Analytical Resources, Incorporated
Analytical Chemists and Consultants

31 August 2021

Cindy Fields
Anchor QEA, LLC
1201 3rd Ave, Suite 2600
Seattle, WA 98101

RE: Lower Duwamish AOC4

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)
21G0321	N/A

Susan Dunnihoo

Digitally signed by Susan Dunnihoo
Date: 2021.08.31 13:41:29 -07'00'

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 enclosed 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.

Susan Dunnihoo, Director, Client Services

Accredited in accordance with nelac
Cert# 100006-012

1 of 1 2160321

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Duwamish AOC4	Ship to:	ARI		No. AOC4ENR
Project Number:	190067-02.02	Attn:	Sue Dunnihoo	Shipping Date:	7/27/21
Contact Name:	Amara Vandervort	Shipper:	Courier	Airbill Number:	———
Sampled By:	Windward	Form filled out by:	AV	Turnaround requested:	STD

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions [Composite/Bag ID]
					PCB Aroclors EPA 8082A	Arsenic EPA 6020A	Percent solids SM 2540G					
7/7/2021	1451	LDW21-IT615A	2	sediment	X	X	X					
7/7/2021	1540	LDW21-IT617A	2	sediment	X	X	X					
7/7/2021	1620	LDW21-IT618A	2	sediment	X	X	X					
7/7/2021	1702	LDW21-IT624A	2	sediment	X	X	X					
7/7/2021	1832	LDW21-IT626A	2	sediment	X	X	X					
Total Number of Containers			10	Purchase Order / Statement of Work #CLF-052021-ARI								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Meghan Carrillo	YARED LISANEWORK	Print name: YARED LISANEWORK	Jacob Martin
Signature: Megh Carr		Signature:	
Company: MTL	Company: YA YA SAFETY	Company: YA YA SAFETY NET	Company: ARI
Date/Time: 7-27-21 @10:02AM	Date/Time: 7/27/21 @10:02 AM	Date/Time: 07/27/21 @10:02 AM	Date/Time: 07/27/2021 1002

1200 Jacob for Yu Jacob 1200

* Distribution: White copies accompany shipment; yellow retained by consignor.

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Wind Ward environmental LLC
200 First Avenue West
Suite 500
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Archer/Windward

Project Name: Lower Duwamish AOC4

COC No(s): _____ NA

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

Assigned ARI Job No: 21G0321

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 1220 0.3 ____ ____ ____ ____ ____

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

Temp Gun ID#: DOO5206

Cooler Accepted by: JS Date: 07/27/2021 Time: ~~1002~~ JS 1220

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: JS Date: 07/27/2021 Time: 1252 Labels checked by: JS

***** 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:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Anchor QEA, LLC	Project:	Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number:	180067-02.03	**Reported:**
Seattle, WA 98101	Project Manager:	Cindy Fields	08/31/2021 13:22

ANALYTICAL REPORT FOR SAMPLES

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
21G0321-01	LDW21-IT615A	Solid	07/07/21 14:51	07/27/21 12:20
21G0321-02	LDW21-IT617A	Solid	07/07/21 15:40	07/27/21 12:20
21G0321-03	LDW21-IT618A	Solid	07/07/21 16:20	07/27/21 12:20
21G0321-04	LDW21-IT624A	Solid	07/07/21 17:02	07/27/21 12:20
21G0321-05	LDW21-IT626A	Solid	07/07/21 18:32	07/27/21 12:20

Anchor QEA, LLC	Project: Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number: 180067-02.03	**Reported:**
Seattle WA, 98101	Project Manager: Cindy Fields	31-Aug-2021 13:22

Case Narrative

Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Work Order: 21G0321

Sample receipt

Samples as listed on the preceding page were received 27-Jul-2021 12:20 under ARI work order 21G0321. For details regarding sample receipt, please refer to the Cooler Receipt Form. Mercury aliquots were frozen to meet QAPP requirements.

TOC analysis was performed by another lab and is reported directly to the client.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted outside the recommended sediment holding times and analyzed within the recommended holding times for extracts, as samples were processed by another laboratory before receipt at ARI. The aroclors have been "H"-flagged, indicating the excursion.

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 for all batches.

The batch BJH0179 blank spike (BS/LCS) percent recoveries were double the control limits, as were the surrogates. A double spike was suspected, but the associated samples were re-extracted in batch BJH0604.

The batch BJH0193 blank spike (BS/LCS) percent recoveries were within control limits.

The batch BJH0604 lab QC was run in duplicate, due to limite sample volumes. The blank spike/blank spike duplicate (BS/LCS-BSD/LCSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

The batch BJH0193 matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

The reference material (SRM) percent recoveries were within control limits for all batches.

Total Metals - EPA Method 6020B (Arsenic)

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

Initial and continuing calibrations were within method requirements.

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

The blank spike (BS/LCS) percent recoveries were within control limits.

The duplicate (DUP) relative percent difference (RPD) was within advisory control limits.

Anchor QEA, LLC	Project: Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number: 180067-02.03	**Reported:**
Seattle WA, 98101	Project Manager: Cindy Fields	31-Aug-2021 13:22

Case Narrative

The matrix spike/matrix spike duplicate (MS/MSD) spike recoveries and relative percent difference (RPD) were within advisory control limits.

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.
J	Estimated concentration value detected below the reporting limit.
H	Hold time violation - Hold time was exceeded.
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

Dual Column

LDW21-IT615A

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21G0321-01 A	File ID:	08192133ECD7.D
Sampled:	07/07/21 14:51	Prepared:	08/06/21 11:30	Analyzed:	08/19/21 23:27
% Solids:	97.40	Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.83 g Wet / 2.5 mL
Batch:	BJH0179	Sequence:	SJH0254	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	H, U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	H, U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	H, U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	H, U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	H, U
11097-69-1	Aroclor 1254	1	1	2.6	1.6	4.0	H, J
11096-82-5	Aroclor 1260	2	1	0.7	0.6	4.0	H, J

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*8.0023*	*7.67*	*95.9*	*40 - 126*	
Tetrachlorometaxylene	*1*	*8.0023*	*3.85*	*48.2*	*44 - 120*	
Decachlorobiphenyl	*2*	*8.0023*	*7.45*	*93.1*	*40 - 126*	
Tetrachlorometaxylene	*2*	*8.0023*	*3.57*	*44.7*	*44 - 120*	

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

Data file 1: /210819.b/08192133ECD7.D
Data file 2: /210819.b/210819.b/08192133ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21G0321-01
Client ID:
Injection Date: 19-AUG-2021 23:27
Report Date: 08/30/2021 09:54
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.067	-0.001	63002	5.410	-0.001	173666	19.3	17.9	7.5	Tetrachloro-m-xylene
13.162	-0.003	163283	13.846	-0.003	924446	38.4	37.2	3.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	270601	4.5
Hexabromobiphenyl	425681	468913	10.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	756509	4.9
Hexabromobiphenyl	863111	1117084	29.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	---			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	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	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	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	8.673	-0.004	2856	12.2	1	9.236	-0.003	8436	13.1
Aroclor-1254	2	8.746	-0.002	1443	13.4	2	9.329	-0.003	6714	17.8
Aroclor-1254	3	9.049	0.007	2503	16.4	3	9.759	-0.003	4904	10.0
Aroclor-1254	4	9.176	-0.004	3561	12.2	4	9.911	-0.003	12233	11.3
Aroclor-1254	5	9.859	-0.012	2014	11.0	5	10.151	-0.000	13270	12.0
	Total Col1Ave (5 peaks):				13.1	Total Col2Ave (5 peaks):				12.8 RPD = 2
	Corrected Ave (4 peaks):				12.2	Corrected Ave (4 peaks):				11.6 RPD = 5
Aroclor-1260	1	10.381	-0.004	694	3.3	1	11.430	0.006	5632	6.1
Aroclor-1260	2	10.700	-0.003	549	2.7	2	11.674	-0.004	7098	2.6
Aroclor-1260	3	11.050	-0.004	1702	3.0	3	12.257	-0.003	5334	3.1
Aroclor-1260	4	11.451	-0.003	1118	4.5	4	12.965	-0.006	2638	3.2
Aroclor-1260	5	11.552	-0.004	461	3.7	NS	---			----
	Total Col1Ave (5 peaks):				3.4	Total Col2Ave (4 peaks):				3.7 RPD = 9
	Corrected Ave (4 peaks):				3.2	Corrected Ave (3 peaks):				3.0 RPD = 7
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.168 - 13.065) = 67154 Col1 Total PCB = 0.0 ppm*

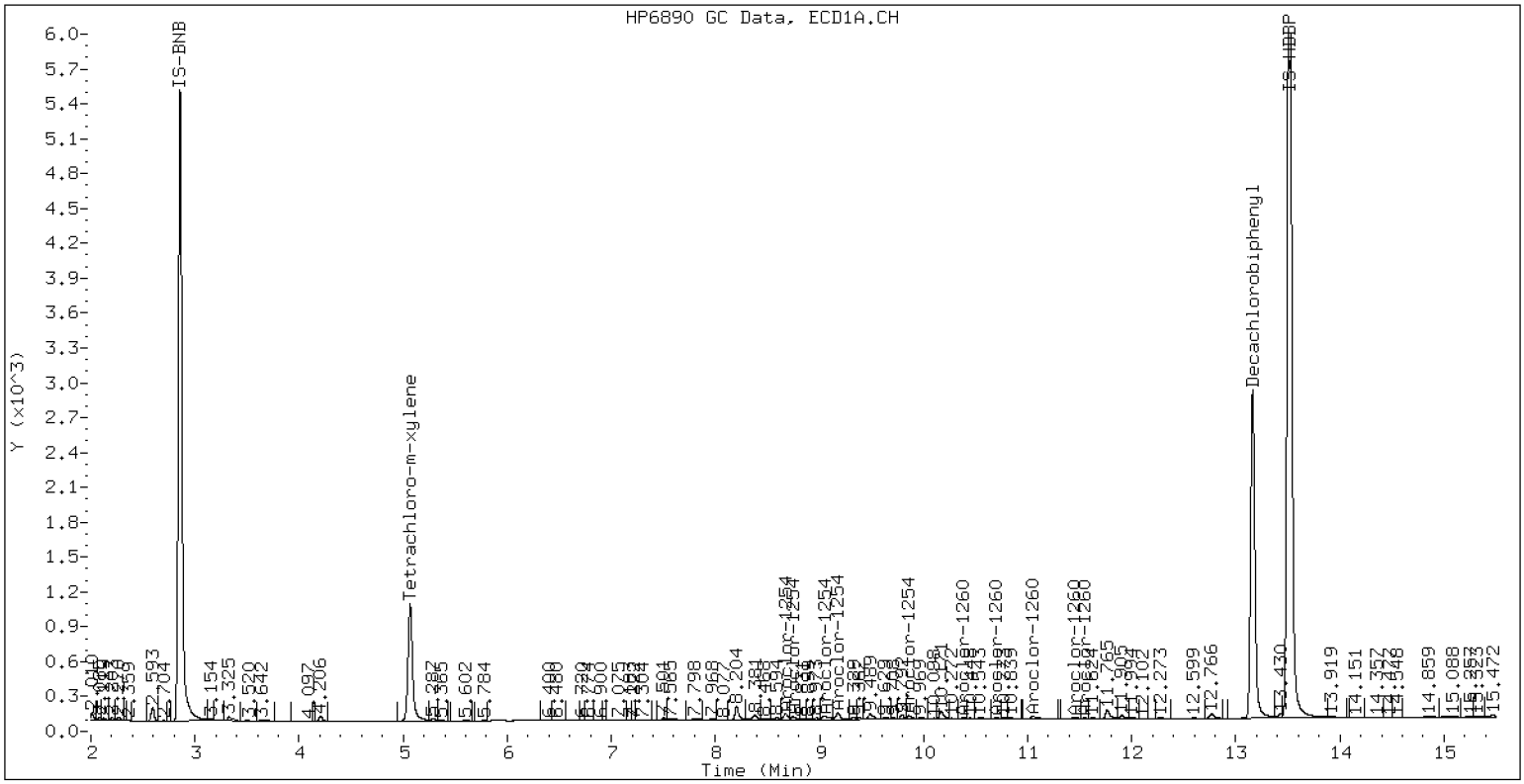
Total PCB Area Col2 (5.168 - 13.065) = 421032 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

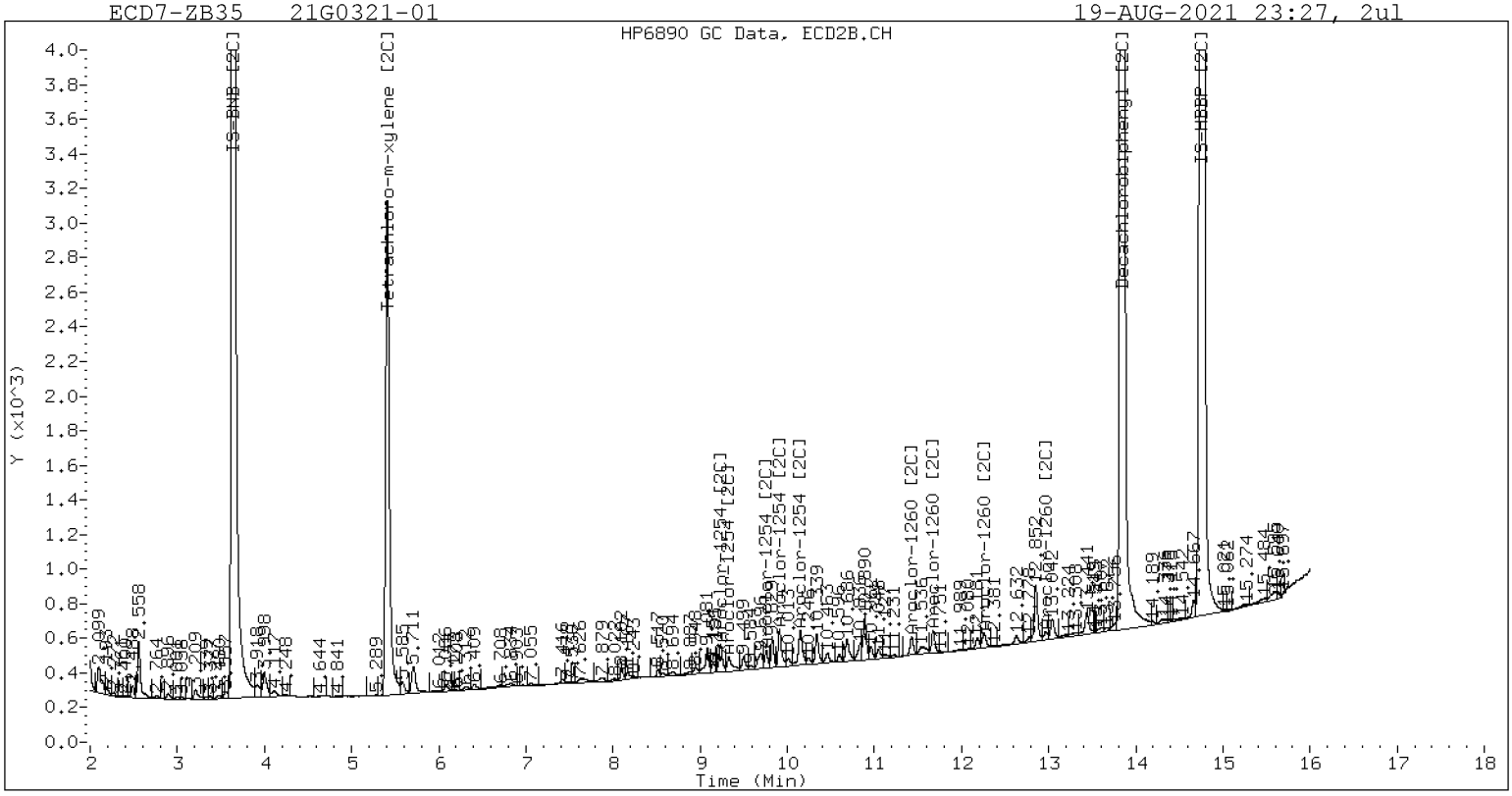
PCB Dual Column Chromatograms

ECD7-ZB5 21G0321-01 19-AUG-2021 23:27, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21G0321-01 19-AUG-2021 23:27, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT615A

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21G0321-01RE1 A	File ID:	08272125ECD7.D
Sampled:	07/07/21 14:51	Prepared:	08/25/21 13:40	Analyzed:	08/28/21 00:09
% Solids:	97.40	Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.83 g Wet / 2.5 mL
Batch:	BJH0604	Sequence:	SJH0396	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	H, U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	H, U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	H, U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	H, U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	H, U
11097-69-1	Aroclor 1254	1	1	2.6	1.6	4.0	H, J
11096-82-5	Aroclor 1260	2	1	0.7	0.6	4.0	H, J

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*8.0023*	*6.16*	*77.0*	*40 - 126*	
Tetrachlorometaxylene	*1*	*8.0023*	*4.16*	*52.0*	*44 - 120*	
Decachlorobiphenyl	*2*	*8.0023*	*5.64*	*70.4*	*40 - 126*	
Tetrachlorometaxylene	*2*	*8.0023*	*3.93*	*49.1*	*44 - 120*	

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

Data file 1: /2108127.b/08272125ECD7.D
Data file 2: /2108127.b/2108127.b/08272125ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21G0321-01RE1
Client ID:
Injection Date: 28-AUG-2021 00:09
Report Date: 08/30/2021 14:37
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.001	70157	5.412	-0.002	185966	20.8	19.6	5.8	Tetrachloro-m-xylene
13.162	-0.004	134842	13.842	-0.001	733247	30.8	28.2	8.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	278945	7.8
Hexabromobiphenyl	425681	482481	13.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	736720	2.2
Hexabromobiphenyl	863111	1171289	35.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.617	-0.046	202	2.0	1	7.057	0.001	475	1.1
Aroclor-1016	2	7.048	0.010	483	1.6	2	7.651	-0.002	3204	3.4
Aroclor-1016	3	---			0.0	3	7.893	0.036	1251	3.4
Aroclor-1016	4	7.318	0.026	426	5.0	4	8.104	-0.001	1844	8.3
Total Col1Ave (3 peaks):					2.9	Total Col2Ave (4 peaks):			4.0	RPD = 34
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			2.6	
Aroclor-1221	1	4.083	0.068	236	10.7	1	4.637	-0.040	622	11.2
Aroclor-1221	2	---			0.0	2	6.089	0.017	2523	19.9
Aroclor-1221	3	5.792	0.067	128	1.4	3	6.410	0.001	1399	6.3
Col1Ave: <3 Quant Peaks						Col2Ave: 12.5				
Aroclor-1232	1	4.083	0.065	236	17.4	1	4.637	-0.042	622	18.9
Aroclor-1232	2	5.792	0.065	128	1.7	2	7.057	-0.001	475	2.5
Aroclor-1232	3	7.048	0.015	483	4.3	3	7.651	0.000	3204	8.3
Aroclor-1232	4	7.971	-0.001	364	7.9	4	8.518	-0.004	1275	12.7
Total Col1Ave (4 peaks):					7.8	Total Col2Ave (4 peaks):			10.6	RPD = 30
Corrected Ave (3 peaks):					4.6	Corrected Ave (3 peaks):			7.8	RPD = 51*
Aroclor-1242	1	6.617	-0.045	202	2.6	1	7.057	0.001	475	1.4
Aroclor-1242	2	7.048	0.010	483	2.1	2	7.651	-0.002	3204	4.4
Aroclor-1242	3	8.382	-0.003	2702	20.8	3	8.949	-0.007	2111	6.1
Aroclor-1242	4	8.675	-0.001	2681	50.5	4	9.032	-0.007	1186	3.0
Total Col1Ave (4 peaks):					19.0	Total Col2Ave (4 peaks):			3.7	RPD = 134*
Corrected Ave (3 peaks):					8.5	Corrected Ave (3 peaks):			2.9	RPD = 98*
Aroclor-1248	1	7.800	-0.004	598	5.1	1	8.104	-0.002	1844	6.0
Aroclor-1248	2	7.971	-0.002	364	2.4	2	8.518	-0.003	1275	3.4
Aroclor-1248	3	8.382	-0.001	2702	12.1	3	8.949	-0.004	2111	3.6
Aroclor-1248	4	8.675	-0.002	2681	21.0	4	9.329	-0.053	5636	11.2
Total Col1Ave (4 peaks):					10.2	Total Col2Ave (4 peaks):			6.1	RPD = 50*
Corrected Ave (3 peaks):					6.5	Corrected Ave (3 peaks):			4.3	RPD = 40*
Aroclor-1254	1	8.675	-0.004	2681	11.1	1	9.236	-0.003	7190	11.5
Aroclor-1254	2	8.746	-0.003	1357	12.2	2	9.329	-0.003	5636	15.3
Aroclor-1254	3	9.051	0.006	2680	17.1	3	9.760	-0.002	4513	9.4
Aroclor-1254	4	9.177	-0.003	3566	11.9	4	9.911	-0.002	11334	10.7
Aroclor-1254	5	9.862	-0.009	2200	11.7	5	10.149	-0.002	12125	11.3
Total Col1Ave (5 peaks):					12.8	Total Col2Ave (5 peaks):			11.6	RPD = 9
Corrected Ave (4 peaks):					11.7	Corrected Ave (4 peaks):			10.7	RPD = 9
Aroclor-1260	1	10.383	-0.004	636	2.9	1	11.429	0.005	5661	5.8
Aroclor-1260	2	10.700	-0.004	457	2.1	2	11.674	-0.003	6574	2.3
Aroclor-1260	3	11.051	-0.004	1596	2.8	3	12.257	-0.002	5063	2.8
Aroclor-1260	4	11.452	-0.003	1126	4.4	4	12.966	-0.004	2362	2.7
Aroclor-1260	5	11.553	-0.004	454	3.5	NS	---			----
Total Col1Ave (5 peaks):					3.2	Total Col2Ave (4 peaks):			3.4	RPD = 8
Corrected Ave (4 peaks):					2.8	Corrected Ave (3 peaks):			2.6	RPD = 9
Aroclor-1262	1	10.383	-0.001	636	2.2	1	10.962	-0.008	3308	2.3
Aroclor-1262	2	11.452	-0.002	1126	5.9	2	11.674	-0.011	6574	2.2
Aroclor-1262	3	11.626	-0.001	576	2.1	3	12.183	-0.005	4052	3.0
Aroclor-1262	4	12.274	-0.000	657	2.9	4	12.966	-0.007	2362	1.9
Total Col1Ave (4 peaks):					3.3	Total Col2Ave (4 peaks):			2.3	RPD = 33
Corrected Ave (3 peaks):					2.4	Corrected Ave (3 peaks):			2.1	RPD = 12
Aroclor-1268	1	11.553	-0.004	454	0.7	1	12.183	-0.017	4052	1.2
Aroclor-1268	2	11.626	0.000	576	0.8	2	12.257	-0.010	5063	1.4
Aroclor-1268	3	11.905	-0.095	3069	5.7	3	12.633	-0.011	1415	0.4
Aroclor-1268	4	12.766	-0.006	1677	1.0	4	12.782	-0.001	1246	1.6
Total Col1Ave (4 peaks):					2.1	Total Col2Ave (4 peaks):			1.2	RPD = 57*
Corrected Ave (3 peaks):					0.8	Corrected Ave (3 peaks):			1.0	RPD = 18

Total PCB Area Col1 (5.170 - 13.066) = 64329 Col1 Total PCB = 0.0 ppm*

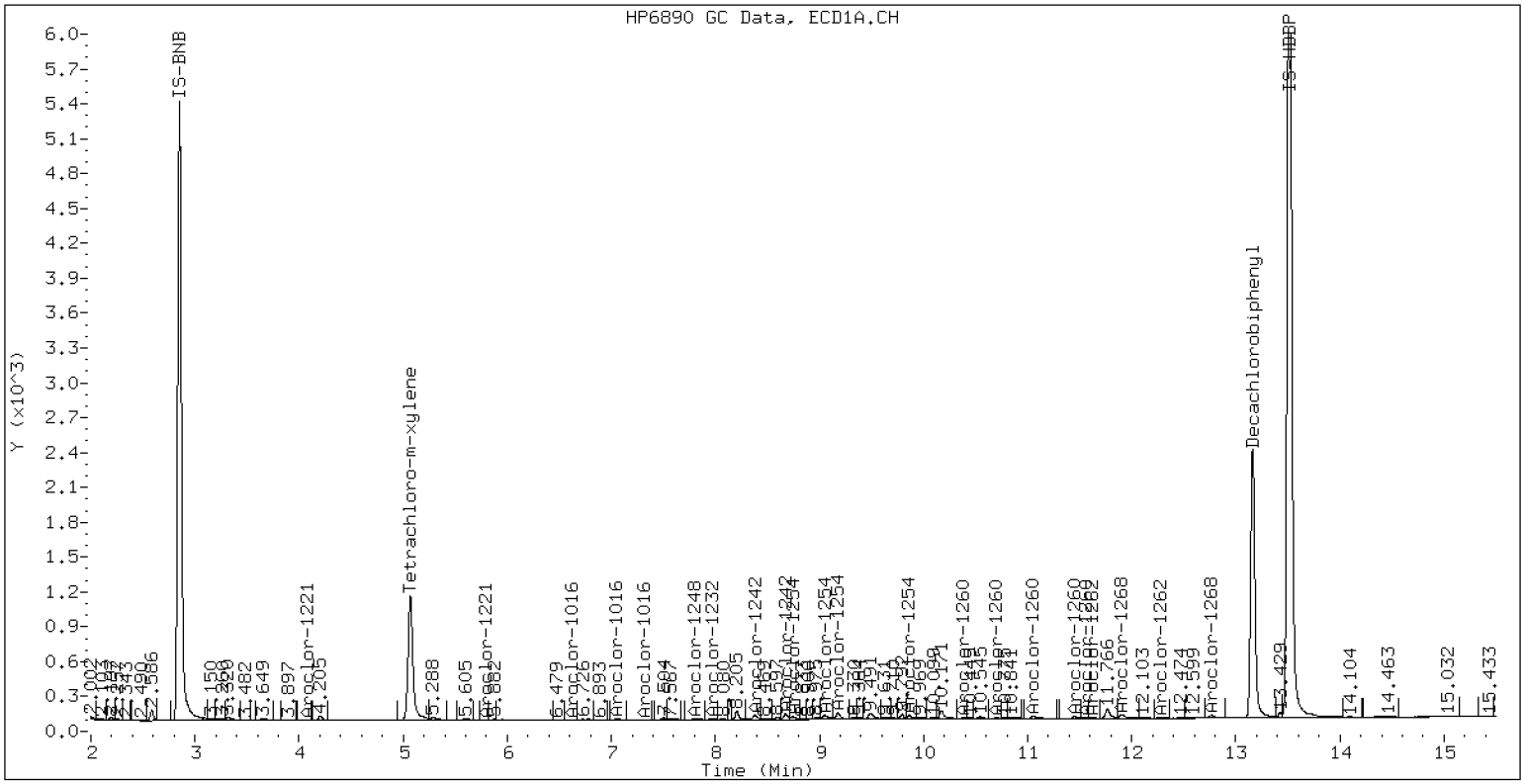
Total PCB Area Col2 (5.170 - 13.066) = 401373 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

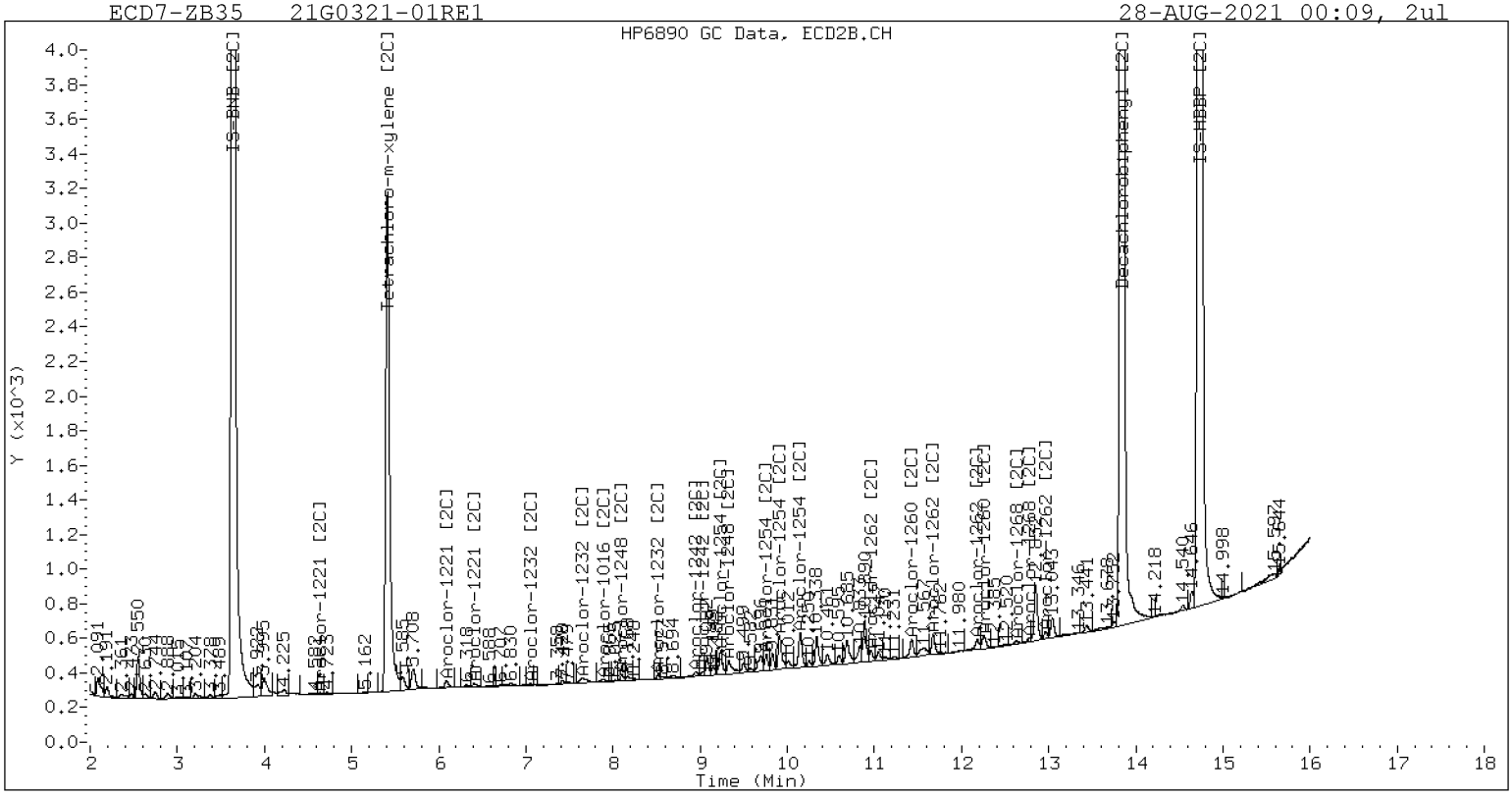
PCB Dual Column Chromatograms

ECD7-ZB5 21G0321-01RE1 28-AUG-2021 00:09, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21G0321-01RE1 28-AUG-2021 00:09, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

LDW21-IT617A

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21G0321-02 A	File ID:	08192134ECD7.D
Sampled:	07/07/21 15:40	Prepared:	08/06/21 11:30	Analyzed:	08/19/21 23:48
% Solids:	98.00	Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.78 g Wet / 2.5 mL
Batch:	BJH0179	Sequence:	SJH0254	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	H, U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	H, U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	H, U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	H, U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	H, U
11097-69-1	Aroclor 1254	1	1	5.7	1.6	4.0	H
11096-82-5	Aroclor 1260	2	1	1.1	0.6	4.0	H, J

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9844*	*7.76*	*97.2*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9844*	*5.50*	*68.8*	*44 - 120*	
Decachlorobiphenyl	*2*	*7.9844*	*7.40*	*92.7*	*40 - 126*	
Tetrachlorometaxylene	*2*	*7.9844*	*5.25*	*65.8*	*44 - 120*	

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

Data file 1: /210819.b/08192134ECD7.D
Data file 2: /210819.b/210819.b/08192134ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21G0321-02
Client ID:
Injection Date: 19-AUG-2021 23:48
Report Date: 08/30/2021 09:54
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.068	0.000	93861	5.411	-0.001	263331	27.5	26.3	4.5	Tetrachloro-m-xylene
13.162	-0.003	170683	13.845	-0.004	1000849	38.9	37.1	4.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	282076	9.0
Hexabromobiphenyl	425681	483408	13.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	778724	8.0
Hexabromobiphenyl	863111	1214449	40.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	---			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	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	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	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	8.672	-0.005	6242	25.6	1	9.234	-0.005	17716	26.7
Aroclor-1254	2	8.744	-0.004	2741	24.3	2	9.327	-0.004	11772	30.3
Aroclor-1254	3	9.042	0.001	5845	36.8	3	9.758	-0.005	12895	25.5
Aroclor-1254	4	9.174	-0.006	8536	28.2	4	9.909	-0.006	30664	27.4
Aroclor-1254	5	9.861	-0.010	5335	28.0	5	10.147	-0.004	30651	27.0
	Total Col1Ave (5 peaks):			28.6		Total Col2Ave (5 peaks):			27.4	RPD = 4
	Corrected Ave (4 peaks):			26.5		Corrected Ave (4 peaks):			26.7	RPD = 0
Aroclor-1260	1	10.381	-0.004	1118	5.1	1	11.430	0.006	11664	11.6
Aroclor-1260	2	10.699	-0.004	1091	5.1	2	11.674	-0.004	11633	4.0
Aroclor-1260	3	11.049	-0.005	2977	5.2	3	12.257	-0.003	8093	4.3
Aroclor-1260	4	11.450	-0.004	1859	7.2	4	12.966	-0.004	2746	3.0
Aroclor-1260	5	11.552	-0.004	432	3.4	NS	---			----
	Total Col1Ave (5 peaks):			5.2		Total Col2Ave (4 peaks):			5.7	RPD = 9
	Corrected Ave (4 peaks):			4.7		Corrected Ave (3 peaks):			3.8	RPD = 22
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.168 - 13.065) = 122646 Col1 Total PCB = 0.0 ppm*

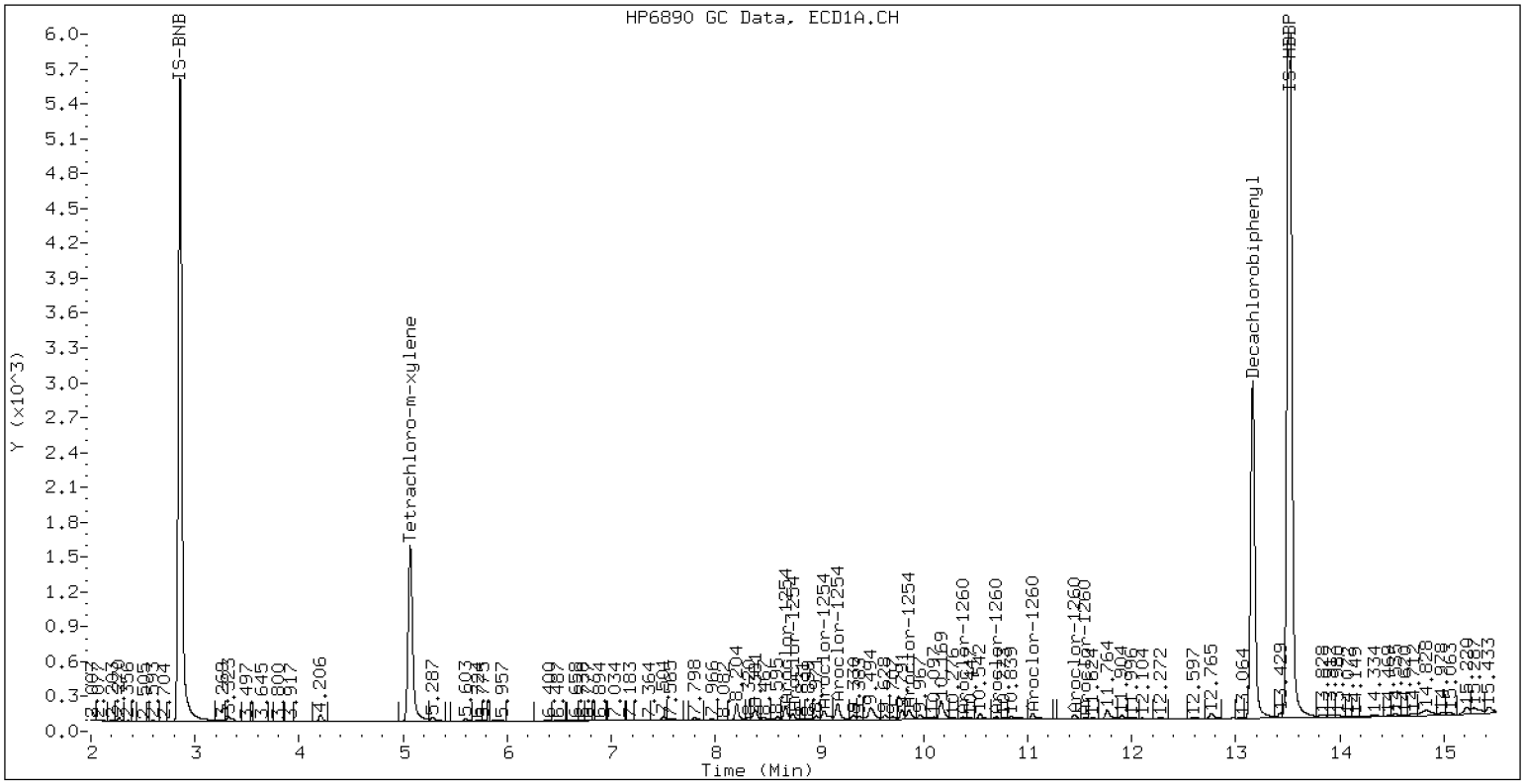
Total PCB Area Col2 (5.168 - 13.065) = 687724 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

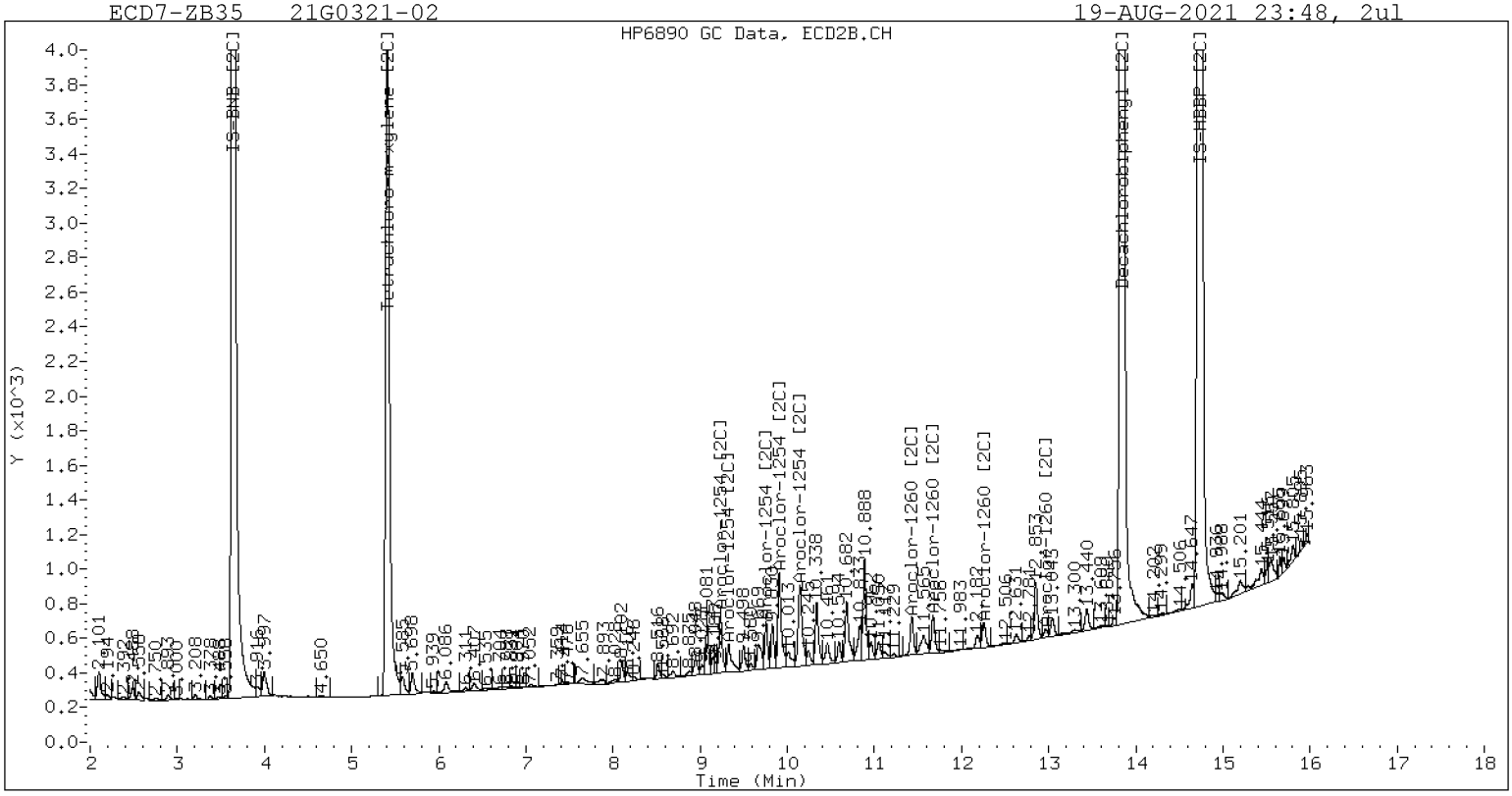
PCB Dual Column Chromatograms

ECD7-ZB5 21G0321-02 19-AUG-2021 23:48, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21G0321-02 19-AUG-2021 23:48, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

LDW21-IT617A

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21G0321-02RE1 A	File ID:	08272126ECD7.D
Sampled:	07/07/21 15:40	Prepared:	08/25/21 13:40	Analyzed:	08/28/21 00:30
% Solids:	98.00	Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.76 g Wet / 2.5 mL
Batch:	BJH0604	Sequence:	SJH0396	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	H, U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	H, U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	H, U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	H, U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	H, U
11097-69-1	Aroclor 1254	1	1	2.6	1.6	4.0	H, J
11096-82-5	Aroclor 1260	1	1	0.7	0.6	4.0	H, J

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9969*	*6.07*	*75.9*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9969*	*4.83*	*60.4*	*44 - 120*	

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

Data file 1: /2108127.b/08272126ECD7.D
Data file 2: /2108127.b/2108127.b/08272126ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21G0321-02RE1
Client ID:
Injection Date: 28-AUG-2021 00:30
Report Date: 08/30/2021 14:37
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	79441	5.412	-0.002	215240	24.2	23.2	4.2	Tetrachloro-m-xylene
13.162	-0.004	130325	13.842	-0.002	711512	30.3	27.8	8.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	272055	5.1
Hexabromobiphenyl	425681	473125	11.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	723128	0.3
Hexabromobiphenyl	863111	1153218	33.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.673	0.011	152	1.6	1	7.055	-0.000	515	1.2
Aroclor-1016	2	7.040	0.002	429	1.5	2	7.652	-0.002	3848	4.2
Aroclor-1016	3	7.186	0.004	112	0.8	3	7.920	0.062	1764	4.9
Aroclor-1016	4	7.363	0.071	308	3.7	4	8.104	-0.001	1724	7.9
Total Col1Ave (4 peaks):				1.9	Total Col2Ave (4 peaks):				4.5	RPD = 82*
Corrected Ave (3 peaks):				1.3	Corrected Ave (3 peaks):				3.4	RPD = 91*
Aroclor-1221	1	---			0.0	1	4.581	-0.095	186	3.4
Aroclor-1221	2	---			0.0	2	6.088	0.016	4491	36.1
Aroclor-1221	3	---			0.0	3	6.407	-0.002	1714	7.9
Col1Ave: <3 Quant Peaks						Col2Ave: 15.8				
Aroclor-1232	1	---			0.0	1	4.581	-0.098	186	5.8
Aroclor-1232	2	---			0.0	2	7.055	-0.003	515	2.7
Aroclor-1232	3	7.040	0.006	429	3.9	3	7.652	0.001	3848	10.2
Aroclor-1232	4	7.970	-0.002	444	9.9	4	8.517	-0.005	1021	10.4
Col1Ave: <3 Quant Peaks						Col2Ave: 7.3				
Aroclor-1242	1	6.673	0.011	152	2.0	1	7.055	0.000	515	1.5
Aroclor-1242	2	7.040	0.002	429	1.9	2	7.652	-0.002	3848	5.3
Aroclor-1242	3	8.382	-0.003	2807	22.2	3	8.954	-0.002	1395	4.1
Aroclor-1242	4	8.675	0.000	2609	50.4	4	9.032	-0.007	1019	2.7
Total Col1Ave (4 peaks):				19.1	Total Col2Ave (4 peaks):				3.4	RPD = 139*
Corrected Ave (3 peaks):				8.7	Corrected Ave (3 peaks):				2.8	RPD = 103*
Aroclor-1248	1	7.802	-0.001	730	6.4	1	8.104	-0.002	1724	5.8
Aroclor-1248	2	7.970	-0.004	444	3.0	2	8.517	-0.004	1021	2.8
Aroclor-1248	3	8.382	-0.001	2807	12.9	3	8.954	0.001	1395	2.4
Aroclor-1248	4	8.675	-0.001	2609	21.0	4	9.330	-0.053	5079	10.3
Total Col1Ave (4 peaks):				10.8	Total Col2Ave (4 peaks):				5.3	RPD = 68*
Corrected Ave (3 peaks):				7.4	Corrected Ave (3 peaks):				3.7	RPD = 68*
Aroclor-1254	1	8.675	-0.003	2609	11.1	1	9.236	-0.002	6810	11.1
Aroclor-1254	2	8.748	-0.002	1412	13.0	2	9.330	-0.002	5079	14.1
Aroclor-1254	3	9.049	0.004	2568	16.8	3	9.760	-0.002	4295	9.2
Aroclor-1254	4	9.178	-0.002	3699	12.7	4	9.913	-0.001	11647	11.2
Aroclor-1254	5	9.861	-0.009	2171	11.8	5	10.151	-0.000	12861	12.2
Total Col1Ave (5 peaks):				13.1	Total Col2Ave (5 peaks):				11.5	RPD = 12
Corrected Ave (4 peaks):				12.1	Corrected Ave (4 peaks):				10.9	RPD = 11
Aroclor-1260	1	10.383	-0.004	690	3.2	1	11.429	0.004	5902	6.2
Aroclor-1260	2	10.700	-0.004	619	3.0	2	11.675	-0.003	6767	2.4
Aroclor-1260	3	11.052	-0.004	1674	3.0	3	12.255	-0.003	5678	3.2
Aroclor-1260	4	11.453	-0.003	950	3.8	4	12.964	-0.006	2452	2.9
Aroclor-1260	5	11.553	-0.004	684	5.4	NS	---			----
Total Col1Ave (5 peaks):				3.7	Total Col2Ave (4 peaks):				3.7	RPD = 1
Corrected Ave (4 peaks):				3.2	Corrected Ave (3 peaks):				2.8	RPD = 14
Aroclor-1262	1	10.383	-0.000	690	2.4	1	10.963	-0.007	3192	2.3
Aroclor-1262	2	11.453	-0.001	950	5.1	2	11.675	-0.011	6767	2.3
Aroclor-1262	3	11.625	-0.002	639	2.4	3	12.181	-0.007	4793	3.6
Aroclor-1262	4	12.275	0.000	586	2.6	4	12.964	-0.009	2452	2.0
Total Col1Ave (4 peaks):				3.1	Total Col2Ave (4 peaks):				2.5	RPD = 21
Corrected Ave (3 peaks):				2.5	Corrected Ave (3 peaks):				2.2	RPD = 13
Aroclor-1268	1	11.553	-0.004	684	1.1	1	12.181	-0.019	4793	1.4
Aroclor-1268	2	11.625	-0.001	639	1.0	2	12.255	-0.012	5678	1.6
Aroclor-1268	3	11.995	-0.006	1307	2.5	3	12.630	-0.014	3194	1.0
Aroclor-1268	4	12.767	-0.005	3011	1.8	4	12.780	-0.003	1850	2.4
Total Col1Ave (4 peaks):				1.6	Total Col2Ave (4 peaks):				1.6	RPD = 2
Corrected Ave (3 peaks):				1.3	Corrected Ave (3 peaks):				1.3	RPD = 6

Total PCB Area Col1 (5.170 - 13.066) = 66108 Col1 Total PCB = 0.0 ppm*

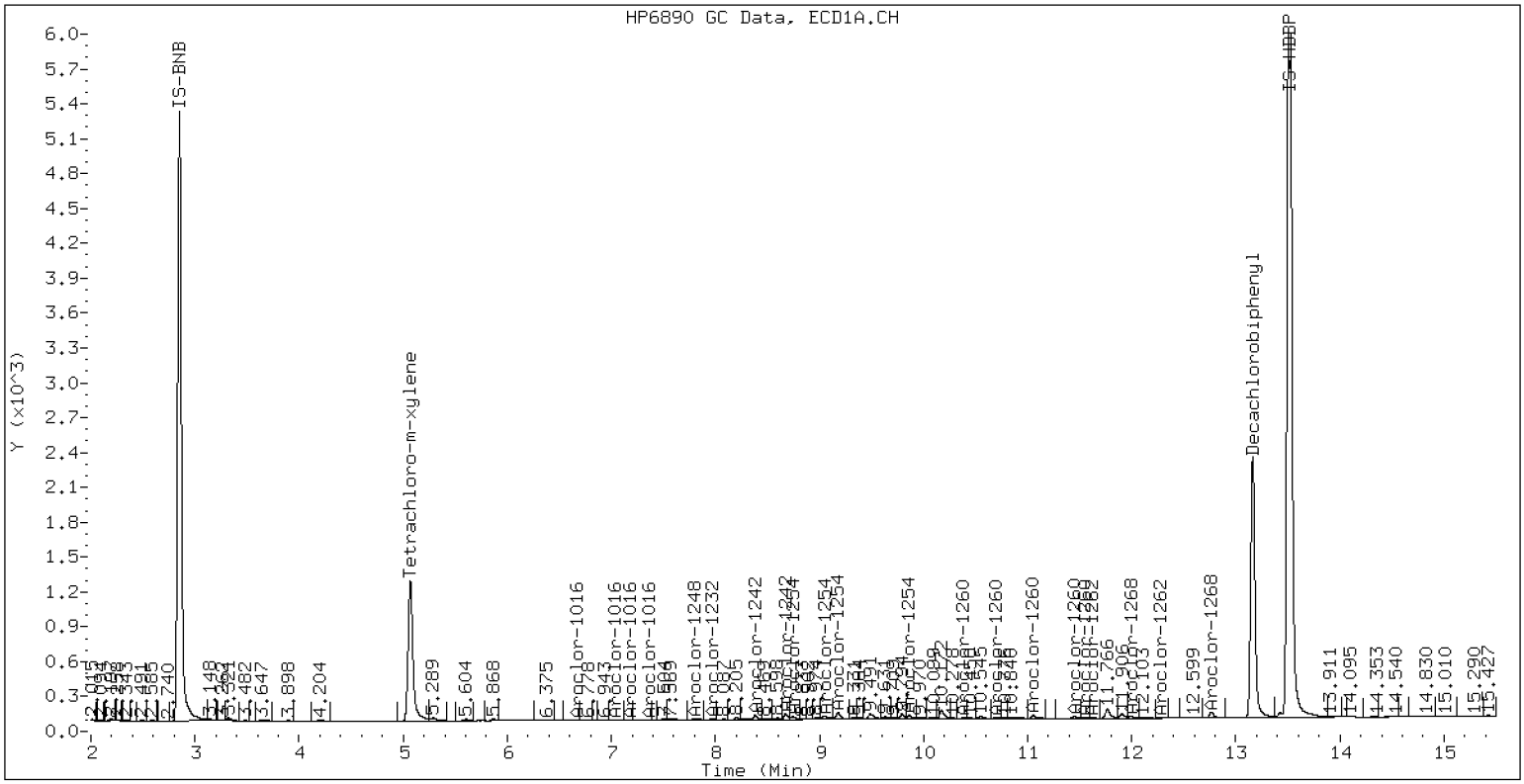
Total PCB Area Col2 (5.170 - 13.066) = 434086 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

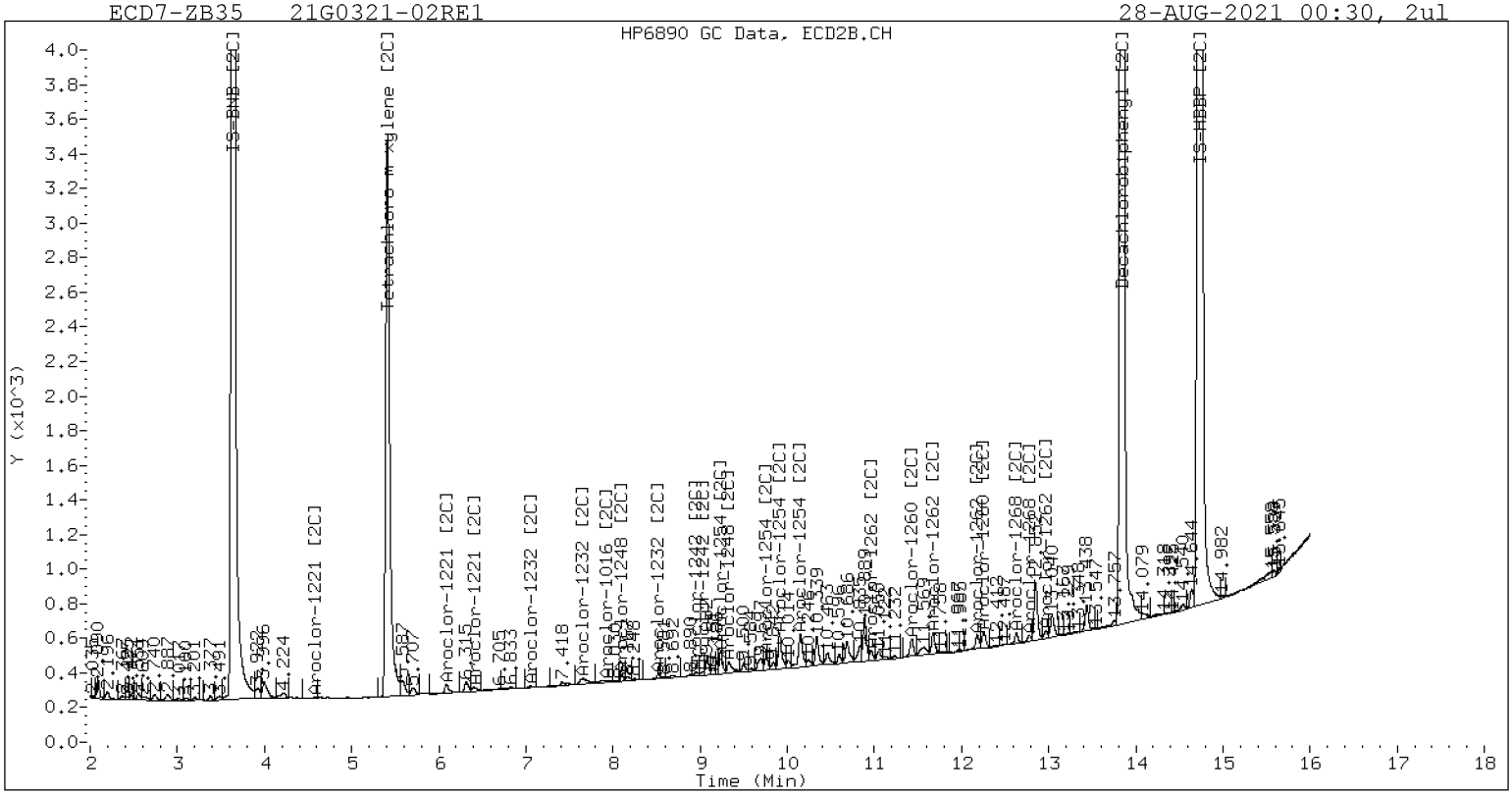
PCB Dual Column Chromatograms

ECD7-ZB5 21G0321-02RE1 28-AUG-2021 00:30, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21G0321-02RE1 28-AUG-2021 00:30, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

LDW21-IT618A

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21G0321-03 A	File ID:	08192135ECD7.D
Sampled:	07/07/21 16:20	Prepared:	08/06/21 11:30	Analyzed:	08/20/21 00:08
% Solids:	97.72	Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.79 g Wet / 2.5 mL
Batch:	BJH0179	Sequence:	SJH0254	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	H, U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	H, U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	H, U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	H, U
12672-29-6	Aroclor 1248	1	1	12.0	1.6	4.0	H, P1
11097-69-1	Aroclor 1254	1	1	13.9	1.6	4.0	H
11096-82-5	Aroclor 1260	1	1	5.1	0.6	4.0	H

