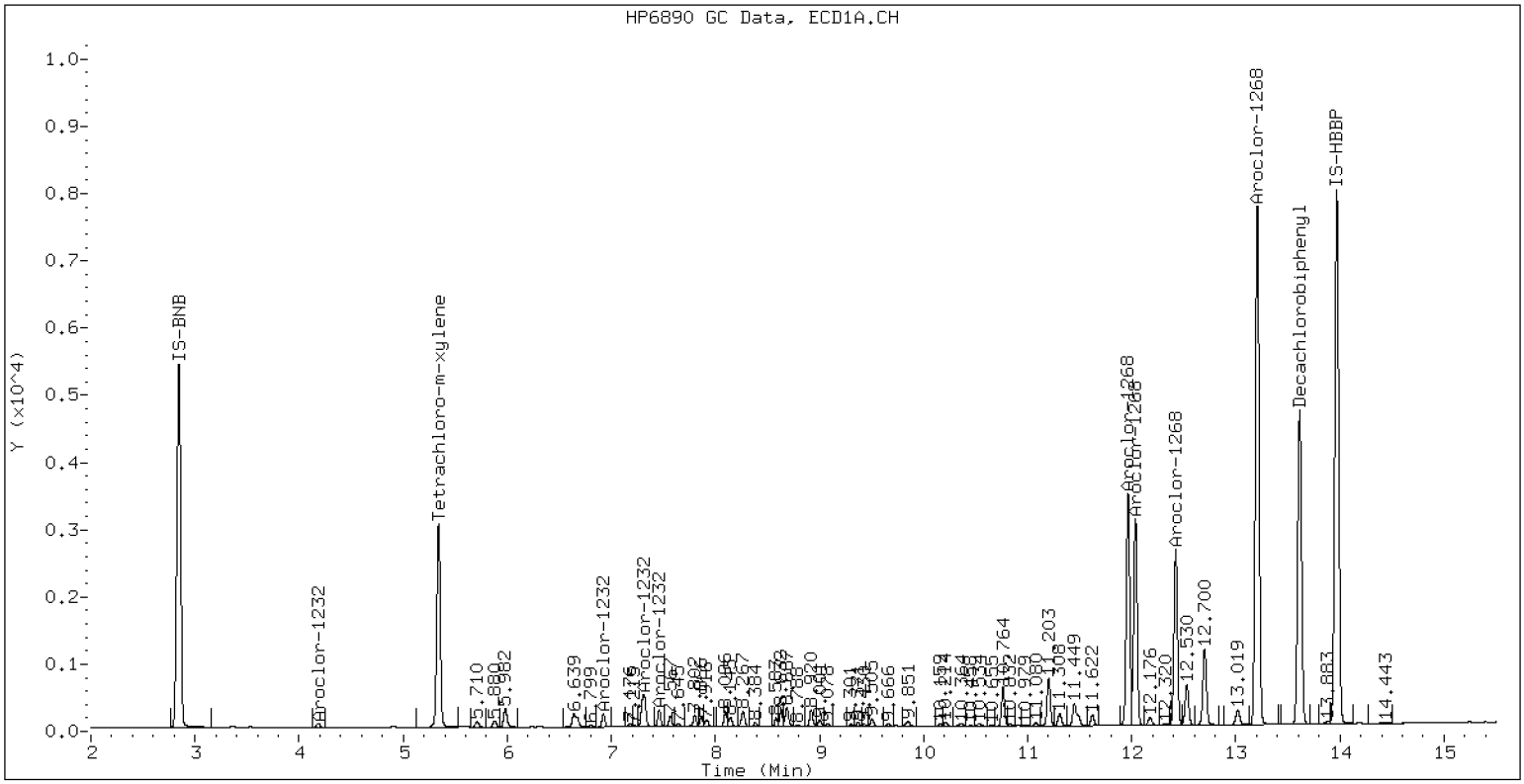
Total PCB Area Col2 (5.441 - 13.514) = 5494071 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

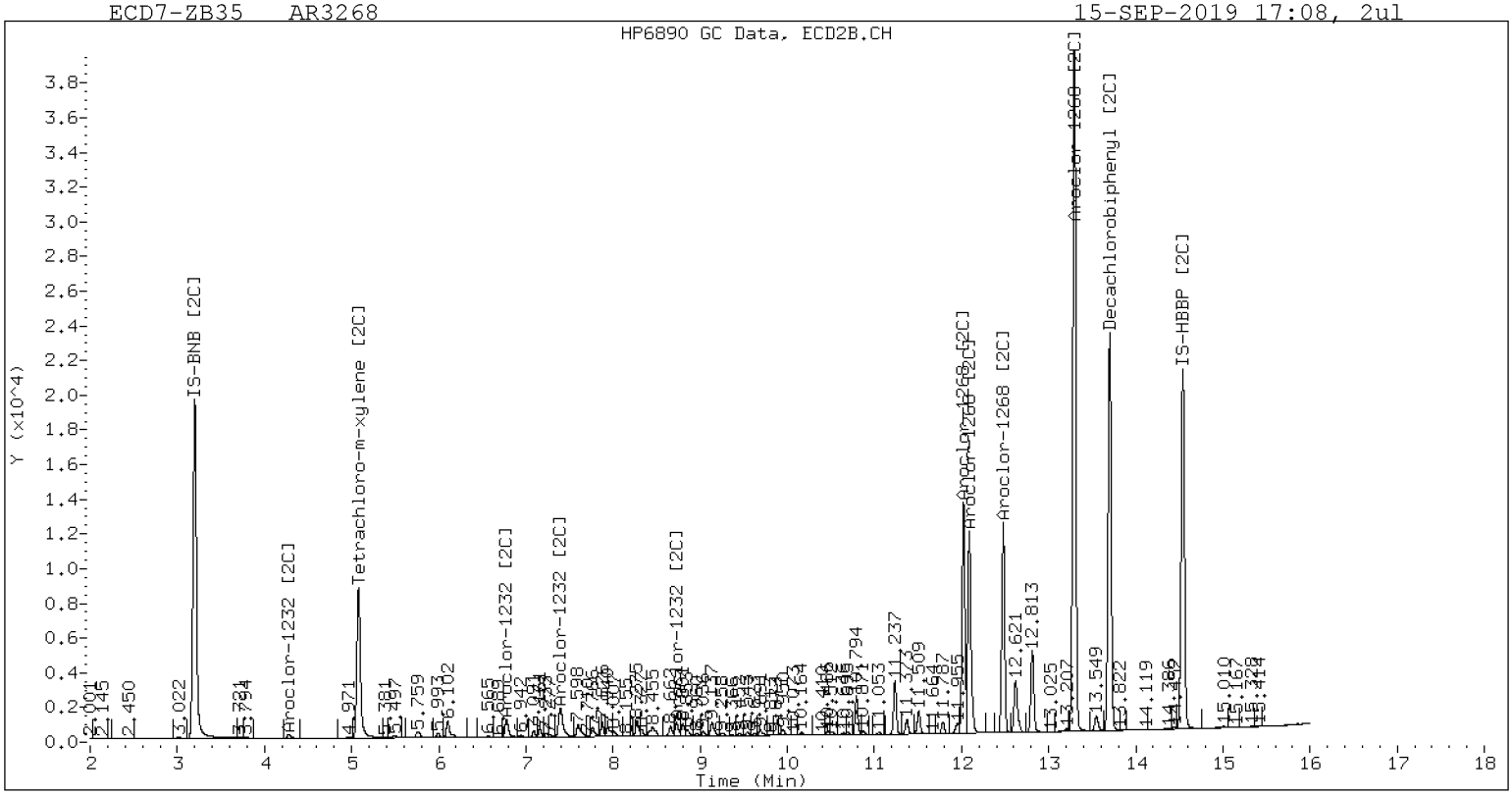
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268 15-SEP-2019 17:08, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268 15-SEP-2019 17:08, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091516ECD7.D
Data file 2: /20190915.b/20190915.b/19091516ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV1
Client ID:
Injection Date: 15-SEP-2019 17:29
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.340	-0.000	139282	5.079	-0.001	501326	41.8	39.0	6.9	Tetrachloro-m-xylene
13.614	0.000	147529	13.700	-0.002	704171	36.6	34.1	7.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	104.5	97.5
Decachlorobiphenyl	91.4	85.2

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	269047	2.3
Hexabromobiphenyl	382688	398753	4.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1081674	-0.0
Hexabromobiphenyl	1006687	1076917	7.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.925	-0.001	20670	253.2	1	6.777	-0.001	131932	245.2
Aroclor-1016	2	7.313	-0.000	75492	260.0	2	7.398	-0.000	284758	253.4
Aroclor-1016	3	7.459	-0.001	27940	255.2	3	7.598	0.001	114982	253.9
Aroclor-1016	4	8.267	-0.001	25628	285.0	4	7.766	-0.001	72012	254.6
Total Col1Ave (4 peaks):					263.4	Total Col2Ave (4 peaks):				251.8 RPD = 5
Corrected Ave (3 peaks):					256.1	Corrected Ave (3 peaks):				250.8 RPD = 2
Aroclor-1221	1	---			0.0	1	4.281	-0.002	714	9.3
Aroclor-1221	2	5.708	-0.003	2518	82.4	2	5.762	0.004	17203	107.3
Aroclor-1221	3	5.981	-0.002	14494	186.9	3	6.103	-0.001	63127	235.2
Col1Ave: <3 Quant Peaks						Col2Ave: 117.3				
Aroclor-1232	1	---			0.0	1	4.281	-0.001	714	15.6
Aroclor-1232	2	6.925	0.000	20670	675.7	2	6.777	0.000	131932	578.9
Aroclor-1232	3	7.313	0.000	75492	690.6	3	7.398	0.001	284758	624.5
Aroclor-1232	4	7.459	-0.000	27940	681.7	4	8.728	-0.001	16488	108.8
Total Col1Ave (3 peaks):					682.7	Total Col2Ave (4 peaks):				332.0 RPD = 69*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				234.4
Aroclor-1242	1	6.925	-0.000	20670	312.2	1	6.777	-0.001	131932	321.7
Aroclor-1242	2	7.313	-0.001	75492	315.5	2	7.398	0.000	284758	321.6
Aroclor-1242	3	8.632	0.000	3823	48.5	3	7.766	-0.001	72012	319.0
Aroclor-1242	4	8.924	0.005	1968	23.4	4	8.799	-0.001	10146	36.1
Total Col1Ave (4 peaks):					174.9	Total Col2Ave (4 peaks):				249.6 RPD = 35
Corrected Ave (3 peaks):					128.0	Corrected Ave (3 peaks):				225.6 RPD = 55*
Aroclor-1248	1	8.096	-0.001	20862	172.5	1	7.398	0.003	284758	484.2
Aroclor-1248	2	8.632	0.000	3823	25.4	2	8.275	-0.000	86975	196.1
Aroclor-1248	3	8.924	0.004	1968	14.1	3	8.799	-0.001	10146	22.7
Aroclor-1248	4	9.478	-0.028	15140	168.4	4	9.135	-0.000	5011	8.7
Total Col1Ave (4 peaks):					95.1	Total Col2Ave (4 peaks):				177.9 RPD = 61*
Corrected Ave (3 peaks):					69.3	Corrected Ave (3 peaks):				75.8 RPD = 9
Aroclor-1254	1	9.004	0.002	13997	61.7	1	9.036	-0.000	52182	87.1
Aroclor-1254	2	---			0.0	2	9.135	0.008	5011	16.4
Aroclor-1254	3	9.372	0.001	2241	17.2	3	9.544	0.001	8366	17.8
Aroclor-1254	4	9.478	-0.027	15140	54.2	4	9.732	0.041	121876	129.6
Aroclor-1254	5	10.158	-0.053	79007	424.0	5	10.467	0.003	54907	94.5
Total Col1Ave (4 peaks):					139.3	Total Col2Ave (5 peaks):				69.1 RPD = 67*
Corrected Ave (3 peaks):					44.4	Corrected Ave (4 peaks):				54.0 RPD = 19
Aroclor-1260	1	10.763	-0.000	47502	257.9	1	10.793	-0.001	173400	255.9
Aroclor-1260	2	11.079	-0.001	47459	268.8	2	11.232	-0.001	175778	256.8
Aroclor-1260	3	11.449	-0.000	124200	277.2	3	11.510	-0.002	444580	259.2
Aroclor-1260	4	11.849	0.000	56510	279.5	4	12.023	0.000	135226	253.4
Aroclor-1260	5	11.965	-0.000	23732	247.9	NS	---			----
Total Col1Ave (5 peaks):					266.3	Total Col2Ave (4 peaks):				256.3 RPD = 4
Corrected Ave (4 peaks):					263.0	Corrected Ave (3 peaks):				255.4 RPD = 3
Aroclor-1262	1	11.079	-0.001	47459	227.2	1	10.793	-0.001	173400	185.6
Aroclor-1262	2	11.449	-0.000	124200	240.2	2	11.232	-0.002	175778	220.0
Aroclor-1262	3	11.849	-0.001	56510	368.0	3	11.510	-0.001	444580	242.6
Aroclor-1262	4	11.965	-0.000	23732	121.9	4	12.023	-0.001	135226	151.3
Total Col1Ave (4 peaks):					239.3	Total Col2Ave (4 peaks):				199.9 RPD = 18
Corrected Ave (3 peaks):					196.4	Corrected Ave (3 peaks):				185.6 RPD = 6
Aroclor-1268	1	11.965	-0.000	23732	38.7	1	12.023	-0.001	135226	58.3
Aroclor-1268	2	12.038	0.002	29014	52.4	2	12.078	-0.013	289317	124.3
Aroclor-1268	3	12.438	0.015	12219	26.1	3	12.479	-0.002	4945	2.3
Aroclor-1268	4	13.205	-0.002	5597	3.8	4	13.293	-0.004	26676	3.6
Total Col1Ave (4 peaks):					30.3	Total Col2Ave (4 peaks):				47.1 RPD = 44*
Corrected Ave (3 peaks):					22.9	Corrected Ave (3 peaks):				21.4 RPD = 7

Total PCB Area Col1 (5.441 - 13.514) = 1171435 Col1 Total PCB = 0.5 ppm*

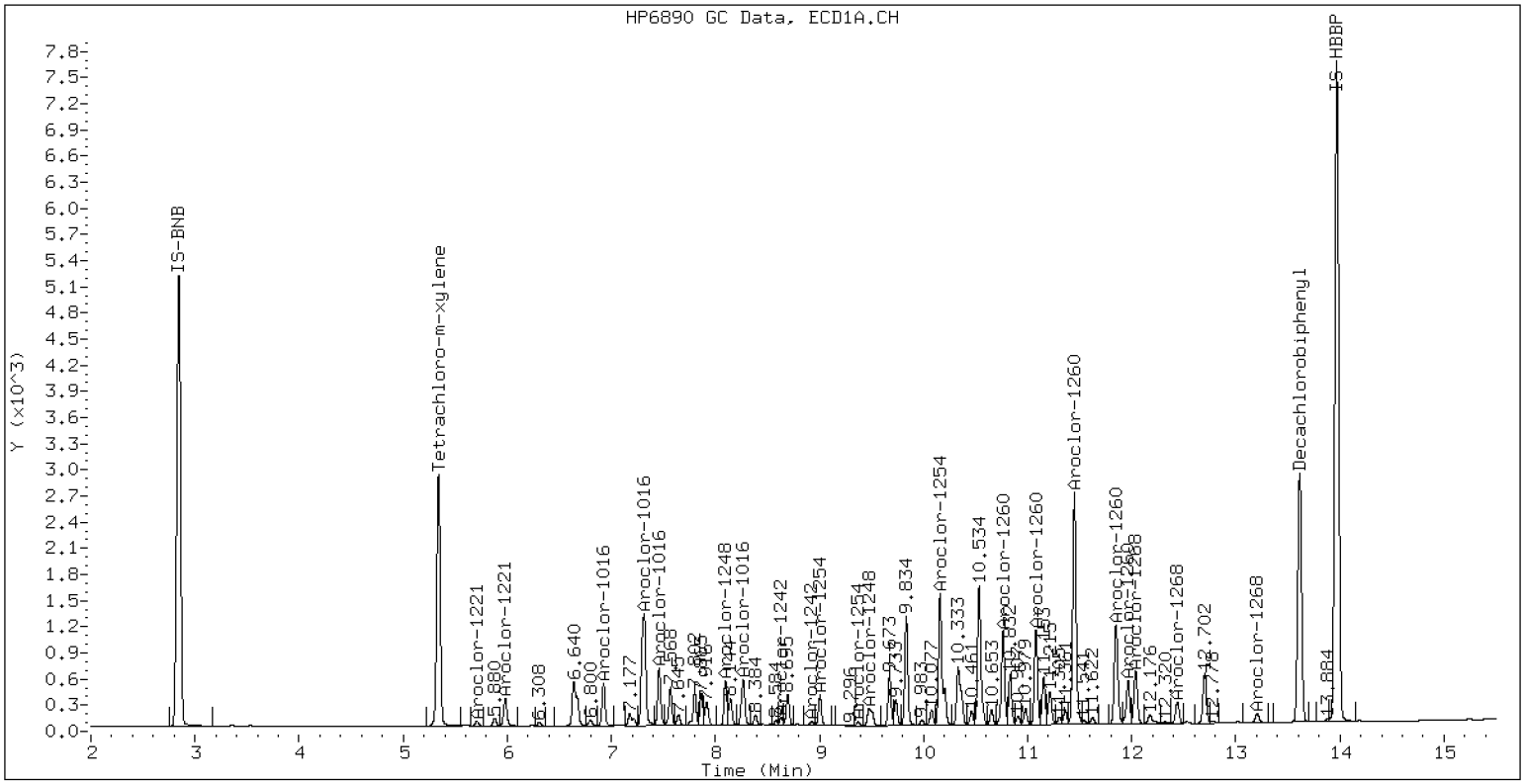
Total PCB Area Col2 (5.441 - 13.514) = 4394557 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

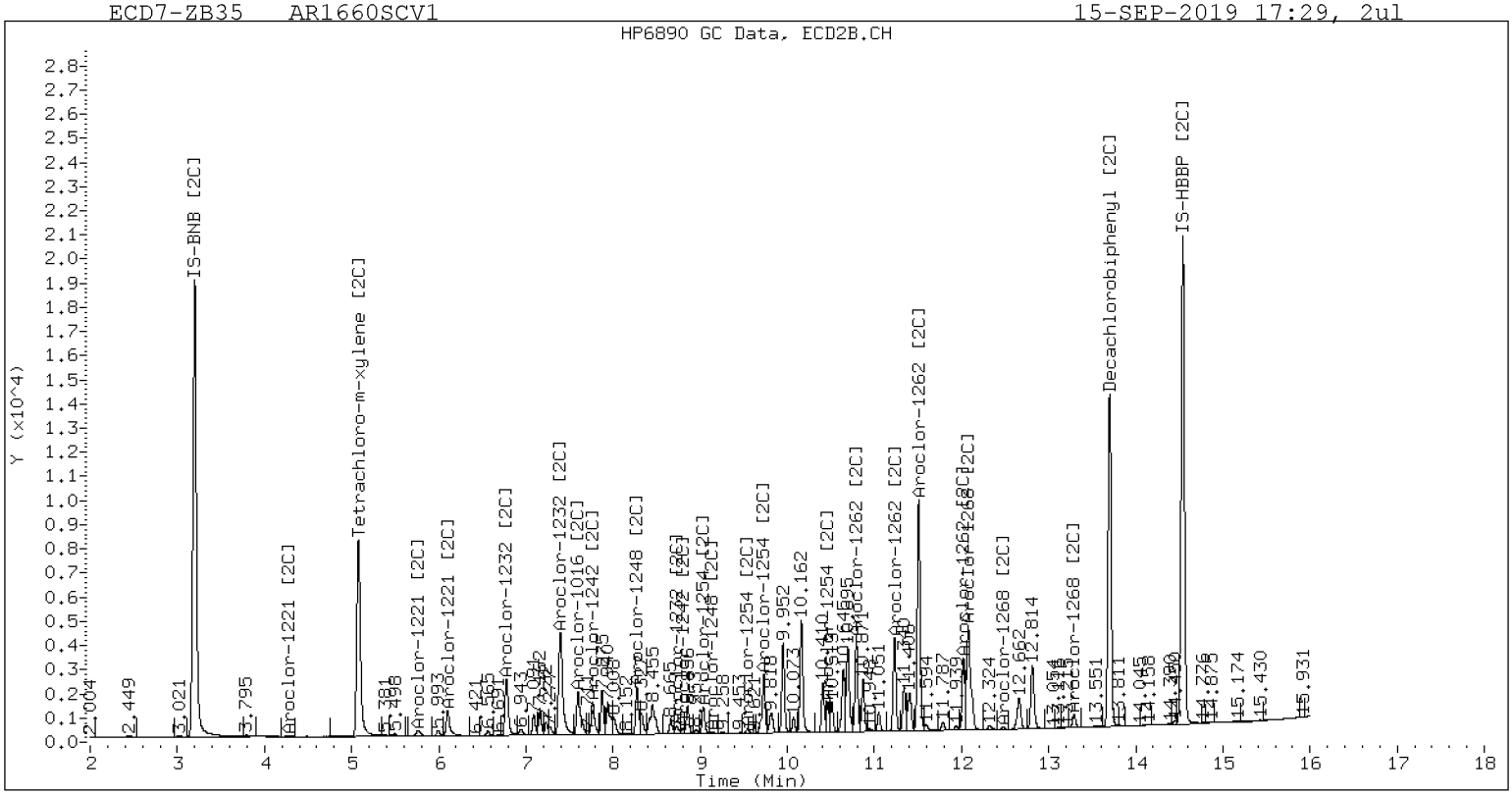
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV1 15-SEP-2019 17:29, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV1 15-SEP-2019 17:29, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091517ECD7.D
Data file 2: /20190915.b/20190915.b/19091517ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV2
Client ID:
Injection Date: 15-SEP-2019 17:50
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000	141558	5.080	0.000	512417	41.3	38.1	8.1	Tetrachloro-m-xylene
13.614	0.000	154315	13.701	-0.000	730054	36.7	33.8	8.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	103.3	95.3
Decachlorobiphenyl	91.7	84.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	276605	-36.0
Hexabromobiphenyl	517563	415898	-19.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1131917	-24.4
Hexabromobiphenyl	1404015	1125325	-19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.925	-0.000	16898	201.3	1	6.778	-0.001	106681	189.5
Aroclor-1016	2	7.313	-0.000	60035	201.1	2	7.398	0.000	229278	195.0
Aroclor-1016	3	7.460	0.000	22476	199.7	3	7.598	0.000	92364	194.9
Aroclor-1016	4	8.267	-0.001	22168	239.8	4	7.767	-0.000	57828	195.4
Total Col1Ave (4 peaks): 210.5						Total Col2Ave (4 peaks): 193.7 RPD = 8				
Corrected Ave (3 peaks): 200.7						Corrected Ave (3 peaks): 193.1 RPD = 4				
Aroclor-1221	1	---			0.0	1	4.287	0.003	465	5.8
Aroclor-1221	2	5.709	-0.003	1988	63.3	2	5.768	0.010	14831	88.4
Aroclor-1221	3	5.981	-0.002	11461	143.8	3	6.104	-0.000	51036	181.7
Col1Ave: <3 Quant Peaks						Col2Ave: 92.0				
Aroclor-1232	1	---			0.0	1	4.287	0.005	465	9.7
Aroclor-1232	2	6.925	0.000	16898	537.3	2	6.778	0.001	106681	447.3
Aroclor-1232	3	7.313	0.000	60035	534.2	3	7.398	0.001	229278	480.5
Aroclor-1232	4	7.460	0.000	22476	533.4	4	8.729	-0.000	71208	449.0
Total Col1Ave (3 peaks): 535.0						Total Col2Ave (4 peaks): 346.6 RPD = 43*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 302.0				
Aroclor-1242	1	6.925	-0.000	16898	248.3	1	6.778	-0.000	106681	248.6
Aroclor-1242	2	7.313	-0.001	60035	244.1	2	7.398	0.000	229278	247.4
Aroclor-1242	3	8.632	0.000	19399	239.2	3	7.767	-0.001	57828	244.8
Aroclor-1242	4	8.920	0.000	20377	235.7	4	8.801	0.000	68184	232.0
Total Col1Ave (4 peaks): 241.8						Total Col2Ave (4 peaks): 243.2 RPD = 1				
Corrected Ave (3 peaks): 239.7						Corrected Ave (3 peaks): 241.4 RPD = 1				
Aroclor-1248	1	8.096	-0.001	17908	144.1	1	7.398	0.003	229278	372.5
Aroclor-1248	2	8.632	0.000	19399	125.4	2	8.275	0.000	73096	157.5
Aroclor-1248	3	8.920	-0.000	20377	141.5	3	8.801	0.000	68184	145.8
Aroclor-1248	4	9.506	-0.000	11216	121.3	4	9.136	0.001	86440	142.9
Total Col1Ave (4 peaks): 133.1						Total Col2Ave (4 peaks): 204.7 RPD = 42*				
Corrected Ave (3 peaks): 129.4						Corrected Ave (3 peaks): 148.8 RPD = 14				
Aroclor-1254	1	9.001	-0.001	9693	41.6	1	9.036	-0.001	25152	40.1
Aroclor-1254	2	9.078	-0.000	4295	59.8	2	9.136	0.009	86440	270.9
Aroclor-1254	3	9.371	0.000	5872	43.8	3	9.543	-0.000	23570	47.9
Aroclor-1254	4	9.506	0.001	11216	39.1	4	9.691	-0.000	37432	38.0
Aroclor-1254	5	10.215	0.005	7428	38.8	5	10.465	0.002	27749	45.7
Total Col1Ave (5 peaks): 44.6						Total Col2Ave (5 peaks): 88.5 RPD = 66*				
Corrected Ave (4 peaks): 40.8						Corrected Ave (4 peaks): 42.9 RPD = 5				
Aroclor-1260	1	---			0.0	1	10.795	0.000	925	1.3
Aroclor-1260	2	---			0.0	2	11.225	-0.008	5685	7.9
Aroclor-1260	3	---			0.0	3	11.512	-0.000	3227	1.8
Aroclor-1260	4	---			0.0	4	12.077	0.054	2320	4.2
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 3.8				
Aroclor-1262	1	---			0.0	1	10.795	0.000	925	0.9
Aroclor-1262	2	---			0.0	2	11.225	-0.010	5685	6.8
Aroclor-1262	3	---			0.0	3	11.512	0.001	3227	1.7
Aroclor-1262	4	---			0.0	4	12.077	0.053	2320	2.5
Col1Ave: <3 Quant Peaks						Col2Ave: 3.0				
Aroclor-1268	1	---			0.0	1	12.077	0.054	2320	1.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	12.484	0.003	1021	0.5
Aroclor-1268	4	---			0.0	4	13.300	0.003	911	0.1
Col1Ave: <3 Quant Peaks						Col2Ave: 0.5				

Total PCB Area Col1 (5.441 - 13.514) = 432451 Col1 Total PCB = 0.2 ppm*

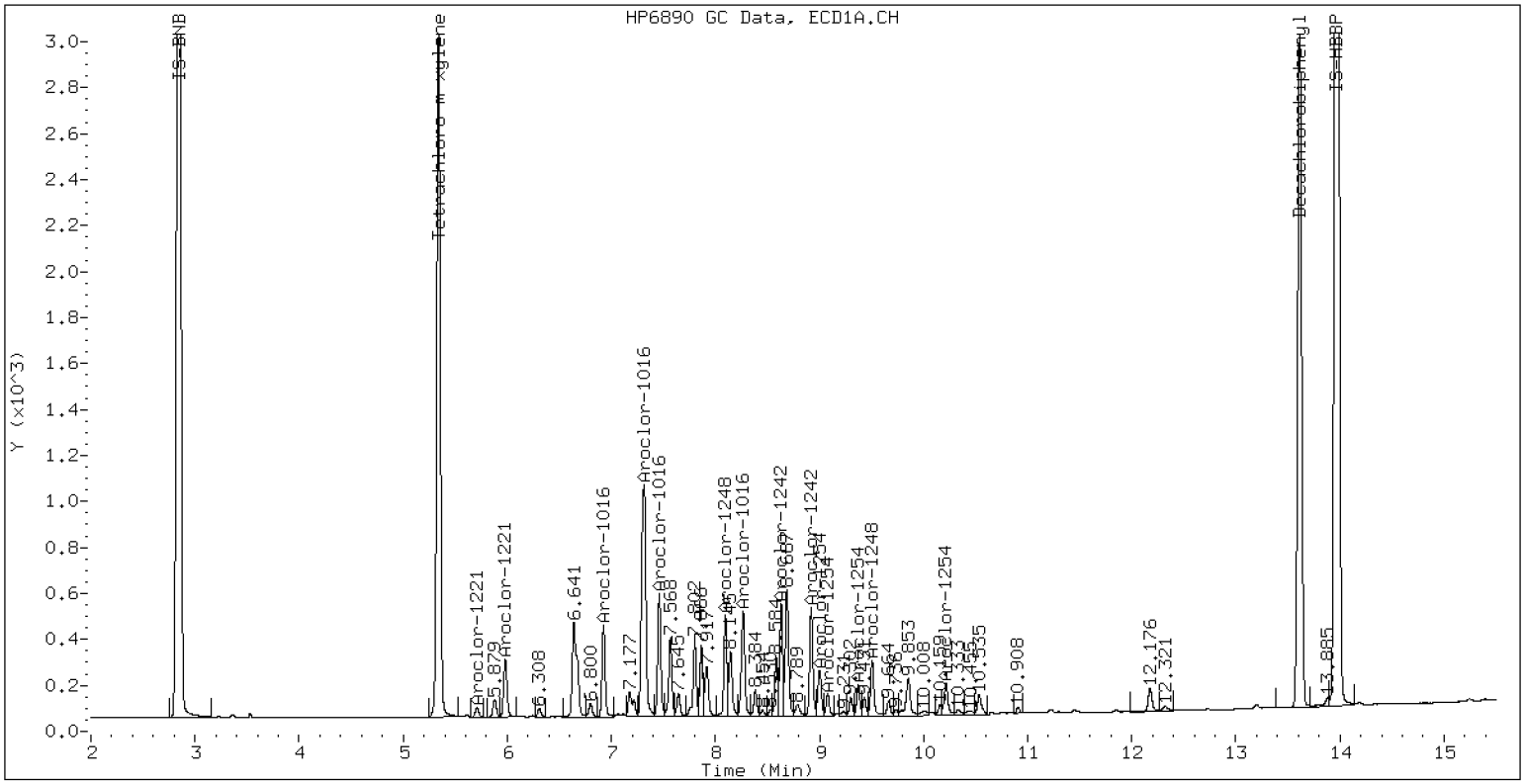
Total PCB Area Col2 (5.441 - 13.514) = 1684066 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

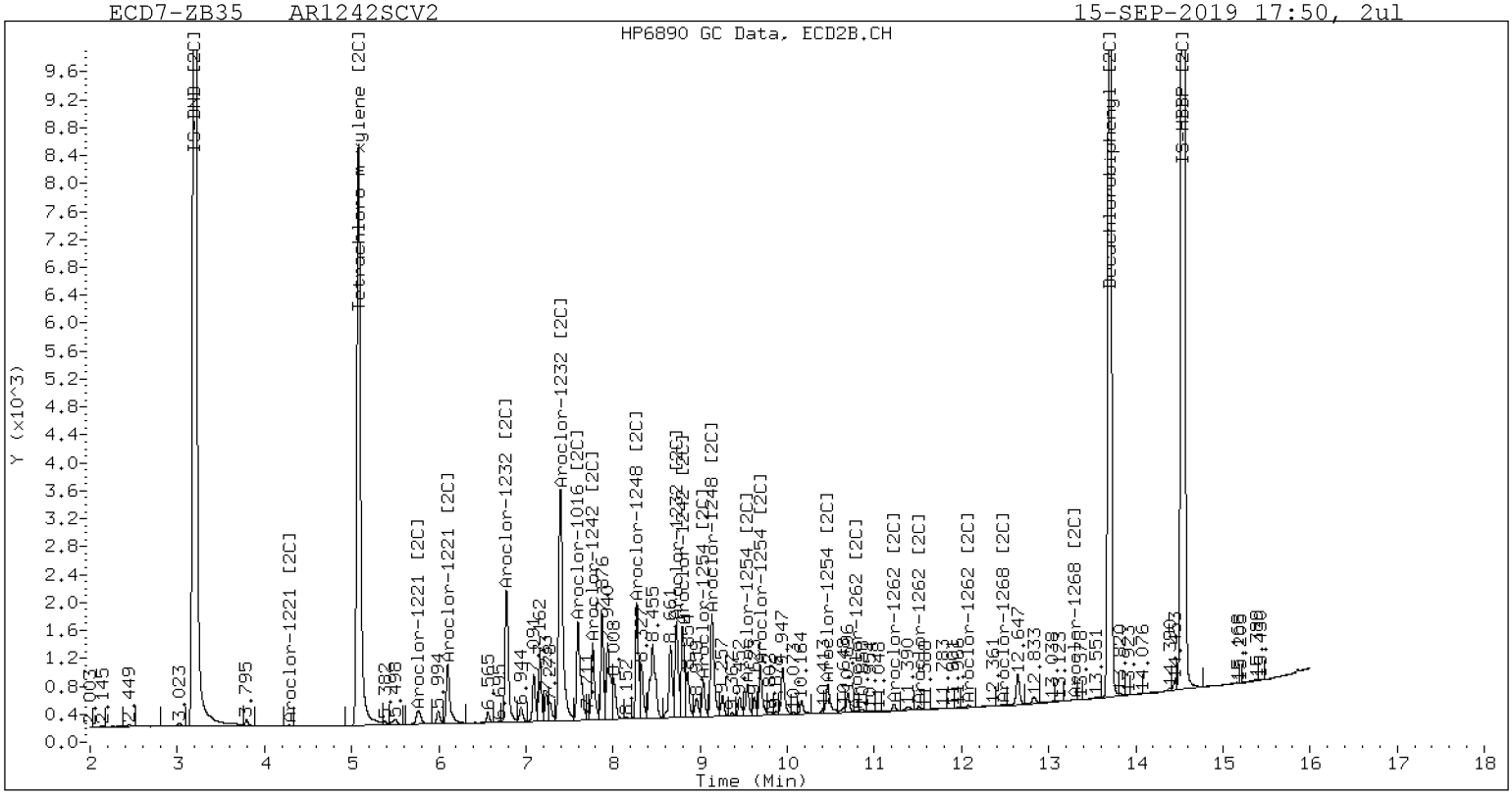
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV2 15-SEP-2019 17:50, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV2 15-SEP-2019 17:50, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091518ECD7.D
Data file 2: /20190915.b/20190915.b/19091518ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV3
Client ID:
Injection Date: 15-SEP-2019 18:11
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000	144337	5.081	0.001	525429	41.1	38.2	7.2	Tetrachloro-m-xylene
13.613	-0.000	155898	13.702	-0.000	747902	36.1	33.8	6.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	102.6	95.5
Decachlorobiphenyl	90.2	84.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283776	-34.4
Hexabromobiphenyl	517563	427022	-17.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1157339	-22.7
Hexabromobiphenyl	1404015	1151947	-18.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.926	-0.000	8301	96.4	1	6.777	-0.002	59820	103.9
Aroclor-1016	2	7.309	-0.004	40510	132.3	2	7.397	-0.001	161655	134.4
Aroclor-1016	3	7.462	0.002	13575	117.5	3	7.599	0.001	36509	75.3
Aroclor-1016	4	8.267	-0.000	35033	369.4	4	7.768	0.001	33959	112.2
Total Col1Ave (4 peaks): 178.9						Total Col2Ave (4 peaks): 106.5 RPD = 51*				
Corrected Ave (3 peaks): 115.4						Corrected Ave (3 peaks): 97.1 RPD = 17				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	5.617	-0.095	1004	31.1	2	5.780	0.022	7736	45.1
Aroclor-1221	3	5.981	-0.002	2454	30.0	3	6.105	0.001	12052	42.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.926	0.001	8301	257.3	2	6.777	-0.000	59820	245.3
Aroclor-1232	3	7.309	-0.003	40510	351.4	3	7.397	-0.000	161655	331.4
Aroclor-1232	4	7.462	0.002	13575	314.0	4	8.729	-0.001	134716	830.7
Total Col1Ave (3 peaks): 307.6						Total Col2Ave (3 peaks): 469.1 RPD = 42*				
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.926	-0.000	8301	118.9	1	6.777	-0.001	59820	136.3
Aroclor-1242	2	7.309	-0.005	40510	160.5	2	7.397	-0.001	161655	170.6
Aroclor-1242	3	8.632	0.001	38513	463.0	3	7.768	0.000	33959	140.6
Aroclor-1242	4	8.920	0.001	35533	400.6	4	8.801	0.000	118313	393.7
Total Col1Ave (4 peaks): 285.7						Total Col2Ave (4 peaks): 210.3 RPD = 30				
Corrected Ave (3 peaks): 226.7						Corrected Ave (3 peaks): 149.2 RPD = 41*				
Aroclor-1248	1	8.096	-0.000	31009	243.1	1	7.397	0.002	161655	256.9
Aroclor-1248	2	8.632	0.000	38513	242.6	2	8.275	0.000	119193	251.2
Aroclor-1248	3	8.920	-0.000	35533	240.5	3	8.801	0.000	118313	247.5
Aroclor-1248	4	9.506	-0.000	23308	245.7	4	9.135	-0.000	153684	248.5
Total Col1Ave (4 peaks): 243.0						Total Col2Ave (4 peaks): 251.0 RPD = 3				
Corrected Ave (3 peaks): 242.1						Corrected Ave (3 peaks): 249.1 RPD = 3				
Aroclor-1254	1	9.001	-0.002	20497	85.7	1	9.037	-0.000	49764	77.6
Aroclor-1254	2	9.078	0.000	9115	123.7	2	9.135	0.008	153684	471.1
Aroclor-1254	3	9.371	-0.000	12774	92.9	3	9.543	-0.000	49122	97.7
Aroclor-1254	4	9.506	0.001	23308	79.1	4	9.691	-0.000	81623	81.1
Aroclor-1254	5	10.216	0.005	15329	78.0	5	10.463	-0.000	61571	99.1
Total Col1Ave (5 peaks): 91.9						Total Col2Ave (5 peaks): 165.3 RPD = 57*				
Corrected Ave (4 peaks): 83.9						Corrected Ave (4 peaks): 88.9 RPD = 6				
Aroclor-1260	1	10.764	-0.000	1211	6.1	1	10.795	0.001	2983	4.1
Aroclor-1260	2	---			0.0	2	11.226	-0.007	6906	9.4
Aroclor-1260	3	11.449	-0.000	1232	2.6	3	11.510	-0.002	6245	3.4
Aroclor-1260	4	---			0.0	4	12.024	0.001	3247	5.7
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 5.7				
Aroclor-1262	1	---			0.0	1	10.795	0.001	2983	3.0
Aroclor-1262	2	---			0.0	2	11.226	-0.008	6906	8.1
Aroclor-1262	3	---			0.0	3	11.510	-0.000	6245	3.2
Aroclor-1262	4	---			0.0	4	12.024	0.000	3247	3.4
Col1Ave: <3 Quant Peaks						Col2Ave: 4.4				
Aroclor-1268	1	---			0.0	1	12.024	0.001	3247	1.3
Aroclor-1268	2	---			0.0	2	12.082	-0.008	4066	1.6
Aroclor-1268	3	---			0.0	3	12.487	0.006	1630	0.7
Aroclor-1268	4	---			0.0	4	13.295	-0.003	2205	0.3
Col1Ave: <3 Quant Peaks						Col2Ave: 1.0				

Total PCB Area Col1 (5.441 - 13.514) = 543228 Col1 Total PCB = 0.2 ppm*

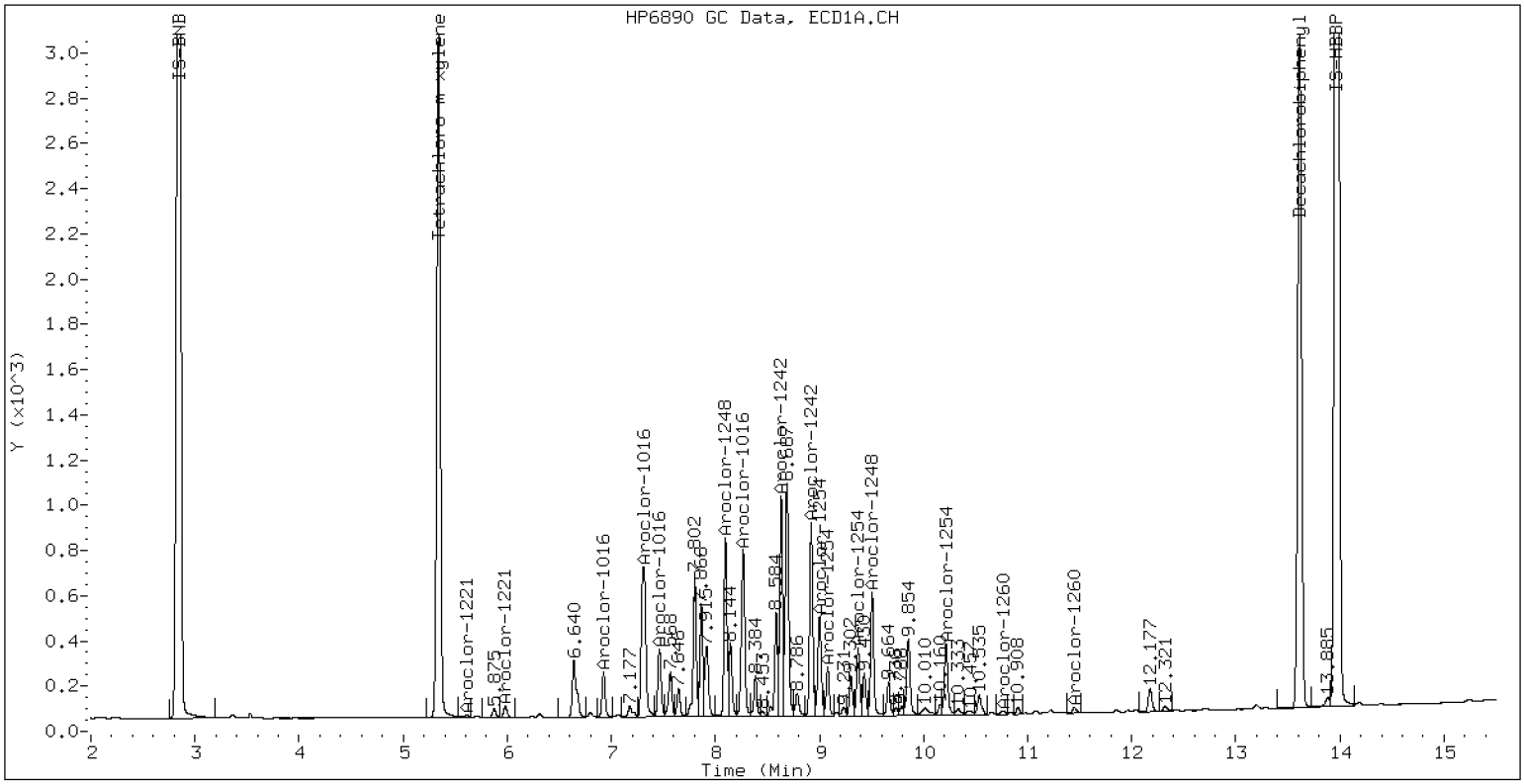
Total PCB Area Col2 (5.441 - 13.514) = 2103769 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

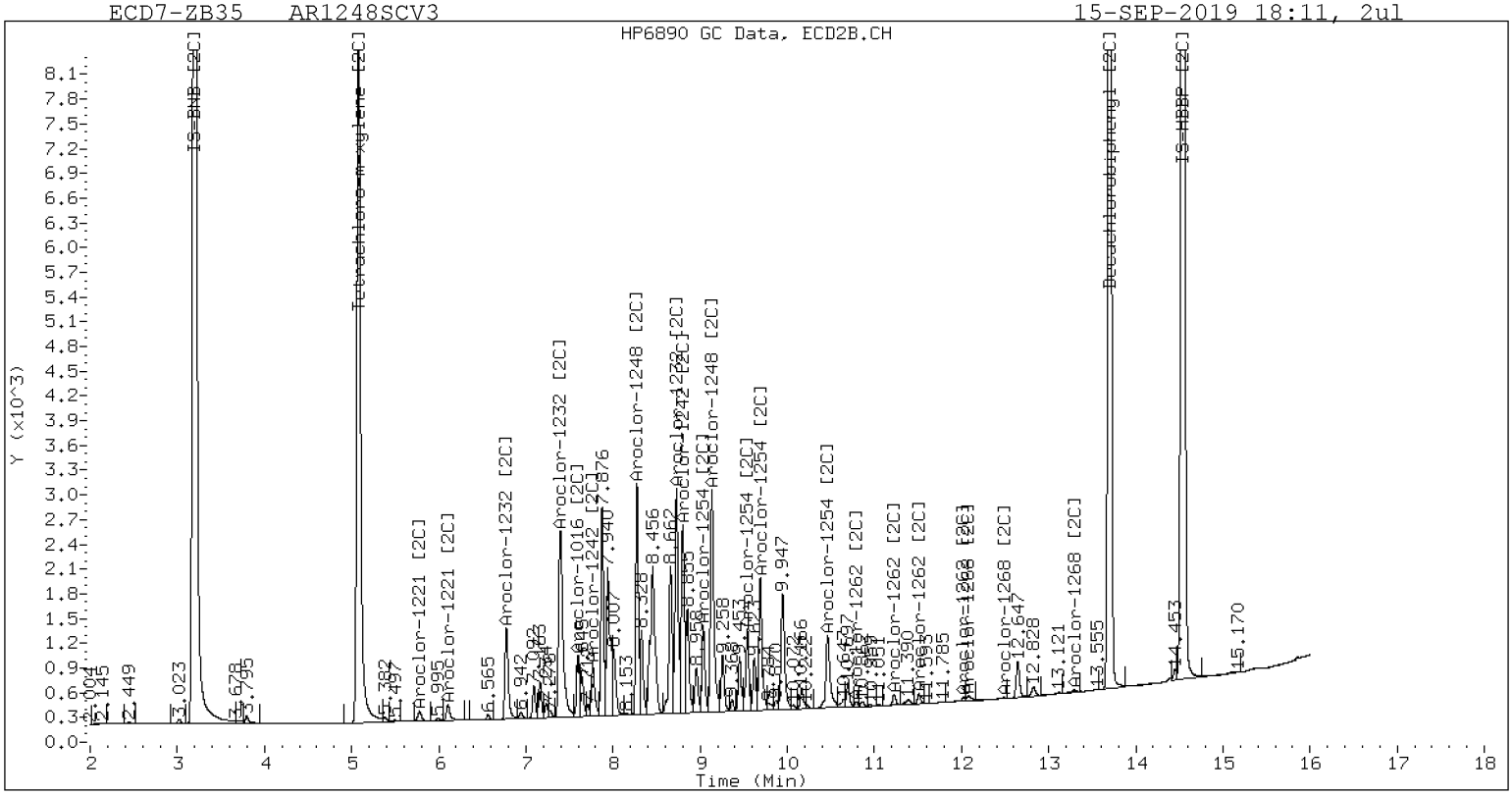
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV3 15-SEP-2019 18:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV3 15-SEP-2019 18:11, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091519ECD7.D
Data file 2: /20190915.b/20190915.b/19091519ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV4
Client ID:
Injection Date: 15-SEP-2019 18:32
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	142065	5.081	0.001	516612	40.3	37.6	7.0	Tetrachloro-m-xylene
13.614	-0.000	156661	13.701	-0.001	753354	36.4	33.9	7.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.8	94.0
Decachlorobiphenyl	90.9	84.7

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	284555	-34.2
Hexabromobiphenyl	517563	425678	-17.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1156822	-22.7
Hexabromobiphenyl	1404015	1159232	-17.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	6.778	-0.000	1021	1.8
Aroclor-1016	2	7.304	-0.009	1001	3.3	2	7.394	-0.004	4515	3.8
Aroclor-1016	3	---			0.0	3	7.602	0.004	728	1.5
Aroclor-1016	4	8.267	-0.000	4386	46.1	4	7.769	0.002	531	1.8
	Col1Ave: <3 Quant Peaks					Col2Ave: 2.2				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	5.782	0.024	6140	35.8
Aroclor-1221	3	---			0.0	3	6.116	0.012	1797	6.3
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	6.778	0.001	1021	4.2
Aroclor-1232	3	---			0.0	3	7.394	-0.003	4515	9.3
Aroclor-1232	4	---			0.0	4	8.729	0.000	65407	403.5
	Col1Ave: <3 Quant Peaks					Col2Ave: 139.0				
Aroclor-1242	1	---			0.0	1	6.778	-0.000	1021	2.3
Aroclor-1242	2	7.304	-0.010	1001	4.0	2	7.394	-0.004	4515	4.8
Aroclor-1242	3	8.632	0.001	20852	250.0	3	7.769	0.002	531	2.2
Aroclor-1242	4	8.925	0.005	11451	128.7	4	8.799	-0.002	20564	68.5
	Total Col1Ave (3 peaks): 127.6					Total Col2Ave (4 peaks): 19.4 RPD = 147*				
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks): 3.1				
Aroclor-1248	1	8.096	-0.000	11047	86.4	1	7.394	-0.001	4515	7.2
Aroclor-1248	2	8.632	0.001	20852	131.0	2	8.275	0.000	45204	95.3
Aroclor-1248	3	8.925	0.005	11451	77.3	3	8.799	-0.002	20564	43.0
Aroclor-1248	4	9.505	-0.001	73680	774.7	4	9.126	-0.009	84230	136.3
	Total Col1Ave (4 peaks): 267.3					Total Col2Ave (4 peaks): 70.4 RPD = 117*				
	Corrected Ave (3 peaks): 98.2					Corrected Ave (3 peaks): 48.5 RPD = 68*				
Aroclor-1254	1	9.002	-0.000	59931	250.0	1	9.036	-0.001	163998	255.8
Aroclor-1254	2	9.078	0.000	18717	253.2	2	9.126	-0.001	84230	258.3
Aroclor-1254	3	9.371	-0.000	35086	254.4	3	9.543	-0.000	130701	260.0
Aroclor-1254	4	9.505	0.000	73680	249.5	4	9.691	-0.001	256589	255.2
Aroclor-1254	5	10.211	0.001	49421	250.8	5	10.465	0.001	161017	259.2
	Total Col1Ave (5 peaks): 251.6					Total Col2Ave (5 peaks): 257.7 RPD = 2				
	Corrected Ave (4 peaks): 250.9					Corrected Ave (4 peaks): 257.1 RPD = 2				
Aroclor-1260	1	10.762	-0.002	2944	15.0	1	10.793	-0.001	12381	17.0
Aroclor-1260	2	11.081	0.001	3390	18.0	2	11.222	-0.011	72596	98.5
Aroclor-1260	3	11.449	-0.000	7822	16.4	3	11.509	-0.003	45240	24.5
Aroclor-1260	4	11.848	-0.000	7534	34.9	4	12.024	0.001	5827	10.1
Aroclor-1260	5	---			0.0	NS	---			----
	Total Col1Ave (4 peaks): 21.1					Total Col2Ave (4 peaks): 37.5 RPD = 56*				
	Corrected Ave (3 peaks): 16.4					Corrected Ave (3 peaks): 17.2 RPD = 5				
Aroclor-1262	1	11.081	0.001	3390	15.2	1	10.793	-0.001	12381	12.3
Aroclor-1262	2	11.449	-0.000	7822	14.2	2	11.222	-0.012	72596	84.4
Aroclor-1262	3	11.848	-0.001	7534	46.0	3	11.509	-0.001	45240	22.9
Aroclor-1262	4	---			0.0	4	12.024	0.000	5827	6.1
	Total Col1Ave (3 peaks): 25.1					Total Col2Ave (4 peaks): 31.4 RPD = 22				
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks): 13.8				
Aroclor-1268	1	---			0.0	1	12.024	0.001	5827	2.3
Aroclor-1268	2	---			0.0	2	12.074	-0.016	29049	11.6
Aroclor-1268	3	---			0.0	3	12.483	0.003	858	0.4
Aroclor-1268	4	---			0.0	4	13.296	-0.002	1169	0.1
	Col1Ave: <3 Quant Peaks					Col2Ave: 3.6				

Total PCB Area Col1 (5.441 - 13.514) = 702105 Col1 Total PCB = 0.3 ppm*

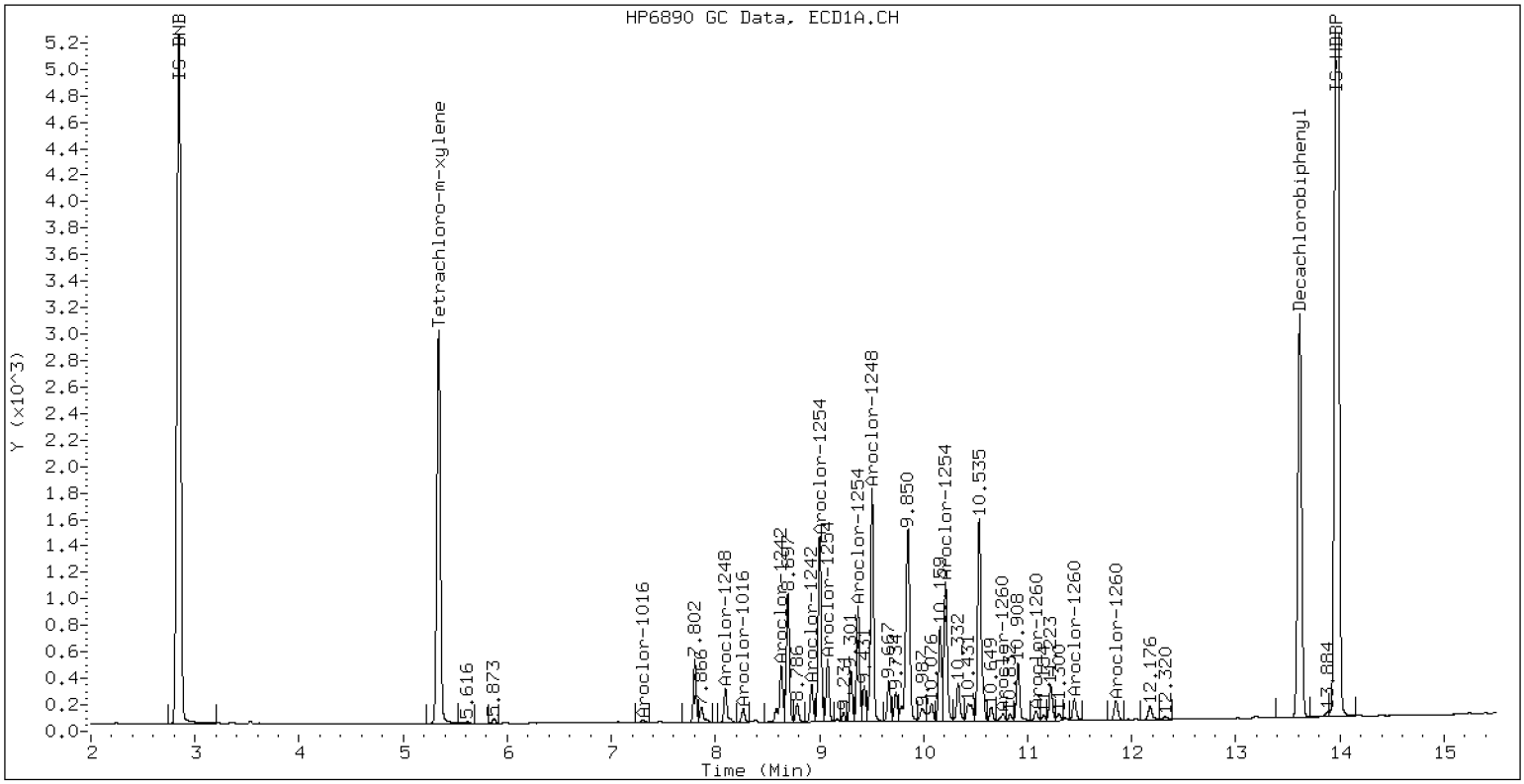
Total PCB Area Col2 (5.441 - 13.514) = 2618424 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

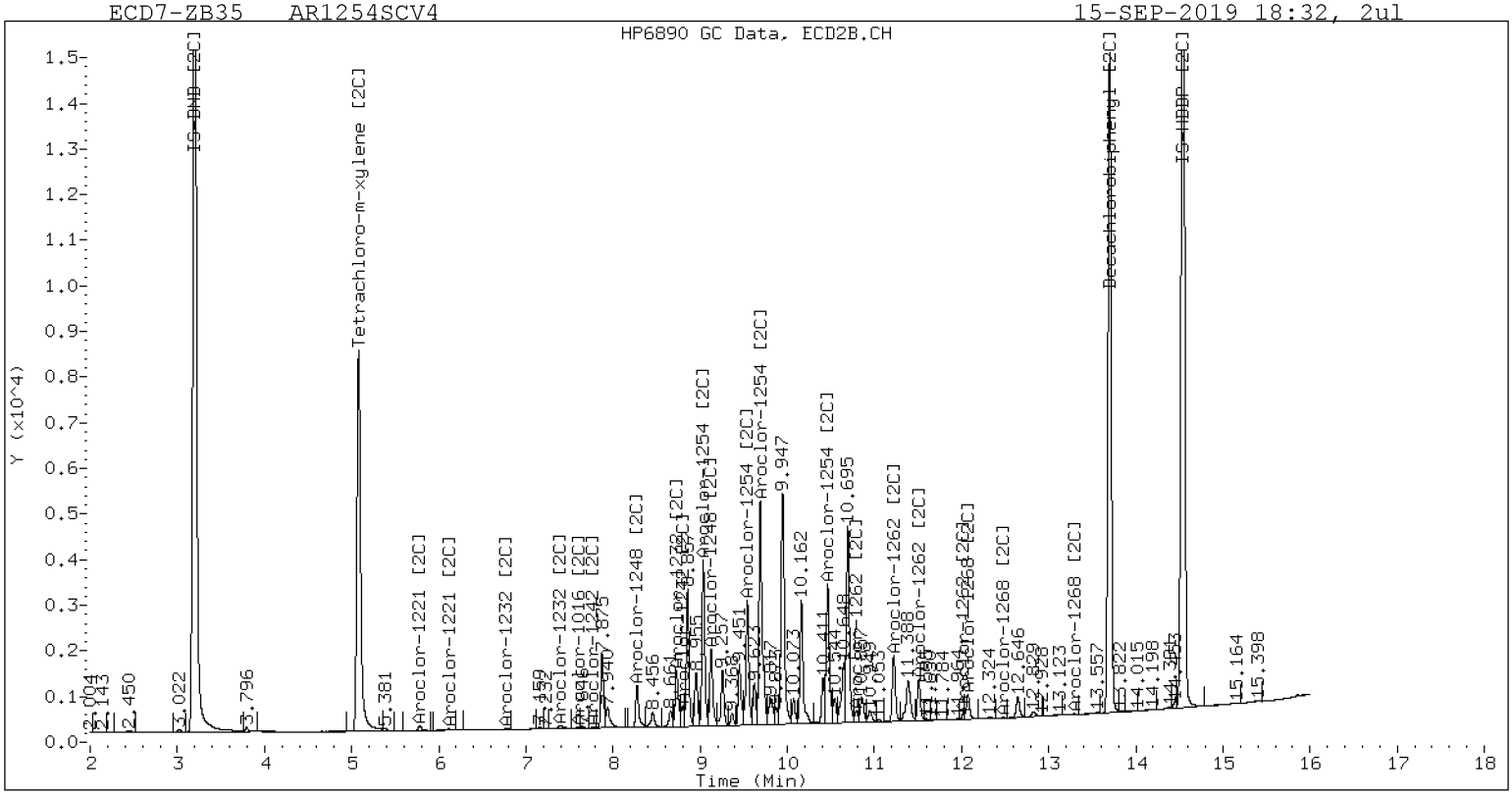
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV4 15-SEP-2019 18:32, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV4 15-SEP-2019 18:32, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091520ECD7.D
Data file 2: /20190915.b/20190915.b/19091520ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV5
Client ID:
Injection Date: 15-SEP-2019 18:53
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	146719	5.081	0.001	519721	41.9	39.8	5.2	Tetrachloro-m-xylene
13.614	-0.000	152896	13.700	-0.001	742387	35.9	33.8	6.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	104.8	99.5
Decachlorobiphenyl	89.7	84.4

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	282463	-34.7
Hexabromobiphenyl	517563	421281	-18.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1099699	-26.6
Hexabromobiphenyl	1404015	1145810	-18.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	6.926	0.000	1872	21.8	1	6.789	0.010	25015	45.7
Aroclor-1016	2	7.315	0.002	5616	18.4	2	7.400	0.002	25838	22.6
Aroclor-1016	3	7.460	-0.000	2502	21.8	3	7.600	0.003	12141	26.4
Aroclor-1016	4	8.268	0.000	1039	11.0	4	7.768	0.002	6755	23.5
Total Col1Ave (4 peaks):				18.3		Total Col2Ave (4 peaks):			29.5	RPD = 47*
Corrected Ave (3 peaks):				17.1		Corrected Ave (3 peaks):			24.2	RPD = 34
Aroclor-1221	1	4.185	0.001	5406	261.5	1	4.283	-0.000	20980	268.7
Aroclor-1221	2	5.711	-0.000	8273	257.8	2	5.758	-0.000	43022	263.9
Aroclor-1221	3	5.982	-0.001	21050	258.6	3	6.104	-0.001	72399	265.4
Total Col1Ave (3 peaks):				259.3		Total Col2Ave (3 peaks):			266.0	RPD = 3
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.185	0.001	5406	444.4	1	4.283	0.001	20980	450.7
Aroclor-1232	2	6.926	0.001	1872	58.3	2	6.789	0.012	25015	108.0
Aroclor-1232	3	7.315	0.002	5616	48.9	3	7.400	0.003	25838	55.7
Aroclor-1232	4	7.460	0.000	2502	58.1	4	8.730	0.001	6692	43.4
Total Col1Ave (4 peaks):				152.4		Total Col2Ave (4 peaks):			164.5	RPD = 8
Corrected Ave (3 peaks):				55.1		Corrected Ave (3 peaks):			69.0	RPD = 22
Aroclor-1242	1	6.926	0.000	1872	26.9	1	6.789	0.011	25015	60.0
Aroclor-1242	2	7.315	0.001	5616	22.4	2	7.400	0.002	25838	28.7
Aroclor-1242	3	8.634	0.002	1386	16.7	3	7.768	0.001	6755	29.4
Aroclor-1242	4	8.923	0.004	1556	17.6	4	8.802	0.002	3724	13.0
Total Col1Ave (4 peaks):				20.9		Total Col2Ave (4 peaks):			32.8	RPD = 44*
Corrected Ave (3 peaks):				18.9		Corrected Ave (3 peaks):			23.7	RPD = 23
Aroclor-1248	1	8.097	0.000	1229	9.7	1	7.400	0.005	25838	43.2
Aroclor-1248	2	8.634	0.002	1386	8.8	2	8.276	0.001	5926	13.1
Aroclor-1248	3	8.923	0.003	1556	10.6	3	8.802	0.002	3724	8.2
Aroclor-1248	4	9.476	-0.030	10150	107.5	4	9.133	-0.003	8590	14.6
Total Col1Ave (4 peaks):				34.1		Total Col2Ave (4 peaks):			19.8	RPD = 53*
Corrected Ave (3 peaks):				9.7		Corrected Ave (3 peaks):			12.0	RPD = 21
Aroclor-1254	1	9.004	0.002	7447	31.3	1	9.037	0.001	28859	47.4
Aroclor-1254	2	---			0.0	2	9.133	0.006	8590	27.7
Aroclor-1254	3	9.372	0.001	1574	11.5	3	9.544	0.000	7347	15.4
Aroclor-1254	4	9.476	-0.029	10150	34.6	4	9.733	0.041	117247	122.7
Aroclor-1254	5	10.158	-0.052	57397	293.4	5	10.468	0.004	28744	48.7
Total Col1Ave (4 peaks):				92.7		Total Col2Ave (5 peaks):			52.4	RPD = 56*
Corrected Ave (3 peaks):				25.8		Corrected Ave (4 peaks):			34.8	RPD = 30
Aroclor-1260	1	10.764	0.001	72353	371.9	1	10.794	-0.000	265507	368.3
Aroclor-1260	2	11.080	0.000	59517	319.1	2	11.234	0.001	228474	313.8
Aroclor-1260	3	11.450	0.000	141816	299.5	3	11.510	-0.002	510965	280.0
Aroclor-1260	4	11.849	0.000	43028	201.4	4	12.024	0.001	256630	451.9
Aroclor-1260	5	11.966	0.000	55865	552.4	NS	---			----
Total Col1Ave (5 peaks):				348.9		Total Col2Ave (4 peaks):			353.5	RPD = 1
Corrected Ave (4 peaks):				298.0		Corrected Ave (3 peaks):			320.7	RPD = 7
Aroclor-1262	1	11.080	0.000	59517	269.7	1	10.794	-0.000	265507	267.1
Aroclor-1262	2	11.450	0.000	141816	259.6	2	11.234	-0.001	228474	268.8
Aroclor-1262	3	11.849	-0.001	43028	265.2	3	11.510	-0.000	510965	262.1
Aroclor-1262	4	11.966	0.000	55865	271.7	4	12.024	-0.000	256630	269.9
Total Col1Ave (4 peaks):				266.5		Total Col2Ave (4 peaks):			267.0	RPD = 0
Corrected Ave (3 peaks):				264.8		Corrected Ave (3 peaks):			266.0	RPD = 0
Aroclor-1268	1	11.966	0.000	55865	86.3	1	12.024	0.000	256630	104.0
Aroclor-1268	2	12.038	0.002	57038	97.6	2	12.085	-0.005	364662	147.2
Aroclor-1268	3	12.438	0.015	20392	41.3	3	12.478	-0.002	16839	7.5
Aroclor-1268	4	13.206	-0.001	16188	10.4	4	13.294	-0.004	80522	10.1
Total Col1Ave (4 peaks):				58.9		Total Col2Ave (4 peaks):			67.2	RPD = 13

Corrected Ave (3 peaks): 46.0 Corrected Ave (3 peaks): 40.5 RPD = 13

Total PCB Area Col1 (5.441 - 13.514) = 953031 Col1 Total PCB = 0.4 ppm*

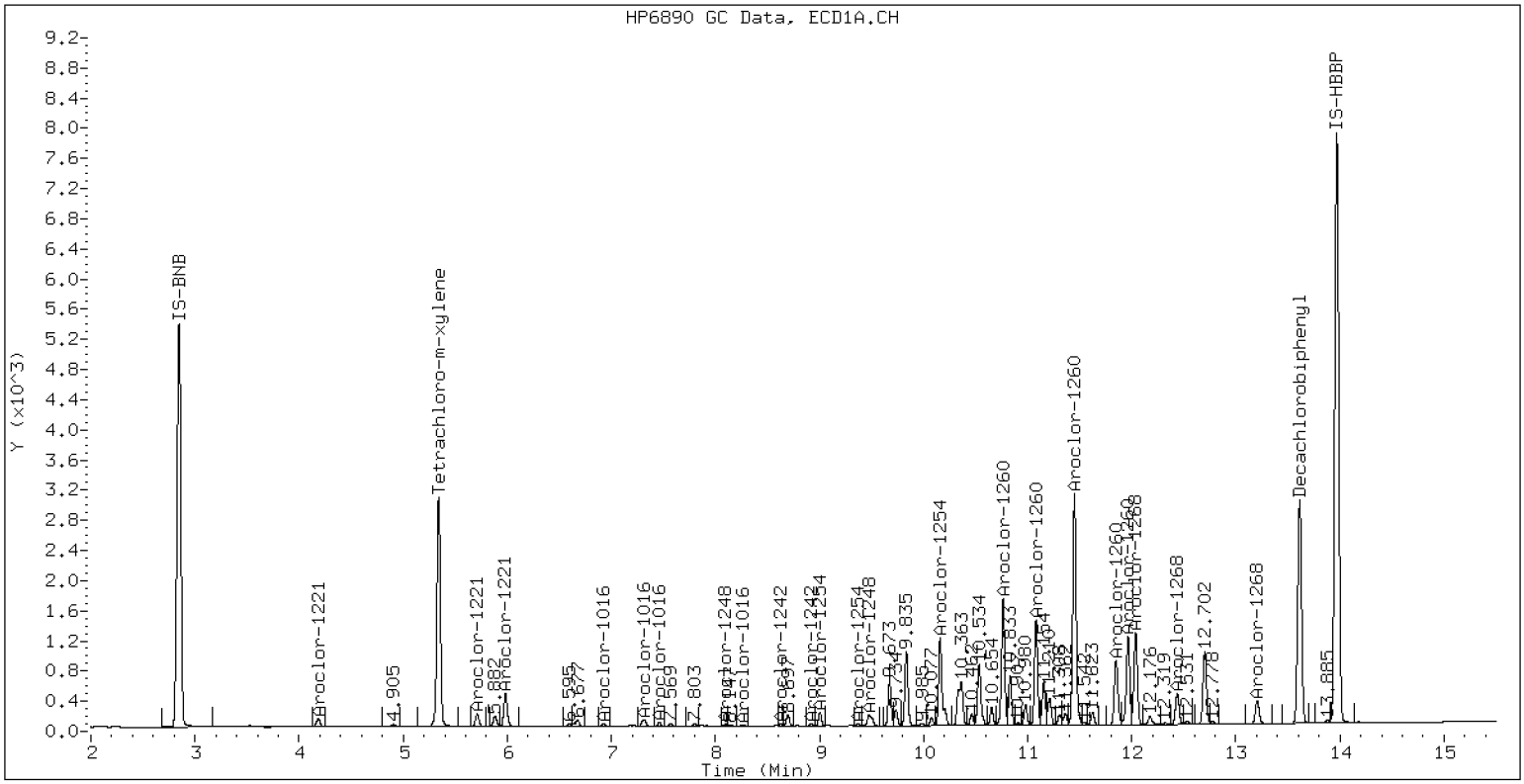
Total PCB Area Col2 (5.441 - 13.514) = 3754639 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

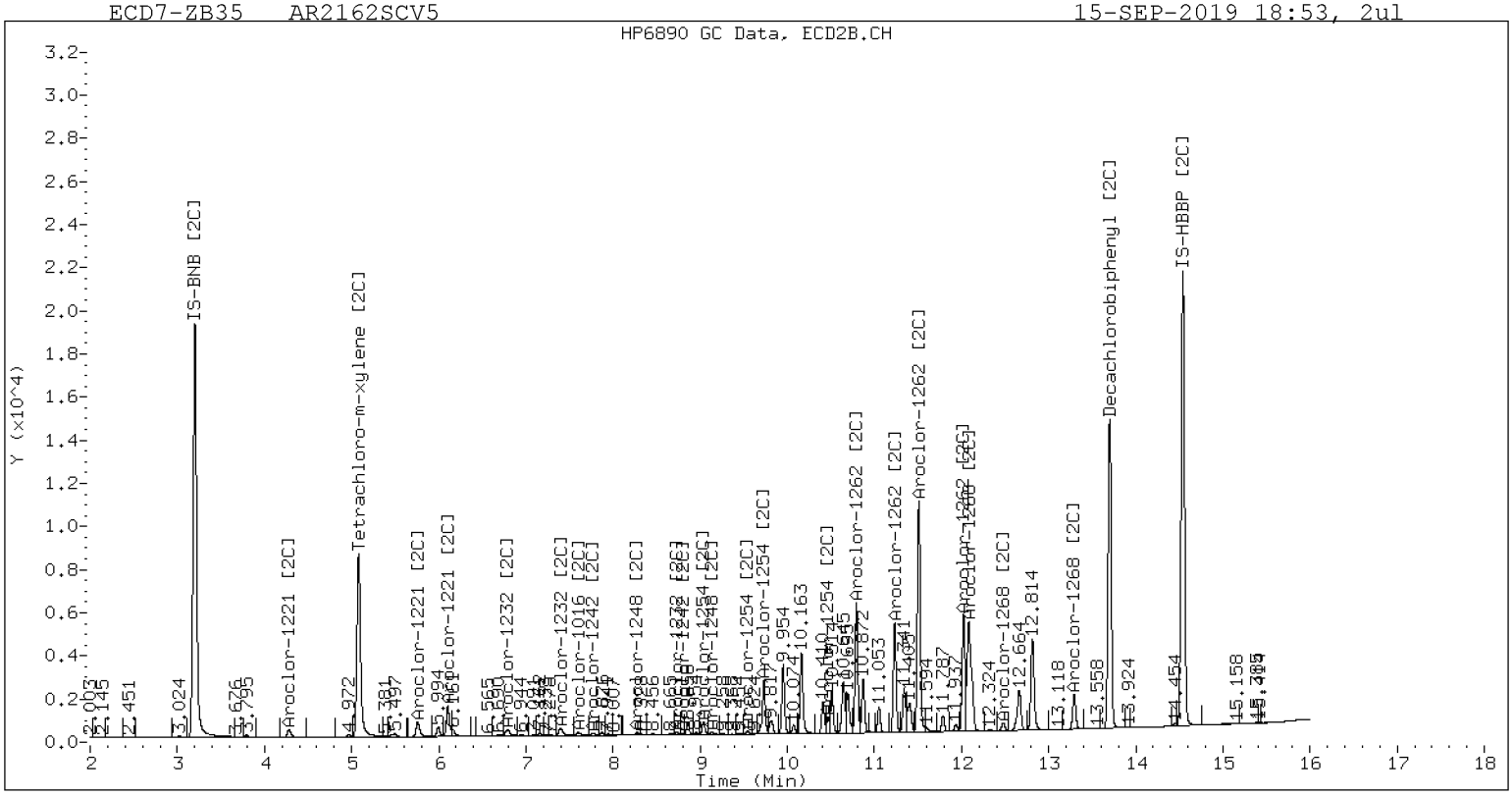
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV5 15-SEP-2019 18:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV5 15-SEP-2019 18:53, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091521ECD7.D
Data file 2: /20190915.b/20190915.b/19091521ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV6
Client ID:
Injection Date: 15-SEP-2019 19:14
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	141373	5.081	0.001	505294	40.3	37.8	6.4	Tetrachloro-m-xylene
13.614	0.000	214658	13.702	-0.000	1059666	50.0	47.8	4.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.7	94.4
Decachlorobiphenyl	125.0	119.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283260	-34.5
Hexabromobiphenyl	517563	424464	-18.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1126107	-24.8
Hexabromobiphenyl	1404015	1155245	-17.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.926	-0.000	9622	112.0	1	6.779	0.000	68458	122.2
Aroclor-1016	2	7.314	0.001	33292	108.9	2	7.399	0.001	134510	115.0
Aroclor-1016	3	7.460	0.000	12616	109.4	3	7.599	0.001	54238	115.0
Aroclor-1016	4	8.268	0.000	10808	114.2	4	7.767	0.000	34263	116.3
Total Col1Ave (4 peaks):					111.1	Total Col2Ave (4 peaks):				117.1 RPD = 5
Corrected Ave (3 peaks):					110.1	Corrected Ave (3 peaks):				115.4 RPD = 5
Aroclor-1221	1	4.185	0.000	3178	153.3	1	4.283	-0.001	12766	159.7
Aroclor-1221	2	5.711	-0.001	4834	150.2	2	5.760	0.002	27761	166.3
Aroclor-1221	3	5.982	-0.001	16410	201.0	3	6.104	-0.000	70670	253.0
Total Col1Ave (3 peaks):					168.2	Total Col2Ave (3 peaks):				193.0 RPD = 14
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.185	0.001	3178	260.5	1	4.283	0.001	12766	267.8
Aroclor-1232	2	6.926	0.001	9622	298.8	2	6.779	0.002	68458	288.5
Aroclor-1232	3	7.314	0.001	33292	289.3	3	7.399	0.002	134510	283.4
Aroclor-1232	4	7.460	0.000	12616	292.4	4	8.729	0.000	37553	238.0
Total Col1Ave (4 peaks):					285.2	Total Col2Ave (4 peaks):				269.4 RPD = 6
Corrected Ave (3 peaks):					280.7	Corrected Ave (3 peaks):				263.1 RPD = 6
Aroclor-1242	1	6.926	0.000	9622	138.1	1	6.779	0.001	68458	160.4
Aroclor-1242	2	7.314	-0.000	33292	132.2	2	7.399	0.001	134510	145.9
Aroclor-1242	3	8.632	0.001	9671	116.5	3	7.767	0.000	34263	145.8
Aroclor-1242	4	8.920	0.001	10040	113.4	4	8.802	0.001	37955	129.8
Total Col1Ave (4 peaks):					125.0	Total Col2Ave (4 peaks):				145.5 RPD = 15
Corrected Ave (3 peaks):					120.7	Corrected Ave (3 peaks):				140.5 RPD = 15
Aroclor-1248	1	8.096	-0.000	9055	71.1	1	7.399	0.004	134510	219.7
Aroclor-1248	2	8.632	0.000	9671	61.0	2	8.275	0.000	39058	84.6
Aroclor-1248	3	8.920	0.000	10040	68.1	3	8.802	0.001	37955	81.6
Aroclor-1248	4	9.506	0.000	3395	35.9	4	9.138	0.003	44105	73.3
Total Col1Ave (4 peaks):					59.0	Total Col2Ave (4 peaks):				114.8 RPD = 64*
Corrected Ave (3 peaks):					55.0	Corrected Ave (3 peaks):				79.8 RPD = 37
Aroclor-1254	1	9.001	-0.001	3344	14.0	1	9.038	0.001	8654	13.9
Aroclor-1254	2	9.078	0.000	1342	18.2	2	9.138	0.011	44105	138.9
Aroclor-1254	3	9.372	0.001	1692	12.3	3	9.544	0.001	7982	16.3
Aroclor-1254	4	9.506	0.001	3395	11.5	4	9.692	0.001	13501	13.8
Aroclor-1254	5	10.215	0.004	2260	11.5	5	10.468	0.004	5584	9.2
Total Col1Ave (5 peaks):					13.5	Total Col2Ave (5 peaks):				38.4 RPD = 96*
Corrected Ave (4 peaks):					12.4	Corrected Ave (4 peaks):				13.3 RPD = 7
Aroclor-1260	1	10.764	0.000	36154	184.4	1	10.794	-0.000	139310	191.7
Aroclor-1260	2	11.080	-0.000	3230	17.2	2	11.237	0.004	167894	228.7
Aroclor-1260	3	11.449	-0.001	22521	47.2	3	11.510	-0.002	92070	50.0
Aroclor-1260	4	---			0.0	4	12.023	0.001	671734	1173.3
Aroclor-1260	5	11.966	0.001	178894	1755.7	NS	---			----
Total Col1Ave (4 peaks):					501.1	Total Col2Ave (4 peaks):				410.9 RPD = 20
Corrected Ave (3 peaks):					82.9	Corrected Ave (3 peaks):				156.8 RPD = 62*
Aroclor-1262	1	11.080	-0.000	3230	14.5	1	10.794	-0.000	139310	139.0
Aroclor-1262	2	11.449	-0.000	22521	40.9	2	11.237	0.003	167894	195.9
Aroclor-1262	3	---			0.0	3	11.510	-0.001	92070	46.8
Aroclor-1262	4	11.966	0.001	178894	863.5	4	12.023	-0.000	671734	700.6
Total Col1Ave (3 peaks):					306.3	Total Col2Ave (4 peaks):				270.6 RPD = 12
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				127.2
Aroclor-1268	1	11.966	0.001	178894	274.2	1	12.023	0.000	671734	270.0
Aroclor-1268	2	12.037	0.001	179024	303.9	2	12.090	0.000	760106	304.4
Aroclor-1268	3	12.424	0.001	121349	243.7	3	12.480	-0.000	546687	241.7
Aroclor-1268	4	13.207	0.000	359555	228.4	4	13.297	0.000	1841105	229.6
Total Col1Ave (4 peaks):					262.6	Total Col2Ave (4 peaks):				261.4 RPD = 0

Corrected Ave (3 peaks): 248.8 Corrected Ave (3 peaks): 247.1 RPD = 1

Total PCB Area Col1 (5.441 - 13.514) = 1291499 Col1 Total PCB = 0.5 ppm*

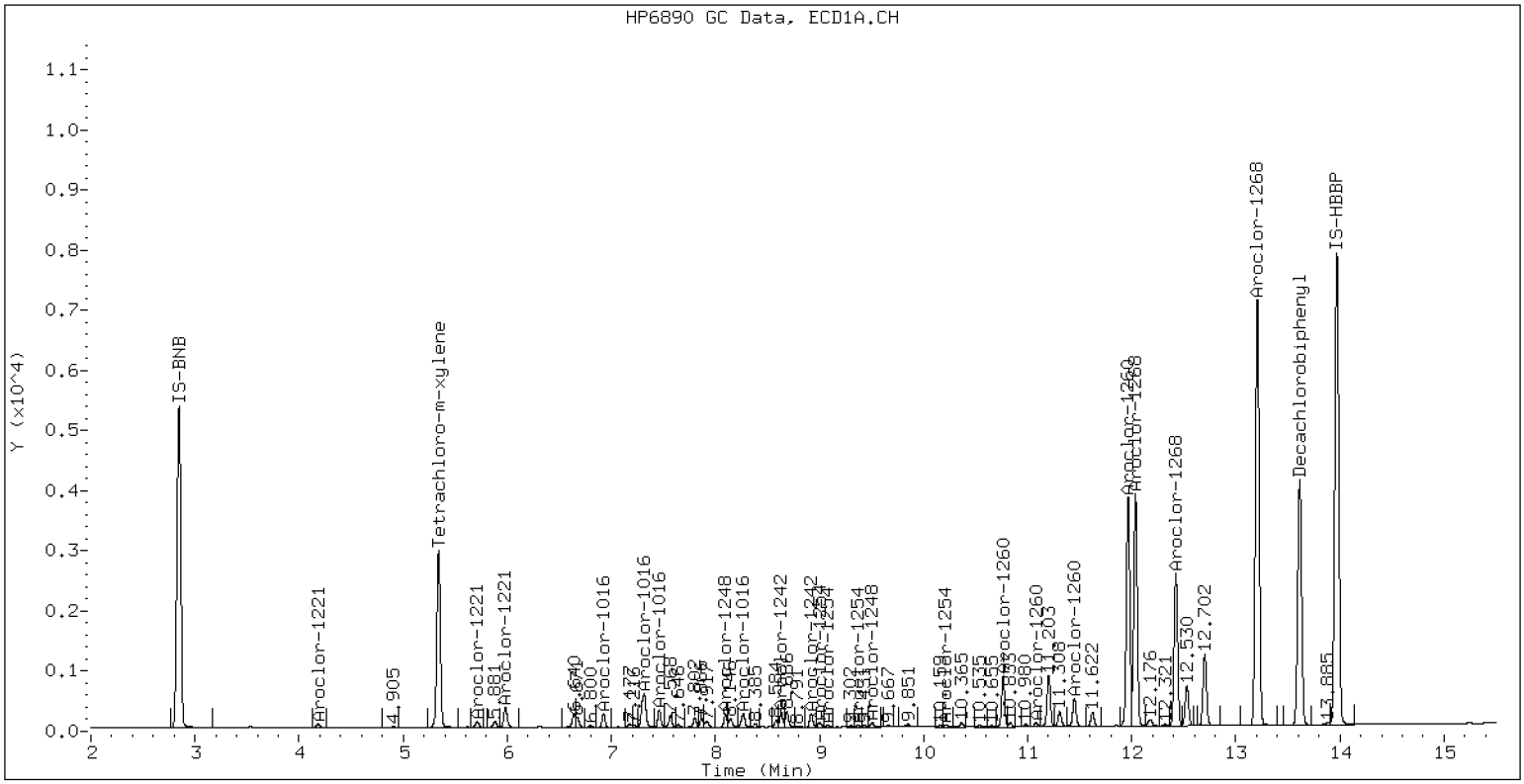
Total PCB Area Col2 (5.441 - 13.514) = 5756571 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

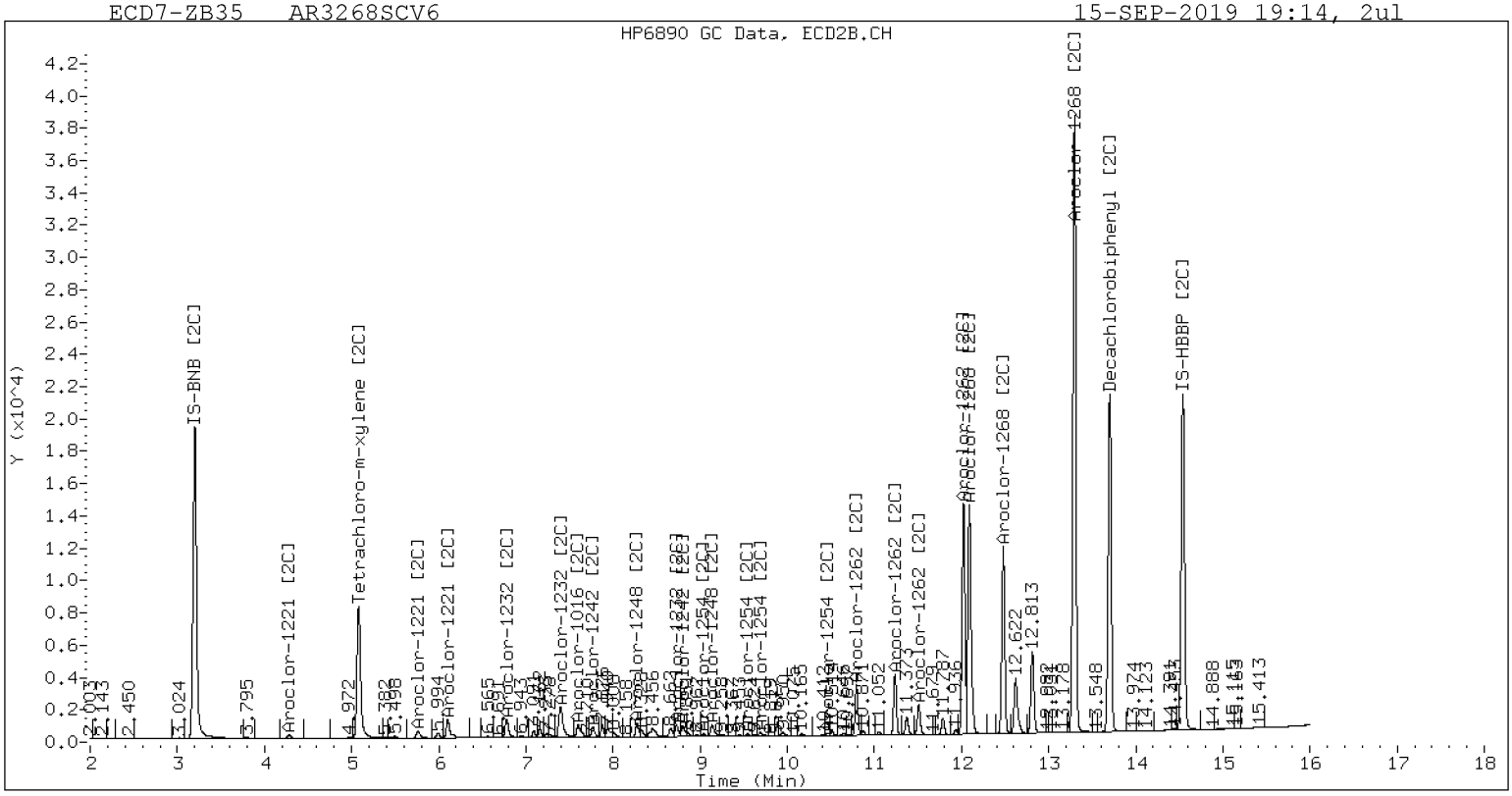
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV6 15-SEP-2019 19:14, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV6 15-SEP-2019 19:14, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /20190915.b/19091522ECD7.D ARI ID: 0.1 PPM DDTS

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
8.970	0.000	395765	9.507	0.000	2862423	0.100	0.100	0.0	2,4-DDE
10.017	0.000	449432	10.254	0.000	4084188	0.100	0.200#	66.7*	2,4-DDT
9.394	0.000	704657	9.789	0.000	1497198	0.100	0.100	0.0	4,4-DDE
9.962	0.000	644061	10.254	0.000	4084188	0.100	0.200#	66.7*	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /20190915.b/19091523ECD7.D ARI ID: DDT BD

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
0.000	-8.970	0	9.513	0.007	9914	0.000	0.000	----	2,4-DDE
0.000	-10.017	0	10.261	0.006	140848	0.000	0.010#	----	2,4-DDT
9.401	0.007	1870	9.881	0.092	1712	0.000	0.000	82.2*	4,4-DDE
9.970	0.008	30501	10.261	0.006	140848	0.007	0.010#	34.1	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 19J0249
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Calibration: CI00052
Laboratory ID: SHI0216-SCV1
Sequence: SHI0216
Sequence Name: AR1660SCV1
Standard ID: H004289

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1016	250.00	263	5.3	20.00
Aroclor 1016 [2C]	250.00	252	0.7	20.00
Aroclor 1260	250.00	266	6.5	20.00
Aroclor 1260 [2C]	250.00	256	2.5	20.00
Decachlorobiphenyl	40.000	36.6	-8.6	20.00
Tetrachlorometaxylene	40.000	41.8	4.5	20.00
Decachlorobiphenyl [2C]	40.000	34.1	-14.8	20.00
Tetrachlorometaxylene [2C]	40.000	39.0	-2.5	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091516ECD7.D
Data file 2: /20190915.b/20190915.b/19091516ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV1
Client ID:
Injection Date: 15-SEP-2019 17:29
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.340	-0.000	139282	5.079	-0.001	501326	41.8	39.0	6.9	Tetrachloro-m-xylene
13.614	0.000	147529	13.700	-0.002	704171	36.6	34.1	7.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	104.5	97.5
Decachlorobiphenyl	91.4	85.2

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	269047	2.3
Hexabromobiphenyl	382688	398753	4.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1081674	-0.0
Hexabromobiphenyl	1006687	1076917	7.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.925	-0.001	20670	253.2	1	6.777	-0.001	131932	245.2
Aroclor-1016	2	7.313	-0.000	75492	260.0	2	7.398	-0.000	284758	253.4
Aroclor-1016	3	7.459	-0.001	27940	255.2	3	7.598	0.001	114982	253.9
Aroclor-1016	4	8.267	-0.001	25628	285.0	4	7.766	-0.001	72012	254.6
Total Col1Ave (4 peaks): 263.4						Total Col2Ave (4 peaks): 251.8 RPD = 5				
Corrected Ave (3 peaks): 256.1						Corrected Ave (3 peaks): 250.8 RPD = 2				
Aroclor-1221	1	---			0.0	1	4.281	-0.002	714	9.3
Aroclor-1221	2	5.708	-0.003	2518	82.4	2	5.762	0.004	17203	107.3
Aroclor-1221	3	5.981	-0.002	14494	186.9	3	6.103	-0.001	63127	235.2
Col1Ave: <3 Quant Peaks						Col2Ave: 117.3				
Aroclor-1232	1	---			0.0	1	4.281	-0.001	714	15.6
Aroclor-1232	2	6.925	0.000	20670	675.7	2	6.777	0.000	131932	578.9
Aroclor-1232	3	7.313	0.000	75492	690.6	3	7.398	0.001	284758	624.5
Aroclor-1232	4	7.459	-0.000	27940	681.7	4	8.728	-0.001	16488	108.8
Total Col1Ave (3 peaks): 682.7						Total Col2Ave (4 peaks): 332.0 RPD = 69*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 234.4				
Aroclor-1242	1	6.925	-0.000	20670	312.2	1	6.777	-0.001	131932	321.7
Aroclor-1242	2	7.313	-0.001	75492	315.5	2	7.398	0.000	284758	321.6
Aroclor-1242	3	8.632	0.000	3823	48.5	3	7.766	-0.001	72012	319.0
Aroclor-1242	4	8.924	0.005	1968	23.4	4	8.799	-0.001	10146	36.1
Total Col1Ave (4 peaks): 174.9						Total Col2Ave (4 peaks): 249.6 RPD = 35				
Corrected Ave (3 peaks): 128.0						Corrected Ave (3 peaks): 225.6 RPD = 55*				
Aroclor-1248	1	8.096	-0.001	20862	172.5	1	7.398	0.003	284758	484.2
Aroclor-1248	2	8.632	0.000	3823	25.4	2	8.275	-0.000	86975	196.1
Aroclor-1248	3	8.924	0.004	1968	14.1	3	8.799	-0.001	10146	22.7
Aroclor-1248	4	9.478	-0.028	15140	168.4	4	9.135	-0.000	5011	8.7
Total Col1Ave (4 peaks): 95.1						Total Col2Ave (4 peaks): 177.9 RPD = 61*				
Corrected Ave (3 peaks): 69.3						Corrected Ave (3 peaks): 75.8 RPD = 9				
Aroclor-1254	1	9.004	0.002	13997	61.7	1	9.036	-0.000	52182	87.1
Aroclor-1254	2	---			0.0	2	9.135	0.008	5011	16.4
Aroclor-1254	3	9.372	0.001	2241	17.2	3	9.544	0.001	8366	17.8
Aroclor-1254	4	9.478	-0.027	15140	54.2	4	9.732	0.041	121876	129.6
Aroclor-1254	5	10.158	-0.053	79007	424.0	5	10.467	0.003	54907	94.5
Total Col1Ave (4 peaks): 139.3						Total Col2Ave (5 peaks): 69.1 RPD = 67*				
Corrected Ave (3 peaks): 44.4						Corrected Ave (4 peaks): 54.0 RPD = 19				
Aroclor-1260	1	10.763	-0.000	47502	257.9	1	10.793	-0.001	173400	255.9
Aroclor-1260	2	11.079	-0.001	47459	268.8	2	11.232	-0.001	175778	256.8
Aroclor-1260	3	11.449	-0.000	124200	277.2	3	11.510	-0.002	444580	259.2
Aroclor-1260	4	11.849	0.000	56510	279.5	4	12.023	0.000	135226	253.4
Aroclor-1260	5	11.965	-0.000	23732	247.9	NS	---			----
Total Col1Ave (5 peaks): 266.3						Total Col2Ave (4 peaks): 256.3 RPD = 4				
Corrected Ave (4 peaks): 263.0						Corrected Ave (3 peaks): 255.4 RPD = 3				
Aroclor-1262	1	11.079	-0.001	47459	227.2	1	10.793	-0.001	173400	185.6
Aroclor-1262	2	11.449	-0.000	124200	240.2	2	11.232	-0.002	175778	220.0
Aroclor-1262	3	11.849	-0.001	56510	368.0	3	11.510	-0.001	444580	242.6
Aroclor-1262	4	11.965	-0.000	23732	121.9	4	12.023	-0.001	135226	151.3
Total Col1Ave (4 peaks): 239.3						Total Col2Ave (4 peaks): 199.9 RPD = 18				
Corrected Ave (3 peaks): 196.4						Corrected Ave (3 peaks): 185.6 RPD = 6				
Aroclor-1268	1	11.965	-0.000	23732	38.7	1	12.023	-0.001	135226	58.3
Aroclor-1268	2	12.038	0.002	29014	52.4	2	12.078	-0.013	289317	124.3
Aroclor-1268	3	12.438	0.015	12219	26.1	3	12.479	-0.002	4945	2.3
Aroclor-1268	4	13.205	-0.002	5597	3.8	4	13.293	-0.004	26676	3.6
Total Col1Ave (4 peaks): 30.3						Total Col2Ave (4 peaks): 47.1 RPD = 44*				
Corrected Ave (3 peaks): 22.9						Corrected Ave (3 peaks): 21.4 RPD = 7				

Total PCB Area Col1 (5.441 - 13.514) = 1171435 Col1 Total PCB = 0.5 ppm*

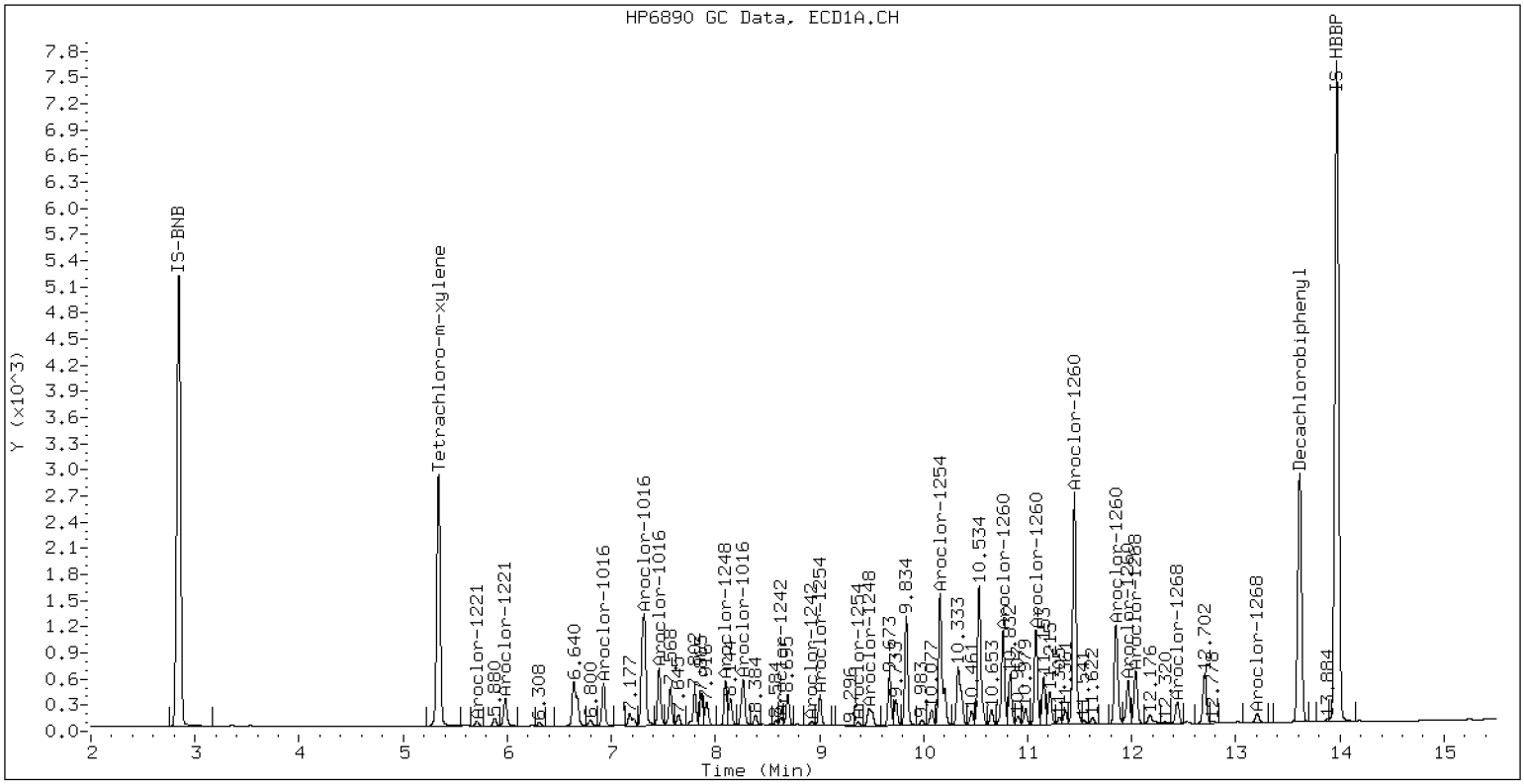
Total PCB Area Col2 (5.441 - 13.514) = 4394557 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

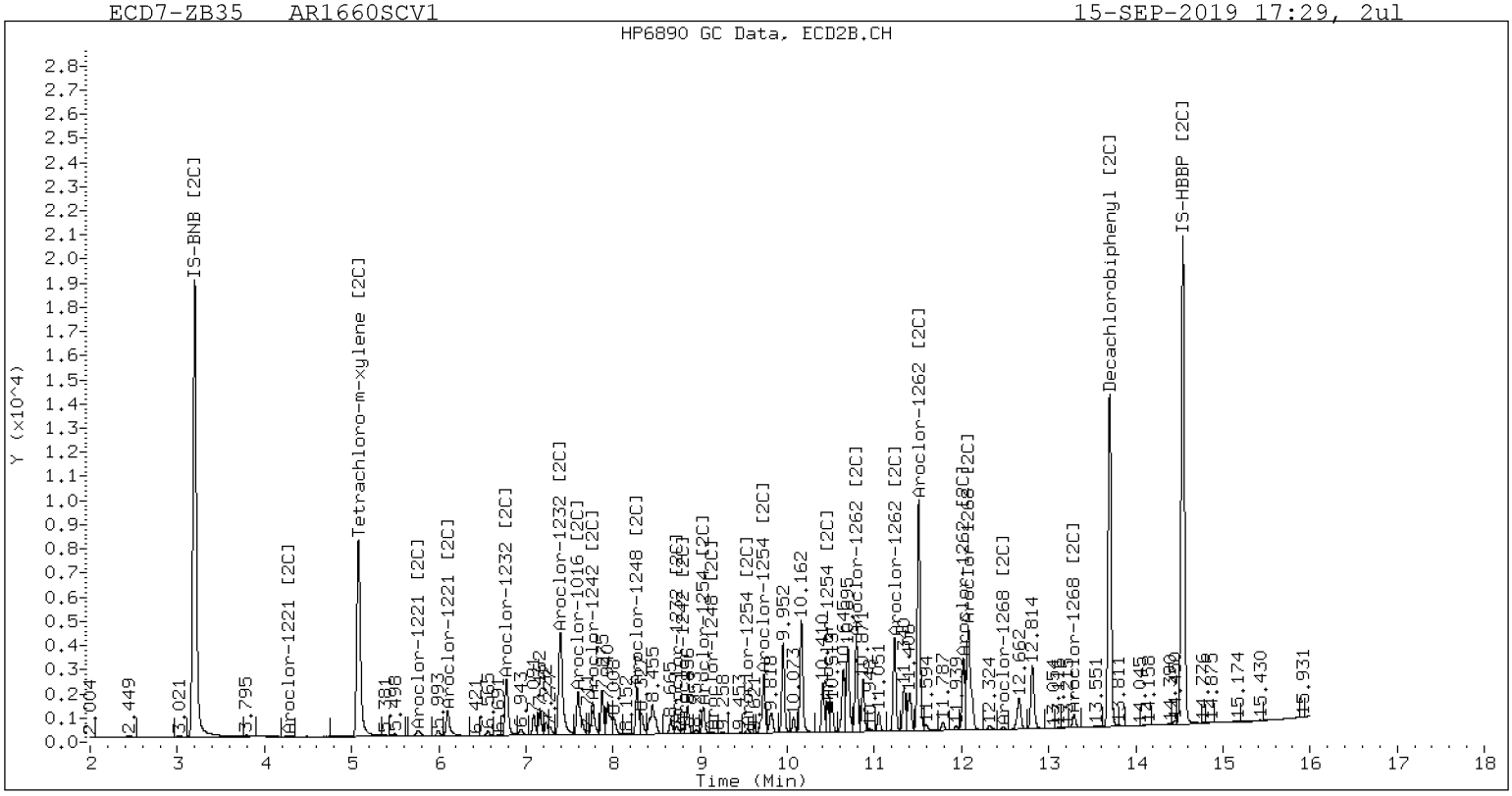
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV1 15-SEP-2019 17:29, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV1 15-SEP-2019 17:29, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 19J0249
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Calibration: CI00052
Laboratory ID: SHI0216-SCV2
Sequence: SHI0216
Sequence Name: AR1242SCV2
Standard ID: H004290

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1242	250.00	242	-3.3	20.00
Aroclor 1242 [2C]	250.00	243	-2.7	20.00
Decachlorobiphenyl	40.000	36.7	-8.3	20.00
Tetrachlorometaxylene	40.000	41.3	3.3	20.00
Decachlorobiphenyl [2C]	40.000	33.8	-15.5	20.00
Tetrachlorometaxylene [2C]	40.000	38.1	-4.7	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091517ECD7.D
Data file 2: /20190915.b/20190915.b/19091517ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV2
Client ID:
Injection Date: 15-SEP-2019 17:50
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000	141558	5.080	0.000	512417	41.3	38.1	8.1	Tetrachloro-m-xylene
13.614	0.000	154315	13.701	-0.000	730054	36.7	33.8	8.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	103.3	95.3
Decachlorobiphenyl	91.7	84.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	276605	-36.0
Hexabromobiphenyl	517563	415898	-19.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1131917	-24.4
Hexabromobiphenyl	1404015	1125325	-19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.925	-0.000	16898	201.3	1	6.778	-0.001	106681	189.5
Aroclor-1016	2	7.313	-0.000	60035	201.1	2	7.398	0.000	229278	195.0
Aroclor-1016	3	7.460	0.000	22476	199.7	3	7.598	0.000	92364	194.9
Aroclor-1016	4	8.267	-0.001	22168	239.8	4	7.767	-0.000	57828	195.4
Total Col1Ave (4 peaks): 210.5						Total Col2Ave (4 peaks): 193.7 RPD = 8				
Corrected Ave (3 peaks): 200.7						Corrected Ave (3 peaks): 193.1 RPD = 4				
Aroclor-1221	1	---			0.0	1	4.287	0.003	465	5.8
Aroclor-1221	2	5.709	-0.003	1988	63.3	2	5.768	0.010	14831	88.4
Aroclor-1221	3	5.981	-0.002	11461	143.8	3	6.104	-0.000	51036	181.7
Col1Ave: <3 Quant Peaks						Col2Ave: 92.0				
Aroclor-1232	1	---			0.0	1	4.287	0.005	465	9.7
Aroclor-1232	2	6.925	0.000	16898	537.3	2	6.778	0.001	106681	447.3
Aroclor-1232	3	7.313	0.000	60035	534.2	3	7.398	0.001	229278	480.5
Aroclor-1232	4	7.460	0.000	22476	533.4	4	8.729	-0.000	71208	449.0
Total Col1Ave (3 peaks): 535.0						Total Col2Ave (4 peaks): 346.6 RPD = 43*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 302.0				
Aroclor-1242	1	6.925	-0.000	16898	248.3	1	6.778	-0.000	106681	248.6
Aroclor-1242	2	7.313	-0.001	60035	244.1	2	7.398	0.000	229278	247.4
Aroclor-1242	3	8.632	0.000	19399	239.2	3	7.767	-0.001	57828	244.8
Aroclor-1242	4	8.920	0.000	20377	235.7	4	8.801	0.000	68184	232.0
Total Col1Ave (4 peaks): 241.8						Total Col2Ave (4 peaks): 243.2 RPD = 1				
Corrected Ave (3 peaks): 239.7						Corrected Ave (3 peaks): 241.4 RPD = 1				
Aroclor-1248	1	8.096	-0.001	17908	144.1	1	7.398	0.003	229278	372.5
Aroclor-1248	2	8.632	0.000	19399	125.4	2	8.275	0.000	73096	157.5
Aroclor-1248	3	8.920	-0.000	20377	141.5	3	8.801	0.000	68184	145.8
Aroclor-1248	4	9.506	-0.000	11216	121.3	4	9.136	0.001	86440	142.9
Total Col1Ave (4 peaks): 133.1						Total Col2Ave (4 peaks): 204.7 RPD = 42*				
Corrected Ave (3 peaks): 129.4						Corrected Ave (3 peaks): 148.8 RPD = 14				
Aroclor-1254	1	9.001	-0.001	9693	41.6	1	9.036	-0.001	25152	40.1
Aroclor-1254	2	9.078	-0.000	4295	59.8	2	9.136	0.009	86440	270.9
Aroclor-1254	3	9.371	0.000	5872	43.8	3	9.543	-0.000	23570	47.9
Aroclor-1254	4	9.506	0.001	11216	39.1	4	9.691	-0.000	37432	38.0
Aroclor-1254	5	10.215	0.005	7428	38.8	5	10.465	0.002	27749	45.7
Total Col1Ave (5 peaks): 44.6						Total Col2Ave (5 peaks): 88.5 RPD = 66*				
Corrected Ave (4 peaks): 40.8						Corrected Ave (4 peaks): 42.9 RPD = 5				
Aroclor-1260	1	---			0.0	1	10.795	0.000	925	1.3
Aroclor-1260	2	---			0.0	2	11.225	-0.008	5685	7.9
Aroclor-1260	3	---			0.0	3	11.512	-0.000	3227	1.8
Aroclor-1260	4	---			0.0	4	12.077	0.054	2320	4.2
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 3.8				
Aroclor-1262	1	---			0.0	1	10.795	0.000	925	0.9
Aroclor-1262	2	---			0.0	2	11.225	-0.010	5685	6.8
Aroclor-1262	3	---			0.0	3	11.512	0.001	3227	1.7
Aroclor-1262	4	---			0.0	4	12.077	0.053	2320	2.5
Col1Ave: <3 Quant Peaks						Col2Ave: 3.0				
Aroclor-1268	1	---			0.0	1	12.077	0.054	2320	1.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	12.484	0.003	1021	0.5
Aroclor-1268	4	---			0.0	4	13.300	0.003	911	0.1
Col1Ave: <3 Quant Peaks						Col2Ave: 0.5				