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*8.0010*	*7.40*	*92.5*	*40 - 126*	
Tetrachlorometaxylene	*1*	*8.0010*	*5.96*	*74.5*	*44 - 120*	

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

Data file 1: /210819.b/08192135ECD7.D
Data file 2: /210819.b/210819.b/08192135ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21G0321-03
Client ID:
Injection Date: 20-AUG-2021 00:08
Report Date: 08/30/2021 09:54
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.001	100173	5.410	-0.002	276361	29.8	27.4	8.2	Tetrachloro-m-xylene
13.158	-0.007	146203	13.842	-0.008	849042	37.0	32.9	11.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	278235	7.5
Hexabromobiphenyl	425681	435394	2.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	783885	8.7
Hexabromobiphenyl	863111	1160071	34.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	---			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	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	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	7.796	-0.005	3712	31.8	1	8.101	-0.004	15087	46.4
Aroclor-1248	2	7.963	-0.009	3235	21.3	2	8.515	-0.005	12165	30.8
Aroclor-1248	3	8.377	-0.003	13780	61.8	3	8.943	-0.009	18084	28.7
Aroclor-1248	4	8.670	-0.007	15842	124.5	4	9.364	-0.016	12130	22.7
	Total Col1Ave (4 peaks):				59.9	Total Col2Ave (4 peaks):			32.2	RPD = 60*
	Corrected Ave (3 peaks):				38.3	Corrected Ave (3 peaks):			27.4	RPD = 33
Aroclor-1254	1	8.670	-0.007	15842	66.0	1	9.233	-0.007	42936	64.4
Aroclor-1254	2	8.742	-0.006	7406	66.6	2	9.324	-0.008	20533	52.5
Aroclor-1254	3	9.038	-0.004	10030	64.1	3	9.756	-0.007	27750	54.6
Aroclor-1254	4	9.170	-0.010	22369	74.8	4	9.907	-0.008	77697	69.0
Aroclor-1254	5	9.858	-0.013	14367	76.5	5	10.143	-0.008	87273	76.4
	Total Col1Ave (5 peaks):				69.6	Total Col2Ave (5 peaks):			63.4	RPD = 9
	Corrected Ave (4 peaks):				67.9	Corrected Ave (4 peaks):			60.1	RPD = 12
Aroclor-1260	1	10.378	-0.007	5046	25.8	1	11.426	0.002	36041	37.4
Aroclor-1260	2	10.696	-0.007	4487	23.3	2	11.671	-0.007	50721	18.1
Aroclor-1260	3	11.046	-0.008	13017	25.1	3	12.253	-0.007	35426	19.7
Aroclor-1260	4	11.446	-0.009	7028	30.4	4	12.963	-0.008	17168	19.9
Aroclor-1260	5	11.549	-0.007	2750	23.7	NS	---			----
	Total Col1Ave (5 peaks):				25.6	Total Col2Ave (4 peaks):			23.8	RPD = 8
	Corrected Ave (4 peaks):				24.5	Corrected Ave (3 peaks):			19.2	RPD = 24
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.168 - 13.065) = 327091 Col1 Total PCB = 0.1 ppm*

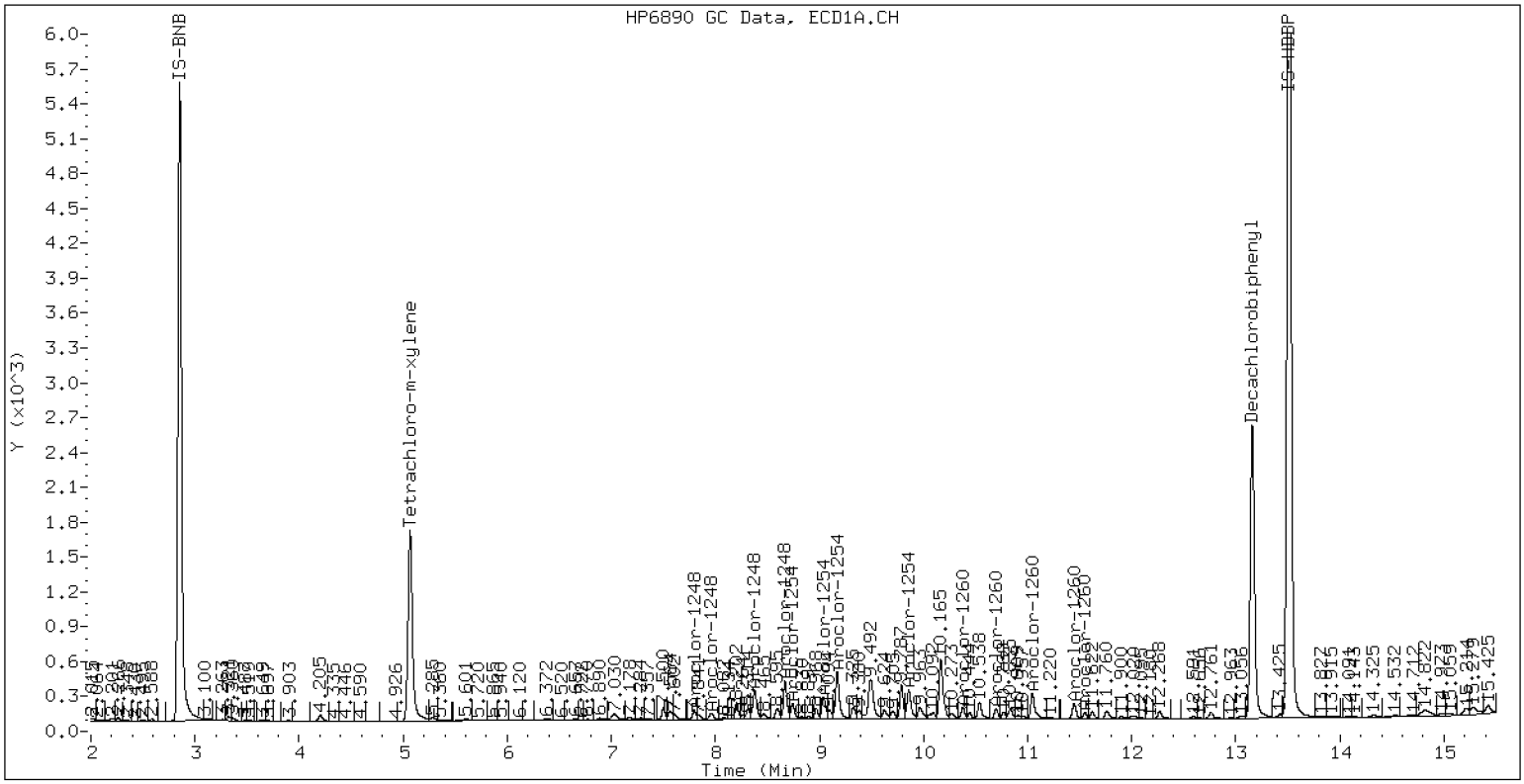
Total PCB Area Col2 (5.168 - 13.065) = 1385013 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

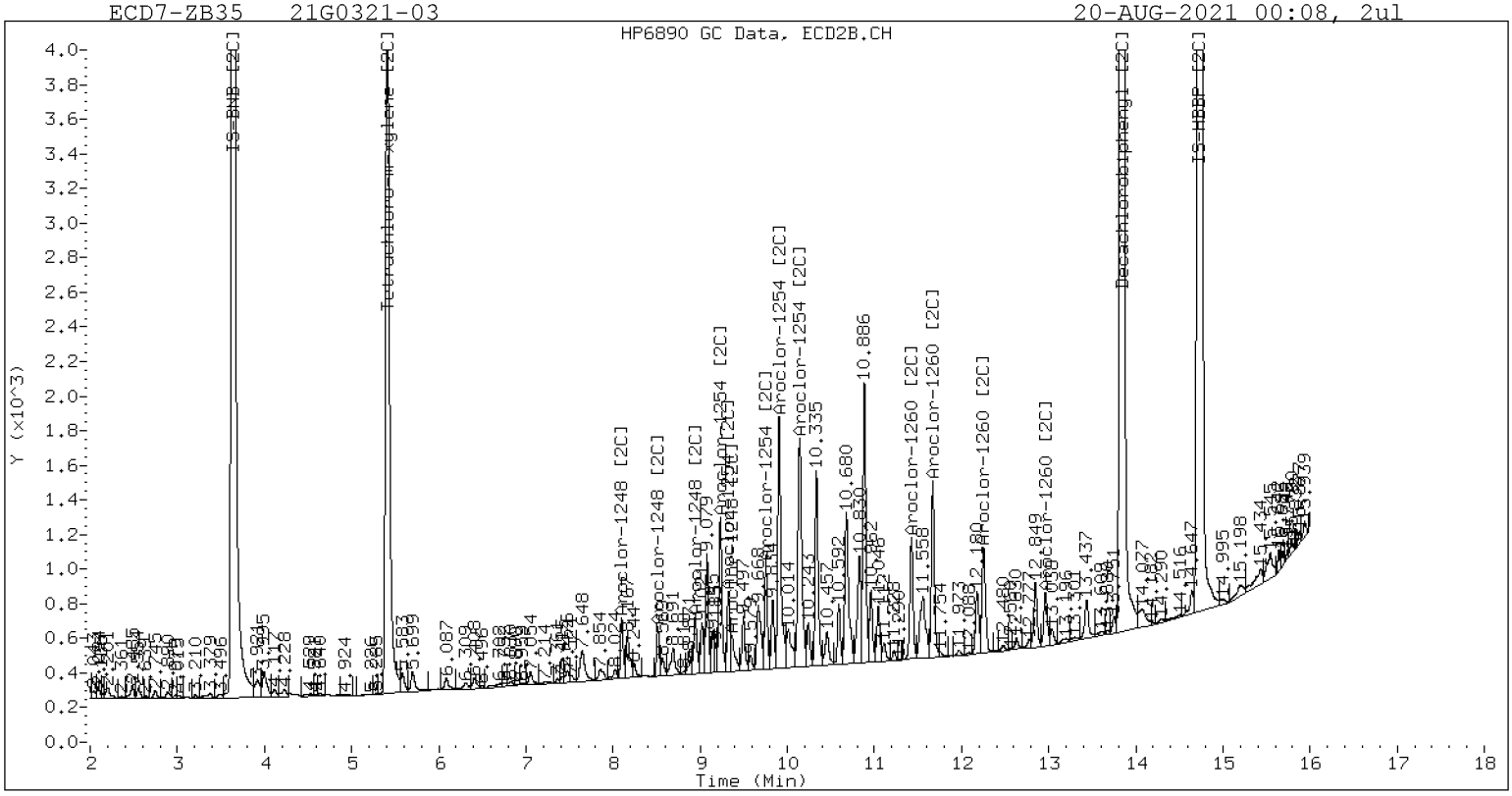
PCB Dual Column Chromatograms

ECD7-ZB5 21G0321-03 20-AUG-2021 00:08, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21G0321-03 20-AUG-2021 00:08, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT618A

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21G0321-03RE1 A	File ID:	08272127ECD7.D
Sampled:	07/07/21 16:20	Prepared:	08/25/21 13:40	Analyzed:	08/28/21 00:50
% Solids:	97.72	Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.8 g Wet / 2.5 mL
Batch:	BJH0604	Sequence:	SJH0396	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	H, U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	H, U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	H, U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	H, U
12672-29-6	Aroclor 1248	1	1	8.6	1.6	4.0	H
11097-69-1	Aroclor 1254	1	1	14.3	1.6	4.0	H
11096-82-5	Aroclor 1260	1	1	5.7	0.6	4.0	H

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9948*	*6.36*	*79.5*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9948*	*5.20*	*65.0*	*44 - 120*	

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

Data file 1: /2108127.b/08272127ECD7.D
Data file 2: /2108127.b/2108127.b/08272127ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21G0321-03RE1
Client ID:
Injection Date: 28-AUG-2021 00:50
Report Date: 08/30/2021 14:37
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	-0.000	89027	5.411	-0.003	238361	26.0	24.1	7.8	Tetrachloro-m-xylene
13.159	-0.007	131281	13.839	-0.004	716305	31.8	27.5	14.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	283126	9.4
Hexabromobiphenyl	425681	454709	6.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	770678	6.9
Hexabromobiphenyl	863111	1173753	36.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.657	-0.005	1082	10.8	1	7.054	-0.002	3458	7.9
Aroclor-1016	2	7.035	-0.003	4937	16.1	2	7.651	-0.003	17496	17.8
Aroclor-1016	3	7.180	-0.002	1610	11.7	3	7.857	-0.001	5027	13.0
Aroclor-1016	4	7.287	-0.005	1091	12.6	4	8.102	-0.003	14631	62.7
Total Col1Ave (4 peaks):					12.8	Total Col2Ave (4 peaks):				25.3 RPD = 66*
Corrected Ave (3 peaks):					11.7	Corrected Ave (3 peaks):				12.9 RPD = 10
Aroclor-1221	1	4.036	0.020	530	23.7	1	4.722	0.046	3540	61.2
Aroclor-1221	2	5.435	-0.016	274	7.8	2	6.087	0.015	5302	40.0
Aroclor-1221	3	5.725	0.001	829	8.8	3	6.409	0.000	2642	11.4
Total Col1Ave (3 peaks):					13.4	Total Col2Ave (3 peaks):				37.6 RPD = 95*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.036	0.018	530	38.6	1	4.722	0.043	3540	102.8
Aroclor-1232	2	5.725	-0.001	829	11.1	2	7.054	-0.004	3458	17.2
Aroclor-1232	3	7.035	0.001	4937	43.3	3	7.651	-0.000	17496	43.4
Aroclor-1232	4	7.965	-0.007	3967	84.7	4	8.516	-0.006	12151	115.8
Total Col1Ave (4 peaks):					44.4	Total Col2Ave (4 peaks):				69.8 RPD = 44*
Corrected Ave (3 peaks):					31.0	Corrected Ave (3 peaks):				54.5 RPD = 55*
Aroclor-1242	1	6.657	-0.004	1082	13.9	1	7.054	-0.002	3458	9.8
Aroclor-1242	2	7.035	-0.003	4937	21.2	2	7.651	-0.002	17496	22.7
Aroclor-1242	3	8.379	-0.007	15831	120.2	3	8.946	-0.011	20182	56.1
Aroclor-1242	4	8.672	-0.004	16357	303.8	4	9.025	-0.014	16670	40.9
Total Col1Ave (4 peaks):					114.8	Total Col2Ave (4 peaks):				32.4 RPD = 112*
Corrected Ave (3 peaks):					51.8	Corrected Ave (3 peaks):				24.4 RPD = 72*
Aroclor-1248	1	7.798	-0.005	4071	34.3	1	8.102	-0.004	14631	45.8
Aroclor-1248	2	7.965	-0.009	3967	25.6	2	8.516	-0.005	12151	31.3
Aroclor-1248	3	8.379	-0.005	15831	69.8	3	8.946	-0.008	20182	32.6
Aroclor-1248	4	8.672	-0.005	16357	126.4	4	9.369	-0.014	15709	29.9
Total Col1Ave (4 peaks):					64.0	Total Col2Ave (4 peaks):				34.9 RPD = 59*
Corrected Ave (3 peaks):					43.2	Corrected Ave (3 peaks):				31.2 RPD = 32
Aroclor-1254	1	8.672	-0.007	16357	67.0	1	9.233	-0.005	40229	61.4
Aroclor-1254	2	8.743	-0.007	7806	69.0	2	9.326	-0.006	19069	49.6
Aroclor-1254	3	9.041	-0.005	10464	65.7	3	9.756	-0.006	25844	51.7
Aroclor-1254	4	9.173	-0.008	23280	76.5	4	9.907	-0.007	77613	70.1
Aroclor-1254	5	9.860	-0.010	15332	80.3	5	10.144	-0.006	26822	77.3
Total Col1Ave (5 peaks):					71.7	Total Col2Ave (5 peaks):				62.0 RPD = 15
Corrected Ave (4 peaks):					69.8	Corrected Ave (4 peaks):				58.2 RPD = 18
Aroclor-1260	1	10.379	-0.008	5864	28.7	1	11.425	0.001	37455	38.4
Aroclor-1260	2	10.697	-0.007	4987	24.8	2	11.670	-0.007	56257	19.8
Aroclor-1260	3	11.046	-0.009	14699	27.1	3	12.252	-0.007	40715	22.3
Aroclor-1260	4	11.447	-0.009	8018	33.2	4	12.963	-0.007	19998	22.9
Aroclor-1260	5	11.549	-0.008	3433	28.4	NS	---			----
Total Col1Ave (5 peaks):					28.4	Total Col2Ave (4 peaks):				25.9 RPD = 9
Corrected Ave (4 peaks):					27.2	Corrected Ave (3 peaks):				21.7 RPD = 23
Aroclor-1262	1	10.379	-0.005	5864	21.1	1	10.961	-0.009	21614	15.1
Aroclor-1262	2	11.447	-0.008	8018	44.6	2	11.670	-0.016	56257	18.6
Aroclor-1262	3	11.621	-0.006	4059	15.7	3	12.179	-0.009	21818	16.2
Aroclor-1262	4	12.269	-0.006	4732	22.3	4	12.963	-0.010	19998	16.0
Total Col1Ave (4 peaks):					25.9	Total Col2Ave (4 peaks):				16.5 RPD = 45*
Corrected Ave (3 peaks):					19.7	Corrected Ave (3 peaks):				15.8 RPD = 22
Aroclor-1268	1	11.549	-0.008	3433	5.6	1	12.179	-0.021	21818	6.5
Aroclor-1268	2	11.621	-0.005	4059	6.3	2	12.252	-0.015	40715	11.1
Aroclor-1268	3	12.022	0.021	2881	5.7	3	12.629	-0.015	2431	0.8
Aroclor-1268	4	12.762	-0.010	2965	1.8	4	12.778	-0.005	2419	3.1
Total Col1Ave (4 peaks):					4.9	Total Col2Ave (4 peaks):				5.3 RPD = 9

Corrected Ave (3 peaks): 4.4 Corrected Ave (3 peaks): 3.4 RPD = 24

Total PCB Area Col1 (5.170 - 13.066) = 350905 Col1 Total PCB = 0.1 ppm*

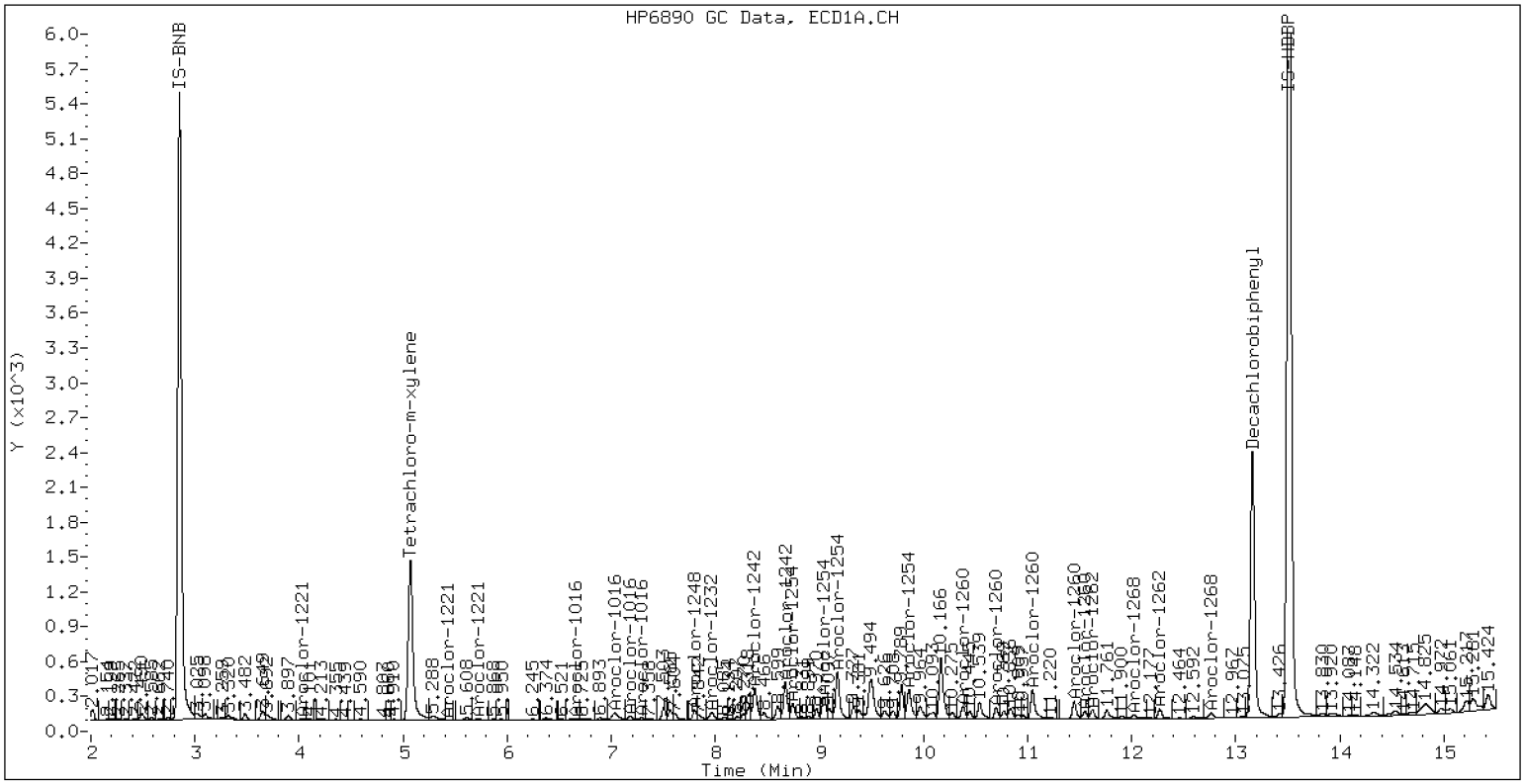
Total PCB Area Col2 (5.170 - 13.066) = 1347476 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

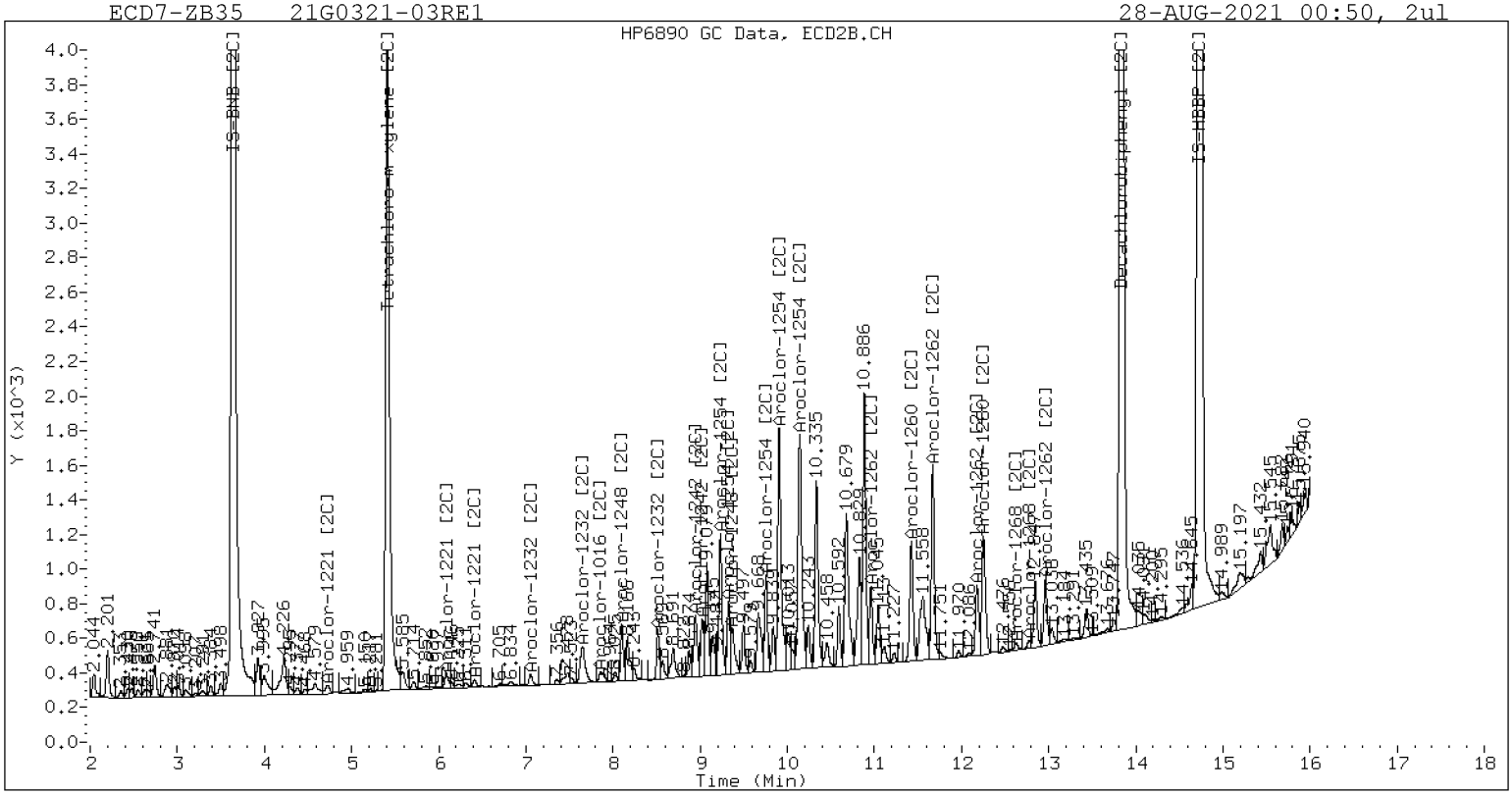
PCB Dual Column Chromatograms

ECD7-ZB5 21G0321-03RE1 28-AUG-2021 00:50, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21G0321-03RE1 28-AUG-2021 00:50, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT624A

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21G0321-04 A	File ID:	08192144ECD7.D
Sampled:	07/07/21 17:02	Prepared:	08/06/21 13:00	Analyzed:	08/20/21 03:13
% Solids:	99.10	Preparation:	EPA 3550C (Ultrasonic)	Initial/Final:	12.63 g Wet / 2.5 mL
Batch:	BJH0193	Sequence:	SJH0254	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	H, U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	H, U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	H, U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	H, U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	H, U
11097-69-1	Aroclor 1254	2	1	5.5	1.6	4.0	H
11096-82-5	Aroclor 1260	2	1	1.7	0.6	4.0	H, J

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9896*	*7.97*	*99.8*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9896*	*7.26*	*90.9*	*44 - 120*	
Decachlorobiphenyl	*2*	*7.9896*	*7.28*	*91.1*	*40 - 126*	
Tetrachlorometaxylene	*2*	*7.9896*	*6.66*	*83.3*	*44 - 120*	

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

Data file 1: /210819.b/08192144ECD7.D
Data file 2: /210819.b/210819.b/08192144ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21G0321-04
Client ID:
Injection Date: 20-AUG-2021 03:13
Report Date: 08/23/2021 17:05
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.001	120811	5.410	-0.002	336583	36.4	33.3	8.7	Tetrachloro-m-xylene
13.161	-0.005	162509	13.843	-0.007	939082	39.9	36.4	9.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	274875	6.2
Hexabromobiphenyl	425681	448397	5.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	785660	9.0
Hexabromobiphenyl	863111	1159889	34.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.613	-0.046	1606	16.5	1	7.053	-0.001	1241	2.8
Aroclor-1016	2	7.072	0.040	1774	6.0	2	7.669	0.018	5244	5.2
Aroclor-1016	3	7.180	0.001	357	2.7	3	7.883	0.026	1832	4.7
Aroclor-1016	4	7.337	0.049	352	4.2	4	8.101	-0.003	6643	27.9
Total Col1Ave (4 peaks):					7.3	Total Col2Ave (4 peaks):				10.1 RPD = 32
Corrected Ave (3 peaks):					4.3	Corrected Ave (3 peaks):				4.2 RPD = 1
Aroclor-1221	1	4.045	0.029	145	6.7	1	4.725	0.048	710	12.0
Aroclor-1221	2	---			0.0	2	6.087	0.014	6690	49.6
Aroclor-1221	3	5.770	0.045	461	5.0	3	6.400	-0.009	1980	8.4
Col1Ave: <3 Quant Peaks						Col2Ave: 23.3				
Aroclor-1232	1	4.045	0.027	145	10.9	1	4.725	0.046	710	20.2
Aroclor-1232	2	5.770	0.043	461	6.4	2	7.053	-0.005	1241	6.0
Aroclor-1232	3	7.072	0.039	1774	16.0	3	7.669	0.018	5244	12.8
Aroclor-1232	4	7.963	-0.009	885	19.5	4	8.516	-0.006	4218	39.4
Total Col1Ave (4 peaks):					13.2	Total Col2Ave (4 peaks):				19.6 RPD = 39
Corrected Ave (3 peaks):					11.1	Corrected Ave (3 peaks):				13.0 RPD = 16
Aroclor-1242	1	6.613	-0.047	1606	21.2	1	7.053	-0.001	1241	3.4
Aroclor-1242	2	7.072	0.038	1774	7.9	2	7.669	0.019	5244	6.7
Aroclor-1242	3	8.379	-0.003	4392	34.3	3	8.945	-0.008	5225	14.3
Aroclor-1242	4	8.670	-0.005	5422	103.7	4	9.022	-0.011	3595	8.6
Total Col1Ave (4 peaks):					41.8	Total Col2Ave (4 peaks):				8.3 RPD = 134*
Corrected Ave (3 peaks):					21.1	Corrected Ave (3 peaks):				6.3 RPD = 109*
Aroclor-1248	1	7.797	-0.004	1870	16.2	1	8.101	-0.004	6643	20.4
Aroclor-1248	2	7.963	-0.008	885	5.9	2	8.516	-0.004	4218	10.6
Aroclor-1248	3	8.379	-0.002	4392	19.9	3	8.945	-0.007	5225	8.3
Aroclor-1248	4	8.670	-0.006	5422	43.1	4	9.325	-0.055	10889	20.3
Total Col1Ave (4 peaks):					21.3	Total Col2Ave (4 peaks):				14.9 RPD = 35
Corrected Ave (3 peaks):					14.0	Corrected Ave (3 peaks):				13.1 RPD = 7
Aroclor-1254	1	8.670	-0.007	5422	22.9	1	9.233	-0.007	18409	27.5
Aroclor-1254	2	8.741	-0.007	2319	21.1	2	9.325	-0.007	10889	27.8
Aroclor-1254	3	9.038	-0.003	4008	25.9	3	9.756	-0.007	12806	25.1
Aroclor-1254	4	9.171	-0.009	8403	28.5	4	9.907	-0.007	30195	26.7
Aroclor-1254	5	9.860	-0.011	5304	28.6	5	10.142	-0.009	34548	30.2
Total Col1Ave (5 peaks):					25.4	Total Col2Ave (5 peaks):				27.5 RPD = 8
Corrected Ave (4 peaks):					24.6	Corrected Ave (4 peaks):				26.8 RPD = 9
Aroclor-1260	1	10.378	-0.007	1401	6.9	1	11.427	0.003	13518	14.0
Aroclor-1260	2	10.697	-0.006	1365	6.9	2	11.672	-0.006	17522	6.3
Aroclor-1260	3	11.047	-0.007	4400	8.2	3	12.255	-0.005	13351	7.4
Aroclor-1260	4	11.446	-0.008	2309	9.7	4	12.965	-0.005	5622	6.5
Aroclor-1260	5	11.551	-0.005	903	7.6	NS	---			----
Total Col1Ave (5 peaks):					7.9	Total Col2Ave (4 peaks):				8.6 RPD = 8
Corrected Ave (4 peaks):					7.4	Corrected Ave (3 peaks):				6.7 RPD = 10
Aroclor-1262	1	10.378	-0.005	1401	5.1	1	10.961	-0.009	6681	4.7
Aroclor-1262	2	11.446	-0.008	2309	13.0	2	11.672	-0.014	17522	5.9
Aroclor-1262	3	11.622	-0.005	1051	4.1	3	12.181	-0.007	7773	5.9
Aroclor-1262	4	12.269	-0.005	1265	6.0	4	12.965	-0.007	5622	4.5
Total Col1Ave (4 peaks):					7.1	Total Col2Ave (4 peaks):				5.2 RPD = 30
Corrected Ave (3 peaks):					5.1	Corrected Ave (3 peaks):				5.0 RPD = 1
Aroclor-1268	1	11.551	-0.007	903	1.5	1	12.181	-0.019	7773	2.3
Aroclor-1268	2	11.622	-0.004	1051	1.7	2	12.255	-0.012	13351	3.7
Aroclor-1268	3	12.003	0.002	1154	2.3	3	12.630	-0.014	2919	0.9
Aroclor-1268	4	12.762	-0.009	2308	1.4	4	12.782	-0.001	2086	2.7
Total Col1Ave (4 peaks):					1.7	Total Col2Ave (4 peaks):				2.4 RPD = 32
Corrected Ave (3 peaks):					1.5	Corrected Ave (3 peaks):				2.0 RPD = 25

Total PCB Area Col1 (5.168 - 13.065) = 126661 Col1 Total PCB = 0.0 ppm*

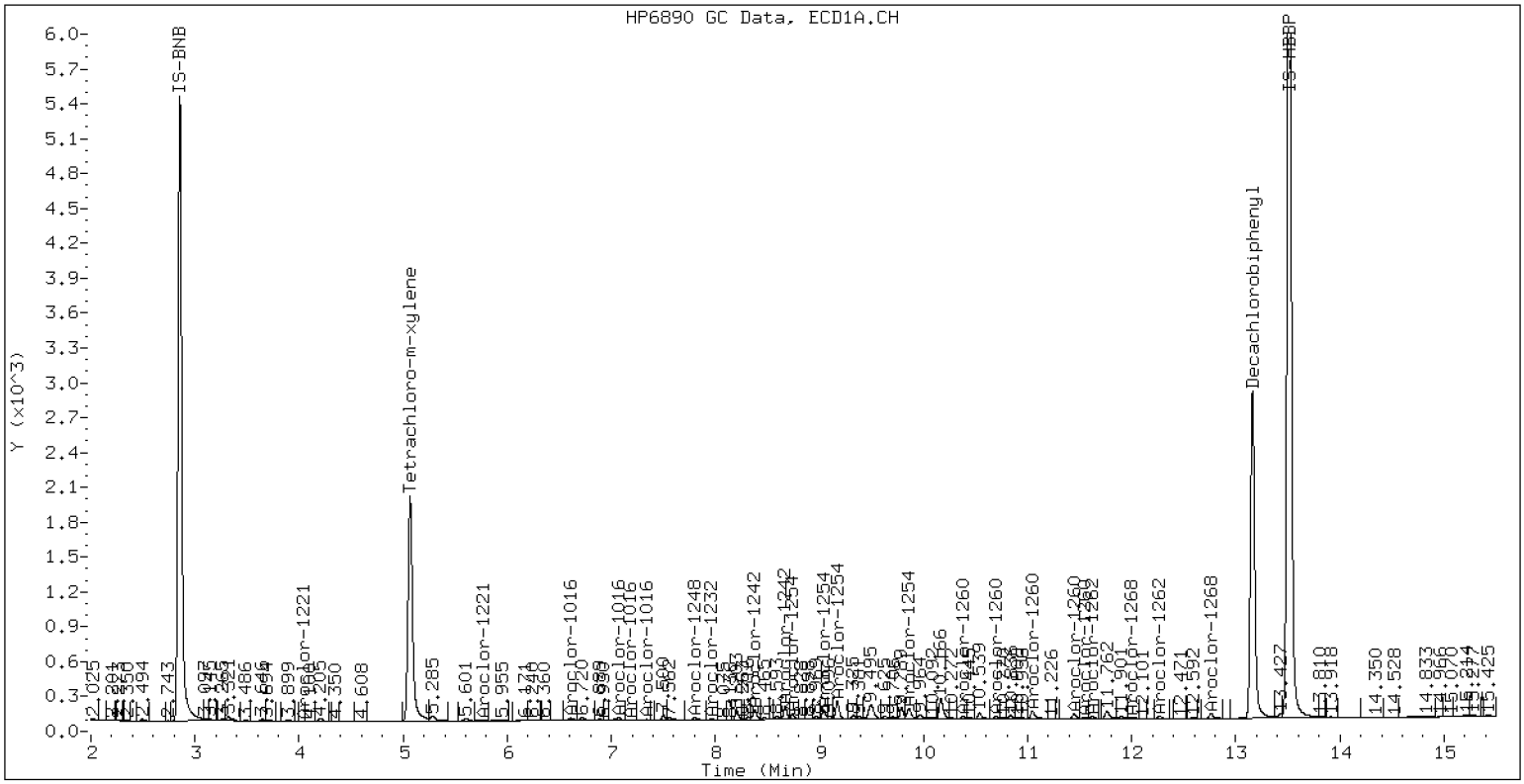
Total PCB Area Col2 (5.168 - 13.065) = 793376 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

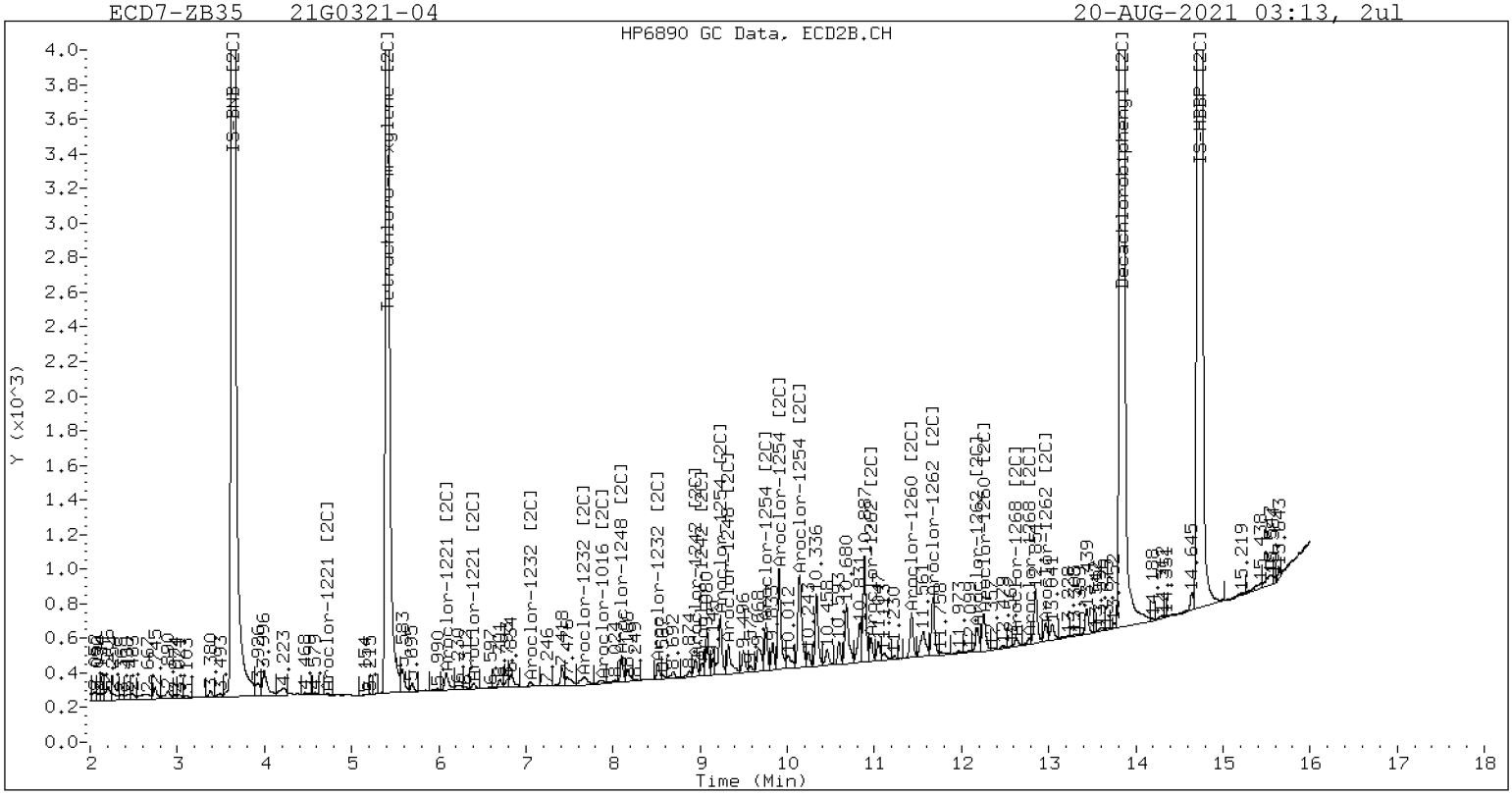
PCB Dual Column Chromatograms

ECD7-ZB5 21G0321-04 20-AUG-2021 03:13, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21G0321-04 20-AUG-2021 03:13, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

LDW21-IT626A

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21G0321-05 A	File ID:	08192145ECD7.D
Sampled:	07/07/21 18:32	Prepared:	08/06/21 13:00	Analyzed:	08/20/21 03:33
% Solids:	98.88	Preparation:	EPA 3550C (Ultrasonic)	Initial/Final:	12.64 g Wet / 2.5 mL
Batch:	BJH0193	Sequence:	SJH0254	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	H, U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	H, U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	H, U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	H, U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	H, U
11097-69-1	Aroclor 1254	2	1	12.6	1.6	4.0	H
11096-82-5	Aroclor 1260	1	1	2.2	0.6	4.0	H, J

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*8.0010*	*6.99*	*87.4*	*40 - 126*	
Tetrachlorometaxylene	*1*	*8.0010*	*6.15*	*76.9*	*44 - 120*	
Decachlorobiphenyl	*2*	*8.0010*	*6.43*	*80.4*	*40 - 126*	
Tetrachlorometaxylene	*2*	*8.0010*	*5.81*	*72.6*	*44 - 120*	

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

Data file 1: /210819.b/08192145ECD7.D
Data file 2: /210819.b/210819.b/08192145ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21G0321-05
Client ID:
Injection Date: 20-AUG-2021 03:33
Report Date: 08/23/2021 17:05
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.066	-0.002	106639	5.410	-0.001	302615	30.8	29.0	5.8	Tetrachloro-m-xylene
13.162	-0.004	155962	13.843	-0.006	888134	35.0	32.2	8.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	286896	10.8
Hexabromobiphenyl	425681	491485	15.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	811257	12.5
Hexabromobiphenyl	863111	1242961	44.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.618	-0.042	1191	11.7	1	7.053	-0.001	1883	4.1
Aroclor-1016	2	7.030	-0.003	3316	10.7	2	7.648	-0.003	10294	9.9
Aroclor-1016	3	7.180	0.001	1087	7.8	3	7.881	0.024	3400	8.4
Aroclor-1016	4	7.286	-0.003	440	5.0	4	8.102	-0.003	26047	106.0
Total Col1Ave (4 peaks):					8.8	Total Col2Ave (4 peaks):				32.1 RPD = 114*
Corrected Ave (3 peaks):					7.8	Corrected Ave (3 peaks):				7.5 RPD = 5
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.088	0.016	4390	31.5
Aroclor-1221	3	---			0.0	3	6.405	-0.004	1576	6.5
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	5.784	0.057	191	2.5	2	7.053	-0.005	1883	8.9
Aroclor-1232	3	7.030	-0.004	3316	28.7	3	7.648	-0.003	10294	24.3
Aroclor-1232	4	7.964	-0.008	2977	62.7	4	8.516	-0.006	13121	118.8
Total Col1Ave (3 peaks):					31.3	Total Col2Ave (3 peaks):				50.6 RPD = 47*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.618	-0.043	1191	15.1	1	7.053	-0.001	1883	5.0
Aroclor-1242	2	7.030	-0.004	3316	14.1	2	7.648	-0.001	10294	12.7
Aroclor-1242	3	8.380	-0.002	14906	111.7	3	8.947	-0.006	13143	34.7
Aroclor-1242	4	8.672	-0.003	13566	248.7	4	9.025	-0.008	11628	27.1
Total Col1Ave (4 peaks):					97.4	Total Col2Ave (4 peaks):				19.9 RPD = 132*
Corrected Ave (3 peaks):					46.9	Corrected Ave (3 peaks):				14.9 RPD = 103*
Aroclor-1248	1	7.798	-0.003	6513	54.2	1	8.102	-0.004	26047	77.5
Aroclor-1248	2	7.964	-0.007	2977	19.0	2	8.516	-0.004	13121	32.1
Aroclor-1248	3	8.380	-0.001	14906	64.9	3	8.947	-0.005	13143	20.2
Aroclor-1248	4	8.672	-0.004	13566	103.4	4	9.412	0.032	5129	9.3
Total Col1Ave (4 peaks):					60.4	Total Col2Ave (4 peaks):				34.7 RPD = 54*
Corrected Ave (3 peaks):					46.0	Corrected Ave (3 peaks):				20.5 RPD = 77*
Aroclor-1254	1	8.672	-0.005	13566	54.8	1	9.235	-0.005	46341	67.1
Aroclor-1254	2	8.744	-0.004	8174	71.3	2	9.326	-0.005	27831	68.7
Aroclor-1254	3	9.040	-0.001	6786	42.1	3	9.758	-0.005	19986	38.0
Aroclor-1254	4	9.174	-0.006	26056	84.5	4	9.908	-0.006	90834	77.9
Aroclor-1254	5	9.860	-0.011	10003	51.7	5	10.146	-0.005	75929	64.2
Total Col1Ave (5 peaks):					60.9	Total Col2Ave (5 peaks):				63.2 RPD = 4
Corrected Ave (4 peaks):					55.0	Corrected Ave (4 peaks):				59.5 RPD = 8
Aroclor-1260	1	10.380	-0.005	2392	10.8	1	11.429	0.005	23454	22.7
Aroclor-1260	2	10.699	-0.005	2282	10.5	2	11.673	-0.005	28813	9.6
Aroclor-1260	3	11.049	-0.005	6219	10.6	3	12.256	-0.004	19063	9.9
Aroclor-1260	4	11.449	-0.005	3821	14.6	4	12.966	-0.004	6842	7.4
Aroclor-1260	5	11.552	-0.004	942	7.2	NS	---			----
Total Col1Ave (5 peaks):					10.8	Total Col2Ave (4 peaks):				12.4 RPD = 14
Corrected Ave (4 peaks):					9.8	Corrected Ave (3 peaks):				9.0 RPD = 9
Aroclor-1262	1	10.380	-0.004	2392	8.0	1	10.962	-0.008	10537	6.9
Aroclor-1262	2	11.449	-0.005	3821	19.7	2	11.673	-0.012	28813	9.0
Aroclor-1262	3	11.623	-0.004	1158	4.1	3	12.184	-0.004	8267	5.8
Aroclor-1262	4	12.272	-0.003	1436	6.2	4	12.966	-0.007	6842	5.2
Total Col1Ave (4 peaks):					9.5	Total Col2Ave (4 peaks):				6.7 RPD = 34
Corrected Ave (3 peaks):					6.1	Corrected Ave (3 peaks):				6.0 RPD = 3
Aroclor-1268	1	11.552	-0.006	942	1.4	1	12.184	-0.016	8267	2.3
Aroclor-1268	2	11.623	-0.003	1158	1.7	2	12.256	-0.011	19063	4.9
Aroclor-1268	3	12.013	0.012	1262	2.3	3	12.630	-0.014	2485	0.7
Aroclor-1268	4	12.765	-0.007	2443	1.4	4	12.783	0.000	1378	1.7
Total Col1Ave (4 peaks):					1.7	Total Col2Ave (4 peaks):				2.4 RPD = 34
Corrected Ave (3 peaks):					1.5	Corrected Ave (3 peaks):				1.6 RPD = 5

Total PCB Area Col1 (5.168 - 13.065) = 269415 Col1 Total PCB = 0.1 ppm*

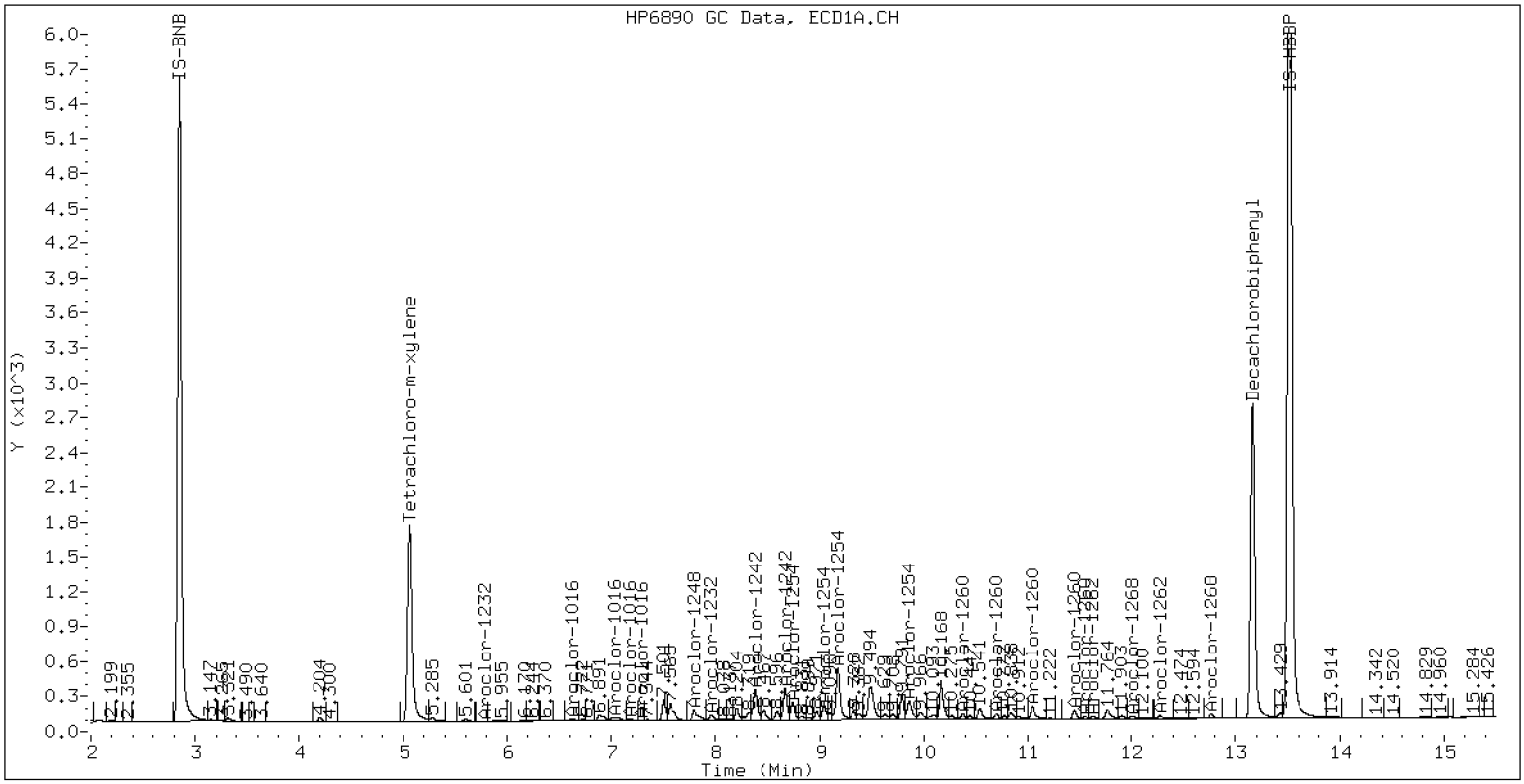
Total PCB Area Col2 (5.168 - 13.065) = 1204405 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

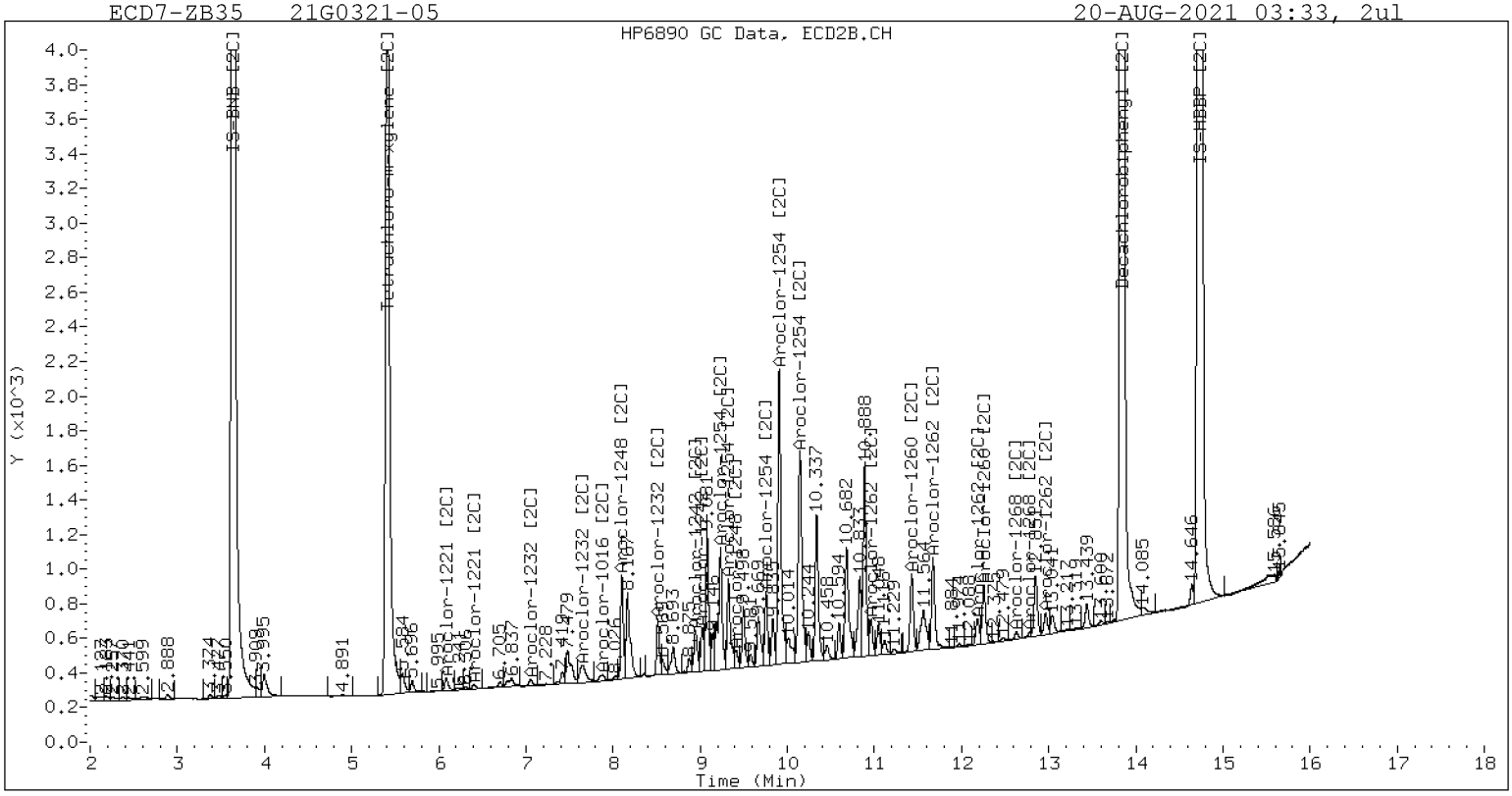
PCB Dual Column Chromatograms

ECD7-ZB5 21G0321-05 20-AUG-2021 03:33, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21G0321-05 20-AUG-2021 03:33, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Batch:	BJH0179 Batch Matrix: Solid	Preparation:	EPA 3546 (Microwave)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT615A	21G0321-01	08192133ECD7.D	08/06/21 11:30	
LDW21-IT617A	21G0321-02	08192134ECD7.D	08/06/21 11:30	
LDW21-IT618A	21G0321-03	08192135ECD7.D	08/06/21 11:30	
Blank	BJH0179-BLK1	08192128ECD7.D	08/06/21 11:30	
LCS	BJH0179-BS1	08192129ECD7.D	08/06/21 11:30	
Reference	BJH0179-SRM1	08192132ECD7.D	08/06/21 11:30	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0179

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

Matrix: Solid **Date Prepared:** 08/06/21 **Balance ID:** B146462614 **Set Up By:** CTO 8/6/21

WO Comments

21G0321: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP</C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>
21G0330: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP</C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H> J006840-43, Dup </H>

The following standards may be missing from this batch!

Designator	Description
QLS 5	QLS Spike

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
21G0321-01 A	97.4	(12.83) 12.83	5mL	5mL	2mL	2.5	1.0	
21G0321-02 A	98.0	(12.76) 12.78	5mL	5mL	2mL	2.5	1.0	
21G0321-03 A	97.7	(12.79) 12.79	5mL	5mL	2mL	2.5	1.0	
21G0330-01 B	78.3	(15.97) 15.99	5mL	5mL	2mL	2.5	1.0	
21G0330-02 B	78.1	(16.00) 16.03	5mL	5mL	2mL	2.5	1.0	
21G0330-03 B	77.6	(16.11) 16.12	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
BJH0179-BLK1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BJH0179-BS1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BJH0179-MS1	78.3	()(15.97) 15.97	5mL	5mL	2mL	2.5	1.0	Use 21G0330-01
BJH0179-MSD1	78.3	()(15.97) 15.97	5mL	5mL	2mL	2.5	1.0	Use 21G0330-01
BJH0179-SRM1	100.0	(~~12.50~~)(2.50) 2.50	5mL	5mL	2mL	2.5	1.0	Use J006842

+1g DI H2O

08/06/21 — Client ID verified By — Date

CT 8/18/21 — Preparation Reviewed By — Date

08/06/21 11:30 — Extraction Date and Time

Printed: 8/6/2021 10:32:11AM

3099F
Page 1 of 2

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0179

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

WO Comments

21G0321: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>
21G0330: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H> J006840-43, Dup </H>

Prep Steps

Microwave
1 (2) 3
08/06/21
Analyst/Date

KD
100°C
Hexane Exchange
(2 X 20 mL)
1 2 3 (4) 5 6
08/17/21
Analyst/Date

TurboVap
Pre Cleanups
1 2 3 (4) 5
8/18/21
Analyst/Date

TurboVap
Post Cleanups
1 2 3 4 (5)
8/18/21
Analyst/Date

Vialing
8/18/21
Analyst/Date

Reagents Used

Station/Reagent	Standard ID
Microwave Analyst: KT Date: 08/06/21	
Anhydrous Sodium Sulfate	J008834
Neutral Glass Wool	J006768
1:1 Hexane/Acetone	J007652
Hexane	J006933
KD Analyst: Date: 08/17/21	
Hexane	J002562
Anhydrous Sodium Sulfate	J008126
Vialing Analyst: Date: 8/18/21	
Hexane	J002562
Concentrated Sulfuric Acid	J006317
Tetrabutylammonium hydrogensulfate (TBAS)	J007842
Sodium Sulfite	J007364
Silica Gel (SPE) Darts	J007859

Surrogates & Spike Standards Used

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate 2µg/mL	N J006926 Exp: 08/08/2021	50µL		
Spike 20µg/mL	1 J004905 Exp: 11/07/2021	63µL		

(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).

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

Extraction Parameter: PCB Extraction Batch BJH0179

Total Solids Batch: BJG0696 Work Order(s): 216833

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= 01-03	08/06/21
☑ Standing Water Decanted (Not shared)= 02	08/03/21
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☐ Other (Details)=	
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).	
Poured about 50% of MSI into BS at KD	08/17/21
☑ Share Samples Y / (N)	08/03/21 ~~08/21/21~~
☑ Multiple Jars Y / (N)	08/03/21
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

Extraction Parameter: FLB

Extraction Batch: ~~BJH0179 - BJH0193~~ BJH0179 (vl 08/06/21)

Total Solids Batch: ~~21G0321~~ BJG0694 (CTO 7129/21)

Work Order(s): 21G0321

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= 01-03	08/06/21
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☑ Organics (Leaves/sticks/grass)= 05	08/05/21
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☑ Other (Details)=	
~2mm silver filaments found in 04 and 05 (< 1%)	08/05/21
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).	
☑ Share Samples Y / (N)	08/05/21
☑ Multiple Jars Y / (N)	08/05/21
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0179

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

WO Comments

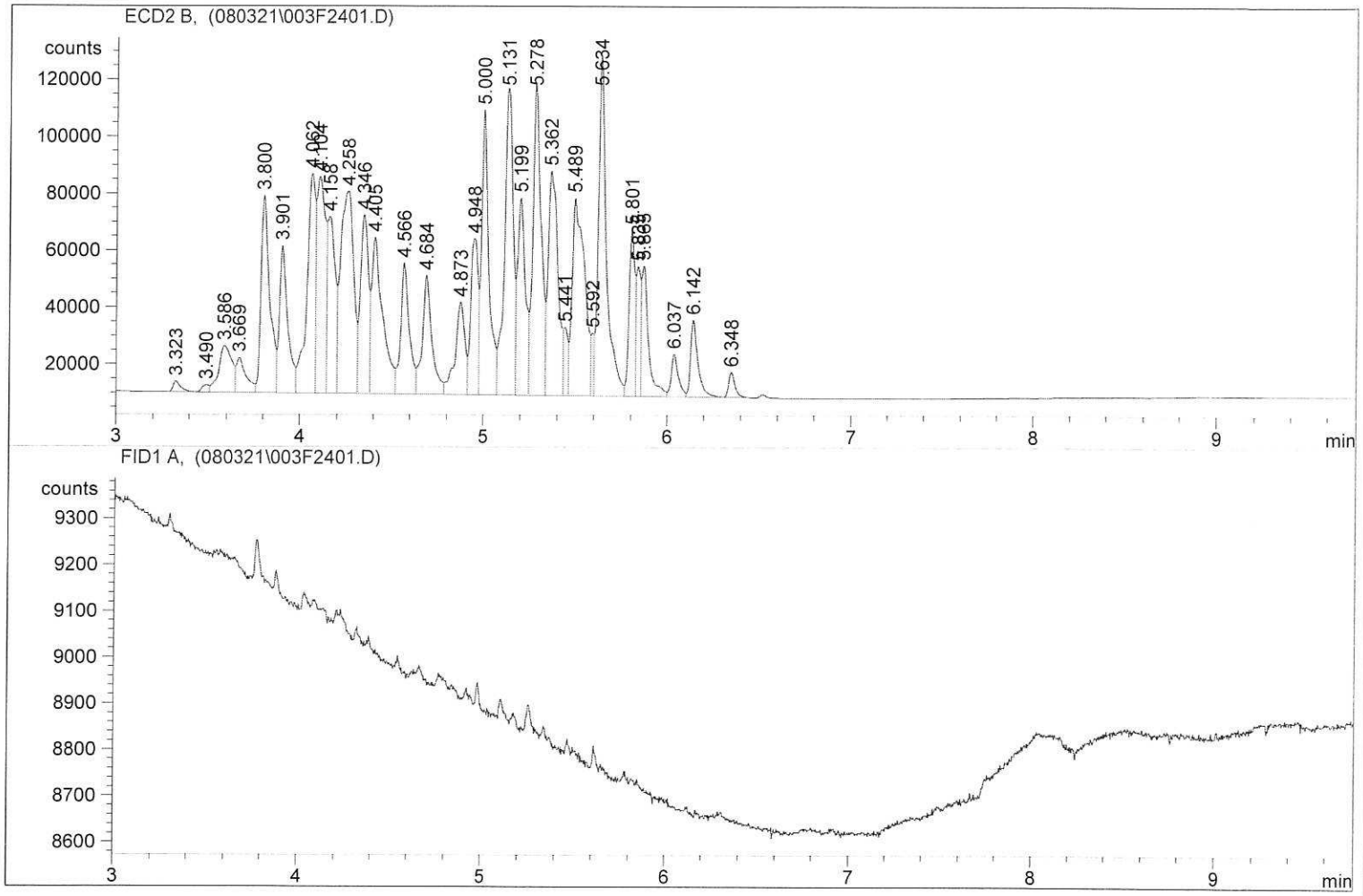
21G0321: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>
21G0330: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H> J006840-43, Dup </H>

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. Re-homogenize and rinse with 1:1 Hexane/Acetone. 9. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 10. KD on 100° bath. 11. Exchange (2 X with 20mL) Hexane. 12. TurboVap. 13. Clean-ups. 14. TurboVap. 15. Vial with Hexane. A. Need Total Solids Y / N B. Archive/Freeze Y / N	

Printed: 8/6/2021 8:37:51AM

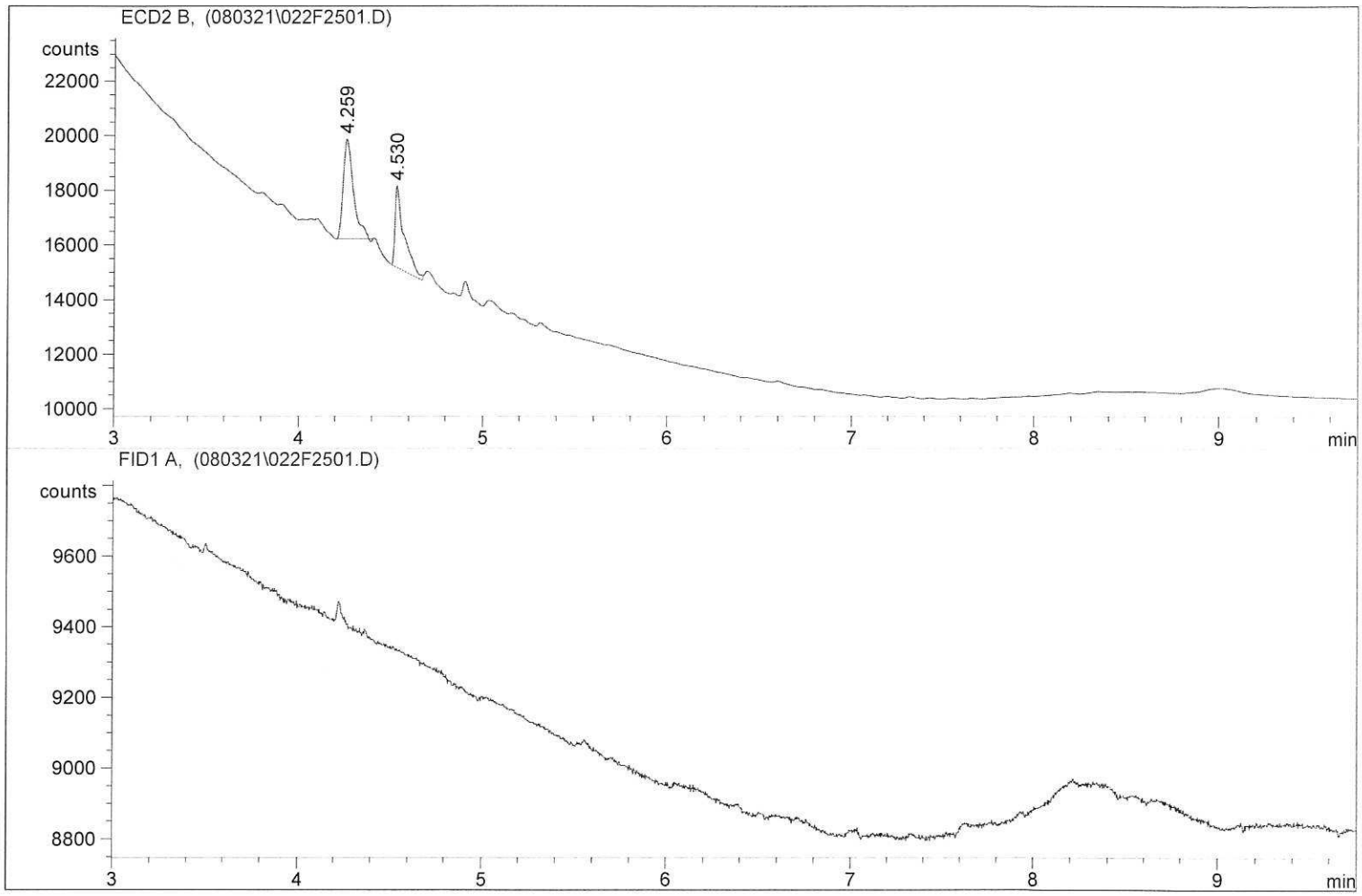
3099F

Injection Date	: 8/3/2021 4:20:29 PM	Seq. Line :	24
Sample Name	: AR 1660 1PPM	Location :	Vial 3
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080321B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Injection Date	: 8/3/2021 4:34:42 PM	Seq. Line :	25
Sample Name	: 21G0330 1	Location :	Vial 22
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080321B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Injection Date	: 8/3/2021 4:48:17 PM	Seq. Line :	26
Sample Name	: 21G0330 2	Location :	Vial 23
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080321B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
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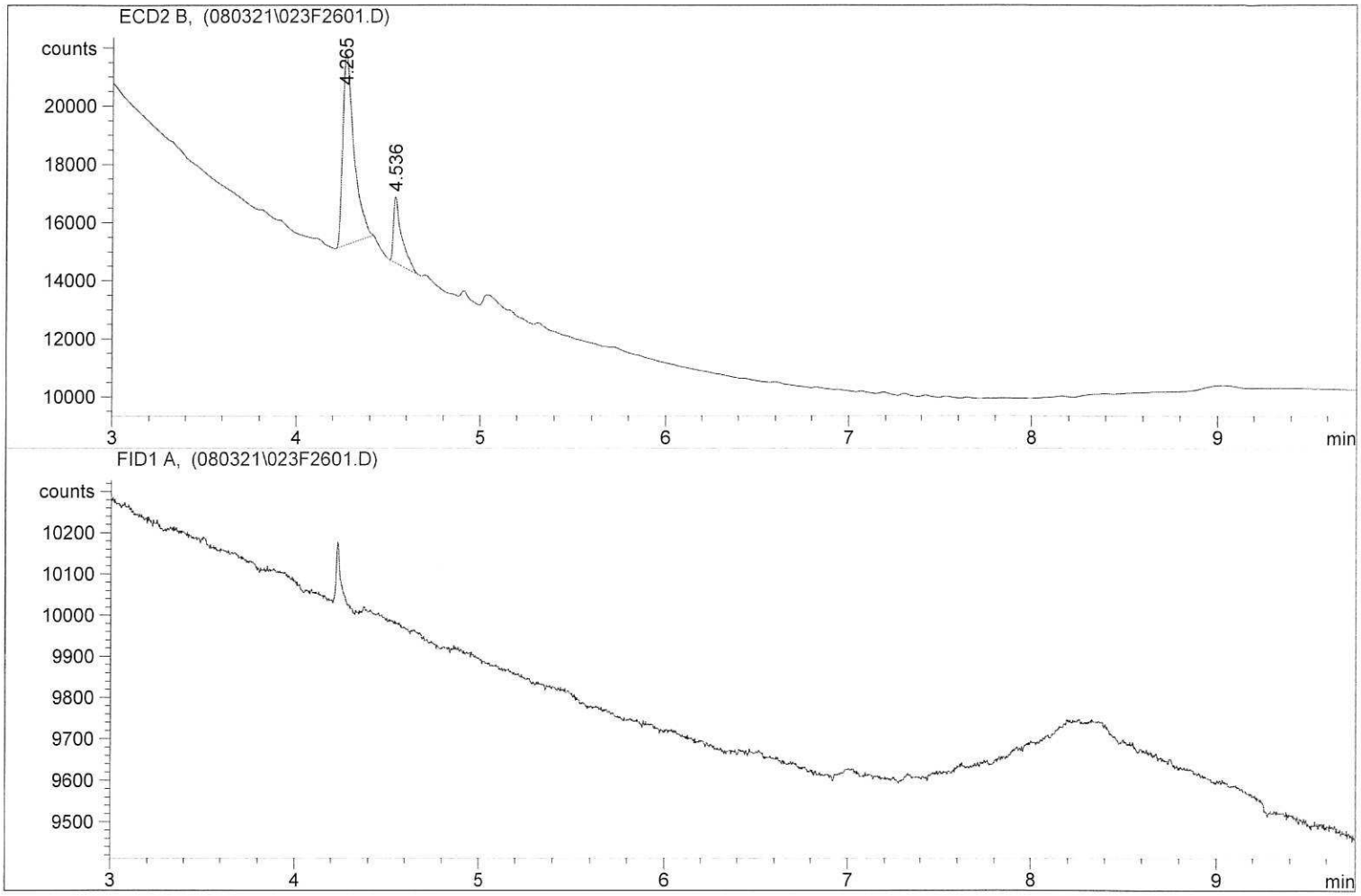
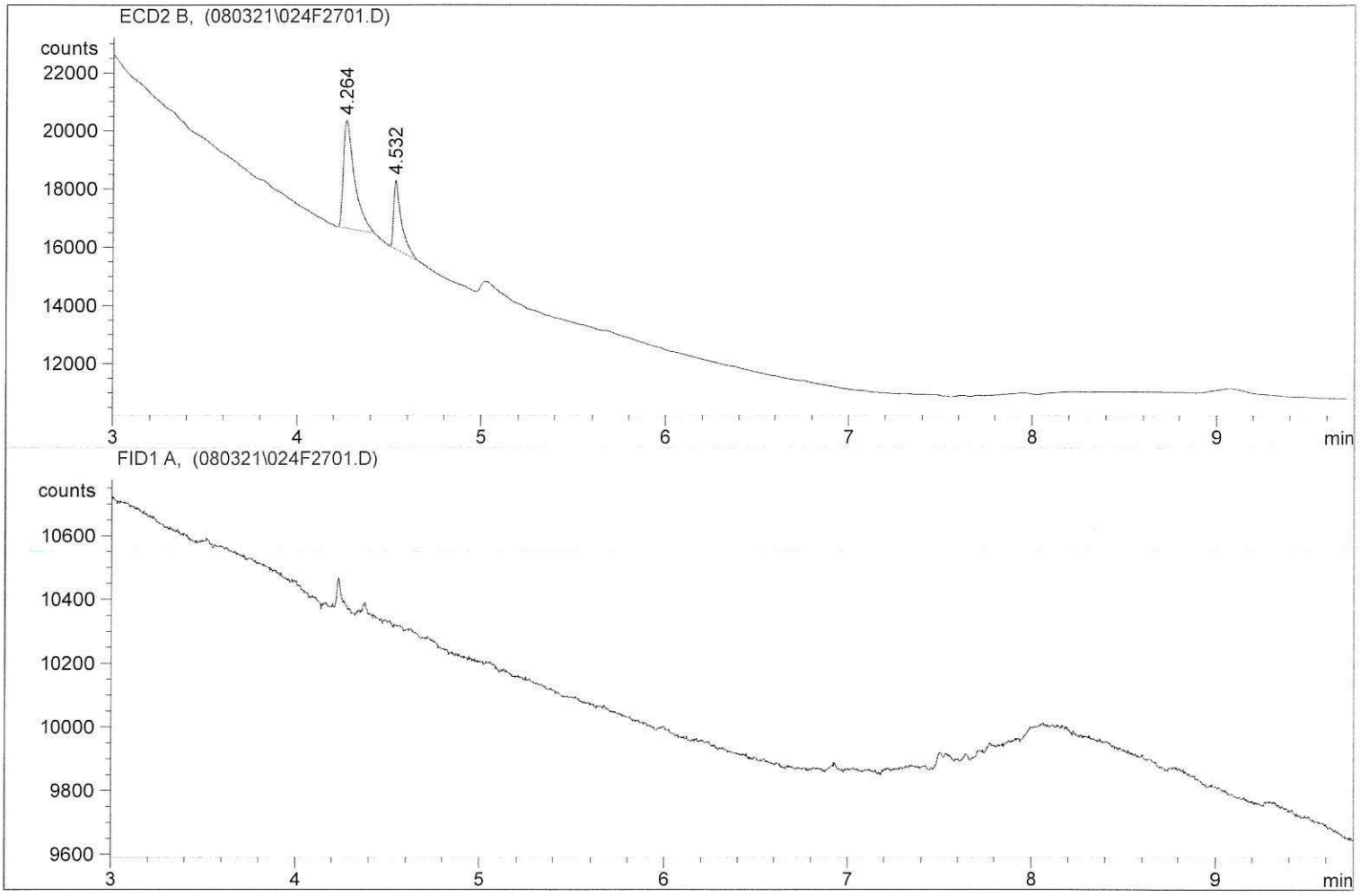
SCREEN METHOD			



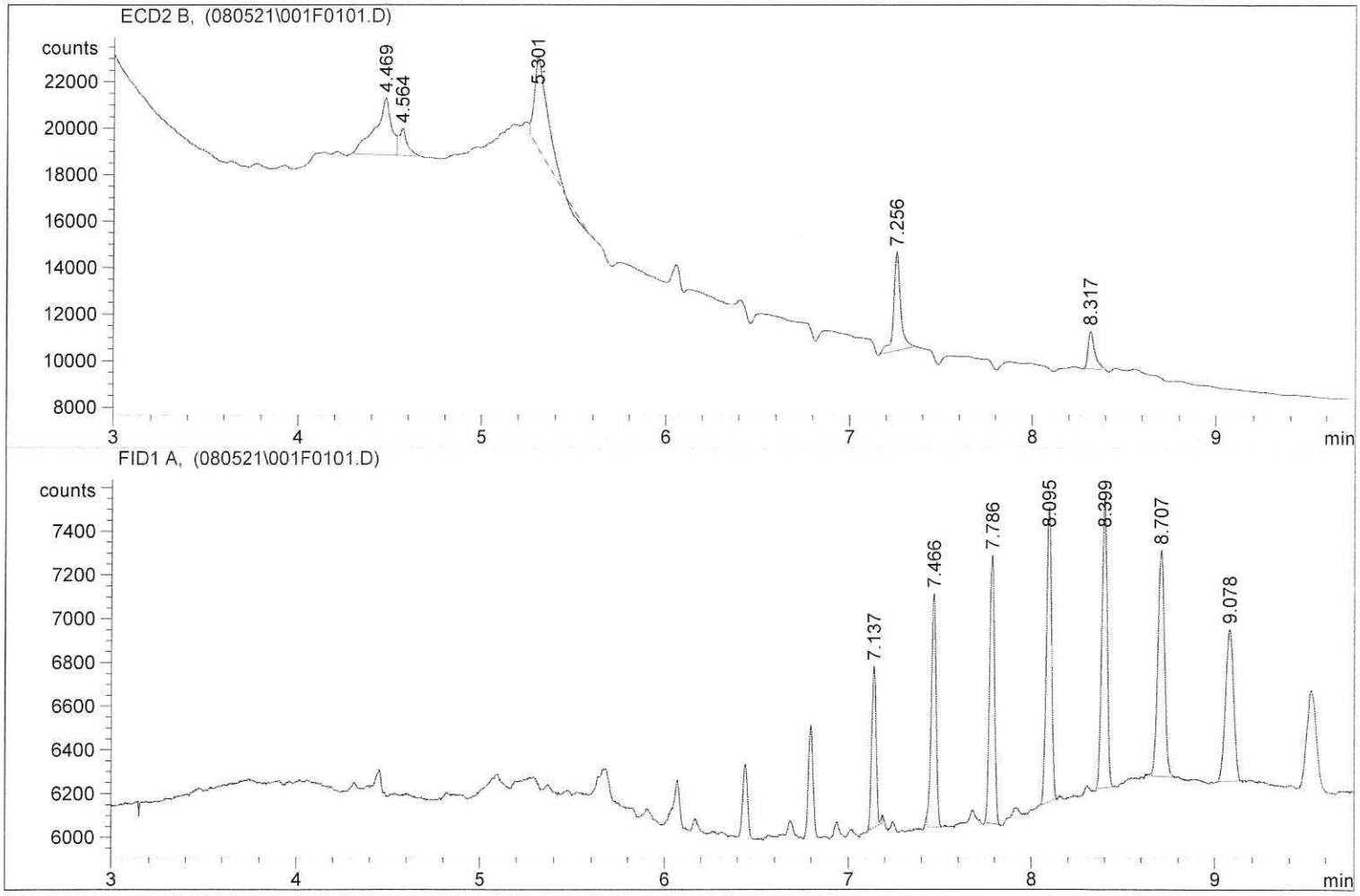
*** End of Report ***

Injection Date	: 8/3/2021 5:02:35 PM	Seq. Line :	27
Sample Name	: 21G0330 3	Location :	Vial 24
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080321B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



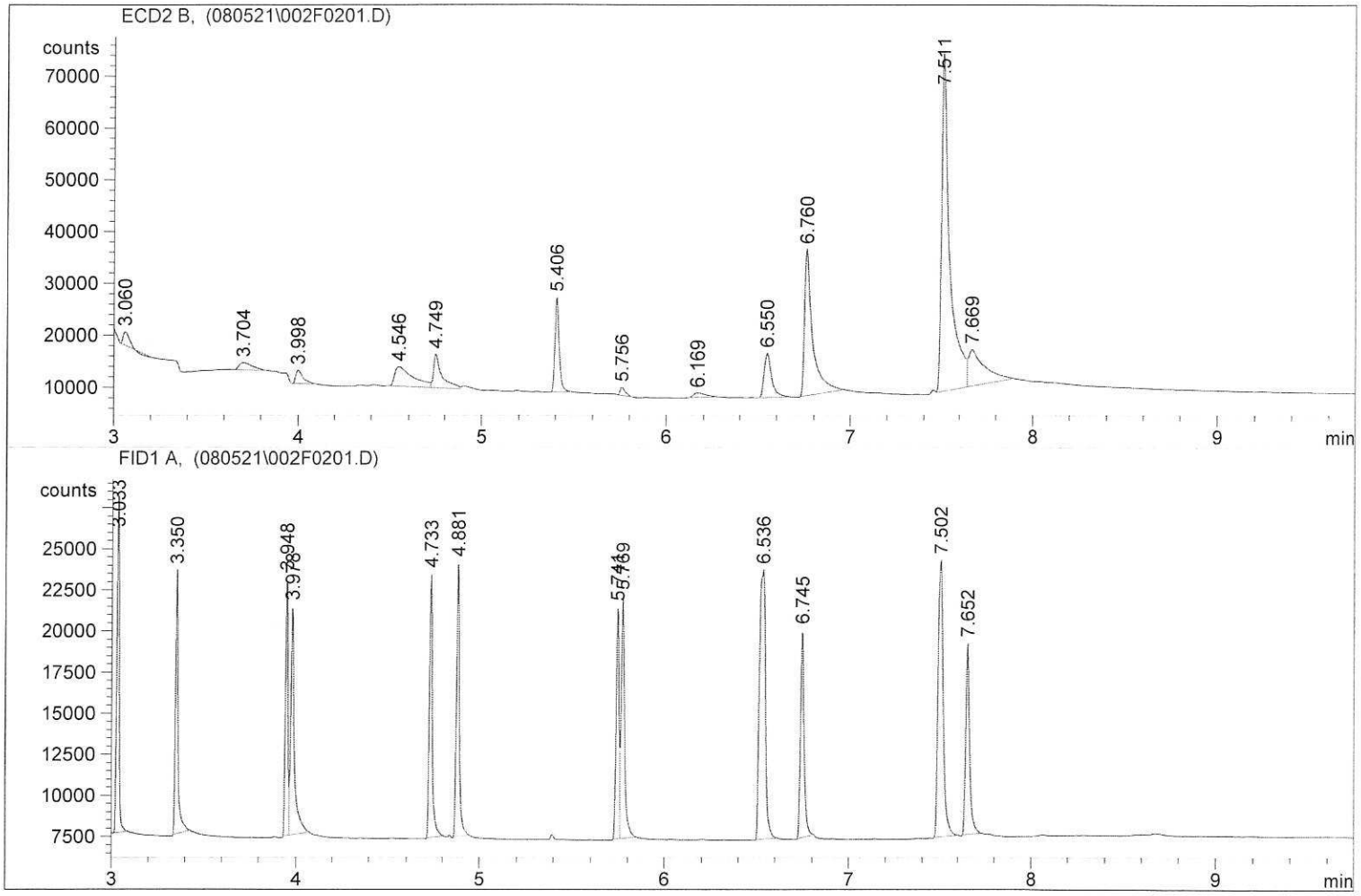
*** End of Report ***

Injection Date	: 8/5/2021 10:28:27 AM	Seq. Line :	1
Sample Name	: DCM RINSE	Location :	Vial 1
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



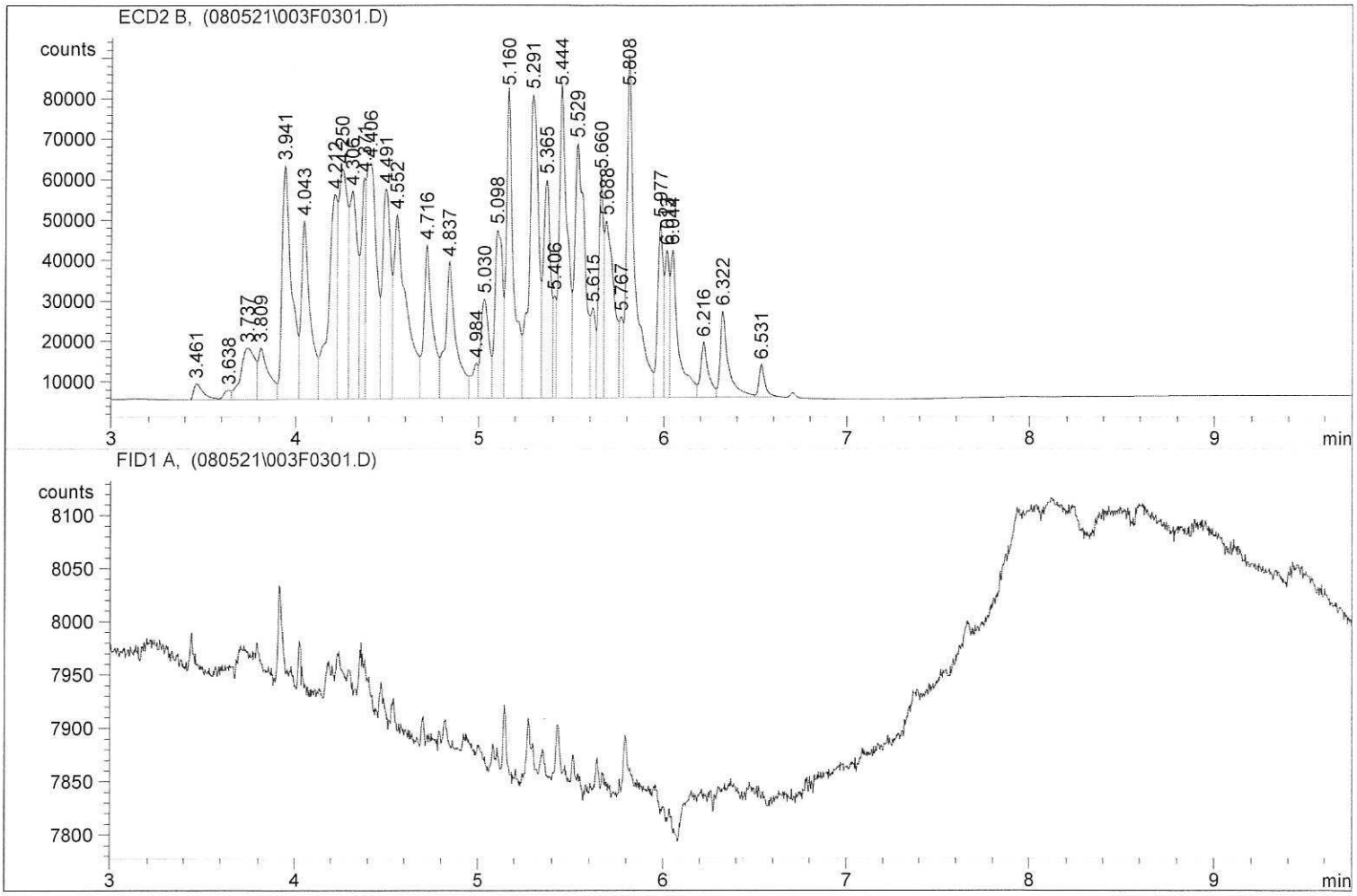
*** End of Report ***

Injection Date	: 8/5/2021 10:42:43 AM	Seq. Line :	2
Sample Name	: PNA STD 10PPM	Location :	Vial 2
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



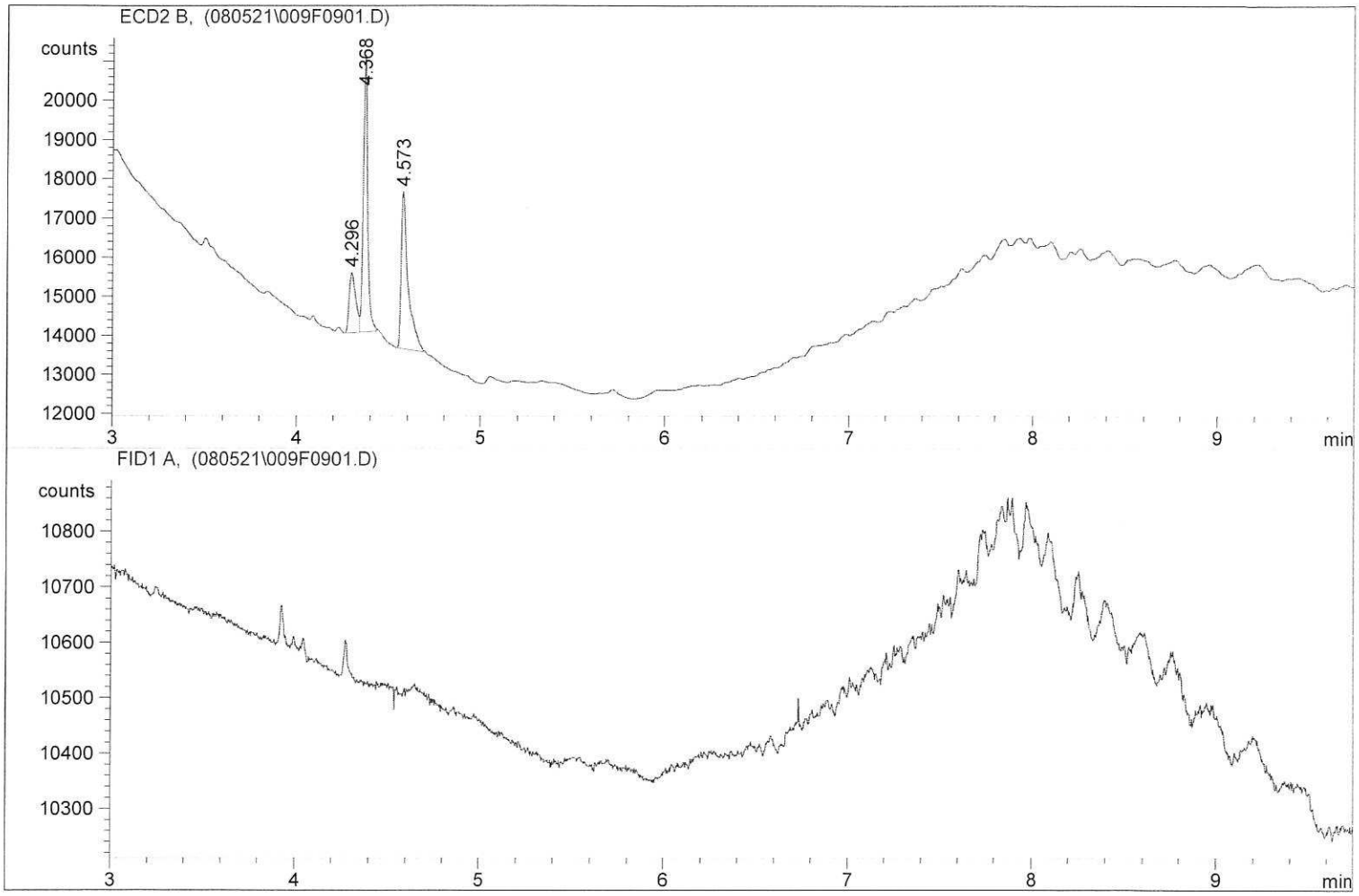
*** End of Report ***

Injection Date	: 8/5/2021 10:56:15 AM	Seq. Line :	3
Sample Name	: AR 1660 1PPM	Location :	Vial 3
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



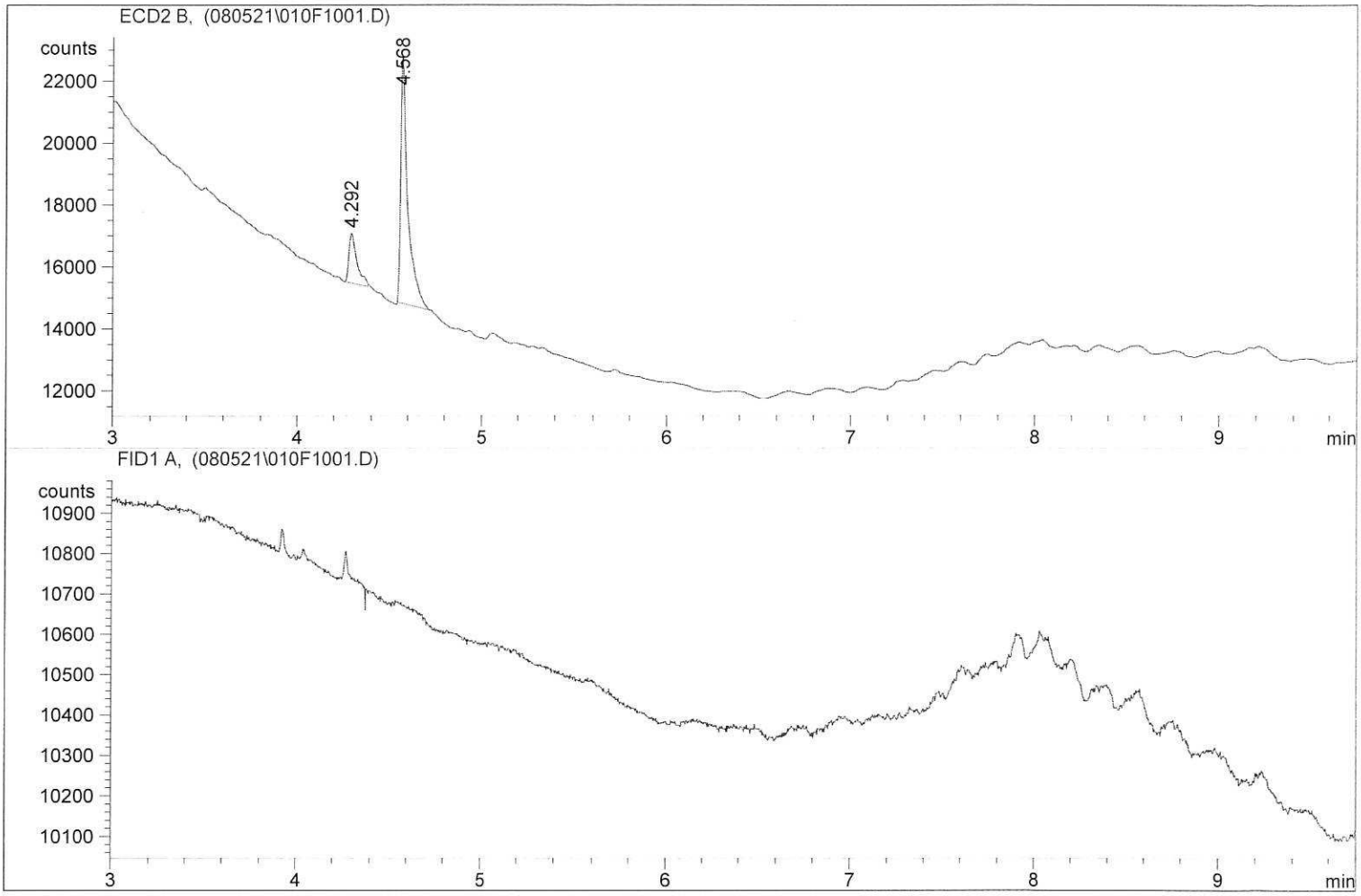
*** End of Report ***

Injection Date	: 8/5/2021 12:21:01 PM	Seq. Line :	9
Sample Name	: 21G0321 1	Location :	Vial 9
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Injection Date	: 8/5/2021 12:35:04 PM	Seq. Line :	10
Sample Name	: 21G0321 2	Location :	Vial 10
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

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==========================================================================
Injection Date  : 8/5/2021 12:49:50 PM          Seq. Line :  11
Sample Name     : 21G0321 3                      Location : Vial 11
Acq. Operator   : JL                                  Inj :  1
                                               Inj Volume : 1 µl
Sequence File   : C:\HPCHEM\1\SEQUENCE\080521.S
Method          : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed    : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD
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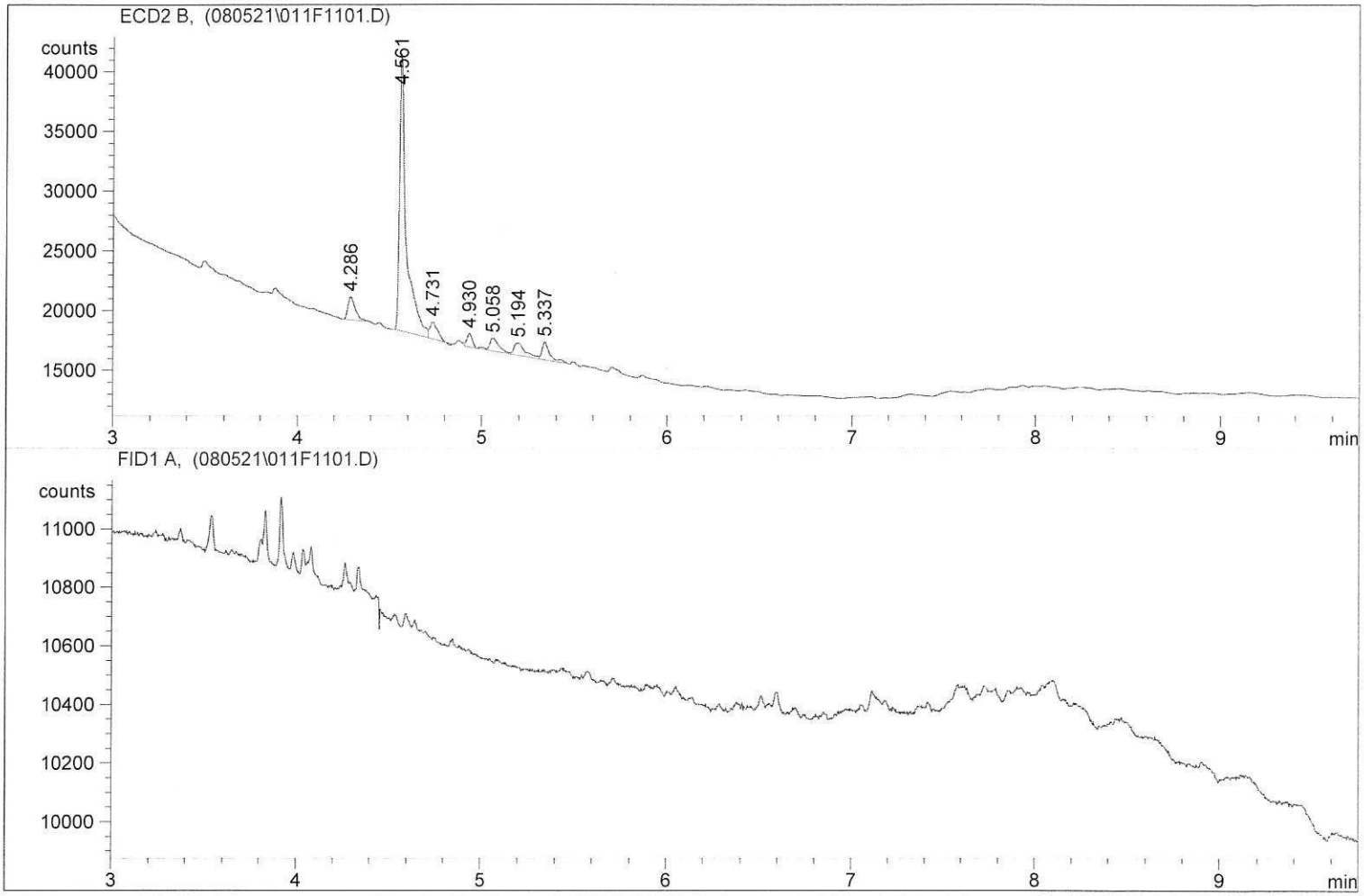
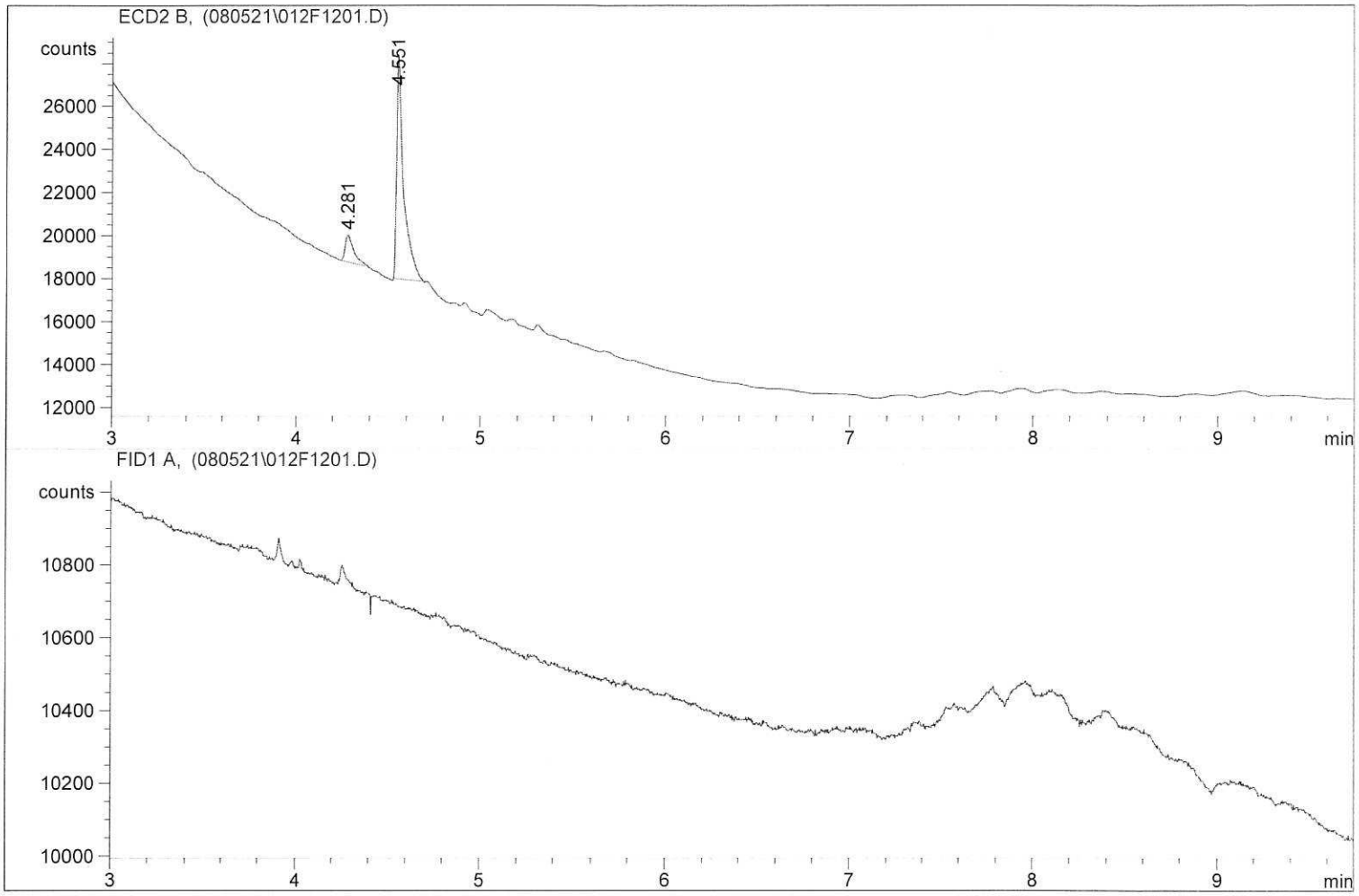


*** End of Report ***

Injection Date	: 8/5/2021 1:03:26 PM	Seq. Line :	12
Sample Name	: 21G0321 4	Location :	Vial 12
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

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Injection Date : 8/5/2021 1:17:36 PM
Sample Name : 21G0321 5
Acq. Operator : JL

Seq. Line : 13
Location : Vial 13
Inj : 1
Inj Volume : 1 µl

Sequence File : C:\HPCHEM\1\SEQUENCE\080521.S
Method : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD

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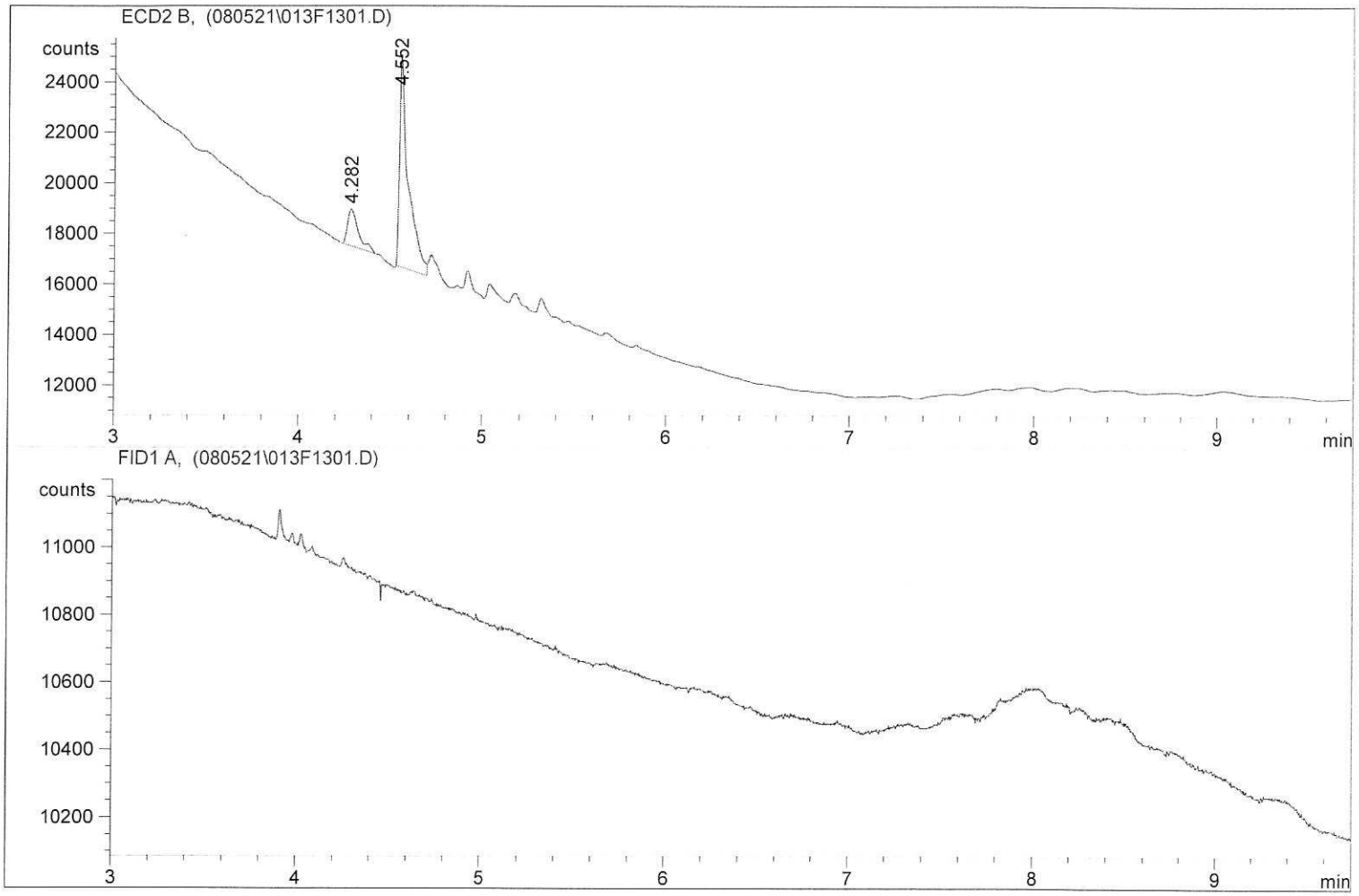

*** End of Report ***

Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Batch:	BJH0193	Batch Matrix:	Solid	Preparation:	EPA 3550C (Ultrasonic)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT624A	21G0321-04	08192144ECD7.D	08/06/21 13:00	
LDW21-IT626A	21G0321-05	08192145ECD7.D	08/06/21 13:00	
Blank	BJH0193-BLK1	08192139ECD7.D	08/06/21 13:00	
LCS	BJH0193-BS1	08192140ECD7.D	08/06/21 13:00	
LDW21-IT624A	BJH0193-MS1	08192141ECD7.D	08/06/21 13:00	
LDW21-IT624A	BJH0193-MSD1	08192142ECD7.D	08/06/21 13:00	
Reference	BJH0193-SRM1	08192143ECD7.D	08/06/21 13:00	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0193

Prepared using: EPA 3550C (Ultrasonic)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

Matrix: Solid **Date Prepared:** 08/06/21 **Balance ID:** B14642614 **Set Up By:** CTO 8/6/21

WO Comments

21G0321: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>

The following standards may be missing from this batch!

Designator	Description
QLS 5	QLS Spike

Analysis: 8082A PCB Solid 4

Lab Number & Container	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	Sonic Horn ID + Check	(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
21G0321-04 A	99.1	(12.61) 12.63	8	5mL	5mL	2 mL	2.5 ____	1.0 ____	
21G0321-05 A	98.9	(12.64) 12.64	9	5mL	5mL	2 mL	2.5 ____	1.0 ____	

Batch QC

Lab Number	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	Sonic Horn ID + Check	(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
BJH0193-BLK1	100.0	(12.50) 12.50	7	5mL	5mL	2 mL	2.5 ____	1.0 ____	
BJH0193-BS1	100.0	(12.50) 12.50	8	5mL	5mL	2 mL	2.5 ____	1.0 ____	
BJH0193-MS1	99.1	()(12.61) 12.61	9	5mL	5mL	2 mL	2.5 ____	1.0 ____	Use 21G0321-04
BJH0193-MSD1	99.1	()(12.61) 12.61	10	5mL	5mL	2 mL	2.5 ____	1.0 ____	Use 21G0321-04
BJH0193-SRM1	100.0	~~(12.50)~~(2.50) 2.50	7	5mL	5mL	2 mL	2.5 ____	1.0 ____	Use ~~J006842~~ J006843

+1g DI H2O

08/06/21 — Client ID Verified By — Date

MS 8/18/21 — Preparation Reviewed By — Date

08/06/21 13:00 — Extraction Date and Time

Printed: 8/6/2021 10:58:26AM

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0193

Prepared using: EPA 3550C (Ultrasonic)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

WO Comments

21G0321: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>

Prep Steps

Sonicate 3X with 8:2 Hexane/Acetone
Analyst/Date: 08/06/21

KD 100°C Hexane Exchange (2 X 20mL)
1 2 3 4 5 6
Analyst/Date: AA 081321

TurboVap Pre-Cleanups
1 2 3 4 5
Analyst/Date: 8/18/21

TurboVap Pre-Cleanups
1 2 3 4 5
Analyst/Date: 8/18/21

Vialing
Analyst/Date: 8/18/21

Reagents Used

Station/Reagent	Standard ID
Sonication Analyst: Date: 08/06/21	
Anhydrous Sodium Sulfate	J008034
Neutral Glass Wool	J006768
80:20 Hexane/Acetone	J006835
Hexane	J006933
KD Analyst: AA Date: 081321	
Hexane	J005194
Anhydrous Sodium Sulfate	J008126
Neutral Glass Wool	NA
Vialing Analyst: Date: 8/18/21	
Hexane	J008562
Concentrated Sulfuric Acid	J006313
Tetrabutylammonium hydrogensulfate (TBAS)	J007842
Sodium Sulfite	J007364
Silica Gel (SPE) Darts	J007869

Surrogates & Spike Standards Used

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate 2µg/mL	N J006926 Exp: 08/08/2021	50µL	CT	
Spike 20µg/mL	1 J004905 Exp: 11/07/2021	63µL	CT	

(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).