Total PCB Area Col1 (5.441 - 13.514) = 432451 Col1 Total PCB = 0.2 ppm*

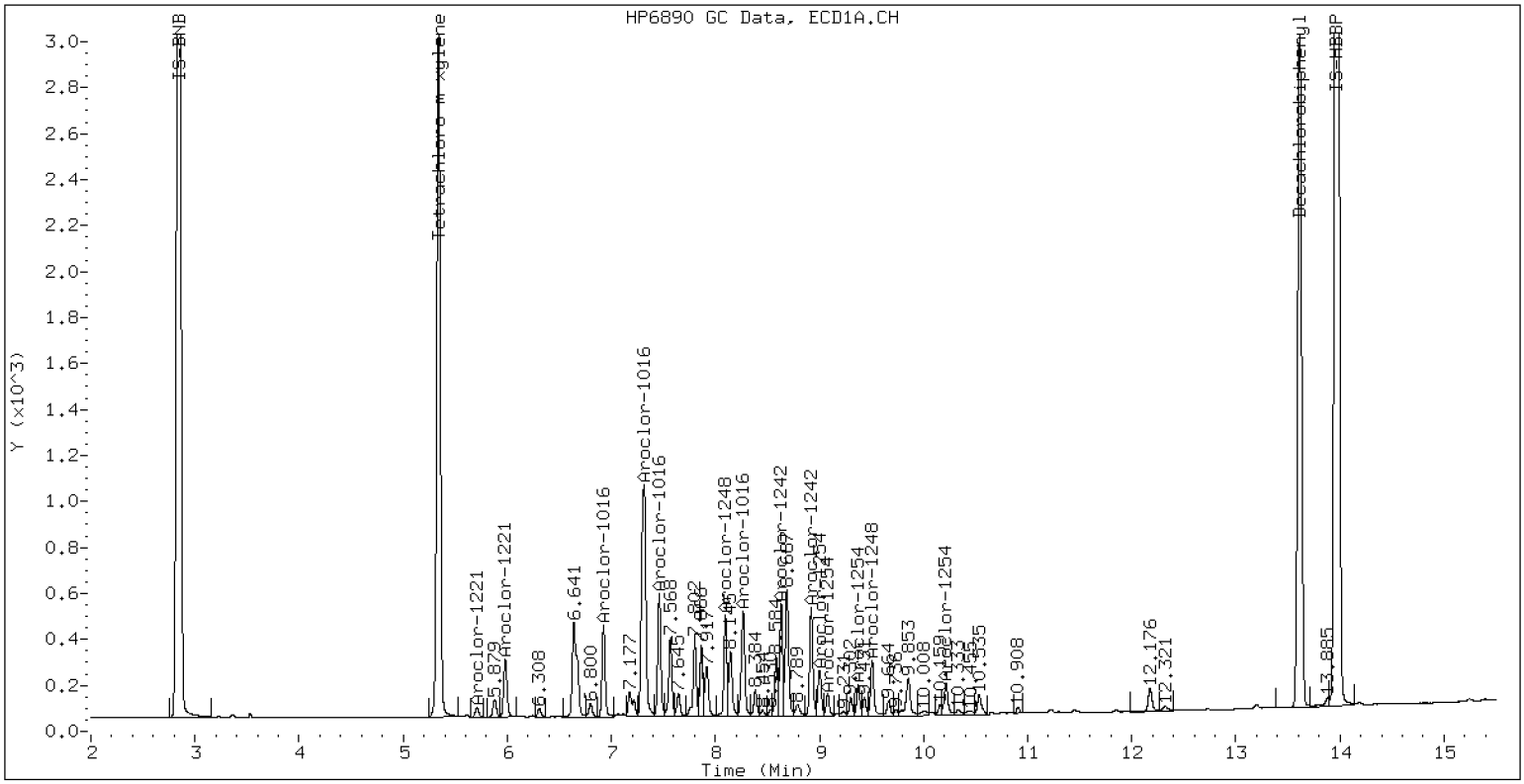
Total PCB Area Col2 (5.441 - 13.514) = 1684066 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

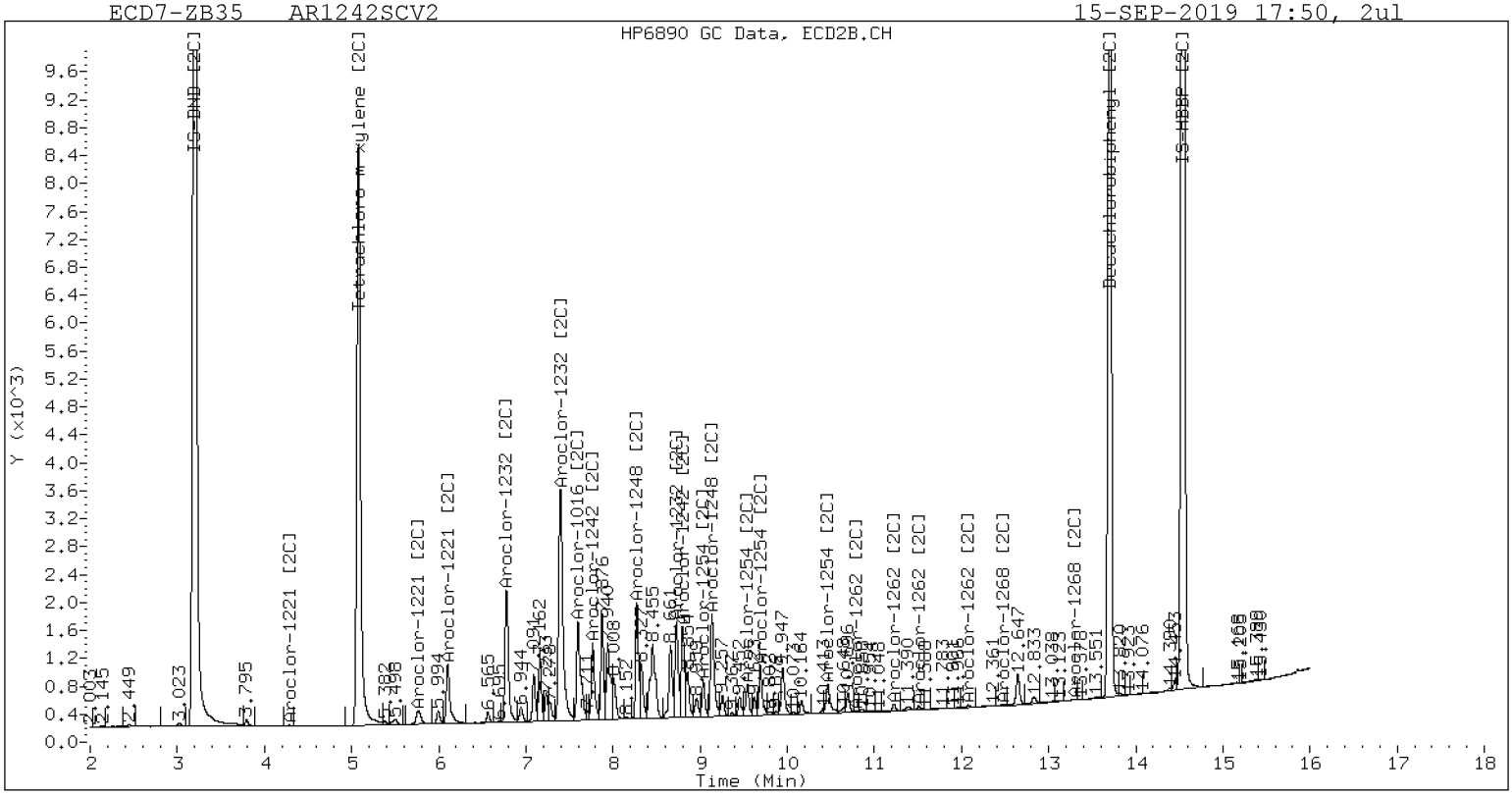
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV2 15-SEP-2019 17:50, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV2 15-SEP-2019 17:50, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 19J0249
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Calibration: CI00052
Laboratory ID: SHI0216-SCV3
Sequence: SHI0216
Sequence Name: AR1248SCV3
Standard ID: H004291

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1248	250.00	243	-2.8	20.00
Aroclor 1248 [2C]	250.00	251	0.4	20.00
Decachlorobiphenyl	40.000	36.1	-9.8	20.00
Tetrachlorometaxylene	40.000	41.1	2.6	20.00
Decachlorobiphenyl [2C]	40.000	33.8	-15.4	20.00
Tetrachlorometaxylene [2C]	40.000	38.2	-4.5	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091518ECD7.D
Data file 2: /20190915.b/20190915.b/19091518ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV3
Client ID:
Injection Date: 15-SEP-2019 18:11
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000	144337	5.081	0.001	525429	41.1	38.2	7.2	Tetrachloro-m-xylene
13.613	-0.000	155898	13.702	-0.000	747902	36.1	33.8	6.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	102.6	95.5
Decachlorobiphenyl	90.2	84.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283776	-34.4
Hexabromobiphenyl	517563	427022	-17.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1157339	-22.7
Hexabromobiphenyl	1404015	1151947	-18.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.926	-0.000	8301	96.4	1	6.777	-0.002	59820	103.9
Aroclor-1016	2	7.309	-0.004	40510	132.3	2	7.397	-0.001	161655	134.4
Aroclor-1016	3	7.462	0.002	13575	117.5	3	7.599	0.001	36509	75.3
Aroclor-1016	4	8.267	-0.000	35033	369.4	4	7.768	0.001	33959	112.2
Total Col1Ave (4 peaks): 178.9						Total Col2Ave (4 peaks): 106.5 RPD = 51*				
Corrected Ave (3 peaks): 115.4						Corrected Ave (3 peaks): 97.1 RPD = 17				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	5.617	-0.095	1004	31.1	2	5.780	0.022	7736	45.1
Aroclor-1221	3	5.981	-0.002	2454	30.0	3	6.105	0.001	12052	42.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.926	0.001	8301	257.3	2	6.777	-0.000	59820	245.3
Aroclor-1232	3	7.309	-0.003	40510	351.4	3	7.397	-0.000	161655	331.4
Aroclor-1232	4	7.462	0.002	13575	314.0	4	8.729	-0.001	134716	830.7
Total Col1Ave (3 peaks): 307.6						Total Col2Ave (3 peaks): 469.1 RPD = 42*				
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.926	-0.000	8301	118.9	1	6.777	-0.001	59820	136.3
Aroclor-1242	2	7.309	-0.005	40510	160.5	2	7.397	-0.001	161655	170.6
Aroclor-1242	3	8.632	0.001	38513	463.0	3	7.768	0.000	33959	140.6
Aroclor-1242	4	8.920	0.001	35533	400.6	4	8.801	0.000	118313	393.7
Total Col1Ave (4 peaks): 285.7						Total Col2Ave (4 peaks): 210.3 RPD = 30				
Corrected Ave (3 peaks): 226.7						Corrected Ave (3 peaks): 149.2 RPD = 41*				
Aroclor-1248	1	8.096	-0.000	31009	243.1	1	7.397	0.002	161655	256.9
Aroclor-1248	2	8.632	0.000	38513	242.6	2	8.275	0.000	119193	251.2
Aroclor-1248	3	8.920	-0.000	35533	240.5	3	8.801	0.000	118313	247.5
Aroclor-1248	4	9.506	-0.000	23308	245.7	4	9.135	-0.000	153684	248.5
Total Col1Ave (4 peaks): 243.0						Total Col2Ave (4 peaks): 251.0 RPD = 3				
Corrected Ave (3 peaks): 242.1						Corrected Ave (3 peaks): 249.1 RPD = 3				
Aroclor-1254	1	9.001	-0.002	20497	85.7	1	9.037	-0.000	49764	77.6
Aroclor-1254	2	9.078	0.000	9115	123.7	2	9.135	0.008	153684	471.1
Aroclor-1254	3	9.371	-0.000	12774	92.9	3	9.543	-0.000	49122	97.7
Aroclor-1254	4	9.506	0.001	23308	79.1	4	9.691	-0.000	81623	81.1
Aroclor-1254	5	10.216	0.005	15329	78.0	5	10.463	-0.000	61571	99.1
Total Col1Ave (5 peaks): 91.9						Total Col2Ave (5 peaks): 165.3 RPD = 57*				
Corrected Ave (4 peaks): 83.9						Corrected Ave (4 peaks): 88.9 RPD = 6				
Aroclor-1260	1	10.764	-0.000	1211	6.1	1	10.795	0.001	2983	4.1
Aroclor-1260	2	---			0.0	2	11.226	-0.007	6906	9.4
Aroclor-1260	3	11.449	-0.000	1232	2.6	3	11.510	-0.002	6245	3.4
Aroclor-1260	4	---			0.0	4	12.024	0.001	3247	5.7
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 5.7				
Aroclor-1262	1	---			0.0	1	10.795	0.001	2983	3.0
Aroclor-1262	2	---			0.0	2	11.226	-0.008	6906	8.1
Aroclor-1262	3	---			0.0	3	11.510	-0.000	6245	3.2
Aroclor-1262	4	---			0.0	4	12.024	0.000	3247	3.4
Col1Ave: <3 Quant Peaks						Col2Ave: 4.4				
Aroclor-1268	1	---			0.0	1	12.024	0.001	3247	1.3
Aroclor-1268	2	---			0.0	2	12.082	-0.008	4066	1.6
Aroclor-1268	3	---			0.0	3	12.487	0.006	1630	0.7
Aroclor-1268	4	---			0.0	4	13.295	-0.003	2205	0.3
Col1Ave: <3 Quant Peaks						Col2Ave: 1.0				

Total PCB Area Col1 (5.441 - 13.514) = 543228 Col1 Total PCB = 0.2 ppm*

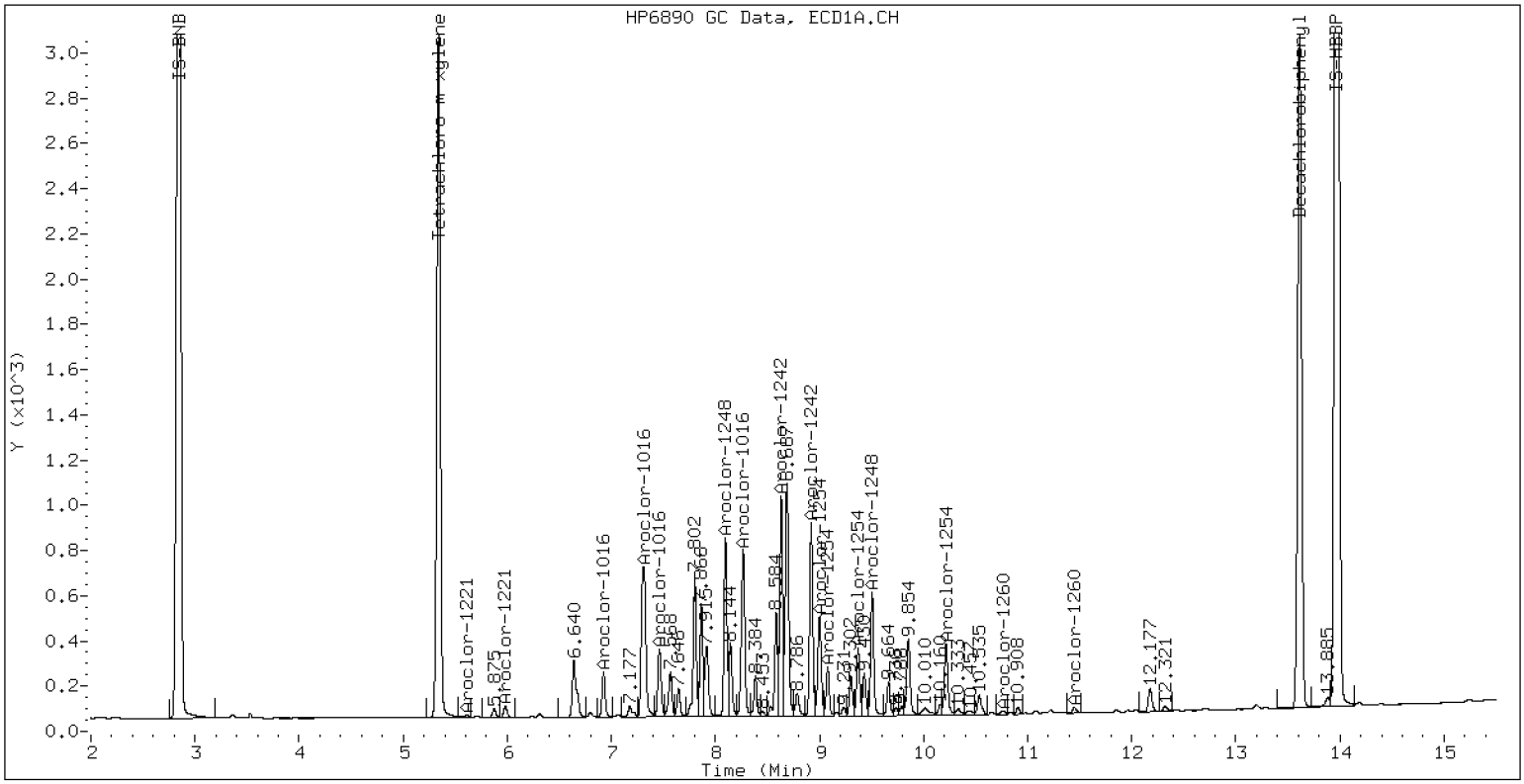
Total PCB Area Col2 (5.441 - 13.514) = 2103769 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

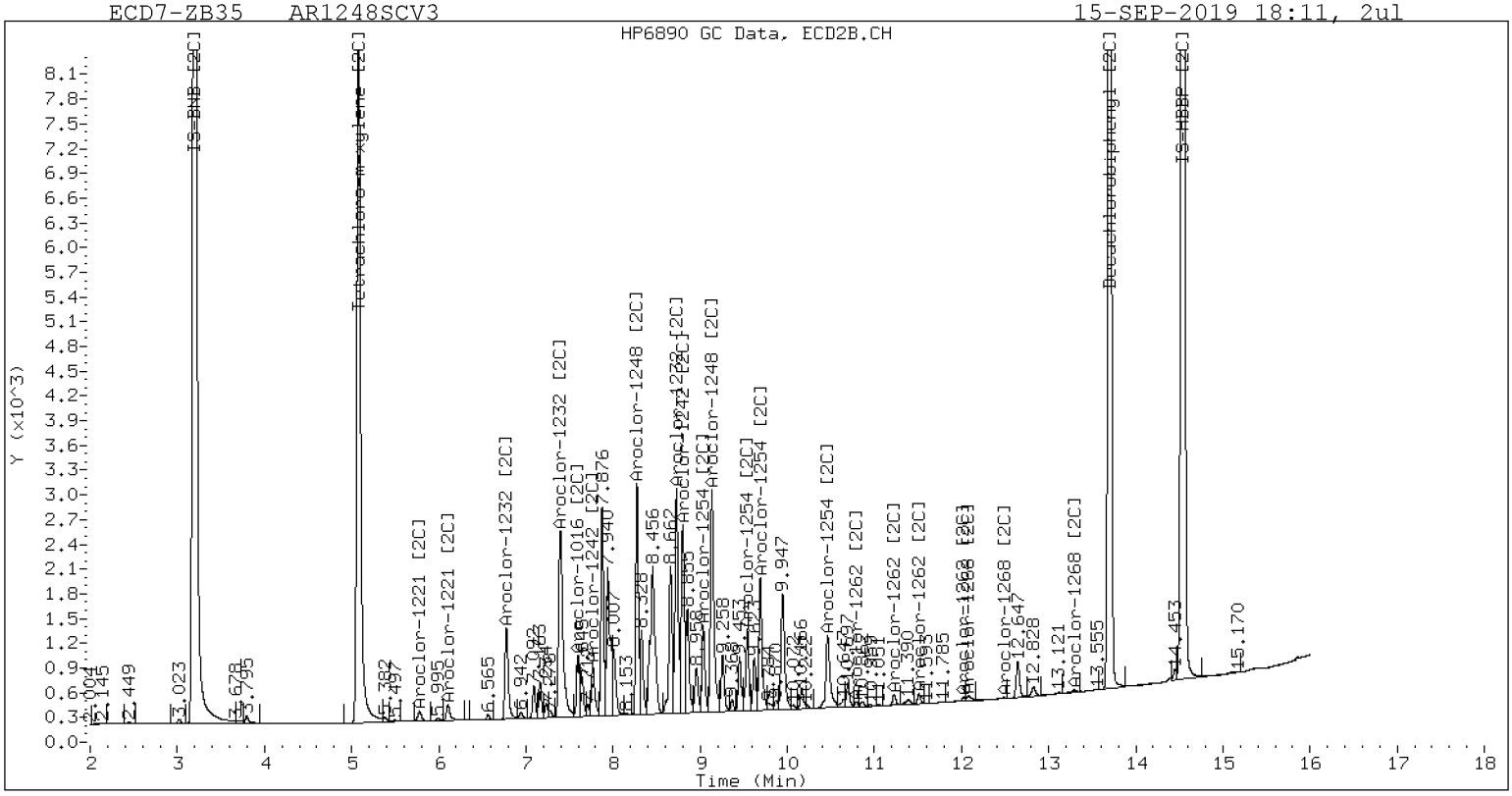
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV3 15-SEP-2019 18:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV3 15-SEP-2019 18:11, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 19J0249
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Calibration: CI00052
Laboratory ID: SHI0216-SCV4
Sequence: SHI0216
Sequence Name: AR1254SCV4
Standard ID: H004292

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1254	250.00	252	0.6	20.00
Aroclor 1254 [2C]	250.00	258	3.1	20.00
Decachlorobiphenyl	40.000	36.4	-9.1	20.00
Tetrachlorometaxylene	40.000	40.3	0.8	20.00
Decachlorobiphenyl [2C]	40.000	33.9	-15.3	20.00
Tetrachlorometaxylene [2C]	40.000	37.6	-6.0	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091519ECD7.D
Data file 2: /20190915.b/20190915.b/19091519ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV4
Client ID:
Injection Date: 15-SEP-2019 18:32
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	142065	5.081	0.001	516612	40.3	37.6	7.0	Tetrachloro-m-xylene
13.614	-0.000	156661	13.701	-0.001	753354	36.4	33.9	7.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.8	94.0
Decachlorobiphenyl	90.9	84.7

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	284555	-34.2
Hexabromobiphenyl	517563	425678	-17.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1156822	-22.7
Hexabromobiphenyl	1404015	1159232	-17.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	6.778	-0.000	1021	1.8
Aroclor-1016	2	7.304	-0.009	1001	3.3	2	7.394	-0.004	4515	3.8
Aroclor-1016	3	---			0.0	3	7.602	0.004	728	1.5
Aroclor-1016	4	8.267	-0.000	4386	46.1	4	7.769	0.002	531	1.8
	Col1Ave: <3 Quant Peaks					Col2Ave: 2.2				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	5.782	0.024	6140	35.8
Aroclor-1221	3	---			0.0	3	6.116	0.012	1797	6.3
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	6.778	0.001	1021	4.2
Aroclor-1232	3	---			0.0	3	7.394	-0.003	4515	9.3
Aroclor-1232	4	---			0.0	4	8.729	0.000	65407	403.5
	Col1Ave: <3 Quant Peaks					Col2Ave: 139.0				
Aroclor-1242	1	---			0.0	1	6.778	-0.000	1021	2.3
Aroclor-1242	2	7.304	-0.010	1001	4.0	2	7.394	-0.004	4515	4.8
Aroclor-1242	3	8.632	0.001	20852	250.0	3	7.769	0.002	531	2.2
Aroclor-1242	4	8.925	0.005	11451	128.7	4	8.799	-0.002	20564	68.5
	Total Col1Ave (3 peaks): 127.6					Total Col2Ave (4 peaks): 19.4 RPD = 147*				
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks): 3.1				
Aroclor-1248	1	8.096	-0.000	11047	86.4	1	7.394	-0.001	4515	7.2
Aroclor-1248	2	8.632	0.001	20852	131.0	2	8.275	0.000	45204	95.3
Aroclor-1248	3	8.925	0.005	11451	77.3	3	8.799	-0.002	20564	43.0
Aroclor-1248	4	9.505	-0.001	73680	774.7	4	9.126	-0.009	84230	136.3
	Total Col1Ave (4 peaks): 267.3					Total Col2Ave (4 peaks): 70.4 RPD = 117*				
	Corrected Ave (3 peaks): 98.2					Corrected Ave (3 peaks): 48.5 RPD = 68*				
Aroclor-1254	1	9.002	-0.000	59931	250.0	1	9.036	-0.001	163998	255.8
Aroclor-1254	2	9.078	0.000	18717	253.2	2	9.126	-0.001	84230	258.3
Aroclor-1254	3	9.371	-0.000	35086	254.4	3	9.543	-0.000	130701	260.0
Aroclor-1254	4	9.505	0.000	73680	249.5	4	9.691	-0.001	256589	255.2
Aroclor-1254	5	10.211	0.001	49421	250.8	5	10.465	0.001	161017	259.2
	Total Col1Ave (5 peaks): 251.6					Total Col2Ave (5 peaks): 257.7 RPD = 2				
	Corrected Ave (4 peaks): 250.9					Corrected Ave (4 peaks): 257.1 RPD = 2				
Aroclor-1260	1	10.762	-0.002	2944	15.0	1	10.793	-0.001	12381	17.0
Aroclor-1260	2	11.081	0.001	3390	18.0	2	11.222	-0.011	72596	98.5
Aroclor-1260	3	11.449	-0.000	7822	16.4	3	11.509	-0.003	45240	24.5
Aroclor-1260	4	11.848	-0.000	7534	34.9	4	12.024	0.001	5827	10.1
Aroclor-1260	5	---			0.0	NS	---			----
	Total Col1Ave (4 peaks): 21.1					Total Col2Ave (4 peaks): 37.5 RPD = 56*				
	Corrected Ave (3 peaks): 16.4					Corrected Ave (3 peaks): 17.2 RPD = 5				
Aroclor-1262	1	11.081	0.001	3390	15.2	1	10.793	-0.001	12381	12.3
Aroclor-1262	2	11.449	-0.000	7822	14.2	2	11.222	-0.012	72596	84.4
Aroclor-1262	3	11.848	-0.001	7534	46.0	3	11.509	-0.001	45240	22.9
Aroclor-1262	4	---			0.0	4	12.024	0.000	5827	6.1
	Total Col1Ave (3 peaks): 25.1					Total Col2Ave (4 peaks): 31.4 RPD = 22				
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks): 13.8				
Aroclor-1268	1	---			0.0	1	12.024	0.001	5827	2.3
Aroclor-1268	2	---			0.0	2	12.074	-0.016	29049	11.6
Aroclor-1268	3	---			0.0	3	12.483	0.003	858	0.4
Aroclor-1268	4	---			0.0	4	13.296	-0.002	1169	0.1
	Col1Ave: <3 Quant Peaks					Col2Ave: 3.6				

Total PCB Area Col1 (5.441 - 13.514) = 702105 Col1 Total PCB = 0.3 ppm*

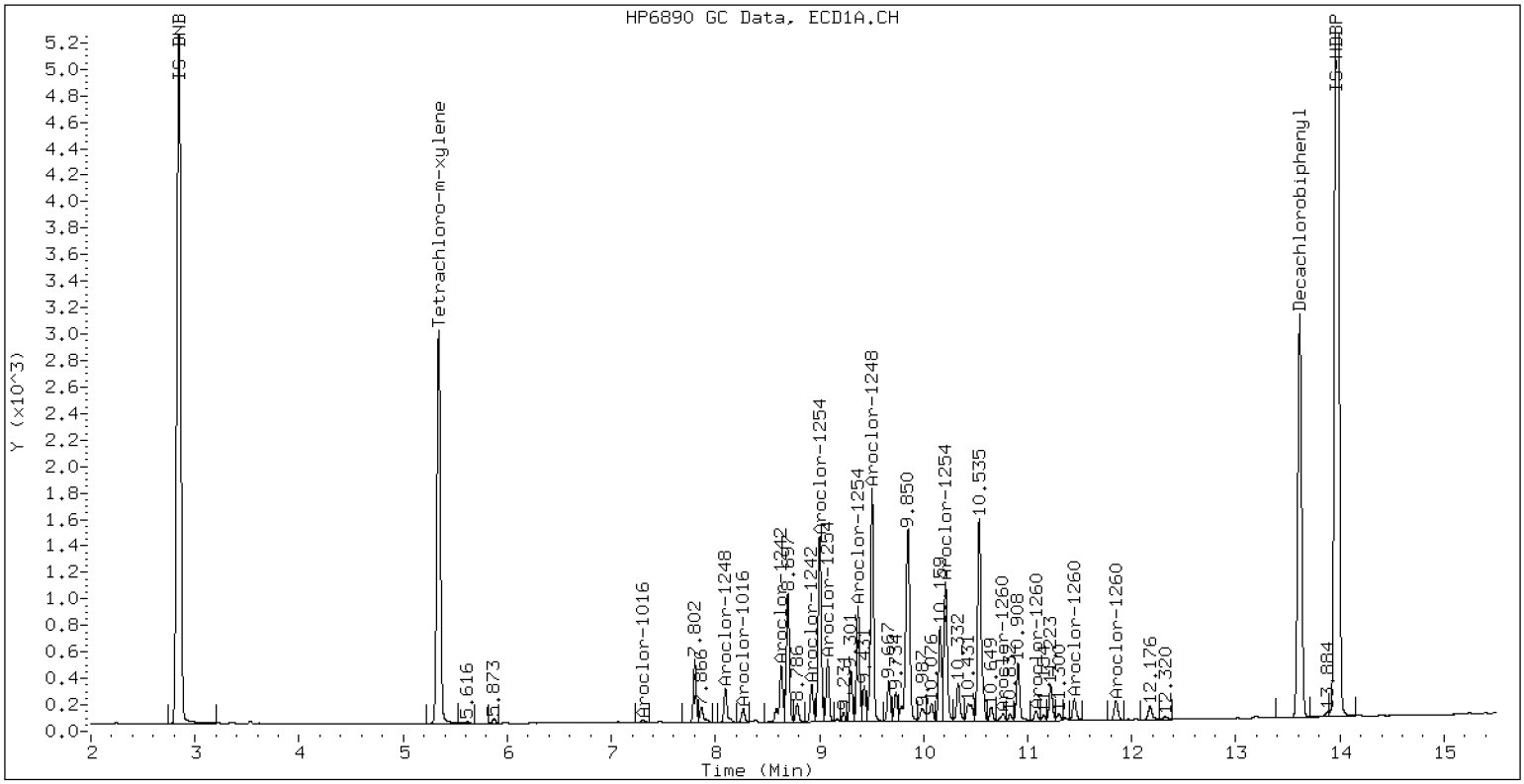
Total PCB Area Col2 (5.441 - 13.514) = 2618424 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

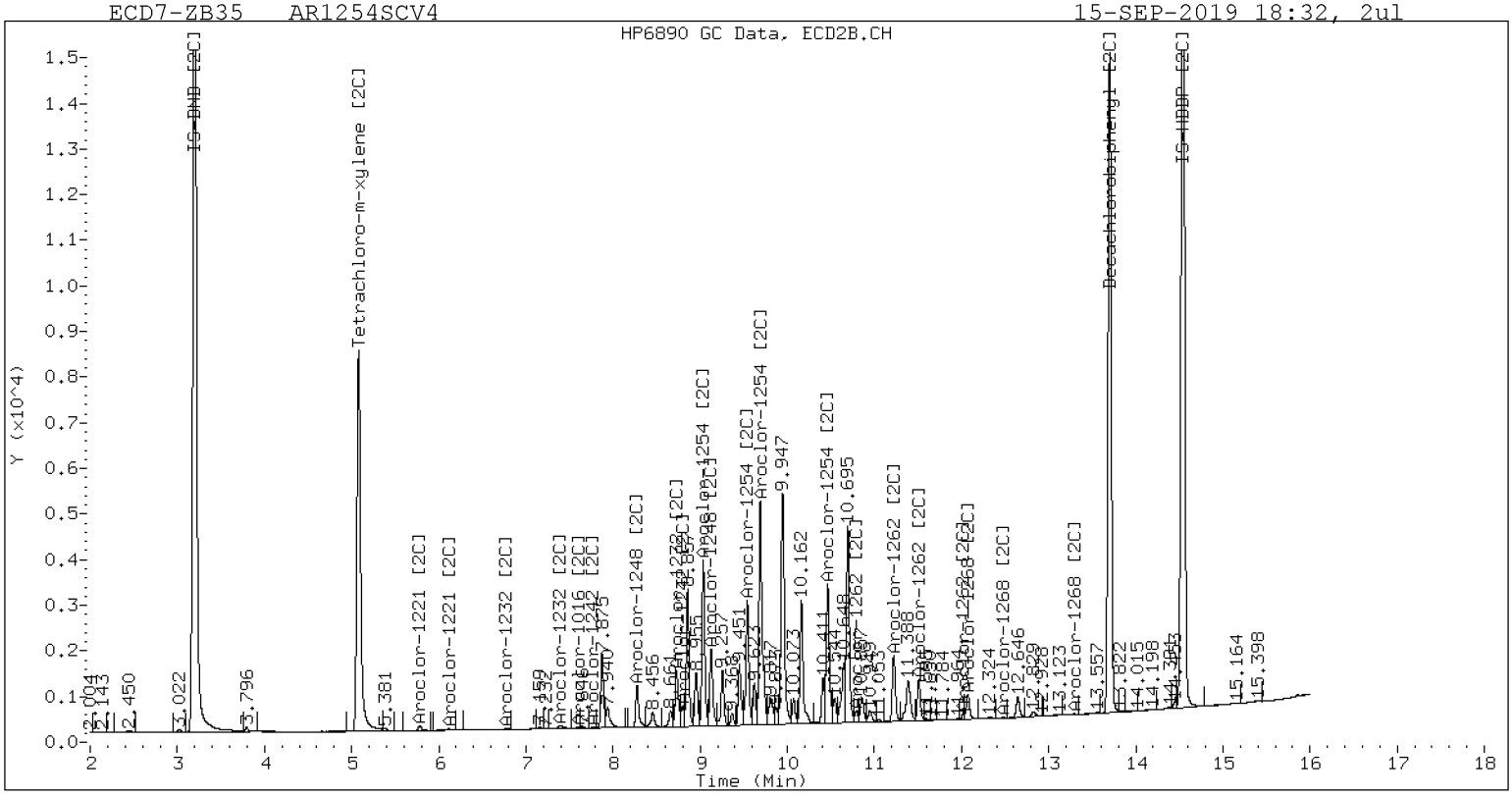
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV4 15-SEP-2019 18:32, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV4 15-SEP-2019 18:32, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 19J0249
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Calibration: CI00052
Laboratory ID: SHI0216-SCV5
Sequence: SHI0216
Sequence Name: AR2162SCV5
Standard ID: H004293

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1221	250.00	259	3.7	20.00
Aroclor 1221 [2C]	250.00	266	6.4	20.00
Aroclor 1262	250.00	267	6.6	20.00
Aroclor 1262 [2C]	250.00	267	6.8	20.00
Decachlorobiphenyl	40.000	35.9	-10.3	20.00
Tetrachlorometaxylene	40.000	41.9	4.8	20.00
Decachlorobiphenyl [2C]	40.000	33.8	-15.6	20.00
Tetrachlorometaxylene [2C]	40.000	39.8	-0.5	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091520ECD7.D
Data file 2: /20190915.b/20190915.b/19091520ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV5
Client ID:
Injection Date: 15-SEP-2019 18:53
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	146719	5.081	0.001	519721	41.9	39.8	5.2	Tetrachloro-m-xylene
13.614	-0.000	152896	13.700	-0.001	742387	35.9	33.8	6.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	104.8	99.5
Decachlorobiphenyl	89.7	84.4

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	282463	-34.7
Hexabromobiphenyl	517563	421281	-18.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1099699	-26.6
Hexabromobiphenyl	1404015	1145810	-18.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.926	0.000	1872	21.8	1	6.789	0.010	25015	45.7
Aroclor-1016	2	7.315	0.002	5616	18.4	2	7.400	0.002	25838	22.6
Aroclor-1016	3	7.460	-0.000	2502	21.8	3	7.600	0.003	12141	26.4
Aroclor-1016	4	8.268	0.000	1039	11.0	4	7.768	0.002	6755	23.5
Total Col1Ave (4 peaks):				18.3		Total Col2Ave (4 peaks):			29.5	RPD = 47*
Corrected Ave (3 peaks):				17.1		Corrected Ave (3 peaks):			24.2	RPD = 34
Aroclor-1221	1	4.185	0.001	5406	261.5	1	4.283	-0.000	20980	268.7
Aroclor-1221	2	5.711	-0.000	8273	257.8	2	5.758	-0.000	43022	263.9
Aroclor-1221	3	5.982	-0.001	21050	258.6	3	6.104	-0.001	72399	265.4
Total Col1Ave (3 peaks):				259.3		Total Col2Ave (3 peaks):			266.0	RPD = 3
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.185	0.001	5406	444.4	1	4.283	0.001	20980	450.7
Aroclor-1232	2	6.926	0.001	1872	58.3	2	6.789	0.012	25015	108.0
Aroclor-1232	3	7.315	0.002	5616	48.9	3	7.400	0.003	25838	55.7
Aroclor-1232	4	7.460	0.000	2502	58.1	4	8.730	0.001	6692	43.4
Total Col1Ave (4 peaks):				152.4		Total Col2Ave (4 peaks):			164.5	RPD = 8
Corrected Ave (3 peaks):				55.1		Corrected Ave (3 peaks):			69.0	RPD = 22
Aroclor-1242	1	6.926	0.000	1872	26.9	1	6.789	0.011	25015	60.0
Aroclor-1242	2	7.315	0.001	5616	22.4	2	7.400	0.002	25838	28.7
Aroclor-1242	3	8.634	0.002	1386	16.7	3	7.768	0.001	6755	29.4
Aroclor-1242	4	8.923	0.004	1556	17.6	4	8.802	0.002	3724	13.0
Total Col1Ave (4 peaks):				20.9		Total Col2Ave (4 peaks):			32.8	RPD = 44*
Corrected Ave (3 peaks):				18.9		Corrected Ave (3 peaks):			23.7	RPD = 23
Aroclor-1248	1	8.097	0.000	1229	9.7	1	7.400	0.005	25838	43.2
Aroclor-1248	2	8.634	0.002	1386	8.8	2	8.276	0.001	5926	13.1
Aroclor-1248	3	8.923	0.003	1556	10.6	3	8.802	0.002	3724	8.2
Aroclor-1248	4	9.476	-0.030	10150	107.5	4	9.133	-0.003	8590	14.6
Total Col1Ave (4 peaks):				34.1		Total Col2Ave (4 peaks):			19.8	RPD = 53*
Corrected Ave (3 peaks):				9.7		Corrected Ave (3 peaks):			12.0	RPD = 21
Aroclor-1254	1	9.004	0.002	7447	31.3	1	9.037	0.001	28859	47.4
Aroclor-1254	2	---			0.0	2	9.133	0.006	8590	27.7
Aroclor-1254	3	9.372	0.001	1574	11.5	3	9.544	0.000	7347	15.4
Aroclor-1254	4	9.476	-0.029	10150	34.6	4	9.733	0.041	117247	122.7
Aroclor-1254	5	10.158	-0.052	57397	293.4	5	10.468	0.004	28744	48.7
Total Col1Ave (4 peaks):				92.7		Total Col2Ave (5 peaks):			52.4	RPD = 56*
Corrected Ave (3 peaks):				25.8		Corrected Ave (4 peaks):			34.8	RPD = 30
Aroclor-1260	1	10.764	0.001	72353	371.9	1	10.794	-0.000	265507	368.3
Aroclor-1260	2	11.080	0.000	59517	319.1	2	11.234	0.001	228474	313.8
Aroclor-1260	3	11.450	0.000	141816	299.5	3	11.510	-0.002	510965	280.0
Aroclor-1260	4	11.849	0.000	43028	201.4	4	12.024	0.001	256630	451.9
Aroclor-1260	5	11.966	0.000	55865	552.4	NS	---			----
Total Col1Ave (5 peaks):				348.9		Total Col2Ave (4 peaks):			353.5	RPD = 1
Corrected Ave (4 peaks):				298.0		Corrected Ave (3 peaks):			320.7	RPD = 7
Aroclor-1262	1	11.080	0.000	59517	269.7	1	10.794	-0.000	265507	267.1
Aroclor-1262	2	11.450	0.000	141816	259.6	2	11.234	-0.001	228474	268.8
Aroclor-1262	3	11.849	-0.001	43028	265.2	3	11.510	-0.000	510965	262.1
Aroclor-1262	4	11.966	0.000	55865	271.7	4	12.024	-0.000	256630	269.9
Total Col1Ave (4 peaks):				266.5		Total Col2Ave (4 peaks):			267.0	RPD = 0
Corrected Ave (3 peaks):				264.8		Corrected Ave (3 peaks):			266.0	RPD = 0
Aroclor-1268	1	11.966	0.000	55865	86.3	1	12.024	0.000	256630	104.0
Aroclor-1268	2	12.038	0.002	57038	97.6	2	12.085	-0.005	364662	147.2
Aroclor-1268	3	12.438	0.015	20392	41.3	3	12.478	-0.002	16839	7.5
Aroclor-1268	4	13.206	-0.001	16188	10.4	4	13.294	-0.004	80522	10.1
Total Col1Ave (4 peaks):				58.9		Total Col2Ave (4 peaks):			67.2	RPD = 13

Corrected Ave (3 peaks): 46.0 Corrected Ave (3 peaks): 40.5 RPD = 13

Total PCB Area Col1 (5.441 - 13.514) = 953031 Col1 Total PCB = 0.4 ppm*

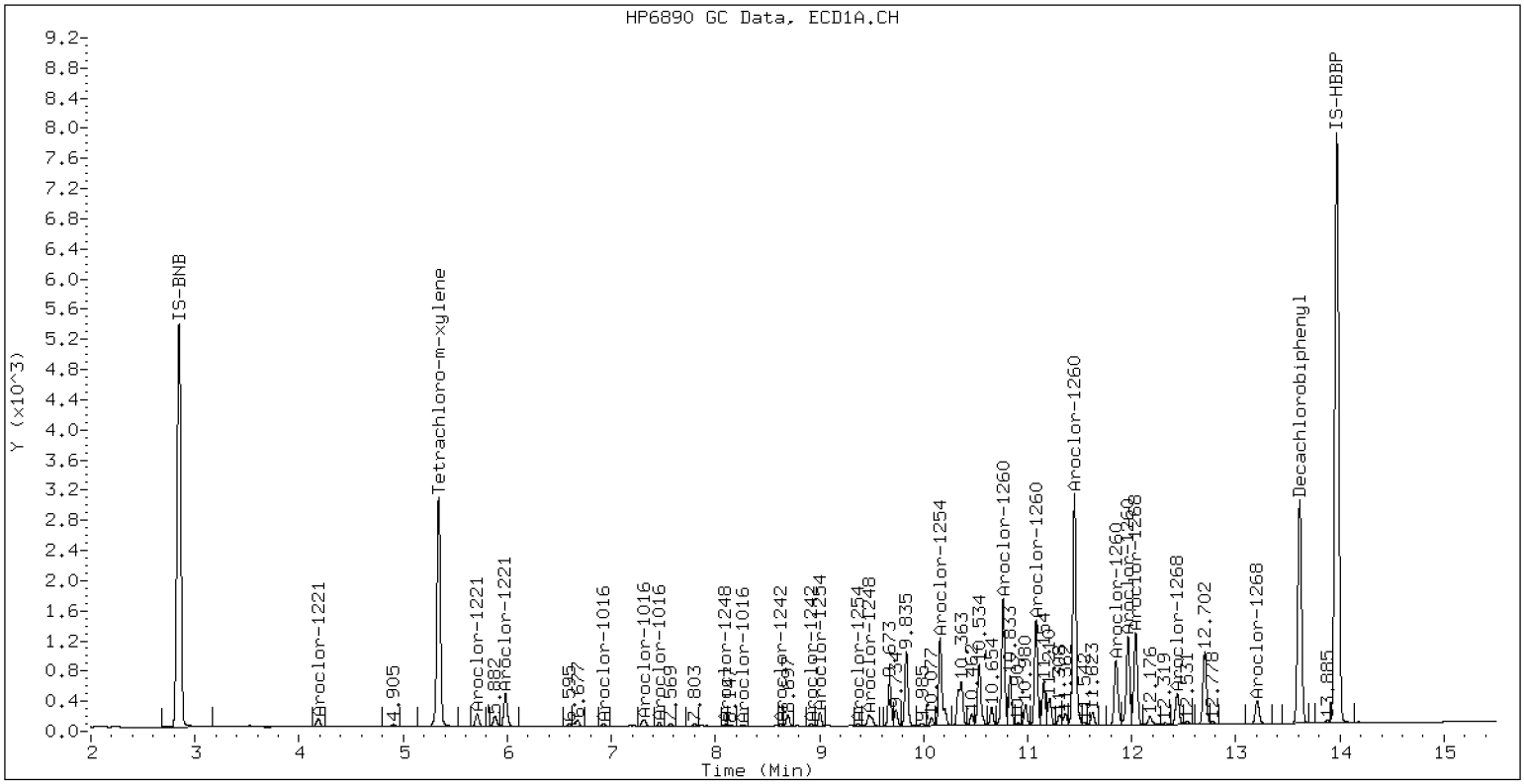
Total PCB Area Col2 (5.441 - 13.514) = 3754639 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

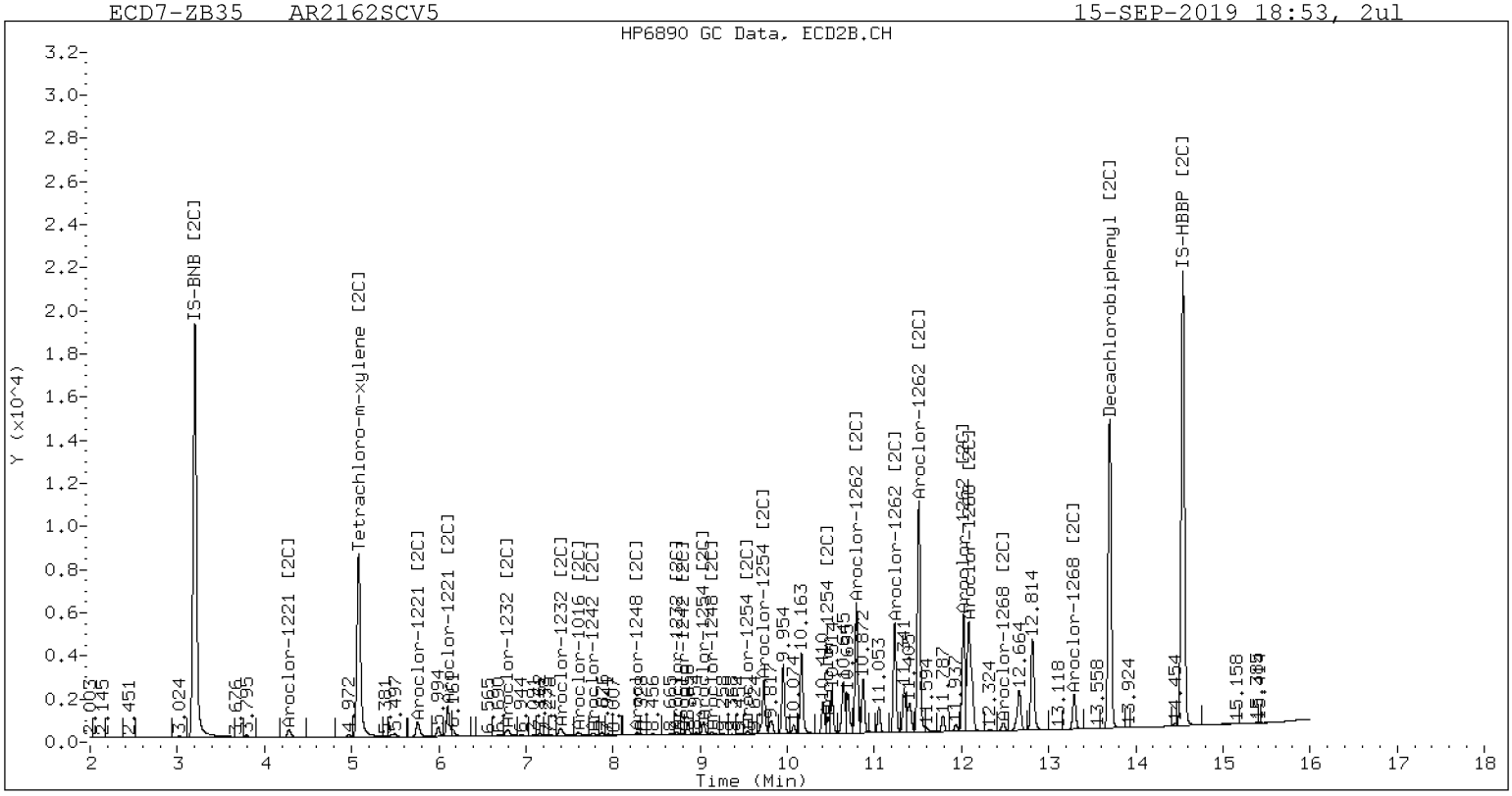
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV5 15-SEP-2019 18:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV5 15-SEP-2019 18:53, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 19J0249
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigation
Calibration: CI00052
Laboratory ID: SHI0216-SCV6
Sequence: SHI0216
Sequence Name: AR3268SCV6
Standard ID: H004294

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1232	250.00	285	14.1	20.00
Aroclor 1232 [2C]	250.00	269	7.8	20.00
Aroclor 1268	250.00	263	5.0	20.00
Aroclor 1268 [2C]	250.00	261	4.6	20.00
Decachlorobiphenyl	40.000	50.0	25.0	20.00
Tetrachlorometaxylene	40.000	40.3	0.7	20.00
Decachlorobiphenyl [2C]	40.000	47.8	19.5	20.00
Tetrachlorometaxylene [2C]	40.000	37.8	-5.6	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091521ECD7.D
Data file 2: /20190915.b/20190915.b/19091521ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV6
Client ID:
Injection Date: 15-SEP-2019 19:14
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	141373	5.081	0.001	505294	40.3	37.8	6.4	Tetrachloro-m-xylene
13.614	0.000	214658	13.702	-0.000	1059666	50.0	47.8	4.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.7	94.4
Decachlorobiphenyl	125.0	119.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283260	-34.5
Hexabromobiphenyl	517563	424464	-18.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1126107	-24.8
Hexabromobiphenyl	1404015	1155245	-17.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.926	-0.000	9622	112.0	1	6.779	0.000	68458	122.2
Aroclor-1016	2	7.314	0.001	33292	108.9	2	7.399	0.001	134510	115.0
Aroclor-1016	3	7.460	0.000	12616	109.4	3	7.599	0.001	54238	115.0
Aroclor-1016	4	8.268	0.000	10808	114.2	4	7.767	0.000	34263	116.3
Total Col1Ave (4 peaks):					111.1	Total Col2Ave (4 peaks):				117.1 RPD = 5
Corrected Ave (3 peaks):					110.1	Corrected Ave (3 peaks):				115.4 RPD = 5
Aroclor-1221	1	4.185	0.000	3178	153.3	1	4.283	-0.001	12766	159.7
Aroclor-1221	2	5.711	-0.001	4834	150.2	2	5.760	0.002	27761	166.3
Aroclor-1221	3	5.982	-0.001	16410	201.0	3	6.104	-0.000	70670	253.0
Total Col1Ave (3 peaks):					168.2	Total Col2Ave (3 peaks):				193.0 RPD = 14
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.185	0.001	3178	260.5	1	4.283	0.001	12766	267.8
Aroclor-1232	2	6.926	0.001	9622	298.8	2	6.779	0.002	68458	288.5
Aroclor-1232	3	7.314	0.001	33292	289.3	3	7.399	0.002	134510	283.4
Aroclor-1232	4	7.460	0.000	12616	292.4	4	8.729	0.000	37553	238.0
Total Col1Ave (4 peaks):					285.2	Total Col2Ave (4 peaks):				269.4 RPD = 6
Corrected Ave (3 peaks):					280.7	Corrected Ave (3 peaks):				263.1 RPD = 6
Aroclor-1242	1	6.926	0.000	9622	138.1	1	6.779	0.001	68458	160.4
Aroclor-1242	2	7.314	-0.000	33292	132.2	2	7.399	0.001	134510	145.9
Aroclor-1242	3	8.632	0.001	9671	116.5	3	7.767	0.000	34263	145.8
Aroclor-1242	4	8.920	0.001	10040	113.4	4	8.802	0.001	37955	129.8
Total Col1Ave (4 peaks):					125.0	Total Col2Ave (4 peaks):				145.5 RPD = 15
Corrected Ave (3 peaks):					120.7	Corrected Ave (3 peaks):				140.5 RPD = 15
Aroclor-1248	1	8.096	-0.000	9055	71.1	1	7.399	0.004	134510	219.7
Aroclor-1248	2	8.632	0.000	9671	61.0	2	8.275	0.000	39058	84.6
Aroclor-1248	3	8.920	0.000	10040	68.1	3	8.802	0.001	37955	81.6
Aroclor-1248	4	9.506	0.000	3395	35.9	4	9.138	0.003	44105	73.3
Total Col1Ave (4 peaks):					59.0	Total Col2Ave (4 peaks):				114.8 RPD = 64*
Corrected Ave (3 peaks):					55.0	Corrected Ave (3 peaks):				79.8 RPD = 37
Aroclor-1254	1	9.001	-0.001	3344	14.0	1	9.038	0.001	8654	13.9
Aroclor-1254	2	9.078	0.000	1342	18.2	2	9.138	0.011	44105	138.9
Aroclor-1254	3	9.372	0.001	1692	12.3	3	9.544	0.001	7982	16.3
Aroclor-1254	4	9.506	0.001	3395	11.5	4	9.692	0.001	13501	13.8
Aroclor-1254	5	10.215	0.004	2260	11.5	5	10.468	0.004	5584	9.2
Total Col1Ave (5 peaks):					13.5	Total Col2Ave (5 peaks):				38.4 RPD = 96*
Corrected Ave (4 peaks):					12.4	Corrected Ave (4 peaks):				13.3 RPD = 7
Aroclor-1260	1	10.764	0.000	36154	184.4	1	10.794	-0.000	139310	191.7
Aroclor-1260	2	11.080	-0.000	3230	17.2	2	11.237	0.004	167894	228.7
Aroclor-1260	3	11.449	-0.001	22521	47.2	3	11.510	-0.002	92070	50.0
Aroclor-1260	4	---			0.0	4	12.023	0.001	671734	1173.3
Aroclor-1260	5	11.966	0.001	178894	1755.7	NS	---			----
Total Col1Ave (4 peaks):					501.1	Total Col2Ave (4 peaks):				410.9 RPD = 20
Corrected Ave (3 peaks):					82.9	Corrected Ave (3 peaks):				156.8 RPD = 62*
Aroclor-1262	1	11.080	-0.000	3230	14.5	1	10.794	-0.000	139310	139.0
Aroclor-1262	2	11.449	-0.000	22521	40.9	2	11.237	0.003	167894	195.9
Aroclor-1262	3	---			0.0	3	11.510	-0.001	92070	46.8
Aroclor-1262	4	11.966	0.001	178894	863.5	4	12.023	-0.000	671734	700.6
Total Col1Ave (3 peaks):					306.3	Total Col2Ave (4 peaks):				270.6 RPD = 12
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				127.2
Aroclor-1268	1	11.966	0.001	178894	274.2	1	12.023	0.000	671734	270.0
Aroclor-1268	2	12.037	0.001	179024	303.9	2	12.090	0.000	760106	304.4
Aroclor-1268	3	12.424	0.001	121349	243.7	3	12.480	-0.000	546687	241.7
Aroclor-1268	4	13.207	0.000	359555	228.4	4	13.297	0.000	1841105	229.6
Total Col1Ave (4 peaks):					262.6	Total Col2Ave (4 peaks):				261.4 RPD = 0