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0193

Prepared using: EPA 3550C (Ultrasonic)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

WO Comments

21G0321: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. Weigh soil/sed into 600mL or 400mL beakers. 2. Use 10g neutral Sodium Sulfate for the blanks. 3. Add surr/spike. 4. Add 8:2 Hexane/Acetone. 5. Dry using neutral Sodium Sulfate-25g Max at first-A small amt of Additional sulfate may be needed after 10 min. or before 2nd sonication? 6. Sonicate 3X with 8:2 Hexane/Acetone for 5min each. 7. Collect into 500mL flask+Lg funnel with a small amount neutral glasswool plug only. NO SODIUM SULFATE. 8. KD (Normal Drying Column) on 100° bath. (Blanks=only 5g Sodium Sulfate). 9. Exchange (2 X with 20mL) Hexane. 10. TurboVap. 11. Clean-ups- REQUIRED. 12. TurboVap. 13. Vial with Hexane. A. Need Total Solids Y / N B. Archive/Freeze Y N	

Printed: 8/6/2021 10:58:26AM

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

Extraction Parameter: FLB Extraction Batch ~~BJH0174~~ BJH0193

Total Solids Batch: ~~21G0321~~ BJG0694 CTO 7129/21 Work Order(s): 21G0321

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= 01-03	08/06/21
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☑ Organics (Leaves/sticks/grass)= 05	08/05/21
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☑ Other (Details)=	
~2mm silver filaments found in 04 and 05 (< 1%)	08/05/21
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).	
☑ Share Samples Y / (N)	08/05/21
☑ Multiple Jars Y / (N)	08/05/21
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Batch:	BJH0604	Batch Matrix:	Solid	Preparation:	EPA 3546 (Microwave)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT615A	21G0321-01RE1	08272125ECD7.D	08/25/21 13:40	From BJH0179 by JGR on 24-Aug-2021
LDW21-IT617A	21G0321-02RE1	08272126ECD7.D	08/25/21 13:40	From BJH0179 by JGR on 24-Aug-2021
LDW21-IT618A	21G0321-03RE1	08272127ECD7.D	08/25/21 13:40	From BJH0179 by JGR on 24-Aug-2021
Blank	BJH0604-BLK1	08272121ECD7.D	08/25/21 13:40	
LCS	BJH0604-BS1	08272122ECD7.D	08/25/21 13:40	
LCS Dup	BJH0604-BSD1	08272123ECD7.D	08/25/21 13:40	
Reference	BJH0604-SRM1	08272124ECD7.D	08/25/21 13:40	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Rush

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0604 RE

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

Matrix: Solid **Date Prepared:** 8/25/21 **Balance ID:** B139298002 **Set Up By:** GTO 8/24/21

From BJH0179 on 8/24/2021 by JGR

re-ext due to lcs contaminated with ms extract at kd

WO Comments

21G0321: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>
TOC done at KC Lab
21G0330: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H> J006840-43, Dup </H>

The following standards may be missing from this batch!

Designator	Description
QLS 5	QLS Spike

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
21G0321-01RE1 A	97.4	(12.83)	12.83	5mL	5mL	2mL	2.5	1.0	From BJH0179 by JGR on 24-Aug-2021
21G0321-02RE1 A	98.0	(12.76)	12.76	5mL	5mL	2mL	2.5	1.0	From BJH0179 by JGR on 24-Aug-2021
21G0321-03RE1 A	97.7	(12.79)	12.84	5mL	5mL	2mL	2.5	1.0	From BJH0179 by JGR on 24-Aug-2021
21G0330-01RE1 B	78.3	(15.97)	15.97	5mL	5mL	2mL	2.5	1.0	From BJH0179 by JGR on 24-Aug-2021
21G0330-02RE1 B	78.1	(16.00)	16.00	5mL	5mL	2mL	2.5	1.0	From BJH0179 by JGR on 24-Aug-2021
21G0330-03RE1 B	77.6	(16.11)	16.11	5mL	5mL	2mL	2.5	1.0	From BJH0179 by JGR on 24-Aug-2021

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
BJH0604-BLK1	100.0	(12.50)	12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BJH0604-BS1	100.0	(12.50)	12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BJH0604-BSD1	100.0	(12.50)	12.50	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.)
BJH0604-MS1	97.4	~~(12.83)~~	15.97	5mL	5mL	2mL	2.5	1.0	Use 21G0330-01RE1
BJH0604-MSD1	97.4	~~(12.83)~~	15.97	5mL	5mL	2mL	2.5	1.0	Use 21G0330-01RE1
BJH0604-SRM1	100.0	~~(12.50)~~ (2.50)	2.50	5mL	5mL	2mL	2.5	1.0	Use J007935

+1g DI H2O

D 15.97g

TW 8/25/21 — Client ID verified By, Date

CLS 8/25/21 — Preparation Reviewed By, Date

8/25/21 13:46 — Extraction Date and Time

Printed: 8/24/2021 1:44:33PM

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Page 1 of 2

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0604

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

WO Comments

21G0321: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>
TOC done at KC Lab
21G0330: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H> J006840-43, Dup </H>

Prep Steps

Microwave
1 2 3
TW 8/25/21
Analyst/Date

KD 100°C Hexane Exchange (2 X 20 mL)
1 2 3 4 5 6
AA 082521
Analyst/Date

TurboVap Pre Cleanups
1 2 3 4 5
CW 8/25/21
Analyst/Date

TurboVap Post Cleanups
1 2 3 4 5
CW 8/25/21
Analyst/Date

Vialing
CW 8/25/21
Analyst/Date

Reagents Used

Station/Reagent	Standard ID
Microwave Analyst: TW Date: 8/25/21	
Anhydrous Sodium Sulfate	J008900
Neutral Glass Wool	J006339
1:1 Hexane/Acetone	J007934
Hexane	J005194
KD Analyst: AA Date: 082521	
Hexane	J008160
Anhydrous Sodium Sulfate	J008511
Vialing Analyst: CW Date: 8/25/21	
Hexane	J008160
Concentrated Sulfuric Acid	J006313
Tetrabutylammonium hydrogensulfate (TBAS)	J007842
Sodium Sulfite	J007164
Silica Gel (SPE) Darts	J007859

Surrogates & Spike Standards Used

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate 2µg/mL	N 1008146 Exp: 02/07/2022 TW	50µL	TW	
Spike 20µg/mL	1 1008330 Exp: 02/12/2022 TW	63µL	TW	

(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).

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0604

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

WO Comments

21G0321: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>
TOC done at KC Lab
21G0330: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H> J006840-43, Dup </H>

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. Re-homogenize and rinse with 1:1 Hexane/Acetone. 9. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 10. KD on 100° bath. 11. Exchange (2 X with 20mL) Hexane. 12. TurboVap. 13. Clean-ups. 14. TurboVap. 15. Vial with Hexane. A. Need Total Solids Y [N] B. Archive/Freeze [Y] N	

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

Extraction Parameter: PCB RE Extraction Batch BJI0604RE

Total Solids Batch: BJ60692 Work Order(s): 21G0321, 330

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☐ Other (Details)=	
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).	
☐ Share Samples Y / N	
☐ Multiple Jars Y / N	
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Analytical Resources, Incorporated
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Organic Extractions Laboratory Analyst Notes

Extraction Parameter: PCB Extraction Batch: BJ146179

Total Solids Batch: BJ06696 Work Order(s): 216033a

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= 01-03	08/06/21
☑ Standing Water Decanted (Not shared)= 02	08/03/21
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☐ Other (Details)=	
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).	
Poured about 50% of MSI into BS at KD	08/17/21
☑ Share Samples Y / (N)	08/03/21
☑ Multiple Jars Y / (N)	08/03/21
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

Extraction Parameter: FLB

Extraction Batch: ~~BJH0174 - BJH0179~~ BJH0179 VL 08/06/21

Total Solids Batch: ~~21G0321~~ BJG0694 CTO 7/29/21

Work Order(s): 21G0321

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= 01-03	08/06/21
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☑ Organics (Leaves/sticks/grass)= 05	08/05/21
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☑ Other (Details)=	
~2mm silver filaments found in 04 and 05 (< 1%)	08/05/21
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).	
☑ Share Samples Y / (N)	08/05/21
☑ Multiple Jars Y / (N)	08/05/21
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0179

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

WO Comments

21G0321: <G> BPR Project batch as meuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H>BPR J006840-43, Dup </H>

21G0330: <G> BPR Project batch as meuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, MS/MSD </E>
<H> J006840-43, Dup </H>

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. Re-homogenize and rinse with 1:1 Hexane/Acetone. 9. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 10. KD on 100° bath. 11. Exchange (2 X with 20mL) Hexane. 12. TurboVap. 13. Clean-ups. 14. TurboVap. 15. Vial with Hexane. A. Need Total Solids Y / N B. Archive/Freeze Y / N	

Printed: 8/6/2021 8:37:51AM

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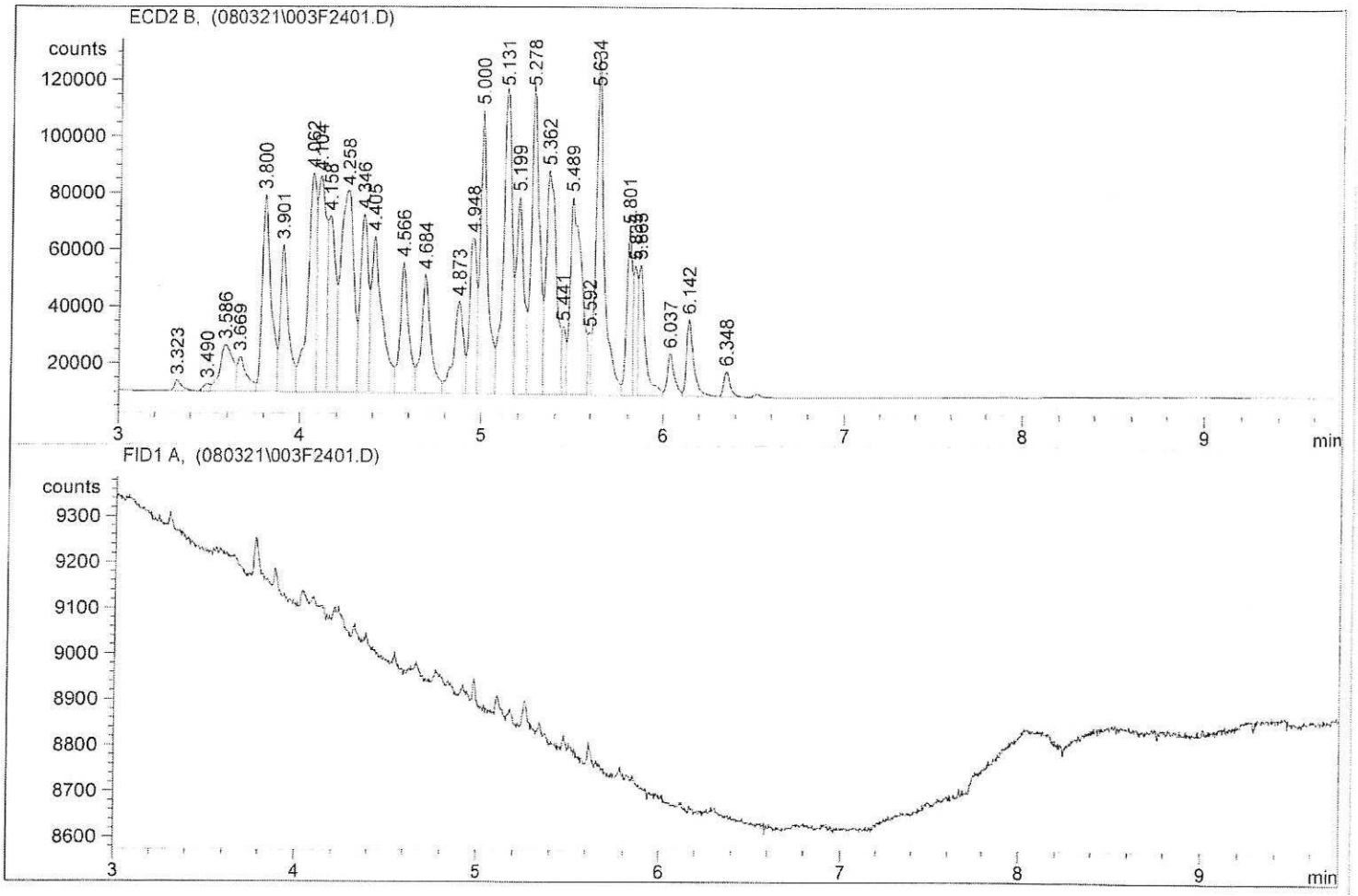
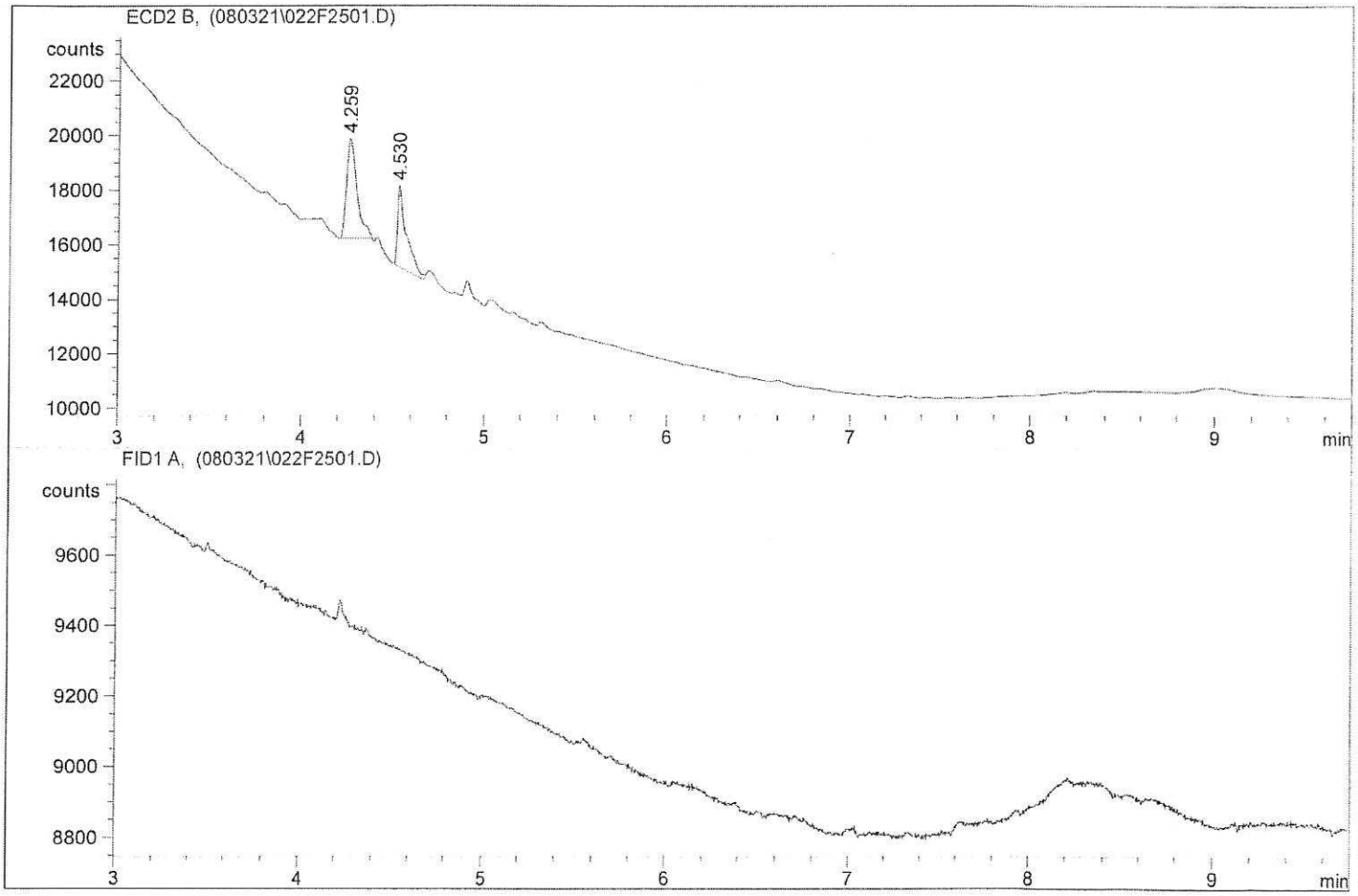
Injection Date	: 8/3/2021 4:20:29 PM	Seq. Line :	24
Sample Name	: AR 1660 1PPM	Location :	Vial 3
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080321B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

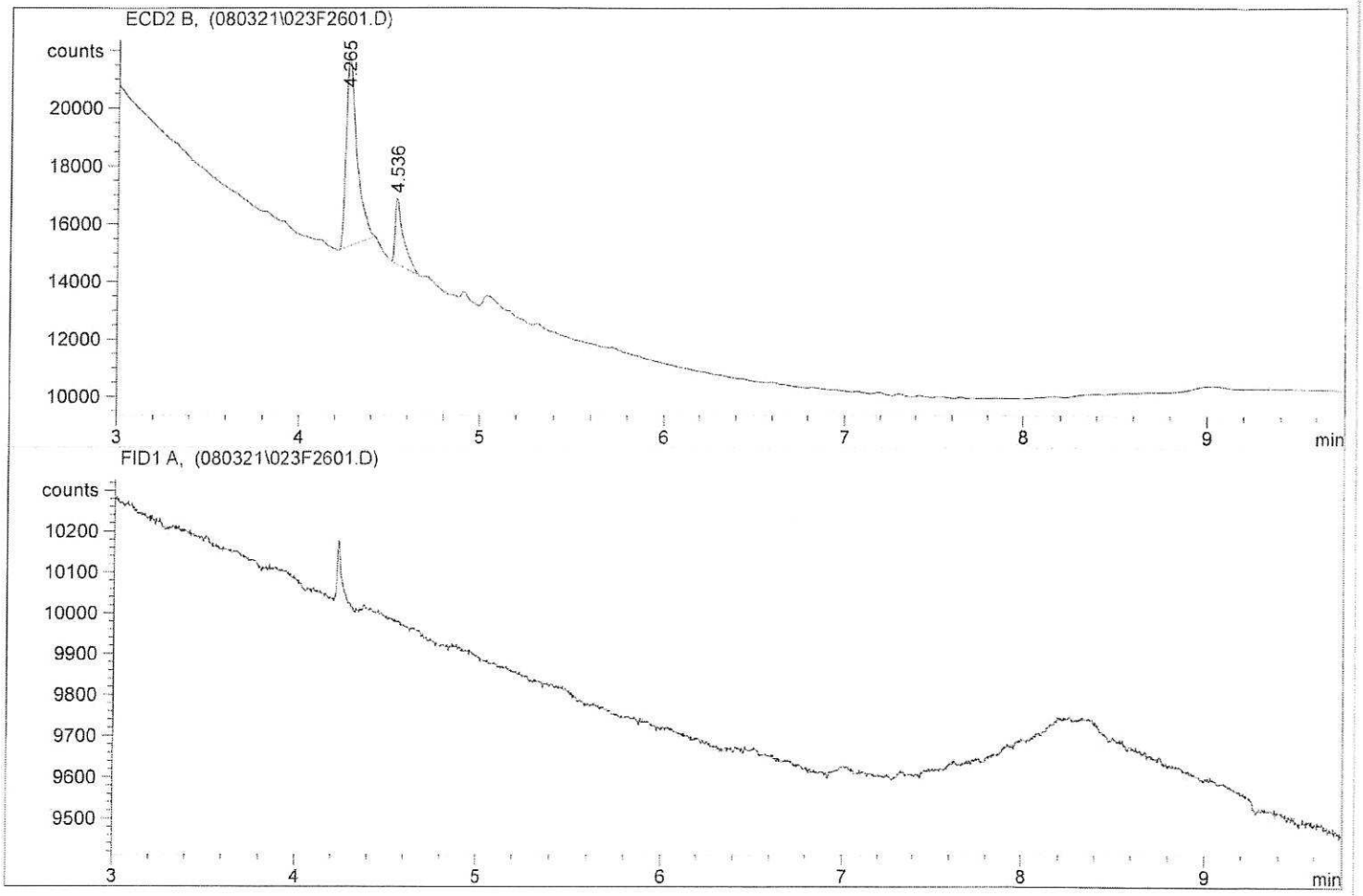
Injection Date	: 8/3/2021 4:34:42 PM	Seq. Line :	25
Sample Name	: 21G0330 1	Location :	Vial 22
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl

Sequence File : C:\HPCHEM\1\SEQUENCE\080321B.S
Method : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD



*** End of Report ***

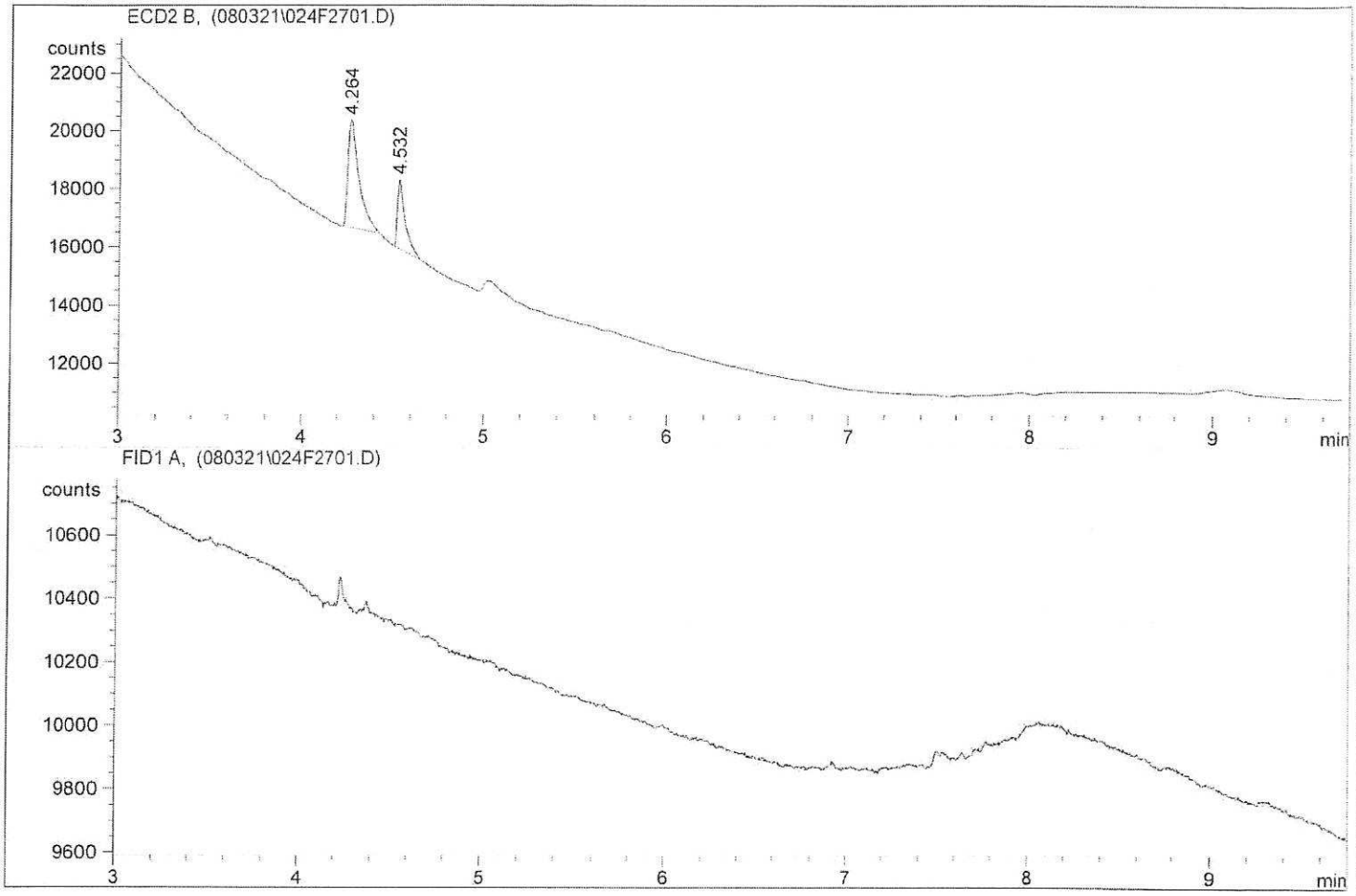
Injection Date	: 8/3/2021 4:48:17 PM	Seq. Line :	26
Sample Name	: 21G0330 2	Location :	Vial 23
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080321B.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Injection Date	: 8/3/2021 5:02:35 PM	Seq. Line :	27
Sample Name	: 21G0330 3	Location :	Vial 24
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl

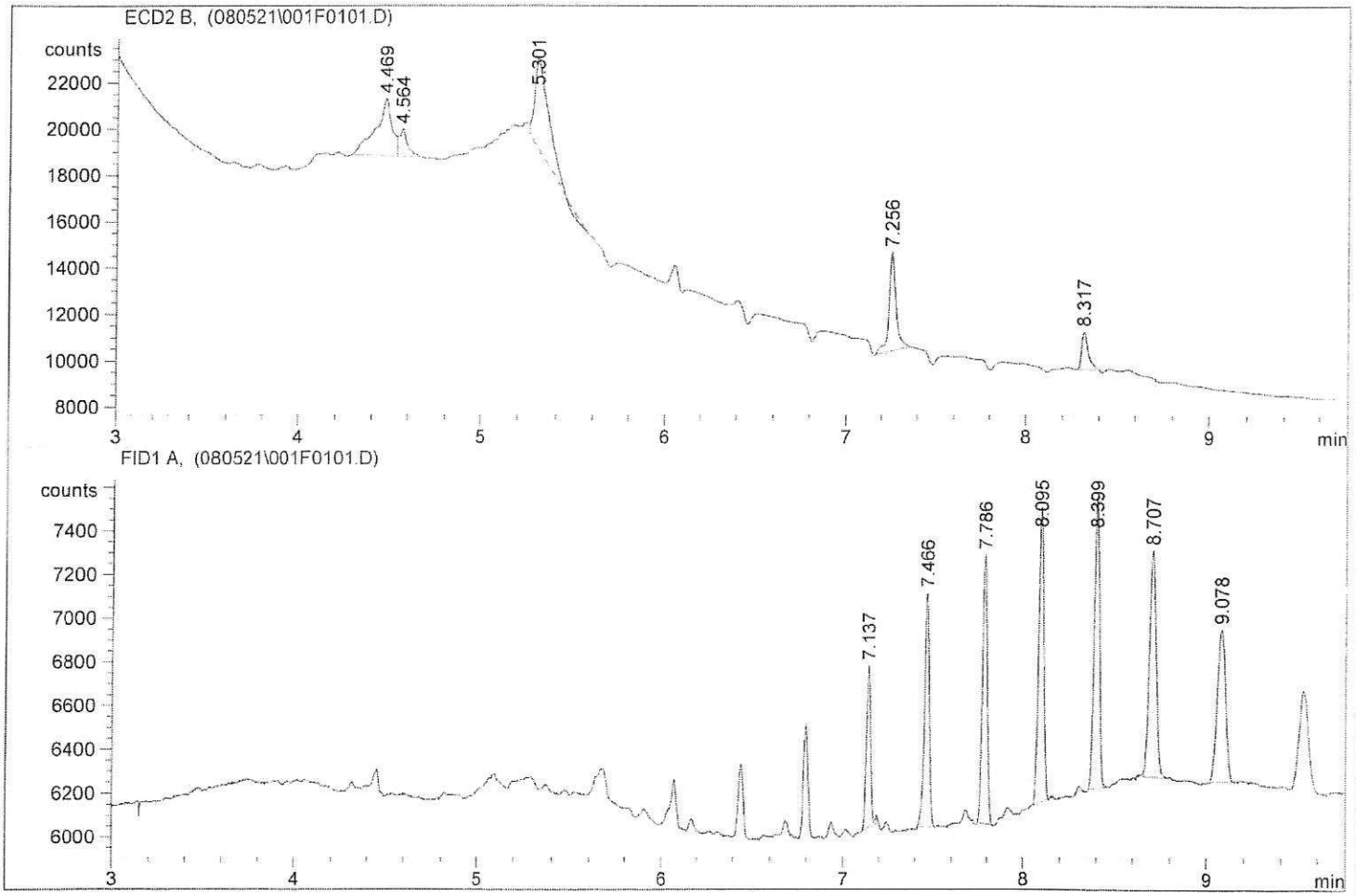
Sequence File : C:\HPCHEM\1\SEQUENCE\080321B.S
Method : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD



*** End of Report ***

Injection Date	: 8/5/2021 10:28:27 AM	Seq. Line :	1
Sample Name	: DCM RINSE	Location :	Vial 1
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl

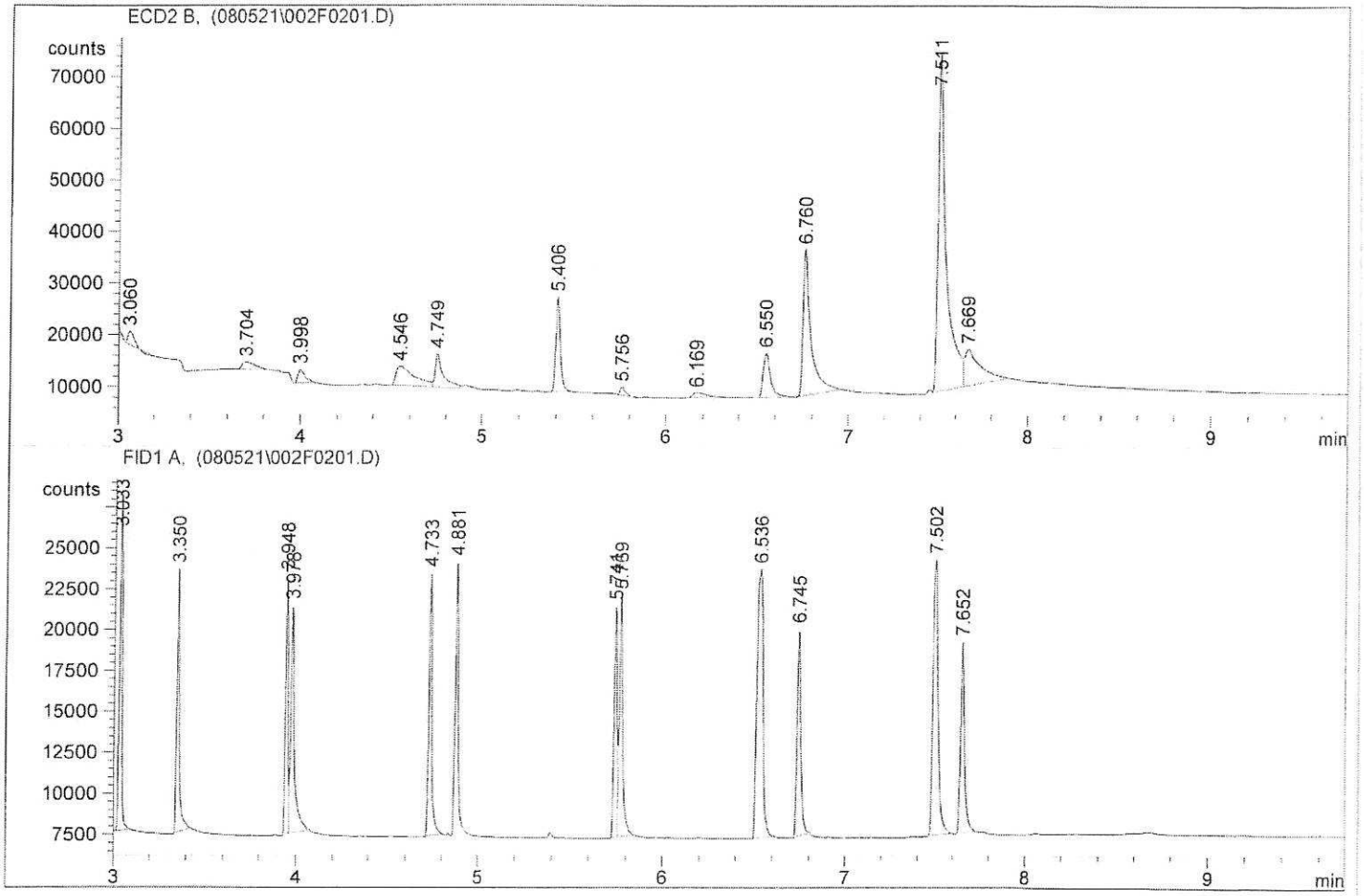
Sequence File : C:\HPCHEM\1\SEQUENCE\080521.S
Method : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD



*** End of Report ***

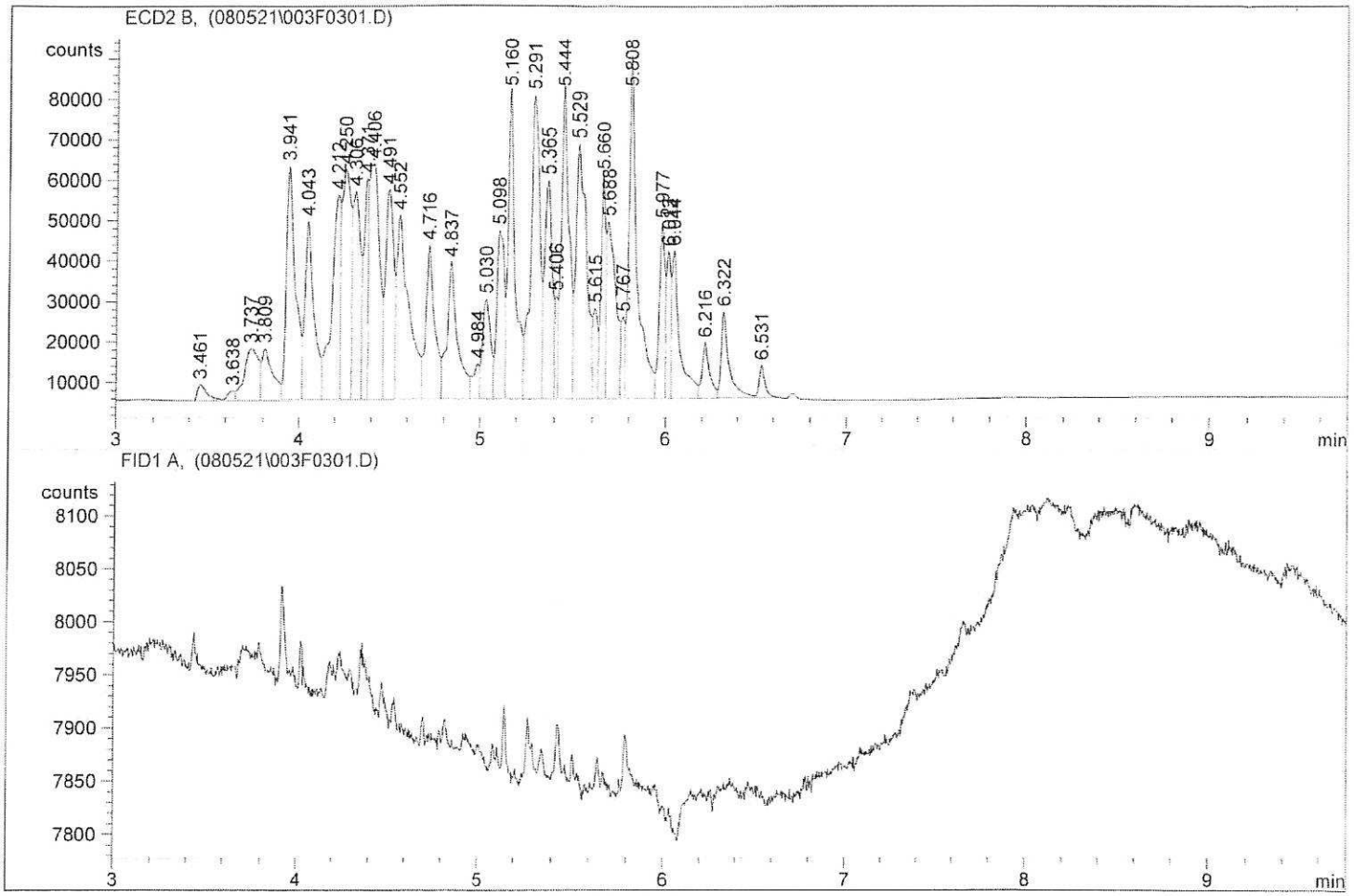
Injection Date	: 8/5/2021 10:42:43 AM	Seq. Line :	2
Sample Name	: PNA STD 10PPM	Location :	Vial 2
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl

Sequence File : C:\HPCHEM\1\SEQUENCE\080521.S
Method : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD



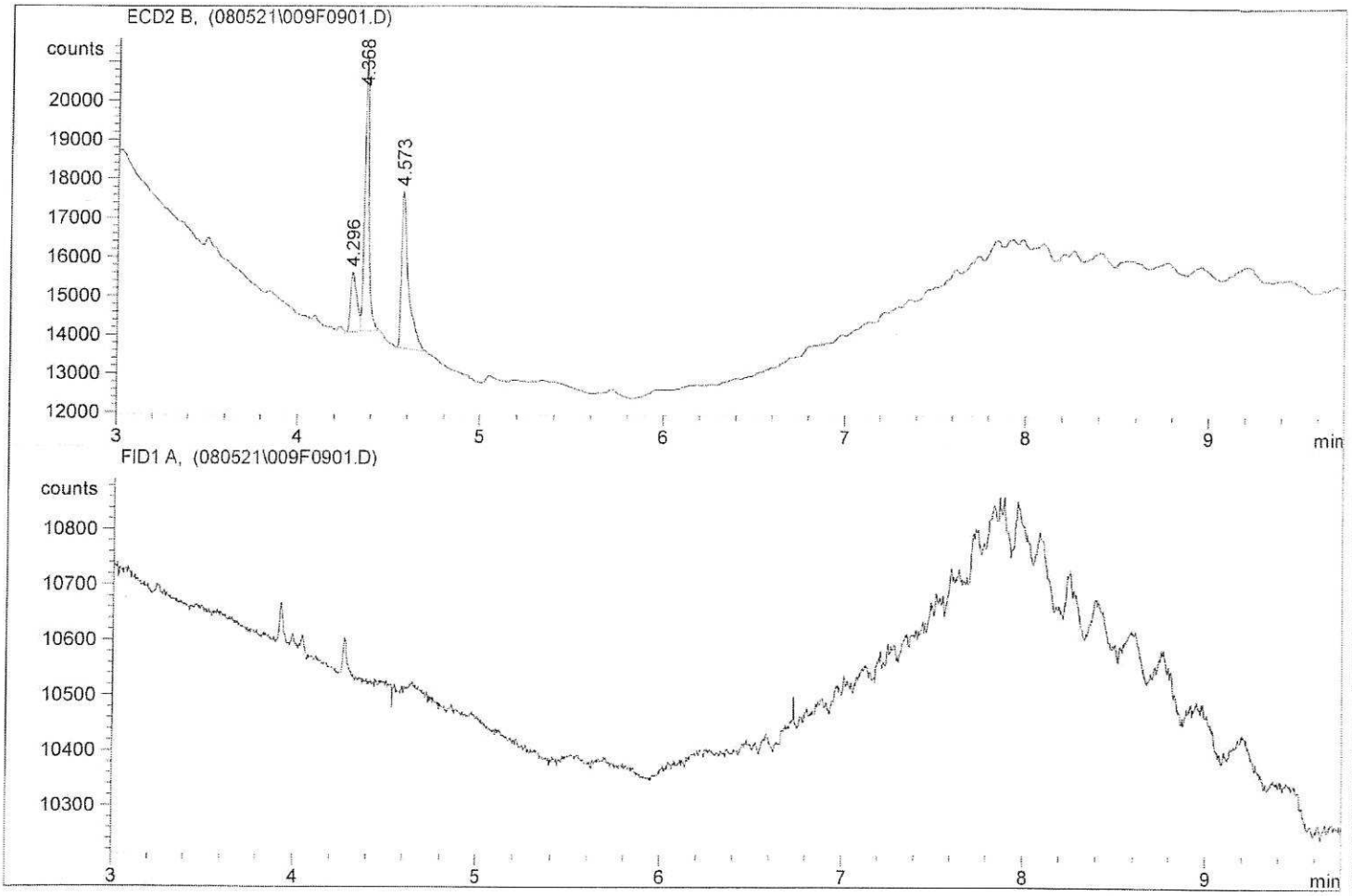
*** End of Report ***

Injection Date	: 8/5/2021 10:56:15 AM	Seq. Line :	3
Sample Name	: AR 1660 1PPM	Location :	Vial 3
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



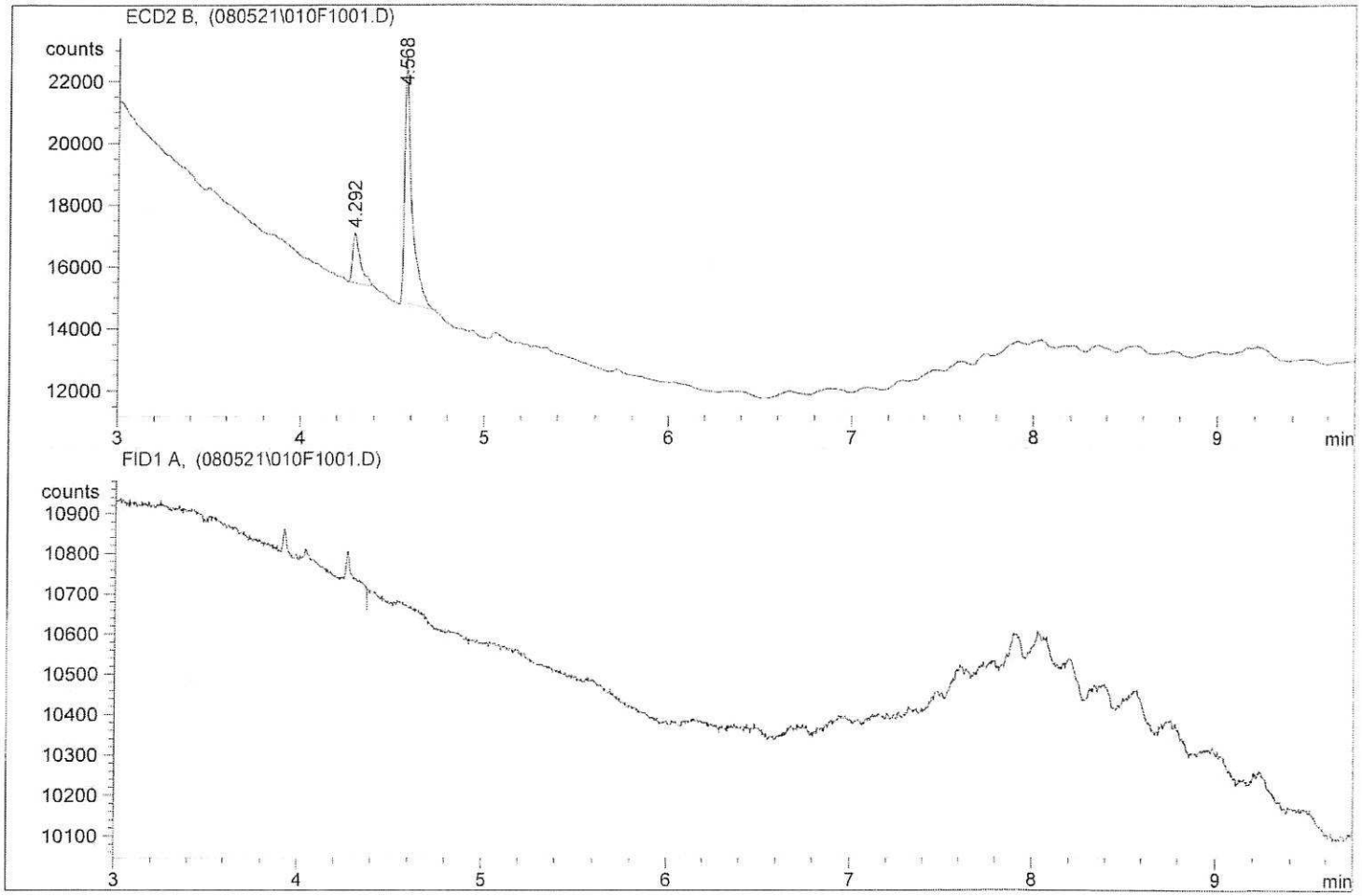
*** End of Report ***

Injection Date	: 8/5/2021 12:21:01 PM	Seq. Line :	9
Sample Name	: 21G0321 1	Location :	Vial 9
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



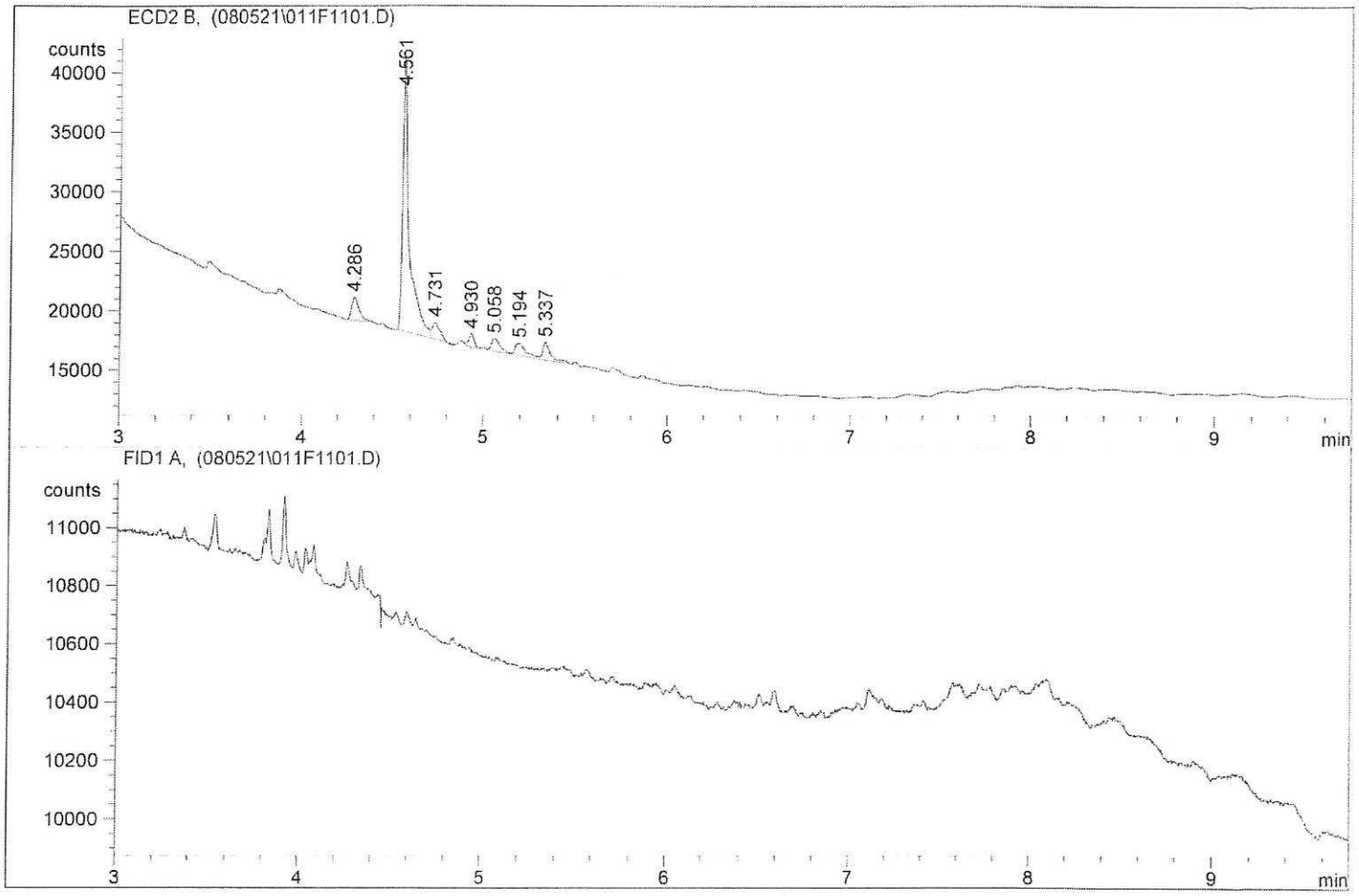
*** End of Report ***

Injection Date	: 8/5/2021 12:35:04 PM	Seq. Line :	10
Sample Name	: 21G0321 2	Location :	Vial 10
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



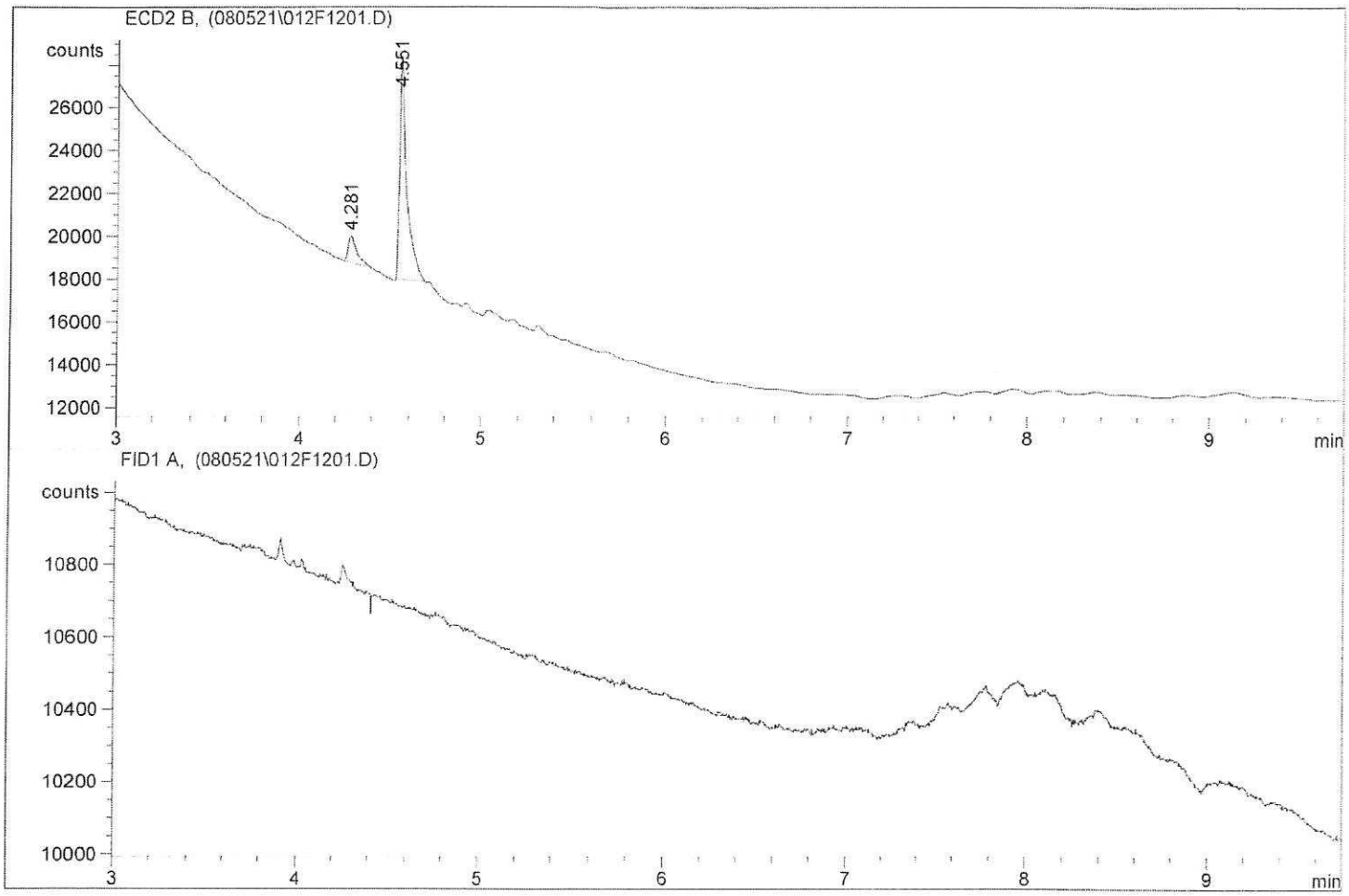
*** End of Report ***

Injection Date	: 8/5/2021 12:49:50 PM	Seq. Line :	11
Sample Name	: 21G0321 3	Location :	Vial 11
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



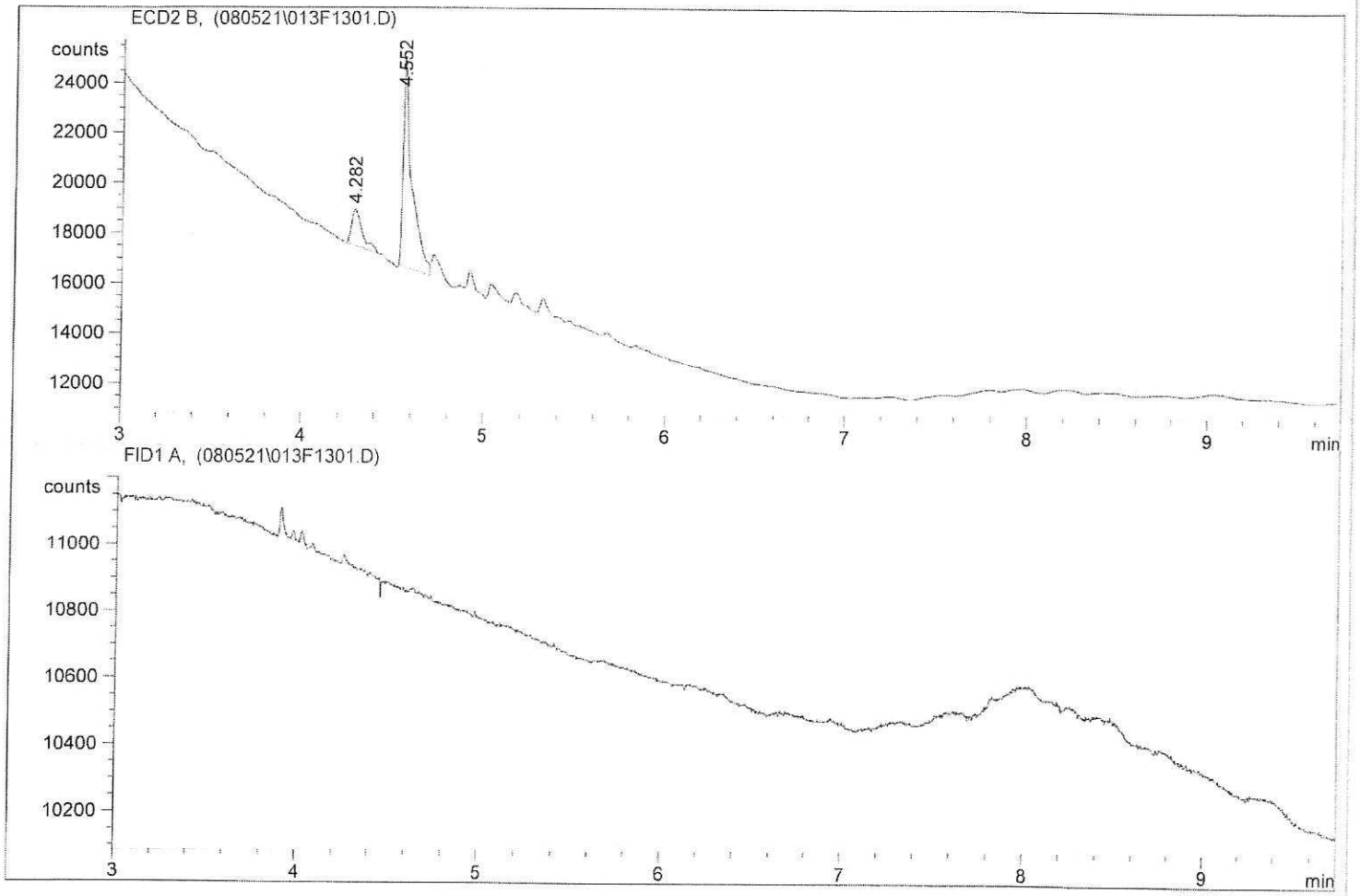
*** End of Report ***

Injection Date	: 8/5/2021 1:03:26 PM	Seq. Line :	12
Sample Name	: 21G0321 4	Location :	Vial 12
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Injection Date	: 8/5/2021 1:17:36 PM	Seq. Line :	13
Sample Name	: 21G0321 5	Location :	Vial 13
Acq. Operator	: JL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080521.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

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CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0168	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
LDW21-IT615A	21G0321-01	08192133ECD7.D	08/19/2021	
Reference	BJH0179-SRM1	08192132ECD7.D	08/19/2021	
LCS	BJH0179-BS1	08192129ECD7.D	08/19/2021	
Blank	BJH0179-BLK1	08192128ECD7.D	08/19/2021	
LDW21-IT618A	21G0321-03	08192135ECD7.D	08/19/2021	
LDW21-IT617A	21G0321-02	08192134ECD7.D	08/19/2021	

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CLEANUP BENCH SHEET

CJH0168

Matrix: Solid **Cleanup using: Organics - EPA 3665A Sulfuric Acid Cleanup** **Printed: 8/19/2021 12:08:36AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0321-01	A	LDW21-IT615A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0321-02	A	LDW21-IT617A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0321-03	A	LDW21-IT618A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0330-01	B	LDW21-IT701B	B 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0330-02	B	LDW21-IT701C	B 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0330-03	B	LDW21-IT701E	B 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
BJH0179-BLK1	-	Blank	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-BS1	-	LCS	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-MS1	-	Matrix Spike	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-SRM1	-	Reference	-	2.5	2.5	-	8/19/2021	CCT	

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CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0169	Cleanup Type:	Sulfur
Cleanup Method:	EPA 3660B Sulfur Cleanup	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LCS	BJH0179-BS1	08192129ECD7.D	08/19/2021	
Blank	BJH0179-BLK1	08192128ECD7.D	08/19/2021	
LDW21-IT618A	21G0321-03	08192135ECD7.D	08/19/2021	
LDW21-IT617A	21G0321-02	08192134ECD7.D	08/19/2021	
LDW21-IT615A	21G0321-01	08192133ECD7.D	08/19/2021	
Reference	BJH0179-SRM1	08192132ECD7.D	08/19/2021	

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CLEANUP BENCH SHEET

CJH0169

Matrix: Solid **Cleanup using: Organics - EPA 3660B Sulfur Cleanup** **Printed: 8/19/2021 12:09:08AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0321-01	A	LDW21-IT615A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0321-02	A	LDW21-IT617A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0321-03	A	LDW21-IT618A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0330-01	B	LDW21-IT701B	B 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0330-02	B	LDW21-IT701C	B 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0330-03	B	LDW21-IT701E	B 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
BJH0179-BLK1	-	Blank	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-BS1	-	LCS	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-MS1	-	Matrix Spike	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-SRM1	-	Reference	-	2.5	2.5	-	8/19/2021	CCT	

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CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0170	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
LCS	BJH0179-BS1	08192129ECD7.D	08/19/2021	
LDW21-IT615A	21G0321-01	08192133ECD7.D	08/19/2021	
LDW21-IT617A	21G0321-02	08192134ECD7.D	08/19/2021	
LDW21-IT618A	21G0321-03	08192135ECD7.D	08/19/2021	
Blank	BJH0179-BLK1	08192128ECD7.D	08/19/2021	
Reference	BJH0179-SRM1	08192132ECD7.D	08/19/2021	

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CLEANUP BENCH SHEET

CJH0170

Matrix: Solid **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup** **Printed: 8/19/2021 12:09:40AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0321-01	A	LDW21-IT615A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0321-02	A	LDW21-IT617A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0321-03	A	LDW21-IT618A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0330-01	B	LDW21-IT701B	B 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0330-02	B	LDW21-IT701C	B 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0330-03	B	LDW21-IT701E	B 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
BJH0179-BLK1	-	Blank	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-BS1	-	LCS	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-MS1	-	Matrix Spike	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/19/2021	CCT	
BJH0179-SRM1	-	Reference	-	2.5	2.5	-	8/19/2021	CCT	

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CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0171	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
Blank	BJH0193-BLK1	08192139ECD7.D	08/19/2021	
LDW21-IT624A	21G0321-04	08192144ECD7.D	08/19/2021	
LDW21-IT626A	21G0321-05	08192145ECD7.D	08/19/2021	
LCS	BJH0193-BS1	08192140ECD7.D	08/19/2021	
Matrix Spike	BJH0193-MS1	08192141ECD7.D	08/19/2021	
Matrix Spike Dup	BJH0193-MSD1	08192142ECD7.D	08/19/2021	
Reference	BJH0193-SRM1	08192143ECD7.D	08/19/2021	

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CLEANUP BENCH SHEET

CJH0171

Matrix: Solid **Cleanup using: Organics - EPA 3665A Sulfuric Acid Cleanup** **Printed: 8/19/2021 12:10:57AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0321-04	A	LDW21-IT624A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0321-05	A	LDW21-IT626A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
BJH0193-BLK1	-	Blank	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-BS1	-	LCS	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-MS1	-	Matrix Spike	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-SRM1	-	Reference	-	2.5	2.5	-	8/19/2021	CCT	

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CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0172	Cleanup Type:	Sulfur
Cleanup Method:	EPA 3660B Sulfur Cleanup	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Matrix Spike Dup	BJH0193-MSD1	08192142ECD7.D	08/19/2021	
LDW21-IT626A	21G0321-05	08192145ECD7.D	08/19/2021	
LDW21-IT624A	21G0321-04	08192144ECD7.D	08/19/2021	
Blank	BJH0193-BLK1	08192139ECD7.D	08/19/2021	
LCS	BJH0193-BS1	08192140ECD7.D	08/19/2021	
Matrix Spike	BJH0193-MS1	08192141ECD7.D	08/19/2021	
Reference	BJH0193-SRM1	08192143ECD7.D	08/19/2021	

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CLEANUP BENCH SHEET

CJH0172

Matrix: Solid **Cleanup using: Organics - EPA 3660B Sulfur Cleanup** **Printed: 8/19/2021 12:11:22AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0321-04	A	LDW21-IT624A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0321-05	A	LDW21-IT626A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
BJH0193-BLK1	-	Blank	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-BS1	-	LCS	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-MS1	-	Matrix Spike	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-SRM1	-	Reference	-	2.5	2.5	-	8/19/2021	CCT	

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CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0173	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
Matrix Spike	BJH0193-MS1	08192141ECD7.D	08/19/2021	
Reference	BJH0193-SRM1	08192143ECD7.D	08/19/2021	
LCS	BJH0193-BS1	08192140ECD7.D	08/19/2021	
Matrix Spike Dup	BJH0193-MSD1	08192142ECD7.D	08/19/2021	
Blank	BJH0193-BLK1	08192139ECD7.D	08/19/2021	
LDW21-IT626A	21G0321-05	08192145ECD7.D	08/19/2021	
LDW21-IT624A	21G0321-04	08192144ECD7.D	08/19/2021	

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CLEANUP BENCH SHEET

CJH0173

Matrix: Solid **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup** **Printed: 8/19/2021 12:11:48AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0321-04	A	LDW21-IT624A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
21G0321-05	A	LDW21-IT626A	A 01	2.5	2.5	8082A PCB Solid 4	8/19/2021	CCT	
BJH0193-BLK1	-	Blank	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-BS1	-	LCS	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-MS1	-	Matrix Spike	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/19/2021	CCT	
BJH0193-SRM1	-	Reference	-	2.5	2.5	-	8/19/2021	CCT	

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CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0250	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
Blank	BJH0604-BLK1	08272121ECD7.D	08/26/2021	
LCS	BJH0604-BS1	08272122ECD7.D	08/26/2021	
LCS Dup	BJH0604-BSD1	08272123ECD7.D	08/26/2021	
Reference	BJH0604-SRM1	08272124ECD7.D	08/26/2021	
LDW21-IT617A	21G0321-02RE1	08272126ECD7.D	08/26/2021	
LDW21-IT615A	21G0321-01RE1	08272125ECD7.D	08/26/2021	
LDW21-IT618A	21G0321-03RE1	08272127ECD7.D	08/26/2021	

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CLEANUP BENCH SHEET

CJH0250

Matrix: Solid **Cleanup using: Organics - EPA 3665A Sulfuric Acid Cleanup** **Printed: 8/26/2021 12:17:01AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0330-03RE1	B	LDW21-IT701E	B 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0330-02RE1	B	LDW21-IT701C	B 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0321-03RE1	A	LDW21-IT618A	A 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0330-01RE1	B	LDW21-IT701B	B 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0321-01RE1	A	LDW21-IT615A	A 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0321-02RE1	A	LDW21-IT617A	A 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
BJH0604-SRM1	-	Reference	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-BLK1	-	Blank	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-BS1	-	LCS	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-MS1	-	Matrix Spike	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-BSD1	-	LCS Dup	-	2.5	2.5	-	8/26/2021	CCT	

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Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0251	Cleanup Type:	Sulfur
Cleanup Method:	EPA 3660B Sulfur Cleanup	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	BJH0604-BLK1	08272121ECD7.D	08/26/2021	
LCS Dup	BJH0604-BSD1	08272123ECD7.D	08/26/2021	
LCS	BJH0604-BS1	08272122ECD7.D	08/26/2021	
Reference	BJH0604-SRM1	08272124ECD7.D	08/26/2021	
LDW21-IT618A	21G0321-03RE1	08272127ECD7.D	08/26/2021	
LDW21-IT617A	21G0321-02RE1	08272126ECD7.D	08/26/2021	
LDW21-IT615A	21G0321-01RE1	08272125ECD7.D	08/26/2021	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJH0251

Matrix: Solid **Cleanup using: Organics - EPA 3660B Sulfur Cleanup** **Printed: 8/26/2021 12:17:32AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0330-03RE1	B	LDW21-IT701E	B 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0330-02RE1	B	LDW21-IT701C	B 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0321-03RE1	A	LDW21-IT618A	A 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0330-01RE1	B	LDW21-IT701B	B 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0321-01RE1	A	LDW21-IT615A	A 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0321-02RE1	A	LDW21-IT617A	A 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
BJH0604-SRM1	-	Reference	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-BLK1	-	Blank	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-BS1	-	LCS	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-MS1	-	Matrix Spike	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-BSD1	-	LCS Dup	-	2.5	2.5	-	8/26/2021	CCT	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0252	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
LDW21-IT617A	21G0321-02RE1	08272126ECD7.D	08/26/2021	
Reference	BJH0604-SRM1	08272124ECD7.D	08/26/2021	
LDW21-IT618A	21G0321-03RE1	08272127ECD7.D	08/26/2021	
LDW21-IT615A	21G0321-01RE1	08272125ECD7.D	08/26/2021	
LCS Dup	BJH0604-BSD1	08272123ECD7.D	08/26/2021	
LCS	BJH0604-BS1	08272122ECD7.D	08/26/2021	
Blank	BJH0604-BLK1	08272121ECD7.D	08/26/2021	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJH0252

Matrix: Solid **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup** **Printed: 8/26/2021 12:18:06AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0330-03RE1	B	LDW21-IT701E	B 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0330-02RE1	B	LDW21-IT701C	B 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0321-03RE1	A	LDW21-IT618A	A 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0330-01RE1	B	LDW21-IT701B	B 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0321-01RE1	A	LDW21-IT615A	A 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
21G0321-02RE1	A	LDW21-IT617A	A 02	2.5	2.5	8082A PCB Solid 4	8/26/2021	CCT	
BJH0604-SRM1	-	Reference	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-BLK1	-	Blank	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-BS1	-	LCS	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-MS1	-	Matrix Spike	-	2.5	2.5	-	8/26/2021	CCT	
BJH0604-BSD1	-	LCS Dup	-	2.5	2.5	-	8/26/2021	CCT	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
METHOD BLANK DATA SHEET
EPA 8082A

Blank

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Solid	Laboratory ID:	BJH0179-BLK1	File ID:	08192128ECD7.D
Sampled:	N/A	Prepared:	08/06/21 11:30	Analyzed:	08/19/21 21:45
Solids:		Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.5 g / 2.5 mL
Batch:	BJH0179	Sequence:	SJH0254	Calibration:	EH00034
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

SURROGATES	ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl	8.0000	8.40	105	40 - 126	
Tetrachlorometaxylene	8.0000	8.01	100	44 - 120	
Decachlorobiphenyl [2C]	8.0000	8.12	101	40 - 126	
Tetrachlorometaxylene [2C]	8.0000	7.70	96.2	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: /210819.b/08192128ECD7.D
Data file 2: /210819.b/210819.b/08192128ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0179-BLK1
Client ID:
Injection Date: 19-AUG-2021 21:45
Report Date: 08/30/2021 09:54
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.069	0.001	134017	5.412	0.000	385307	40.1	38.5	4.1	Tetrachloro-m-xylene
13.164	-0.002	195793	13.846	-0.003	1105404	42.0	40.6	3.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	276713	6.9
Hexabromobiphenyl	425681	513549	20.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	779279	8.1
Hexabromobiphenyl	863111	1225775	42.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
		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	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
		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	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
		Col1Ave: <3 Quant Peaks				Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
		Col1Ave: <3 Quant Peaks				Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks				Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks				Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.168 - 13.065) = 120161 Col1 Total PCB = 0.0 ppm*

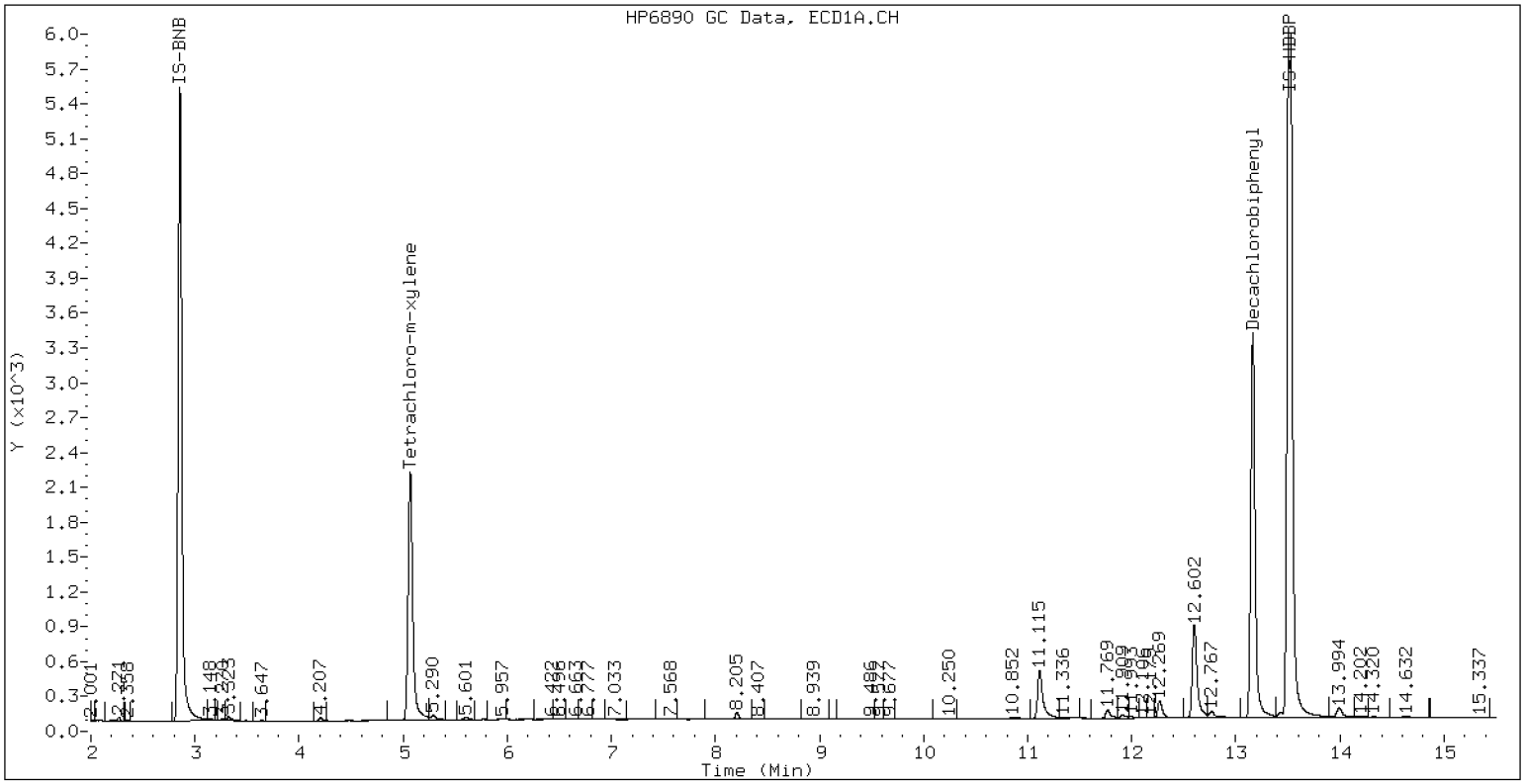
Total PCB Area Col2 (5.168 - 13.065) = 618127 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

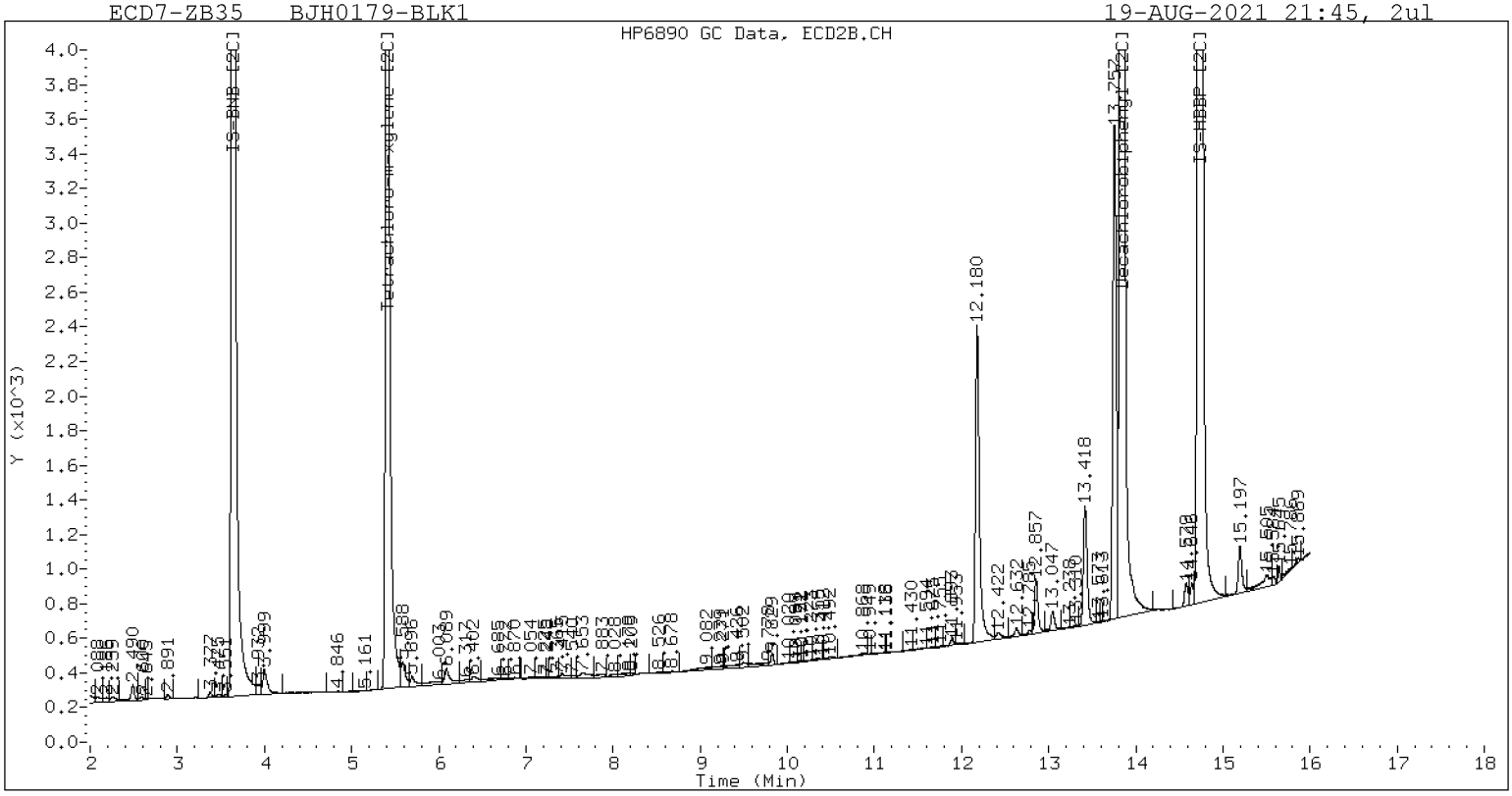
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0179-BLK1 19-AUG-2021 21:45, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0179-BLK1 19-AUG-2021 21:45, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
METHOD BLANK DATA SHEET
EPA 8082A

Blank

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Solid	Laboratory ID:	BJH0193-BLK1	File ID:	08192139ECD7.D
Sampled:	N/A	Prepared:	08/06/21 13:00	Analyzed:	08/20/21 01:30
Solids:		Preparation:	EPA 3550C (Ultrasonic)	Initial/Final:	12.5 g / 2.5 mL
Batch:	BJH0193	Sequence:	SJH0254	Calibration:	EH00034
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

SURROGATES	ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl	8.0000	7.40	92.5	40 - 126	
Tetrachlorometaxylene	8.0000	6.70	83.8	44 - 120	
Decachlorobiphenyl [2C]	8.0000	7.22	90.2	40 - 126	
Tetrachlorometaxylene [2C]	8.0000	6.34	79.2	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: /210819.b/08192139ECD7.D
Data file 2: /210819.b/210819.b/08192139ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0193-BLK1
Client ID:
Injection Date: 20-AUG-2021 01:30
Report Date: 08/23/2021 17:05
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.001	114406	5.412	0.001	329272	33.5	31.7	5.6	Tetrachloro-m-xylene
13.164	-0.002	171422	13.848	-0.001	1010169	37.0	36.1	2.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	282356	9.1
Hexabromobiphenyl	425681	510219	19.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	808740	12.2
Hexabromobiphenyl	863111	1259900	46.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	---			0.0
Aroclor-1016	2	---			0.0	2	7.677	0.026	5730	5.6
Aroclor-1016	3	---			0.0	3	7.884	0.027	2716	6.7
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	6.090	0.017	3998	28.8
Aroclor-1221	3	---			0.0	3	6.405	-0.004	1005	4.1
	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	8.205	0.100	4588	13.7
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	9.425	0.045	4373	7.9
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	9.425	0.093	4373	10.8
Aroclor-1254	3	---			0.0	3	9.826	0.064	764	1.5
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	10.162	0.011	863	0.7
	Col1Ave: <3 Quant Peaks					Col2Ave: 4.3				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	12.293	0.033	534	0.3
Aroclor-1260	4	---			0.0	4	12.950	-0.020	445	0.5
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	12.195	0.007	672	0.5
Aroclor-1262	4	---			0.0	4	12.950	-0.022	445	0.3
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	12.195	-0.005	672	0.2
Aroclor-1268	2	---			0.0	2	12.293	0.026	534	0.1
Aroclor-1268	3	11.990	-0.010	909	1.6	3	12.631	-0.013	2849	0.8
Aroclor-1268	4	12.770	-0.001	2591	1.4	4	12.785	0.002	1255	1.5
	Col1Ave: <3 Quant Peaks					Col2Ave: 0.7				

Total PCB Area Col1 (5.168 - 13.065) = 19889 Col1 Total PCB = 0.0 ppm*

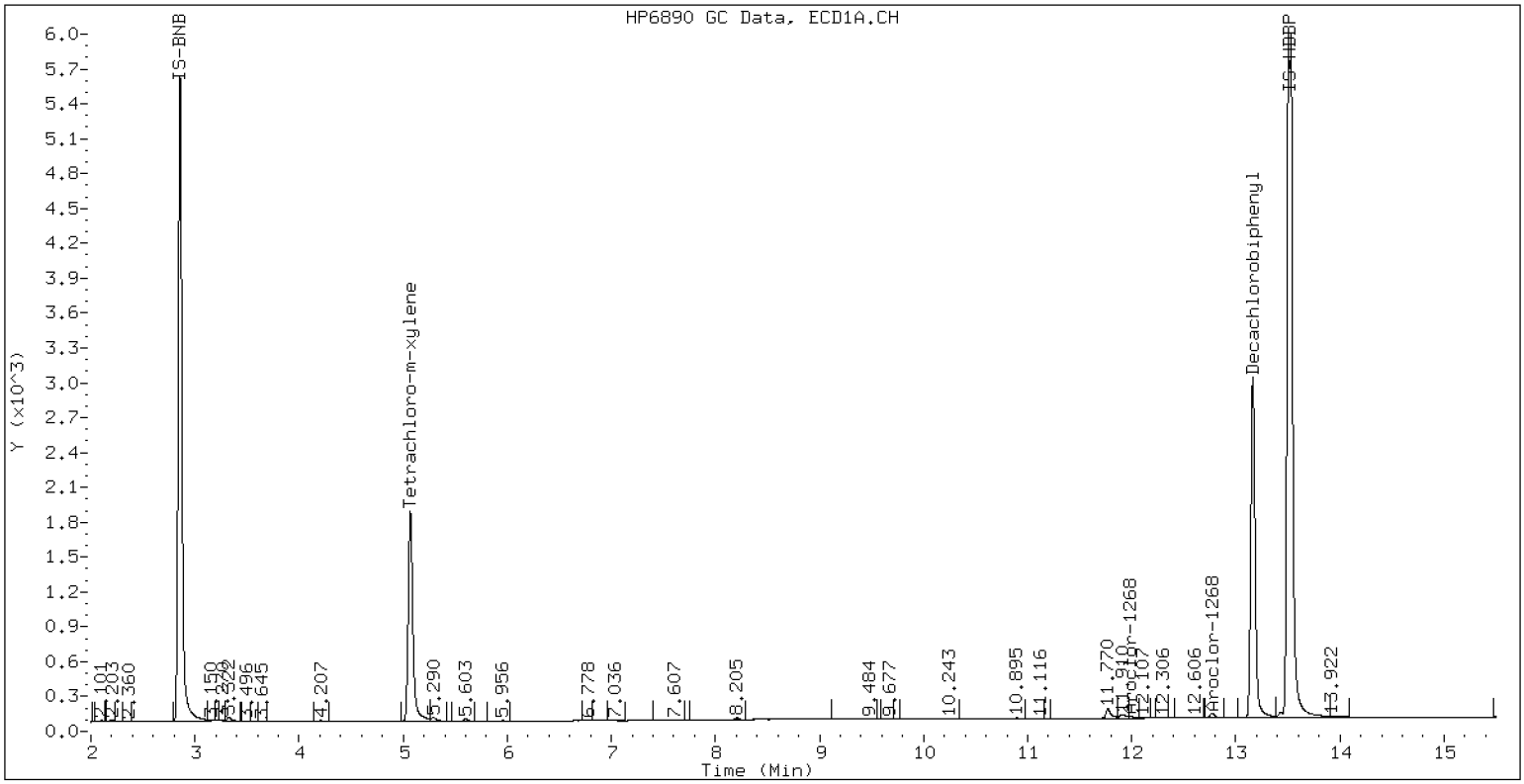
Total PCB Area Col2 (5.168 - 13.065) = 416088 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

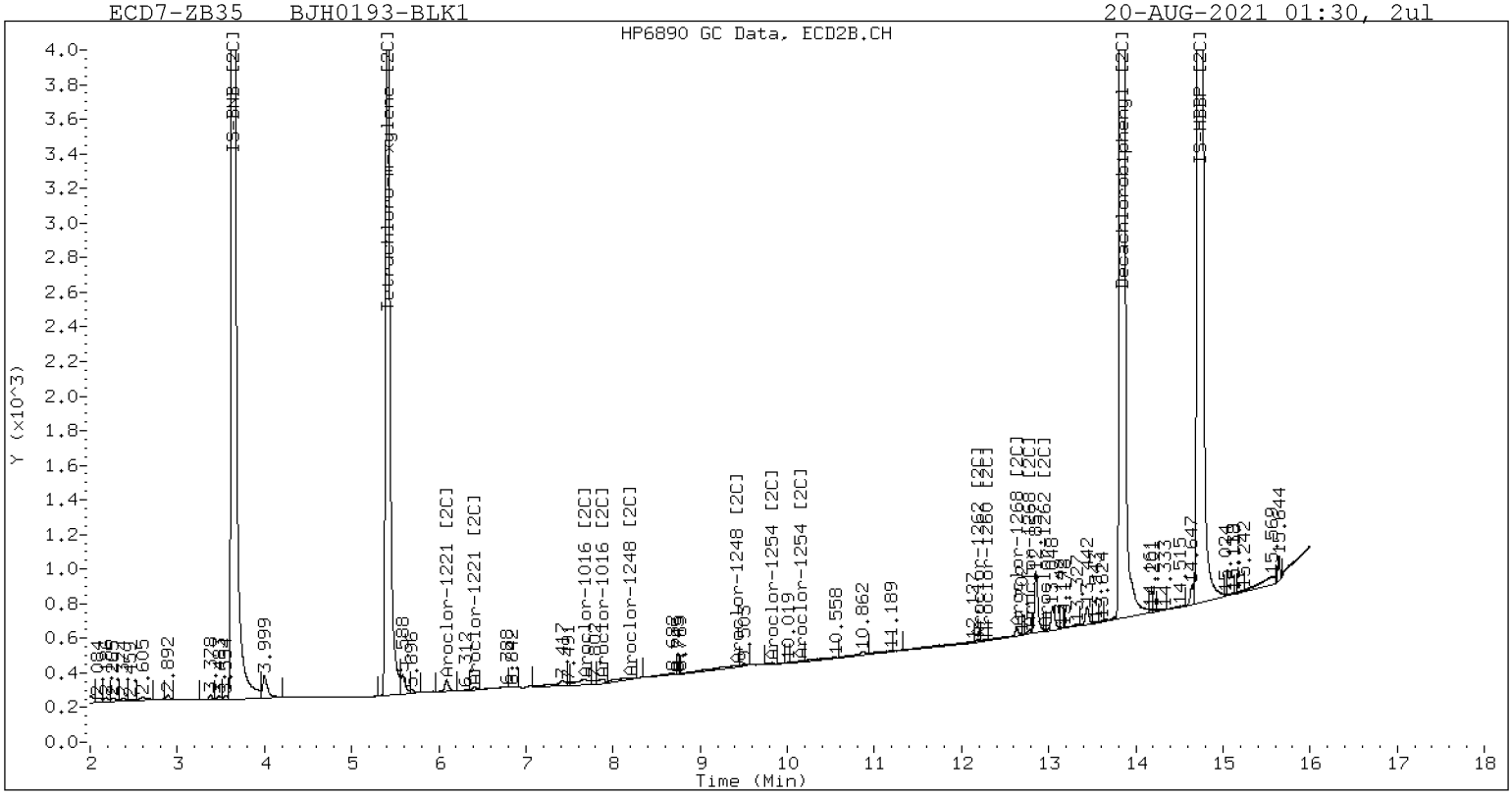
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0193-BLK1 20-AUG-2021 01:30, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0193-BLK1 20-AUG-2021 01:30, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
METHOD BLANK DATA SHEET
EPA 8082A

Blank

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Solid	Laboratory ID:	BJH0604-BLK1	File ID:	08272121ECD7.D
Sampled:	N/A	Prepared:	08/25/21 13:40	Analyzed:	08/27/21 22:47
Solids:		Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.5 g / 2.5 mL
Batch:	BJH0604	Sequence:	SJH0396	Calibration:	EH00034
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

SURROGATES	ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl	8.0000	6.46	80.7	40 - 126	
Tetrachlorometaxylene	8.0000	6.19	77.4	44 - 120	
Decachlorobiphenyl [2C]	8.0000	5.96	74.6	40 - 126	
Tetrachlorometaxylene [2C]	8.0000	5.81	72.7	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: /2108127.b/08272121ECD7.D
Data file 2: /2108127.b/2108127.b/08272121ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0604-BLK1
Client ID:
Injection Date: 27-AUG-2021 22:47
Report Date: 08/30/2021 14:36
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.001	96273	5.413	-0.001	260327	30.9	29.1	6.3	Tetrachloro-m-xylene
13.163	-0.003	134538	13.843	-0.000	720495	32.3	29.8	8.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	257413	-0.6
Hexabromobiphenyl	425681	458995	7.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	696987	-3.3
Hexabromobiphenyl	863111	1087353	26.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	7.670	0.016	1199	1.3
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	8.104	-0.001	526	2.5
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	4.637	-0.040	437	8.4
Aroclor-1221	2	---			0.0	2	6.091	0.019	3170	26.5
Aroclor-1221	3	---			0.0	3	6.405	-0.004	874	4.2
	Col1Ave: <3 Quant Peaks					Col2Ave: 13.0				
Aroclor-1232	1	---			0.0	1	4.637	-0.042	437	14.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	7.670	0.019	1199	3.3
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	8.104	-0.002	526	1.8
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	9.343	-0.039	742	1.6
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	9.261	0.023	3045	5.1
Aroclor-1254	2	---			0.0	2	9.343	0.011	742	2.1
Aroclor-1254	3	---			0.0	3	9.831	0.069	1978	4.4
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: 3.9				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	12.187	-0.072	2541	1.5
Aroclor-1260	4	---			0.0	4	13.047	0.077	5897	7.3
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	10.964	-0.006	603	0.5
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	12.187	-0.001	2541	2.0
Aroclor-1262	4	---			0.0	4	13.047	0.074	5897	5.1
	Col1Ave: <3 Quant Peaks					Col2Ave: 2.5				
Aroclor-1268	1	---			0.0	1	12.187	-0.013	2541	0.8
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.911	-0.090	2084	4.1	3	12.641	-0.003	263	0.1
Aroclor-1268	4	12.774	0.002	970	0.6	4	12.782	-0.001	593	0.8
	Col1Ave: <3 Quant Peaks					Col2Ave: 0.6				

Total PCB Area Col1 (5.170 - 13.066) = 13293 Col1 Total PCB = 0.0 ppm*

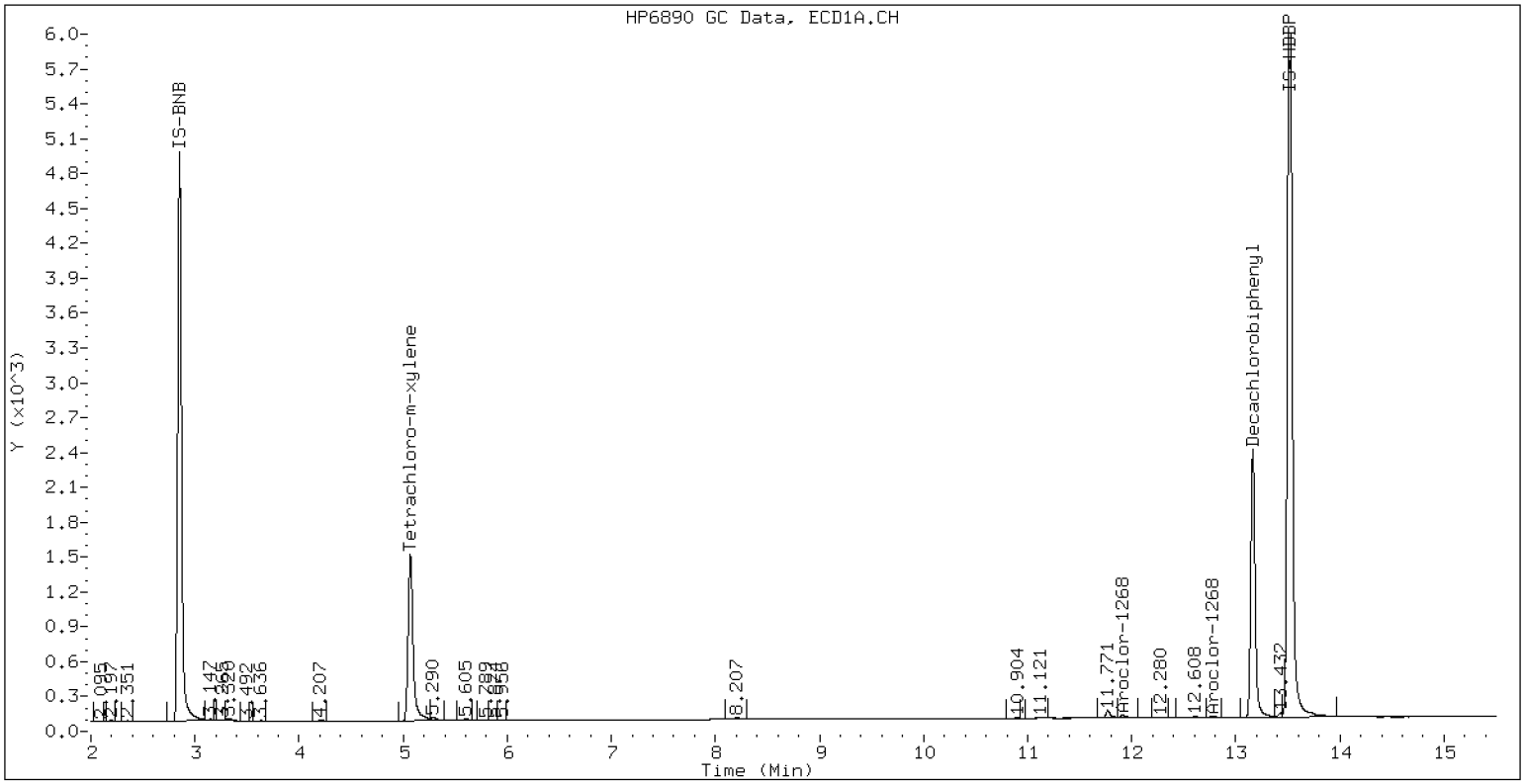
Total PCB Area Col2 (5.170 - 13.066) = 317795 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

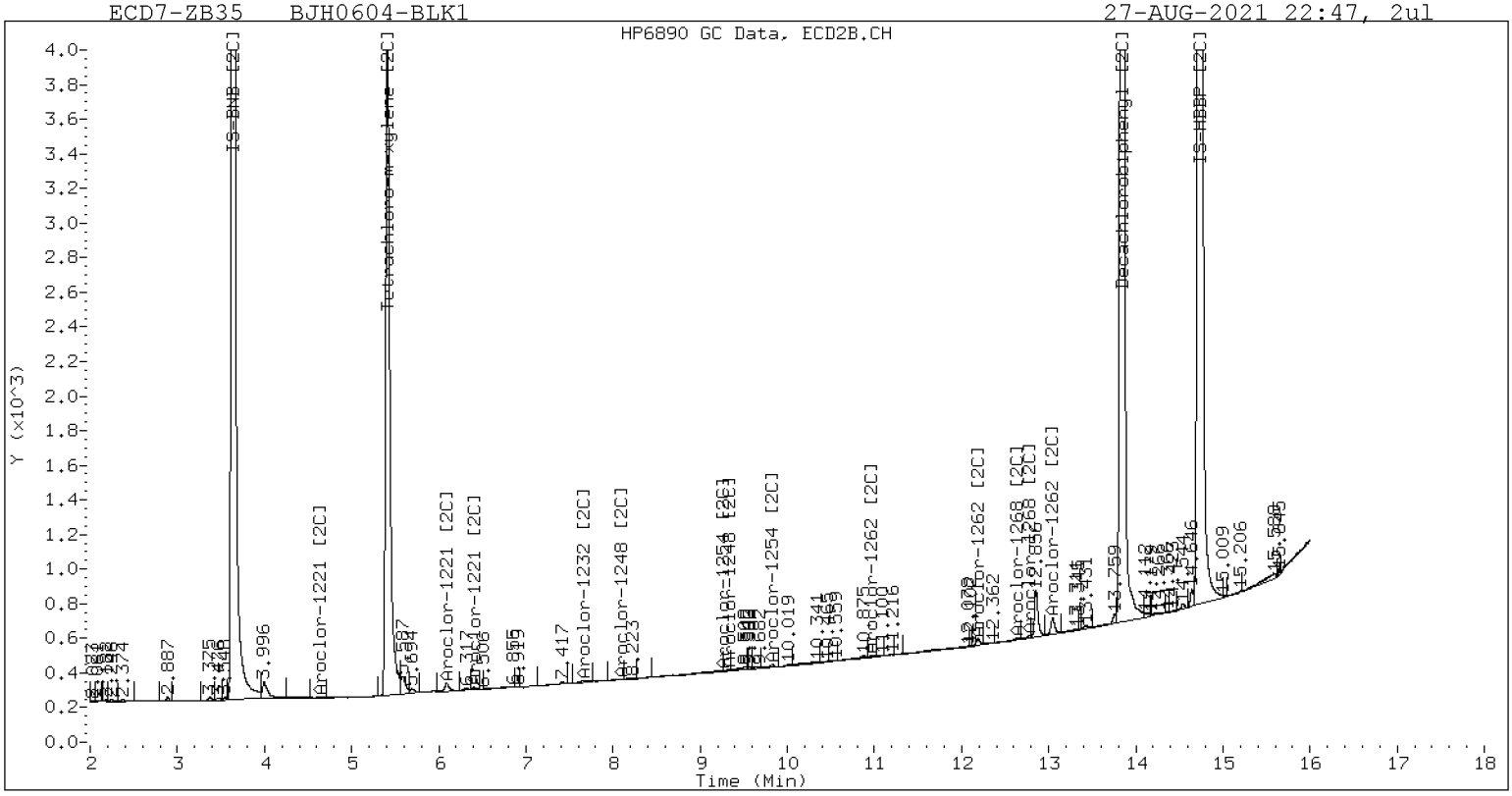
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0604-BLK1 27-AUG-2021 22:47, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0604-BLK1 27-AUG-2021 22:47, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LCS / LCS DUPLICATE RECOVERY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/19/21 22:05
Batch:	BJH0179	Laboratory ID:	BJH0179-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	101	159	*	157	*	56 - 120
Aroclor 1260	101	147	*	145	*	58 - 120

* Indicates values outside of QC limits

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

Data file 1: /210819.b/08192129ECD7.D
Data file 2: /210819.b/210819.b/08192129ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0179-BS1
Client ID:
Injection Date: 19-AUG-2021 22:05
Report Date: 08/30/2021 09:54
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.001	205280	5.410	-0.001	533731	60.8	53.6	12.6	Tetrachloro-m-xylene
13.161	-0.005	250707	13.843	-0.006	1421493	65.8	56.7	14.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	279255	7.9
Hexabromobiphenyl	425681	419772	-1.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	774764	7.5
Hexabromobiphenyl	863111	1129011	30.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.654	-0.005	79824	806.0	1	7.052	-0.003	286928	649.5
Aroclor-1016	2	7.026	-0.006	279994	924.5	2	7.643	-0.008	803812	813.4
Aroclor-1016	3	7.172	-0.006	92980	684.1	3	7.848	-0.009	262136	675.9
Aroclor-1016	4	7.280	-0.008	64389	755.6	4	8.100	-0.004	223117	950.6
Total Col1Ave (4 peaks):				792.5		Total Col2Ave (4 peaks):			772.4	RPD = 3
Corrected Ave (3 peaks):				748.6		Corrected Ave (3 peaks):			712.9	RPD = 5
Aroclor-1221	1	4.015	-0.000	467	21.2	1	4.678	0.001	2811	48.3
Aroclor-1221	2	5.446	-0.005	7451	215.5	2	6.071	-0.002	29959	225.0
Aroclor-1221	3	5.721	-0.003	42720	457.4	3	6.405	-0.004	116273	501.1
Total Col1Ave (3 peaks):				231.4		Total Col2Ave (3 peaks):			258.2	RPD = 11
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.015	-0.003	467	34.5	1	4.678	-0.001	2811	81.2
Aroclor-1232	2	5.721	-0.005	42720	580.3	2	7.052	-0.006	286928	1418.1
Aroclor-1232	3	7.026	-0.007	279994	2492.1	3	7.643	-0.008	803812	1985.0
Aroclor-1232	4	7.960	-0.012	101419	2194.3	4	8.514	-0.008	241368	2288.0
Total Col1Ave (4 peaks):				1325.3		Total Col2Ave (4 peaks):			1443.1	RPD = 9
Corrected Ave (3 peaks):				936.4		Corrected Ave (3 peaks):			1161.4	RPD = 21
Aroclor-1242	1	6.654	-0.006	79824	1037.5	1	7.052	-0.003	286928	805.5
Aroclor-1242	2	7.026	-0.008	279994	1220.7	2	7.643	-0.006	803812	1038.8
Aroclor-1242	3	8.377	-0.004	65956	507.6	3	8.935	-0.018	94092	260.3
Aroclor-1242	4	8.668	-0.007	61108	1150.8	4	9.015	-0.018	53505	130.4
Total Col1Ave (4 peaks):				979.2		Total Col2Ave (4 peaks):			558.8	RPD = 55*
Corrected Ave (3 peaks):				898.6		Corrected Ave (3 peaks):			398.7	RPD = 77*
Aroclor-1248	1	7.795	-0.005	75320	643.6	1	8.100	-0.005	223117	694.9
Aroclor-1248	2	7.960	-0.011	101419	663.9	2	8.514	-0.006	241368	617.6
Aroclor-1248	3	8.377	-0.004	65956	294.9	3	8.935	-0.017	94092	151.2
Aroclor-1248	4	8.668	-0.008	61108	478.6	4	9.365	-0.015	27153	51.4
Total Col1Ave (4 peaks):				520.2		Total Col2Ave (4 peaks):			378.8	RPD = 31
Corrected Ave (3 peaks):				472.3		Corrected Ave (3 peaks):			273.4	RPD = 53*
Aroclor-1254	1	8.668	-0.009	61108	253.6	1	9.231	-0.008	172673	262.0
Aroclor-1254	2	8.739	-0.009	9699	87.0	2	9.322	-0.010	17695	45.7
Aroclor-1254	3	9.036	-0.006	15731	100.2	3	9.755	-0.008	39364	78.3
Aroclor-1254	4	9.167	-0.013	77246	257.5	4	9.912	-0.003	339572	304.9
Aroclor-1254	5	9.852	-0.018	67766	359.7	5	10.151	-0.001	516467	457.3
Total Col1Ave (5 peaks):				211.6		Total Col2Ave (5 peaks):			229.7	RPD = 8
Corrected Ave (4 peaks):				174.6		Corrected Ave (4 peaks):			172.7	RPD = 1
Aroclor-1260	1	10.378	-0.007	136706	723.9	1	11.420	-0.004	514263	547.9
Aroclor-1260	2	10.696	-0.007	137842	743.7	2	11.673	-0.005	1592531	583.8
Aroclor-1260	3	11.045	-0.009	354304	707.2	3	12.253	-0.007	927337	528.7
Aroclor-1260	4	11.446	-0.009	174186	780.4	4	12.966	-0.005	481158	573.8
Aroclor-1260	5	11.549	-0.007	79214	708.8	NS	---			----
Total Col1Ave (5 peaks):				732.8		Total Col2Ave (4 peaks):			558.5	RPD = 27
Corrected Ave (4 peaks):				720.9		Corrected Ave (3 peaks):			550.1	RPD = 27
Aroclor-1262	1	10.378	-0.006	136706	533.7	1	10.962	-0.008	523805	379.4
Aroclor-1262	2	11.446	-0.009	174186	1050.1	2	11.673	-0.012	1592531	546.7
Aroclor-1262	3	11.621	-0.005	101483	424.4	3	12.184	-0.004	477304	369.1
Aroclor-1262	4	12.269	-0.006	92134	469.3	4	12.966	-0.007	481158	399.3
Total Col1Ave (4 peaks):				619.4		Total Col2Ave (4 peaks):			423.6	RPD = 38
Corrected Ave (3 peaks):				475.8		Corrected Ave (3 peaks):			382.6	RPD = 22
Aroclor-1268	1	11.549	-0.009	79214	140.7	1	12.184	-0.016	477304	147.1
Aroclor-1268	2	11.621	-0.004	101483	171.8	2	12.253	-0.014	927337	262.0
Aroclor-1268	3	12.022	0.021	41901	90.2	3	12.628	-0.016	21515	7.0
Aroclor-1268	4	12.762	-0.010	22543	15.0	4	12.776	-0.007	14855	19.6
Total Col1Ave (4 peaks):				104.4		Total Col2Ave (4 peaks):			108.9	RPD = 4

Corrected Ave (3 peaks): 82.0 Corrected Ave (3 peaks): 57.9 RPD = 34

Total PCB Area Col1 (5.168 - 13.065) = 4061388 Col1 Total PCB = 1.4 ppm*

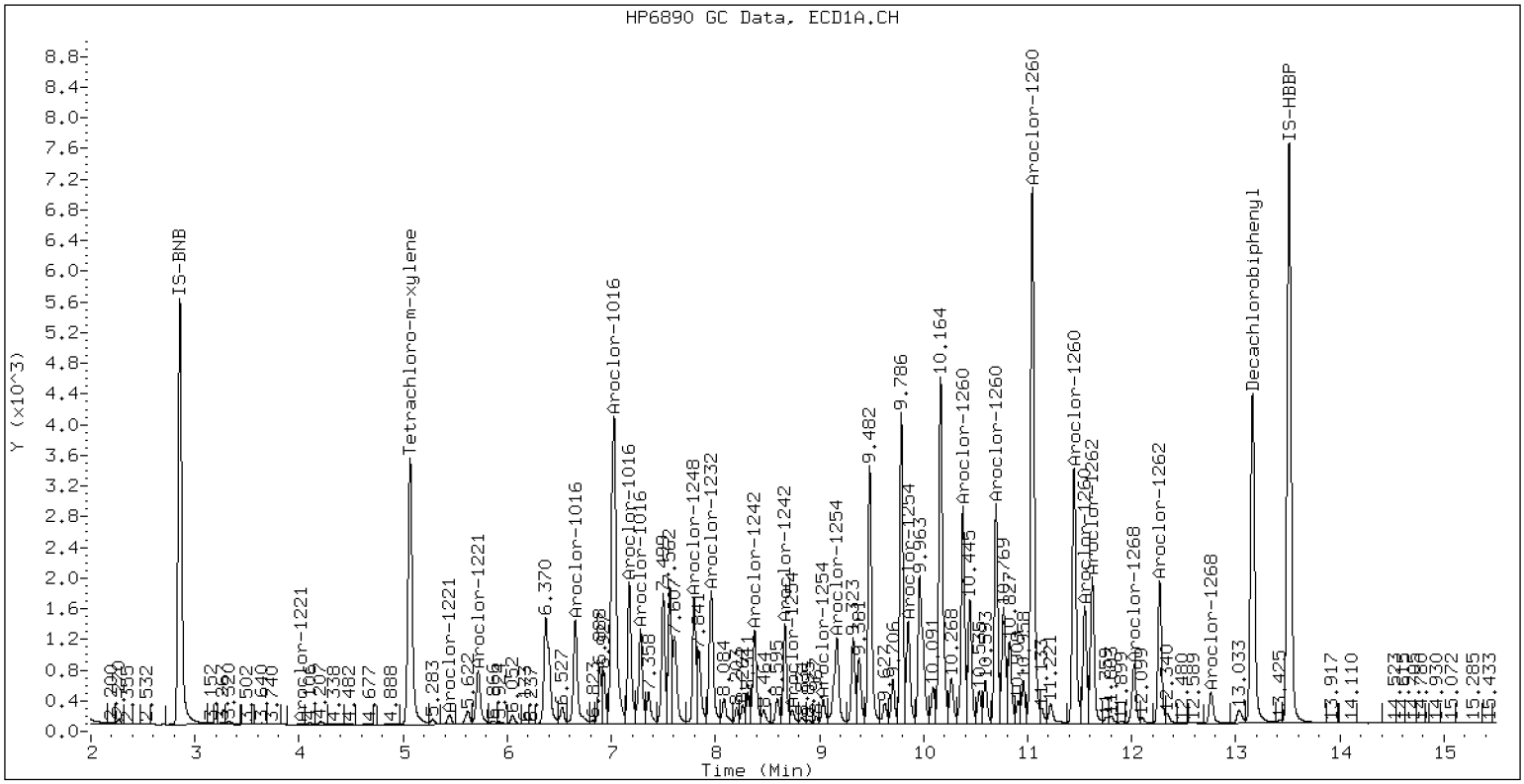
Total PCB Area Col2 (5.168 - 13.065) = 13945136 Col2 Total PCB = 1.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

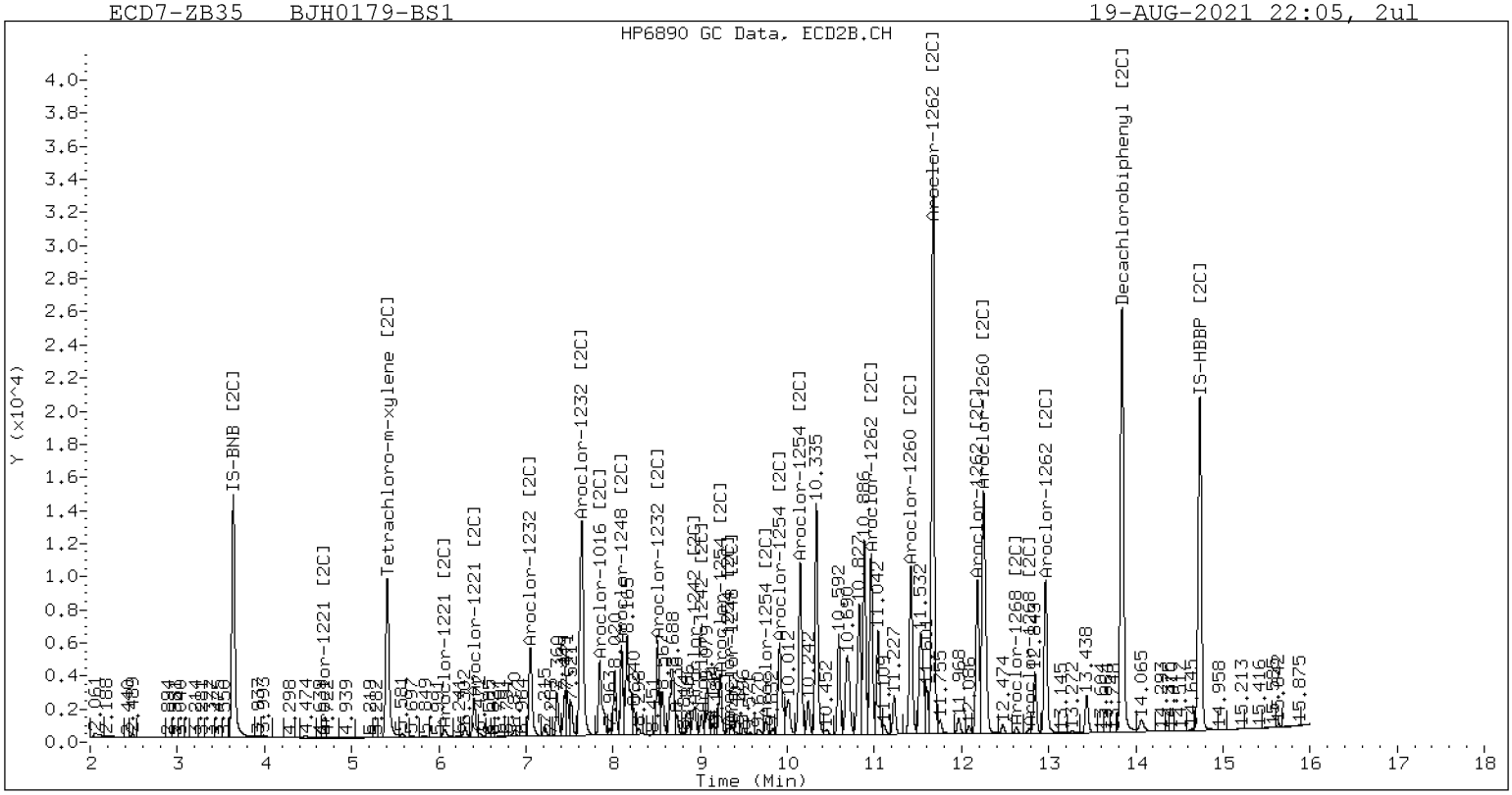
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0179-BS1 19-AUG-2021 22:05, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0179-BS1 19-AUG-2021 22:05, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LCS / LCS DUPLICATE RECOVERY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/20/21 01:51
Batch:	BJH0193	Laboratory ID:	BJH0193-BS1
Preparation:	EPA 3550C (Ultrasonic)	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	101	75.6		75.0	56 - 120
Aroclor 1260	101	75.2		74.6	58 - 120