Corrected Ave (3 peaks): 248.8 Corrected Ave (3 peaks): 247.1 RPD = 1

Total PCB Area Col1 (5.441 - 13.514) = 1291499 Col1 Total PCB = 0.5 ppm*

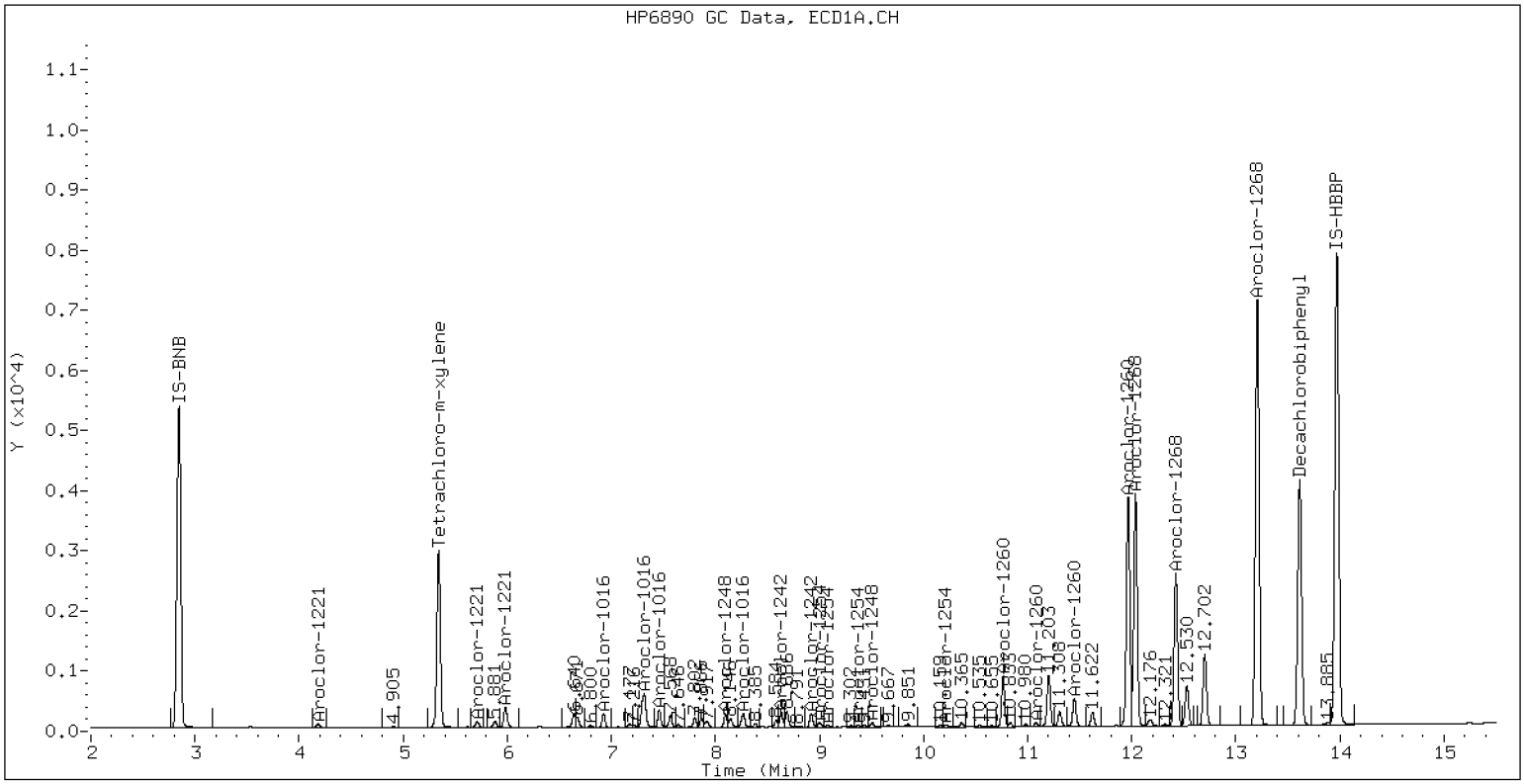
Total PCB Area Col2 (5.441 - 13.514) = 5756571 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

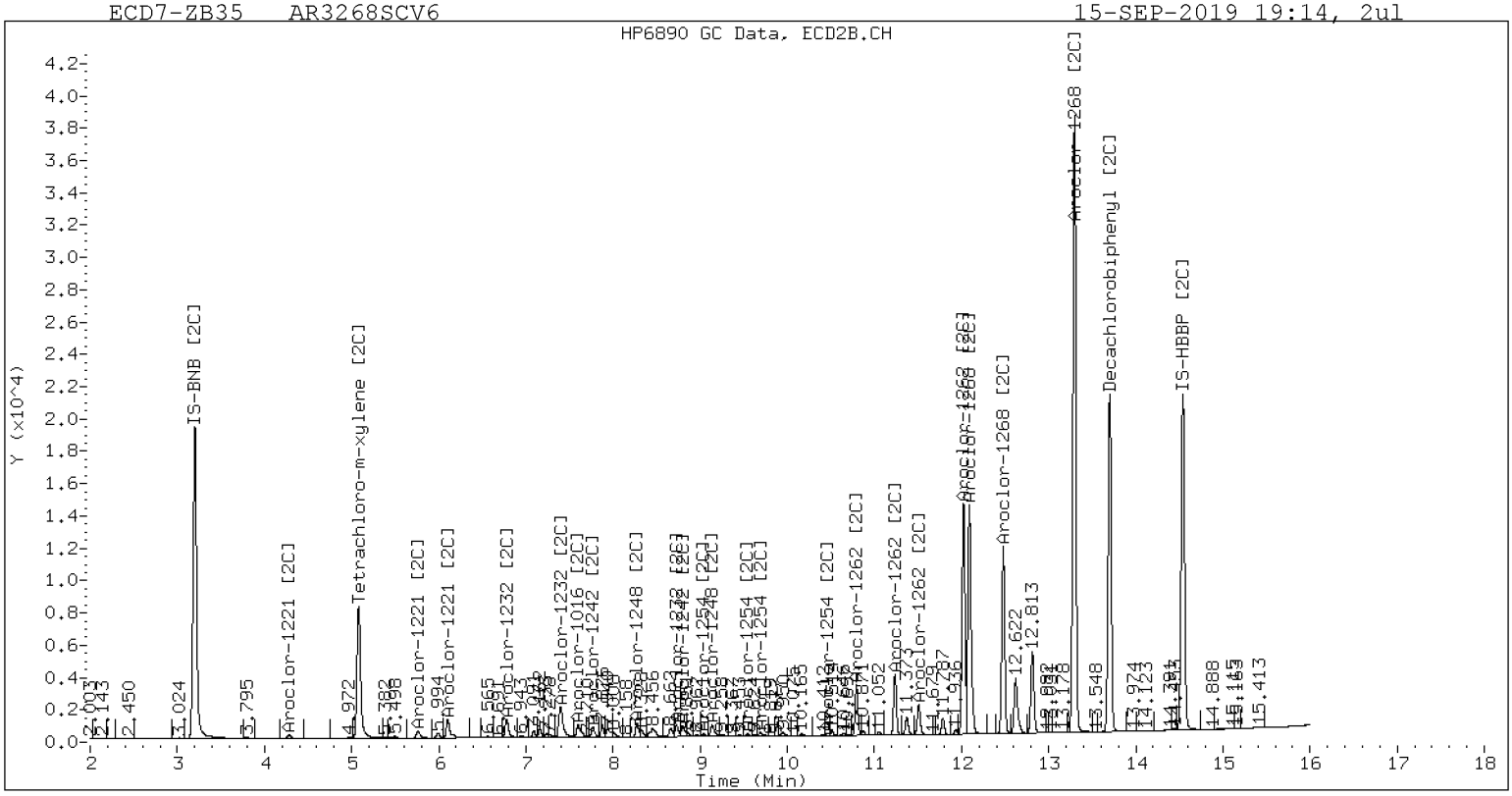
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV6 15-SEP-2019 19:14, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV6 15-SEP-2019 19:14, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101704ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0299	Injection Date:	10/17/19
Lab Sample ID:	SHJ0299-ICV1	Injection Time:	11:48
Sequence Name:	AR1254ICV1		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	229	0.0530781	0.0505935		-8.3	20
Aroclor 1254 [2C]	A	250.00	295	0.0428263	0.0502744		17.8	20
Decachlorobiphenyl	A	40.000	44.0	0.8094199	0.8907981		10.0	20
Tetrachlorometaxylene	A	40.000	44.4	0.9910571	1.1011430		11.0	20
Decachlorobiphenyl [2C]	A	40.000	39.3	1.5347890	1.5073700		-1.8	20
Tetrachlorometaxylene [2C]	A	40.000	47.0	0.9503239	1.1167100		17.5	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101704ECD7.D
Data file 2: /20191017.b/20191017.b/19101704ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV1
Client ID:
Injection Date: 17-OCT-2019 11:48
Report Date: 10/18/2019 07:39
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.332	-0.004	134525	5.060	-0.003	520724	44.4	47.0	5.6	Tetrachloro-m-xylene
13.612	-0.032	163094	13.684	-0.034	787487	44.0	39.3	11.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	111.1	117.5
Decachlorobiphenyl	110.1	98.2

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	244337	-7.1
Hexabromobiphenyl	382688	366175	-4.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	932604	-13.8
Hexabromobiphenyl	1006687	1044849	3.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1254	1	8.999	-0.002	51363	249.5	1	9.020	-0.002	157350	304.5
Aroclor-1254	2	9.075	-0.002	13455	212.0	2	9.110	-0.003	77912	296.4
Aroclor-1254	3	9.369	-0.002	21403	180.7	3	9.527	-0.003	117970	291.1
Aroclor-1254	4	9.502	-0.002	65183	257.1	4	9.674	-0.003	229488	283.1
Aroclor-1254	5	10.208	-0.003	41750	246.7	5	10.449	-0.003	149876	299.3

Total Col1Ave (5 peaks): 229.2 Total Col2Ave (5 peaks): 294.9 RPD = 25

Corrected Ave (4 peaks): 222.2 Corrected Ave (4 peaks): 292.5 RPD = 27

CalAmt %D: -8.3 CalAmt %D: 17.9

Total PCB Area Col1 (5.436 - 13.545) = 612632 Col1 Total PCB = 0.3 ppm*

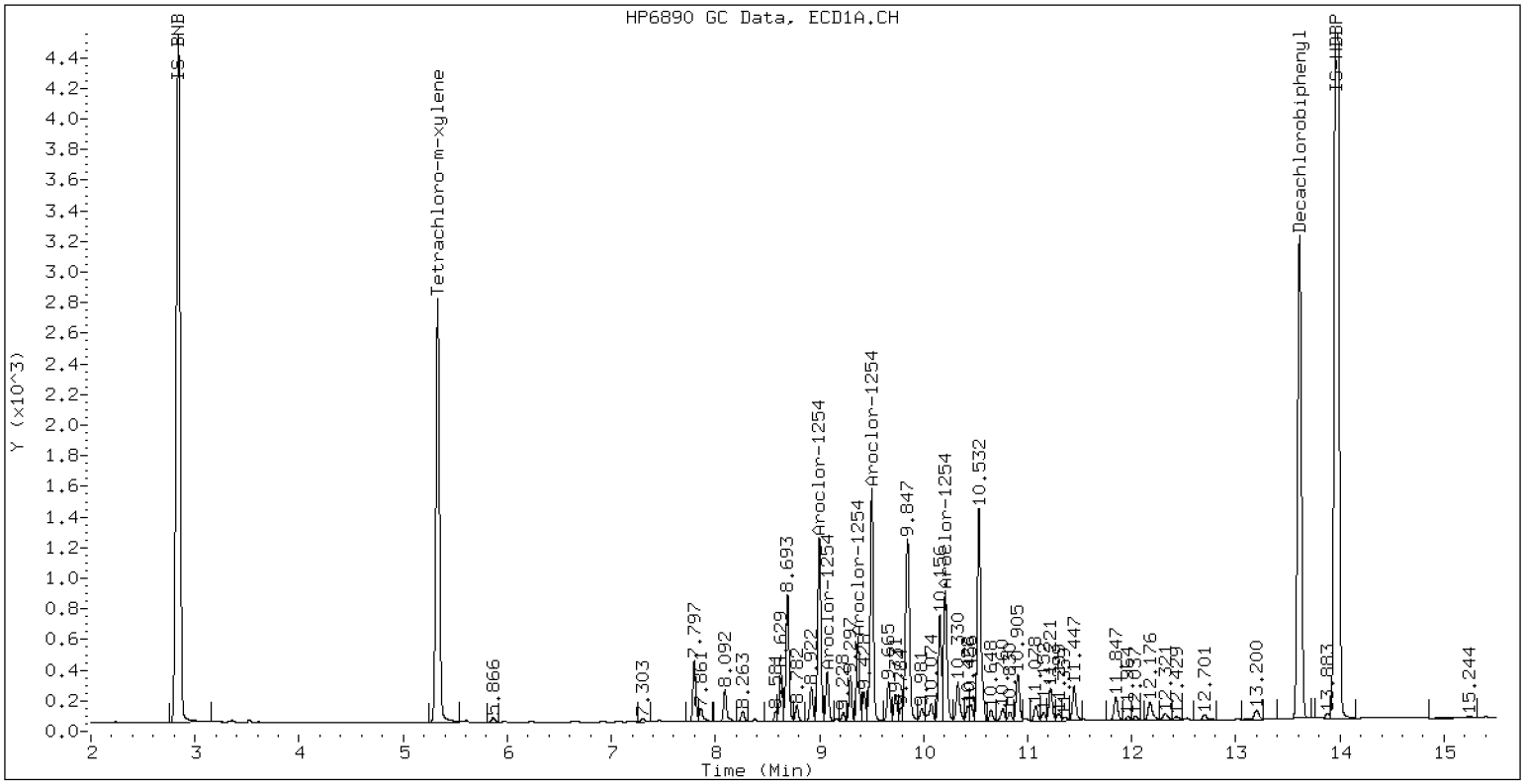
Total PCB Area Col2 (5.436 - 13.545) = 2488451 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

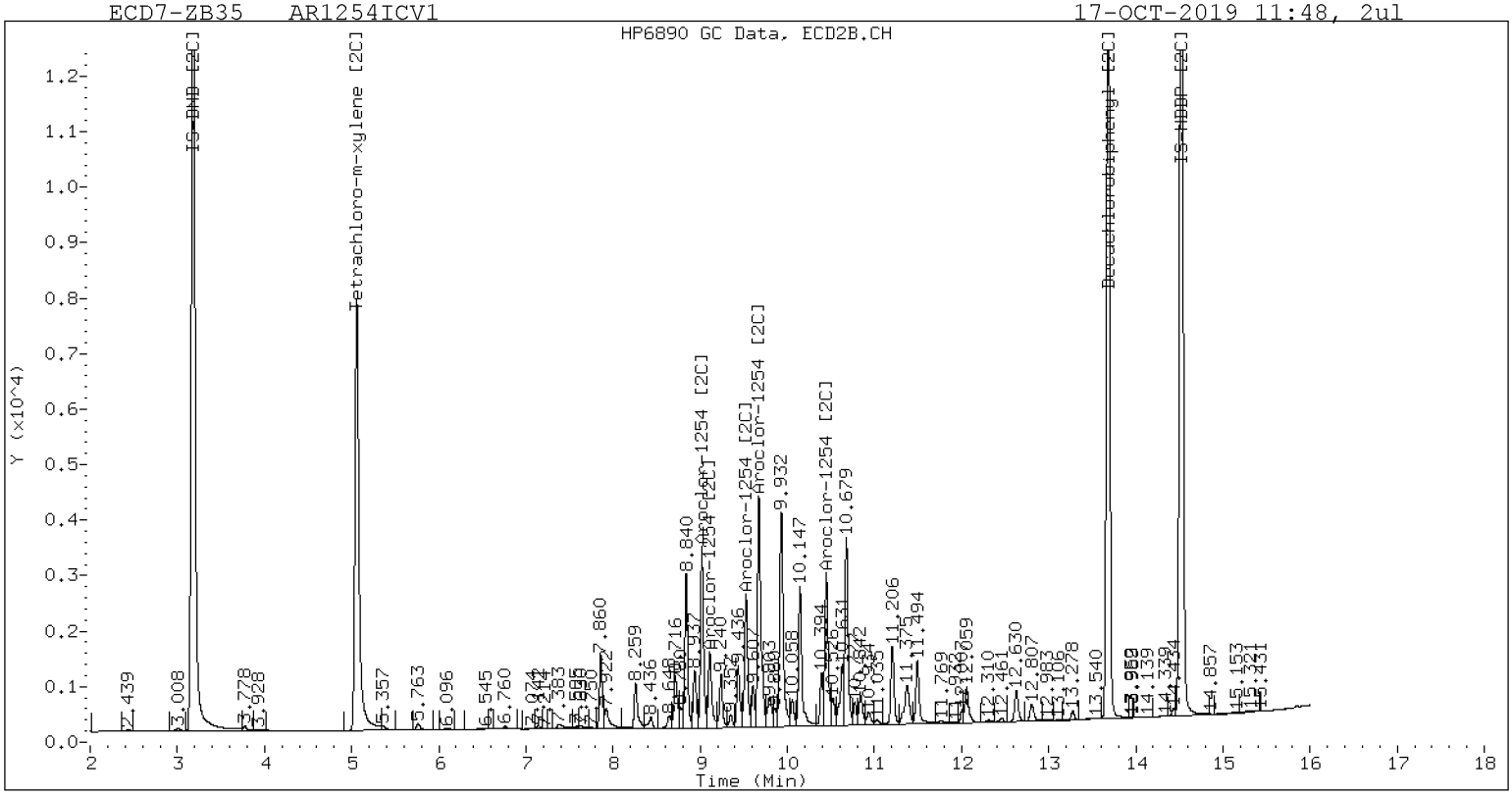
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1 17-OCT-2019 11:48, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1 17-OCT-2019 11:48, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101705ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0299	Injection Date:	10/17/19
Lab Sample ID:	SHJ0299-ICV2	Injection Time:	12:09
Sequence Name:	AR1660ICV2		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	279	0.0424735	0.0477077		11.4	20
Aroclor 1016 [2C]	A	250.00	290	0.0443328	0.0520456		16.1	20
Aroclor 1260	A	250.00	267	0.0444075	0.0483041		7.0	20
Aroclor 1260 [2C]	A	250.00	225	0.0670532	0.0617452		-10.0	20
Decachlorobiphenyl	A	40.000	45.9	0.8094199	0.9294731		14.8	20
Tetrachlorometaxylene	A	40.000	47.0	0.9910571	1.1649240		17.5	20
Decachlorobiphenyl [2C]	A	40.000	37.8	1.5347890	1.4497480		-5.5	20
Tetrachlorometaxylene [2C]	A	40.000	47.7	0.9503239	1.1334910		19.3	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101705ECD7.D
Data file 2: /20191017.b/20191017.b/19101705ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV2
Client ID:
Injection Date: 17-OCT-2019 12:09
Report Date: 10/17/2019 16:29
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.334	0.000	137390	5.062	0.000	522839	47.0	47.7	1.5	Tetrachloro-m-xylene
13.612	0.000	162095	13.684	0.000	734093	45.9	37.8	19.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	117.5	119.3
Decachlorobiphenyl	114.8	94.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	235878	-10.3
Hexabromobiphenyl	382688	348789	-8.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	922529	-14.7
Hexabromobiphenyl	1006687	1012718	0.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.922	0.000	19591	273.7	1	6.761	0.000	126170	274.9
Aroclor-1016	2	7.311	0.000	72518	284.9	2	7.383	0.000	288378	300.9
Aroclor-1016	3	7.456	0.000	26712	278.3	3	7.583	0.000	118014	305.5
Aroclor-1016	4	8.265	0.000	21844	277.1	4	7.752	0.000	67608	280.2

Total Col1Ave (4 peaks): 278.5 Total Col2Ave (4 peaks): 290.4 RPD = 4
Corrected Ave (3 peaks): 276.4 Corrected Ave (3 peaks): 285.4 RPD = 3

CalAmt %D: 11.4 CalAmt %D: 16.2

Aroclor-1260	1	10.762	0.000	40233	249.8	1	10.778	0.000	141720	222.4
Aroclor-1260	2	11.078	0.000	41589	269.3	2	11.215	0.000	147200	228.7
Aroclor-1260	3	11.447	0.000	108257	276.2	3	11.494	0.000	388001	240.6
Aroclor-1260	4	11.847	0.000	52712	298.1	4	12.008	0.000	104710	208.6
Aroclor-1260	5	11.964	0.000	20458	244.3	NS	---			----

Total Col1Ave (5 peaks): 267.5 Total Col2Ave (4 peaks): 225.1 RPD = 17
Corrected Ave (4 peaks): 259.9 Corrected Ave (3 peaks): 219.9 RPD = 17

CalAmt %D: 7.0 CalAmt %D: -10.0

Total PCB Area Col1 (5.434 - 13.512) = 1155033 Col1 Total PCB = 0.6 ppm*

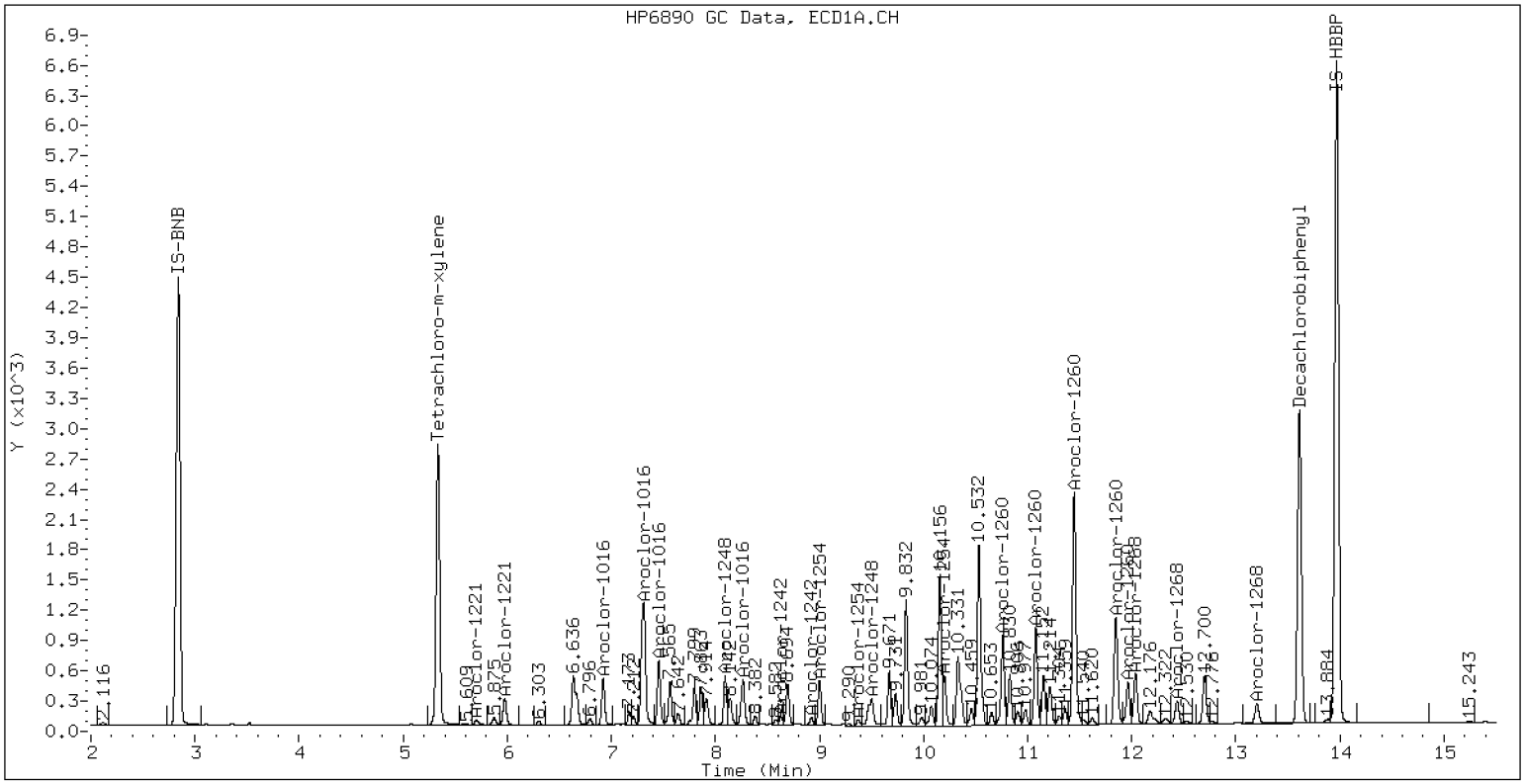
Total PCB Area Col2 (5.434 - 13.512) = 4261236 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

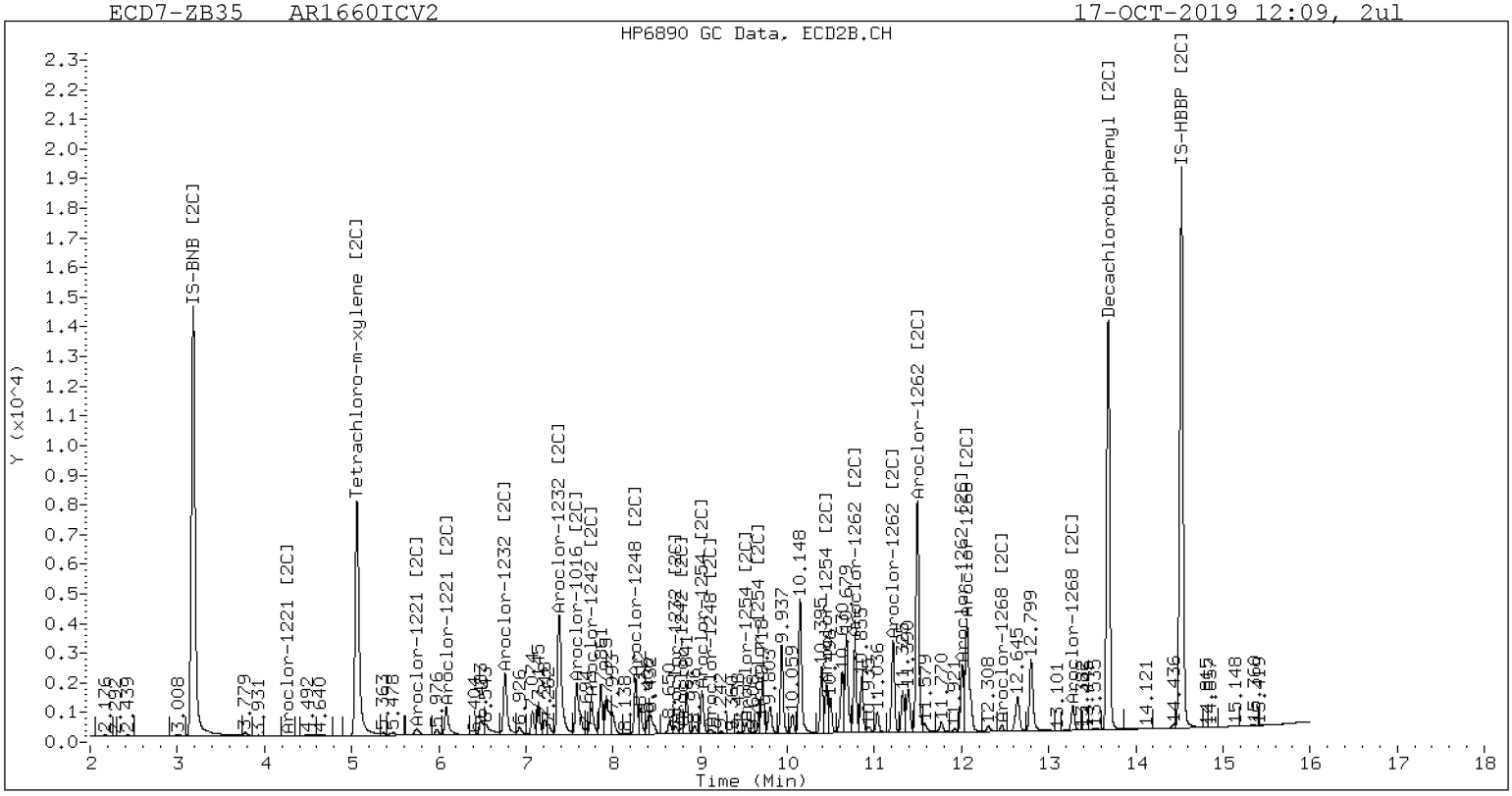
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660ICV2 17-OCT-2019 12:09, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660ICV2 17-OCT-2019 12:09, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101805ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0314	Injection Date:	10/18/19
Lab Sample ID:	SHJ0314-ICV1	Injection Time:	14:15
Sequence Name:	AR1254ICV1		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	234	0.0530781	0.0507925		-6.2	20
Aroclor 1254 [2C]	A	250.00	256	0.0428263	0.0443964		2.2	20
Decachlorobiphenyl	A	40.000	38.9	0.8094199	0.7869976		-2.8	20
Tetrachlorometaxylene	A	40.000	42.3	0.9910571	1.0473570		5.8	20
Decachlorobiphenyl [2C]	A	40.000	38.2	1.5347890	1.4671230		-4.5	20
Tetrachlorometaxylene [2C]	A	40.000	41.7	0.9503239	0.9903103		4.3	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191018.b/19101805ECD7.D
Data file 2: /20191018.b/20191018.b/19101805ECD7.D
Method: \\target\share\chem4\ecd7.i\20191018.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV1
Client ID:
Injection Date: 18-OCT-2019 14:15
Report Date: 10/18/2019 15:33
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.332	-0.005	248941	5.058	-0.005	522152	42.3	41.7	1.4	Tetrachloro-m-xylene
13.615	0.002	304476	13.684	-0.002	762667	38.9	38.2	1.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	105.7	104.2
Decachlorobiphenyl	97.2	95.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	475370	80.8
Hexabromobiphenyl	382688	773766	102.2 <-

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1054522	-2.5
Hexabromobiphenyl	1006687	1039677	3.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1254	1	9.000	0.000	95742	239.0	1	9.022	0.000	151027	258.5
Aroclor-1254	2	9.076	0.000	25134	203.6	2	9.112	0.000	72151	242.7
Aroclor-1254	3	9.369	0.000	57680	250.3	3	9.528	0.000	114575	250.1
Aroclor-1254	4	9.504	0.000	122557	248.4	4	9.677	0.000	249429	272.2
Aroclor-1254	5	10.210	0.000	76156	231.3	5	10.452	0.000	144333	254.9

Total Col1Ave (5 peaks): 234.5 Total Col2Ave (5 peaks): 255.7 RPD = 9

Corrected Ave (4 peaks): 230.6 Corrected Ave (4 peaks): 251.5 RPD = 9

CalAmt %D: -6.2 CalAmt %D: 2.3

Total PCB Area Col1 (5.437 - 13.514) = 1113705 Col1 Total PCB = 0.3 ppm*

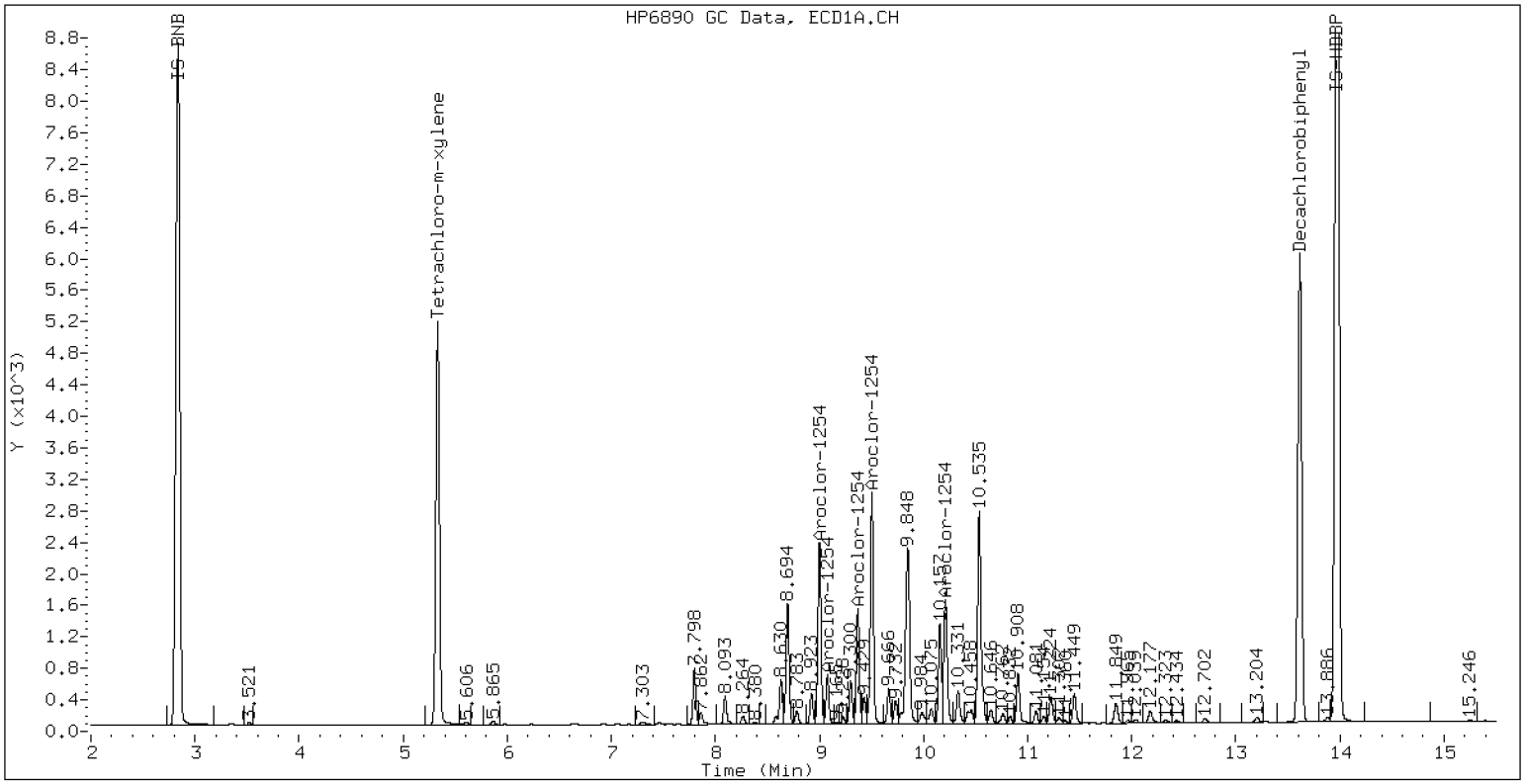
Total PCB Area Col2 (5.437 - 13.514) = 2476039 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

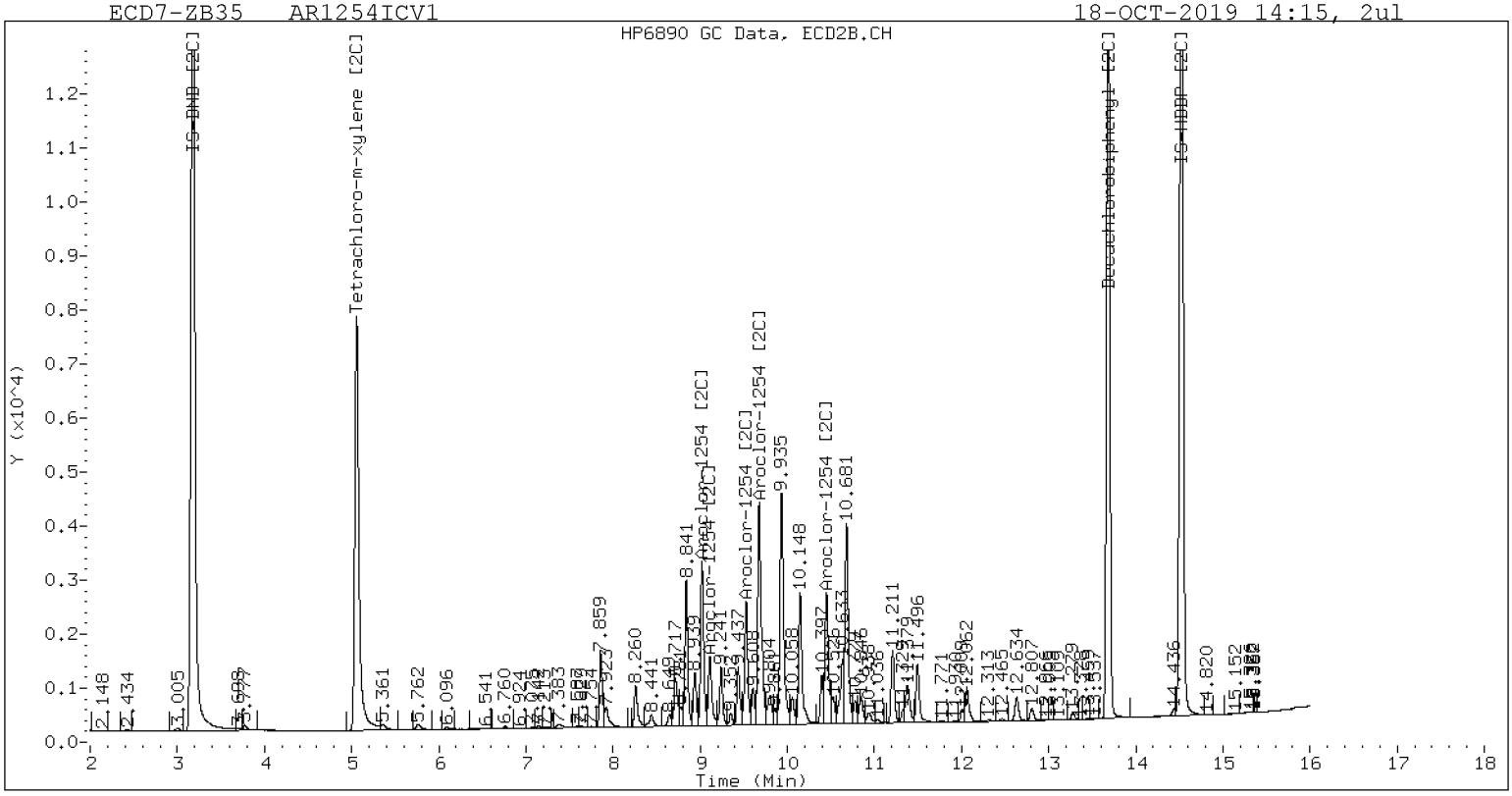
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1 18-OCT-2019 14:15, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1 18-OCT-2019 14:15, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101804ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0314	Injection Date:	10/18/19
Lab Sample ID:	SHJ0314-ICV2	Injection Time:	13:54
Sequence Name:	AR1660ICV2		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	252	0.0424735	0.0438843		0.6	20
Aroclor 1016 [2C]	A	250.00	281	0.0443328	0.0503298		12.3	20
Aroclor 1260	A	250.00	251	0.0444075	0.0461655		0.6	20
Aroclor 1260 [2C]	A	250.00	245	0.0670532	0.0667640		-2.2	20
Decachlorobiphenyl	A	40.000	44.8	0.8094199	0.9060538		12.0	20
Tetrachlorometaxylene	A	40.000	45.1	0.9910571	1.1179200		12.8	20
Decachlorobiphenyl [2C]	A	40.000	40.0	1.5347890	1.5332160		0.0	20
Tetrachlorometaxylene [2C]	A	40.000	45.7	0.9503239	1.0868110		14.3	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191018.b/19101804ECD7.D
Data file 2: /20191018.b/20191018.b/19101804ECD7.D
Method: \\target\share\chem4\ecd7.i\20191018.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV2
Client ID:
Injection Date: 18-OCT-2019 13:54
Report Date: 10/18/2019 15:33
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.325	-0.012	242085	5.051	-0.012	463653	45.1	45.7	1.4	Tetrachloro-m-xylene
13.614	0.001	284037	13.685	-0.001	617272	44.8	40.0	11.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	112.8	114.4
Decachlorobiphenyl	111.9	99.9

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	433099	64.7
Hexabromobiphenyl	382688	626976	63.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	853236	-21.1
Hexabromobiphenyl	1006687	805199	-20.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.915	0.000	31485	239.6	1	6.753	0.000	112767	265.7
Aroclor-1016	2	7.305	0.000	126278	270.2	2	7.377	0.000	258090	291.1
Aroclor-1016	3	7.451	0.000	44514	252.5	3	7.577	0.000	105370	294.9
Aroclor-1016	4	8.261	0.000	35301	243.9	4	7.745	0.000	60563	271.4

Total Col1Ave (4 peaks): 251.6 Total Col2Ave (4 peaks): 280.8 RPD = 11
Corrected Ave (3 peaks): 245.3 Corrected Ave (3 peaks): 276.1 RPD = 12

CalAmt %D: 0.6 CalAmt %D: 12.3

Aroclor-1260	1	10.761	0.000	68434	236.3	1	10.777	0.000	121621	240.1
Aroclor-1260	2	11.078	0.000	70826	255.1	2	11.214	0.000	132712	259.3
Aroclor-1260	3	11.448	0.000	192271	272.9	3	11.493	0.000	328643	256.3
Aroclor-1260	4	11.848	0.000	88300	277.8	4	12.006	0.000	89003	223.0
Aroclor-1260	5	11.964	0.000	32429	215.5	NS	---			----

Total Col1Ave (5 peaks): 251.5 Total Col2Ave (4 peaks): 244.7 RPD = 3
Corrected Ave (4 peaks): 245.0 Corrected Ave (3 peaks): 239.8 RPD = 2

CalAmt %D: 0.6 CalAmt %D: -2.1

Total PCB Area Col1 (5.437 - 13.514) = 1909508 Col1 Total PCB = 0.5 ppm*

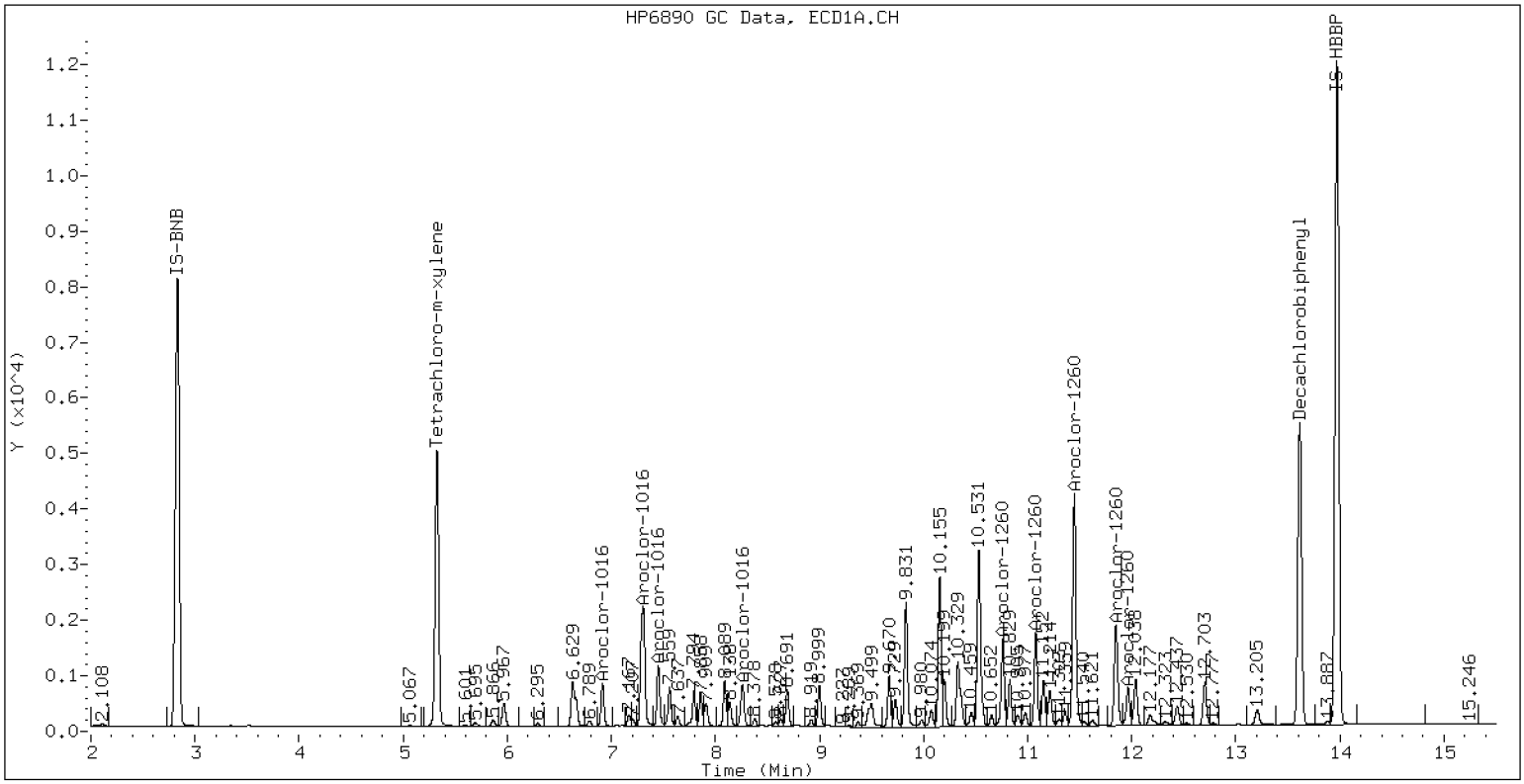
Total PCB Area Col2 (5.437 - 13.514) = 3709703 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

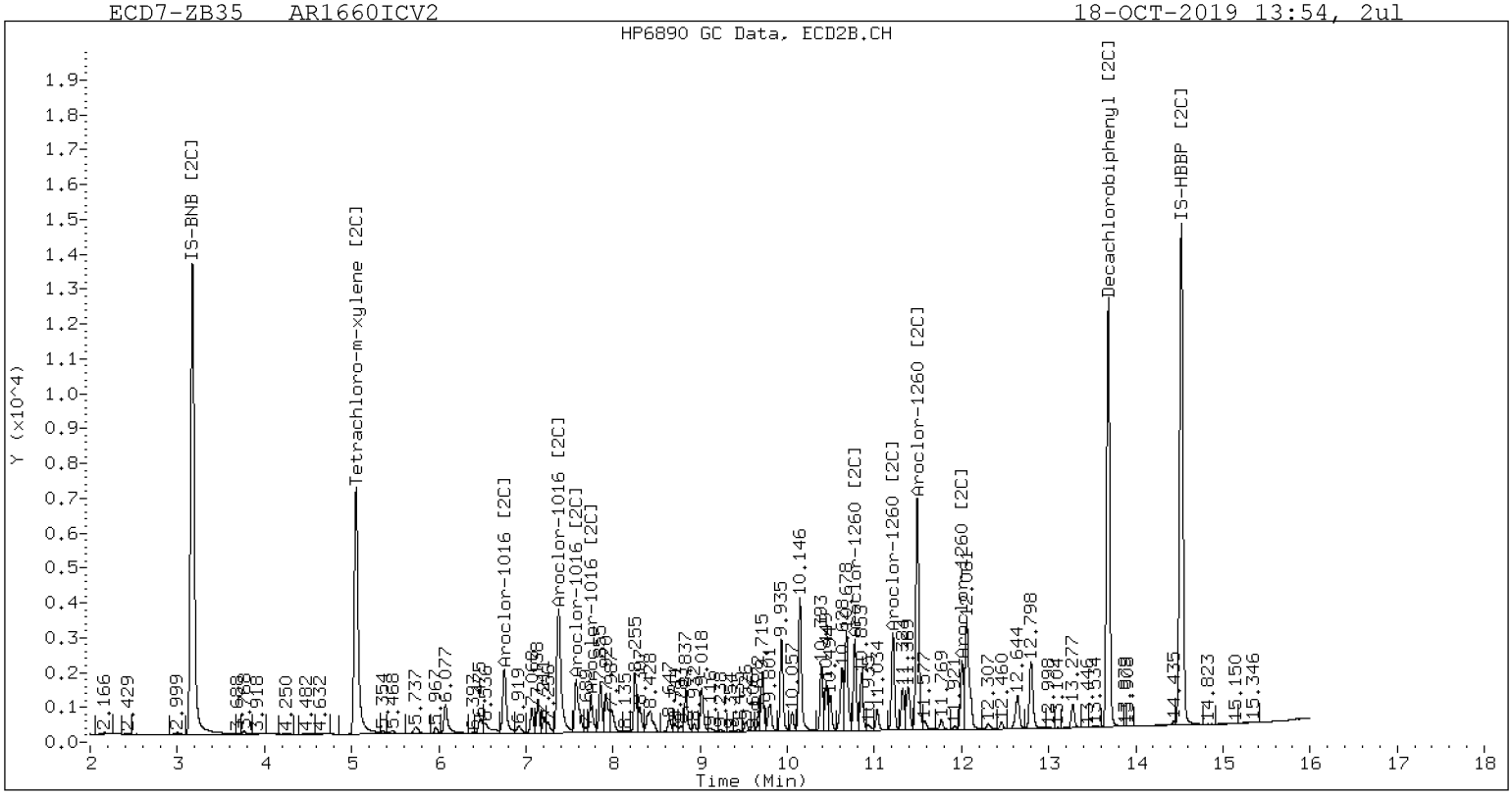
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660ICV2 18-OCT-2019 13:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660ICV2 18-OCT-2019 13:54, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19091516ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHI0216	Injection Date:	09/15/19
Lab Sample ID:	SHI0216-SCV1	Injection Time:	17:29
Sequence Name:	AR1660SCV1		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	263	0.0424735	0.0445216		5.3	20
Aroclor 1016 [2C]	A	250.00	252	0.0443328	0.0446481		0.7	20
Aroclor 1260	A	250.00	266	0.0444075	0.0480543		6.5	20
Aroclor 1260 [2C]	A	250.00	256	0.0670532	0.0690106		2.5	20
Decachlorobiphenyl	A	40.000	36.6	0.8094199	0.7399518		-8.6	20
Tetrachlorometaxylene	A	40.000	41.8	0.9910571	1.0353730		4.5	20
Decachlorobiphenyl [2C]	A	40.000	34.1	1.5347890	1.3077540		-14.8	20
Tetrachlorometaxylene [2C]	A	40.000	39.0	0.9503239	0.9269447		-2.5	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091516ECD7.D
Data file 2: /20190915.b/20190915.b/19091516ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV1
Client ID:
Injection Date: 15-SEP-2019 17:29
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.340	-0.000	139282	5.079	-0.001	501326	41.8	39.0	6.9	Tetrachloro-m-xylene
13.614	0.000	147529	13.700	-0.002	704171	36.6	34.1	7.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	104.5	97.5
Decachlorobiphenyl	91.4	85.2

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	269047	2.3
Hexabromobiphenyl	382688	398753	4.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1081674	-0.0
Hexabromobiphenyl	1006687	1076917	7.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.925	-0.001	20670	253.2	1	6.777	-0.001	131932	245.2
Aroclor-1016	2	7.313	-0.000	75492	260.0	2	7.398	-0.000	284758	253.4
Aroclor-1016	3	7.459	-0.001	27940	255.2	3	7.598	0.001	114982	253.9
Aroclor-1016	4	8.267	-0.001	25628	285.0	4	7.766	-0.001	72012	254.6
Total Col1Ave (4 peaks): 263.4						Total Col2Ave (4 peaks): 251.8 RPD = 5				
Corrected Ave (3 peaks): 256.1						Corrected Ave (3 peaks): 250.8 RPD = 2				
Aroclor-1221	1	---			0.0	1	4.281	-0.002	714	9.3
Aroclor-1221	2	5.708	-0.003	2518	82.4	2	5.762	0.004	17203	107.3
Aroclor-1221	3	5.981	-0.002	14494	186.9	3	6.103	-0.001	63127	235.2
Col1Ave: <3 Quant Peaks						Col2Ave: 117.3				
Aroclor-1232	1	---			0.0	1	4.281	-0.001	714	15.6
Aroclor-1232	2	6.925	0.000	20670	675.7	2	6.777	0.000	131932	578.9
Aroclor-1232	3	7.313	0.000	75492	690.6	3	7.398	0.001	284758	624.5
Aroclor-1232	4	7.459	-0.000	27940	681.7	4	8.728	-0.001	16488	108.8
Total Col1Ave (3 peaks): 682.7						Total Col2Ave (4 peaks): 332.0 RPD = 69*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 234.4				
Aroclor-1242	1	6.925	-0.000	20670	312.2	1	6.777	-0.001	131932	321.7
Aroclor-1242	2	7.313	-0.001	75492	315.5	2	7.398	0.000	284758	321.6
Aroclor-1242	3	8.632	0.000	3823	48.5	3	7.766	-0.001	72012	319.0
Aroclor-1242	4	8.924	0.005	1968	23.4	4	8.799	-0.001	10146	36.1
Total Col1Ave (4 peaks): 174.9						Total Col2Ave (4 peaks): 249.6 RPD = 35				
Corrected Ave (3 peaks): 128.0						Corrected Ave (3 peaks): 225.6 RPD = 55*				
Aroclor-1248	1	8.096	-0.001	20862	172.5	1	7.398	0.003	284758	484.2
Aroclor-1248	2	8.632	0.000	3823	25.4	2	8.275	-0.000	86975	196.1
Aroclor-1248	3	8.924	0.004	1968	14.1	3	8.799	-0.001	10146	22.7
Aroclor-1248	4	9.478	-0.028	15140	168.4	4	9.135	-0.000	5011	8.7
Total Col1Ave (4 peaks): 95.1						Total Col2Ave (4 peaks): 177.9 RPD = 61*				
Corrected Ave (3 peaks): 69.3						Corrected Ave (3 peaks): 75.8 RPD = 9				
Aroclor-1254	1	9.004	0.002	13997	61.7	1	9.036	-0.000	52182	87.1
Aroclor-1254	2	---			0.0	2	9.135	0.008	5011	16.4
Aroclor-1254	3	9.372	0.001	2241	17.2	3	9.544	0.001	8366	17.8
Aroclor-1254	4	9.478	-0.027	15140	54.2	4	9.732	0.041	121876	129.6
Aroclor-1254	5	10.158	-0.053	79007	424.0	5	10.467	0.003	54907	94.5
Total Col1Ave (4 peaks): 139.3						Total Col2Ave (5 peaks): 69.1 RPD = 67*				
Corrected Ave (3 peaks): 44.4						Corrected Ave (4 peaks): 54.0 RPD = 19				
Aroclor-1260	1	10.763	-0.000	47502	257.9	1	10.793	-0.001	173400	255.9
Aroclor-1260	2	11.079	-0.001	47459	268.8	2	11.232	-0.001	175778	256.8
Aroclor-1260	3	11.449	-0.000	124200	277.2	3	11.510	-0.002	444580	259.2
Aroclor-1260	4	11.849	0.000	56510	279.5	4	12.023	0.000	135226	253.4
Aroclor-1260	5	11.965	-0.000	23732	247.9	NS	---			----
Total Col1Ave (5 peaks): 266.3						Total Col2Ave (4 peaks): 256.3 RPD = 4				
Corrected Ave (4 peaks): 263.0						Corrected Ave (3 peaks): 255.4 RPD = 3				
Aroclor-1262	1	11.079	-0.001	47459	227.2	1	10.793	-0.001	173400	185.6
Aroclor-1262	2	11.449	-0.000	124200	240.2	2	11.232	-0.002	175778	220.0
Aroclor-1262	3	11.849	-0.001	56510	368.0	3	11.510	-0.001	444580	242.6
Aroclor-1262	4	11.965	-0.000	23732	121.9	4	12.023	-0.001	135226	151.3
Total Col1Ave (4 peaks): 239.3						Total Col2Ave (4 peaks): 199.9 RPD = 18				
Corrected Ave (3 peaks): 196.4						Corrected Ave (3 peaks): 185.6 RPD = 6				
Aroclor-1268	1	11.965	-0.000	23732	38.7	1	12.023	-0.001	135226	58.3
Aroclor-1268	2	12.038	0.002	29014	52.4	2	12.078	-0.013	289317	124.3
Aroclor-1268	3	12.438	0.015	12219	26.1	3	12.479	-0.002	4945	2.3
Aroclor-1268	4	13.205	-0.002	5597	3.8	4	13.293	-0.004	26676	3.6
Total Col1Ave (4 peaks): 30.3						Total Col2Ave (4 peaks): 47.1 RPD = 44*				
Corrected Ave (3 peaks): 22.9						Corrected Ave (3 peaks): 21.4 RPD = 7				