* Indicates values outside of QC limits

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

Data file 1: /210819.b/08192140ECD7.D
Data file 2: /210819.b/210819.b/08192140ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0193-BS1
Client ID:
Injection Date: 20-AUG-2021 01:51
Report Date: 08/23/2021 17:05
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.001	113128	5.412	0.000	323607	32.8	30.9	5.9	Tetrachloro-m-xylene
13.163	-0.002	169926	13.847	-0.002	1009016	36.9	36.0	2.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	285774	10.4
Hexabromobiphenyl	425681	507556	19.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	815516	13.1
Hexabromobiphenyl	863111	1262918	46.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.658	-0.001	37288	367.9	1	7.054	-0.001	163492	351.6
Aroclor-1016	2	7.030	-0.003	122018	393.7	2	7.646	-0.004	392492	377.3
Aroclor-1016	3	7.176	-0.003	50509	363.1	3	7.852	-0.005	156666	383.8
Aroclor-1016	4	7.286	-0.003	33770	387.3	4	8.102	-0.002	92559	374.7
Total Col1Ave (4 peaks):				378.0		Total Col2Ave (4 peaks):			371.8	RPD = 2
Corrected Ave (3 peaks):				372.8		Corrected Ave (3 peaks):			367.9	RPD = 1
Aroclor-1221	1	4.020	0.005	188	8.3	1	4.672	-0.004	712	11.6
Aroclor-1221	2	5.449	-0.002	4110	116.2	2	6.072	-0.000	15821	112.9
Aroclor-1221	3	5.723	-0.001	22528	235.7	3	6.408	-0.001	71448	292.6
Total Col1Ave (3 peaks):				120.1		Total Col2Ave (3 peaks):			139.0	RPD = 15
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.020	0.002	188	13.6	1	4.672	-0.007	712	19.5
Aroclor-1232	2	5.723	-0.003	22528	299.0	2	7.054	-0.004	163492	767.7
Aroclor-1232	3	7.030	-0.004	122018	1061.2	3	7.646	-0.005	392492	920.8
Aroclor-1232	4	7.966	-0.006	44645	943.9	4	8.516	-0.006	124752	1123.5
Total Col1Ave (4 peaks):				579.4		Total Col2Ave (4 peaks):			707.9	RPD = 20
Corrected Ave (3 peaks):				418.8		Corrected Ave (3 peaks):			569.3	RPD = 30
Aroclor-1242	1	6.658	-0.002	37288	473.6	1	7.054	-0.001	163492	436.0
Aroclor-1242	2	7.030	-0.004	122018	519.8	2	7.646	-0.003	392492	481.9
Aroclor-1242	3	8.381	-0.001	33215	249.8	3	8.929	-0.024	48055	126.3
Aroclor-1242	4	8.673	-0.003	30626	563.6	4	9.027	-0.006	14258	33.0
Total Col1Ave (4 peaks):				451.7		Total Col2Ave (4 peaks):			269.3	RPD = 51*
Corrected Ave (3 peaks):				414.4		Corrected Ave (3 peaks):			198.5	RPD = 70*
Aroclor-1248	1	7.798	-0.003	34970	292.0	1	8.102	-0.003	92559	273.9
Aroclor-1248	2	7.966	-0.005	44645	285.6	2	8.516	-0.004	124752	303.3
Aroclor-1248	3	8.381	0.001	33215	145.1	3	8.929	-0.023	48055	73.3
Aroclor-1248	4	8.673	-0.004	30626	234.4	4	9.375	-0.005	9144	16.4
Total Col1Ave (4 peaks):				239.3		Total Col2Ave (4 peaks):			166.7	RPD = 36
Corrected Ave (3 peaks):				221.7		Corrected Ave (3 peaks):			121.2	RPD = 59*
Aroclor-1254	1	8.673	-0.004	30626	124.2	1	9.234	-0.005	94105	135.6
Aroclor-1254	2	---			0.0	2	9.324	-0.008	2179	5.4
Aroclor-1254	3	9.041	-0.000	4426	27.5	3	9.759	-0.004	17128	32.4
Aroclor-1254	4	9.172	-0.008	27621	90.0	4	9.923	0.009	231734	197.7
Aroclor-1254	5	9.855	-0.015	37424	194.1	5	10.153	0.002	297620	250.4
Total Col1Ave (4 peaks):				109.0		Total Col2Ave (5 peaks):			124.3	RPD = 13
Corrected Ave (3 peaks):				80.6		Corrected Ave (4 peaks):			92.8	RPD = 14
Aroclor-1260	1	10.382	-0.004	83458	365.5	1	11.422	-0.002	333645	317.8
Aroclor-1260	2	10.699	-0.004	84600	377.5	2	11.676	-0.002	962367	315.4
Aroclor-1260	3	11.050	-0.004	225153	371.7	3	12.256	-0.004	633992	323.1
Aroclor-1260	4	11.451	-0.004	105956	392.6	4	12.968	-0.003	330244	352.0
Aroclor-1260	5	11.553	-0.003	50232	371.8	NS	---			----
Total Col1Ave (5 peaks):				375.8		Total Col2Ave (4 peaks):			327.1	RPD = 14
Corrected Ave (4 peaks):				371.6		Corrected Ave (3 peaks):			318.8	RPD = 15
Aroclor-1262	1	10.382	-0.002	83458	269.5	1	10.964	-0.006	360362	233.3
Aroclor-1262	2	11.451	-0.004	105956	528.3	2	11.676	-0.010	962367	295.3
Aroclor-1262	3	11.626	-0.001	63810	220.7	3	12.186	-0.002	304513	210.5
Aroclor-1262	4	12.274	-0.001	61963	261.0	4	12.968	-0.005	330244	245.0
Total Col1Ave (4 peaks):				319.9		Total Col2Ave (4 peaks):			246.0	RPD = 26
Corrected Ave (3 peaks):				250.4		Corrected Ave (3 peaks):			229.6	RPD = 9
Aroclor-1268	1	11.553	-0.004	50232	73.8	1	12.186	-0.014	304513	83.9
Aroclor-1268	2	11.626	0.000	63810	89.3	2	12.256	-0.011	633992	160.1
Aroclor-1268	3	12.027	0.027	25974	46.2	3	12.630	-0.014	12763	3.7
Aroclor-1268	4	12.767	-0.005	15527	8.6	4	12.780	-0.003	8151	9.6
Total Col1Ave (4 peaks):				54.5		Total Col2Ave (4 peaks):			64.3	RPD = 17

Corrected Ave (3 peaks): 42.9 Corrected Ave (3 peaks): 32.4 RPD = 28

Total PCB Area Col1 (5.168 - 13.065) = 2183123 Col1 Total PCB = 0.8 ppm*

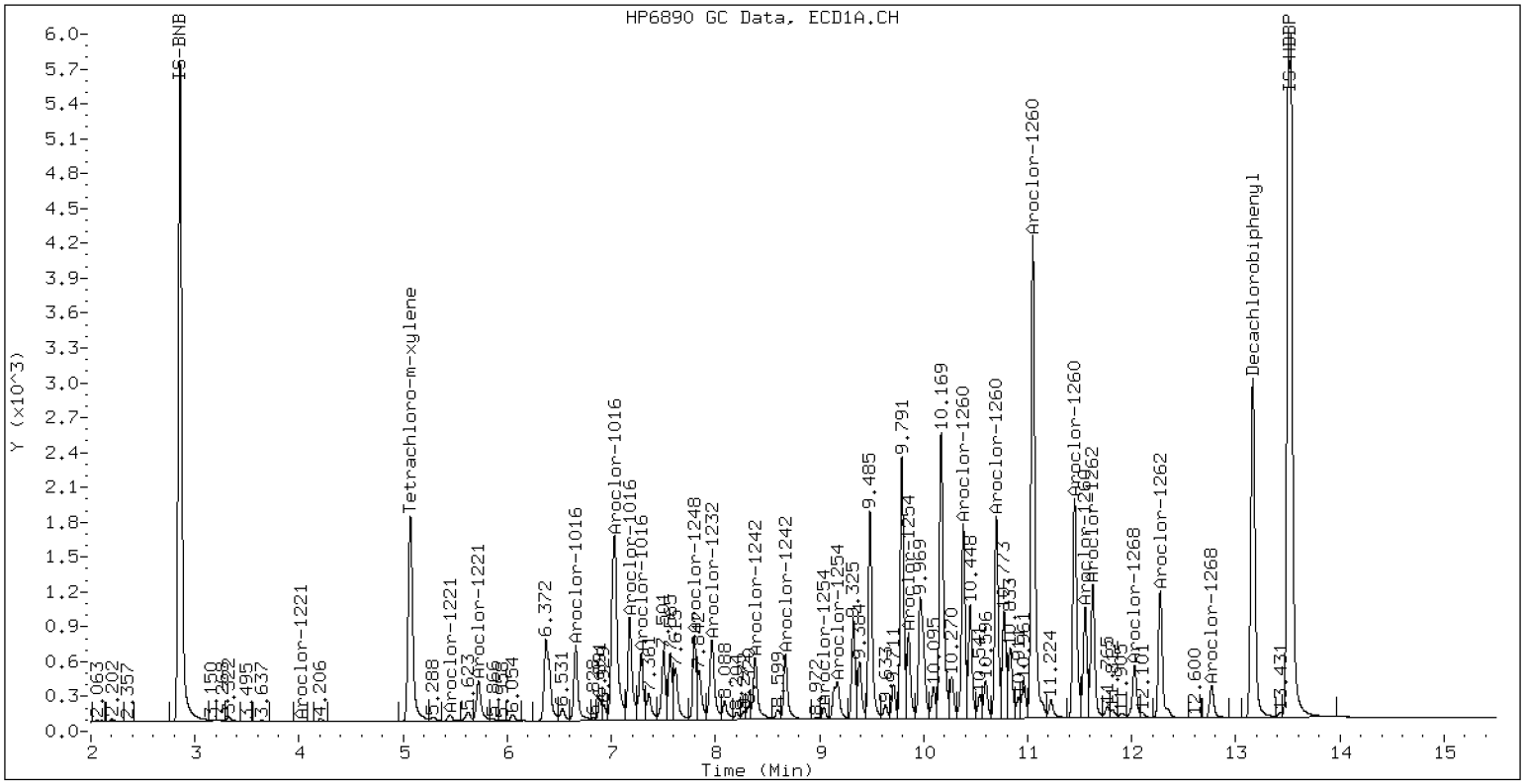
Total PCB Area Col2 (5.168 - 13.065) = 8258335 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

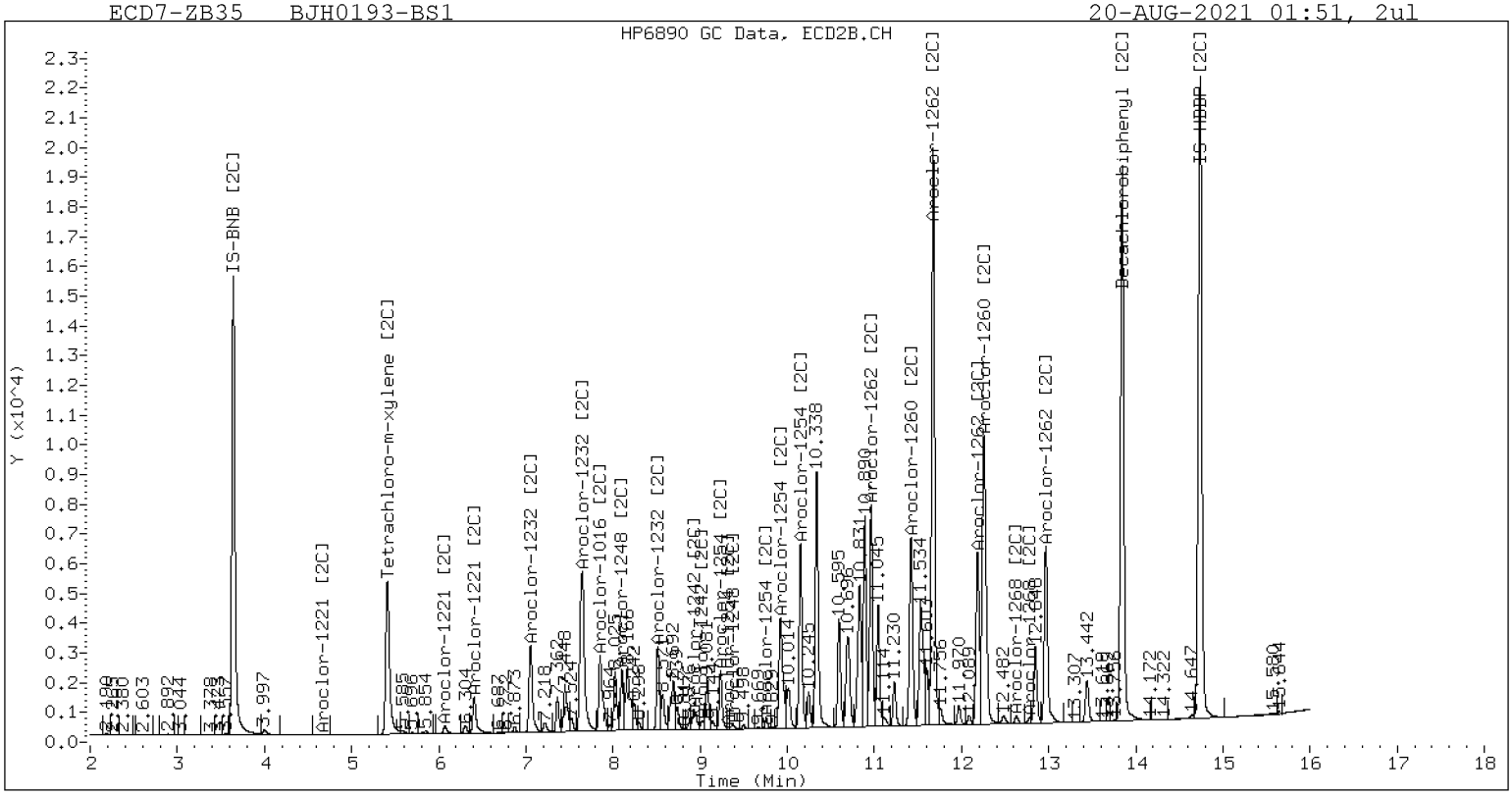
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0193-BS1 20-AUG-2021 01:51, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0193-BS1 20-AUG-2021 01:51, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LCS / LCS DUPLICATE RECOVERY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/27/21 23:08
Batch:	BJH0604	Laboratory ID:	BJH0604-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	101	77.6		77.0	56 - 120
Aroclor 1260	101	71.1		70.5	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	101	83.3		82.6	7.01	30	56 - 120
Aroclor 1260	101	76.6		76.0	7.52	30	58 - 120

* Indicates values outside of QC limits

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

Data file 1: /2108127.b/08272122ECD7.D
Data file 2: /2108127.b/2108127.b/08272122ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0604-BS1
Client ID:
Injection Date: 27-AUG-2021 23:08
Report Date: 08/30/2021 14:36
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	97275	5.412	-0.002	263445	29.2	27.6	5.3	Tetrachloro-m-xylene
13.164	-0.002	138739	13.843	-0.001	749818	30.9	28.7	7.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	276037	6.6
Hexabromobiphenyl	425681	494947	16.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	741441	2.8
Hexabromobiphenyl	863111	1177166	36.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	-0.002	37323	381.2	1	7.054	-0.001	151360	358.0
Aroclor-1016	2	7.033	-0.005	118971	397.4	2	7.649	-0.004	357947	378.5
Aroclor-1016	3	7.179	-0.003	50639	376.9	3	7.855	-0.003	142960	385.2
Aroclor-1016	4	7.289	-0.003	33470	397.4	4	8.103	-0.002	86041	383.1
Total Col1Ave (4 peaks):					388.2	Total Col2Ave (4 peaks):				376.2 RPD = 3
Corrected Ave (3 peaks):					385.2	Corrected Ave (3 peaks):				373.2 RPD = 3
Aroclor-1221	1	4.015	0.000	208	9.5	1	4.672	-0.005	809	14.5
Aroclor-1221	2	5.451	-0.000	3960	115.9	2	6.074	0.002	14209	111.5
Aroclor-1221	3	5.726	0.002	23826	258.1	3	6.410	0.001	66944	301.5
Total Col1Ave (3 peaks):					127.8	Total Col2Ave (3 peaks):				142.5 RPD = 11
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.015	-0.003	208	15.5	1	4.672	-0.007	809	24.4
Aroclor-1232	2	5.726	-0.000	23826	327.4	2	7.054	-0.004	151360	781.7
Aroclor-1232	3	7.033	-0.001	118971	1071.2	3	7.649	-0.002	357947	923.7
Aroclor-1232	4	7.971	-0.001	44262	968.8	4	8.517	-0.005	111330	1102.8
Total Col1Ave (4 peaks):					595.8	Total Col2Ave (4 peaks):				708.1 RPD = 17
Corrected Ave (3 peaks):					437.3	Corrected Ave (3 peaks):				576.6 RPD = 27
Aroclor-1242	1	6.660	-0.001	37323	490.7	1	7.054	-0.001	151360	444.0
Aroclor-1242	2	7.033	-0.005	118971	524.7	2	7.649	-0.004	357947	483.4
Aroclor-1242	3	8.384	-0.001	35398	275.6	3	8.932	-0.024	44114	127.5
Aroclor-1242	4	8.675	0.000	33748	643.0	4	9.032	-0.007	10735	27.3
Total Col1Ave (4 peaks):					483.5	Total Col2Ave (4 peaks):				270.6 RPD = 56*
Corrected Ave (3 peaks):					430.4	Corrected Ave (3 peaks):				199.6 RPD = 73*
Aroclor-1248	1	7.800	-0.003	34151	295.2	1	8.103	-0.003	86041	280.0
Aroclor-1248	2	7.971	-0.003	44262	293.1	2	8.517	-0.003	111330	297.7
Aroclor-1248	3	8.384	0.001	35398	160.1	3	8.932	-0.022	44114	74.1
Aroclor-1248	4	8.675	-0.001	33748	267.4	4	9.380	-0.003	7644	15.1
Total Col1Ave (4 peaks):					254.0	Total Col2Ave (4 peaks):				166.7 RPD = 41*
Corrected Ave (3 peaks):					240.2	Corrected Ave (3 peaks):				123.1 RPD = 64*
Aroclor-1254	1	8.675	-0.003	33748	141.7	1	9.237	-0.001	92742	147.0
Aroclor-1254	2	---			0.0	2	9.380	0.048	7644	20.6
Aroclor-1254	3	9.045	0.000	5698	36.7	3	9.762	-0.001	17753	36.9
Aroclor-1254	4	9.177	-0.004	19974	67.4	4	9.925	0.011	213286	200.1
Aroclor-1254	5	9.858	-0.012	39511	212.2	5	10.155	0.005	271429	251.2
Total Col1Ave (4 peaks):					114.5	Total Col2Ave (5 peaks):				131.2 RPD = 14
Corrected Ave (3 peaks):					81.9	Corrected Ave (4 peaks):				101.2 RPD = 21
Aroclor-1260	1	10.384	-0.003	76631	344.1	1	11.424	-0.001	292708	299.1
Aroclor-1260	2	10.702	-0.002	78165	357.7	2	11.676	-0.001	809365	284.6
Aroclor-1260	3	11.053	-0.003	208128	352.4	3	12.258	-0.001	543599	297.2
Aroclor-1260	4	11.454	-0.001	100012	380.0	4	12.969	-0.001	272974	312.2
Aroclor-1260	5	11.554	-0.003	45123	342.4	NS	---			----
Total Col1Ave (5 peaks):					355.3	Total Col2Ave (4 peaks):				298.3 RPD = 17
Corrected Ave (4 peaks):					349.1	Corrected Ave (3 peaks):				293.6 RPD = 17
Aroclor-1262	1	10.384	0.000	76631	253.7	1	10.966	-0.005	309875	215.3
Aroclor-1262	2	11.454	-0.000	100012	511.4	2	11.676	-0.009	809365	266.5
Aroclor-1262	3	11.628	0.001	57148	202.7	3	12.187	-0.001	248749	184.5
Aroclor-1262	4	12.275	0.001	55031	237.7	4	12.969	-0.004	272974	217.3
Total Col1Ave (4 peaks):					301.4	Total Col2Ave (4 peaks):				220.9 RPD = 31
Corrected Ave (3 peaks):					231.4	Corrected Ave (3 peaks):				205.7 RPD = 12
Aroclor-1268	1	11.554	-0.003	45123	68.0	1	12.187	-0.013	248749	73.5
Aroclor-1268	2	11.628	0.002	57148	82.0	2	12.258	-0.009	543599	147.3
Aroclor-1268	3	12.030	0.029	23570	43.0	3	12.631	-0.013	11538	3.6
Aroclor-1268	4	12.768	-0.004	13937	7.9	4	12.779	-0.004	6486	8.2
Total Col1Ave (4 peaks):					50.2	Total Col2Ave (4 peaks):				58.2 RPD = 15

Corrected Ave (3 peaks): 39.6 Corrected Ave (3 peaks): 28.5 RPD = 33

Total PCB Area Col1 (5.170 - 13.066) = 2119976 Col1 Total PCB = 0.8 ppm*

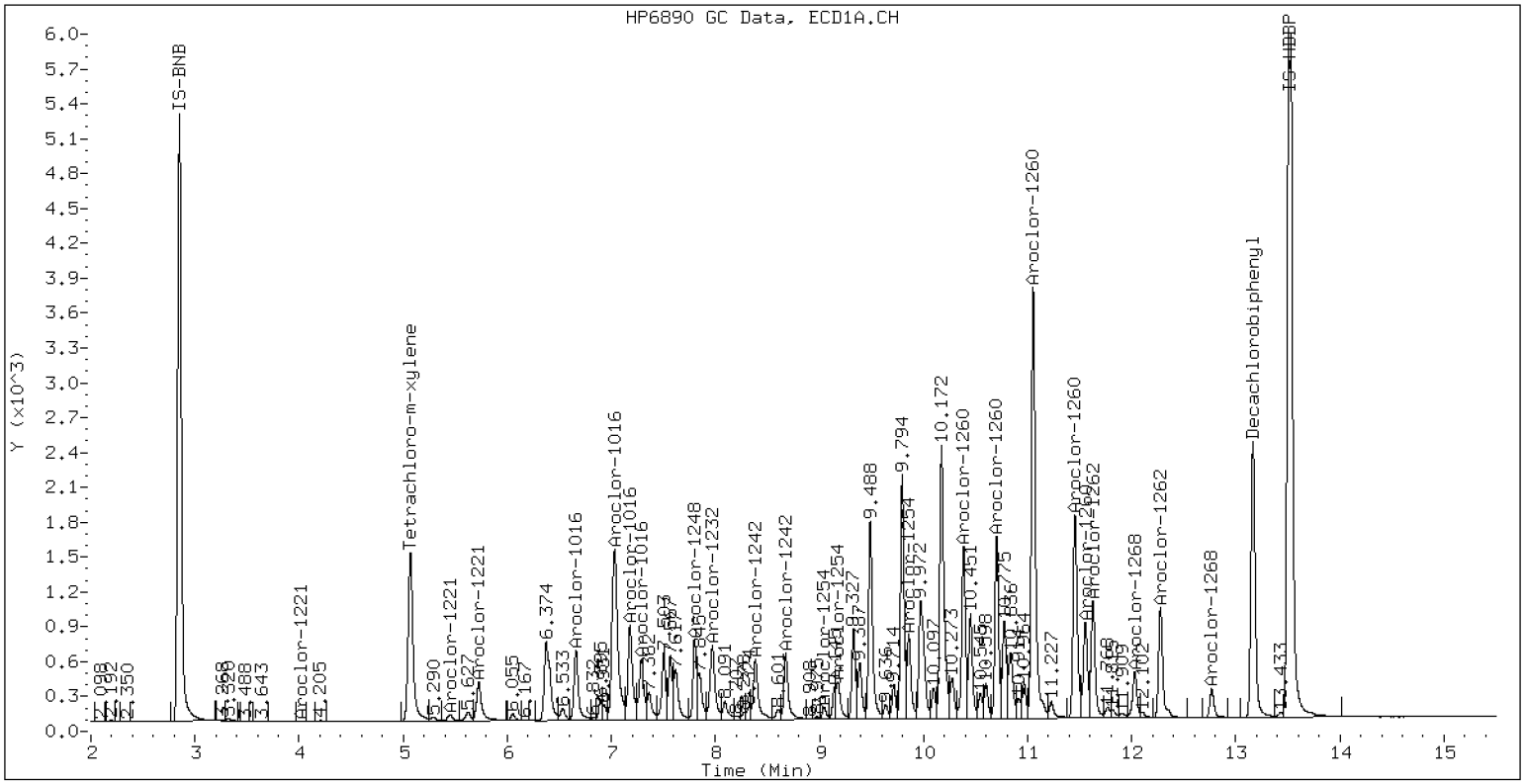
Total PCB Area Col2 (5.170 - 13.066) = 7293333 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

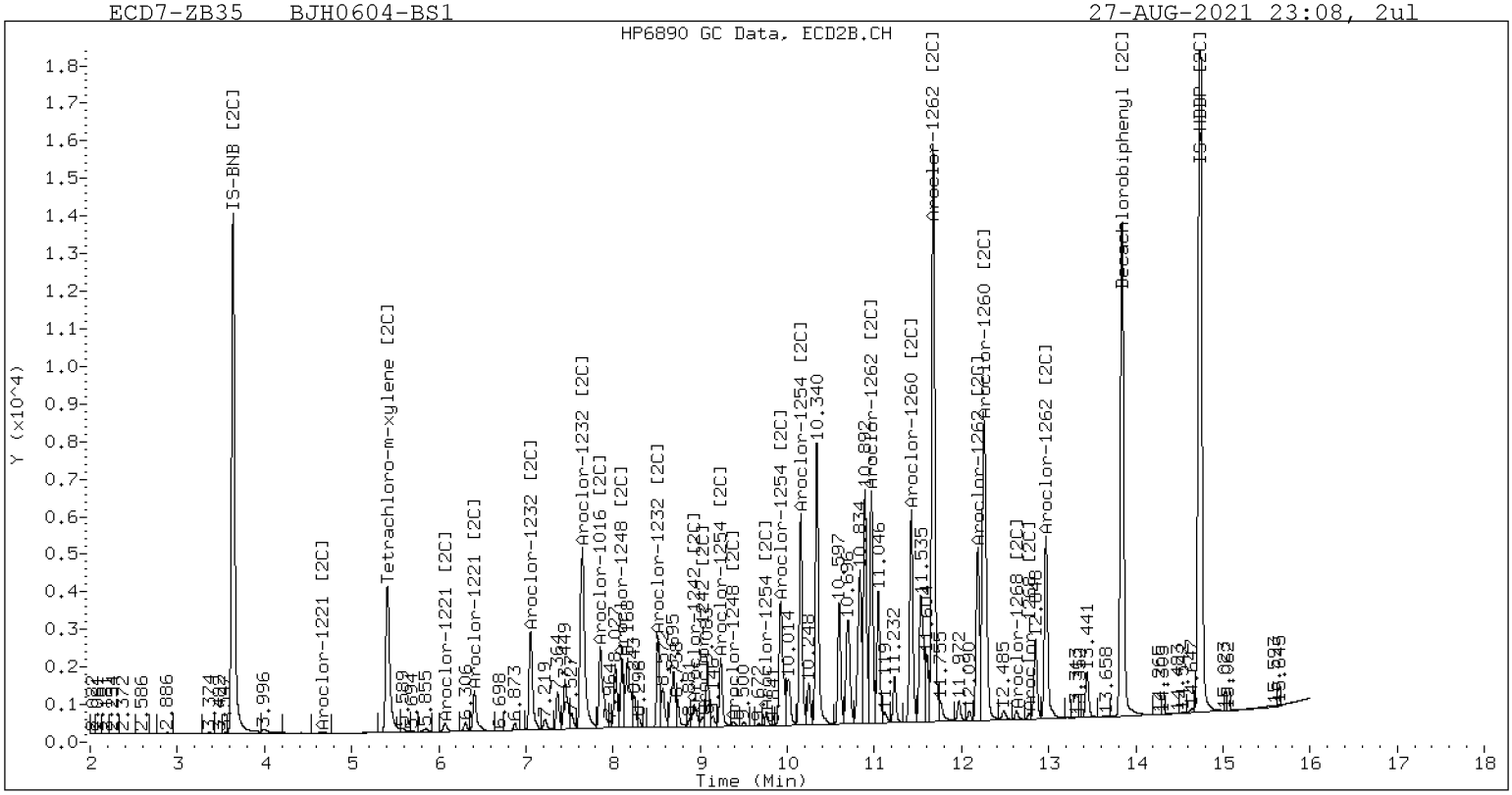
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0604-BS1 27-AUG-2021 23:08, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0604-BS1 27-AUG-2021 23:08, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /2108127.b/08272123ECD7.D
Data file 2: /2108127.b/2108127.b/08272123ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0604-BSD1
Client ID:
Injection Date: 27-AUG-2021 23:28
Report Date: 08/30/2021 14:36
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	102374	5.412	-0.002	275501	30.7	29.0	5.7	Tetrachloro-m-xylene
13.164	-0.003	147967	13.843	-0.001	795021	33.1	30.6	7.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	276178	6.7
Hexabromobiphenyl	425681	492904	15.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	739762	2.6
Hexabromobiphenyl	863111	1170091	35.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	-0.002	39816	406.5	1	7.055	-0.001	161134	382.0
Aroclor-1016	2	7.032	-0.006	127790	426.6	2	7.648	-0.005	382670	405.6
Aroclor-1016	3	7.178	-0.004	54115	402.6	3	7.854	-0.003	153049	413.3
Aroclor-1016	4	7.287	-0.004	36238	430.0	4	8.103	-0.002	91451	408.1
Total Col1Ave (4 peaks):				416.4		Total Col2Ave (4 peaks):			402.2	RPD = 3
Corrected Ave (3 peaks):				411.9		Corrected Ave (3 peaks):			398.5	RPD = 3
Aroclor-1221	1	4.017	0.002	220	10.1	1	4.669	-0.008	952	17.1
Aroclor-1221	2	5.450	-0.001	3723	108.9	2	6.073	0.001	14493	114.0
Aroclor-1221	3	5.725	0.001	23623	255.8	3	6.409	-0.000	71161	321.2
Total Col1Ave (3 peaks):				124.9		Total Col2Ave (3 peaks):			150.8	RPD = 19
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.017	-0.001	220	16.4	1	4.669	-0.010	952	28.8
Aroclor-1232	2	5.725	-0.001	23623	324.5	2	7.055	-0.003	161134	834.1
Aroclor-1232	3	7.032	-0.002	127790	1150.1	3	7.648	-0.003	382670	989.7
Aroclor-1232	4	7.970	-0.002	47512	1039.4	4	8.517	-0.005	119079	1182.2
Total Col1Ave (4 peaks):				632.6		Total Col2Ave (4 peaks):			758.7	RPD = 18
Corrected Ave (3 peaks):				460.1		Corrected Ave (3 peaks):			617.5	RPD = 29
Aroclor-1242	1	6.660	-0.002	39816	523.3	1	7.055	-0.001	161134	473.8
Aroclor-1242	2	7.032	-0.006	127790	563.4	2	7.648	-0.005	382670	518.0
Aroclor-1242	3	8.384	-0.002	38292	298.0	3	8.930	-0.026	47004	136.2
Aroclor-1242	4	8.674	-0.001	36398	693.1	4	9.030	-0.009	11886	30.3
Total Col1Ave (4 peaks):				519.4		Total Col2Ave (4 peaks):			289.6	RPD = 57*
Corrected Ave (3 peaks):				461.5		Corrected Ave (3 peaks):			213.4	RPD = 74*
Aroclor-1248	1	7.800	-0.003	37187	321.3	1	8.103	-0.003	91451	298.3
Aroclor-1248	2	7.970	-0.003	47512	314.5	2	8.517	-0.003	119079	319.1
Aroclor-1248	3	8.384	0.000	38292	173.1	3	8.930	-0.023	47004	79.1
Aroclor-1248	4	8.674	-0.002	36398	288.2	4	9.379	-0.003	8067	16.0
Total Col1Ave (4 peaks):				274.3		Total Col2Ave (4 peaks):			178.1	RPD = 43*
Corrected Ave (3 peaks):				258.6		Corrected Ave (3 peaks):			131.1	RPD = 65*
Aroclor-1254	1	8.674	-0.004	36398	152.8	1	9.237	-0.001	96721	153.7
Aroclor-1254	2	---			0.0	2	9.379	0.047	8067	21.8
Aroclor-1254	3	9.044	-0.001	6247	40.2	3	9.761	-0.001	18871	39.3
Aroclor-1254	4	9.175	-0.006	32629	110.0	4	9.925	0.011	228653	215.1
Aroclor-1254	5	9.857	-0.013	42381	227.5	5	10.155	0.004	291040	269.9
Total Col1Ave (4 peaks):				132.6		Total Col2Ave (5 peaks):			140.0	RPD = 5
Corrected Ave (3 peaks):				101.0		Corrected Ave (4 peaks):			107.5	RPD = 6
Aroclor-1260	1	10.383	-0.004	82279	371.0	1	11.423	-0.001	312726	321.5
Aroclor-1260	2	10.701	-0.003	84056	386.2	2	11.678	0.001	896792	317.2
Aroclor-1260	3	11.052	-0.004	223619	380.1	3	12.259	0.001	588535	323.7
Aroclor-1260	4	11.454	-0.002	107666	410.8	4	12.968	-0.002	291743	335.7
Aroclor-1260	5	11.555	-0.002	48204	367.3	NS	---			----
Total Col1Ave (5 peaks):				383.1		Total Col2Ave (4 peaks):			324.5	RPD = 17
Corrected Ave (4 peaks):				376.2		Corrected Ave (3 peaks):			320.8	RPD = 16
Aroclor-1262	1	10.383	-0.001	82279	273.5	1	10.965	-0.005	331805	231.9
Aroclor-1262	2	11.454	-0.000	107666	552.8	2	11.678	-0.007	896792	297.0
Aroclor-1262	3	11.627	-0.000	61273	218.2	3	12.186	-0.002	269635	201.2
Aroclor-1262	4	12.276	0.002	59161	256.6	4	12.968	-0.005	291743	233.6
Total Col1Ave (4 peaks):				325.3		Total Col2Ave (4 peaks):			240.9	RPD = 30
Corrected Ave (3 peaks):				249.5		Corrected Ave (3 peaks):			222.2	RPD = 12
Aroclor-1268	1	11.555	-0.002	48204	72.9	1	12.186	-0.014	269635	80.2
Aroclor-1268	2	11.627	0.001	61273	88.3	2	12.259	-0.008	588535	160.4
Aroclor-1268	3	12.031	0.030	25267	46.3	3	12.631	-0.013	12483	3.9
Aroclor-1268	4	12.769	-0.003	15415	8.8	4	12.780	-0.003	6993	8.9
Total Col1Ave (4 peaks):				54.1		Total Col2Ave (4 peaks):			63.4	RPD = 16

Corrected Ave (3 peaks): 42.7 Corrected Ave (3 peaks): 31.0 RPD = 32

Total PCB Area Col1 (5.170 - 13.066) = 2274463 Col1 Total PCB = 0.8 ppm*

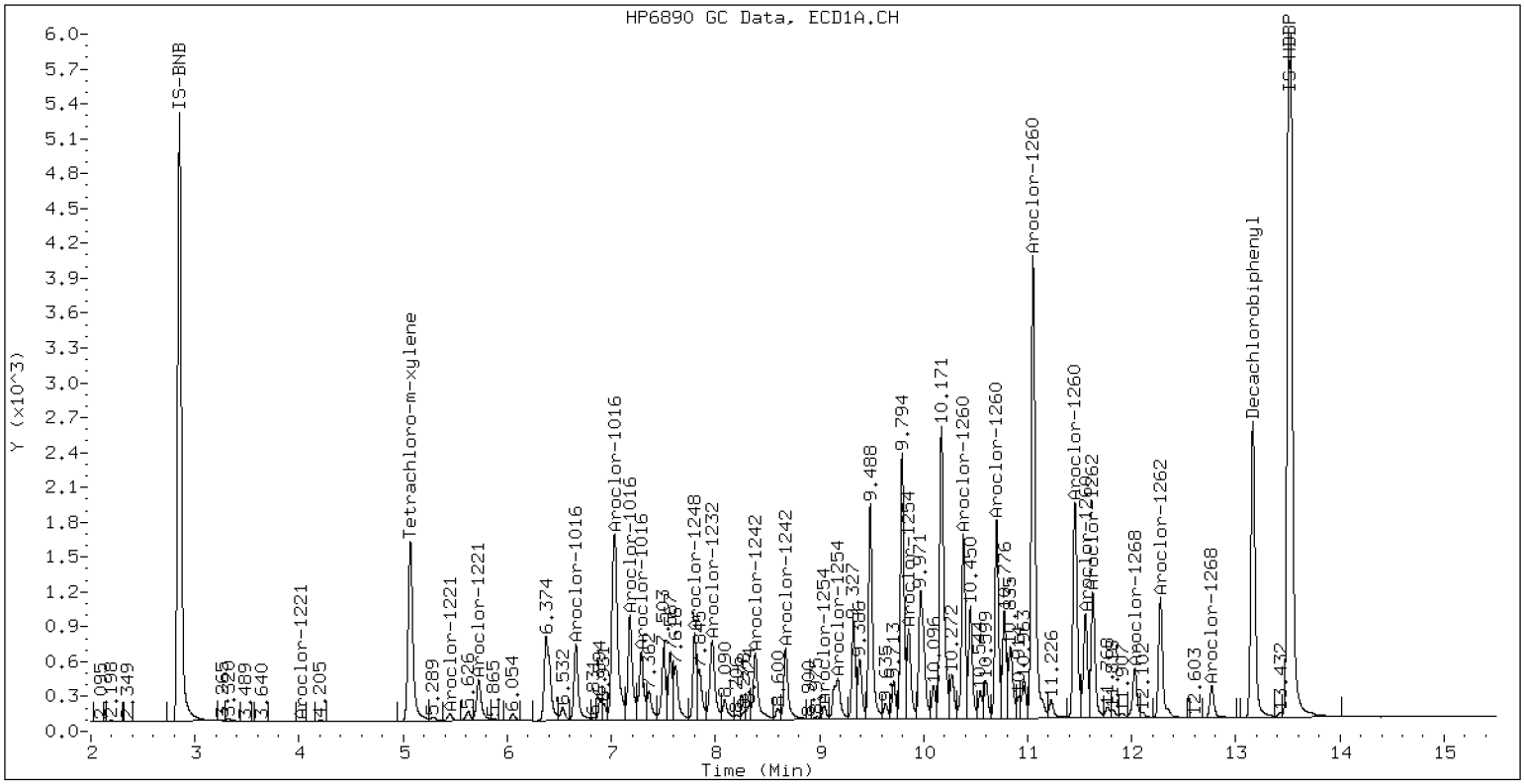
Total PCB Area Col2 (5.170 - 13.066) = 7827618 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

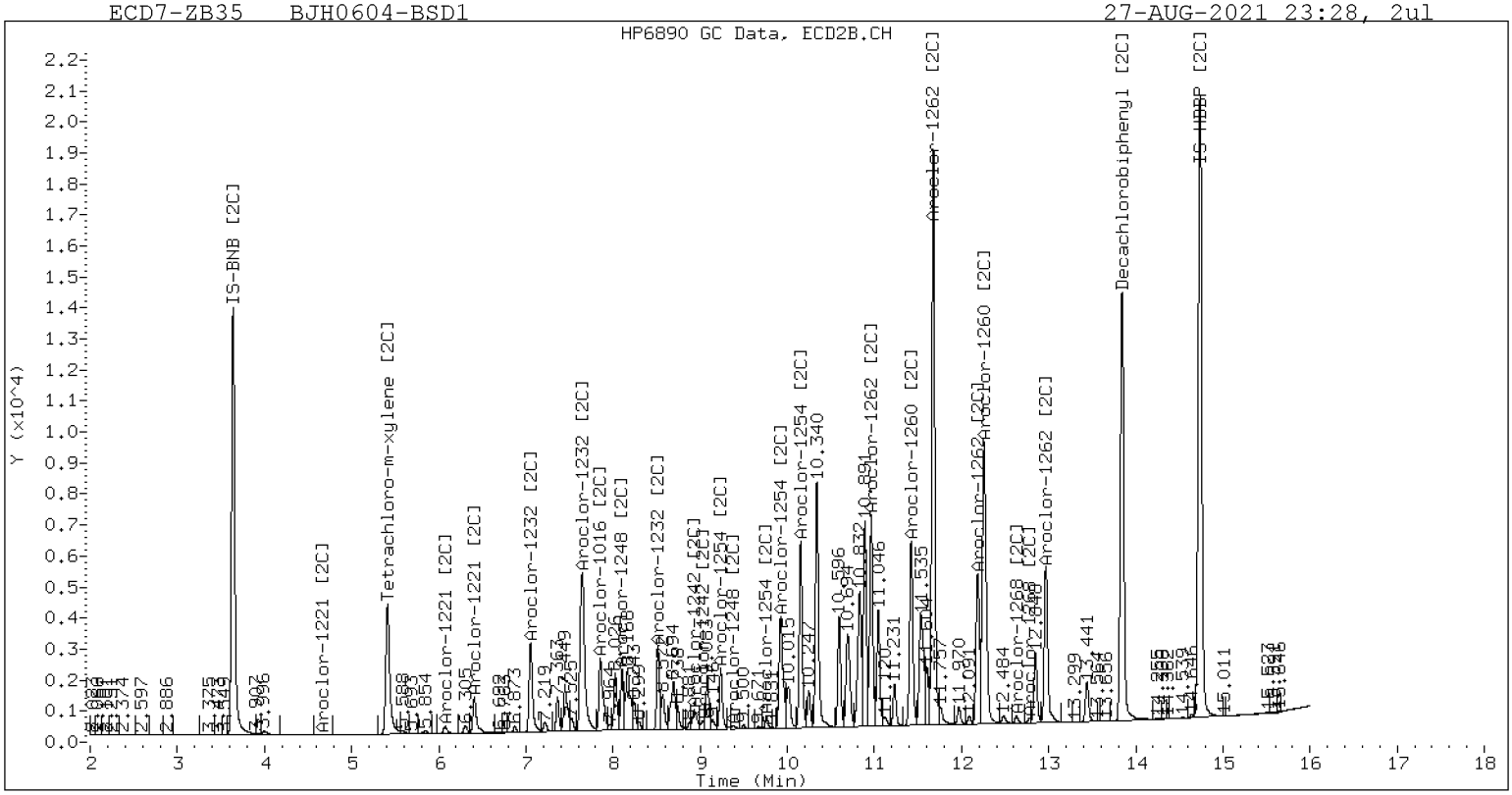
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0604-BSD1 27-AUG-2021 23:28, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0604-BSD1 27-AUG-2021 23:28, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT624A

MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/20/21 02:11
Batch:	BJH0193	Laboratory ID:	BJH0193-MS1
Preparation:	EPA 3550C (Ultrasonic)	Sequence Name:	Matrix Spike
Initial/Final:	12.61 g / 2.5 mL	Source Sample:	LDW21-IT624A

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	H, U	78.4		77.6	56 - 120
Aroclor 1260 [2C]	101	1.7	H, J	63.9		61.7	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

LDW21-IT624A

MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/20/21 02:32
Batch:	BJH0193	Laboratory ID:	BJH0193-MSD1
Preparation:	EPA 3550C (Ultrasonic)	Sequence Name:	Matrix Spike Dup
Initial/Final:	12.61 g / 2.5 mL	Source Sample:	LDW21-IT624A

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Aroclor 1016	101	81.1		80.3	3.37	30	56 - 120
Aroclor 1260 [2C]	101	67.2		65.0	5.10	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: /210819.b/08192141ECD7.D
Data file 2: /210819.b/210819.b/08192141ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0193-MS1
Client ID:
Injection Date: 20-AUG-2021 02:11
Report Date: 08/23/2021 17:05
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.001	108631	5.411	-0.000	307126	31.0	29.0	6.6	Tetrachloro-m-xylene
13.161	-0.004	147235	13.843	-0.006	849445	33.5	31.0	8.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	290218	12.1
Hexabromobiphenyl	425681	483631	13.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	824658	14.4
Hexabromobiphenyl	863111	1235046	43.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.657	-0.002	40364	392.1	1	7.053	-0.002	166347	353.8
Aroclor-1016	2	7.029	-0.004	128470	408.2	2	7.645	-0.006	377176	358.6
Aroclor-1016	3	7.175	-0.004	51988	368.0	3	7.851	-0.006	154406	374.0
Aroclor-1016	4	7.283	-0.005	35345	399.1	4	8.102	-0.003	94646	378.9
Total Col1Ave (4 peaks):				391.9		Total Col2Ave (4 peaks):			366.3	RPD = 7
Corrected Ave (3 peaks):				386.4		Corrected Ave (3 peaks):			362.1	RPD = 6
Aroclor-1221	1	4.011	-0.004	188	8.2	1	4.674	-0.002	936	15.1
Aroclor-1221	2	5.449	-0.002	4541	126.4	2	6.072	0.000	15322	108.1
Aroclor-1221	3	5.723	-0.001	24309	250.5	3	6.407	-0.002	71847	290.9
Total Col1Ave (3 peaks):				128.4		Total Col2Ave (3 peaks):			138.1	RPD = 7
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.011	-0.007	188	13.4	1	4.674	-0.005	936	25.4
Aroclor-1232	2	5.723	-0.003	24309	317.7	2	7.053	-0.005	166347	772.4
Aroclor-1232	3	7.029	-0.005	128470	1100.2	3	7.645	-0.006	377176	875.1
Aroclor-1232	4	7.964	-0.008	45856	954.7	4	8.515	-0.007	126115	1123.1
Total Col1Ave (4 peaks):				596.5		Total Col2Ave (4 peaks):			699.0	RPD = 16
Corrected Ave (3 peaks):				428.6		Corrected Ave (3 peaks):			557.6	RPD = 26
Aroclor-1242	1	6.657	-0.003	40364	504.8	1	7.053	-0.002	166347	438.7
Aroclor-1242	2	7.029	-0.005	128470	539.0	2	7.645	-0.005	377176	458.0
Aroclor-1242	3	8.379	-0.003	33806	250.4	3	8.933	-0.020	49135	127.7
Aroclor-1242	4	8.670	-0.005	33331	604.0	4	9.021	-0.012	17693	40.5
Total Col1Ave (4 peaks):				474.5		Total Col2Ave (4 peaks):			266.2	RPD = 56*
Corrected Ave (3 peaks):				431.4		Corrected Ave (3 peaks):			202.3	RPD = 72*
Aroclor-1248	1	7.797	-0.004	37329	306.9	1	8.102	-0.004	94646	277.0
Aroclor-1248	2	7.964	-0.007	45856	288.8	2	8.515	-0.005	126115	303.2
Aroclor-1248	3	8.379	-0.001	33806	145.4	3	8.933	-0.020	49135	74.2
Aroclor-1248	4	8.670	-0.006	33331	251.2	4	9.369	-0.011	9848	17.5
Total Col1Ave (4 peaks):				248.1		Total Col2Ave (4 peaks):			168.0	RPD = 39
Corrected Ave (3 peaks):				228.5		Corrected Ave (3 peaks):			122.9	RPD = 60*
Aroclor-1254	1	8.670	-0.007	33331	133.1	1	9.233	-0.006	102796	146.5
Aroclor-1254	2	8.739	-0.009	3845	33.2	2	9.325	-0.007	8001	19.4
Aroclor-1254	3	9.039	-0.002	8290	50.8	3	9.756	-0.007	26180	48.9
Aroclor-1254	4	9.170	-0.010	36335	116.5	4	9.920	0.006	241442	203.7
Aroclor-1254	5	9.854	-0.016	40688	207.8	5	10.151	0.000	309273	257.3
Total Col1Ave (5 peaks):				108.3		Total Col2Ave (5 peaks):			135.2	RPD = 22
Corrected Ave (4 peaks):				83.4		Corrected Ave (4 peaks):			104.6	RPD = 23
Aroclor-1260	1	10.380	-0.005	82800	380.5	1	11.421	-0.003	325456	317.0
Aroclor-1260	2	10.698	-0.005	83217	389.7	2	11.674	-0.004	923431	309.5
Aroclor-1260	3	11.048	-0.006	221796	384.3	3	12.256	-0.005	596599	310.9
Aroclor-1260	4	11.448	-0.006	105507	410.3	4	12.966	-0.004	312190	340.3
Aroclor-1260	5	11.551	-0.005	48613	377.6	NS	---			----
Total Col1Ave (5 peaks):				388.5		Total Col2Ave (4 peaks):			319.4	RPD = 20
Corrected Ave (4 peaks):				383.0		Corrected Ave (3 peaks):			312.5	RPD = 20
Aroclor-1262	1	10.380	-0.003	82800	280.6	1	10.963	-0.007	343557	227.5
Aroclor-1262	2	11.448	-0.006	105507	552.1	2	11.674	-0.012	923431	289.8
Aroclor-1262	3	11.624	-0.003	61536	223.4	3	12.185	-0.004	292626	206.9
Aroclor-1262	4	12.271	-0.003	56018	247.7	4	12.966	-0.006	312190	236.8
Total Col1Ave (4 peaks):				325.9		Total Col2Ave (4 peaks):			240.2	RPD = 30
Corrected Ave (3 peaks):				250.5		Corrected Ave (3 peaks):			223.7	RPD = 11
Aroclor-1268	1	11.551	-0.006	48613	74.9	1	12.185	-0.016	292626	82.5
Aroclor-1268	2	11.624	-0.002	61536	90.4	2	12.256	-0.011	596599	154.1
Aroclor-1268	3	12.025	0.024	24842	46.4	3	12.629	-0.015	11579	3.5
Aroclor-1268	4	12.764	-0.008	15004	8.7	4	12.778	-0.005	7786	9.4
Total Col1Ave (4 peaks):				55.1		Total Col2Ave (4 peaks):			62.3	RPD = 12

Corrected Ave (3 peaks): 43.3 Corrected Ave (3 peaks): 31.8 RPD = 31

Total PCB Area Col1 (5.168 - 13.065) = 2254205 Col1 Total PCB = 0.8 ppm*

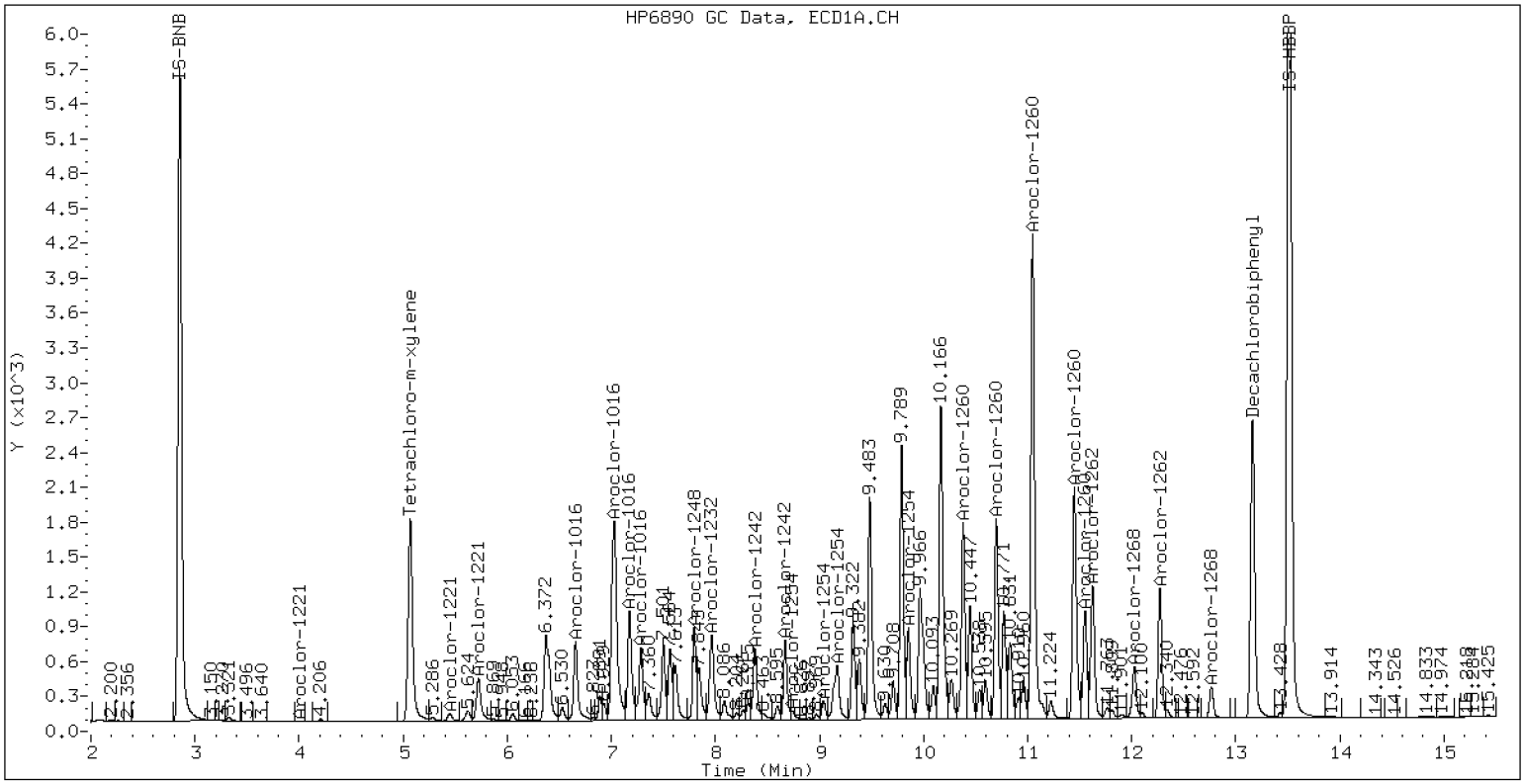
Total PCB Area Col2 (5.168 - 13.065) = 8130110 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

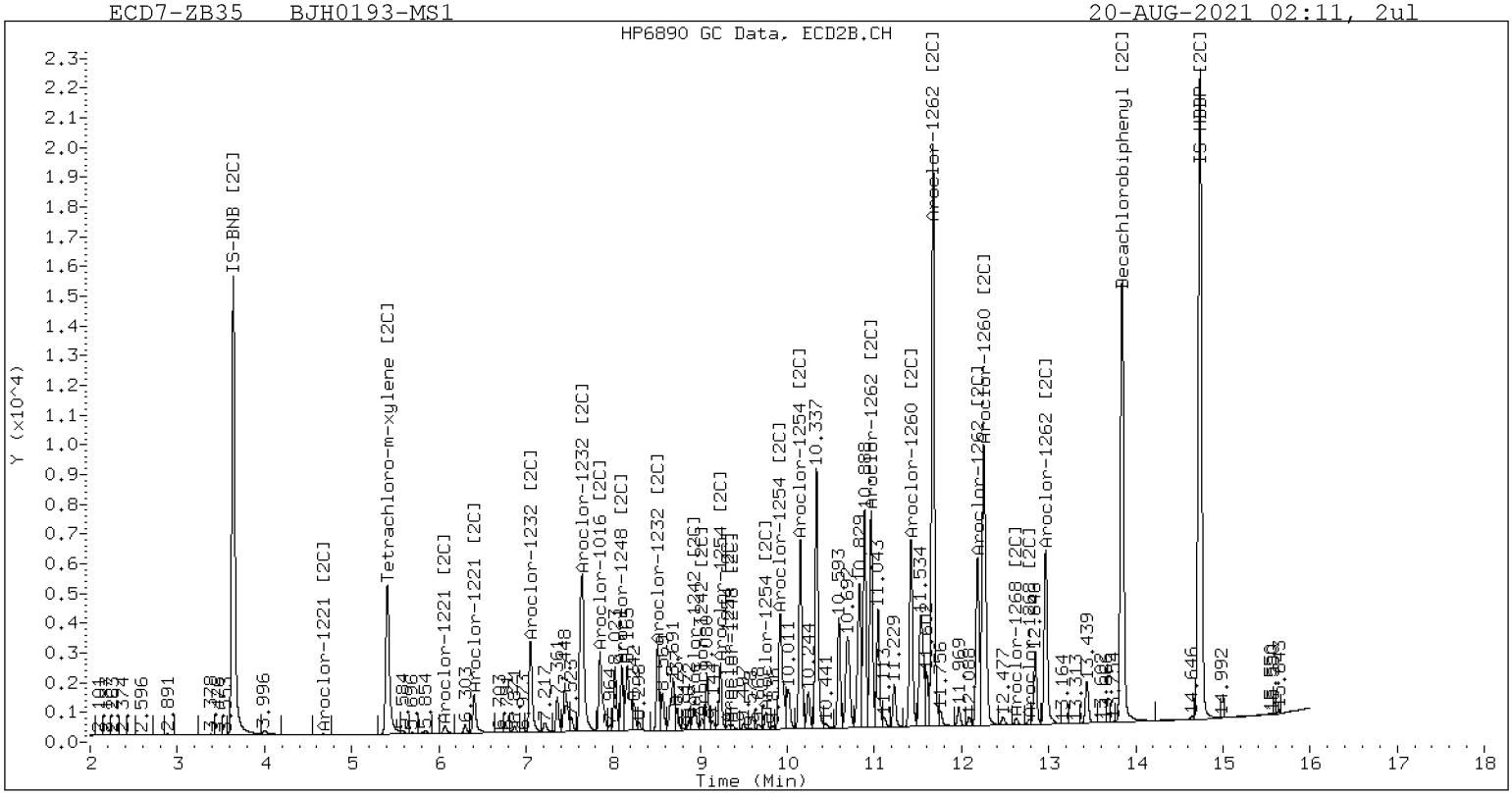
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0193-MS1 20-AUG-2021 02:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0193-MS1 20-AUG-2021 02:11, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210819.b/08192142ECD7.D
Data file 2: /210819.b/210819.b/08192142ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0193-MSD1
Client ID:
Injection Date: 20-AUG-2021 02:32
Report Date: 08/23/2021 17:05
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.000	120645	5.411	-0.001	338457	34.7	32.3	7.0	Tetrachloro-m-xylene
13.161	-0.004	159293	13.842	-0.007	918237	38.2	34.4	10.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	287928	11.2
Hexabromobiphenyl	425681	459362	7.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	814852	13.0
Hexabromobiphenyl	863111	1199741	39.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.656	-0.003	40743	399.0	1	7.053	-0.002	172204	370.6
Aroclor-1016	2	7.029	-0.004	132967	425.8	2	7.644	-0.006	377678	363.4
Aroclor-1016	3	7.174	-0.005	53767	383.7	3	7.851	-0.006	157328	385.7
Aroclor-1016	4	7.283	-0.006	36258	412.7	4	8.101	-0.004	99915	404.8
Total Col1Ave (4 peaks):				405.3		Total Col2Ave (4 peaks):			381.1	RPD = 6
Corrected Ave (3 peaks):				398.4		Corrected Ave (3 peaks):			373.2	RPD = 7
Aroclor-1221	1	4.017	0.001	216	9.5	1	4.670	-0.007	1169	19.1
Aroclor-1221	2	5.448	-0.003	3908	109.6	2	6.071	-0.001	16528	118.0
Aroclor-1221	3	5.723	-0.001	23899	248.2	3	6.407	-0.002	74156	303.9
Total Col1Ave (3 peaks):				122.4		Total Col2Ave (3 peaks):			147.0	RPD = 18
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.017	-0.001	216	15.5	1	4.670	-0.009	1169	32.1
Aroclor-1232	2	5.723	-0.004	23899	314.9	2	7.053	-0.005	172204	809.2
Aroclor-1232	3	7.029	-0.005	132967	1147.8	3	7.644	-0.007	377678	886.8
Aroclor-1232	4	7.964	-0.008	47521	997.2	4	8.515	-0.007	128592	1159.0
Total Col1Ave (4 peaks):				618.8		Total Col2Ave (4 peaks):			721.8	RPD = 15
Corrected Ave (3 peaks):				442.5		Corrected Ave (3 peaks):			576.0	RPD = 26
Aroclor-1242	1	6.656	-0.004	40743	513.6	1	7.053	-0.002	172204	459.6
Aroclor-1242	2	7.029	-0.005	132967	562.3	2	7.644	-0.005	377678	464.1
Aroclor-1242	3	8.378	-0.004	36500	272.5	3	8.932	-0.020	51684	135.9
Aroclor-1242	4	8.669	-0.006	37035	676.5	4	9.021	-0.012	19353	44.9
Total Col1Ave (4 peaks):				506.2		Total Col2Ave (4 peaks):			276.1	RPD = 59*
Corrected Ave (3 peaks):				449.4		Corrected Ave (3 peaks):			213.5	RPD = 71*
Aroclor-1248	1	7.796	-0.005	39238	325.2	1	8.101	-0.005	99915	295.9
Aroclor-1248	2	7.964	-0.007	47521	301.7	2	8.515	-0.005	128592	312.9
Aroclor-1248	3	8.378	-0.002	36500	158.3	3	8.932	-0.020	51684	78.9
Aroclor-1248	4	8.669	-0.007	37035	281.3	4	9.367	-0.013	10861	19.5
Total Col1Ave (4 peaks):				266.6		Total Col2Ave (4 peaks):			176.8	RPD = 41*
Corrected Ave (3 peaks):				247.1		Corrected Ave (3 peaks):			131.5	RPD = 61*
Aroclor-1254	1	8.669	-0.008	37035	149.1	1	9.233	-0.007	112157	161.8
Aroclor-1254	2	8.740	-0.008	5164	44.9	2	9.325	-0.007	11957	29.4
Aroclor-1254	3	9.037	-0.004	10954	67.7	3	9.756	-0.006	32086	60.7
Aroclor-1254	4	9.168	-0.011	42687	138.0	4	9.919	0.005	262004	223.7
Aroclor-1254	5	9.853	-0.018	44559	229.4	5	10.151	-0.000	332190	279.7
Total Col1Ave (5 peaks):				125.8		Total Col2Ave (5 peaks):			151.1	RPD = 18
Corrected Ave (4 peaks):				99.9		Corrected Ave (4 peaks):			118.9	RPD = 17
Aroclor-1260	1	10.379	-0.006	85594	414.2	1	11.420	-0.004	335233	336.1
Aroclor-1260	2	10.696	-0.007	85641	422.2	2	11.674	-0.004	945064	326.0
Aroclor-1260	3	11.046	-0.008	232169	423.5	3	12.255	-0.006	608946	326.7
Aroclor-1260	4	11.447	-0.007	109294	447.5	4	12.965	-0.005	316974	355.7
Aroclor-1260	5	11.551	-0.005	49986	408.7	NS	---			----
Total Col1Ave (5 peaks):				423.2		Total Col2Ave (4 peaks):			336.1	RPD = 23
Corrected Ave (4 peaks):				417.2		Corrected Ave (3 peaks):			329.6	RPD = 23
Aroclor-1262	1	10.379	-0.005	85594	305.3	1	10.962	-0.008	348983	237.9
Aroclor-1262	2	11.447	-0.007	109294	602.1	2	11.674	-0.012	945064	305.3
Aroclor-1262	3	11.622	-0.004	63119	241.2	3	12.184	-0.004	311420	226.6
Aroclor-1262	4	12.270	-0.005	58327	271.5	4	12.965	-0.007	316974	247.5
Total Col1Ave (4 peaks):				355.0		Total Col2Ave (4 peaks):			254.3	RPD = 33
Corrected Ave (3 peaks):				272.7		Corrected Ave (3 peaks):			237.3	RPD = 14
Aroclor-1268	1	11.551	-0.007	49986	81.1	1	12.184	-0.016	311420	90.3
Aroclor-1268	2	11.622	-0.003	63119	97.6	2	12.255	-0.012	608946	161.9
Aroclor-1268	3	12.024	0.023	25789	50.7	3	12.629	-0.015	11996	3.7
Aroclor-1268	4	12.765	-0.007	14969	9.1	4	12.778	-0.005	8344	10.4
Total Col1Ave (4 peaks):				59.6		Total Col2Ave (4 peaks):			66.6	RPD = 11

Corrected Ave (3 peaks): 47.0 Corrected Ave (3 peaks): 34.8 RPD = 30

Total PCB Area Col1 (5.168 - 13.065) = 2365486 Col1 Total PCB = 0.8 ppm*

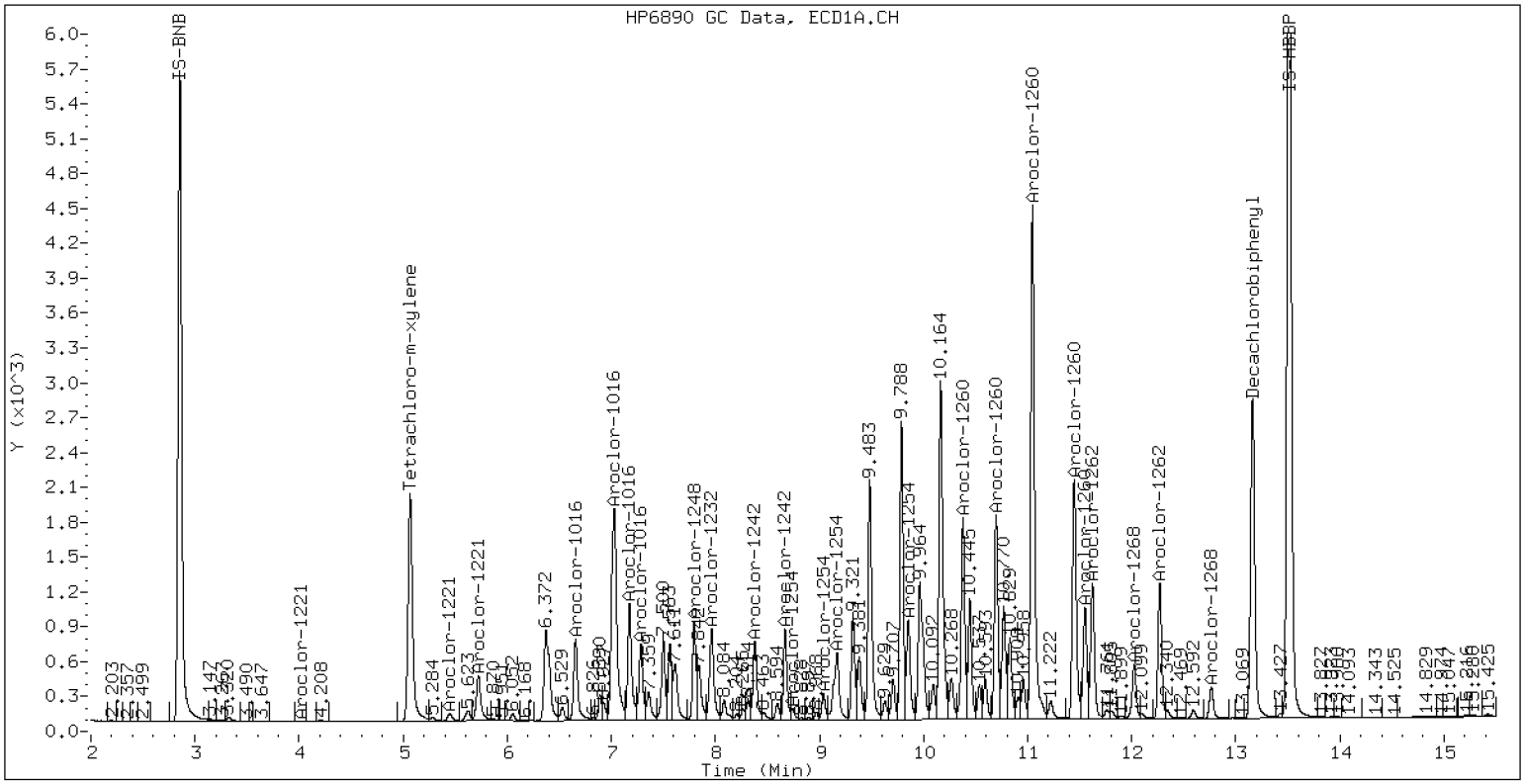
Total PCB Area Col2 (5.168 - 13.065) = 8445516 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

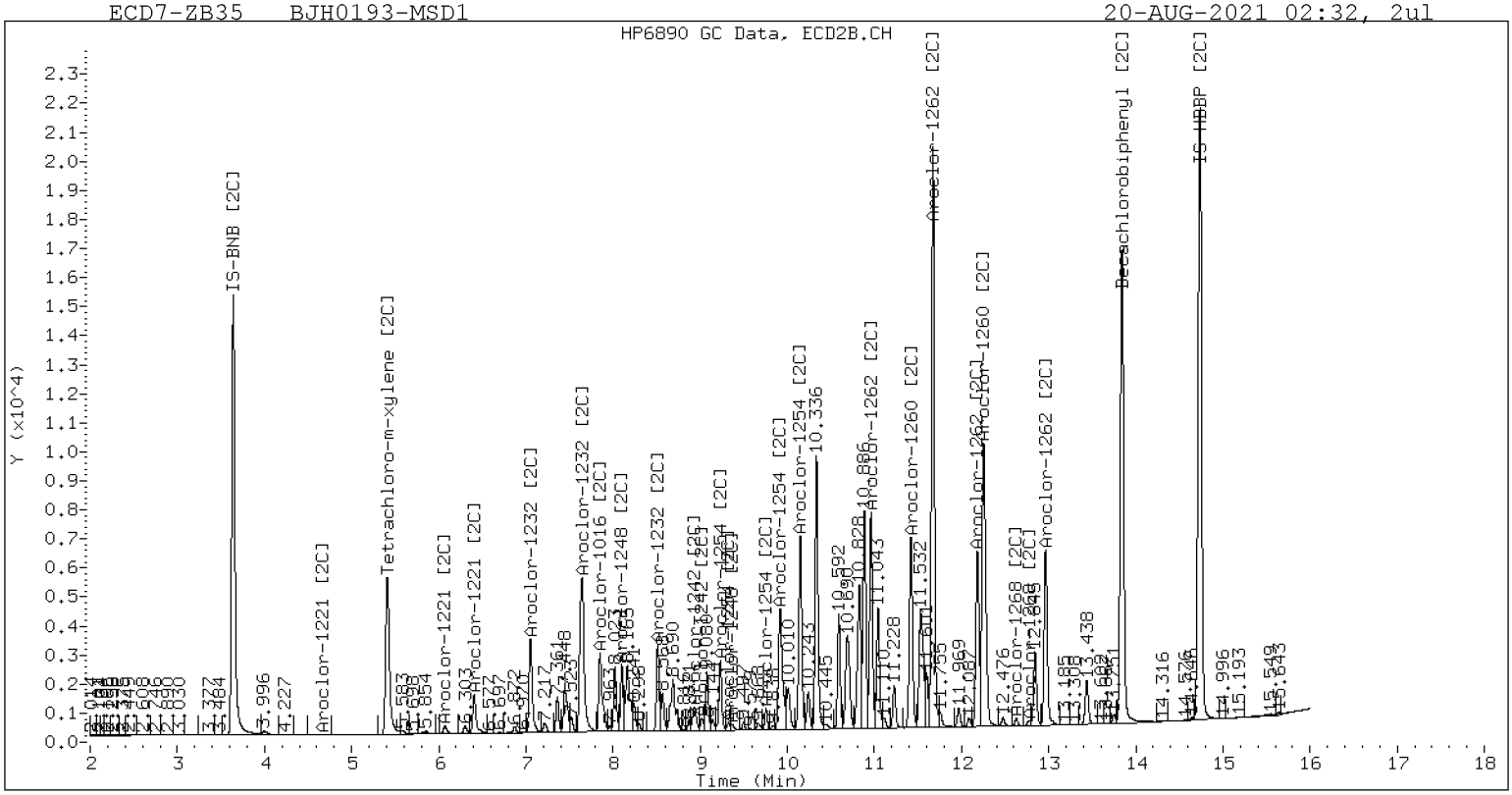
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0193-MSD1 20-AUG-2021 02:32, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0193-MSD1 20-AUG-2021 02:32, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0179-SRM1
Batch: BJH0179
Initial/Final: 2.5 g / 2.5 mL
Preparation: EPA 3546 (Microwave)
Analyzed: 08/19/2021 23:07
Standard ID: J006842
Expires: 12/28/2021
Standard Lot#: PSRM0136
Description: Puget Sound reference-SRM

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Aroclor 1260	108.00	84.6	2.9	20.0		78.4	38 - 167
Aroclor 1260 [2C]	108.00	65.3	2.9	20.0		60.5	38 - 167

* Values outside of QC limits

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

Data file 1: /210819.b/08192132ECD7.D
Data file 2: /210819.b/210819.b/08192132ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0179-SRM1
Client ID:
Injection Date: 19-AUG-2021 23:07
Report Date: 08/30/2021 09:54
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.066	-0.001	105738	5.409	-0.002	295440	32.0	29.9	6.8	Tetrachloro-m-xylene
13.159	-0.006	123086	13.840	-0.009	688816	33.5	28.0	17.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	273215	5.5
Hexabromobiphenyl	425681	405308	-4.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	768530	6.6
Hexabromobiphenyl	863111	1108607	28.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.653	-0.006	849	8.8	1	7.053	-0.002	6834	15.6
Aroclor-1016	2	7.030	-0.003	4296	14.5	2	7.645	-0.005	18306	18.7
Aroclor-1016	3	7.176	-0.003	996	7.5	3	7.851	-0.006	3544	9.2
Aroclor-1016	4	7.280	-0.008	838	10.1	4	8.101	-0.004	12016	51.6
Total Col1Ave (4 peaks):				10.2		Total Col2Ave (4 peaks):			23.8	RPD = 80*
Corrected Ave (3 peaks):				8.8		Corrected Ave (3 peaks):			14.5	RPD = 49*
Aroclor-1221	1	4.098	0.083	1398	64.8	1	4.637	-0.040	2493	43.2
Aroclor-1221	2	---			0.0	2	6.089	0.016	8324	63.0
Aroclor-1221	3	5.722	-0.003	219	2.4	3	6.408	-0.001	6381	27.7
Col1Ave: <3 Quant Peaks						Col2Ave:			44.7	
Aroclor-1232	1	4.098	0.080	1398	105.5	1	4.637	-0.042	2493	72.6
Aroclor-1232	2	5.722	-0.005	219	3.0	2	7.053	-0.005	6834	34.1
Aroclor-1232	3	7.030	-0.004	4296	39.1	3	7.645	-0.006	18306	45.6
Aroclor-1232	4	7.962	-0.011	2457	54.3	4	8.514	-0.008	9431	90.1
Total Col1Ave (4 peaks):				50.5		Total Col2Ave (4 peaks):			60.6	RPD = 18
Corrected Ave (3 peaks):				32.2		Corrected Ave (3 peaks):			50.7	RPD = 45*
Aroclor-1242	1	6.653	-0.008	849	11.3	1	7.053	-0.001	6834	19.3
Aroclor-1242	2	7.030	-0.004	4296	19.1	2	7.645	-0.004	18306	23.9
Aroclor-1242	3	8.377	-0.004	10714	84.3	3	8.941	-0.012	15224	42.5
Aroclor-1242	4	8.667	-0.008	13630	262.4	4	9.016	-0.017	11131	27.4
Total Col1Ave (4 peaks):				94.3		Total Col2Ave (4 peaks):			28.3	RPD = 108*
Corrected Ave (3 peaks):				38.2		Corrected Ave (3 peaks):			23.5	RPD = 48*
Aroclor-1248	1	7.795	-0.005	2738	23.9	1	8.101	-0.005	12016	37.7
Aroclor-1248	2	7.962	-0.009	2457	16.4	2	8.514	-0.006	9431	24.3
Aroclor-1248	3	8.377	-0.003	10714	49.0	3	8.941	-0.012	15224	24.7
Aroclor-1248	4	8.667	-0.009	13630	109.1	4	9.365	-0.015	12760	24.3
Total Col1Ave (4 peaks):				49.6		Total Col2Ave (4 peaks):			27.8	RPD = 56*
Corrected Ave (3 peaks):				29.8		Corrected Ave (3 peaks):			24.4	RPD = 20
Aroclor-1254	1	8.667	-0.010	13630	57.8	1	9.231	-0.008	42997	65.8
Aroclor-1254	2	8.740	-0.008	5027	46.1	2	9.320	-0.012	10732	28.0
Aroclor-1254	3	9.039	-0.003	8053	52.4	3	9.754	-0.008	19518	39.2
Aroclor-1254	4	9.167	-0.013	18634	63.5	4	9.909	-0.006	76099	68.9
Aroclor-1254	5	9.852	-0.019	13909	75.5	5	10.147	-0.004	109660	97.9
Total Col1Ave (5 peaks):				59.1		Total Col2Ave (5 peaks):			59.9	RPD = 1
Corrected Ave (4 peaks):				54.9		Corrected Ave (4 peaks):			50.4	RPD = 9
Aroclor-1260	1	10.375	-0.010	15903	87.2	1	11.418	-0.006	67042	72.7
Aroclor-1260	2	10.694	-0.009	12626	70.5	2	11.669	-0.009	170715	63.7
Aroclor-1260	3	11.042	-0.012	41757	86.3	3	12.251	-0.010	107805	62.6
Aroclor-1260	4	11.443	-0.012	22258	103.3	4	12.962	-0.008	51155	62.1
Aroclor-1260	5	11.548	-0.008	8176	75.8	NS	---			----
Total Col1Ave (5 peaks):				84.6		Total Col2Ave (4 peaks):			65.3	RPD = 26
Corrected Ave (4 peaks):				80.0		Corrected Ave (3 peaks):			62.8	RPD = 24
Aroclor-1262	1	10.375	-0.008	15903	64.3	1	10.960	-0.010	68308	50.4
Aroclor-1262	2	11.443	-0.012	22258	139.0	2	11.669	-0.017	170715	59.7
Aroclor-1262	3	11.619	-0.008	10443	45.2	3	12.179	-0.009	57056	44.9
Aroclor-1262	4	12.266	-0.008	9895	52.2	4	12.962	-0.011	51155	43.2
Total Col1Ave (4 peaks):				75.2		Total Col2Ave (4 peaks):			49.6	RPD = 41*
Corrected Ave (3 peaks):				53.9		Corrected Ave (3 peaks):			46.2	RPD = 15
Aroclor-1268	1	11.548	-0.009	8176	15.0	1	12.179	-0.021	57056	17.9
Aroclor-1268	2	11.619	-0.007	10443	18.3	2	12.251	-0.016	107805	31.0
Aroclor-1268	3	12.020	0.019	5340	11.9	3	12.629	-0.015	6014	2.0
Aroclor-1268	4	12.761	-0.011	3680	2.5	4	12.779	-0.004	4878	6.6
Total Col1Ave (4 peaks):				11.9		Total Col2Ave (4 peaks):			14.4	RPD = 18
Corrected Ave (3 peaks):				9.8		Corrected Ave (3 peaks):			8.8	RPD = 11

Total PCB Area Col1 (5.168 - 13.065) = 463540 Col1 Total PCB = 0.2 ppm*

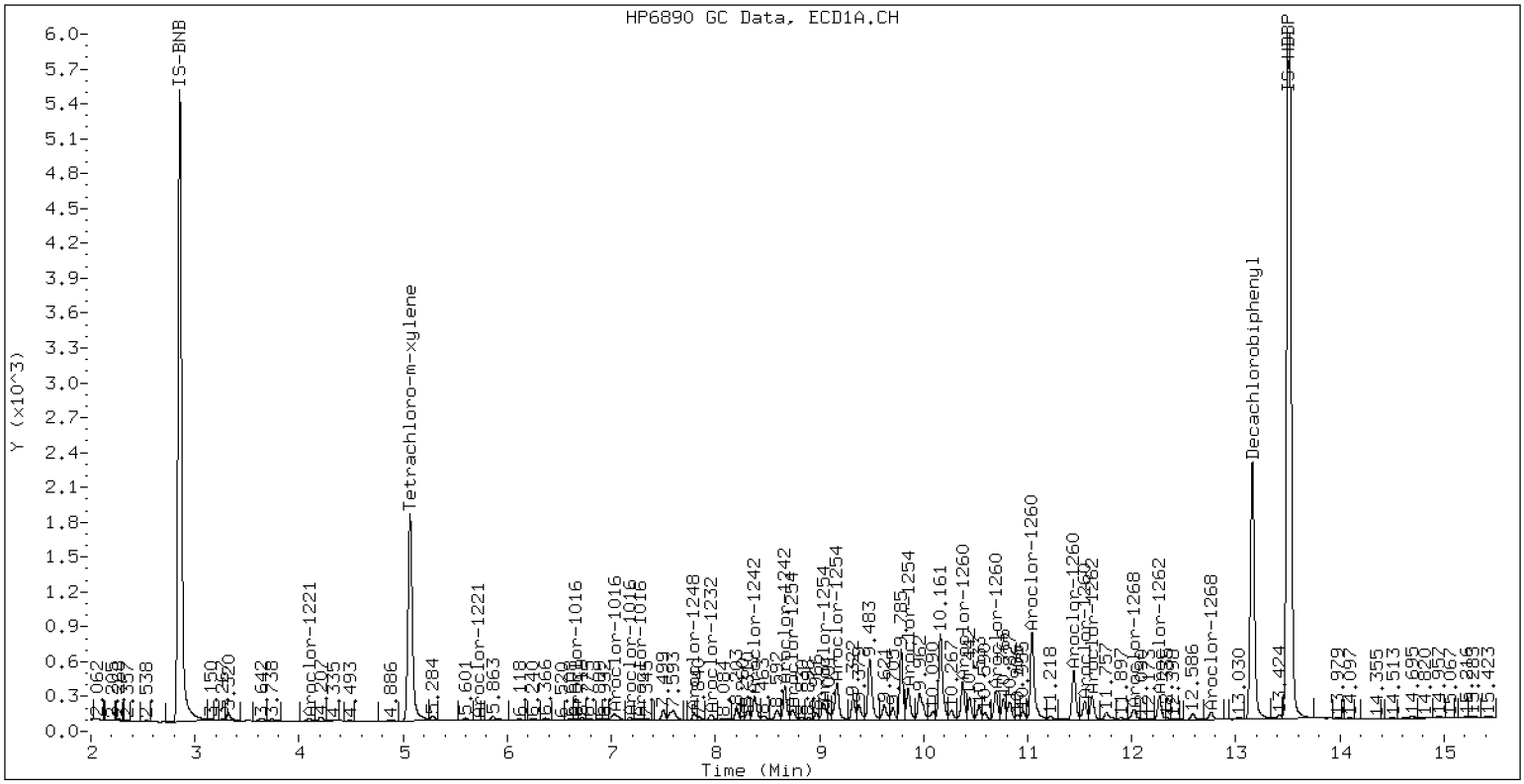
Total PCB Area Col2 (5.168 - 13.065) = 2073408 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

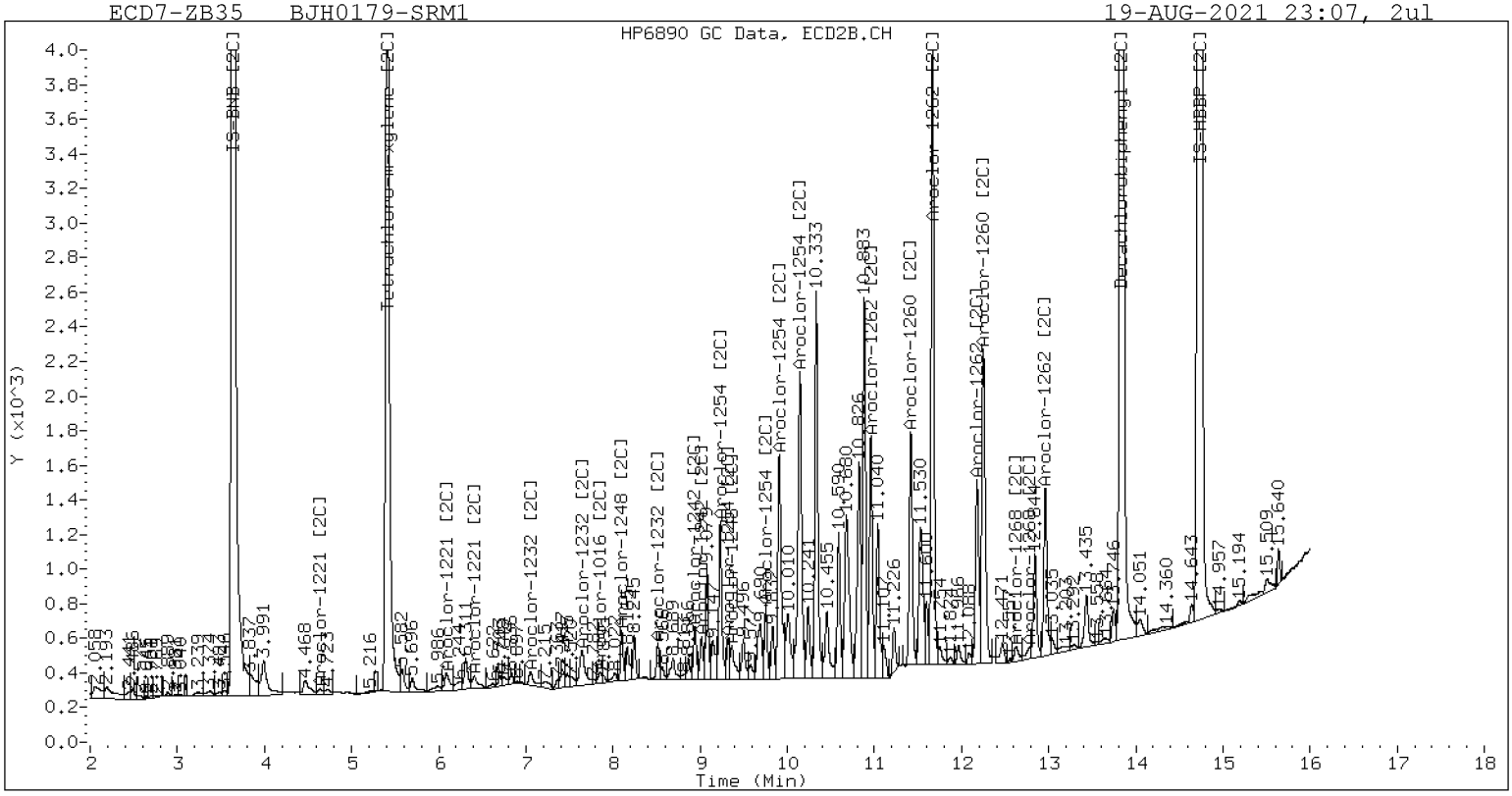
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0179-SRM1 19-AUG-2021 23:07, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0179-SRM1 19-AUG-2021 23:07, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0193-SRM1
Batch: BJH0193
Initial/Final: 2.5 g / 2.5 mL
Preparation: EPA 3550C (Ultrasonic)
Analyzed: 08/20/2021 2:52
Standard ID: J006842
Expires: 12/28/2021
Standard Lot#: PSRM0136
Description: Puget Sound reference-SRM

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Aroclor 1260	108.00	82.4	2.9	20.0		76.3	38 - 167
Aroclor 1260 [2C]	108.00	69.9	2.9	20.0		64.7	38 - 167

* Values outside of QC limits

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

Data file 1: /210819.b/08192143ECD7.D
Data file 2: /210819.b/210819.b/08192143ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0193-SRM1
Client ID:
Injection Date: 20-AUG-2021 02:52
Report Date: 08/23/2021 17:05
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.001	116589	5.410	-0.002	326892	34.8	32.6	6.4	Tetrachloro-m-xylene
13.160	-0.006	145562	13.841	-0.009	816141	37.4	31.9	15.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	277381	7.2
Hexabromobiphenyl	425681	429245	0.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	779698	8.1
Hexabromobiphenyl	863111	1151014	33.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.653	-0.007	1378	14.0	1	7.051	-0.003	5937	13.4
Aroclor-1016	2	7.029	-0.004	4180	13.9	2	7.645	-0.005	17650	17.7
Aroclor-1016	3	7.176	-0.002	1258	9.3	3	7.851	-0.006	5525	14.2
Aroclor-1016	4	7.282	-0.006	1206	14.2	4	8.100	-0.004	12745	54.0
Total Col1Ave (4 peaks):					12.9	Total Col2Ave (4 peaks):				24.8 RPD = 63*
Corrected Ave (3 peaks):					12.4	Corrected Ave (3 peaks):				15.1 RPD = 19
Aroclor-1221	1	4.105	0.090	134	6.1	1	4.639	-0.038	1763	30.1
Aroclor-1221	2	5.364	-0.087	425	12.4	2	6.087	0.015	6886	51.4
Aroclor-1221	3	5.722	-0.002	432	4.7	3	6.408	-0.001	5711	24.5
Total Col1Ave (3 peaks):					7.7	Total Col2Ave (3 peaks):				35.3 RPD = 128*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.105	0.087	134	10.0	1	4.639	-0.040	1763	50.6
Aroclor-1232	2	5.722	-0.005	432	5.9	2	7.051	-0.007	5937	29.2
Aroclor-1232	3	7.029	-0.004	4180	37.5	3	7.645	-0.006	17650	43.3
Aroclor-1232	4	7.962	-0.011	3083	67.2	4	8.515	-0.007	8717	82.1
Total Col1Ave (4 peaks):					30.1	Total Col2Ave (4 peaks):				51.3 RPD = 52*
Corrected Ave (3 peaks):					17.8	Corrected Ave (3 peaks):				41.0 RPD = 79*
Aroclor-1242	1	6.653	-0.008	1378	18.0	1	7.051	-0.003	5937	16.6
Aroclor-1242	2	7.029	-0.005	4180	18.3	2	7.645	-0.004	17650	22.7
Aroclor-1242	3	8.378	-0.005	11257	87.2	3	8.940	-0.013	15545	42.7
Aroclor-1242	4	8.668	-0.007	14230	269.8	4	9.017	-0.016	11247	27.2
Total Col1Ave (4 peaks):					98.4	Total Col2Ave (4 peaks):				27.3 RPD = 113*
Corrected Ave (3 peaks):					41.2	Corrected Ave (3 peaks):				22.2 RPD = 60*
Aroclor-1248	1	7.795	-0.006	3073	26.4	1	8.100	-0.005	12745	39.4
Aroclor-1248	2	7.962	-0.010	3083	20.3	2	8.515	-0.005	8717	22.2
Aroclor-1248	3	8.378	-0.003	11257	50.7	3	8.940	-0.012	15545	24.8
Aroclor-1248	4	8.668	-0.008	14230	112.2	4	9.364	-0.016	12513	23.5
Total Col1Ave (4 peaks):					52.4	Total Col2Ave (4 peaks):				27.5 RPD = 62*
Corrected Ave (3 peaks):					32.5	Corrected Ave (3 peaks):				23.5 RPD = 32
Aroclor-1254	1	8.668	-0.009	14230	59.5	1	9.231	-0.008	43873	66.1
Aroclor-1254	2	8.741	-0.007	5212	47.0	2	9.319	-0.012	10815	27.8
Aroclor-1254	3	9.040	-0.002	8178	52.4	3	9.754	-0.008	20163	39.9
Aroclor-1254	4	9.168	-0.012	19234	64.5	4	9.910	-0.005	78304	69.9
Aroclor-1254	5	9.854	-0.017	14581	77.9	5	10.148	-0.003	115512	101.6
Total Col1Ave (5 peaks):					60.3	Total Col2Ave (5 peaks):				61.1 RPD = 1
Corrected Ave (4 peaks):					55.9	Corrected Ave (4 peaks):				50.9 RPD = 9
Aroclor-1260	1	10.377	-0.008	16438	85.1	1	11.420	-0.004	73495	76.8
Aroclor-1260	2	10.695	-0.008	13143	69.3	2	11.670	-0.008	185959	66.9
Aroclor-1260	3	11.044	-0.010	40738	79.5	3	12.253	-0.008	121788	68.1
Aroclor-1260	4	11.445	-0.009	23208	101.7	4	12.964	-0.007	58063	67.9
Aroclor-1260	5	11.550	-0.006	8729	76.4	NS	---			----
Total Col1Ave (5 peaks):					82.4	Total Col2Ave (4 peaks):				69.9 RPD = 16
Corrected Ave (4 peaks):					77.6	Corrected Ave (3 peaks):				67.6 RPD = 14
Aroclor-1262	1	10.377	-0.006	16438	62.8	1	10.961	-0.010	75282	53.5
Aroclor-1262	2	11.445	-0.009	23208	136.8	2	11.670	-0.016	185959	62.6
Aroclor-1262	3	11.621	-0.006	11291	46.2	3	12.180	-0.008	65408	49.6
Aroclor-1262	4	12.269	-0.006	11915	59.4	4	12.964	-0.009	58063	47.3
Total Col1Ave (4 peaks):					76.3	Total Col2Ave (4 peaks):				53.2 RPD = 36
Corrected Ave (3 peaks):					56.1	Corrected Ave (3 peaks):				50.1 RPD = 11
Aroclor-1268	1	11.550	-0.007	8729	15.2	1	12.180	-0.020	65408	19.8
Aroclor-1268	2	11.621	-0.005	11291	18.7	2	12.253	-0.014	121788	33.7
Aroclor-1268	3	12.023	0.022	6454	13.6	3	12.631	-0.013	8242	2.6
Aroclor-1268	4	12.762	-0.010	4397	2.9	4	12.779	-0.004	6370	8.3
Total Col1Ave (4 peaks):					12.6	Total Col2Ave (4 peaks):				16.1 RPD = 25

Corrected Ave (3 peaks): 10.5 Corrected Ave (3 peaks): 10.2 RPD = 3

Total PCB Area Col1 (5.168 - 13.065) = 478353 Col1 Total PCB = 0.2 ppm*

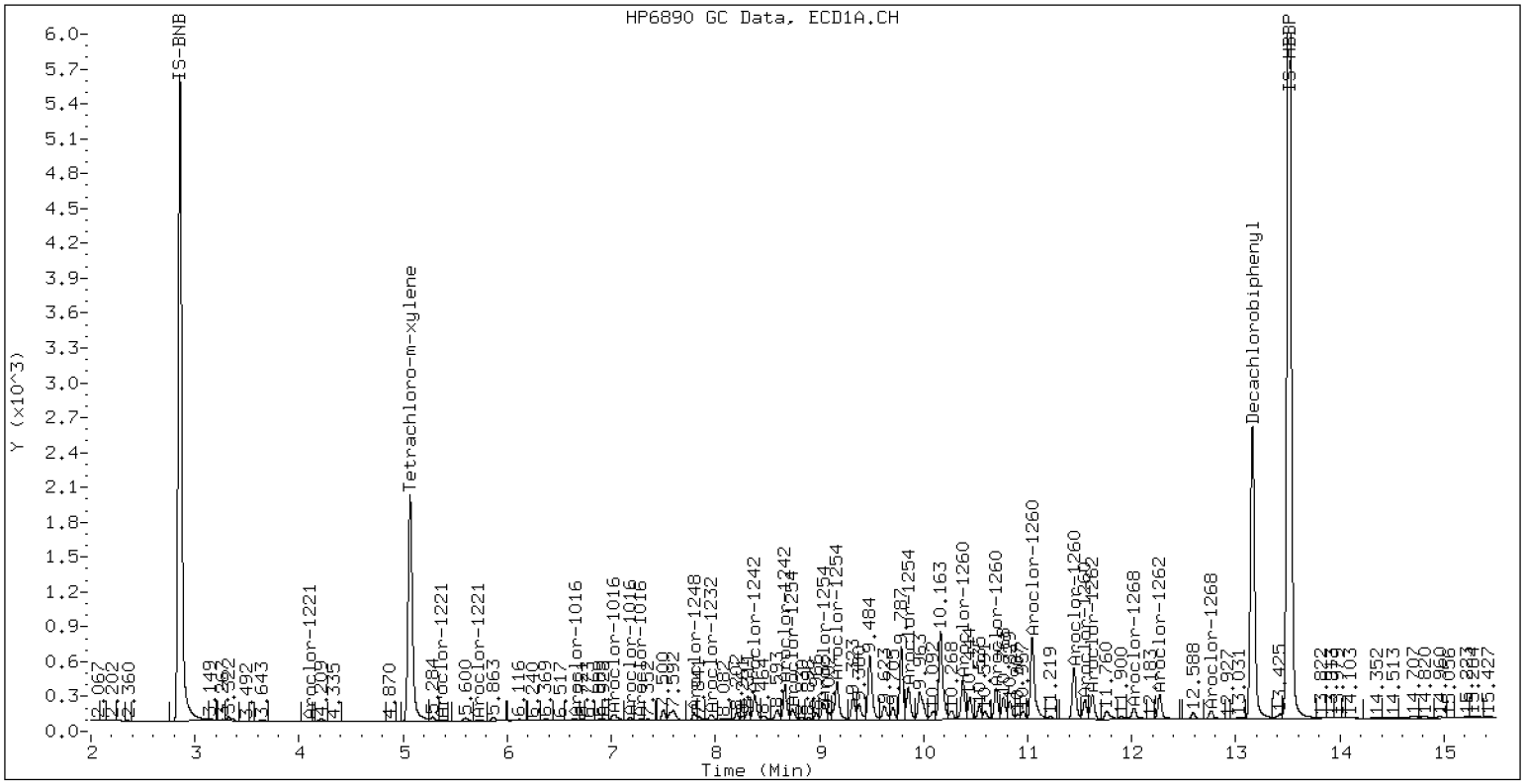
Total PCB Area Col2 (5.168 - 13.065) = 2208035 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

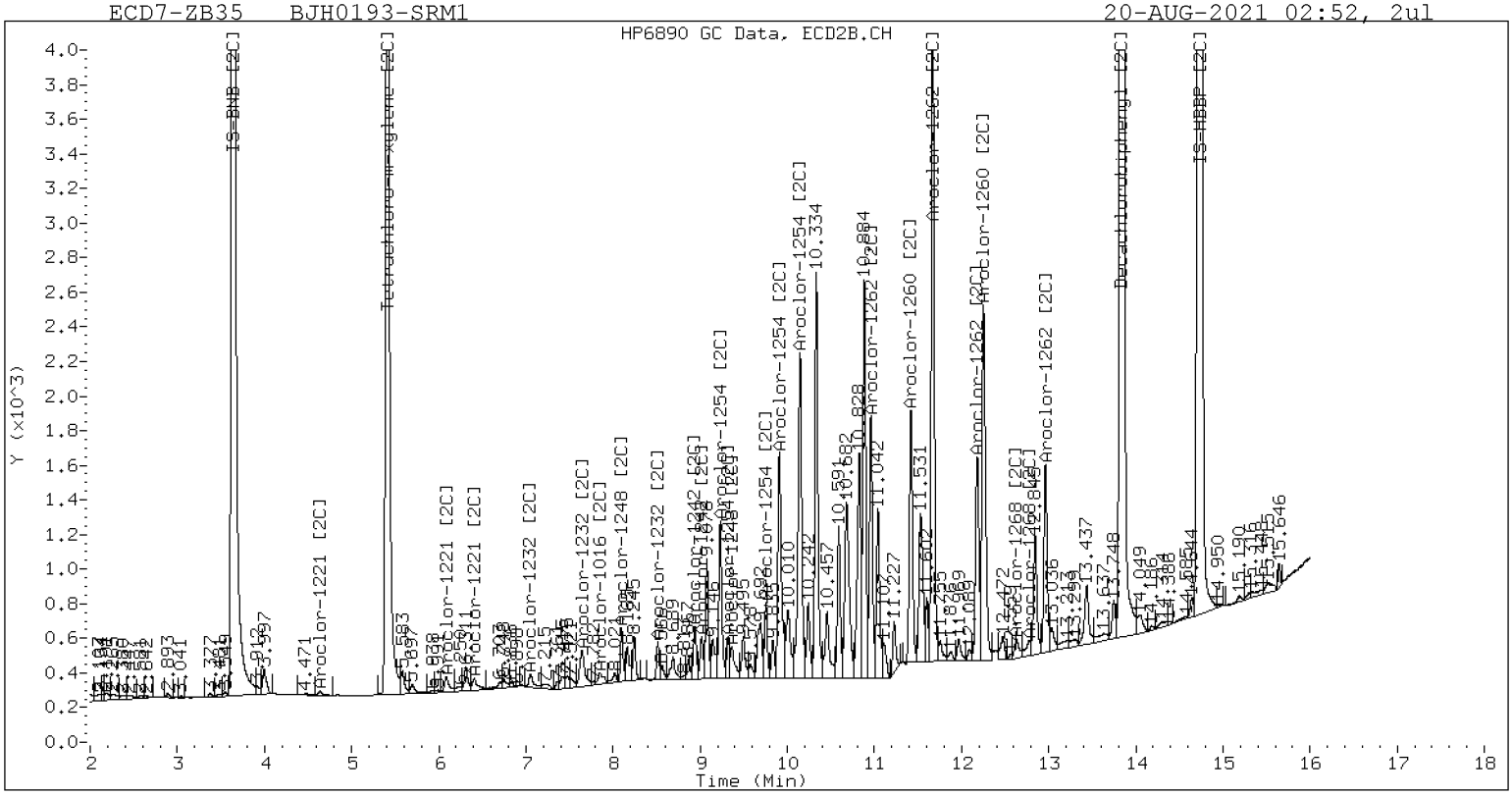
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0193-SRM1 20-AUG-2021 02:52, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0193-SRM1 20-AUG-2021 02:52, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0604-SRM1
Batch: BJH0604
Initial/Final: 2.5 g / 2.5 mL
Preparation: EPA 3546 (Microwave)
Analyzed: 08/27/2021 23:49
Standard ID: J007935
Expires: 01/30/2022
Standard Lot#: PSRM0140
Description: Puget Sound reference-SRM

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Aroclor 1260	108.00	96.2	2.9	20.0		89.1	38 - 167
Aroclor 1260 [2C]	108.00	74.4	2.9	20.0		68.9	38 - 167

* Values outside of QC limits

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

Data file 1: /2108127.b/08272124ECD7.D
Data file 2: /2108127.b/2108127.b/08272124ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0604-SRM1
Client ID:
Injection Date: 27-AUG-2021 23:49
Report Date: 08/30/2021 14:36
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.068	-0.001	102790	5.410	-0.004	253667	28.9	25.7	11.7	Tetrachloro-m-xylene
13.157	-0.009	112633	13.838	-0.006	607822	29.0	24.1	18.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	294169	13.6
Hexabromobiphenyl	425681	427483	0.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	767860	6.5
Hexabromobiphenyl	863111	1135755	31.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.609	-0.054	11461	109.9	1	7.052	-0.003	11028	25.2
Aroclor-1016	2	7.033	-0.005	5403	16.9	2	7.654	0.001	32282	33.0
Aroclor-1016	3	7.180	-0.002	4812	33.6	3	7.866	0.008	5290	13.8
Aroclor-1016	4	7.280	-0.012	4789	53.4	4	8.100	-0.005	12878	55.4
Total Col1Ave (4 peaks):				53.4		Total Col2Ave (4 peaks):			31.8	RPD = 51*
Corrected Ave (3 peaks):				34.6		Corrected Ave (3 peaks):			24.0	RPD = 36
Aroclor-1221	1	4.103	0.088	6544	281.7	1	4.636	-0.040	9314	161.6
Aroclor-1221	2	5.500	0.049	2105	57.8	2	6.108	0.036	35063	265.8
Aroclor-1221	3	5.724	-0.001	2783	28.3	3	6.313	-0.096	194709	846.8
Total Col1Ave (3 peaks):				122.6		Total Col2Ave (3 peaks):			424.7	RPD = 110*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.103	0.086	6544	458.7	1	4.636	-0.043	9314	271.4
Aroclor-1232	2	5.724	-0.003	2783	35.9	2	7.052	-0.006	11028	55.0
Aroclor-1232	3	7.033	-0.001	5403	45.7	3	7.654	0.003	32282	80.4
Aroclor-1232	4	7.961	-0.011	5328	109.4	4	8.513	-0.009	10291	98.4
Total Col1Ave (4 peaks):				162.4		Total Col2Ave (4 peaks):			126.3	RPD = 25
Corrected Ave (3 peaks):				63.7		Corrected Ave (3 peaks):			78.0	RPD = 20
Aroclor-1242	1	6.609	-0.053	11461	141.4	1	7.052	-0.003	11028	31.2
Aroclor-1242	2	7.033	-0.005	5403	22.4	2	7.654	0.001	32282	42.1
Aroclor-1242	3	8.378	-0.008	13349	97.5	3	8.940	-0.017	14077	39.3
Aroclor-1242	4	8.668	-0.007	16130	288.4	4	9.017	-0.021	10453	25.7
Total Col1Ave (4 peaks):				137.4		Total Col2Ave (4 peaks):			34.6	RPD = 120*
Corrected Ave (3 peaks):				87.1		Corrected Ave (3 peaks):			32.1	RPD = 92*
Aroclor-1248	1	7.796	-0.007	8584	69.6	1	8.100	-0.005	12878	40.5
Aroclor-1248	2	7.961	-0.012	5328	33.1	2	8.513	-0.007	10291	26.6
Aroclor-1248	3	8.378	-0.006	13349	56.7	3	8.940	-0.014	14077	22.8
Aroclor-1248	4	8.668	-0.008	16130	119.9	4	9.364	-0.018	8801	16.8
Total Col1Ave (4 peaks):				69.8		Total Col2Ave (4 peaks):			26.7	RPD = 89*
Corrected Ave (3 peaks):				53.1		Corrected Ave (3 peaks):			22.1	RPD = 83*
Aroclor-1254	1	8.668	-0.010	16130	63.6	1	9.230	-0.009	41611	63.7
Aroclor-1254	2	8.741	-0.008	6550	55.8	2	9.319	-0.013	9203	24.0
Aroclor-1254	3	9.040	-0.006	9816	59.3	3	9.753	-0.009	16554	33.2
Aroclor-1254	4	9.168	-0.012	22126	70.0	4	9.908	-0.005	75412	68.3
Aroclor-1254	5	9.852	-0.018	16061	80.9	5	10.146	-0.004	107112	95.7
Total Col1Ave (5 peaks):				65.9		Total Col2Ave (5 peaks):			57.0	RPD = 15
Corrected Ave (4 peaks):				62.2		Corrected Ave (4 peaks):			47.3	RPD = 27
Aroclor-1260	1	10.376	-0.011	19266	100.2	1	11.418	-0.007	75846	80.3
Aroclor-1260	2	10.693	-0.011	15506	82.1	2	11.668	-0.010	197387	71.9
Aroclor-1260	3	11.042	-0.013	48787	95.6	3	12.251	-0.008	126815	71.9
Aroclor-1260	4	11.443	-0.013	26514	116.7	4	12.962	-0.008	61918	73.4
Aroclor-1260	5	11.547	-0.010	9853	86.6	NS	---			----
Total Col1Ave (5 peaks):				96.2		Total Col2Ave (4 peaks):			74.4	RPD = 26
Corrected Ave (4 peaks):				91.1		Corrected Ave (3 peaks):			72.4	RPD = 23
Aroclor-1262	1	10.376	-0.008	19266	73.9	1	10.960	-0.010	70914	51.1
Aroclor-1262	2	11.443	-0.011	26514	157.0	2	11.668	-0.018	197387	67.4
Aroclor-1262	3	11.619	-0.008	12525	51.4	3	12.178	-0.010	66414	51.1
Aroclor-1262	4	12.266	-0.008	12439	62.2	4	12.962	-0.011	61918	51.1
Total Col1Ave (4 peaks):				86.1		Total Col2Ave (4 peaks):			55.1	RPD = 44*
Corrected Ave (3 peaks):				62.5		Corrected Ave (3 peaks):			51.1	RPD = 20
Aroclor-1268	1	11.547	-0.010	9853	17.2	1	12.178	-0.022	66414	20.4
Aroclor-1268	2	11.619	-0.006	12525	20.8	2	12.251	-0.016	126815	35.6
Aroclor-1268	3	12.020	0.020	6747	14.3	3	12.627	-0.017	4926	1.6
Aroclor-1268	4	12.760	-0.011	3288	2.2	4	12.775	-0.008	5900	7.8
Total Col1Ave (4 peaks):				13.6		Total Col2Ave (4 peaks):			16.3	RPD = 18

Corrected Ave (3 peaks): 11.2 Corrected Ave (3 peaks): 9.9 RPD = 12

Total PCB Area Col1 (5.170 - 13.066) = 746852 Col1 Total PCB = 0.3 ppm*

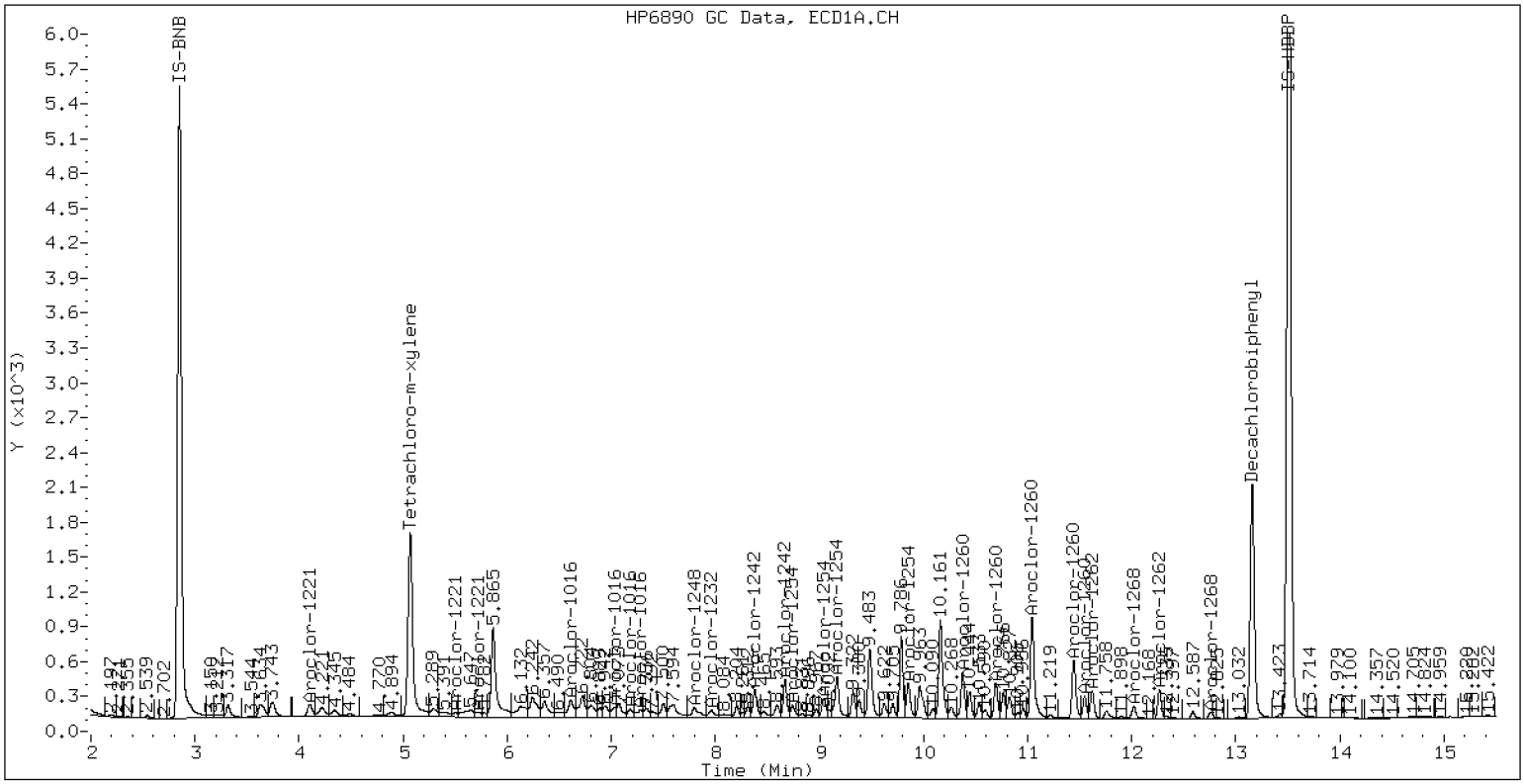
Total PCB Area Col2 (5.170 - 13.066) = 2394755 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

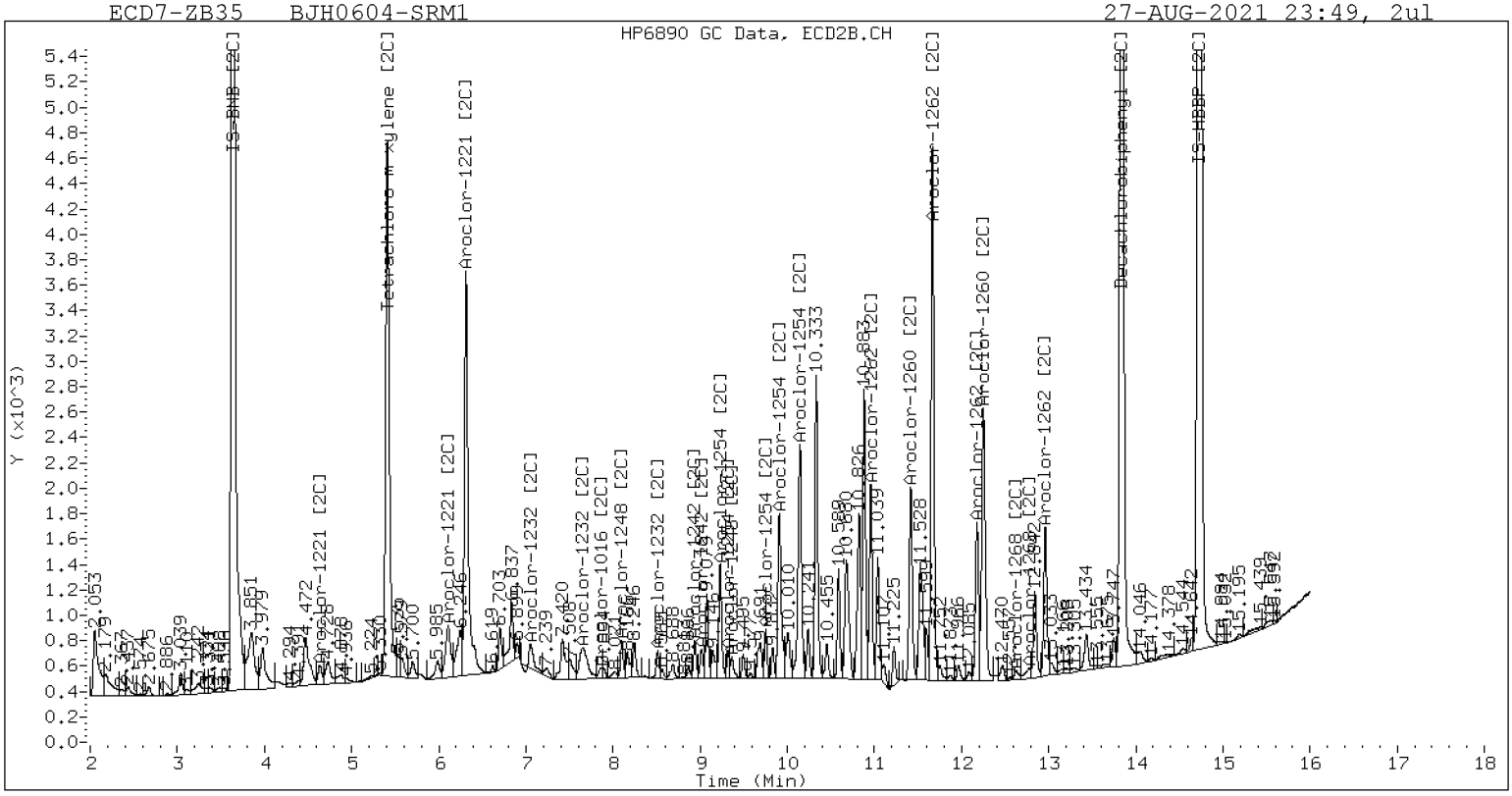
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0604-SRM1 27-AUG-2021 23:49, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0604-SRM1 27-AUG-2021 23:49, 2ul