Total PCB Area Col1 (5.441 - 13.514) = 1171435 Col1 Total PCB = 0.5 ppm*

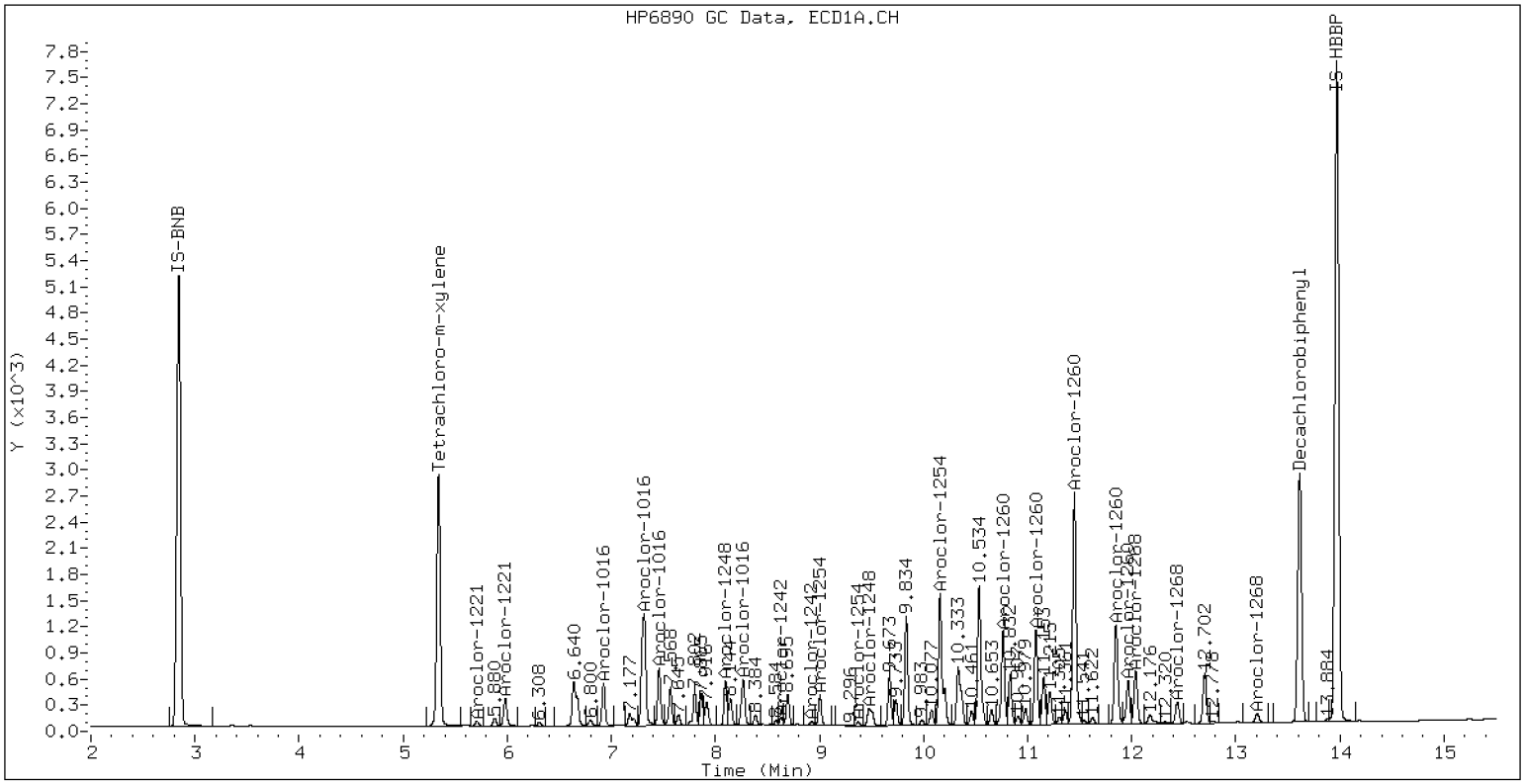
Total PCB Area Col2 (5.441 - 13.514) = 4394557 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

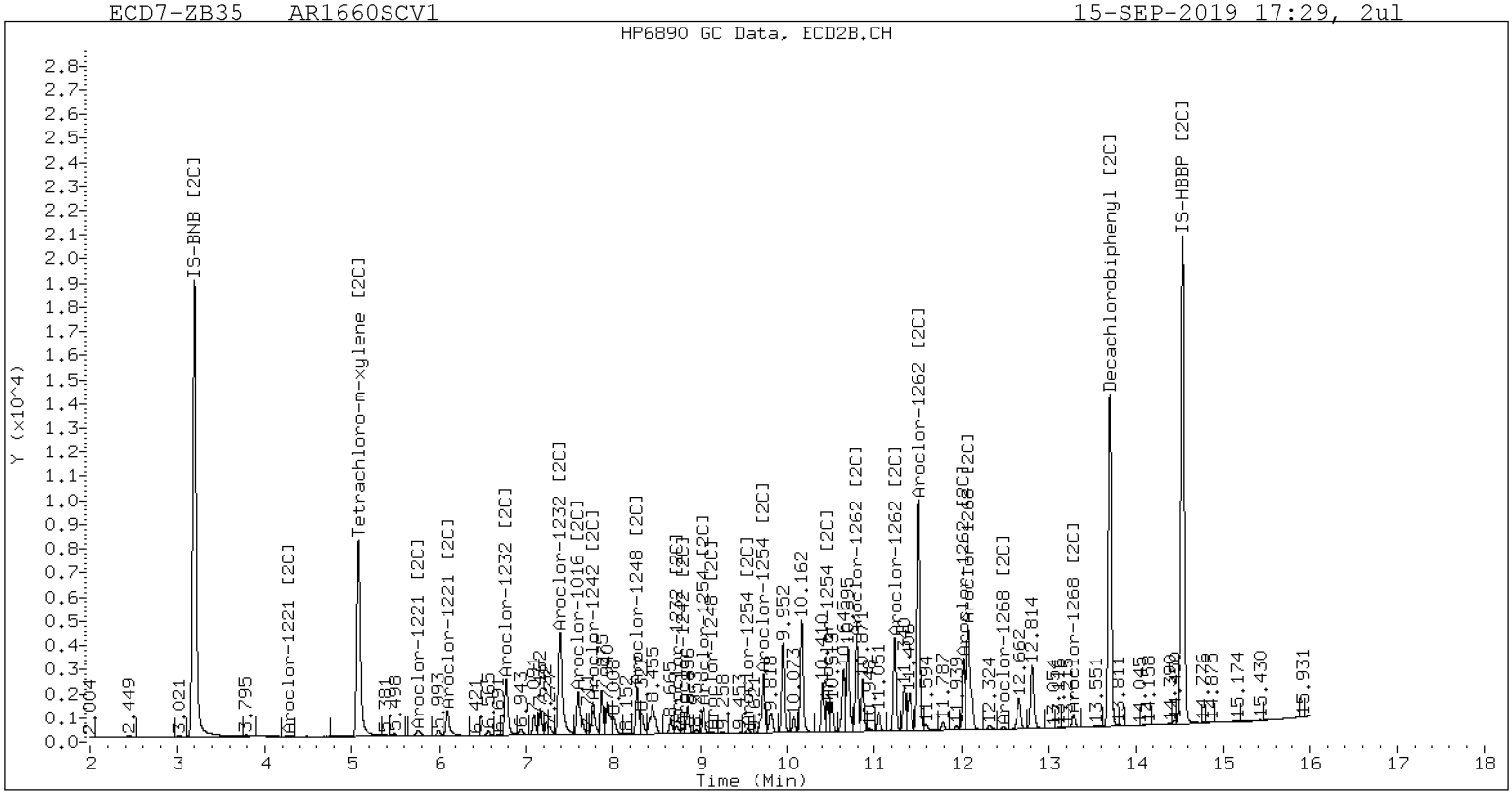
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV1 15-SEP-2019 17:29, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV1 15-SEP-2019 17:29, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19091517ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHI0216	Injection Date:	09/15/19
Lab Sample ID:	SHI0216-SCV2	Injection Time:	17:50
Sequence Name:	AR1242SCV2		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	242	0.0348200	0.0337547		-3.3	20
Aroclor 1242 [2C]	A	250.00	243	0.0333224	0.0326505		-2.7	20
Decachlorobiphenyl	A	40.000	36.7	0.8094199	0.7420810		-8.3	20
Tetrachlorometaxylene	A	40.000	41.3	0.9910571	1.0235390		3.3	20
Decachlorobiphenyl [2C]	A	40.000	33.8	1.5347890	1.2974990		-15.5	20
Tetrachlorometaxylene [2C]	A	40.000	38.1	0.9503239	0.9053968		-4.7	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091517ECD7.D
Data file 2: /20190915.b/20190915.b/19091517ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV2
Client ID:
Injection Date: 15-SEP-2019 17:50
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000	141558	5.080	0.000	512417	41.3	38.1	8.1	Tetrachloro-m-xylene
13.614	0.000	154315	13.701	-0.000	730054	36.7	33.8	8.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	103.3	95.3
Decachlorobiphenyl	91.7	84.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	276605	-36.0
Hexabromobiphenyl	517563	415898	-19.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1131917	-24.4
Hexabromobiphenyl	1404015	1125325	-19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.925	-0.000	16898	201.3	1	6.778	-0.001	106681	189.5
Aroclor-1016	2	7.313	-0.000	60035	201.1	2	7.398	0.000	229278	195.0
Aroclor-1016	3	7.460	0.000	22476	199.7	3	7.598	0.000	92364	194.9
Aroclor-1016	4	8.267	-0.001	22168	239.8	4	7.767	-0.000	57828	195.4
Total Col1Ave (4 peaks): 210.5						Total Col2Ave (4 peaks): 193.7 RPD = 8				
Corrected Ave (3 peaks): 200.7						Corrected Ave (3 peaks): 193.1 RPD = 4				
Aroclor-1221	1	---			0.0	1	4.287	0.003	465	5.8
Aroclor-1221	2	5.709	-0.003	1988	63.3	2	5.768	0.010	14831	88.4
Aroclor-1221	3	5.981	-0.002	11461	143.8	3	6.104	-0.000	51036	181.7
Col1Ave: <3 Quant Peaks						Col2Ave: 92.0				
Aroclor-1232	1	---			0.0	1	4.287	0.005	465	9.7
Aroclor-1232	2	6.925	0.000	16898	537.3	2	6.778	0.001	106681	447.3
Aroclor-1232	3	7.313	0.000	60035	534.2	3	7.398	0.001	229278	480.5
Aroclor-1232	4	7.460	0.000	22476	533.4	4	8.729	-0.000	71208	449.0
Total Col1Ave (3 peaks): 535.0						Total Col2Ave (4 peaks): 346.6 RPD = 43*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 302.0				
Aroclor-1242	1	6.925	-0.000	16898	248.3	1	6.778	-0.000	106681	248.6
Aroclor-1242	2	7.313	-0.001	60035	244.1	2	7.398	0.000	229278	247.4
Aroclor-1242	3	8.632	0.000	19399	239.2	3	7.767	-0.001	57828	244.8
Aroclor-1242	4	8.920	0.000	20377	235.7	4	8.801	0.000	68184	232.0
Total Col1Ave (4 peaks): 241.8						Total Col2Ave (4 peaks): 243.2 RPD = 1				
Corrected Ave (3 peaks): 239.7						Corrected Ave (3 peaks): 241.4 RPD = 1				
Aroclor-1248	1	8.096	-0.001	17908	144.1	1	7.398	0.003	229278	372.5
Aroclor-1248	2	8.632	0.000	19399	125.4	2	8.275	0.000	73096	157.5
Aroclor-1248	3	8.920	-0.000	20377	141.5	3	8.801	0.000	68184	145.8
Aroclor-1248	4	9.506	-0.000	11216	121.3	4	9.136	0.001	86440	142.9
Total Col1Ave (4 peaks): 133.1						Total Col2Ave (4 peaks): 204.7 RPD = 42*				
Corrected Ave (3 peaks): 129.4						Corrected Ave (3 peaks): 148.8 RPD = 14				
Aroclor-1254	1	9.001	-0.001	9693	41.6	1	9.036	-0.001	25152	40.1
Aroclor-1254	2	9.078	-0.000	4295	59.8	2	9.136	0.009	86440	270.9
Aroclor-1254	3	9.371	0.000	5872	43.8	3	9.543	-0.000	23570	47.9
Aroclor-1254	4	9.506	0.001	11216	39.1	4	9.691	-0.000	37432	38.0
Aroclor-1254	5	10.215	0.005	7428	38.8	5	10.465	0.002	27749	45.7
Total Col1Ave (5 peaks): 44.6						Total Col2Ave (5 peaks): 88.5 RPD = 66*				
Corrected Ave (4 peaks): 40.8						Corrected Ave (4 peaks): 42.9 RPD = 5				
Aroclor-1260	1	---			0.0	1	10.795	0.000	925	1.3
Aroclor-1260	2	---			0.0	2	11.225	-0.008	5685	7.9
Aroclor-1260	3	---			0.0	3	11.512	-0.000	3227	1.8
Aroclor-1260	4	---			0.0	4	12.077	0.054	2320	4.2
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 3.8				
Aroclor-1262	1	---			0.0	1	10.795	0.000	925	0.9
Aroclor-1262	2	---			0.0	2	11.225	-0.010	5685	6.8
Aroclor-1262	3	---			0.0	3	11.512	0.001	3227	1.7
Aroclor-1262	4	---			0.0	4	12.077	0.053	2320	2.5
Col1Ave: <3 Quant Peaks						Col2Ave: 3.0				
Aroclor-1268	1	---			0.0	1	12.077	0.054	2320	1.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	12.484	0.003	1021	0.5
Aroclor-1268	4	---			0.0	4	13.300	0.003	911	0.1
Col1Ave: <3 Quant Peaks						Col2Ave: 0.5				

Total PCB Area Col1 (5.441 - 13.514) = 432451 Col1 Total PCB = 0.2 ppm*

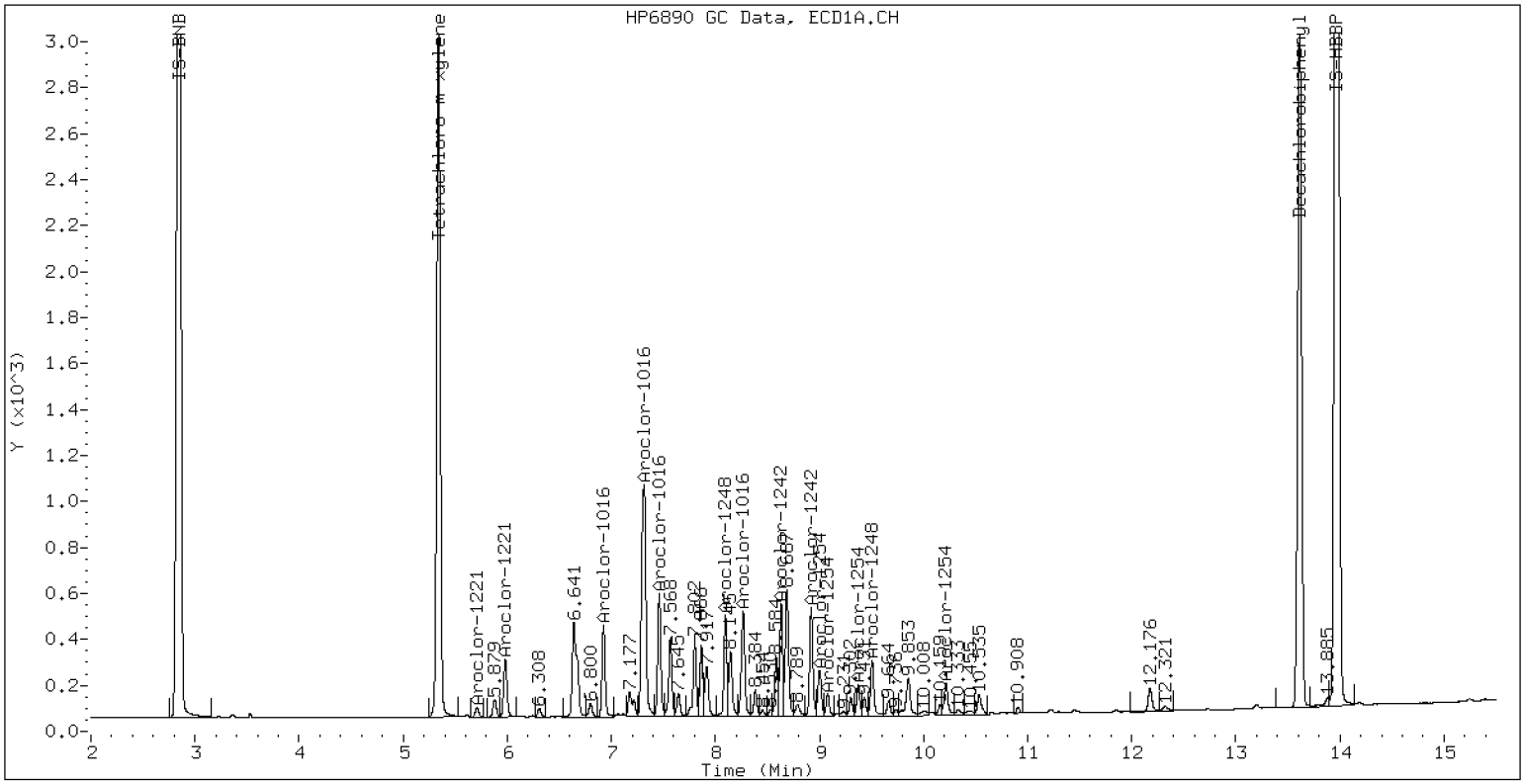
Total PCB Area Col2 (5.441 - 13.514) = 1684066 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

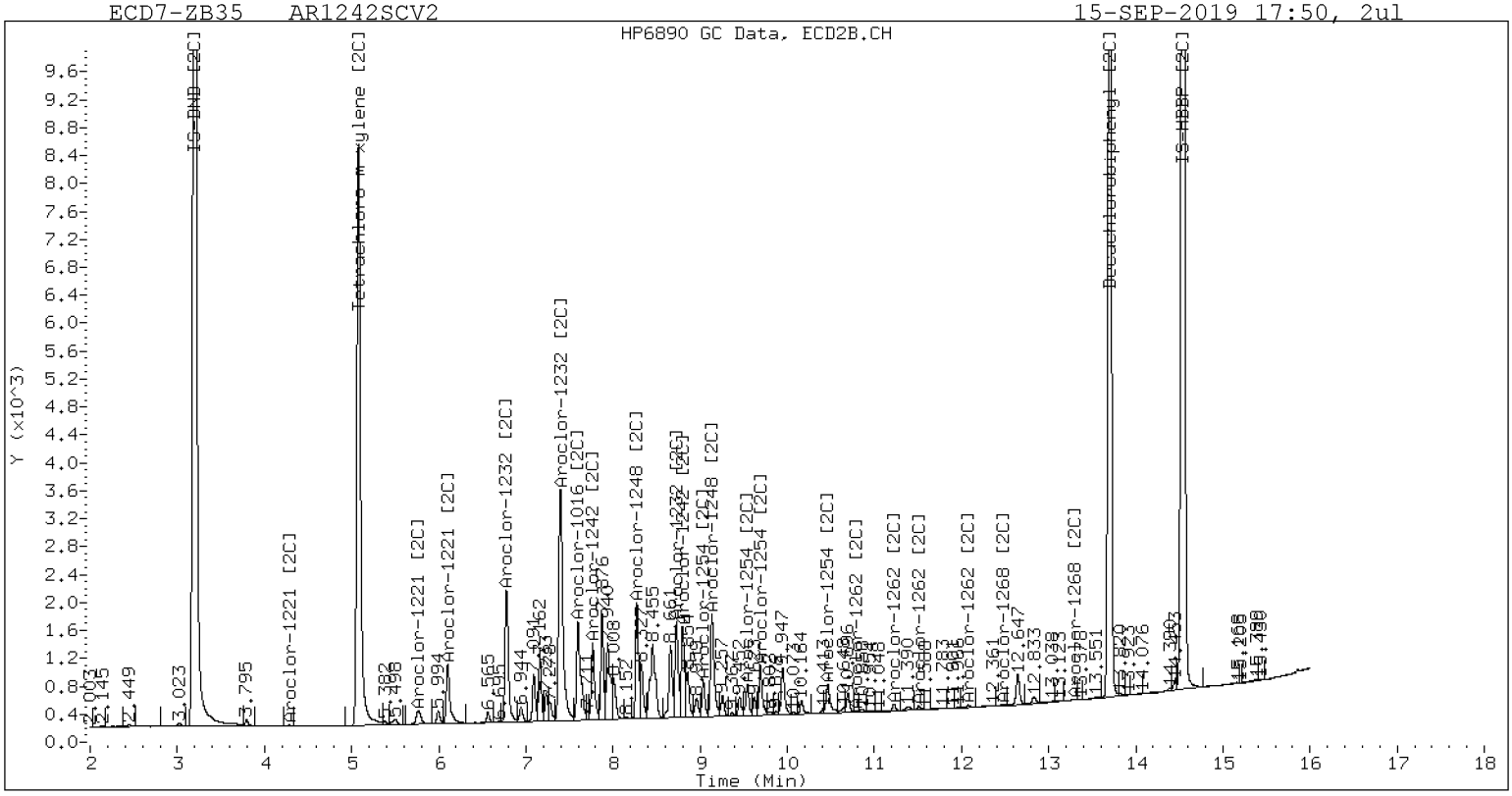
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV2 15-SEP-2019 17:50, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV2 15-SEP-2019 17:50, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19091518ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHI0216	Injection Date:	09/15/19
Lab Sample ID:	SHI0216-SCV3	Injection Time:	18:11
Sequence Name:	AR1248SCV3		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	243	0.0372731	0.0361871		-2.8	20
Aroclor 1248 [2C]	A	250.00	251	0.0380217	0.0382149		0.4	20
Decachlorobiphenyl	A	40.000	36.1	0.8094199	0.7301638		-9.8	20
Tetrachlorometaxylene	A	40.000	41.1	0.9910571	1.0172600		2.6	20
Decachlorobiphenyl [2C]	A	40.000	33.8	1.5347890	1.2985010		-15.4	20
Tetrachlorometaxylene [2C]	A	40.000	38.2	0.9503239	0.9079950		-4.5	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091518ECD7.D
Data file 2: /20190915.b/20190915.b/19091518ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV3
Client ID:
Injection Date: 15-SEP-2019 18:11
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000	144337	5.081	0.001	525429	41.1	38.2	7.2	Tetrachloro-m-xylene
13.613	-0.000	155898	13.702	-0.000	747902	36.1	33.8	6.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	102.6	95.5
Decachlorobiphenyl	90.2	84.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283776	-34.4
Hexabromobiphenyl	517563	427022	-17.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1157339	-22.7
Hexabromobiphenyl	1404015	1151947	-18.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.926	-0.000	8301	96.4	1	6.777	-0.002	59820	103.9
Aroclor-1016	2	7.309	-0.004	40510	132.3	2	7.397	-0.001	161655	134.4
Aroclor-1016	3	7.462	0.002	13575	117.5	3	7.599	0.001	36509	75.3
Aroclor-1016	4	8.267	-0.000	35033	369.4	4	7.768	0.001	33959	112.2
Total Col1Ave (4 peaks): 178.9						Total Col2Ave (4 peaks): 106.5 RPD = 51*				
Corrected Ave (3 peaks): 115.4						Corrected Ave (3 peaks): 97.1 RPD = 17				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	5.617	-0.095	1004	31.1	2	5.780	0.022	7736	45.1
Aroclor-1221	3	5.981	-0.002	2454	30.0	3	6.105	0.001	12052	42.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.926	0.001	8301	257.3	2	6.777	-0.000	59820	245.3
Aroclor-1232	3	7.309	-0.003	40510	351.4	3	7.397	-0.000	161655	331.4
Aroclor-1232	4	7.462	0.002	13575	314.0	4	8.729	-0.001	134716	830.7
Total Col1Ave (3 peaks): 307.6						Total Col2Ave (3 peaks): 469.1 RPD = 42*				
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.926	-0.000	8301	118.9	1	6.777	-0.001	59820	136.3
Aroclor-1242	2	7.309	-0.005	40510	160.5	2	7.397	-0.001	161655	170.6
Aroclor-1242	3	8.632	0.001	38513	463.0	3	7.768	0.000	33959	140.6
Aroclor-1242	4	8.920	0.001	35533	400.6	4	8.801	0.000	118313	393.7
Total Col1Ave (4 peaks): 285.7						Total Col2Ave (4 peaks): 210.3 RPD = 30				
Corrected Ave (3 peaks): 226.7						Corrected Ave (3 peaks): 149.2 RPD = 41*				
Aroclor-1248	1	8.096	-0.000	31009	243.1	1	7.397	0.002	161655	256.9
Aroclor-1248	2	8.632	0.000	38513	242.6	2	8.275	0.000	119193	251.2
Aroclor-1248	3	8.920	-0.000	35533	240.5	3	8.801	0.000	118313	247.5
Aroclor-1248	4	9.506	-0.000	23308	245.7	4	9.135	-0.000	153684	248.5
Total Col1Ave (4 peaks): 243.0						Total Col2Ave (4 peaks): 251.0 RPD = 3				
Corrected Ave (3 peaks): 242.1						Corrected Ave (3 peaks): 249.1 RPD = 3				
Aroclor-1254	1	9.001	-0.002	20497	85.7	1	9.037	-0.000	49764	77.6
Aroclor-1254	2	9.078	0.000	9115	123.7	2	9.135	0.008	153684	471.1
Aroclor-1254	3	9.371	-0.000	12774	92.9	3	9.543	-0.000	49122	97.7
Aroclor-1254	4	9.506	0.001	23308	79.1	4	9.691	-0.000	81623	81.1
Aroclor-1254	5	10.216	0.005	15329	78.0	5	10.463	-0.000	61571	99.1
Total Col1Ave (5 peaks): 91.9						Total Col2Ave (5 peaks): 165.3 RPD = 57*				
Corrected Ave (4 peaks): 83.9						Corrected Ave (4 peaks): 88.9 RPD = 6				
Aroclor-1260	1	10.764	-0.000	1211	6.1	1	10.795	0.001	2983	4.1
Aroclor-1260	2	---			0.0	2	11.226	-0.007	6906	9.4
Aroclor-1260	3	11.449	-0.000	1232	2.6	3	11.510	-0.002	6245	3.4
Aroclor-1260	4	---			0.0	4	12.024	0.001	3247	5.7
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 5.7				
Aroclor-1262	1	---			0.0	1	10.795	0.001	2983	3.0
Aroclor-1262	2	---			0.0	2	11.226	-0.008	6906	8.1
Aroclor-1262	3	---			0.0	3	11.510	-0.000	6245	3.2
Aroclor-1262	4	---			0.0	4	12.024	0.000	3247	3.4
Col1Ave: <3 Quant Peaks						Col2Ave: 4.4				
Aroclor-1268	1	---			0.0	1	12.024	0.001	3247	1.3
Aroclor-1268	2	---			0.0	2	12.082	-0.008	4066	1.6
Aroclor-1268	3	---			0.0	3	12.487	0.006	1630	0.7
Aroclor-1268	4	---			0.0	4	13.295	-0.003	2205	0.3
Col1Ave: <3 Quant Peaks						Col2Ave: 1.0				

Total PCB Area Col1 (5.441 - 13.514) = 543228 Col1 Total PCB = 0.2 ppm*

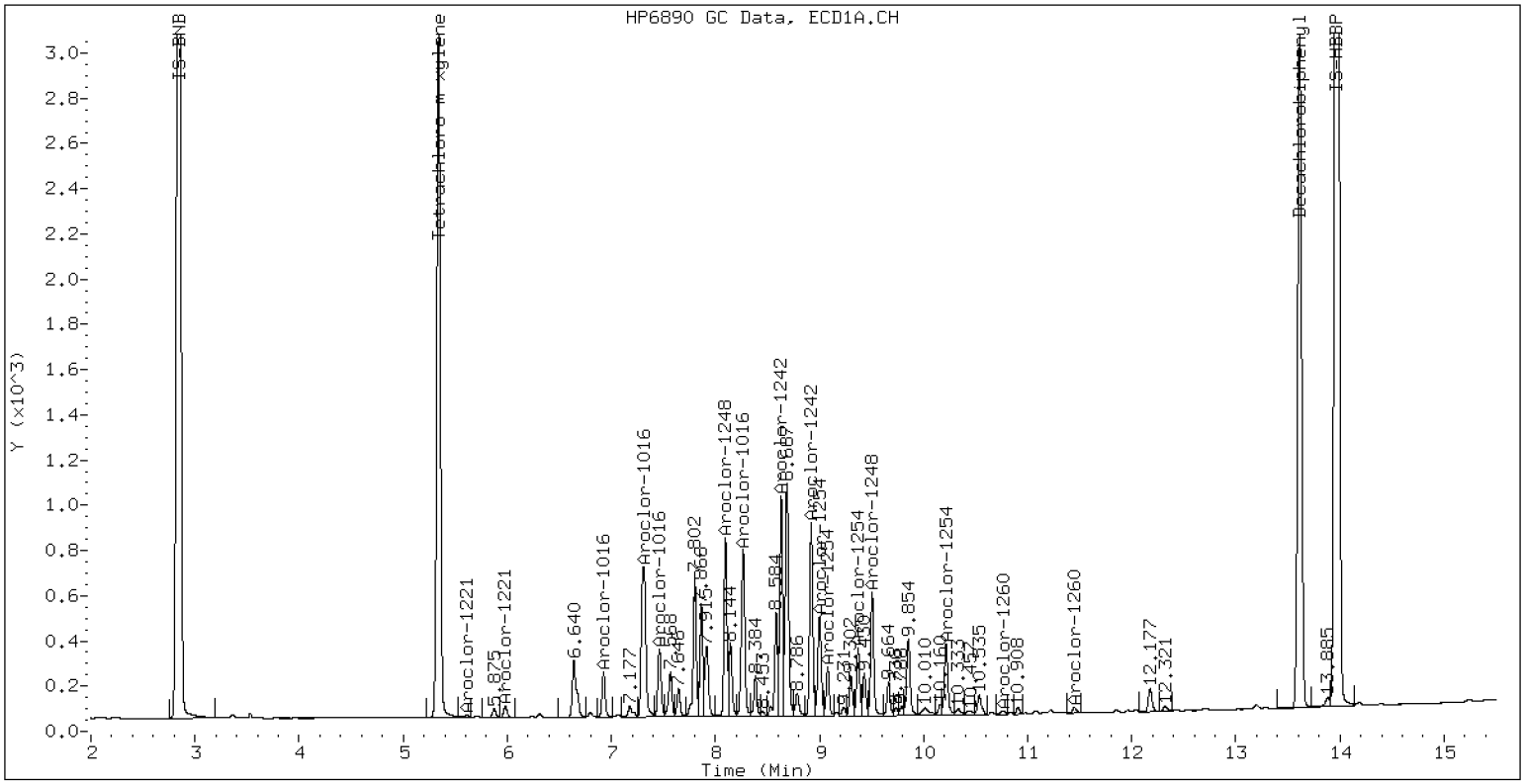
Total PCB Area Col2 (5.441 - 13.514) = 2103769 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

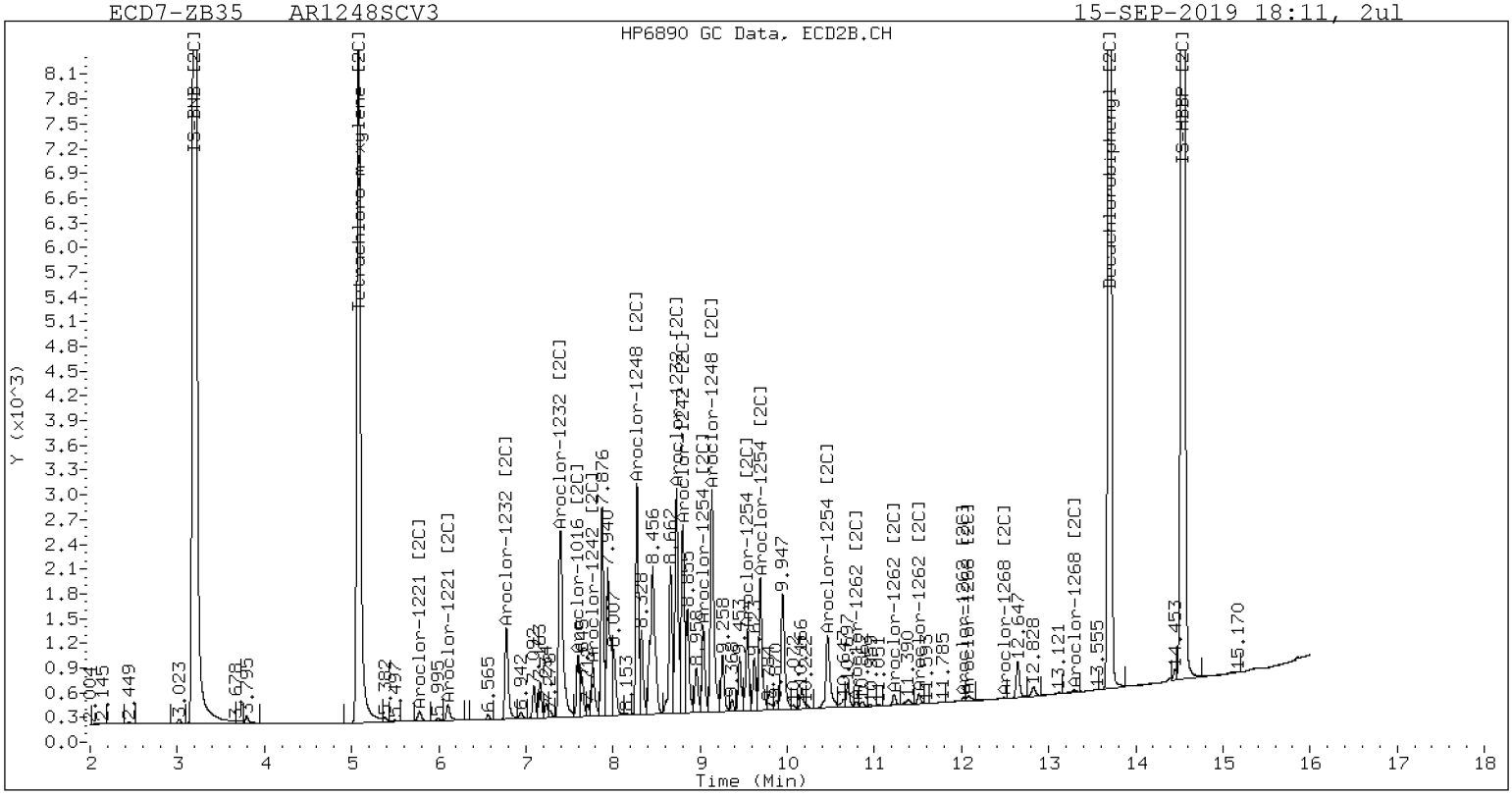
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV3 15-SEP-2019 18:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV3 15-SEP-2019 18:11, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19091519ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHI0216	Injection Date:	09/15/19
Lab Sample ID:	SHI0216-SCV4	Injection Time:	18:32
Sequence Name:	AR1254SCV4		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	252	0.0530781	0.0532672		0.6	20
Aroclor 1254 [2C]	A	250.00	258	0.0428263	0.0440675		3.1	20
Decachlorobiphenyl	A	40.000	36.4	0.8094199	0.7360540		-9.1	20
Tetrachlorometaxylene	A	40.000	40.3	0.9910571	0.9985064		0.8	20
Decachlorobiphenyl [2C]	A	40.000	33.9	1.5347890	1.2997470		-15.3	20
Tetrachlorometaxylene [2C]	A	40.000	37.6	0.9503239	0.8931573		-6.0	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091519ECD7.D
Data file 2: /20190915.b/20190915.b/19091519ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV4
Client ID:
Injection Date: 15-SEP-2019 18:32
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	142065	5.081	0.001	516612	40.3	37.6	7.0	Tetrachloro-m-xylene
13.614	-0.000	156661	13.701	-0.001	753354	36.4	33.9	7.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.8	94.0
Decachlorobiphenyl	90.9	84.7

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	284555	-34.2
Hexabromobiphenyl	517563	425678	-17.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1156822	-22.7
Hexabromobiphenyl	1404015	1159232	-17.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	6.778	-0.000	1021	1.8
Aroclor-1016	2	7.304	-0.009	1001	3.3	2	7.394	-0.004	4515	3.8
Aroclor-1016	3	---			0.0	3	7.602	0.004	728	1.5
Aroclor-1016	4	8.267	-0.000	4386	46.1	4	7.769	0.002	531	1.8
	Col1Ave: <3 Quant Peaks					Col2Ave: 2.2				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	5.782	0.024	6140	35.8
Aroclor-1221	3	---			0.0	3	6.116	0.012	1797	6.3
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	6.778	0.001	1021	4.2
Aroclor-1232	3	---			0.0	3	7.394	-0.003	4515	9.3
Aroclor-1232	4	---			0.0	4	8.729	0.000	65407	403.5
	Col1Ave: <3 Quant Peaks					Col2Ave: 139.0				
Aroclor-1242	1	---			0.0	1	6.778	-0.000	1021	2.3
Aroclor-1242	2	7.304	-0.010	1001	4.0	2	7.394	-0.004	4515	4.8
Aroclor-1242	3	8.632	0.001	20852	250.0	3	7.769	0.002	531	2.2
Aroclor-1242	4	8.925	0.005	11451	128.7	4	8.799	-0.002	20564	68.5
	Total Col1Ave (3 peaks): 127.6					Total Col2Ave (4 peaks): 19.4 RPD = 147*				
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks): 3.1				
Aroclor-1248	1	8.096	-0.000	11047	86.4	1	7.394	-0.001	4515	7.2
Aroclor-1248	2	8.632	0.001	20852	131.0	2	8.275	0.000	45204	95.3
Aroclor-1248	3	8.925	0.005	11451	77.3	3	8.799	-0.002	20564	43.0
Aroclor-1248	4	9.505	-0.001	73680	774.7	4	9.126	-0.009	84230	136.3
	Total Col1Ave (4 peaks): 267.3					Total Col2Ave (4 peaks): 70.4 RPD = 117*				
	Corrected Ave (3 peaks): 98.2					Corrected Ave (3 peaks): 48.5 RPD = 68*				
Aroclor-1254	1	9.002	-0.000	59931	250.0	1	9.036	-0.001	163998	255.8
Aroclor-1254	2	9.078	0.000	18717	253.2	2	9.126	-0.001	84230	258.3
Aroclor-1254	3	9.371	-0.000	35086	254.4	3	9.543	-0.000	130701	260.0
Aroclor-1254	4	9.505	0.000	73680	249.5	4	9.691	-0.001	256589	255.2
Aroclor-1254	5	10.211	0.001	49421	250.8	5	10.465	0.001	161017	259.2
	Total Col1Ave (5 peaks): 251.6					Total Col2Ave (5 peaks): 257.7 RPD = 2				
	Corrected Ave (4 peaks): 250.9					Corrected Ave (4 peaks): 257.1 RPD = 2				
Aroclor-1260	1	10.762	-0.002	2944	15.0	1	10.793	-0.001	12381	17.0
Aroclor-1260	2	11.081	0.001	3390	18.0	2	11.222	-0.011	72596	98.5
Aroclor-1260	3	11.449	-0.000	7822	16.4	3	11.509	-0.003	45240	24.5
Aroclor-1260	4	11.848	-0.000	7534	34.9	4	12.024	0.001	5827	10.1
Aroclor-1260	5	---			0.0	NS	---			----
	Total Col1Ave (4 peaks): 21.1					Total Col2Ave (4 peaks): 37.5 RPD = 56*				
	Corrected Ave (3 peaks): 16.4					Corrected Ave (3 peaks): 17.2 RPD = 5				
Aroclor-1262	1	11.081	0.001	3390	15.2	1	10.793	-0.001	12381	12.3
Aroclor-1262	2	11.449	-0.000	7822	14.2	2	11.222	-0.012	72596	84.4
Aroclor-1262	3	11.848	-0.001	7534	46.0	3	11.509	-0.001	45240	22.9
Aroclor-1262	4	---			0.0	4	12.024	0.000	5827	6.1
	Total Col1Ave (3 peaks): 25.1					Total Col2Ave (4 peaks): 31.4 RPD = 22				
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks): 13.8				
Aroclor-1268	1	---			0.0	1	12.024	0.001	5827	2.3
Aroclor-1268	2	---			0.0	2	12.074	-0.016	29049	11.6
Aroclor-1268	3	---			0.0	3	12.483	0.003	858	0.4
Aroclor-1268	4	---			0.0	4	13.296	-0.002	1169	0.1
	Col1Ave: <3 Quant Peaks					Col2Ave: 3.6				

Total PCB Area Col1 (5.441 - 13.514) = 702105 Col1 Total PCB = 0.3 ppm*

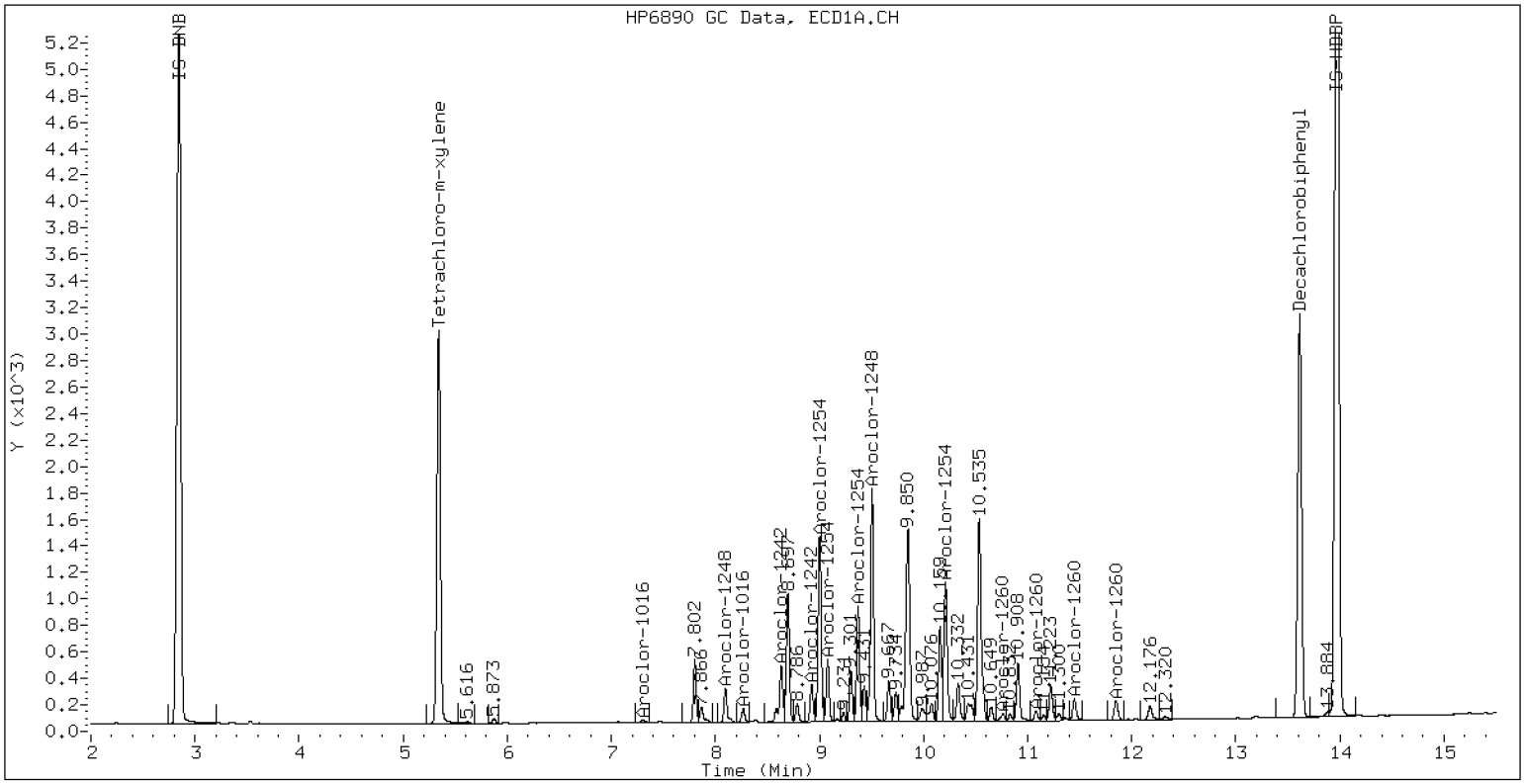
Total PCB Area Col2 (5.441 - 13.514) = 2618424 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

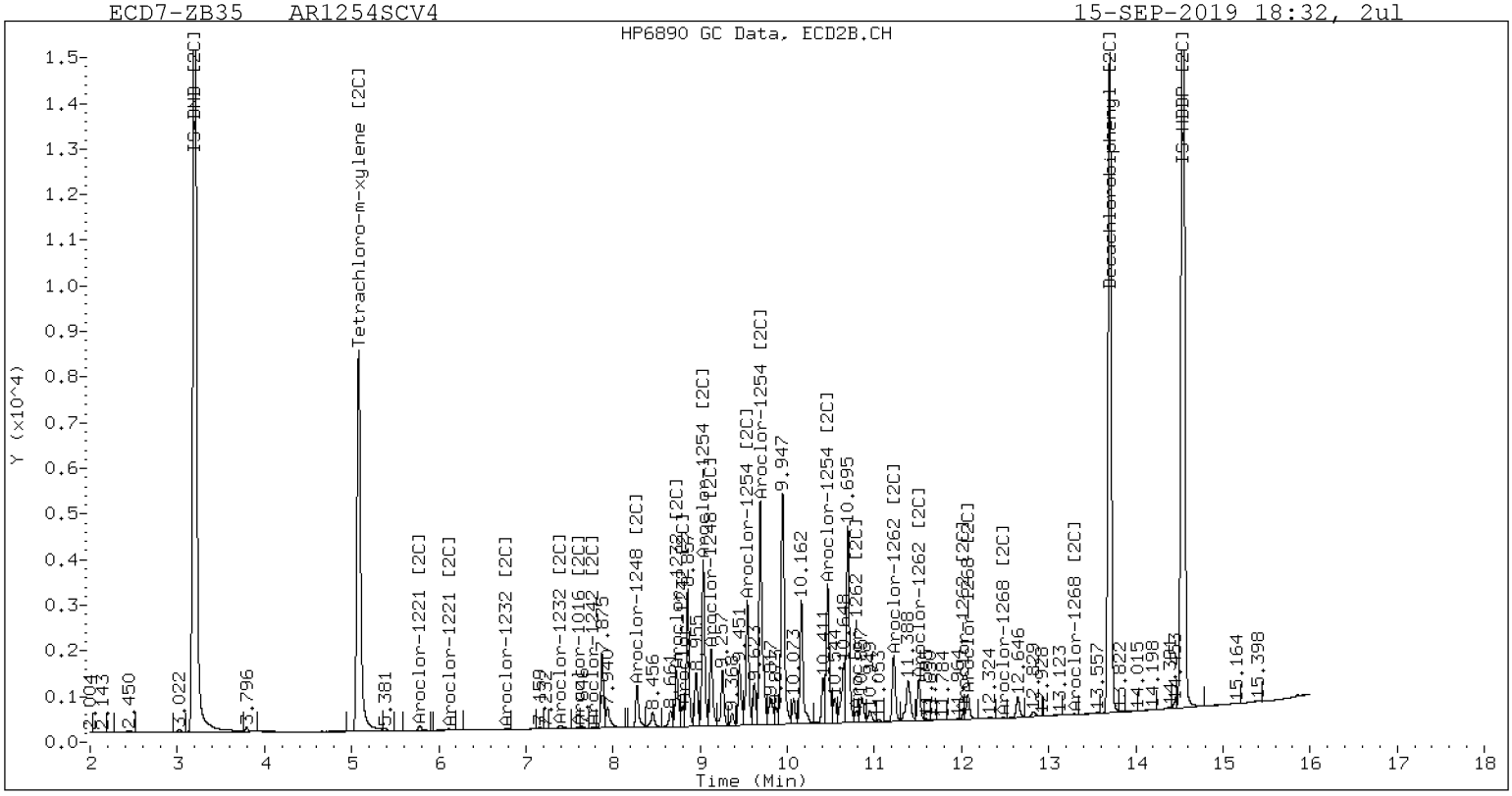
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV4 15-SEP-2019 18:32, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV4 15-SEP-2019 18:32, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19091520ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHI0216	Injection Date:	09/15/19
Lab Sample ID:	SHI0216-SCV5	Injection Time:	18:53
Sequence Name:	AR2162SCV5		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1221	A	250.00	259	0.0126671	0.0131147		3.7	20
Aroclor 1221 [2C]	A	250.00	266	0.0124626	0.0132304		6.4	20
Aroclor 1262	A	250.00	267	0.0538785	0.0570120		6.6	20
Aroclor 1262 [2C]	A	250.00	267	0.0828179	0.0880827		6.8	20
Decachlorobiphenyl	A	40.000	35.9	0.8094199	0.7258623		-10.3	20
Tetrachlorometaxylene	A	40.000	41.9	0.9910571	1.0388550		4.8	20
Decachlorobiphenyl [2C]	A	40.000	33.8	1.5347890	1.2958290		-15.6	20
Tetrachlorometaxylene [2C]	A	40.000	39.8	0.9503239	0.9452059		-0.5	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091520ECD7.D
Data file 2: /20190915.b/20190915.b/19091520ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV5
Client ID:
Injection Date: 15-SEP-2019 18:53
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	146719	5.081	0.001	519721	41.9	39.8	5.2	Tetrachloro-m-xylene
13.614	-0.000	152896	13.700	-0.001	742387	35.9	33.8	6.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	104.8	99.5
Decachlorobiphenyl	89.7	84.4

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	282463	-34.7
Hexabromobiphenyl	517563	421281	-18.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1099699	-26.6
Hexabromobiphenyl	1404015	1145810	-18.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.926	0.000	1872	21.8	1	6.789	0.010	25015	45.7
Aroclor-1016	2	7.315	0.002	5616	18.4	2	7.400	0.002	25838	22.6
Aroclor-1016	3	7.460	-0.000	2502	21.8	3	7.600	0.003	12141	26.4
Aroclor-1016	4	8.268	0.000	1039	11.0	4	7.768	0.002	6755	23.5
Total Col1Ave (4 peaks):				18.3		Total Col2Ave (4 peaks):			29.5	RPD = 47*
Corrected Ave (3 peaks):				17.1		Corrected Ave (3 peaks):			24.2	RPD = 34
Aroclor-1221	1	4.185	0.001	5406	261.5	1	4.283	-0.000	20980	268.7
Aroclor-1221	2	5.711	-0.000	8273	257.8	2	5.758	-0.000	43022	263.9
Aroclor-1221	3	5.982	-0.001	21050	258.6	3	6.104	-0.001	72399	265.4
Total Col1Ave (3 peaks):				259.3		Total Col2Ave (3 peaks):			266.0	RPD = 3
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.185	0.001	5406	444.4	1	4.283	0.001	20980	450.7
Aroclor-1232	2	6.926	0.001	1872	58.3	2	6.789	0.012	25015	108.0
Aroclor-1232	3	7.315	0.002	5616	48.9	3	7.400	0.003	25838	55.7
Aroclor-1232	4	7.460	0.000	2502	58.1	4	8.730	0.001	6692	43.4
Total Col1Ave (4 peaks):				152.4		Total Col2Ave (4 peaks):			164.5	RPD = 8
Corrected Ave (3 peaks):				55.1		Corrected Ave (3 peaks):			69.0	RPD = 22
Aroclor-1242	1	6.926	0.000	1872	26.9	1	6.789	0.011	25015	60.0
Aroclor-1242	2	7.315	0.001	5616	22.4	2	7.400	0.002	25838	28.7
Aroclor-1242	3	8.634	0.002	1386	16.7	3	7.768	0.001	6755	29.4
Aroclor-1242	4	8.923	0.004	1556	17.6	4	8.802	0.002	3724	13.0
Total Col1Ave (4 peaks):				20.9		Total Col2Ave (4 peaks):			32.8	RPD = 44*
Corrected Ave (3 peaks):				18.9		Corrected Ave (3 peaks):			23.7	RPD = 23
Aroclor-1248	1	8.097	0.000	1229	9.7	1	7.400	0.005	25838	43.2
Aroclor-1248	2	8.634	0.002	1386	8.8	2	8.276	0.001	5926	13.1
Aroclor-1248	3	8.923	0.003	1556	10.6	3	8.802	0.002	3724	8.2
Aroclor-1248	4	9.476	-0.030	10150	107.5	4	9.133	-0.003	8590	14.6
Total Col1Ave (4 peaks):				34.1		Total Col2Ave (4 peaks):			19.8	RPD = 53*
Corrected Ave (3 peaks):				9.7		Corrected Ave (3 peaks):			12.0	RPD = 21
Aroclor-1254	1	9.004	0.002	7447	31.3	1	9.037	0.001	28859	47.4
Aroclor-1254	2	---			0.0	2	9.133	0.006	8590	27.7
Aroclor-1254	3	9.372	0.001	1574	11.5	3	9.544	0.000	7347	15.4
Aroclor-1254	4	9.476	-0.029	10150	34.6	4	9.733	0.041	117247	122.7
Aroclor-1254	5	10.158	-0.052	57397	293.4	5	10.468	0.004	28744	48.7
Total Col1Ave (4 peaks):				92.7		Total Col2Ave (5 peaks):			52.4	RPD = 56*
Corrected Ave (3 peaks):				25.8		Corrected Ave (4 peaks):			34.8	RPD = 30
Aroclor-1260	1	10.764	0.001	72353	371.9	1	10.794	-0.000	265507	368.3
Aroclor-1260	2	11.080	0.000	59517	319.1	2	11.234	0.001	228474	313.8
Aroclor-1260	3	11.450	0.000	141816	299.5	3	11.510	-0.002	510965	280.0
Aroclor-1260	4	11.849	0.000	43028	201.4	4	12.024	0.001	256630	451.9
Aroclor-1260	5	11.966	0.000	55865	552.4	NS	---			----
Total Col1Ave (5 peaks):				348.9		Total Col2Ave (4 peaks):			353.5	RPD = 1
Corrected Ave (4 peaks):				298.0		Corrected Ave (3 peaks):			320.7	RPD = 7
Aroclor-1262	1	11.080	0.000	59517	269.7	1	10.794	-0.000	265507	267.1
Aroclor-1262	2	11.450	0.000	141816	259.6	2	11.234	-0.001	228474	268.8
Aroclor-1262	3	11.849	-0.001	43028	265.2	3	11.510	-0.000	510965	262.1
Aroclor-1262	4	11.966	0.000	55865	271.7	4	12.024	-0.000	256630	269.9
Total Col1Ave (4 peaks):				266.5		Total Col2Ave (4 peaks):			267.0	RPD = 0
Corrected Ave (3 peaks):				264.8		Corrected Ave (3 peaks):			266.0	RPD = 0
Aroclor-1268	1	11.966	0.000	55865	86.3	1	12.024	0.000	256630	104.0
Aroclor-1268	2	12.038	0.002	57038	97.6	2	12.085	-0.005	364662	147.2
Aroclor-1268	3	12.438	0.015	20392	41.3	3	12.478	-0.002	16839	7.5
Aroclor-1268	4	13.206	-0.001	16188	10.4	4	13.294	-0.004	80522	10.1
Total Col1Ave (4 peaks):				58.9		Total Col2Ave (4 peaks):			67.2	RPD = 13

Corrected Ave (3 peaks): 46.0 Corrected Ave (3 peaks): 40.5 RPD = 13

Total PCB Area Col1 (5.441 - 13.514) = 953031 Col1 Total PCB = 0.4 ppm*

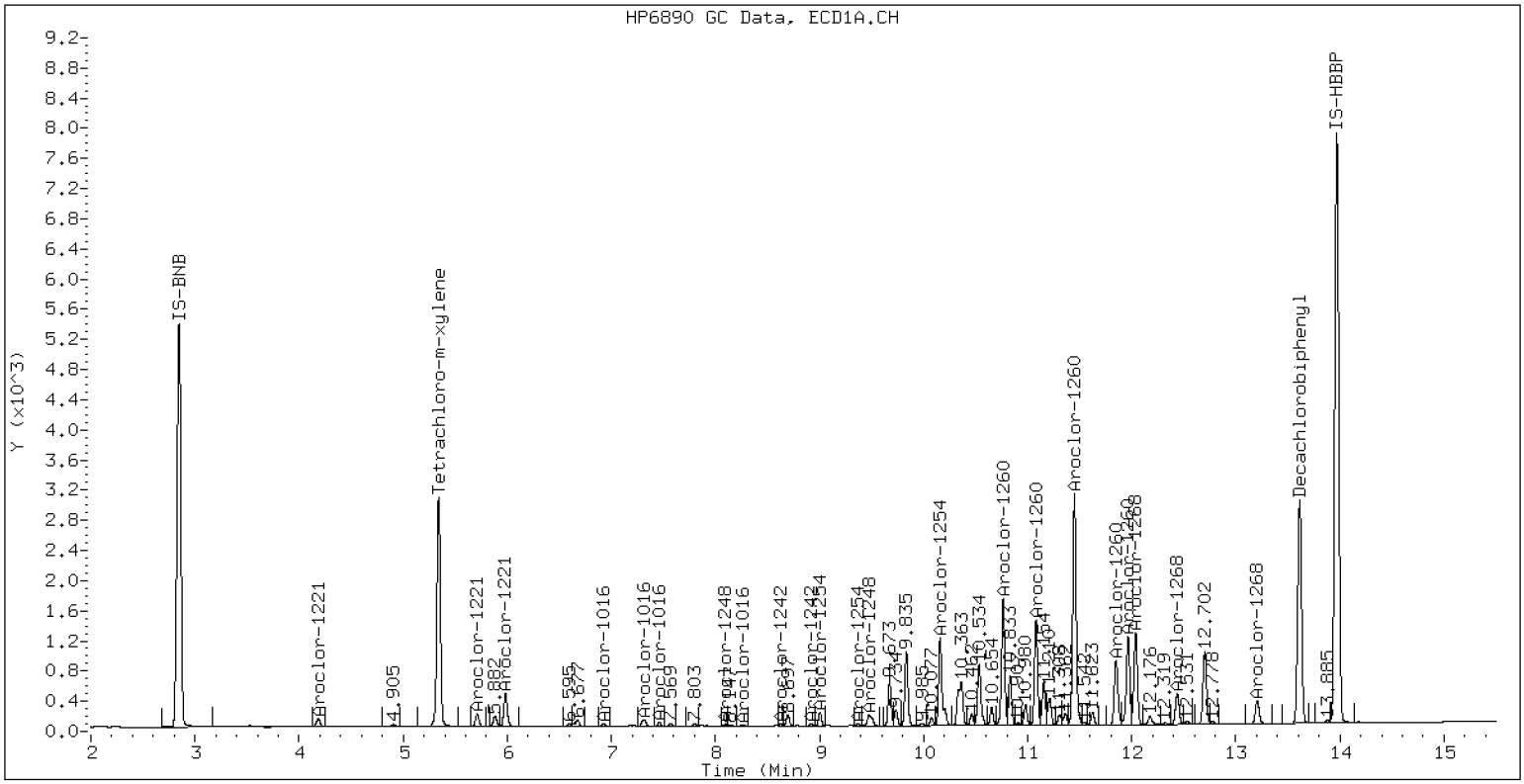
Total PCB Area Col2 (5.441 - 13.514) = 3754639 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

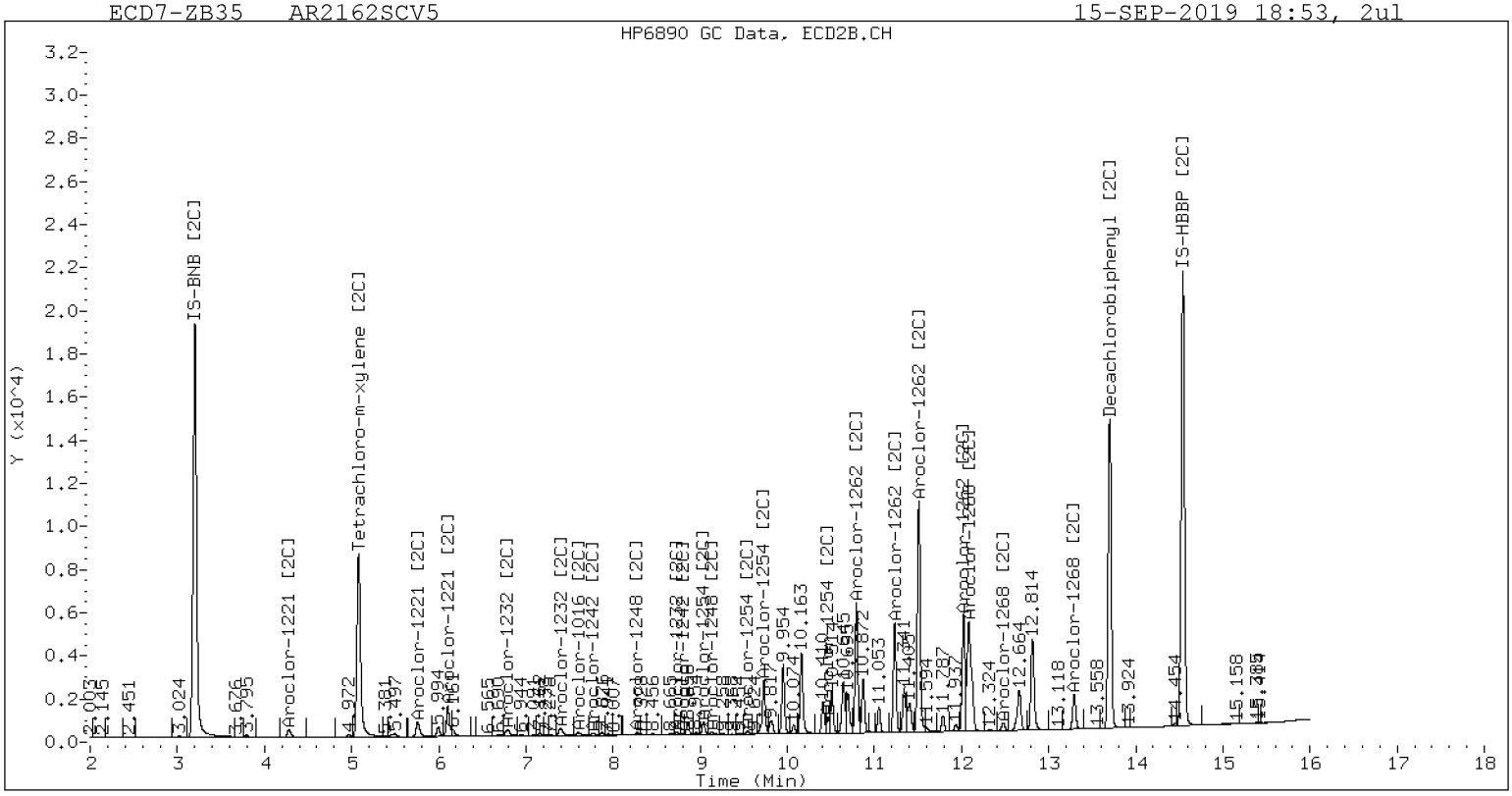
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV5 15-SEP-2019 18:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV5 15-SEP-2019 18:53, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19091521ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHI0216	Injection Date:	09/15/19
Lab Sample ID:	SHI0216-SCV6	Injection Time:	19:14
Sequence Name:	AR3268SCV6		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1232	A	250.00	285	0.0143078	0.0165807		14.1	20
Aroclor 1232 [2C]	A	250.00	269	0.0162933	0.0179938		7.8	20
Aroclor 1268	A	250.00	263	0.1561223	0.1580953		5.0	20
Aroclor 1268 [2C]	A	250.00	261	0.2642944	0.2645071		4.6	20
Decachlorobiphenyl	A	40.000	50.0	0.8094199	1.0114310		25.0	20
Tetrachlorometaxylene	A	40.000	40.3	0.9910571	0.9981854		0.7	20
Decachlorobiphenyl [2C]	A	40.000	47.8	1.5347890	1.8345300		19.5	20
Tetrachlorometaxylene [2C]	A	40.000	37.8	0.9503239	0.8974174		-5.6	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091521ECD7.D
Data file 2: /20190915.b/20190915.b/19091521ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV6
Client ID:
Injection Date: 15-SEP-2019 19:14
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	141373	5.081	0.001	505294	40.3	37.8	6.4	Tetrachloro-m-xylene
13.614	0.000	214658	13.702	-0.000	1059666	50.0	47.8	4.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.7	94.4
Decachlorobiphenyl	125.0	119.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283260	-34.5
Hexabromobiphenyl	517563	424464	-18.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1126107	-24.8
Hexabromobiphenyl	1404015	1155245	-17.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.926	-0.000	9622	112.0	1	6.779	0.000	68458	122.2
Aroclor-1016	2	7.314	0.001	33292	108.9	2	7.399	0.001	134510	115.0
Aroclor-1016	3	7.460	0.000	12616	109.4	3	7.599	0.001	54238	115.0
Aroclor-1016	4	8.268	0.000	10808	114.2	4	7.767	0.000	34263	116.3
Total Col1Ave (4 peaks):					111.1	Total Col2Ave (4 peaks):				117.1 RPD = 5
Corrected Ave (3 peaks):					110.1	Corrected Ave (3 peaks):				115.4 RPD = 5
Aroclor-1221	1	4.185	0.000	3178	153.3	1	4.283	-0.001	12766	159.7
Aroclor-1221	2	5.711	-0.001	4834	150.2	2	5.760	0.002	27761	166.3
Aroclor-1221	3	5.982	-0.001	16410	201.0	3	6.104	-0.000	70670	253.0
Total Col1Ave (3 peaks):					168.2	Total Col2Ave (3 peaks):				193.0 RPD = 14
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.185	0.001	3178	260.5	1	4.283	0.001	12766	267.8
Aroclor-1232	2	6.926	0.001	9622	298.8	2	6.779	0.002	68458	288.5
Aroclor-1232	3	7.314	0.001	33292	289.3	3	7.399	0.002	134510	283.4
Aroclor-1232	4	7.460	0.000	12616	292.4	4	8.729	0.000	37553	238.0
Total Col1Ave (4 peaks):					285.2	Total Col2Ave (4 peaks):				269.4 RPD = 6
Corrected Ave (3 peaks):					280.7	Corrected Ave (3 peaks):				263.1 RPD = 6
Aroclor-1242	1	6.926	0.000	9622	138.1	1	6.779	0.001	68458	160.4
Aroclor-1242	2	7.314	-0.000	33292	132.2	2	7.399	0.001	134510	145.9
Aroclor-1242	3	8.632	0.001	9671	116.5	3	7.767	0.000	34263	145.8
Aroclor-1242	4	8.920	0.001	10040	113.4	4	8.802	0.001	37955	129.8
Total Col1Ave (4 peaks):					125.0	Total Col2Ave (4 peaks):				145.5 RPD = 15
Corrected Ave (3 peaks):					120.7	Corrected Ave (3 peaks):				140.5 RPD = 15
Aroclor-1248	1	8.096	-0.000	9055	71.1	1	7.399	0.004	134510	219.7
Aroclor-1248	2	8.632	0.000	9671	61.0	2	8.275	0.000	39058	84.6
Aroclor-1248	3	8.920	0.000	10040	68.1	3	8.802	0.001	37955	81.6
Aroclor-1248	4	9.506	0.000	3395	35.9	4	9.138	0.003	44105	73.3
Total Col1Ave (4 peaks):					59.0	Total Col2Ave (4 peaks):				114.8 RPD = 64*
Corrected Ave (3 peaks):					55.0	Corrected Ave (3 peaks):				79.8 RPD = 37
Aroclor-1254	1	9.001	-0.001	3344	14.0	1	9.038	0.001	8654	13.9
Aroclor-1254	2	9.078	0.000	1342	18.2	2	9.138	0.011	44105	138.9
Aroclor-1254	3	9.372	0.001	1692	12.3	3	9.544	0.001	7982	16.3
Aroclor-1254	4	9.506	0.001	3395	11.5	4	9.692	0.001	13501	13.8
Aroclor-1254	5	10.215	0.004	2260	11.5	5	10.468	0.004	5584	9.2
Total Col1Ave (5 peaks):					13.5	Total Col2Ave (5 peaks):				38.4 RPD = 96*
Corrected Ave (4 peaks):					12.4	Corrected Ave (4 peaks):				13.3 RPD = 7
Aroclor-1260	1	10.764	0.000	36154	184.4	1	10.794	-0.000	139310	191.7
Aroclor-1260	2	11.080	-0.000	3230	17.2	2	11.237	0.004	167894	228.7
Aroclor-1260	3	11.449	-0.001	22521	47.2	3	11.510	-0.002	92070	50.0
Aroclor-1260	4	---			0.0	4	12.023	0.001	671734	1173.3
Aroclor-1260	5	11.966	0.001	178894	1755.7	NS	---			----
Total Col1Ave (4 peaks):					501.1	Total Col2Ave (4 peaks):				410.9 RPD = 20
Corrected Ave (3 peaks):					82.9	Corrected Ave (3 peaks):				156.8 RPD = 62*
Aroclor-1262	1	11.080	-0.000	3230	14.5	1	10.794	-0.000	139310	139.0
Aroclor-1262	2	11.449	-0.000	22521	40.9	2	11.237	0.003	167894	195.9
Aroclor-1262	3	---			0.0	3	11.510	-0.001	92070	46.8
Aroclor-1262	4	11.966	0.001	178894	863.5	4	12.023	-0.000	671734	700.6
Total Col1Ave (3 peaks):					306.3	Total Col2Ave (4 peaks):				270.6 RPD = 12
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				127.2
Aroclor-1268	1	11.966	0.001	178894	274.2	1	12.023	0.000	671734	270.0
Aroclor-1268	2	12.037	0.001	179024	303.9	2	12.090	0.000	760106	304.4
Aroclor-1268	3	12.424	0.001	121349	243.7	3	12.480	-0.000	546687	241.7
Aroclor-1268	4	13.207	0.000	359555	228.4	4	13.297	0.000	1841105	229.6
Total Col1Ave (4 peaks):					262.6	Total Col2Ave (4 peaks):				261.4 RPD = 0

Corrected Ave (3 peaks): 248.8 Corrected Ave (3 peaks): 247.1 RPD = 1

Total PCB Area Col1 (5.441 - 13.514) = 1291499 Col1 Total PCB = 0.5 ppm*

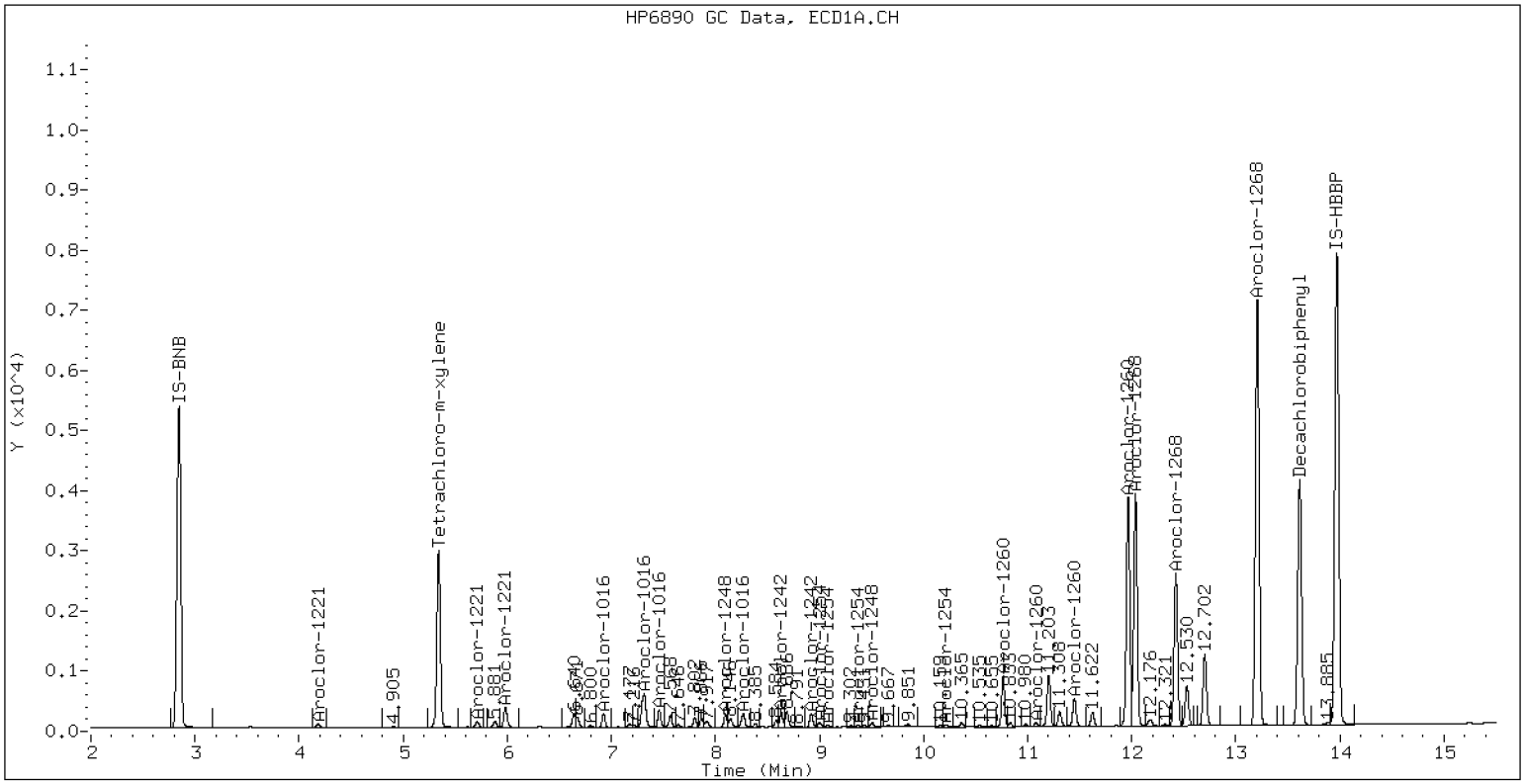
Total PCB Area Col2 (5.441 - 13.514) = 5756571 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

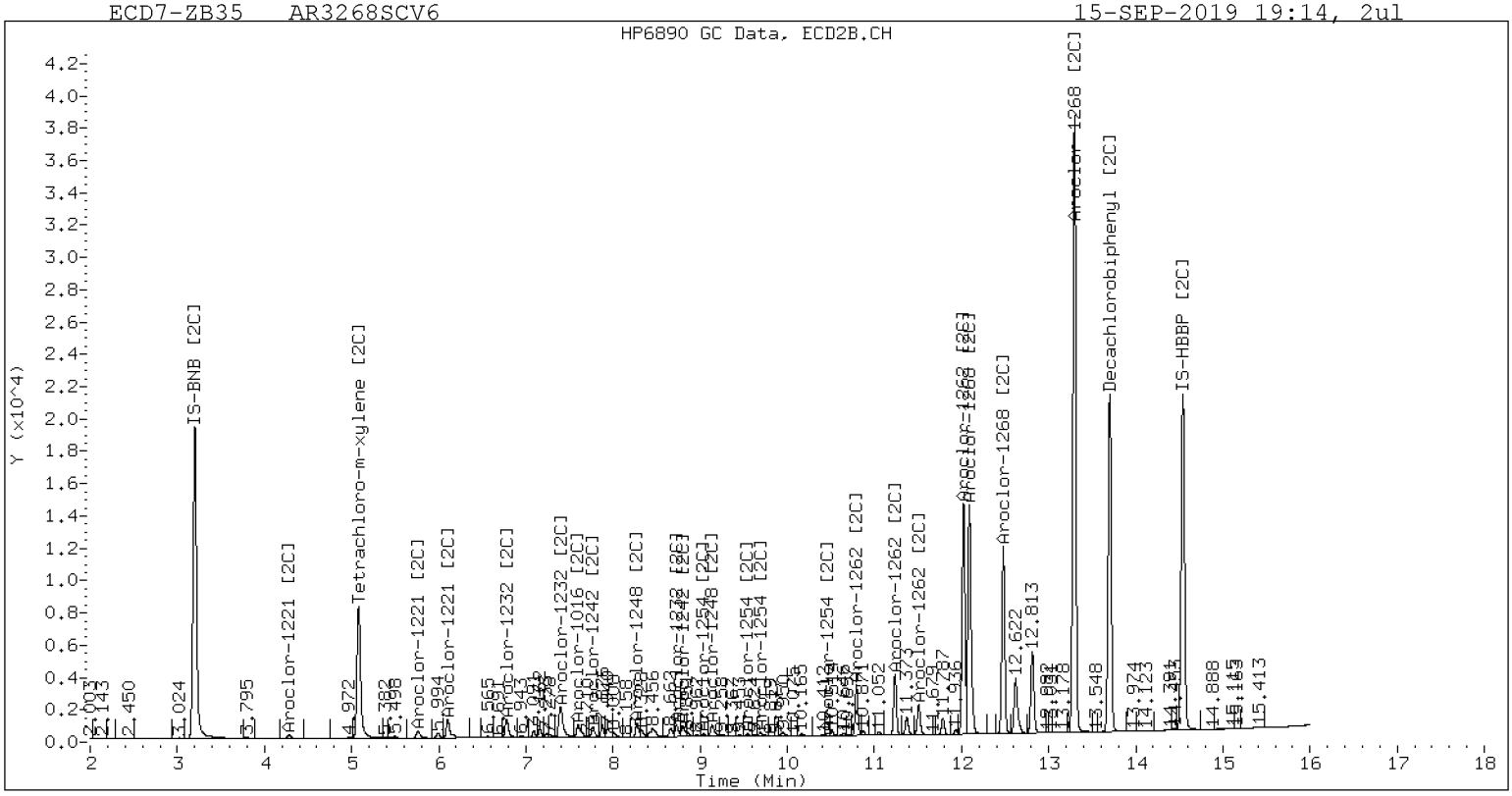
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV6 15-SEP-2019 19:14, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV6 15-SEP-2019 19:14, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101716ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0299	Injection Date:	10/17/19
Lab Sample ID:	SHJ0299-CCV1	Injection Time:	19:24
Sequence Name:	AR1248CCV1		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	239	0.0372731	0.0356559		-4.4	20
Aroclor 1248 [2C]	A	250.00	245	0.0380217	0.0372631		-2.2	20
Decachlorobiphenyl	A	40.000	44.6	0.8094199	0.9023101		11.5	20
Tetrachlorometaxylene	A	40.000	44.3	0.9910571	1.0983620		10.8	20
Decachlorobiphenyl [2C]	A	40.000	37.9	1.5347890	1.4545060		-5.3	20
Tetrachlorometaxylene [2C]	A	40.000	44.5	0.9503239	1.0579370		11.3	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101716ECD7.D
Data file 2: /20191017.b/20191017.b/19101716ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV1
Client ID:
Injection Date: 17-OCT-2019 19:24
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.338	0.002	119923	5.066	0.003	509359	44.3	44.5	0.4	Tetrachloro-m-xylene
13.613	-0.031	83276	13.685	-0.033	534304	44.6	37.9	16.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	110.8	111.3
Decachlorobiphenyl	111.5	94.8

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	218367	-16.9
Hexabromobiphenyl	382688	184584	-51.8 <-

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	962929	-11.0
Hexabromobiphenyl	1006687	734688	-27.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1248	1	8.095	0.000	23581	240.3	1	7.386	0.000	132077	252.3
Aroclor-1248	2	8.631	0.000	29336	240.2	2	8.262	0.000	98100	248.5
Aroclor-1248	3	8.919	0.000	26864	236.3	3	8.789	0.000	93960	236.2
Aroclor-1248	4	9.505	0.000	17545	240.4	4	9.123	0.000	124384	241.7

Total Col1Ave (4 peaks): 239.3 Total Col2Ave (4 peaks): 244.7 RPD = 2

Corrected Ave (3 peaks): 238.9 Corrected Ave (3 peaks): 242.2 RPD = 1

CalAmt %D: -4.3 CalAmt %D: -2.1

Total PCB Area Col1 (5.436 - 13.545) = 414257 Col1 Total PCB = 0.2 ppm*

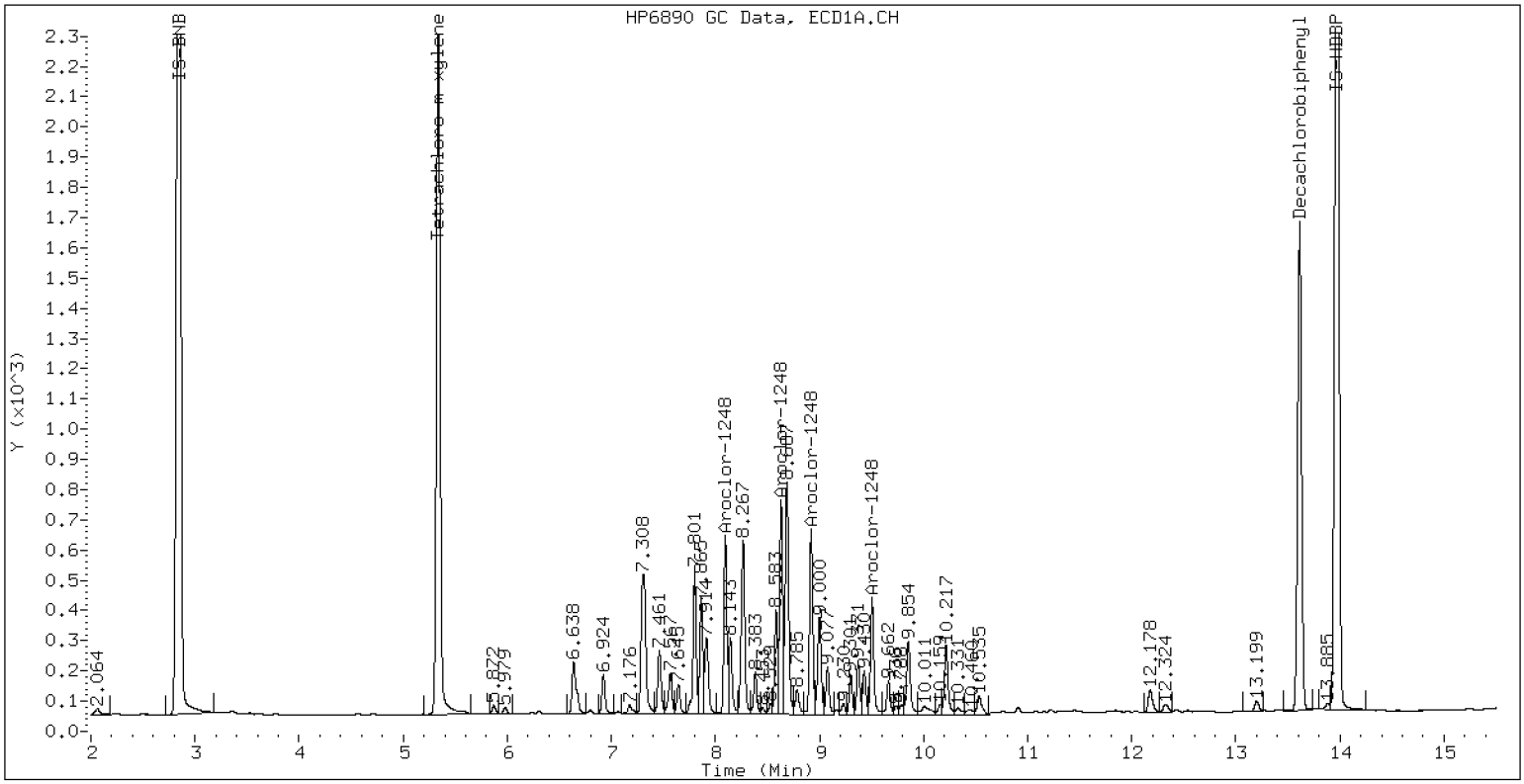
Total PCB Area Col2 (5.436 - 13.545) = 1700560 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

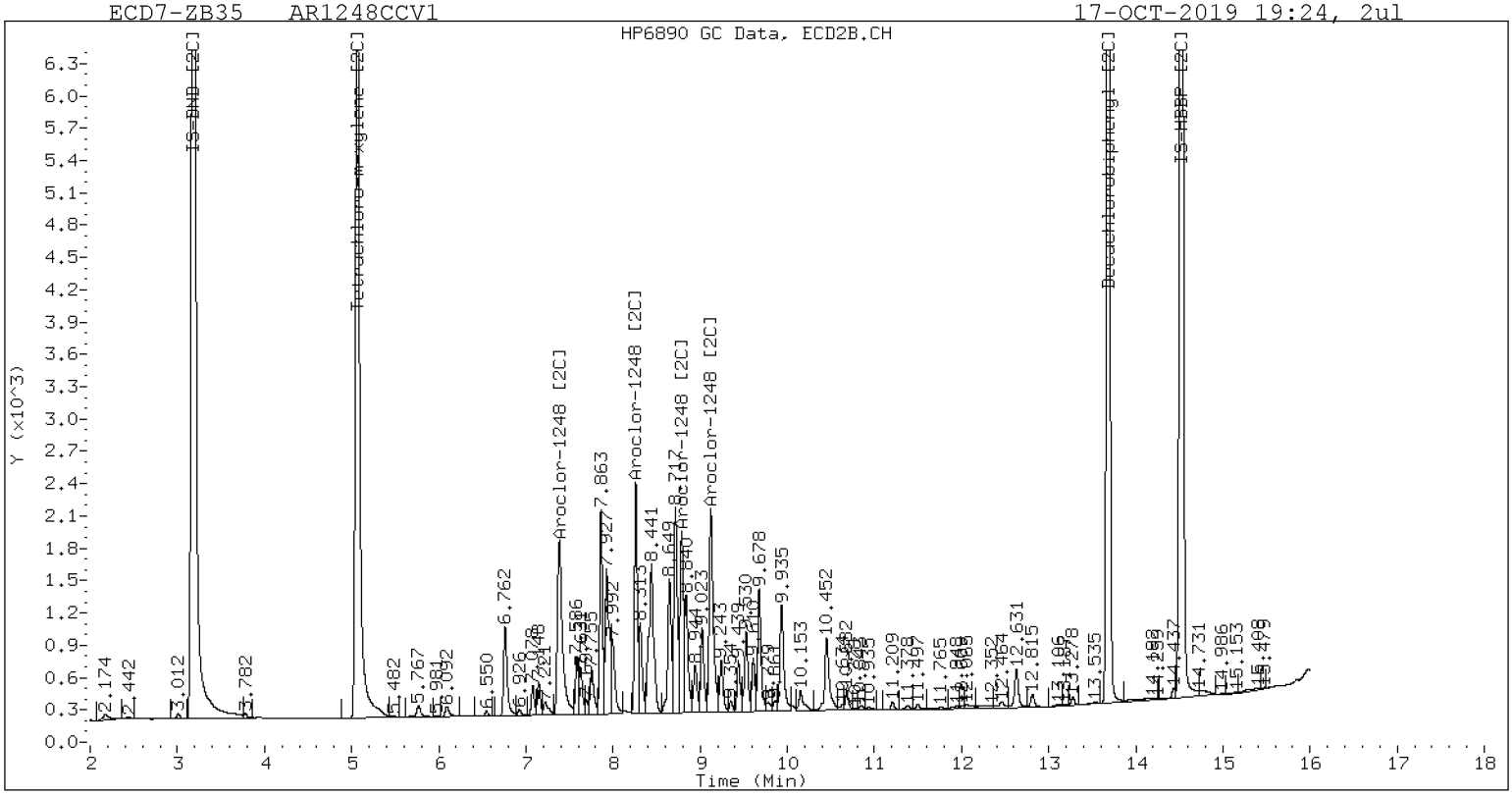
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1 17-OCT-2019 19:24, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248CCV1 17-OCT-2019 19:24, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101717ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0299	Injection Date:	10/17/19
Lab Sample ID:	SHJ0299-CCV2	Injection Time:	19:45
Sequence Name:	AR1660CCV2		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT	
Aroclor 1016	A	250.00	281	0.0424735	0.0481927		12.4	20	
Aroclor 1016 [2C]	A	250.00	292	0.0443328	0.0522745		16.9	20	
Aroclor 1260	A	250.00	314	0.0444075	0.0567234		25.4	20	*
Aroclor 1260 [2C]	A	250.00	250	0.0670532	0.0684323		0.1	20	
Decachlorobiphenyl	A	40.000	47.4	0.8094199	0.9587130		18.5	20	
Tetrachlorometaxylene	A	40.000	47.8	0.9910571	1.1834620		19.5	20	
Decachlorobiphenyl [2C]	A	40.000	40.8	1.5347890	1.5655490		2.0	20	
Tetrachlorometaxylene [2C]	A	40.000	48.0	0.9503239	1.1406630		20.0	20	

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101717ECD7.D
Data file 2: /20191017.b/20191017.b/19101717ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV2
Client ID:
Injection Date: 17-OCT-2019 19:45
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.340	0.004	132556	5.068	0.005	531468	47.8	48.0	0.5	Tetrachloro-m-xylene
13.613	-0.032	124939	13.685	-0.033	689016	47.4	40.8	14.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	119.4	120.0
Decachlorobiphenyl	118.4	102.0

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	224014	-14.8
Hexabromobiphenyl	382688	260639	-31.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	931858	-13.9
Hexabromobiphenyl	1006687	880223	-12.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	6.925	0.004	18895	278.0	1	6.764	0.004	125408	270.5
Aroclor-1016	2	7.315	0.003	69693	288.3	2	7.386	0.003	293323	303.0
Aroclor-1016	3	7.460	0.003	25644	281.3	3	7.586	0.004	119675	306.7
Aroclor-1016	4	8.268	0.003	20716	276.7	4	7.755	0.003	70499	289.3

Total Col1Ave (4 peaks): 281.1 Total Col2Ave (4 peaks): 292.4 RPD = 4
Corrected Ave (3 peaks): 278.7 Corrected Ave (3 peaks): 287.6 RPD = 3

CalAmt %D: 12.4 CalAmt %D: 17.0

Aroclor-1260	1	10.763	0.001	36650	304.5	1	10.780	0.001	134636	243.1
Aroclor-1260	2	11.080	0.001	37242	322.7	2	11.216	0.001	147999	264.6
Aroclor-1260	3	11.449	0.001	94625	323.1	3	11.496	0.001	370141	264.1
Aroclor-1260	4	11.848	-0.000	45127	341.5	4	12.008	-0.000	100170	229.6
Aroclor-1260	5	11.965	-0.000	17361	277.5	NS	---			----

Total Col1Ave (5 peaks): 313.8 Total Col2Ave (4 peaks): 250.3 RPD = 23
Corrected Ave (4 peaks): 306.9 Corrected Ave (3 peaks): 245.6 RPD = 22

CalAmt %D: 25.5 CalAmt %D: 0.1

Total PCB Area Col1 (5.436 - 13.545) = 1052059 Col1 Total PCB = 0.6 ppm*

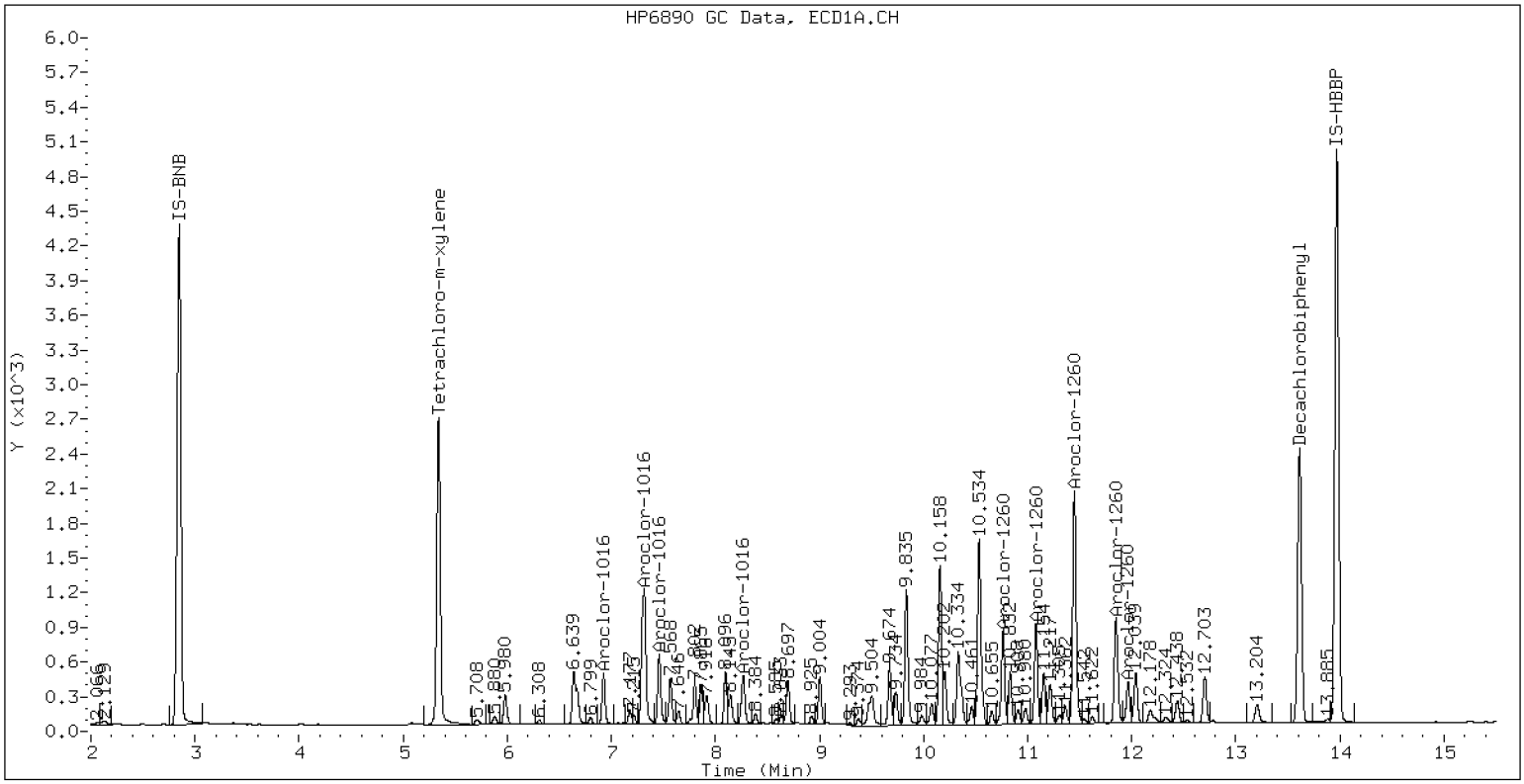
Total PCB Area Col2 (5.436 - 13.545) = 4148325 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

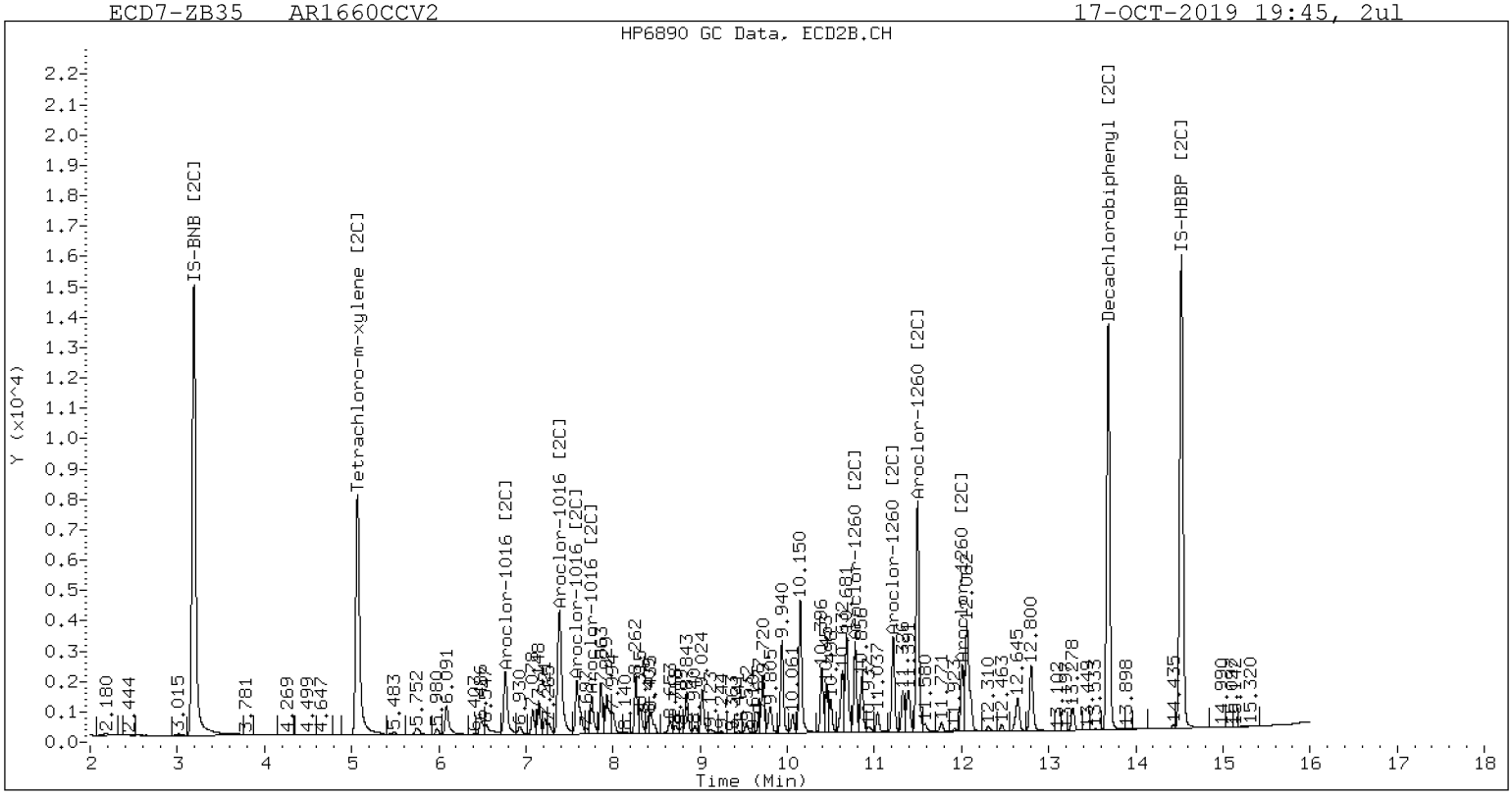
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2 17-OCT-2019 19:45, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2 17-OCT-2019 19:45, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101728ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0299	Injection Date:	10/17/19
Lab Sample ID:	SHJ0299-CCV3	Injection Time:	23:35
Sequence Name:	AR1242CCV3		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	245	0.0348200	0.0342425		-2.0	20
Aroclor 1242 [2C]	A	250.00	265	0.0333224	0.0360764		6.1	20
Decachlorobiphenyl	A	40.000	44.1	0.8094199	0.8921196		10.3	20
Tetrachlorometaxylene	A	40.000	44.8	0.9910571	1.1102980		12.0	20
Decachlorobiphenyl [2C]	A	40.000	38.5	1.5347890	1.4777700		-3.8	20
Tetrachlorometaxylene [2C]	A	40.000	45.4	0.9503239	1.0783270		13.5	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101728ECD7.D
Data file 2: /20191017.b/20191017.b/19101728ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242CCV3
Client ID:
Injection Date: 17-OCT-2019 23:35
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.335	-0.001	192856	5.062	-0.001	785620	44.8	45.4	1.3	Tetrachloro-m-xylene
13.613	-0.032	151874	13.686	-0.032	955011	44.1	38.5	13.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	112.0	113.5
Decachlorobiphenyl	110.2	96.3

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	347395	32.1
Hexabromobiphenyl	382688	340479	-11.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1457109	34.7
Hexabromobiphenyl	1006687	1292503	28.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1242	1	6.922	0.000	20882	244.3	1	6.761	0.000	154027	278.8
Aroclor-1242	2	7.311	0.000	76494	247.6	2	7.385	0.000	330350	276.9
Aroclor-1242	3	8.631	0.000	24720	242.7	3	7.752	0.000	75530	248.4
Aroclor-1242	4	8.919	0.000	26600	245.0	4	8.788	0.000	97184	256.9

Total Col1Ave (4 peaks): 244.9 Total Col2Ave (4 peaks): 265.3 RPD = 8

Corrected Ave (3 peaks): 244.0 Corrected Ave (3 peaks): 260.7 RPD = 7

CalAmt %D: -2.0 CalAmt %D: 6.1

Total PCB Area Col1 (5.436 - 13.545) = 522078 Col1 Total PCB = 0.2 ppm*

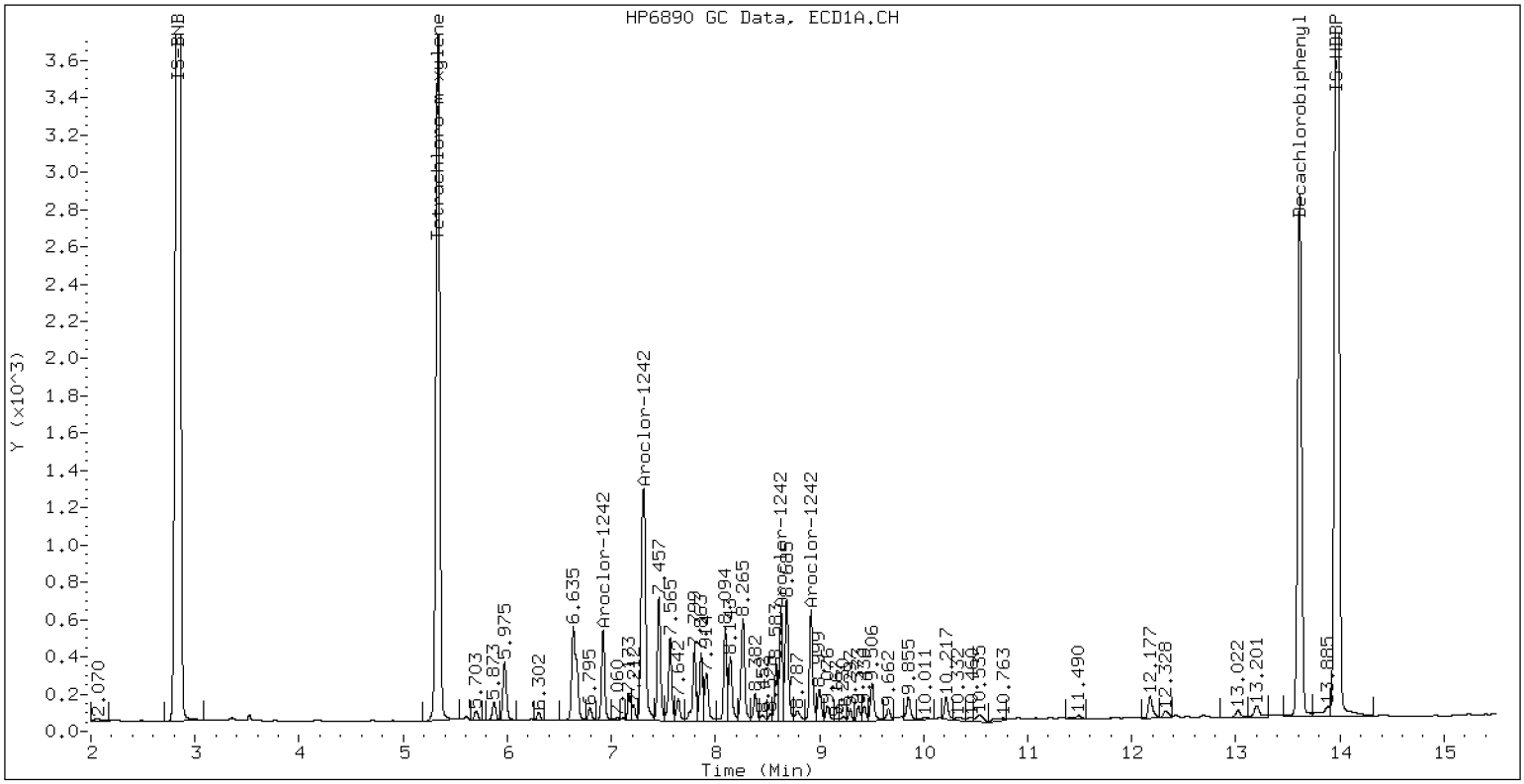
Total PCB Area Col2 (5.436 - 13.545) = 2295119 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

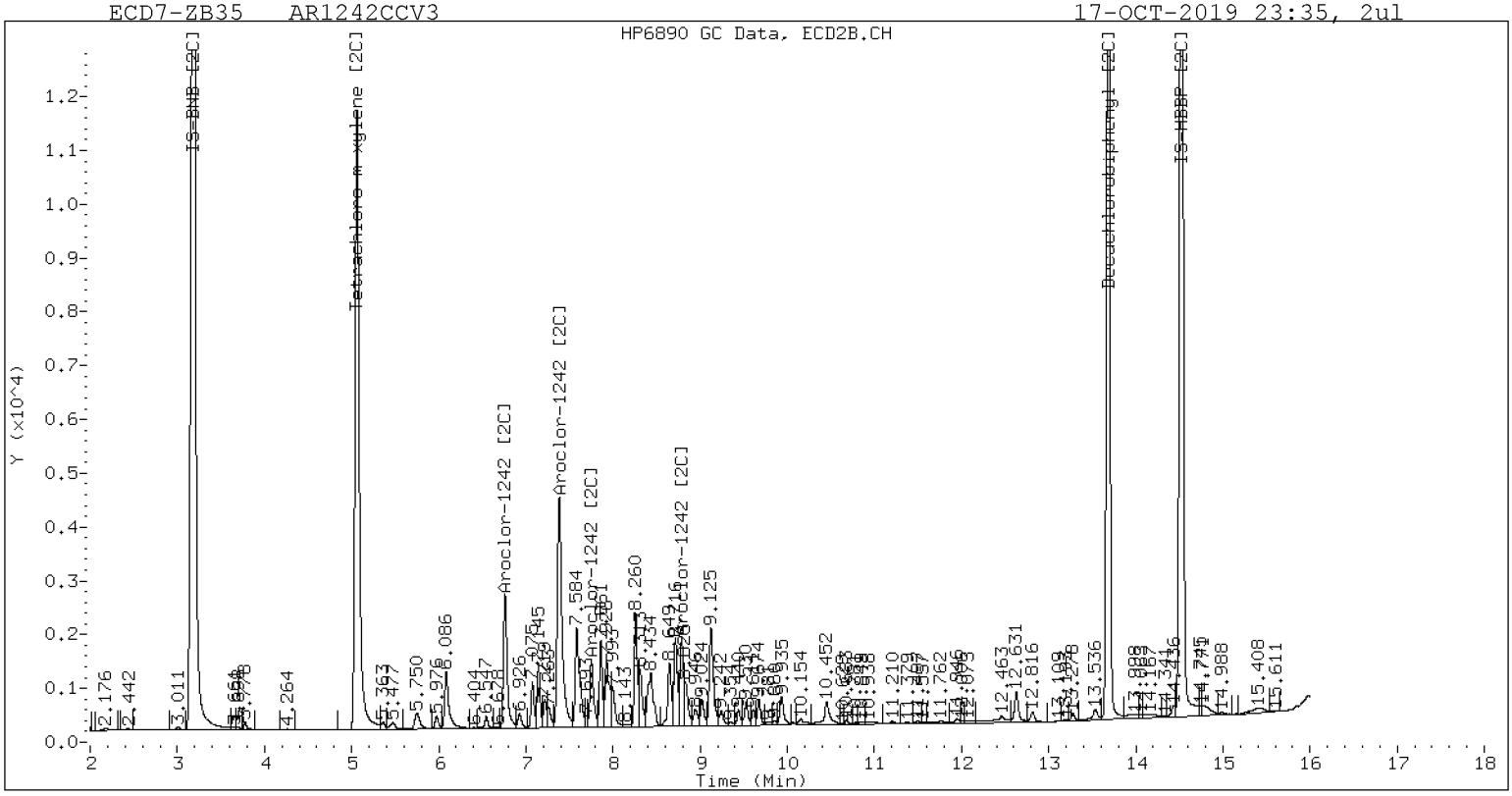
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242CCV3 17-OCT-2019 23:35, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242CCV3 17-OCT-2019 23:35, 2ul

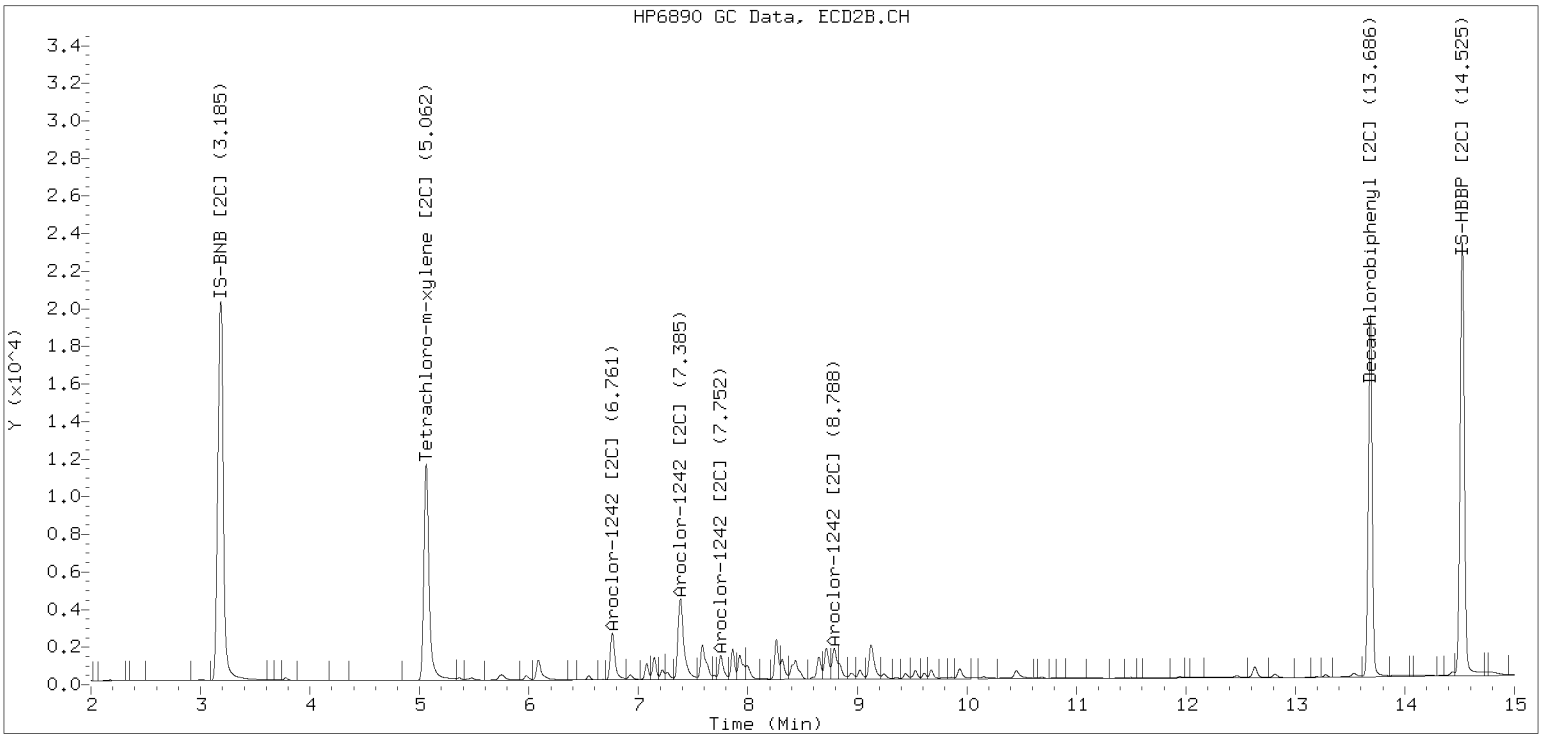


ZB-35 Manual Integration: YES

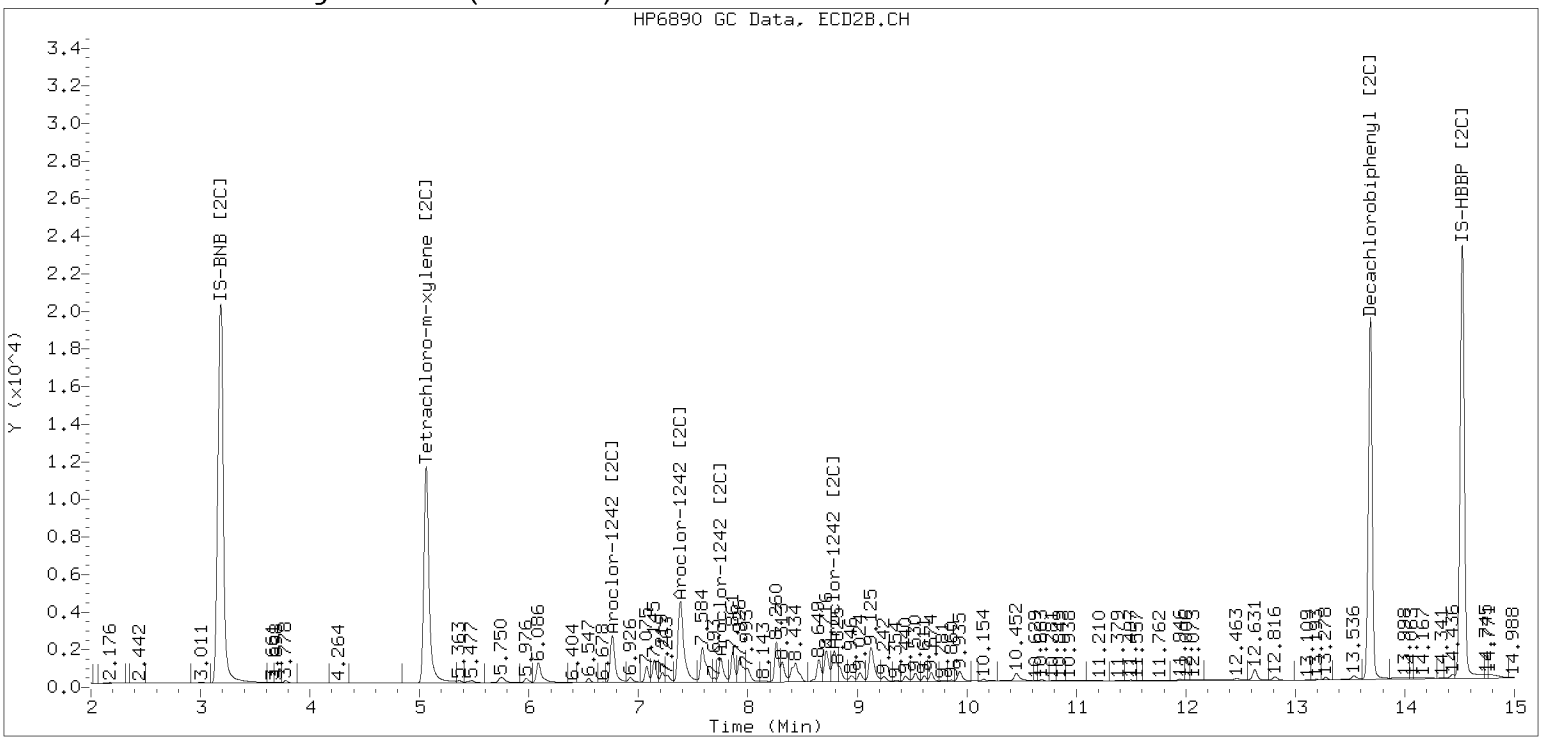
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/20191017.b/20191017.b/19101728ECD7.D Injection Date: 17-OCT-2

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101729ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0299	Injection Date:	10/17/19
Lab Sample ID:	SHJ0299-CCV4	Injection Time:	23:56
Sequence Name:	AR1242CCV4		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT	
Aroclor 1016	A	250.00	278	0.0424735	0.0477328		11.3	20	
Aroclor 1016 [2C]	A	250.00	295	0.0443328	0.0526494		18.0	20	
Aroclor 1260	A	250.00	302	0.0444075	0.0545504		20.6	20	*
Aroclor 1260 [2C]	A	250.00	240	0.0670532	0.0654749		-4.2	20	
Decachlorobiphenyl	A	40.000	46.6	0.8094199	0.9434807		16.5	20	
Tetrachlorometaxylene	A	40.000	47.6	0.9910571	1.1790350		19.0	20	
Decachlorobiphenyl [2C]	A	40.000	39.2	1.5347890	1.5048290		-2.0	20	
Tetrachlorometaxylene [2C]	A	40.000	47.9	0.9503239	1.1377010		19.8	20	

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101729ECD7.D
Data file 2: /20191017.b/20191017.b/19101729ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV4
Client ID:
Injection Date: 17-OCT-2019 23:56
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.339	0.002	136771	5.066	0.002	553346	47.6	47.9	0.6	Tetrachloro-m-xylene
13.614	-0.031	135072	13.685	-0.033	733923	46.6	39.2	17.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	119.0	119.7
Decachlorobiphenyl	116.6	98.0

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	232005	-11.8
Hexabromobiphenyl	382688	286327	-25.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	972744	-10.1
Hexabromobiphenyl	1006687	975424	-3.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	6.924	0.002	19326	274.5	1	6.763	0.003	130533	269.8
Aroclor-1016	2	7.313	0.002	71498	285.6	2	7.386	0.002	308302	305.1
Aroclor-1016	3	7.459	0.003	26296	278.5	3	7.585	0.002	126320	310.1
Aroclor-1016	4	8.267	0.002	21308	274.8	4	7.754	0.002	75025	294.9

Total Col1Ave (4 peaks): 278.4 Total Col2Ave (4 peaks): 295.0 RPD = 6
Corrected Ave (3 peaks): 276.0 Corrected Ave (3 peaks): 289.9 RPD = 5

CalAmt %D: 11.3 CalAmt %D: 18.0

Aroclor-1260	1	10.763	0.000	38219	289.0	1	10.780	0.001	141947	231.3
Aroclor-1260	2	11.079	0.000	39119	308.6	2	11.217	0.001	158866	256.3
Aroclor-1260	3	11.449	0.000	100407	312.0	3	11.496	0.001	391810	252.2
Aroclor-1260	4	11.849	0.000	47837	329.5	4	12.009	0.001	105699	218.6
Aroclor-1260	5	11.965	-0.000	18469	268.7	NS	---			----

Total Col1Ave (5 peaks): 301.6 Total Col2Ave (4 peaks): 239.6 RPD = 23
Corrected Ave (4 peaks): 294.6 Corrected Ave (3 peaks): 234.1 RPD = 23

CalAmt %D: 20.6 CalAmt %D: -4.2

Total PCB Area Col1 (5.436 - 13.545) = 1094693 Col1 Total PCB = 0.6 ppm*

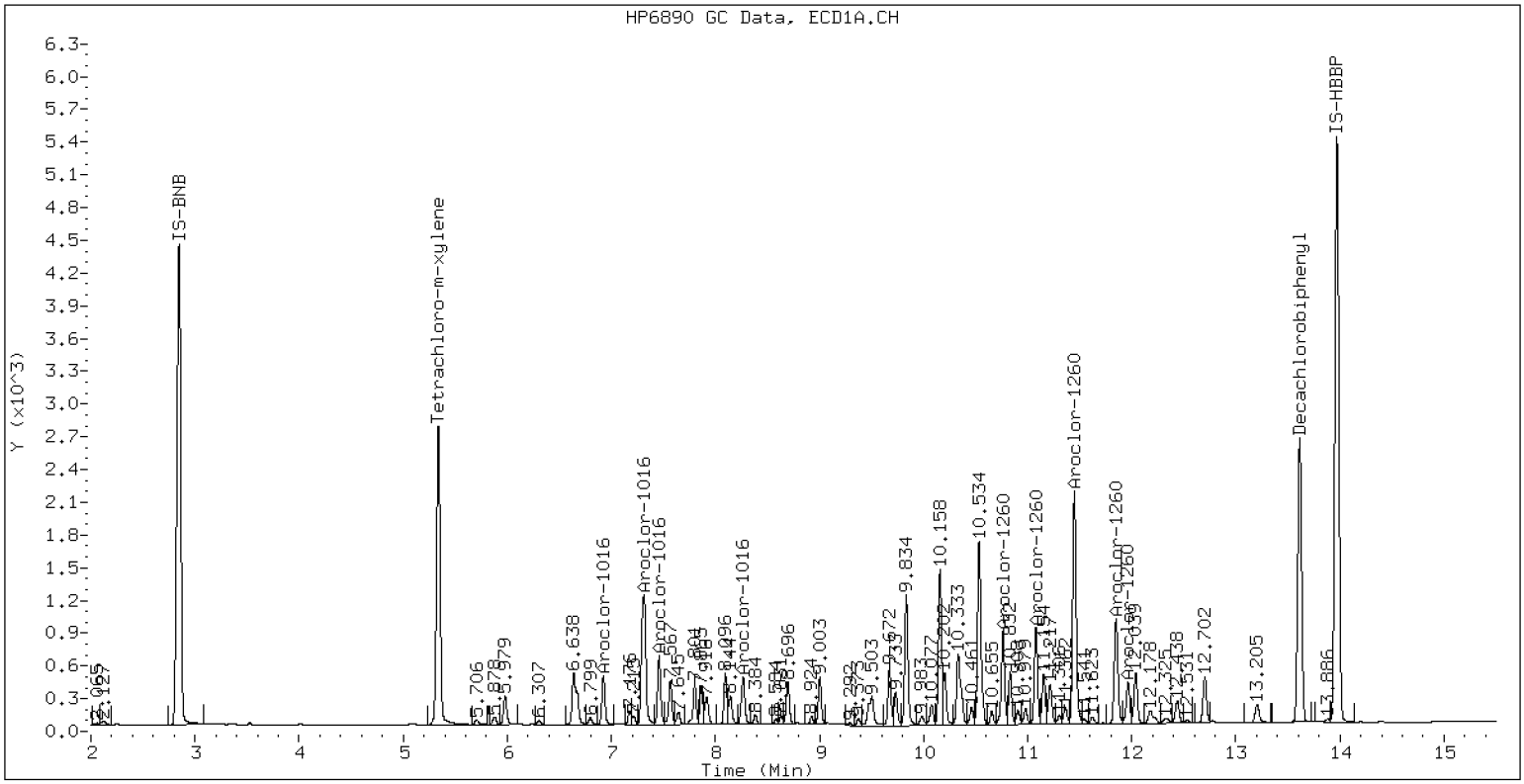
Total PCB Area Col2 (5.436 - 13.545) = 4390716 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

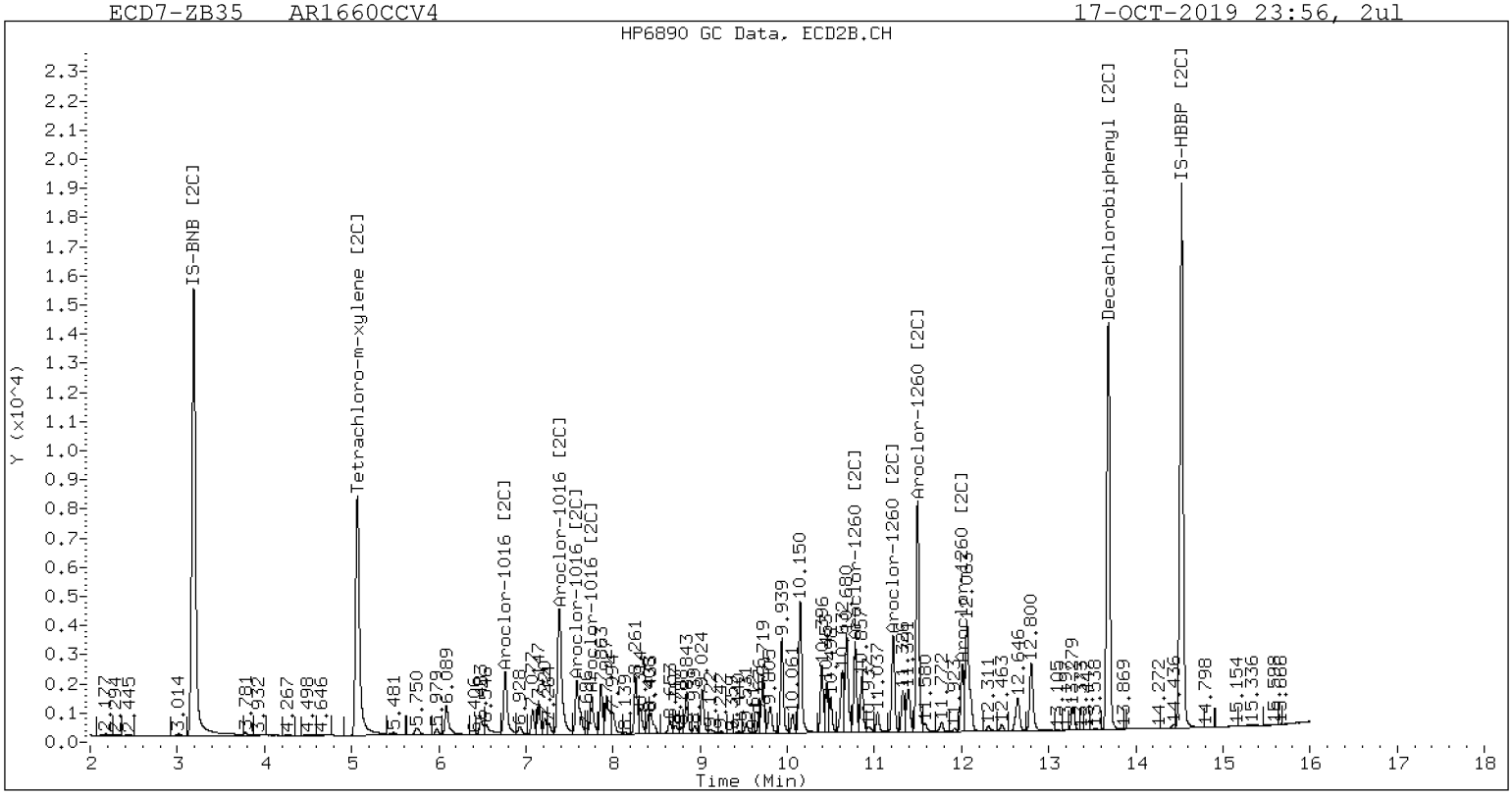
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV4 17-OCT-2019 23:56, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV4 17-OCT-2019 23:56, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101739ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0299	Injection Date:	10/18/19
Lab Sample ID:	SHJ0299-CCV5	Injection Time:	03:25
Sequence Name:	AR1660CCV5		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	223	0.0530781	0.0492916		-10.9	20
Aroclor 1254 [2C]	A	250.00	297	0.0428263	0.0506104		18.7	20
Decachlorobiphenyl	A	40.000	44.3	0.8094199	0.8969285		10.8	20
Tetrachlorometaxylene	A	40.000	44.6	0.9910571	1.1047930		11.5	20
Decachlorobiphenyl [2C]	A	40.000	39.1	1.5347890	1.5021530		-2.3	20
Tetrachlorometaxylene [2C]	A	40.000	46.7	0.9503239	1.1087620		16.8	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101739ECD7.D
Data file 2: /20191017.b/20191017.b/19101739ECD7.D
Method: \\target\share\chem4\ecd7.i\20191017.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254CCV5
Client ID:
Injection Date: 18-OCT-2019 03:25
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.338	0.001	132204	5.064	0.001	548360	44.6	46.7	4.6	Tetrachloro-m-xylene
13.613	-0.032	131905	13.685	-0.033	779158	44.3	39.1	12.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	111.5	116.7
Decachlorobiphenyl	110.8	97.9

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	239328	-9.0
Hexabromobiphenyl	382688	294126	-23.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	989139	-8.6
Hexabromobiphenyl	1006687	1037388	3.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1254	1	9.001	0.000	49661	246.3	1	9.022	0.000	167748	306.1
Aroclor-1254	2	9.077	0.000	12958	208.4	2	9.113	0.000	83194	298.4
Aroclor-1254	3	9.371	0.000	19588	168.9	3	9.530	0.000	125240	291.4
Aroclor-1254	4	9.505	0.000	62527	251.8	4	9.677	0.000	243980	283.8
Aroclor-1254	5	10.211	0.000	39592	238.9	5	10.452	0.000	162037	305.0

Total Col1Ave (5 peaks): 222.8 Total Col2Ave (5 peaks): 296.9 RPD = 29
Corrected Ave (4 peaks): 215.6 Corrected Ave (4 peaks): 294.7 RPD = 31

CalAmt %D: -10.9 CalAmt %D: 18.8

Total PCB Area Col1 (5.436 - 13.545) = 581092 Col1 Total PCB = 0.3 ppm*

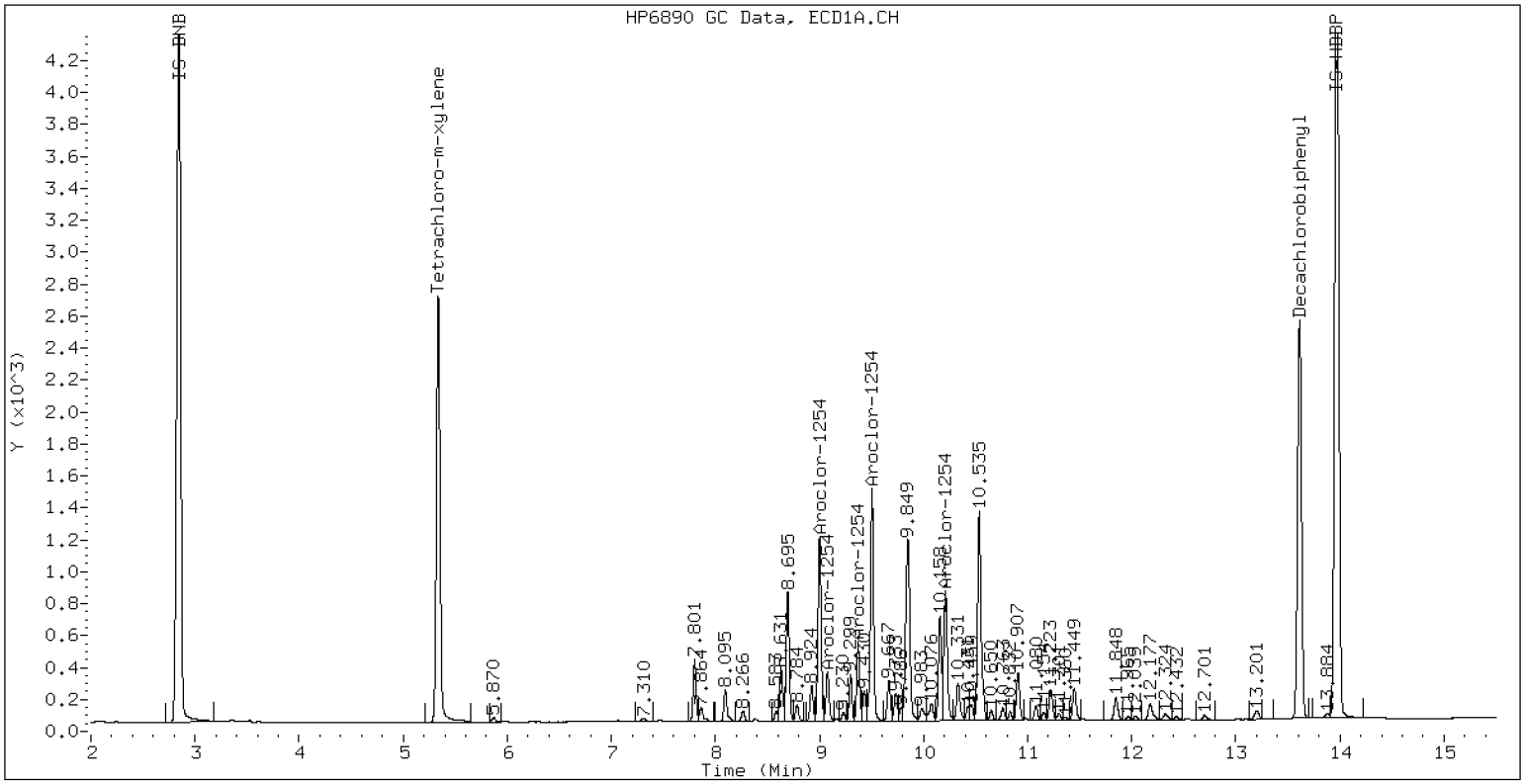
Total PCB Area Col2 (5.436 - 13.545) = 2698329 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

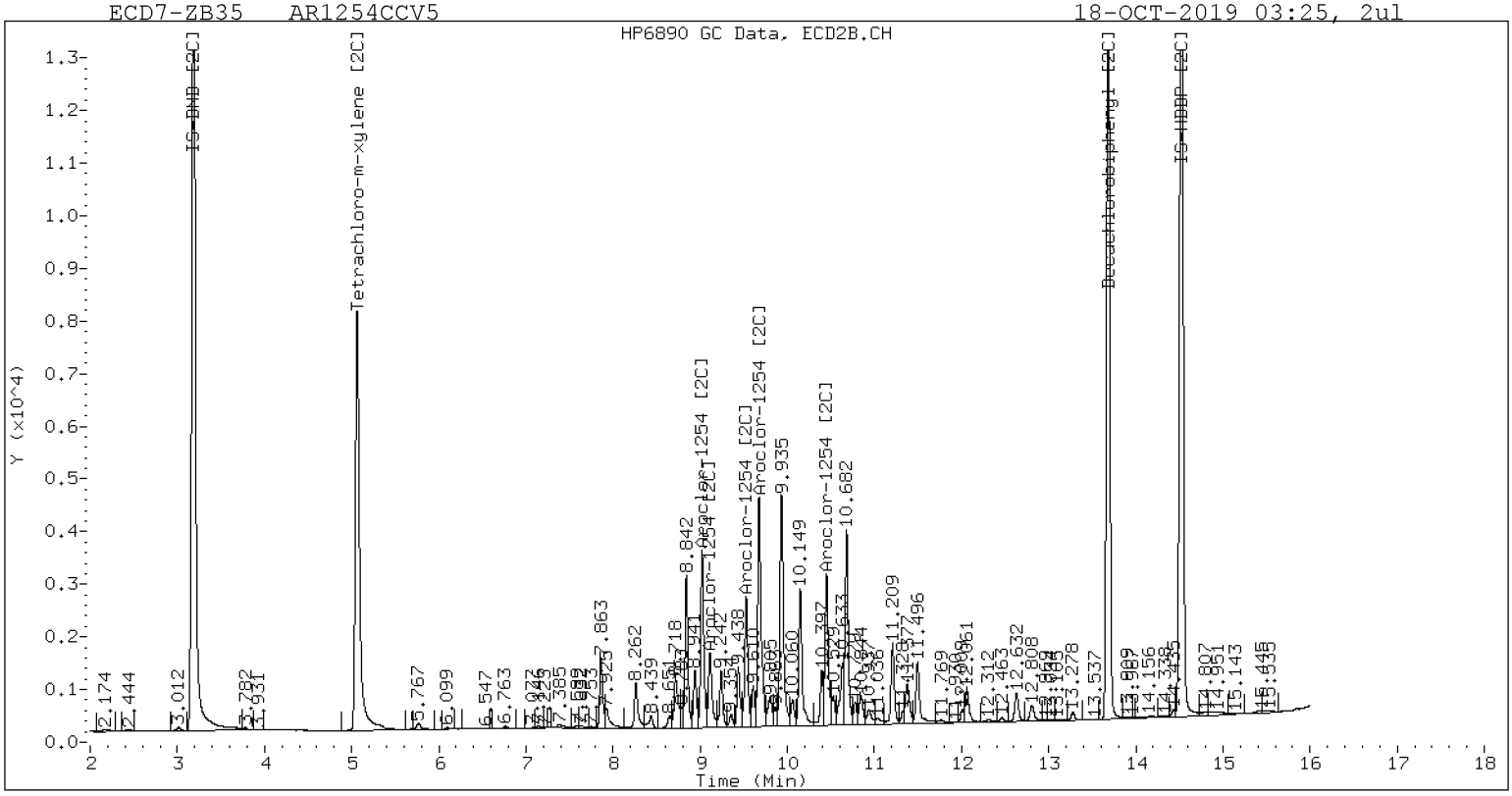
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254CCV5 18-OCT-2019 03:25, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254CCV5 18-OCT-2019 03:25, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101740ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0299	Injection Date:	10/18/19
Lab Sample ID:	SHJ0299-CCV6	Injection Time:	03:46
Sequence Name:	AR1660CCV6		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	278	0.0424735	0.0476123		11.3	20
Aroclor 1016 [2C]	A	250.00	293	0.0443328	0.0522341		17.0	20
Aroclor 1260	A	250.00	298	0.0444075	0.0538034		19.1	20
Aroclor 1260 [2C]	A	250.00	256	0.0670532	0.0697555		2.2	20
Decachlorobiphenyl	A	40.000	46.6	0.8094199	0.9434694		16.5	20
Tetrachlorometaxylene	A	40.000	47.2	0.9910571	1.1686580		18.0	20
Decachlorobiphenyl [2C]	A	40.000	40.7	1.5347890	1.5626290		1.8	20
Tetrachlorometaxylene [2C]	A	40.000	47.1	0.9503239	1.1185220		17.8	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191017.b/19101740ECD7.D
Data file 2: /20191017.b/20191017.b/19101740ECD7.D
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Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV6
Client ID:
Injection Date: 18-OCT-2019 03:46
Report Date: 10/18/2019 07:40
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.336	0.000	135122	5.063	0.000	541487	47.2	47.1	0.2	Tetrachloro-m-xylene
13.645	0.000	140651	13.718	0.000	732799	46.6	40.7	13.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	117.9	117.7
Decachlorobiphenyl	116.6	101.8

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	231243	-12.1
Hexabromobiphenyl	382688	298157	-22.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	968219	-10.5
Hexabromobiphenyl	1006687	937905	-6.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.922	0.000	19312	275.3	1	6.761	0.000	130165	270.3
Aroclor-1016	2	7.311	0.000	70816	283.8	2	7.384	0.000	304073	302.3
Aroclor-1016	3	7.456	0.000	26187	278.3	3	7.582	0.000	123996	305.8
Aroclor-1016	4	8.265	0.000	21310	275.7	4	7.751	0.000	73942	292.0

Total Col1Ave (4 peaks): 278.3 Total Col2Ave (4 peaks): 292.6 RPD = 5
Corrected Ave (3 peaks): 276.4 Corrected Ave (3 peaks): 288.2 RPD = 4

CalAmt %D: 11.3 CalAmt %D: 17.0

Aroclor-1260	1	10.763	0.000	38895	282.5	1	10.779	0.000	145166	246.0
Aroclor-1260	2	11.079	0.000	40039	303.3	2	11.216	0.000	163115	273.7
Aroclor-1260	3	11.448	0.000	103157	307.9	3	11.495	0.000	400731	268.3
Aroclor-1260	4	11.849	0.000	49249	325.8	4	12.009	0.000	108788	234.0
Aroclor-1260	5	11.965	0.000	19314	269.9	NS	---			----

Total Col1Ave (5 peaks): 297.9 Total Col2Ave (4 peaks): 255.5 RPD = 15
Corrected Ave (4 peaks): 290.9 Corrected Ave (3 peaks): 249.5 RPD = 15

CalAmt %D: 19.1 CalAmt %D: 2.2

Total PCB Area Col1 (5.436 - 13.545) = 1114826 Col1 Total PCB = 0.6 ppm*

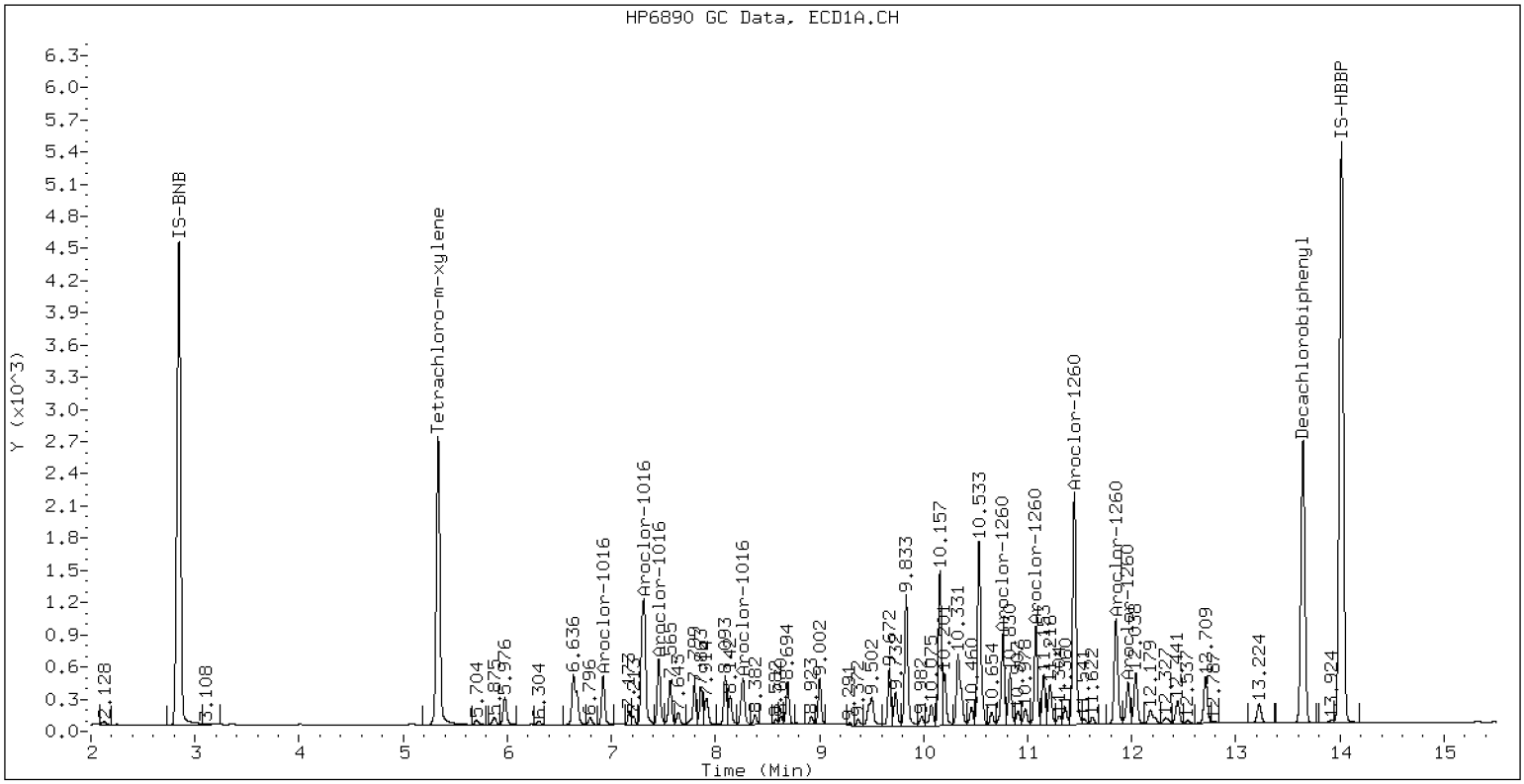
Total PCB Area Col2 (5.436 - 13.545) = 4444722 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

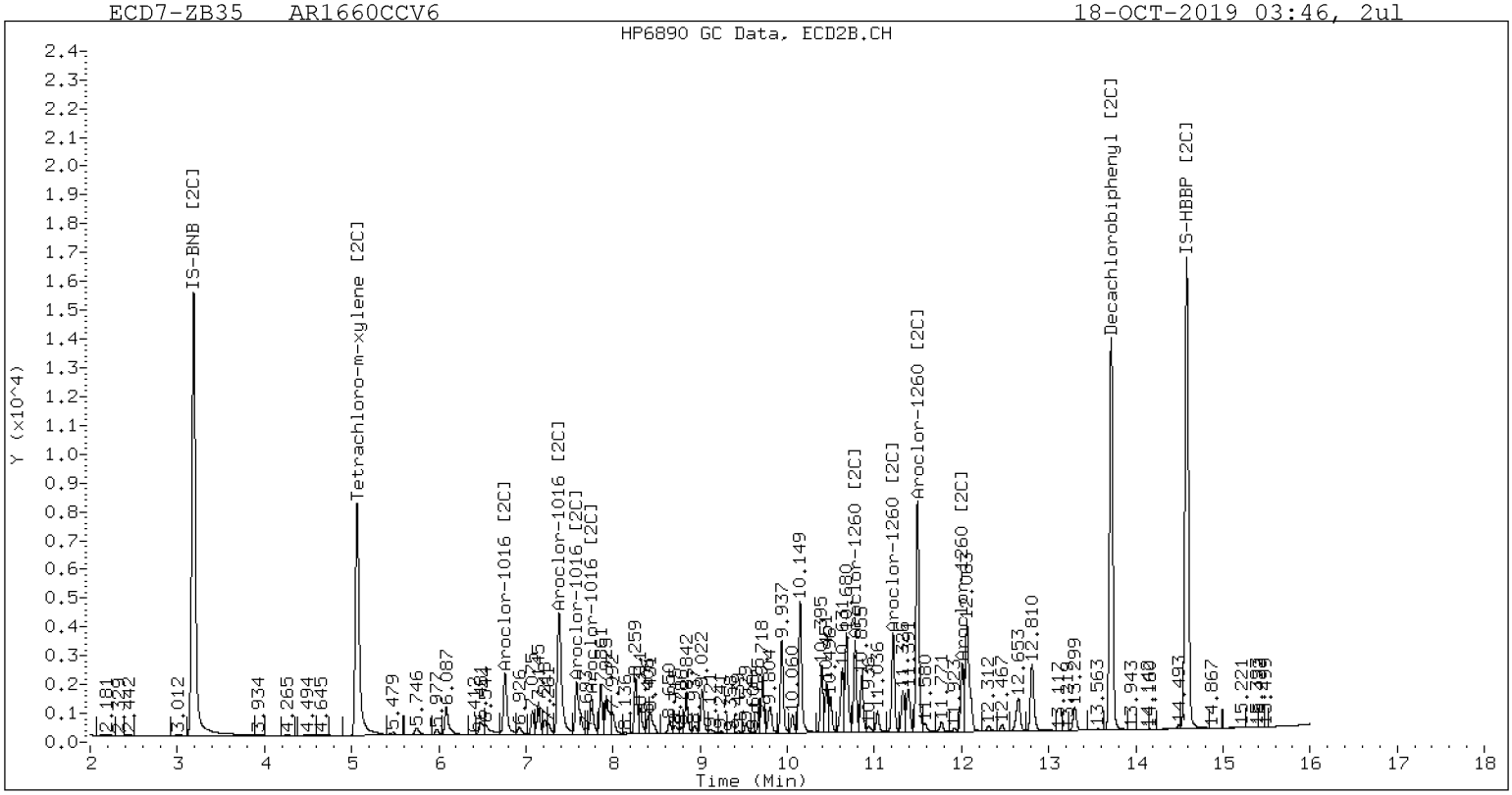
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV6 18-OCT-2019 03:46, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV6 18-OCT-2019 03:46, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101807ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0314	Injection Date:	10/18/19
Lab Sample ID:	SHJ0314-CCV1	Injection Time:	14:57
Sequence Name:	AR1248CCV1		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	240	0.0372731	0.0357801		-4.0	20
Aroclor 1248 [2C]	A	250.00	293	0.0380217	0.0446859		17.2	20
Decachlorobiphenyl	A	40.000	42.6	0.8094199	0.8628683		6.5	20
Tetrachlorometaxylene	A	40.000	42.2	0.9910571	1.0458280		5.5	20
Decachlorobiphenyl [2C]	A	40.000	38.0	1.5347890	1.4584730		-5.0	20
Tetrachlorometaxylene [2C]	A	40.000	45.1	0.9503239	1.0719250		12.8	20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191018.b/19101807ECD7.D
Data file 2: /20191018.b/20191018.b/19101807ECD7.D
Method: \\target\share\chem4\ecd7.i\20191018.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV1
Client ID:
Injection Date: 18-OCT-2019 14:57
Report Date: 10/18/2019 15:33
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.337	0.000	203947	5.063	0.000	430001	42.2	45.1	6.7	Tetrachloro-m-xylene
13.614	0.000	248217	13.687	0.000	635736	42.6	38.0	11.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	105.5	112.8
Decachlorobiphenyl	106.6	95.0

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	390020	48.3
Hexabromobiphenyl	382688	575330	50.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	802297	-25.8
Hexabromobiphenyl	1006687	871783	-13.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1248	1	8.096	0.000	38733	221.0	1	7.385	0.000	126094	289.1
Aroclor-1248	2	8.632	0.000	53359	244.6	2	8.262	0.000	95950	291.7
Aroclor-1248	3	8.920	0.000	49926	245.9	3	8.790	0.000	92629	279.5
Aroclor-1248	4	9.507	0.000	32419	248.7	4	9.124	0.000	133469	311.3

Total Col1Ave (4 peaks): 240.0 Total Col2Ave (4 peaks): 292.9 RPD = 20

Corrected Ave (3 peaks): 237.1 Corrected Ave (3 peaks): 286.8 RPD = 19

CalAmt %D: -4.0 CalAmt %D: 17.2

Total PCB Area Col1 (5.437 - 13.514) = 757628 Col1 Total PCB = 0.2 ppm*

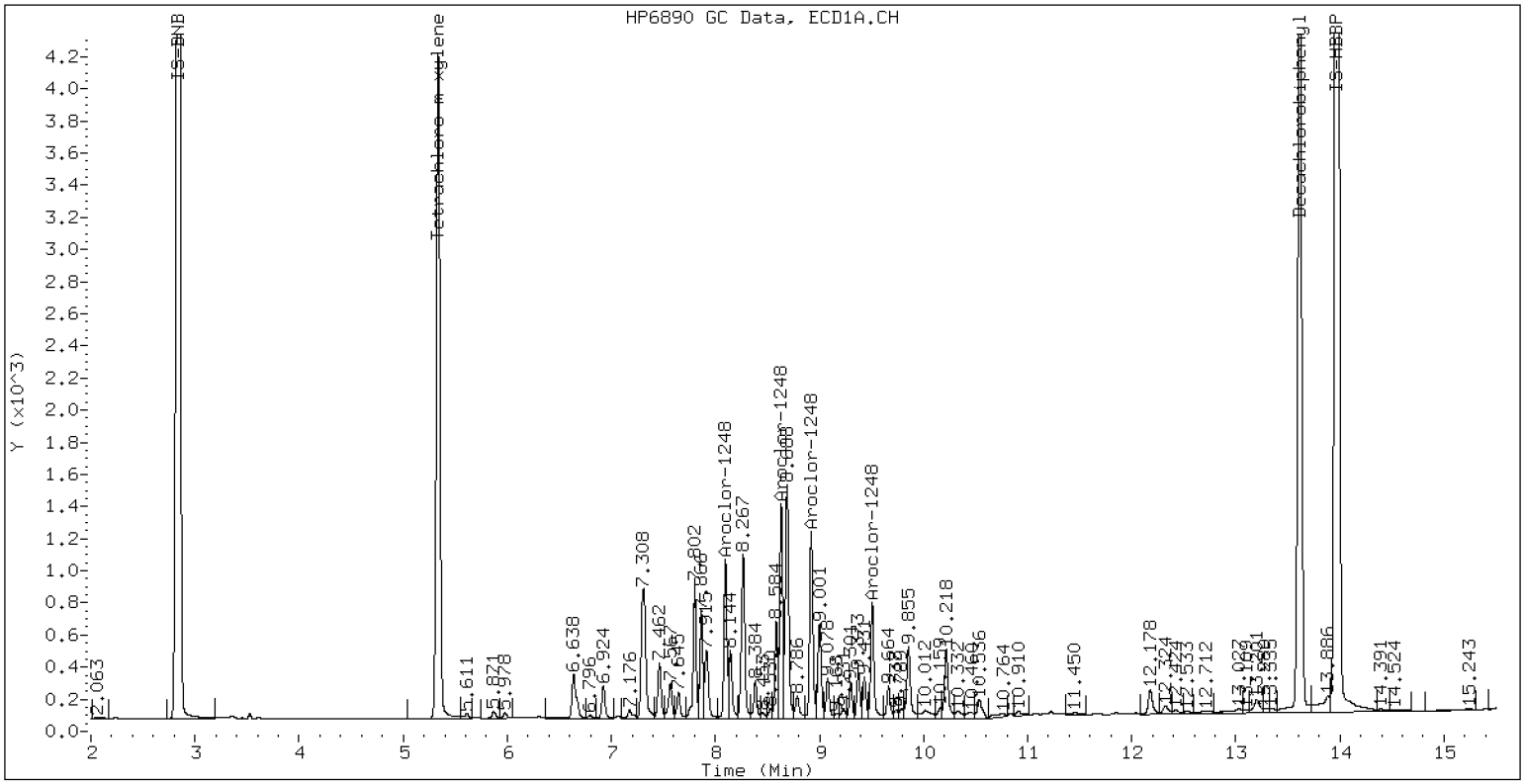
Total PCB Area Col2 (5.437 - 13.514) = 1727582 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

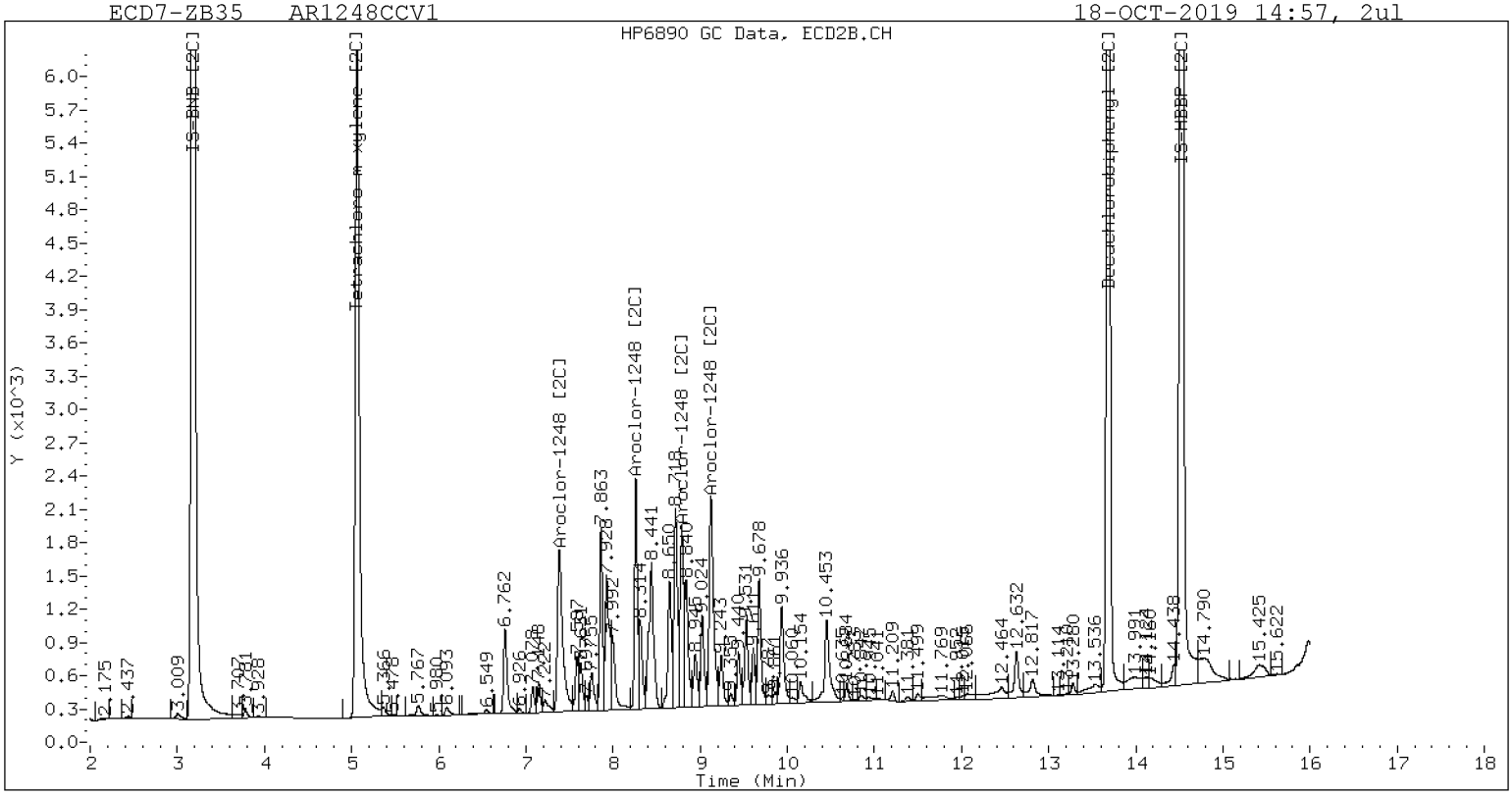
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1 18-OCT-2019 14:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248CCV1 18-OCT-2019 14:57, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Instrument ID:	ECD7	Calibration:	CI00052
Lab File ID:	19101808ECD7.D	Calibration Date:	09/15/19 00:00
Sequence:	SHJ0314	Injection Date:	10/18/19
Lab Sample ID:	SHJ0314-CCV2	Injection Time:	15:18
Sequence Name:	AR1660CCV2		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	259	0.0424735	0.0450537		3.5	20
Aroclor 1016 [2C]	A	250.00	286	0.0443328	0.0511752		14.2	20
Aroclor 1260	A	250.00	250	0.0444075	0.0458944		-0.2	20
Aroclor 1260 [2C]	A	250.00	237	0.0670532	0.0647896		-5.1	20
Decachlorobiphenyl	A	40.000	44.3	0.8094199	0.8966553		10.8	20
Tetrachlorometaxylene	A	40.000	45.8	0.9910571	1.1345540		14.5	20
Decachlorobiphenyl [2C]	A	40.000	39.6	1.5347890	1.5179010		-1.0	20
Tetrachlorometaxylene [2C]	A	40.000	46.2	0.9503239	1.0988650		15.5	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191018.b/19101808ECD7.D
Data file 2: /20191018.b/20191018.b/19101808ECD7.D
Method: \\target\share\chem4\ecd7.i\20191018.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV2
Client ID:
Injection Date: 18-OCT-2019 15:18
Report Date: 10/18/2019 15:39
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.337	-0.000	219290	5.064	0.000	464809	45.8	46.3	1.0	Tetrachloro-m-xylene
13.615	0.001	258924	13.686	0.000	637243	44.3	39.6	11.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	114.5	115.6
Decachlorobiphenyl	110.8	98.9

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	386566	47.0
Hexabromobiphenyl	382688	577533	50.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	845980	-21.8
Hexabromobiphenyl	1006687	839637	-16.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.924	0.008	28993	247.2	1	6.763	0.000	113914	270.7
Aroclor-1016	2	7.313	0.008	115265	276.3	2	7.384	0.000	259944	295.8
Aroclor-1016	3	7.459	0.008	40889	259.9	3	7.584	0.000	106699	301.2
Aroclor-1016	4	8.267	0.006	32556	252.0	4	7.753	0.000	60608	274.0

Total Col1Ave (4 peaks): 258.9 Total Col2Ave (4 peaks): 285.4 RPD = 10
Corrected Ave (3 peaks): 253.0 Corrected Ave (3 peaks): 280.1 RPD = 10

CalAmt %D: 3.5 CalAmt %D: 14.2

Aroclor-1260	1	10.763	0.002	62695	235.1	1	10.780	0.000	121547	230.1
Aroclor-1260	2	11.081	0.002	64895	253.8	2	11.216	0.000	134696	252.4
Aroclor-1260	3	11.450	0.002	176724	272.3	3	11.496	0.000	333202	249.2
Aroclor-1260	4	11.849	0.002	80253	274.1	4	12.009	0.000	90552	217.6
Aroclor-1260	5	11.965	0.001	29582	213.4	NS	---			----

Total Col1Ave (5 peaks): 249.7 Total Col2Ave (4 peaks): 237.3 RPD = 5
Corrected Ave (4 peaks): 243.6 Corrected Ave (3 peaks): 232.3 RPD = 5

CalAmt %D: -0.1 CalAmt %D: -5.1

Total PCB Area Col1 (5.437 - 13.514) = 1751781 Col1 Total PCB = 0.5 ppm*

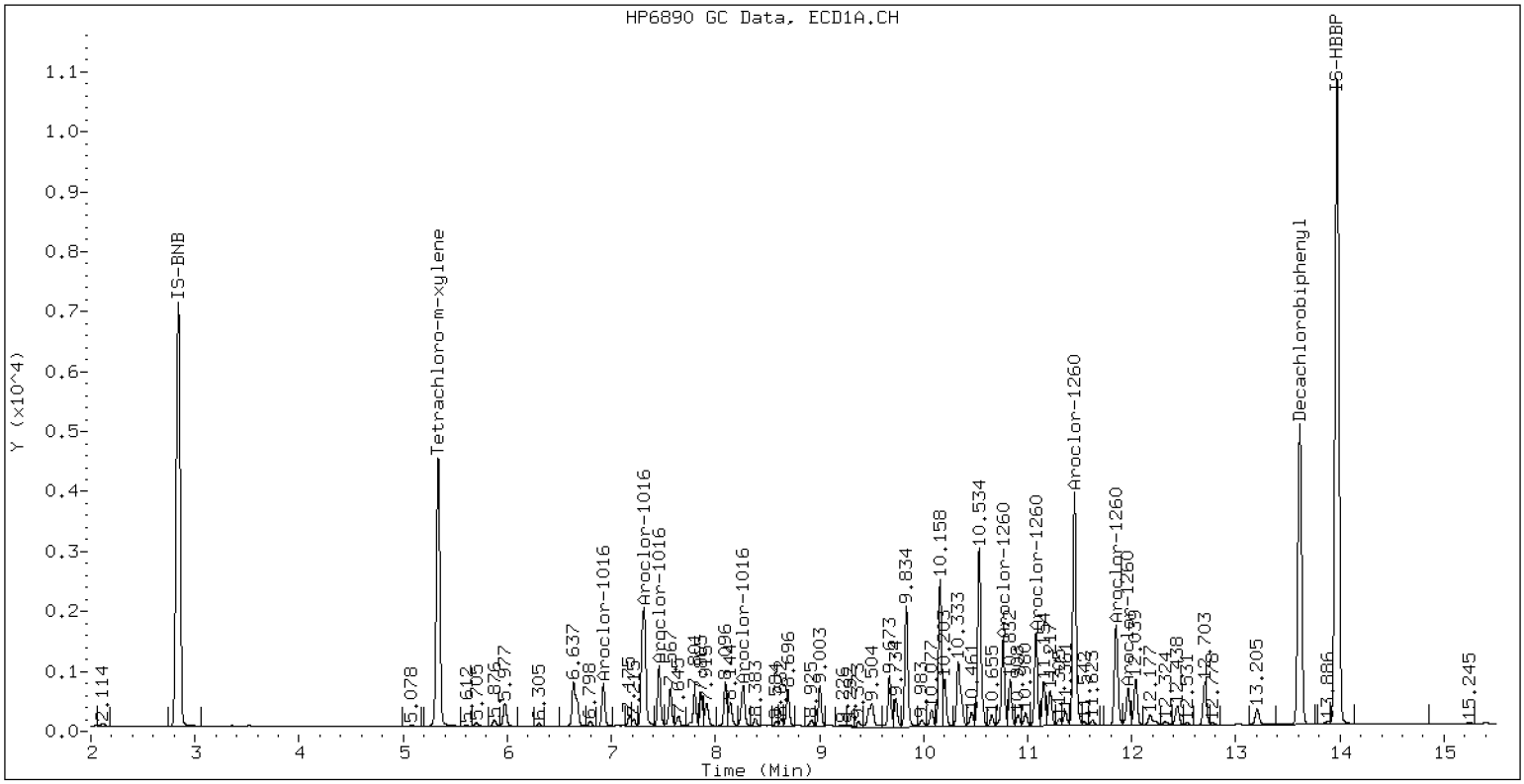
Total PCB Area Col2 (5.437 - 13.514) = 3750019 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

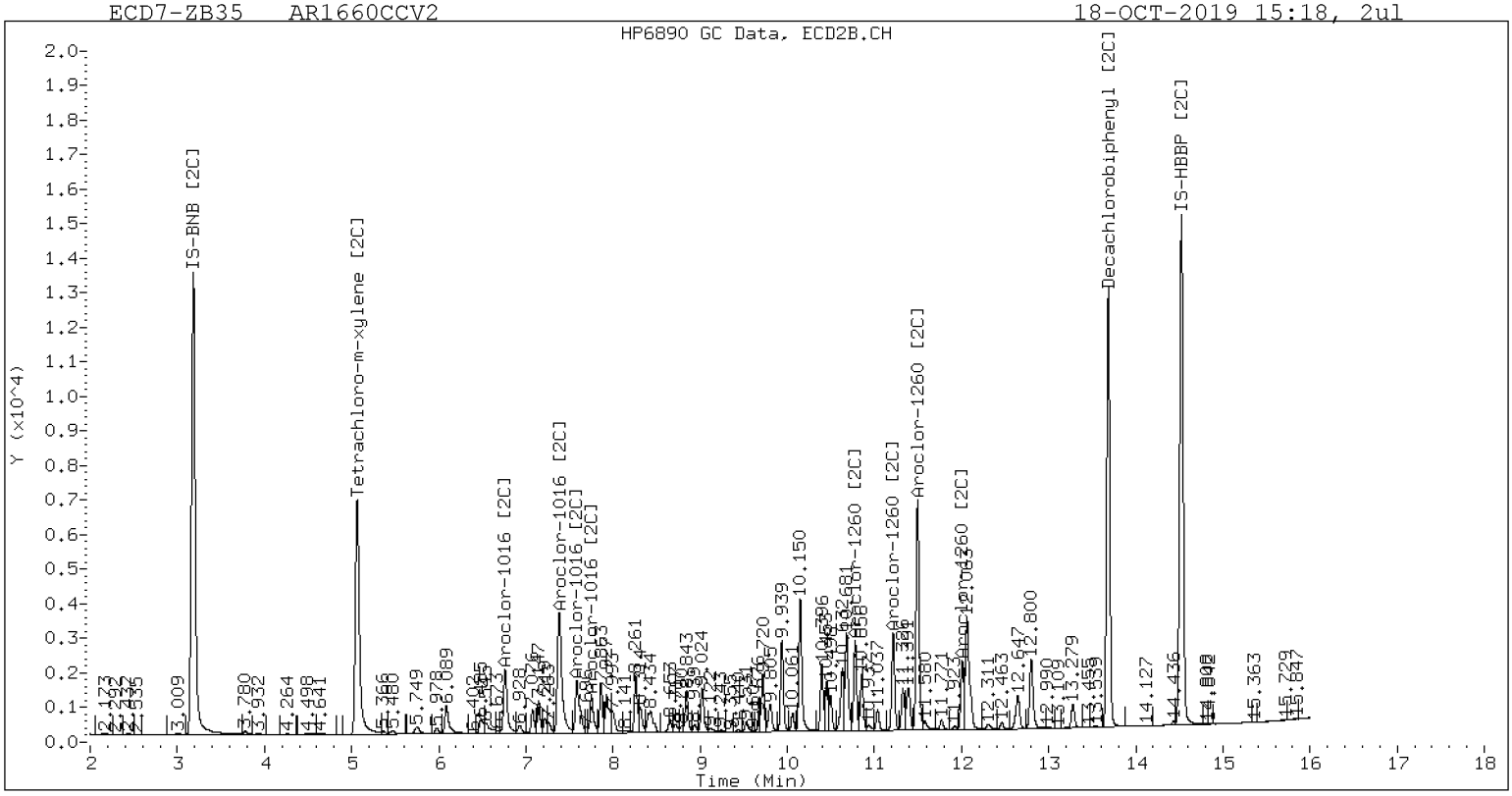
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2 18-OCT-2019 15:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2 18-OCT-2019 15:18, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHI0216	Instrument:	ECD7
		Calibration:	CI00052

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SHI0216-CAL1	19091505ECD7.D	19091505ECD7.D	NA	09/15/19 13:38
Cal Standard	SHI0216-CAL2	19091506ECD7.D	19091506ECD7.D	NA	09/15/19 13:59
Cal Standard	SHI0216-CAL3	19091507ECD7.D	19091507ECD7.D	NA	09/15/19 14:20
Cal Standard	SHI0216-CAL4	19091508ECD7.D	19091508ECD7.D	NA	09/15/19 14:41
Cal Standard	SHI0216-CAL5	19091509ECD7.D	19091509ECD7.D	NA	09/15/19 15:02
Cal Standard	SHI0216-CAL6	19091510ECD7.D	19091510ECD7.D	NA	09/15/19 15:23
Cal Standard	SHI0216-CAL7	19091511ECD7.D	19091511ECD7.D	NA	09/15/19 15:44
Cal Standard	SHI0216-CAL8	19091512ECD7.D	19091512ECD7.D	NA	09/15/19 16:05
Cal Standard	SHI0216-CAL9	19091513ECD7.D	19091513ECD7.D	NA	09/15/19 16:26
Cal Standard	SHI0216-CALA	19091514ECD7.D	19091514ECD7.D	NA	09/15/19 16:47
Cal Standard	SHI0216-CALB	19091515ECD7.D	19091515ECD7.D	NA	09/15/19 17:08
Secondary Cal Check	SHI0216-SCV1	19091516ECD7.D	19091516ECD7.D	NA	09/15/19 17:29
Secondary Cal Check	SHI0216-SCV2	19091517ECD7.D	19091517ECD7.D	NA	09/15/19 17:50
Secondary Cal Check	SHI0216-SCV3	19091518ECD7.D	19091518ECD7.D	NA	09/15/19 18:11
Secondary Cal Check	SHI0216-SCV4	19091519ECD7.D	19091519ECD7.D	NA	09/15/19 18:32
Secondary Cal Check	SHI0216-SCV5	19091520ECD7.D	19091520ECD7.D	NA	09/15/19 18:53
Secondary Cal Check	SHI0216-SCV6	19091521ECD7.D	19091521ECD7.D	NA	09/15/19 19:14

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHJ0299	Instrument:	ECD7
		Calibration:	CI00052

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Initial Cal Check	SHJ0299-ICV1	19101704ECD7.D	19101704ECD7.D	NA	10/17/19 11:48
Initial Cal Check	SHJ0299-ICV2	19101705ECD7.D	19101705ECD7.D	NA	10/17/19 12:09
Calibration Check	SHJ0299-CCV1	19101716ECD7.D	19101716ECD7.D	NA	10/17/19 19:24
Calibration Check	SHJ0299-CCV2	19101717ECD7.D	19101717ECD7.D	NA	10/17/19 19:45
Blank	BHJ0482-BLK1	19101721ECD7.D	19101721ECD7.D	Solid	10/17/19 21:09
LCS	BHJ0482-BS1	19101722ECD7.D	19101722ECD7.D	Solid	10/17/19 21:30
LCS Dup	BHJ0482-BSD1	19101723ECD7.D	19101723ECD7.D	Solid	10/17/19 21:51
Reference	BHJ0482-SRM1	19101724ECD7.D	19101724ECD7.D	Solid	10/17/19 22:11
J3-SC-00to10-102218	19J0249-01	19101725ECD7.D	19101725ECD7.D	Solid	10/17/19 22:32
J3-SC-00to10-102218	BHJ0482-MS1	19101726ECD7.D	19101726ECD7.D	Solid	10/17/19 22:53
J3-SC-00to10-102218	BHJ0482-MSD1	19101727ECD7.D	19101727ECD7.D	Solid	10/17/19 23:14
Calibration Check	SHJ0299-CCV3	19101728ECD7.D	19101728ECD7.D	NA	10/17/19 23:35
Calibration Check	SHJ0299-CCV4	19101729ECD7.D	19101729ECD7.D	NA	10/17/19 23:56
R4-SC-0to1-102118	19J0249-03	19101731ECD7.D	19101731ECD7.D	Solid	10/18/19 00:38
Calibration Check	SHJ0299-CCV5	19101739ECD7.D	19101739ECD7.D	NA	10/18/19 03:25
Calibration Check	SHJ0299-CCV6	19101740ECD7.D	19101740ECD7.D	NA	10/18/19 03:46

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 10/18/2019 12:57:01PM

ANALYSIS SEQUENCE

SHJ0299

Instrument: ECD7 Element Column ID: G2294G2295
Calibration ID: CI00052

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHJ0299-ICV1	AR1254ICV1	QC		1	H008891	H010013	
SHJ0299-ICV2	AR1660ICV2	QC		2	H010012	H010013	
19J0180-65	SD-CONF007-C	8082A PCB Solid 2	A 01	3		H010013	
19J0180-66	SD-CONF007-D	8082A PCB Solid 2	A 01	4		H010013	
19J0180-67	SD-CONF007-E	8082A PCB Solid 2	A 01	5		H010013	
19J0180-68	SD-CONF007-F	8082A PCB Solid 2	A 01	6		H010013	
BHJ0508-BLK1	Blank	QC		7		H010013	
BHJ0508-BS1	LCS	QC		8		H010013	
BHJ0508-BSD1	LCS Dup	QC		9		H010013	
BHJ0508-SRM1	Reference	QC		10		H010013	
BHJ0508-MS1	Matrix Spike	QC		11		H010013	
BHJ0508-MSD1	Matrix Spike Dup	QC		12		H010013	
SHJ0299-CCV1	AR1248CCV1	QC		13	H008890	H010013	
SHJ0299-CCV2	AR1660CCV2	QC		14	H010012	H010013	
BHJ0501-BLK1	Blank	QC		15		H010013	
BHJ0501-BS1	LCS	QC		16		H010013	
19J0263-01	MFC Wash Stall	8082A PCB (20 ug/kg) or (MTCA 0.1 ug/L	A 01	17		H010013	
BHJ0482-BLK1	Blank	QC		18		H010013	
BHJ0482-BS1	LCS	QC		19		H010013	
BHJ0482-BSD1	LCS Dup	QC		20		H010013	
BHJ0482-SRM1	Reference	QC		21		H010013	
BHJ0482-MS1	Matrix Spike	QC		22		H010013	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 10/18/2019 12:57:01PM

ANALYSIS SEQUENCE

SHJ0299

Instrument: ECD7 Element Column ID: G2294G2295
Calibration ID: CI00052

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
BHJ0482-MSD1	Matrix Spike Dup	QC		23		H010013	
SHJ0299-CCV3	AR1242CCV3	QC		24	H008889	H010013	
SHJ0299-CCV4	AR1242CCV4	QC		25	H010012	H010013	
19J0249-01	J3-SC-00to10-102218	8082A PCB Solid 4	A 01	26		H010013	
19J0249-02	D6-SC-0to1-102118	8082A PCB Solid 4	A 01	27		H010013	
19J0249-03	R4-SC-0to1-102118	8082A PCB Solid 4	A 01	28		H010013	
BHJ0524-BLK1	Blank	QC		29		H010013	
BHJ0524-BS1	LCS	QC		30		H010013	
BHJ0524-BSD1	LCS Dup	QC		31		H010013	
BHJ0524-SRM1	Reference	QC		32		H010013	
BHJ0524-MS1	Matrix Spike	QC		33		H010013	
BHJ0524-MSD1	Matrix Spike Dup	QC		34		H010013	
19J0191-11	SD-CONF118R2-A	8082A PCB Solid 2	A 02	35		H010013	
SHJ0299-CCV5	AR1660CCV5	QC		36	H008891	H010013	
SHJ0299-CCV6	AR1660CCV6	QC		37	H010012	H010013	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191017.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	17-OCT-2019 10:45	19101701ECD7.D	1	RINSE	
2	17-OCT-2019 11:06	19101702ECD7.D	1	AR1242ICV1	
3	17-OCT-2019 11:27	19101703ECD7.D	1	DDTS	
4	17-OCT-2019 11:48	19101704ECD7.D	1	AR1254ICV1	
5	17-OCT-2019 12:09	19101705ECD7.D	1	AR1660ICV2	
6	17-OCT-2019 14:38	19101706ECD7.D	5	19J0180-65	
7	17-OCT-2019 14:59	19101707ECD7.D	5	19J0180-66	
8	17-OCT-2019 15:20	19101708ECD7.D	5	19J0180-67	
9	17-OCT-2019 15:41	19101709ECD7.D	5	19J0180-68	
10	17-OCT-2019 16:20	19101710ECD7.D	1	BHJ0508-BLK1	
11	17-OCT-2019 17:39	19101711ECD7.D	1	BHJ0508-BS1	
12	17-OCT-2019 18:00	19101712ECD7.D	1	BHJ0508-BSD1	
13	17-OCT-2019 18:21	19101713ECD7.D	1	BHJ0508-SRM1	
14	17-OCT-2019 18:42	19101714ECD7.D	1	BHJ0508-MS1	
15	17-OCT-2019 19:03	19101715ECD7.D	1	BHJ0508-MSD1	
16	17-OCT-2019 19:24	19101716ECD7.D	1	AR1248CCV1	
17	17-OCT-2019 19:45	19101717ECD7.D	1	AR1660CCV2	
18	17-OCT-2019 20:06	19101718ECD7.D	1	BHJ0501-BLK1	
19	17-OCT-2019 20:27	19101719ECD7.D	1	BHJ0501-BS1	
20	17-OCT-2019 20:48	19101720ECD7.D	1	19J0263-01	
21	17-OCT-2019 21:09	19101721ECD7.D	1	BHJ0482-BLK1	
22	17-OCT-2019 21:30	19101722ECD7.D	1	BHJ0482-BS1	
23	17-OCT-2019 21:51	19101723ECD7.D	1	BHJ0482-BSD1	
24	17-OCT-2019 22:11	19101724ECD7.D	1	BHJ0482-SRM1	
25	17-OCT-2019 22:32	19101725ECD7.D	1	19J0249-01	
26	17-OCT-2019 22:53	19101726ECD7.D	1	BHJ0482-MS1	
27	17-OCT-2019 23:14	19101727ECD7.D	1	BHJ0482-MSD1	
28	17-OCT-2019 23:35	19101728ECD7.D	1	AR1242CCV3	
29	17-OCT-2019 23:56	19101729ECD7.D	1	AR1660CCV4	
30	18-OCT-2019 00:17	19101730ECD7.D	1	19J0249-02	
31	18-OCT-2019 00:38	19101731ECD7.D	1	19J0249-03	
32	18-OCT-2019 00:59	19101732ECD7.D	1	BHJ0524-BLK1	
33	18-OCT-2019 01:20	19101733ECD7.D	1	BHJ0524-BS1	
34	18-OCT-2019 01:41	19101734ECD7.D	1	BHJ0524-BSD1	
35	18-OCT-2019 02:02	19101735ECD7.D	1	BHJ0524-MS1	
36	18-OCT-2019 02:23	19101736ECD7.D	1	BHJ0524-MSD1	
37	18-OCT-2019 02:44	19101737ECD7.D	1	BHJ0524-SRM1	
38	18-OCT-2019 03:05	19101738ECD7.D	1	19J0191-11	
39	18-OCT-2019 03:25	19101739ECD7.D	1	AR1254CCV5	
40	18-OCT-2019 03:46	19101740ECD7.D	1	AR1660CCV6	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191017.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 17-OCT-2019

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1045	19101701ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1106	19101702ECD7.D	AR1242ICV1		1	NO MANUAL INTEGRATION
1127	19101703ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1148	19101704ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1209	19101705ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1438	19101706ECD7.D	19J0180-65		5	Aroclor-1268, IS-HBBP, Decachlorobiphenyl,
1459	19101707ECD7.D	19J0180-66		5	NO MANUAL INTEGRATION
1520	19101708ECD7.D	19J0180-67		5	NO MANUAL INTEGRATION
1541	19101709ECD7.D	19J0180-68		5	NO MANUAL INTEGRATION
1620	19101710ECD7.D	BHJ0508-BLK1		1	NO MANUAL INTEGRATION
1739	19101711ECD7.D	BHJ0508-BS1		1	NO MANUAL INTEGRATION
1800	19101712ECD7.D	BHJ0508-BSD1		1	NO MANUAL INTEGRATION
1821	19101713ECD7.D	BHJ0508-SRM1		1	NO MANUAL INTEGRATION
1842	19101714ECD7.D	BHJ0508-MS1		1	Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, IS-BNB, Tetrachloro-m-xylene,
1903	19101715ECD7.D	BHJ0508-MSD1		1	Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, IS-BNB, Tetrachloro-m-xylene,
1924	19101716ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1945	19101717ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191017.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2006	19101718ECD7.D	BHJ0501-BLK1		1	NO MANUAL INTEGRATION
2027	19101719ECD7.D	BHJ0501-BS1		1	NO MANUAL INTEGRATION
2048	19101720ECD7.D	19J0263-01		1	Aroclor-1221, Aroclor-1232, IS-BNB, Tetrachloro-m-xylene,
2109	19101721ECD7.D	BHJ0482-BLK1		1	NO MANUAL INTEGRATION
2130	19101722ECD7.D	BHJ0482-BS1		1	NO MANUAL INTEGRATION
2151	19101723ECD7.D	BHJ0482-BSD1		1	NO MANUAL INTEGRATION
2211	19101724ECD7.D	BHJ0482-SRM1		1	NO MANUAL INTEGRATION
2232	19101725ECD7.D	19J0249-01		1	NO MANUAL INTEGRATION
2253	19101726ECD7.D	BHJ0482-MS1		1	NO MANUAL INTEGRATION
2314	19101727ECD7.D	BHJ0482-MSD1		1	NO MANUAL INTEGRATION
2335	19101728ECD7.D	AR1242CCV3		1	NO MANUAL INTEGRATION
2356	19101729ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION
0017	19101730ECD7.D	19J0249-02		1	NO MANUAL INTEGRATION
0038	19101731ECD7.D	19J0249-03		1	Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, IS-HBBP, Tetrachloro-m-xylene, Decachlorobiphenyl,
0059	19101732ECD7.D	BHJ0524-BLK1		1	NO MANUAL INTEGRATION
0120	19101733ECD7.D	BHJ0524-BS1		1	NO MANUAL INTEGRATION
0141	19101734ECD7.D	BHJ0524-BSD1		1	NO MANUAL INTEGRATION
0202	19101735ECD7.D	BHJ0524-MS1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191017.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0223	19101736ECD7.D	BHJ0524-MSD1		1	Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, IS-BNB, Tetrachloro-m-xylene,
0244	19101737ECD7.D	BHJ0524-SRM1		1	NO MANUAL INTEGRATION
0305	19101738ECD7.D	19J0191-11		1	Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, IS-BNB, Tetrachloro-m-xylene,
0325	19101739ECD7.D	AR1254CCV5		1	NO MANUAL INTEGRATION
0346	19101740ECD7.D	AR1660CCV6		1	NO MANUAL INTEGRATION
1045	19101701ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1106	19101702ECD7.D	AR1242ICV1		1	NO MANUAL INTEGRATION
1127	19101703ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1148	19101704ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1209	19101705ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1438	19101706ECD7.D	19J0180-65		5	Aroclor-1248 [2C], Aroclor-1254 [2C],
1459	19101707ECD7.D	19J0180-66		5	Aroclor-1248 [2C], Aroclor-1254 [2C],
1520	19101708ECD7.D	19J0180-67		5	Aroclor-1254 [2C],
1541	19101709ECD7.D	19J0180-68		5	Aroclor-1254 [2C],
1620	19101710ECD7.D	BHJ0508-BLK1		1	NO MANUAL INTEGRATION
1739	19101711ECD7.D	BHJ0508-BS1		1	NO MANUAL INTEGRATION
1800	19101712ECD7.D	BHJ0508-BSD1		1	NO MANUAL INTEGRATION
1821	19101713ECD7.D	BHJ0508-SRM1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191017.b\20191017.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1842	19101714ECD7.D	BHJ0508-MS1		1	NO MANUAL INTEGRATION
1903	19101715ECD7.D	BHJ0508-MSD1		1	NO MANUAL INTEGRATION
1924	19101716ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1945	19101717ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
2006	19101718ECD7.D	BHJ0501-BLK1		1	NO MANUAL INTEGRATION
2027	19101719ECD7.D	BHJ0501-BS1		1	NO MANUAL INTEGRATION
2048	19101720ECD7.D	19J0263-01		1	Aroclor-1221 [2C], Aroclor-1232 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
2109	19101721ECD7.D	BHJ0482-BLK1		1	Aroclor-1016 [2C], Aroclor-1221 [2C], Aroclor-1232 [2C], Aroclor-1242 [2C], Aroclor-1248 [2C], Aroclor-1254 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
2130	19101722ECD7.D	BHJ0482-BS1		1	NO MANUAL INTEGRATION
2151	19101723ECD7.D	BHJ0482-BSD1		1	NO MANUAL INTEGRATION
2211	19101724ECD7.D	BHJ0482-SRM1		1	NO MANUAL INTEGRATION
2232	19101725ECD7.D	19J0249-01		1	NO MANUAL INTEGRATION
2253	19101726ECD7.D	BHJ0482-MS1		1	NO MANUAL INTEGRATION
2314	19101727ECD7.D	BHJ0482-MSD1		1	NO MANUAL INTEGRATION
2335	19101728ECD7.D	AR1242CCV3		1	Aroclor-1242 [2C],
2356	19101729ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION
0017	19101730ECD7.D	19J0249-02		1	NO MANUAL INTEGRATION
0038	19101731ECD7.D	19J0249-03		1	Aroclor-1016 [2C], Aroclor-1232 [2C], Aroclor-1242 [2C], Aroclor-1248 [2C], Aroclor-1254 [2C], Aroclor-1260 [2C], Aroclor-1262 [2C], Aroclor-1268 [2C], IS-HBBP [2C], Decachlorobiphenyl [2C],

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191017.b\20191017.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0059	19101732ECD7.D	BHJ0524-BLK1		1	NO MANUAL INTEGRATION
0120	19101733ECD7.D	BHJ0524-BS1		1	NO MANUAL INTEGRATION
0141	19101734ECD7.D	BHJ0524-BSD1		1	NO MANUAL INTEGRATION
0202	19101735ECD7.D	BHJ0524-MS1		1	Aroclor-1016 [2C], Aroclor-1221 [2C], Aroclor-1232 [2C], Aroclor-1242 [2C], Aroclor-1248 [2C], Aroclor-1254 [2C], Aroclor-1260 [2C], Aroclor-1262 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
0223	19101736ECD7.D	BHJ0524-MSD1		1	Aroclor-1016 [2C], Aroclor-1221 [2C], Aroclor-1232 [2C], Aroclor-1242 [2C], Aroclor-1248 [2C], Aroclor-1254 [2C], Aroclor-1260 [2C], Aroclor-1262 [2C], Aroclor-1268 [2C], IS-BNB [2C], IS-HBBP [2C], Tetrachloro-m-xylene [2C], Decachlorobiphenyl [2C],
0244	19101737ECD7.D	BHJ0524-SRM1		1	NO MANUAL INTEGRATION
0305	19101738ECD7.D	19J0191-11		1	Aroclor-1016 [2C], Aroclor-1221 [2C], Aroclor-1232 [2C], Aroclor-1242 [2C], Aroclor-1248 [2C], Aroclor-1254 [2C], Aroclor-1260 [2C], Aroclor-1262 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],
0325	19101739ECD7.D	AR1254CCV5		1	NO MANUAL INTEGRATION
0346	19101740ECD7.D	AR1660CCV6		1	NO MANUAL INTEGRATION

Security Status Report

Date: 18-Oct-2019 13:00

19101701ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101702ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101703ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101704ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101705ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101706ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101707ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101708ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101709ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
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19101711ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101712ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
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19101716ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101717ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101718ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
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19101720ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
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19101727ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
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19101729ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101730ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101731ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101732ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101733ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101734ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101735ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101736ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101737ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101738ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101739ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00
19101740ECD7.D	Data Locked	jrains, 18-Oct-2019 13:00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHJ0314	Instrument:	ECD7
		Calibration:	CI00052

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Initial Cal Check	SHJ0314-ICV2	19101804ECD7.D	19101804ECD7.D	NA	10/18/19 13:54
Initial Cal Check	SHJ0314-ICV1	19101805ECD7.D	19101805ECD7.D	NA	10/18/19 14:15
D6-SC-0to1-102118	19J0249-02	19101806ECD7.D	19101806ECD7.D	Solid	10/18/19 14:36
Calibration Check	SHJ0314-CCV1	19101807ECD7.D	19101807ECD7.D	NA	10/18/19 14:57
Calibration Check	SHJ0314-CCV2	19101808ECD7.D	19101808ECD7.D	NA	10/18/19 15:18

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 10/18/2019 3:42:59PM

ANALYSIS SEQUENCE

SHJ0314

Instrument: ECD7 Element Column ID: g2294g2295
Calibration ID: CI00052

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHJ0314-ICV2	AR1660ICV2	QC		1	H010012	H010013	
SHJ0314-ICV1	AR1254ICV1	QC		2	H008891	H010013	
19J0249-02	D6-SC-0to1-102118	8082A PCB Solid 4	A 01	3		H010013	
SHJ0314-CCV1	AR1248CCV1	QC		4	H008890	H010013	
SHJ0314-CCV2	AR1660CCV2	QC		5	H010012	H010013	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191018.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	18-OCT-2019 06:52	19101801ECD7.D	1	DDTS	
2	18-OCT-2019 13:13	19101802ECD7.D	1	DDTS	
3	18-OCT-2019 13:33	19101803ECD7.D	1	AR1254ICV1	
4	18-OCT-2019 13:54	19101804ECD7.D	1	AR1660ICV2	
5	18-OCT-2019 14:15	19101805ECD7.D	1	AR1254ICV1	
6	18-OCT-2019 14:36	19101806ECD7.D	10	19J0249-02RE1	
7	18-OCT-2019 14:57	19101807ECD7.D	1	AR1248CCV1	
8	18-OCT-2019 15:18	19101808ECD7.D	1	AR1660CCV2	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191018.b

ARI Job No.: DDTS Method: PCB.m Instrument: ecd7.i Date: 18-OCT-2019

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0652	19101801ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1313	19101802ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1333	19101803ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1354	19101804ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1415	19101805ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1436	19101806ECD7.D	19J0249-02RE1		10	NO MANUAL INTEGRATION
1457	19101807ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1518	19101808ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
0652	19101801ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1312	19101802ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1333	19101803ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1354	19101804ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1415	19101805ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1436	19101806ECD7.D	19J0249-02RE1		10	NO MANUAL INTEGRATION
1457	19101807ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1518	19101808ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION

Security Status Report

Date: 18-Oct-2019 15:42

19101801ECD7.D	Data Locked	jrains, 18-Oct-2019 15:42
19101802ECD7.D	Data Locked	jrains, 18-Oct-2019 15:42
19101803ECD7.D	Data Locked	jrains, 18-Oct-2019 15:42
19101804ECD7.D	Data Locked	jrains, 18-Oct-2019 15:42
19101805ECD7.D	Data Locked	jrains, 18-Oct-2019 15:42
19101806ECD7.D	Data Locked	jrains, 18-Oct-2019 15:42
19101807ECD7.D	Data Locked	jrains, 18-Oct-2019 15:42
19101808ECD7.D	Data Locked	jrains, 18-Oct-2019 15:42

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHI0216	Instrument:	ECD7
Calibration:	CI00052	Calibration Date:	09/15/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SHI0216-SCV1 (Water)			Lab File ID: 19091516ECD7.D				Analyzed: 09/15/19 17:29	
Decachlorobiphenyl	40.000	91.4	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	104	80 - 120	5.34	5.341167	-0.0012	N/A	
Decachlorobiphenyl [2C]	40.000	85.2	80 - 120	13.7	13.70317	-0.0032	N/A	
Tetrachlorometaxylene [2C]	40.000	97.5	80 - 120	5.078	5.081333	-0.0033	N/A	
SHI0216-SCV2 (Water)			Lab File ID: 19091517ECD7.D				Analyzed: 09/15/19 17:50	
Decachlorobiphenyl	40.000	91.7	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.34	5.341167	-0.0012	N/A	
Decachlorobiphenyl [2C]	40.000	84.5	80 - 120	13.701	13.70317	-0.0022	N/A	
Tetrachlorometaxylene [2C]	40.000	95.3	80 - 120	5.079	5.081333	-0.0023	N/A	
SHI0216-SCV3 (Water)			Lab File ID: 19091518ECD7.D				Analyzed: 09/15/19 18:11	
Decachlorobiphenyl	40.000	90.2	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.34	5.341167	-0.0012	N/A	
Decachlorobiphenyl [2C]	40.000	84.6	80 - 120	13.701	13.70317	-0.0022	N/A	
Tetrachlorometaxylene [2C]	40.000	95.5	80 - 120	5.08	5.081333	-0.0013	N/A	
SHI0216-SCV4 (Water)			Lab File ID: 19091519ECD7.D				Analyzed: 09/15/19 18:32	
Decachlorobiphenyl	40.000	90.9	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	101	80 - 120	5.341	5.341167	-0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	84.7	80 - 120	13.7	13.70317	-0.0032	N/A	
Tetrachlorometaxylene [2C]	40.000	94.0	80 - 120	5.08	5.081333	-0.0013	N/A	
SHI0216-SCV5 (Water)			Lab File ID: 19091520ECD7.D				Analyzed: 09/15/19 18:53	
Decachlorobiphenyl	40.000	89.7	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	105	80 - 120	5.341	5.341167	-0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	84.4	80 - 120	13.7	13.70317	-0.0032	N/A	
Tetrachlorometaxylene [2C]	40.000	99.5	80 - 120	5.08	5.081333	-0.0013	N/A	
SHI0216-SCV6 (Water)			Lab File ID: 19091521ECD7.D				Analyzed: 09/15/19 19:14	
Decachlorobiphenyl	40.000	125	80 - 200	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	101	80 - 120	5.341	5.341167	-0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	120	80 - 120	13.701	13.70317	-0.0022	N/A	
Tetrachlorometaxylene [2C]	40.000	94.4	80 - 120	5.08	5.081333	-0.0013	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHJ0299	Instrument:	ECD7
Calibration:	CI00052	Calibration Date:	09/15/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SHJ0299-ICV1 (Solid)			Lab File ID: 19101704ECD7.D				Analyzed: 10/17/19 11:48	
Decachlorobiphenyl	40.000	110	80 - 120	13.612	13.61317	-0.0012	N/A	
Tetrachlorometaxylene	40.000	111	80 - 120	5.332	5.341167	-0.0092	N/A	
Decachlorobiphenyl [2C]	40.000	98.3	80 - 120	13.683	13.70317	-0.0202	N/A	
Tetrachlorometaxylene [2C]	40.000	118	80 - 120	5.06	5.081333	-0.0213	N/A	
SHJ0299-ICV2 (Solid)			Lab File ID: 19101705ECD7.D				Analyzed: 10/17/19 12:09	
Decachlorobiphenyl	40.000	115	80 - 120	13.611	13.61317	-0.0022	N/A	
Tetrachlorometaxylene	40.000	118	80 - 120	5.334	5.341167	-0.0072	N/A	
Decachlorobiphenyl [2C]	40.000	94.5	80 - 120	13.683	13.70317	-0.0202	N/A	
Tetrachlorometaxylene [2C]	40.000	119	80 - 120	5.061	5.081333	-0.0203	N/A	
BHJ0482-BLK1 (Solid)			Lab File ID: 19101721ECD7.D				Analyzed: 10/17/19 21:09	
Decachlorobiphenyl	8.0000	86.6	40 - 126	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	8.0000	69.0	44 - 120	5.34	5.341167	-0.0012	N/A	
Decachlorobiphenyl [2C]	8.0000	81.6	40 - 126	13.684	13.70317	-0.0192	N/A	
Tetrachlorometaxylene [2C]	8.0000	61.8	44 - 120	5.065	5.081333	-0.0163	N/A	
BHJ0482-BS1 (Solid)			Lab File ID: 19101722ECD7.D				Analyzed: 10/17/19 21:30	
Decachlorobiphenyl	8.0000	87.0	40 - 126	13.612	13.61317	-0.0012	N/A	
Tetrachlorometaxylene	8.0000	80.6	44 - 120	5.338	5.341167	-0.0032	N/A	
Decachlorobiphenyl [2C]	8.0000	84.3	40 - 126	13.684	13.70317	-0.0192	N/A	
Tetrachlorometaxylene [2C]	8.0000	76.9	44 - 120	5.065	5.081333	-0.0163	N/A	
BHJ0482-BSD1 (Solid)			Lab File ID: 19101723ECD7.D				Analyzed: 10/17/19 21:51	
Decachlorobiphenyl	8.0000	87.7	40 - 126	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	8.0000	79.5	44 - 120	5.336	5.341167	-0.0052	N/A	
Decachlorobiphenyl [2C]	8.0000	87.3	40 - 126	13.688	13.70317	-0.0152	N/A	
Tetrachlorometaxylene [2C]	8.0000	77.4	44 - 120	5.062	5.081333	-0.0193	N/A	
BHJ0482-SRM1 (Solid)			Lab File ID: 19101724ECD7.D				Analyzed: 10/17/19 22:11	
Decachlorobiphenyl	100.00	82.7	40 - 126	13.612	13.61317	-0.0012	N/A	
Tetrachlorometaxylene	100.00	74.0	44 - 120	5.337	5.341167	-0.0042	N/A	
Decachlorobiphenyl [2C]	100.00	88.5	40 - 126	13.683	13.70317	-0.0202	N/A	
Tetrachlorometaxylene [2C]	100.00	79.8	44 - 120	5.064	5.081333	-0.0173	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHJ0299	Instrument:	ECD7
Calibration:	CI00052	Calibration Date:	09/15/2019

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
19J0249-01 (Solid)			Lab File ID: 19101725ECD7.D				Analyzed: 10/17/19 22:32	
Decachlorobiphenyl	7.9790	94.3	40 - 126	13.603	13.61317	-0.0102	N/A	
Tetrachlorometaxylene	7.9790	66.3	44 - 120	5.337	5.341167	-0.0042	N/A	
Decachlorobiphenyl [2C]	7.9790	77.4	40 - 126	13.677	13.70317	-0.0262	N/A	
Tetrachlorometaxylene [2C]	7.9790	65.6	44 - 120	5.062	5.081333	-0.0193	N/A	
BHJ0482-MS1 (Solid)			Lab File ID: 19101726ECD7.D				Analyzed: 10/17/19 22:53	
Decachlorobiphenyl	7.9978	95.8	40 - 126	13.603	13.61317	-0.0102	N/A	
Tetrachlorometaxylene	7.9978	68.3	44 - 120	5.338	5.341167	-0.0032	N/A	
Decachlorobiphenyl [2C]	7.9978	77.0	40 - 126	13.676	13.70317	-0.0272	N/A	
Tetrachlorometaxylene [2C]	7.9978	68.8	44 - 120	5.063	5.081333	-0.0183	N/A	
BHJ0482-MSD1 (Solid)			Lab File ID: 19101727ECD7.D				Analyzed: 10/17/19 23:14	
Decachlorobiphenyl	7.9978	92.4	40 - 126	13.604	13.61317	-0.0092	N/A	
Tetrachlorometaxylene	7.9978	62.5	44 - 120	5.336	5.341167	-0.0052	N/A	
Decachlorobiphenyl [2C]	7.9978	73.1	40 - 126	13.675	13.70317	-0.0282	N/A	
Tetrachlorometaxylene [2C]	7.9978	62.6	44 - 120	5.061	5.081333	-0.0203	N/A	
19J0249-03 (Solid)			Lab File ID: 19101731ECD7.D				Analyzed: 10/18/19 00:38	
Decachlorobiphenyl	8.0005	103	40 - 126	13.604	13.61317	-0.0092	N/A	
Tetrachlorometaxylene	8.0005	61.8	44 - 120	5.333	5.341167	-0.0082	N/A	
Decachlorobiphenyl [2C]	8.0005	64.5	40 - 126	13.676	13.70317	-0.0272	N/A	
Tetrachlorometaxylene [2C]	8.0005	70.9	44 - 120	5.056	5.081333	-0.0253	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHJ0314	Instrument:	ECD7
Calibration:	CI00052	Calibration Date:	09/15/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SHJ0314-ICV2 (Solid)			Lab File ID: 19101804ECD7.D				Analyzed: 10/18/19 13:54	
Decachlorobiphenyl	40.000	112	80 - 120	13.614	13.61317	0.0008	N/A	
Tetrachlorometaxylene	40.000	113	80 - 120	5.325	5.341167	-0.0162	N/A	
Decachlorobiphenyl [2C]	40.000	100	80 - 120	13.685	13.70317	-0.0182	N/A	
Tetrachlorometaxylene [2C]	40.000	114	80 - 120	5.051	5.081333	-0.0303	N/A	
SHJ0314-ICV1 (Solid)			Lab File ID: 19101805ECD7.D				Analyzed: 10/18/19 14:15	
Decachlorobiphenyl	40.000	97.3	80 - 120	13.615	13.61317	0.0018	N/A	
Tetrachlorometaxylene	40.000	106	80 - 120	5.331	5.341167	-0.0102	N/A	
Decachlorobiphenyl [2C]	40.000	95.5	80 - 120	13.684	13.70317	-0.0192	N/A	
Tetrachlorometaxylene [2C]	40.000	104	80 - 120	5.058	5.081333	-0.0233	N/A	
19J0249-02 (Solid)			Lab File ID: 19101806ECD7.D				Analyzed: 10/18/19 14:36	
Decachlorobiphenyl	8.0000	99.6	40 - 126	13.608	13.61317	-0.0052	N/A	
Tetrachlorometaxylene	8.0000	63.4	44 - 120	5.334	5.341167	-0.0072	N/A	
Decachlorobiphenyl [2C]	8.0000	90.1	40 - 126	13.678	13.70317	-0.0252	N/A	
Tetrachlorometaxylene [2C]	8.0000	83.7	44 - 120	5.061	5.081333	-0.0203	N/A	

Analytical Resources, Incorporated
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INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHI0216	Instrument:	ECD7
		Calibration:	CI00052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (SHI0216-SCV1)		(Water)		Lab File ID: 19091516ECD7.D				Analyzed: 09/15/19 17:29	
1-Bromo-2-Nitrobenzene	269047	2.844	262930	2.847	102	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl	398753	13.97	382688	13.97	104	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1081674	3.201	1081928	3.203	100	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	1076917	14.541	1006687	14.542	107	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV2)		(Water)		Lab File ID: 19091517ECD7.D				Analyzed: 09/15/19 17:50	
1-Bromo-2-Nitrobenzene	276605	2.845	262930	2.847	105	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	415898	13.97	382688	13.97	109	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1131917	3.201	1081928	3.203	105	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	1125325	14.541	1006687	14.542	112	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV3)		(Water)		Lab File ID: 19091518ECD7.D				Analyzed: 09/15/19 18:11	
1-Bromo-2-Nitrobenzene	283776	2.845	262930	2.847	108	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	427022	13.971	382688	13.97	112	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1157339	3.2	1081928	3.203	107	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl [2C]	1151947	14.541	1006687	14.542	114	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV4)		(Water)		Lab File ID: 19091519ECD7.D				Analyzed: 09/15/19 18:32	
1-Bromo-2-Nitrobenzene	284555	2.845	262930	2.847	108	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	425678	13.971	382688	13.97	111	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1156822	3.201	1081928	3.203	107	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	1159232	14.541	1006687	14.542	115	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV5)		(Water)		Lab File ID: 19091520ECD7.D				Analyzed: 09/15/19 18:53	
1-Bromo-2-Nitrobenzene	282463	2.847	262930	2.847	107	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	421281	13.97	382688	13.97	110	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1099699	3.203	1081928	3.203	102	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	1145810	14.541	1006687	14.542	114	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV6)		(Water)		Lab File ID: 19091521ECD7.D				Analyzed: 09/15/19 19:14	
1-Bromo-2-Nitrobenzene	283260	2.846	262930	2.847	108	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	424464	13.97	382688	13.97	111	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1126107	3.202	1081928	3.203	104	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	1155245	14.541	1006687	14.542	115	50 - 200	-0.001	+/-0.50	

Analytical Resources, Incorporated
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INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHJ0299	Instrument:	ECD7
		Calibration:	CI00052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SHJ0299-ICV1)		(Solid)		Lab File ID: 19101704ECD7.D				Analyzed: 10/17/19 11:48	
1-Bromo-2-Nitrobenzene	244337	2.84	235878	2.84	104	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	366175	13.969	348789	13.969	105	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	932604	3.182	922529	3.182	101	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	1044849	14.524	1012718	14.525	103	50 - 200	-0.001	+/-0.50	
Initial Cal Check (SHJ0299-ICV2)		(Solid)		Lab File ID: 19101705ECD7.D				Analyzed: 10/17/19 12:09	
1-Bromo-2-Nitrobenzene	235878	2.84	235878	2.84	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	348789	13.969	348789	13.969	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	922529	3.182	922529	3.182	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	1012718	14.525	1012718	14.525	100	50 - 200	0.000	+/-0.50	
Blank (BHJ0482-BLK1)		(Solid)		Lab File ID: 19101721ECD7.D				Analyzed: 10/17/19 21:09	
1-Bromo-2-Nitrobenzene	268324	2.848	235878	2.84	114	50 - 200	0.008	+/-0.50	
Hexabromobiphenyl	382020	13.97	348789	13.969	110	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1163447	3.189	922529	3.182	126	50 - 200	0.007	+/-0.50	
Hexabromobiphenyl [2C]	1186925	14.523	1012718	14.525	117	50 - 200	-0.002	+/-0.50	
LCS (BHJ0482-BS1)		(Solid)		Lab File ID: 19101722ECD7.D				Analyzed: 10/17/19 21:30	
1-Bromo-2-Nitrobenzene	262294	2.845	235878	2.84	111	50 - 200	0.005	+/-0.50	
Hexabromobiphenyl	408450	13.97	348789	13.969	117	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1142686	3.189	922529	3.182	124	50 - 200	0.007	+/-0.50	
Hexabromobiphenyl [2C]	1239318	14.524	1012718	14.525	122	50 - 200	-0.001	+/-0.50	
LCS Dup (BHJ0482-BSD1)		(Solid)		Lab File ID: 19101723ECD7.D				Analyzed: 10/17/19 21:51	
1-Bromo-2-Nitrobenzene	270222	2.843	235878	2.84	115	50 - 200	0.003	+/-0.50	
Hexabromobiphenyl	435743	13.97	348789	13.969	125	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1177944	3.185	922529	3.182	128	50 - 200	0.003	+/-0.50	
Hexabromobiphenyl [2C]	1345078	14.525	1012718	14.525	133	50 - 200	0.000	+/-0.50	
Reference (BHJ0482-SRM1)		(Solid)		Lab File ID: 19101724ECD7.D				Analyzed: 10/17/19 22:11	
1-Bromo-2-Nitrobenzene	273629	2.842	235878	2.84	116	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl	436850	13.97	348789	13.969	125	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1254904	3.185	922529	3.182	136	50 - 200	0.003	+/-0.50	
Hexabromobiphenyl [2C]	1346815	14.524	1012718	14.525	133	50 - 200	-0.001	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHJ0299	Instrument:	ECD7
		Calibration:	CI00052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
J3-SC-00to10-102218 (19J0249-01)		(Solid)		Lab File ID: 19101725ECD7.D				Analyzed: 10/17/19 22:32	
1-Bromo-2-Nitrobenzene	262420	2.844	235878	2.84	111	50 - 200	0.004	+/-0.50	
Hexabromobiphenyl	218227	13.963	348789	13.969	63	50 - 200	-0.006	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	994748	3.187	922529	3.182	108	50 - 200	0.005	+/-0.50	
Hexabromobiphenyl [2C]	1032602	14.518	1012718	14.525	102	50 - 200	-0.007	+/-0.50	
Matrix Spike (BHJ0482-MS1)		(Solid)		Lab File ID: 19101726ECD7.D				Analyzed: 10/17/19 22:53	
1-Bromo-2-Nitrobenzene	255257	2.847	235878	2.84	108	50 - 200	0.007	+/-0.50	
Hexabromobiphenyl	215605	13.963	348789	13.969	62	50 - 200	-0.006	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	942362	3.19	922529	3.182	102	50 - 200	0.008	+/-0.50	
Hexabromobiphenyl [2C]	998466	14.519	1012718	14.525	99	50 - 200	-0.006	+/-0.50	
Matrix Spike Dup (BHJ0482-MSD1)		(Solid)		Lab File ID: 19101727ECD7.D				Analyzed: 10/17/19 23:14	
1-Bromo-2-Nitrobenzene	360165	2.847	235878	2.84	153	50 - 200	0.007	+/-0.50	
Hexabromobiphenyl	292246	13.962	348789	13.969	84	50 - 200	-0.007	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1334103	3.188	922529	3.182	145	50 - 200	0.006	+/-0.50	
Hexabromobiphenyl [2C]	1414989	14.518	1012718	14.525	140	50 - 200	-0.007	+/-0.50	
R4-SC-0to1-102118 (19J0249-03)		(Solid)		Lab File ID: 19101731ECD7.D				Analyzed: 10/18/19 00:38	
1-Bromo-2-Nitrobenzene	247149	2.841	235878	2.84	105	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	198320	13.965	348789	13.969	57	50 - 200	-0.004	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	837269	3.182	922529	3.182	91	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	1032217	14.517	1012718	14.525	102	50 - 200	-0.008	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0249
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Sequence:	SHJ0314	Instrument:	ECD7
		Calibration:	CI00052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SHJ0314-ICV2)		(Solid)	Lab File ID: 19101804ECD7.D				Analyzed: 10/18/19 13:54		
1-Bromo-2-Nitrobenzene	433099	2.832	433099	2.832	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	626976	13.972	626976	13.972	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	853236	3.173	853236	3.173	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	805199	14.522	805199	14.522	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SHJ0314-ICV1)		(Solid)	Lab File ID: 19101805ECD7.D				Analyzed: 10/18/19 14:15		
1-Bromo-2-Nitrobenzene	475370	2.837	433099	2.832	110	50 - 200	0.005	+/-0.50	
Hexabromobiphenyl	773766	13.973	626976	13.972	123	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1054522	3.18	853236	3.173	124	50 - 200	0.007	+/-0.50	
Hexabromobiphenyl [2C]	1039677	14.526	805199	14.522	129	50 - 200	0.004	+/-0.50	
D6-SC-0to1-102118 (19J0249-02)		(Solid)	Lab File ID: 19101806ECD7.D				Analyzed: 10/18/19 14:36		
1-Bromo-2-Nitrobenzene	462416	2.839	433099	2.832	107	50 - 200	0.007	+/-0.50	
Hexabromobiphenyl	484981	13.968	626976	13.972	77	50 - 200	-0.004	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	997031	3.182	853236	3.173	117	50 - 200	0.009	+/-0.50	
Hexabromobiphenyl [2C]	1050791	14.521	805199	14.522	131	50 - 200	-0.001	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	19J0249
Client:	Pacific Groundwater Group			Project:	Swan Island Lagoon Sediment Investigation
Matrix:	Solid	Laboratory ID:	19J0249-01	File ID:	19101725ECD7.D
Sampled:	10/22/18 12:40	Prepared:	10/16/19 12:20	Analyzed:	10/17/19 22:32
Solids:	73.81	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BHJ0482	Sequence:	SHJ0299		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	9.498	9.506	0.008	12319.75	10.4	36.4
	2	9.102	9.135	0.033	26032.25	7.2	
Aroclor 1254	1	10.199	10.21	0.011	22065.4	21.6	27.5
	* 2	10.438	10.463	0.025	105941.4	28.5	
Aroclor 1260	1	11.954	11.96483	0.0108	12727.8	16.0	.
	* 2	11.996	12.02283	0.0268	68263.25	16.0	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	19J0249
Client:	Pacific Groundwater Group			Project:	Swan Island Lagoon Sediment Investigation
Matrix:	Solid	Laboratory ID:	19J0249-03	File ID:	19101731ECD7.D
Sampled:	10/21/18 18:40	Prepared:	10/16/19 12:20	Analyzed:	10/18/19 00:38
Solids:	49.62	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BHJ0482	Sequence:	SHJ0299		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	1	9.495	9.506	0.011	48473	41.2	4.
	* 2	9.101	9.135	0.034	114683.8	42.9	
Aroclor 1254	1	10.196	10.21	0.014	84054.2	90.1	12.4
	* 2	10.435	10.463	0.028	251303	102	
Aroclor 1260	1	11.954	11.96483	0.0108	61107.4	76.9	.
	* 2	11.995	12.02283	0.0278	329627	76.9	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	19J0249
Client:	Pacific Groundwater Group			Project:	Swan Island Lagoon Sediment Investigation
Matrix:	Solid	Laboratory ID:	19J0249-02	File ID:	19101806ECD7.D
Sampled:	10/21/18 16:00	Prepared:	10/16/19 12:20	Analyzed:	10/18/19 14:36
Solids:	41.75	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BHJ0482	Sequence:	SHJ0314		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	9.501	9.506	0.005	56360.75	190	48.4
	2	9.108	9.135	0.027	47386.75	116	
Aroclor 1254	1	10.203	10.21	0.007	102797.6	686	3.2
	* 2	10.443	10.463	0.02	183582.2	708	
Aroclor 1260	* 1	11.96	11.96483	0.00483	88314.6	634	12.2
	2	12.001	12.02283	0.0218	246895.5	561	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HOLDING TIME SUMMARY

Analysis: EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 19J0249

Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
J3-SC-00to10-102218 19J0249-01	10/22/18 12:40	10/15/19 10:43	10/16/19 12:20	358	365	10/17/19 22:32	1	40	
D6-SC-0to1-102118 19J0249-02	10/21/18 16:00	10/15/19 10:43	10/16/19 12:20	359	365	10/18/19 14:36	2	40	
R4-SC-0to1-102118 19J0249-03	10/21/18 18:40	10/15/19 10:43	10/16/19 12:20	359	365	10/18/19 00:38	2	40	
Matrix Spike BHJ0482-MS1	10/22/18 12:40	10/15/19 10:43	10/16/19 12:20	358	365	10/17/19 22:53	1	40	
Matrix Spike Dup BHJ0482-MSD1	10/22/18 12:40	10/15/19 10:43	10/16/19 12:20	358	365	10/17/19 23:14	1	40	

* Indicates hold time exceedance.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 19J0249
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigati
Matrix: Solid
Instrument: ECD7

Analyte	MDL	RL	Units
Aroclor 1016	1.6	4.0	ug/kg
Aroclor 1016 [2C]	1.6	4.0	ug/kg
Aroclor 1221	1.6	4.0	ug/kg
Aroclor 1221 [2C]	1.6	4.0	ug/kg
Aroclor 1232	1.6	4.0	ug/kg
Aroclor 1232 [2C]	1.6	4.0	ug/kg
Aroclor 1242	1.6	4.0	ug/kg
Aroclor 1242 [2C]	1.6	4.0	ug/kg
Aroclor 1248	1.6	4.0	ug/kg
Aroclor 1248 [2C]	1.6	4.0	ug/kg
Aroclor 1254	1.6	4.0	ug/kg
Aroclor 1254 [2C]	1.6	4.0	ug/kg
Aroclor 1260	0.6	4.0	ug/kg
Aroclor 1260 [2C]	0.6	4.0	ug/kg
Aroclor 1262	0.6	4.0	ug/kg
Aroclor 1262 [2C]	0.6	4.0	ug/kg
Aroclor 1268	0.6	4.0	ug/kg
Aroclor 1268 [2C]	0.6	4.0	ug/kg

Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 19J0249
Client: Pacific Groundwater Group
Project: Swan Island Lagoon Sediment Investigati
Matrix: Water
Instrument: ECD7

Analyte	MDL	RL	Units
Aroclor 1016	1.56	4.00	ug/kg
Aroclor 1016 [2C]	1.56	4.00	ug/kg
Aroclor 1221	1.56	4.00	ug/kg
Aroclor 1221 [2C]	1.56	4.00	ug/kg
Aroclor 1232	1.56	4.00	ug/kg
Aroclor 1232 [2C]	1.56	4.00	ug/kg
Aroclor 1242	1.56	4.00	ug/kg
Aroclor 1242 [2C]	1.56	4.00	ug/kg
Aroclor 1248	1.56	4.00	ug/kg
Aroclor 1248 [2C]	1.56	4.00	ug/kg
Aroclor 1254	1.56	4.00	ug/kg
Aroclor 1254 [2C]	1.56	4.00	ug/kg
Aroclor 1260	0.589	4.00	ug/kg
Aroclor 1260 [2C]	0.589	4.00	ug/kg
Aroclor 1262	0.589	4.00	ug/kg
Aroclor 1262 [2C]	0.589	4.00	ug/kg
Aroclor 1268	0.589	4.00	ug/kg
Aroclor 1268 [2C]	0.589	4.00	ug/kg

TOTAL SOLIDS BENCHSHEET

Method: PSEP 1986

(dry at 103-105 C)

Batch:	BHJ0465
Date:	10/15/2019 13:05
Analyst:	YL
Drying Oven:	15
Analytical Balance:	B146462614

Instrumentation

Batch drying time	
record times as mm/dd/yy hh:mm	
date/time in oven:	10/15/2019 15:45
date/time out:	10/16/2019 6:55
elapsed hrs:	15.2

TS (%) calculated as:

Final dry wt (g) = (Dry Wt - Tare Wt)

TS = (Final Dry Wt X 100)/ (sample & dish -dish tare)

SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted
19J0249-01	1.1100	6.5700	5.1400	4.03	**73.81%**	Yes
19J0249-02	1.1200	6.3900	3.3200	2.20	**41.75%**	No
19J0249-03	1.1100	6.4300	3.7500	2.64	**49.62%**	No

TOTAL SOLIDS BENCHSHEET	Batch:	BHJ0465
Method: PSEP 1986	Date:	10/15/2019 13:05
(dry at 103-105 C)	Analyst:	YL
Instrumentation	Drying Oven:	Ø15
	Analytical Balance:	B146462614

Batch drying time		
record times as mm/dd/yy hh:mm		
date/time in oven:	10/15/19	15:45
date/time out:	10/16/19	0655
elapsed hrs:	0.0	

TS (%) calculated as:

Final dry wt (g) = (Dry Wt - Tare Wt)

TS = (Final Dry Wt X 100)/ (sample & dish -dish tare)

SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted
19J0249-01 A	1.11	6.57	5.14			~~No~~ YL
19J0249-02 A	1.12	6.39	3.32			No
19J0249-03 A	1.11	6.43	3.75			No