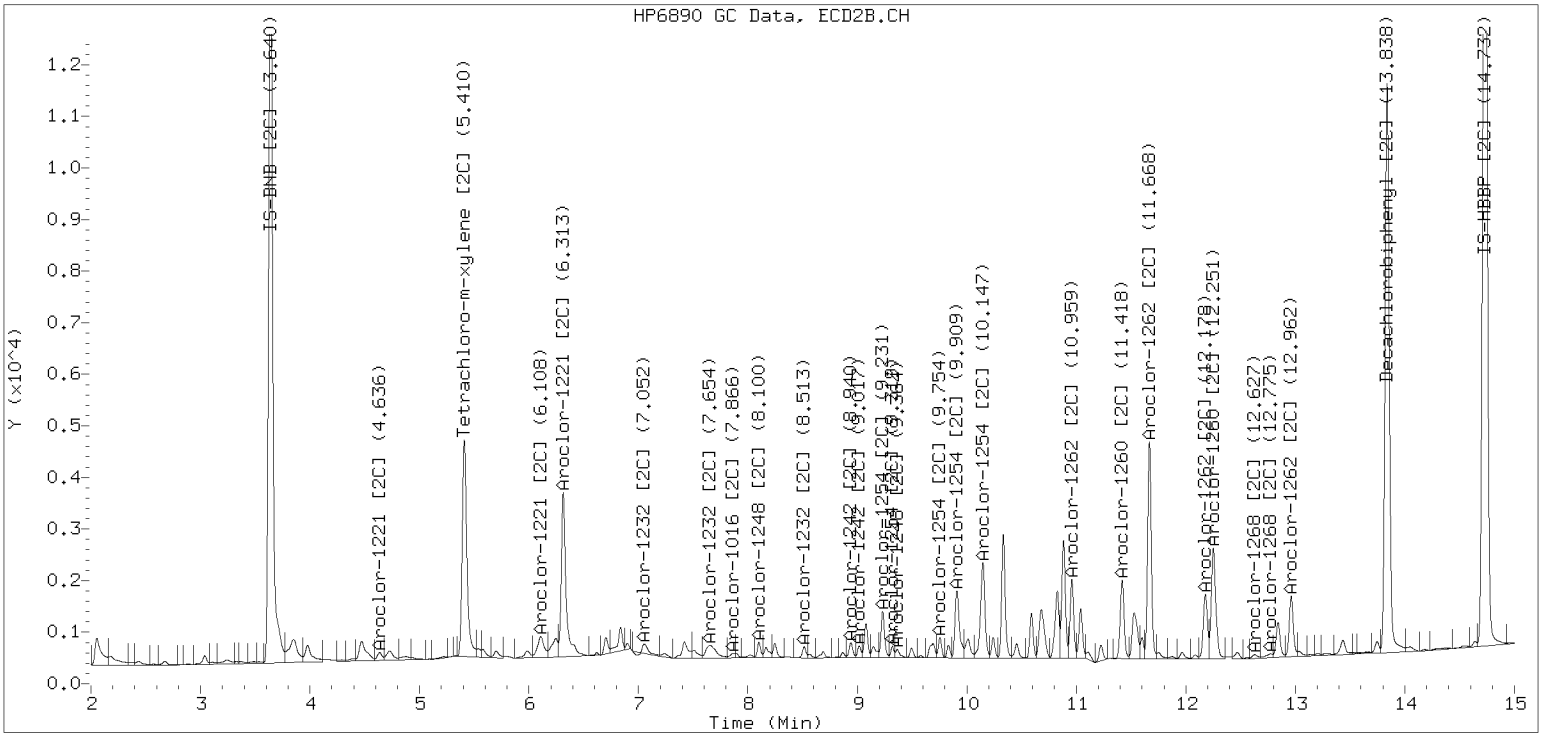


ZB-35 Manual Integration: YES

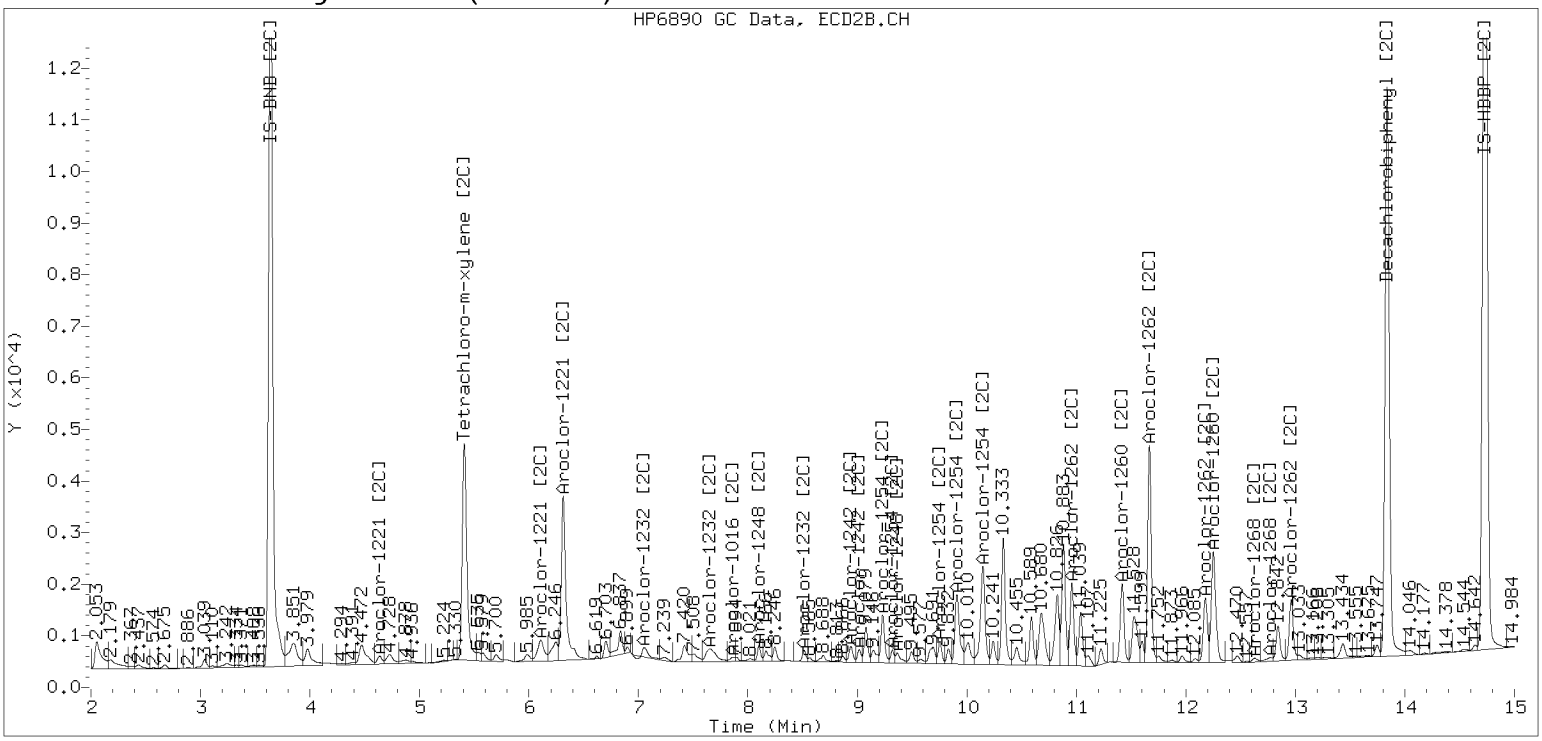
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/2108127.b/2108127.b/08272124ECD7.D Injection Date: 27-AUG-202

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016	20	3.905933E-02	50	0.0446259	100	4.564066E-02	250	0.04709	500	4.625535E-02	1000	4.505981E-02
Aroclor-1016 (1)	20	2.649017E-02	50	2.912055E-02	100	2.939738E-02	250	2.963943E-02	500	2.849957E-02	1000	2.709274E-02
Aroclor-1016 (2)	20	7.428187E-02	50	8.423329E-02	100	8.746182E-02	250	9.203341E-02	500	9.182498E-02	1000	9.075441E-02
Aroclor-1016 (3)	20	3.555465E-02	50	4.092549E-02	100	4.058933E-02	250	4.075499E-02	500	3.888112E-02	1000	3.692439E-02
Aroclor-1016 (4)	20	1.991061E-02	50	2.422428E-02	100	2.511411E-02	250	2.593218E-02	500	2.581574E-02	1000	2.546764E-02
Aroclor 1260	20	4.610015E-02	50	4.459123E-02	100	4.539035E-02	250	4.776685E-02	500	4.820696E-02	1000	4.469533E-02
Aroclor-1260 (1)	20	3.649398E-02	50	3.599611E-02	100	3.587713E-02	250	3.720495E-02	500	3.606153E-02	1000	0.0343203
Aroclor-1260 (2)	20	3.493239E-02	50	3.435188E-02	100	3.496901E-02	250	3.686291E-02	500	3.620059E-02	1000	3.463348E-02
Aroclor-1260 (3)	20	9.843722E-02	50	9.112843E-02	100	9.295538E-02	250	9.789039E-02	500	0.1019955	1000	9.043784E-02
Aroclor-1260 (4)	20	3.984431E-02	50	4.042084E-02	100	4.181781E-02	250	4.477343E-02	500	4.502778E-02	1000	4.333459E-02
Aroclor-1260 (5)	20	2.079286E-02	50	2.105887E-02	100	2.133245E-02	250	2.210256E-02	500	2.174943E-02	1000	2.075043E-02
Decachlorobiphenyl	3.2	0.7431769	8	0.7302126	16	0.7455559	40	0.7525025	80	0.7163282	160	0.6694058
Tetrachlorometaxylene	3.2	0.9393656	8	0.9142096	16	0.9758103	40	1.013211	80	0.9925859	160	0.9666244

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221												
Aroclor-1221 (1)												
Aroclor-1221 (2)												
Aroclor-1221 (3)												
Aroclor 1232												
Aroclor-1232 (1)												
Aroclor-1232 (2)												
Aroclor-1232 (3)												
Aroclor-1232 (4)												
Aroclor 1242	20	3.476957E-02	50	3.251176E-02	100	3.574202E-02	250	3.627235E-02	500	0.0361029	1000	0.0348766
Aroclor-1242 (1)	20	1.894782E-02	50	2.152568E-02	100	2.336447E-02	250	2.359921E-02	500	2.299109E-02	1000	2.182021E-02
Aroclor-1242 (2)	20	5.663612E-02	50	5.706852E-02	100	6.610672E-02	250	7.095404E-02	500	7.201235E-02	1000	7.146865E-02
Aroclor-1242 (3)	20	4.583842E-02	50	3.531016E-02	100	3.720097E-02	250	3.521151E-02	500	3.564921E-02	1000	3.412729E-02
Aroclor-1242 (4)	20	1.765592E-02	50	1.614269E-02	100	1.629592E-02	250	1.532464E-02	500	1.375896E-02	1000	1.209024E-02
Aroclor 1248												
Aroclor-1248 (1)												
Aroclor-1248 (2)												
Aroclor-1248 (3)												
Aroclor-1248 (4)												
Aroclor 1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1262 (1)												
Aroclor-1262 (2)												
Aroclor-1262 (3)												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor-1262 (4)												
Aroclor-1268 (1)												
Aroclor-1268 (2)												
Aroclor-1268 (3)												
Aroclor-1268 (4)												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1248	20	4.277049E-02	50	4.586843E-02	100	4.478412E-02	250	4.573699E-02	500	4.502952E-02	1000	4.273277E-02
Aroclor-1248 (1)	20	3.027179E-02	50	3.457133E-02	100	0.0326326	250	3.463825E-02	500	3.494353E-02	1000	3.409812E-02
Aroclor-1248 (2)	20	3.872679E-02	50	4.418321E-02	100	4.305407E-02	250	4.595423E-02	500	4.598635E-02	1000	4.466949E-02
Aroclor-1248 (3)	20	6.153453E-02	50	6.328759E-02	100	6.556992E-02	250	0.0663208	500	6.567134E-02	1000	6.210098E-02
Aroclor-1248 (4)	20	4.054886E-02	50	4.143157E-02	100	0.0378799	250	3.603467E-02	500	3.351685E-02	1000	3.006244E-02

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016												
Aroclor-1016 (1)												
Aroclor-1016 (2)												
Aroclor-1016 (3)												
Aroclor-1016 (4)												
Aroclor 1254	20	0.0553437	50	5.697553E-02	100	5.740632E-02	250	5.907612E-02	500	5.847785E-02	1000	5.576525E-02
Aroclor-1254 (1)	20	7.163779E-02	50	0.0694659	100	6.902673E-02	250	7.004227E-02	500	6.891729E-02	1000	6.501982E-02
Aroclor-1254 (2)	20	3.299361E-02	50	3.464937E-02	100	3.312192E-02	250	3.311742E-02	500	3.111858E-02	1000	2.670265E-02
Aroclor-1254 (3)	20	4.922704E-02	50	4.279015E-02	100	4.317994E-02	250	4.501395E-02	500	4.520795E-02	1000	4.449624E-02
Aroclor-1254 (4)	20	7.660199E-02	50	8.623033E-02	100	8.820416E-02	250	9.026987E-02	500	8.928537E-02	1000	8.506473E-02
Aroclor-1254 (5)	20	4.625809E-02	50	5.174191E-02	100	5.349887E-02	250	5.693709E-02	500	5.786004E-02	1000	5.754279E-02
Aroclor 1260												
Aroclor-1260 (1)												
Aroclor-1260 (2)												
Aroclor-1260 (3)												
Aroclor-1260 (4)												
Aroclor-1260 (5)												

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221	20	1.344016E-02	50	1.362337E-02	100	1.424699E-02	250	1.556865E-02	500	1.496468E-02	1000	1.410511E-02
Aroclor-1221 (1)	20	6.102735E-03	50	6.616017E-03	100	6.915718E-03	250	6.699115E-03	500	6.032524E-03	1000	5.539604E-03
Aroclor-1221 (2)	20	8.599308E-03	50	8.383142E-03	100	9.463615E-03	250	1.119347E-02	500	1.106774E-02	1000	1.071014E-02
Aroclor-1221 (3)	20	2.561843E-02	50	2.587095E-02	100	2.636163E-02	250	2.881334E-02	500	2.779378E-02	1000	2.606558E-02
Aroclor 1232												
Aroclor-1232 (1)												
Aroclor-1232 (2)												
Aroclor-1232 (3)												
Aroclor-1232 (4)												
Aroclor 1242												
Aroclor-1242 (1)												
Aroclor-1242 (2)												
Aroclor-1242 (3)												
Aroclor-1242 (4)												
Aroclor 1248												
Aroclor-1248 (1)												
Aroclor-1248 (2)												
Aroclor-1248 (3)												
Aroclor-1248 (4)												
Aroclor 1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1262 (1)	20	5.134025E-02	50	4.712973E-02	100	4.785041E-02	250	4.922198E-02	500	4.998328E-02	1000	4.738766E-02
Aroclor-1262 (2)	20	3.096922E-02	50	2.863311E-02	100	0.0307571	250	3.227303E-02	500	3.368581E-02	1000	3.335815E-02
Aroclor-1262 (3)	20	0.046557	50	4.368276E-02	100	4.523577E-02	250	4.610753E-02	500	0.0468182	1000	4.504377E-02

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor-1262 (4)	20	0.0383223	50	3.598523E-02	100	3.699579E-02	250	3.807082E-02	500	0.0394668	1000	3.563971E-02
Aroclor-1268 (1)												
Aroclor-1268 (2)												
Aroclor-1268 (3)												
Aroclor-1268 (4)												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 31		Level 32		Level 33		Level 34		Level 35		Level 36	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1232	20	1.402512E-02	50	1.590765E-02	100	1.784916E-02	250	1.895611E-02	500	1.948861E-02	1000	1.936821E-02
Aroclor-1232 (1)	20	4.656687E-03	50	4.246942E-03	100	0.0037225	250	3.695733E-03	500	3.631422E-03	1000	3.325733E-03
Aroclor-1232 (2)	20	1.975946E-02	50	1.981906E-02	100	2.118962E-02	250	2.245563E-02	500	2.213617E-02	1000	2.117687E-02
Aroclor-1232 (3)	20	2.266989E-02	50	2.831294E-02	100	3.249878E-02	250	3.501632E-02	500	3.681569E-02	1000	3.780662E-02
Aroclor-1232 (4)	20	9.014466E-03	50	1.125164E-02	100	1.398575E-02	250	1.465674E-02	500	1.537116E-02	1000	0.0151636
Aroclor-1268 (1)	20	0.1098826	50	0.1067175	100	0.1064917	250	0.1073455	500	0.1084757	1000	0.1050728
Aroclor-1268 (2)	20	0.116822	50	0.1125651	100	0.1123015	250	0.1123775	500	0.1131765	1000	0.1082687
Aroclor-1268 (3)	20	9.346653E-02	50	8.829601E-02	100	8.761007E-02	250	8.780397E-02	500	8.875903E-02	1000	8.540146E-02
Aroclor-1268 (4)	20	0.3021591	50	0.2885466	100	0.2854368	250	0.278664	500	0.2789172	1000	0.2801083

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016	4.462184E-02	6.4			RSD (20)	
Aroclor 1016	4.462184E-02	6.4			RSD (20)	
Aroclor-1016 (1)	2.837331E-02	4.6			RSD (20)	
Aroclor-1016 (1)	2.837331E-02	4.6			RSD (20)	
Aroclor-1016 (2)	8.676496E-02	7.9			RSD (20)	
Aroclor-1016 (2)	8.676496E-02	7.9			RSD (20)	
Aroclor-1016 (3)	3.893833E-02	5.8			RSD (20)	
Aroclor-1016 (3)	3.893833E-02	5.8			RSD (20)	
Aroclor-1016 (4)	2.441076E-02	9.4			RSD (20)	
Aroclor-1016 (4)	2.441076E-02	9.4			RSD (20)	
Aroclor 1221	1.432483E-02	5.7			RSD (20)	
Aroclor 1221	1.432483E-02	5.7			RSD (20)	
Aroclor-1221 (1)	6.317619E-03	8.1			RSD (20)	
Aroclor-1221 (1)	6.317619E-03	8.1			RSD (20)	
Aroclor-1221 (2)	9.902902E-03	12.7			RSD (20)	
Aroclor-1221 (2)	9.902902E-03	12.7			RSD (20)	
Aroclor-1221 (3)	2.675395E-02	4.7			RSD (20)	
Aroclor-1221 (3)	2.675395E-02	4.7			RSD (20)	
Aroclor 1232	1.759914E-02	12.5			RSD (20)	
Aroclor 1232	1.759914E-02	12.5			RSD (20)	
Aroclor-1232 (1)	3.879836E-03	12.4			RSD (20)	
Aroclor-1232 (1)	3.879836E-03	12.4			RSD (20)	
Aroclor-1232 (2)	2.108947E-02	5.3			RSD (20)	
Aroclor-1232 (2)	2.108947E-02	5.3			RSD (20)	
Aroclor-1232 (3)	3.218671E-02	17.9			RSD (20)	
Aroclor-1232 (3)	3.218671E-02	17.9			RSD (20)	
Aroclor-1232 (4)	1.324056E-02	19.3			RSD (20)	
Aroclor-1232 (4)	1.324056E-02	19.3			RSD (20)	
Aroclor 1242	3.504587E-02	4.0			RSD (20)	
Aroclor 1242	3.504587E-02	4.0			RSD (20)	
Aroclor-1242 (1)	2.204141E-02	7.8			RSD (20)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1242 (1)	2.204141E-02	7.8			RSD (20)	
Aroclor-1242 (2)	6.570773E-02	10.9			RSD (20)	
Aroclor-1242 (2)	6.570773E-02	10.9			RSD (20)	
Aroclor-1242 (3)	3.722293E-02	11.6			RSD (20)	
Aroclor-1242 (3)	3.722293E-02	11.6			RSD (20)	
Aroclor-1242 (4)	1.521139E-02	13.1			RSD (20)	
Aroclor-1242 (4)	1.521139E-02	13.1			RSD (20)	
Aroclor 1248	4.448705E-02	3.2			RSD (20)	
Aroclor 1248	4.448705E-02	3.2			RSD (20)	
Aroclor-1248 (1)	3.352594E-02	5.3			RSD (20)	
Aroclor-1248 (1)	3.352594E-02	5.3			RSD (20)	
Aroclor-1248 (2)	4.376236E-02	6.2			RSD (20)	
Aroclor-1248 (2)	4.376236E-02	6.2			RSD (20)	
Aroclor-1248 (3)	6.408086E-02	3.2			RSD (20)	
Aroclor-1248 (3)	6.408086E-02	3.2			RSD (20)	
Aroclor-1248 (4)	3.657905E-02	11.8			RSD (20)	
Aroclor-1248 (4)	3.657905E-02	11.8			RSD (20)	
Aroclor 1254	5.717413E-02	2.6			RSD (20)	
Aroclor 1254	5.717413E-02	2.6			RSD (20)	
Aroclor-1254 (1)	0.0690183	3.2			RSD (20)	
Aroclor-1254 (1)	0.0690183	3.2			RSD (20)	
Aroclor-1254 (2)	3.195059E-02	8.8			RSD (20)	
Aroclor-1254 (2)	3.195059E-02	8.8			RSD (20)	
Aroclor-1254 (3)	4.498588E-02	5.1			RSD (20)	
Aroclor-1254 (3)	4.498588E-02	5.1			RSD (20)	
Aroclor-1254 (4)	8.594274E-02	5.8			RSD (20)	
Aroclor-1254 (4)	8.594274E-02	5.8			RSD (20)	
Aroclor-1254 (5)	5.397313E-02	8.3			RSD (20)	
Aroclor-1254 (5)	5.397313E-02	8.3			RSD (20)	
Aroclor 1260	4.612514E-02	3.4			RSD (20)	
Aroclor 1260	4.612514E-02	3.4			RSD (20)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1260 (1)	3.599233E-02	2.6			RSD (20)	
Aroclor-1260 (1)	3.599233E-02	2.6			RSD (20)	
Aroclor-1260 (2)	3.532504E-02	2.8			RSD (20)	
Aroclor-1260 (2)	3.532504E-02	2.8			RSD (20)	
Aroclor-1260 (3)	9.547413E-02	4.9			RSD (20)	
Aroclor-1260 (3)	9.547413E-02	4.9			RSD (20)	
Aroclor-1260 (4)	4.253646E-02	5.2			RSD (20)	
Aroclor-1260 (4)	4.253646E-02	5.2			RSD (20)	
Aroclor-1260 (5)	2.129777E-02	2.5			RSD (20)	
Aroclor-1260 (5)	2.129777E-02	2.5			RSD (20)	
Aroclor-1262 (1)	4.881889E-02	3.4			RSD (20)	
Aroclor-1262 (1)	4.881889E-02	3.4			RSD (20)	
Aroclor-1262 (2)	3.161274E-02	6.0			RSD (20)	
Aroclor-1262 (2)	3.161274E-02	6.0			RSD (20)	
Aroclor-1262 (3)	4.557417E-02	2.6			RSD (20)	
Aroclor-1262 (3)	4.557417E-02	2.6			RSD (20)	
Aroclor-1262 (4)	3.741344E-02	3.9			RSD (20)	
Aroclor-1262 (4)	3.741344E-02	3.9			RSD (20)	
Aroclor-1268 (1)	0.107331	1.6			RSD (20)	
Aroclor-1268 (1)	0.107331	1.6			RSD (20)	
Aroclor-1268 (2)	0.1125852	2.4			RSD (20)	
Aroclor-1268 (2)	0.1125852	2.4			RSD (20)	
Aroclor-1268 (3)	8.855618E-02	3.0			RSD (20)	
Aroclor-1268 (3)	8.855618E-02	3.0			RSD (20)	
Aroclor-1268 (4)	0.2856387	3.2			RSD (20)	
Aroclor-1268 (4)	0.2856387	3.2			RSD (20)	
Decachlorobiphenyl	0.726197	4.2			RSD (20)	
Tetrachlorometaxylene	0.9669678	3.7			RSD (20)	

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	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]	20	5.289358E-02	50	5.145778E-02	100	5.630676E-02	250	0.0556822	500	5.249244E-02	1000	4.907115E-02
Aroclor-1016 (1) [2C]	20	4.881532E-02	50	4.733252E-02	100	4.794096E-02	250	4.698295E-02	500	4.353688E-02	1000	3.909537E-02
Aroclor-1016 (2) [2C]	20	0.1001049	50	9.891498E-02	100	0.1073098	250	0.1072367	500	0.1019062	1000	9.675428E-02
Aroclor-1016 (3) [2C]	20	3.847419E-02	50	3.675556E-02	100	4.334296E-02	250	4.291058E-02	500	4.064436E-02	1000	3.814541E-02
Aroclor-1016 (4) [2C]	20	2.417992E-02	50	2.282807E-02	100	2.663338E-02	250	2.559846E-02	500	2.388226E-02	1000	2.228951E-02
Aroclor 1260 [2C]	20	0.1172691	50	0.1129179	100	0.1134907	250	0.1125851	500	0.1058395	1000	0.1031616
Aroclor-1260 (1) [2C]	20	7.145358E-02	50	7.005835E-02	100	6.872649E-02	250	6.789764E-02	500	6.298428E-02	1000	5.789875E-02
Aroclor-1260 (2) [2C]	20	0.2035789	50	0.1973001	100	0.1959076	250	0.194694	500	0.1810824	1000	0.1871902
Aroclor-1260 (3) [2C]	20	0.135521	50	0.1275038	100	0.126307	250	0.1253256	500	0.1196637	1000	0.111429
Aroclor-1260 (4) [2C]	20	5.852306E-02	50	5.680915E-02	100	6.302172E-02	250	6.242312E-02	500	5.962761E-02	1000	5.612868E-02
Decachlorobiphenyl [2C]	3.2	1.717394	8	1.720152	16	1.802687	40	1.834638	80	1.813106		
Tetrachlorometaxylene [2C]	3.2	1.034676	8	1.014034	16	1.038575	40	1.047756	80	1.011409	160	1.021859

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	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]												
Aroclor-1221 (1) [2C]												
Aroclor-1221 (2) [2C]												
Aroclor-1221 (3) [2C]												
Aroclor 1232 [2C]												
Aroclor-1232 (1) [2C]												
Aroclor-1232 (2) [2C]												
Aroclor-1232 (3) [2C]												
Aroclor-1232 (4) [2C]												
Aroclor 1242 [2C]	20	5.479372E-02	50	0.0483602	100	4.955642E-02	250	4.999233E-02	500	4.785558E-02	1000	4.398032E-02
Aroclor-1242 (1) [2C]	20	3.973442E-02	50	3.734827E-02	100	3.807644E-02	250	3.757722E-02	500	3.571596E-02	1000	3.223558E-02
Aroclor-1242 (2) [2C]	20	8.232323E-02	50	7.657779E-02	100	7.865959E-02	250	8.406963E-02	500	8.150517E-02	1000	7.624912E-02
Aroclor-1242 (3) [2C]	20	4.585178E-02	50	3.889532E-02	100	3.674847E-02	250	3.609264E-02	500	0.0342552	1000	3.211077E-02
Aroclor-1242 (4) [2C]	20	5.126546E-02	50	4.061943E-02	100	4.474117E-02	250	4.222976E-02	500	3.994598E-02	1000	0.0353258
Aroclor 1248 [2C]												
Aroclor-1248 (1) [2C]												
Aroclor-1248 (2) [2C]												
Aroclor-1248 (3) [2C]												
Aroclor-1248 (4) [2C]												
Aroclor 1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1262 (1) [2C]												
Aroclor-1262 (2) [2C]												
Aroclor-1262 (3) [2C]												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor-1262 (4) [2C]												
Aroclor-1268 (1) [2C]												
Aroclor-1268 (2) [2C]												
Aroclor-1268 (3) [2C]												
Aroclor-1268 (4) [2C]												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1248 [2C]	20	5.282516E-02	50	4.853076E-02	100	4.819472E-02	250	4.798177E-02	500	4.676512E-02	1000	4.424796E-02
Aroclor-1248 (1) [2C]	20	3.759668E-02	50	0.0346058	100	3.111703E-02	250	3.339886E-02	500	0.0322471	1000	2.994466E-02
Aroclor-1248 (2) [2C]	20	3.966831E-02	50	3.935286E-02	100	4.152605E-02	250	4.204469E-02	500	0.0409495	1000	3.856972E-02
Aroclor-1248 (3) [2C]	20	0.0719664	50	6.625807E-02	100	6.680169E-02	250	6.290895E-02	500	6.103775E-02	1000	5.666339E-02
Aroclor-1248 (4) [2C]	20	6.206924E-02	50	5.390634E-02	100	5.333413E-02	250	0.0535745	500	0.0528261	1000	5.181404E-02

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016 [2C]												
Aroclor-1016 (1) [2C]												
Aroclor-1016 (2) [2C]												
Aroclor-1016 (3) [2C]												
Aroclor-1016 (4) [2C]												
Aroclor 1254 [2C]	20	0.0907266	50	8.081978E-02	100	7.905142E-02	250	7.586303E-02	500	0.0737105	1000	6.961669E-02
Aroclor-1254 (1) [2C]	20	7.888876E-02	50	7.221584E-02	100	6.911081E-02	250	6.590108E-02	500	6.342195E-02	1000	5.885196E-02
Aroclor-1254 (2) [2C]	20	5.118135E-02	50	4.272583E-02	100	3.986894E-02	250	3.733085E-02	500	3.576026E-02	1000	3.280467E-02
Aroclor-1254 (3) [2C]	20	0.0594386	50	5.334983E-02	100	5.220844E-02	250	5.093623E-02	500	4.936532E-02	1000	0.0460384
Aroclor-1254 (4) [2C]	20	0.138452	50	0.1175468	100	0.1157566	250	0.1093424	500	0.1061771	1000	0.1026224
Aroclor-1254 (5) [2C]	20	0.1256723	50	0.1182606	100	0.1183123	250	0.1158046	500	0.1138278	1000	0.107766
Aroclor 1260 [2C]												
Aroclor-1260 (1) [2C]												
Aroclor-1260 (2) [2C]												
Aroclor-1260 (3) [2C]												
Aroclor-1260 (4) [2C]												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221 [2C]	20	1.523312E-02	50	1.489474E-02	100	1.520767E-02	250	1.469468E-02	500	1.419007E-02	1000	1.319573E-02
Aroclor-1221 (1) [2C]	20	6.287788E-03	50	6.851669E-03	100	6.745944E-03	250	5.928753E-03	500	5.407635E-03	1000	4.806184E-03
Aroclor-1221 (2) [2C]	20	1.435306E-02	50	1.351786E-02	100	1.387821E-02	250	1.382451E-02	500	1.376205E-02	1000	1.314042E-02
Aroclor-1221 (3) [2C]	20	2.505851E-02	50	0.0243147	100	2.499884E-02	250	2.433078E-02	500	2.340053E-02	1000	2.164058E-02
Aroclor 1232 [2C]												
Aroclor-1232 (1) [2C]												
Aroclor-1232 (2) [2C]												
Aroclor-1232 (3) [2C]												
Aroclor-1232 (4) [2C]												
Aroclor 1242 [2C]												
Aroclor-1242 (1) [2C]												
Aroclor-1242 (2) [2C]												
Aroclor-1242 (3) [2C]												
Aroclor-1242 (4) [2C]												
Aroclor 1248 [2C]												
Aroclor-1248 (1) [2C]												
Aroclor-1248 (2) [2C]												
Aroclor-1248 (3) [2C]												
Aroclor-1248 (4) [2C]												
Aroclor 1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1262 (1) [2C]	20	0.1111232	50	0.1009989	100	9.894425E-02	250	9.581775E-02	500	9.184825E-02	1000	8.824609E-02
Aroclor-1262 (2) [2C]	20	0.2214786	50	0.2019168	100	0.2009354	250	0.196183	500	0.1980742	1000	0.2198905
Aroclor-1262 (3) [2C]	20	9.754009E-02	50	9.095849E-02	100	9.106464E-02	250	9.129503E-02	500	9.065447E-02	1000	8.823139E-02

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor-1262 (4) [2C]	20	8.699307E-02	50	8.138582E-02	100	8.705168E-02	250	8.696934E-02	500	8.658007E-02	1000	8.334053E-02
Aroclor-1268 (1) [2C]												
Aroclor-1268 (2) [2C]												
Aroclor-1268 (3) [2C]												
Aroclor-1268 (4) [2C]												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 31		Level 32		Level 33		Level 34		Level 35		Level 36	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1232 [2C]	20	1.836796E-02	50	1.894627E-02	100	1.924847E-02	250	1.975315E-02	500	2.002037E-02	1000	0.019426
Aroclor-1232 (1) [2C]	20	4.045981E-03	50	3.755817E-03	100	3.942223E-03	250	3.521876E-03	500	3.234309E-03	1000	2.953095E-03
Aroclor-1232 (2) [2C]	20	2.084019E-02	50	2.101109E-02	100	2.121904E-02	250	2.149953E-02	500	2.090674E-02	1000	1.987726E-02
Aroclor-1232 (3) [2C]	20	4.103054E-02	50	4.175469E-02	100	4.038428E-02	250	4.152252E-02	500	4.364594E-02	1000	4.254588E-02
Aroclor-1232 (4) [2C]	20	7.555134E-03	50	9.263472E-03	100	1.144834E-02	250	1.246866E-02	500	1.229449E-02	1000	1.232776E-02
Aroclor-1268 (1) [2C]	20	0.2417854	50	0.2285366	100	0.2220159	250	0.2190865	500	0.237896	1000	0.2777864
Aroclor-1268 (2) [2C]	20	0.2636771	50	0.2482385	100	0.2463819	250	0.246669	500	0.2491593	1000	0.2964987
Aroclor-1268 (3) [2C]	20	0.2191666	50	0.2145831	100	0.2124203	250	0.2181113	500	0.2196614	1000	0.2621661
Aroclor-1268 (4) [2C]	20	0.0536096	50	5.183009E-02	100	5.229291E-02	250	0.0546515	500	5.573302E-02	1000	5.691635E-02

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016 [2C]	5.298399E-02	5.1			RSD (20)	
Aroclor 1016 [2C]	5.298399E-02	5.1			RSD (20)	
Aroclor-1016 (1) [2C]	4.561733E-02	8.0			RSD (20)	
Aroclor-1016 (1) [2C]	4.561733E-02	8.0			RSD (20)	
Aroclor-1016 (2) [2C]	0.1020378	4.3			RSD (20)	
Aroclor-1016 (2) [2C]	0.1020378	4.3			RSD (20)	
Aroclor-1016 (3) [2C]	4.004551E-02	6.7			RSD (20)	
Aroclor-1016 (3) [2C]	4.004551E-02	6.7			RSD (20)	
Aroclor-1016 (4) [2C]	2.423527E-02	6.8			RSD (20)	
Aroclor-1016 (4) [2C]	2.423527E-02	6.8			RSD (20)	
Aroclor 1221 [2C]	1.456933E-02	5.3			RSD (20)	
Aroclor 1221 [2C]	1.456933E-02	5.3			RSD (20)	
Aroclor-1221 (1) [2C]	6.004662E-03	13.2			RSD (20)	
Aroclor-1221 (1) [2C]	6.004662E-03	13.2			RSD (20)	
Aroclor-1221 (2) [2C]	1.374602E-02	2.9			RSD (20)	
Aroclor-1221 (2) [2C]	1.374602E-02	2.9			RSD (20)	
Aroclor-1221 (3) [2C]	2.395732E-02	5.4			RSD (20)	
Aroclor-1221 (3) [2C]	2.395732E-02	5.4			RSD (20)	
Aroclor 1232 [2C]	0.0192937	3.1			RSD (20)	
Aroclor 1232 [2C]	0.0192937	3.1			RSD (20)	
Aroclor-1232 (1) [2C]	3.57555E-03	11.8			RSD (20)	
Aroclor-1232 (1) [2C]	3.57555E-03	11.8			RSD (20)	
Aroclor-1232 (2) [2C]	2.089231E-02	2.6			RSD (20)	
Aroclor-1232 (2) [2C]	2.089231E-02	2.6			RSD (20)	
Aroclor-1232 (3) [2C]	4.181398E-02	2.8			RSD (20)	
Aroclor-1232 (3) [2C]	4.181398E-02	2.8			RSD (20)	
Aroclor-1232 (4) [2C]	1.089298E-02	18.6			RSD (20)	
Aroclor-1232 (4) [2C]	1.089298E-02	18.6			RSD (20)	
Aroclor 1242 [2C]	4.908976E-02	7.2			RSD (20)	
Aroclor 1242 [2C]	4.908976E-02	7.2			RSD (20)	
Aroclor-1242 (1) [2C]	3.678132E-02	7.0			RSD (20)	

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1242 (1) [2C]	3.678132E-02	7.0			RSD (20)	
Aroclor-1242 (2) [2C]	7.989742E-02	4.0			RSD (20)	
Aroclor-1242 (2) [2C]	7.989742E-02	4.0			RSD (20)	
Aroclor-1242 (3) [2C]	0.0373257	12.8			RSD (20)	
Aroclor-1242 (3) [2C]	0.0373257	12.8			RSD (20)	
Aroclor-1242 (4) [2C]	0.0423546	12.6			RSD (20)	
Aroclor-1242 (4) [2C]	0.0423546	12.6			RSD (20)	
Aroclor 1248 [2C]	4.809091E-02	5.8			RSD (20)	
Aroclor 1248 [2C]	4.809091E-02	5.8			RSD (20)	
Aroclor-1248 (1) [2C]	3.315169E-02	8.2			RSD (20)	
Aroclor-1248 (1) [2C]	3.315169E-02	8.2			RSD (20)	
Aroclor-1248 (2) [2C]	4.035186E-02	3.4			RSD (20)	
Aroclor-1248 (2) [2C]	4.035186E-02	3.4			RSD (20)	
Aroclor-1248 (3) [2C]	6.427271E-02	8.2			RSD (20)	
Aroclor-1248 (3) [2C]	6.427271E-02	8.2			RSD (20)	
Aroclor-1248 (4) [2C]	5.458739E-02	6.8			RSD (20)	
Aroclor-1248 (4) [2C]	5.458739E-02	6.8			RSD (20)	
Aroclor 1254 [2C]	0.078298	9.3			RSD (20)	
Aroclor 1254 [2C]	0.078298	9.3			RSD (20)	
Aroclor-1254 (1) [2C]	6.806507E-02	10.3			RSD (20)	
Aroclor-1254 (1) [2C]	6.806507E-02	10.3			RSD (20)	
Aroclor-1254 (2) [2C]	3.994532E-02	16.2			RSD (20)	
Aroclor-1254 (2) [2C]	3.994532E-02	16.2			RSD (20)	
Aroclor-1254 (3) [2C]	5.188947E-02	8.7			RSD (20)	
Aroclor-1254 (3) [2C]	5.188947E-02	8.7			RSD (20)	
Aroclor-1254 (4) [2C]	0.1149829	11.1			RSD (20)	
Aroclor-1254 (4) [2C]	0.1149829	11.1			RSD (20)	
Aroclor-1254 (5) [2C]	0.1166073	5.1			RSD (20)	
Aroclor-1254 (5) [2C]	0.1166073	5.1			RSD (20)	
Aroclor 1260 [2C]	0.1108773	4.8			RSD (20)	
Aroclor 1260 [2C]	0.1108773	4.8			RSD (20)	

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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1260 (1) [2C]	6.650318E-02	7.7			RSD (20)	
Aroclor-1260 (1) [2C]	6.650318E-02	7.7			RSD (20)	
Aroclor-1260 (2) [2C]	0.1932922	4.1			RSD (20)	
Aroclor-1260 (2) [2C]	0.1932922	4.1			RSD (20)	
Aroclor-1260 (3) [2C]	0.1242917	6.5			RSD (20)	
Aroclor-1260 (3) [2C]	0.1242917	6.5			RSD (20)	
Aroclor-1260 (4) [2C]	5.942222E-02	4.8			RSD (20)	
Aroclor-1260 (4) [2C]	5.942222E-02	4.8			RSD (20)	
Aroclor-1262 (1) [2C]	9.782974E-02	8.2			RSD (20)	
Aroclor-1262 (1) [2C]	9.782974E-02	8.2			RSD (20)	
Aroclor-1262 (2) [2C]	0.2064131	5.5			RSD (20)	
Aroclor-1262 (2) [2C]	0.2064131	5.5			RSD (20)	
Aroclor-1262 (3) [2C]	9.162402E-02	3.4			RSD (20)	
Aroclor-1262 (3) [2C]	9.162402E-02	3.4			RSD (20)	
Aroclor-1262 (4) [2C]	8.538675E-02	2.8			RSD (20)	
Aroclor-1262 (4) [2C]	8.538675E-02	2.8			RSD (20)	
Aroclor-1268 (1) [2C]	0.2378511	9.0			RSD (20)	
Aroclor-1268 (1) [2C]	0.2378511	9.0			RSD (20)	
Aroclor-1268 (2) [2C]	0.2584374	7.6			RSD (20)	
Aroclor-1268 (2) [2C]	0.2584374	7.6			RSD (20)	
Aroclor-1268 (3) [2C]	0.2243515	8.4			RSD (20)	
Aroclor-1268 (3) [2C]	0.2243515	8.4			RSD (20)	
Aroclor-1268 (4) [2C]	5.417224E-02	3.6			RSD (20)	
Aroclor-1268 (4) [2C]	5.417224E-02	3.6			RSD (20)	
Decachlorobiphenyl [2C]	1.777595	3.1			RSD (20)	
Tetrachlorometaxylene [2C]	1.028052	1.4			RSD (20)	

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ANALYSIS SEQUENCE

SJH0176

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0176-CAL1	0.02PPM AR1660	QC		1	J008420	J008446	
SJH0176-CAL2	0.05PPM AR1660	QC		2	J008419	J008446	
SJH0176-CAL3	0.1PPM AR1660	QC		3	J008418	J008446	
SJH0176-CAL4	0.25PPM AR1660	QC		4	J008417	J008446	
SJH0176-CAL5	0.5PPM AR1660	QC		5	J008416	J008446	
SJH0176-CAL6	1PPM AR1660	QC		6	J008134	J008446	
SJH0176-CAL7	0.02PPM AR1242	QC		7	J008425	J008446	
SJH0176-CAL8	0.05PPM AR1242	QC		8	J008424	J008446	
SJH0176-CAL9	0.1PPM AR1242	QC		9	J008423	J008446	
SJH0176-CALA	0.25PPM AR1242	QC		10	J008422	J008446	
SJH0176-CALB	0.5PPM AR1242	QC		11	J008421	J008446	
SJH0176-CALC	1PPM AR1242	QC		12	J008397	J008446	
SJH0176-CALD	0.02PPM AR1248	QC		13	J008430	J008446	
SJH0176-CALE	0.05PPM AR1248	QC		14	J008429	J008446	
SJH0176-CALF	0.1PPM AR1248	QC		15	J008428	J008446	
SJH0176-CALG	0.25PPM AR1248	QC		16	J008427	J008446	
SJH0176-CALH	0.5PPM AR1248	QC		17	J008426	J008446	
SJH0176-CALI	1PPM AR1248	QC		18	J008398	J008446	

Analytical Resources, Incorporated
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ANALYSIS SEQUENCE

SJH0177

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0177-CAL1	0.02PPM AR1254	QC		1	J008435	J008446	
SJH0177-CAL2	0.05PPM AR1254	QC		2	J008434	J008446	
SJH0177-CAL3	0.1PPM AR1254	QC		3	J008433	J008446	
SJH0177-CAL4	0.25PPM AR1254	QC		4	J008432	J008446	
SJH0177-CAL5	0.5PPM AR1254	QC		5	J008431	J008446	
SJH0177-CAL6	1PPM AR1254	QC		6	J008399	J008446	
SJH0177-CAL7	0.02PPM AR2162	QC		7	J008440	J008446	
SJH0177-CAL8	0.05PPM AR2162	QC		8	J008439	J008446	
SJH0177-CAL9	0.1PPM AR2162	QC		9	J008438	J008446	
SJH0177-CALA	0.25PPM AR2162	QC		10	J008437	J008446	
SJH0177-CALB	0.5PPM AR2162	QC		11	J008436	J008446	
SJH0177-CALC	1PPM AR2162	QC		12	J008400	J008446	
SJH0177-CALD	0.02PPM AR3268	QC		13	J008445	J008446	
SJH0177-CALE	0.05PPM AR3268	QC		14	J008444	J008446	
SJH0177-CALF	0.1PPM AR3268	QC		15	J008443	J008446	
SJH0177-CALG	0.25PPM AR3268	QC		16	J008442	J008446	
SJH0177-CALH	0.5PPM AR3268	QC		17	J008441	J008446	
SJH0177-CALI	1PPM AR3268	QC		18	J008401	J008446	
SJH0177-SCV1	AR1660SCV1	QC		19	J008139	J008446	
SJH0177-SCV2	AR1242SCV2	QC		20	J008140	J008446	
SJH0177-SCV3	AR1248SCV3	QC		21	J008141	J008446	
SJH0177-SCV4	AR1254SCV4	QC		22	J008142	J008446	

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ANALYSIS SEQUENCE

SJH0177

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0177-SCV5	AR2162SCV5	QC		23	J008143	J008446	
SJH0177-SCV6	AR3268SCV6	QC		24	J008144	J008446	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	13-AUG-2021 18:41	08132101.D	1	RINSE	
2	13-AUG-2021 19:02	08132102.D	1	RINSE	
3	13-AUG-2021 19:22	08132103.D	1	RINSE	
4	13-AUG-2021 19:43	08132104.D	1	SEQ-IBL1	
5	13-AUG-2021 20:03	08132105.D	1	SEQ-CAL1	
6	13-AUG-2021 20:24	08132106.D	1	SEQ-CAL2	
7	13-AUG-2021 20:44	08132107.D	1	SEQ-CAL3	
8	13-AUG-2021 21:05	08132108.D	1	SEQ-CAL4	
9	13-AUG-2021 21:25	08132109.D	1	SEQ-CAL5	
10	13-AUG-2021 21:46	08132110.D	1	SEQ-CAL6	
11	13-AUG-2021 22:06	08132111.D	1	SEQ-CAL7	
12	13-AUG-2021 22:27	08132112.D	1	SEQ-CAL8	
13	13-AUG-2021 22:47	08132113.D	1	SEQ-CAL9	
14	13-AUG-2021 23:08	08132114.D	1	SEQ-CALA	
15	13-AUG-2021 23:28	08132115.D	1	SEQ-CALB	
16	13-AUG-2021 23:49	08132116.D	1	SEQ-CALC	
17	14-AUG-2021 00:09	08132117.D	1	SEQ-CALD	
18	14-AUG-2021 00:30	08132118.D	1	SEQ-CALE	
19	14-AUG-2021 00:50	08132119.D	1	SEQ-CALF	
20	14-AUG-2021 01:11	08132120.D	1	SEQ-CALG	
21	14-AUG-2021 01:31	08132121.D	1	SEQ-CALH	
22	14-AUG-2021 01:52	08132122.D	1	SEQ-CALI	
23	14-AUG-2021 02:12	08132123.D	1	SEQ-CALJ	
24	14-AUG-2021 02:33	08132124.D	1	SEQ-CALK	
25	14-AUG-2021 02:53	08132125.D	1	SEQ-CALL	
26	14-AUG-2021 03:13	08132126.D	1	SEQ-CALM	
27	14-AUG-2021 03:34	08132127.D	1	SEQ-CALN	
28	14-AUG-2021 03:54	08132128.D	1	SEQ-CALO	
29	14-AUG-2021 04:15	08132129.D	1	SEQ-CALP	
30	14-AUG-2021 04:35	08132130.D	1	SEQ-CALQ	
31	14-AUG-2021 04:56	08132131.D	1	SEQ-CALR	
32	14-AUG-2021 05:16	08132132.D	1	SEQ-CALS	
33	14-AUG-2021 05:37	08132133.D	1	SEQ-CALT	
34	14-AUG-2021 05:57	08132134.D	1	SEQ-CALU	
35	14-AUG-2021 06:18	08132135.D	1	SEQ-CALV	
36	14-AUG-2021 06:38	08132136.D	1	SEQ-CALW	
37	14-AUG-2021 06:59	08132137.D	1	SEQ-CALX	
38	14-AUG-2021 07:19	08132138.D	1	SEQ-CALY	
39	14-AUG-2021 07:40	08132139.D	1	SEQ-CALZ	
40	14-AUG-2021 08:00	08132140.D	1	SEQ-CALAA	
41	14-AUG-2021 08:21	08132141.D	1	SEQ-SCV1	
42	14-AUG-2021 08:41	08132142.D	1	SEQ-SCV2	
43	14-AUG-2021 09:02	08132143.D	1	SEQ-SCV3	
44	14-AUG-2021 09:22	08132144.D	1	SEQ-SCV4	
45	14-AUG-2021 09:43	08132145.D	1	SEQ-SCV5	
46	14-AUG-2021 10:03	08132146.D	1	SEQ-SCV6	
47	14-AUG-2021 10:24	08132147.D	1	0.1PPMDDTS	
48	14-AUG-2021 10:44	08132148.D	1	DS	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 13-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242,
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242,
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242,
2308	08132114.D	SEQ-CALA		1	Aroclor-1242,
2328	08132115.D	SEQ-CALB		1	Aroclor-1242,
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0030	08132118.D	SEQ-CALE		1	Aroclor-1248,
0050	08132119.D	SEQ-CALF		1	Aroclor-1248,
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	NO MANUAL INTEGRATION
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION
0841	08132142.D	SEQ-SCV2		1	NO MANUAL INTEGRATION
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242 [2C],
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242 [2C],
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242 [2C],
2308	08132114.D	SEQ-CALA		1	NO MANUAL INTEGRATION
2328	08132115.D	SEQ-CALB		1	NO MANUAL INTEGRATION
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248 [2C],
0030	08132118.D	SEQ-CALE		1	Aroclor-1248 [2C],
0050	08132119.D	SEQ-CALF		1	NO MANUAL INTEGRATION
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	Aroclor-1248 [2C],
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0841	08132142.D	SEQ-SCV2		1	Aroclor-1242 [2C], Aroclor-1248 [2C],
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION

Security Status Report

Date: 16-Aug-2021 17:20

08132101ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132102ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132103ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132104ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132105ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132106ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132107ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132108ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132109ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132110ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132111ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132112ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132113ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132140ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132141ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132145ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132146ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132147ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132148ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

Security Status Report

Date: 16-Aug-2021 17:20

08132101ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132102ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132103ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132104ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132105ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132142ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132143ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132144ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

08132145ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132146ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132147ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132148ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132105.D
Level 2: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132106.D
Level 3: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132107.D
Level 4: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132108.D
Level 5: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132109.D
Level 6: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132110.D
Level 8: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132147.D
Level 9: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132136.D
Level 10: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132137.D
Level 11: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132138.D
Level 12: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132139.D
Level 13: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132140.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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
1 Aroclor-1221 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00629	0.00685	0.00675	0.00593	0.00541	0.00481	0.00600	13.209
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01435	0.01352	0.01388	0.01382	0.01376	0.01314	0.01375	2.930
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02506	0.02431	0.02500	0.02433	0.02340	0.02164	0.02396	5.359
4 Aroclor-1232 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00405	0.00376	0.00394	0.00352	0.00323	0.00295	0.00358	11.833
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02084	0.02101	0.02122	0.02150	0.02091	0.01988	0.02089	2.642
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04103	0.04175	0.04038	0.04152	0.04365	0.04255	0.04181	2.756
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00756	0.00926	0.01145	0.01247	0.01229	0.01233	0.01089	18.639

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
3 Aroclor-1242 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.03973	0.03735	0.03808	0.03758	0.03572	0.03224	0.03678	7.001
(2)	#####	#####	#####	#####	#####	#####		
	0.08232	0.07658	0.07866	0.08407	0.08151	0.07625	0.07990	4.026
(3)	#####	#####	#####	#####	#####	#####		
	0.04585	0.03890	0.03675	0.03609	0.03426	0.03211	0.03733	12.772
(4)	#####	#####	#####	#####	#####	#####		
	0.05127	0.04062	0.04474	0.04223	0.03995	0.03533	0.04235	12.641
6 Aroclor-1248 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.03760	0.03461	0.03112	0.03340	0.03225	0.02994	0.03315	8.225
(2)	#####	#####	#####	#####	#####	#####		
	0.03967	0.03935	0.04153	0.04204	0.04095	0.03857	0.04035	3.369
(3)	#####	#####	#####	#####	#####	#####		
	0.07197	0.06626	0.06680	0.06291	0.06104	0.05666	0.06427	8.226
(4)	#####	#####	#####	#####	#####	#####		
	0.06207	0.05391	0.05333	0.05357	0.05283	0.05181	0.05459	6.846
7 Aroclor-1016 [2C](1)	0.04882	0.04733	0.04794	0.04698	0.04354	0.03910		
	#####	#####	#####	#####	#####	#####	0.04562	8.042
(2)	0.10010	0.09891	0.10731	0.10724	0.10191	0.09675		
	#####	#####	#####	#####	#####	#####	0.10204	4.300
(3)	0.03847	0.03676	0.04334	0.04291	0.04064	0.03815		
	#####	#####	#####	#####	#####	#####	0.04005	6.732

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
(4)	0.02418	0.02283	0.02663	0.02560	0.02388	0.02229		
	#####	#####	#####	#####	#####	#####	0.02424	6.781
8 Aroclor-1254 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.07889	0.07222	0.06911	0.06590	0.06342	0.05885	0.06807	10.318
(2)	#####	#####	#####	#####	#####	#####		
	0.05118	0.04273	0.03987	0.03733	0.03576	0.03280	0.03995	16.198
(3)	#####	#####	#####	#####	#####	#####		
	0.05944	0.05335	0.05221	0.05094	0.04937	0.04604	0.05189	8.650
(4)	#####	#####	#####	#####	#####	#####		
	0.13845	0.11755	0.11576	0.10934	0.10618	0.10262	0.11498	11.138
(5)	#####	#####	#####	#####	#####	#####		
	0.12567	0.11826	0.11831	0.11580	0.11383	0.10777	0.11661	5.064
10 Aroclor-1262 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.11112	0.10100	0.09894	0.09582	0.09185	0.08825	0.09783	8.173
(2)	#####	#####	#####	#####	#####	#####		
	0.22148	0.20192	0.20094	0.19618	0.19807	0.21989	0.20641	5.451
(3)	#####	#####	#####	#####	#####	#####		
	0.09754	0.09096	0.09106	0.09130	0.09065	0.08823	0.09162	3.393
(4)	#####	#####	#####	#####	#####	#####		
	0.08699	0.08139	0.08705	0.08697	0.08658	0.08334	0.08539	2.844
9 Aroclor-1260 [2C](1)	0.07145	0.07006	0.06873	0.06790	0.06298	0.05790		
	#####	#####	#####	#####	#####	#####	0.06650	7.681

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
(2)	0.20358	0.19730	0.19591	0.19469	0.18108	0.18719		
	#####	#####	#####	#####	#####	#####	0.19329	4.119
(3)	0.13552	0.12750	0.12631	0.12533	0.11966	0.11143		
	#####	#####	#####	#####	#####	#####	0.12429	6.521
(4)	0.05852	0.05681	0.06302	0.06242	0.05963	0.05613		
	#####	#####	#####	#####	#####	#####	0.05942	4.789
11 Aroclor-1268 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.24179	0.22854	0.22202	0.21909	0.23790	#####	0.22986	4.274
(2)	#####	#####	#####	#####	#####	#####		
	0.26368	0.24824	0.24638	0.24667	0.24916	#####	0.25083	2.900
(3)	#####	#####	#####	#####	#####	#####		
	0.21917	0.21458	0.21242	0.21811	0.21966	#####	0.21679	1.451
(4)	#####	#####	#####	#####	#####	#####		
	0.05361	0.05183	0.05229	0.05465	0.05573	#####	0.05362	3.021
41 2,4-DDE [2C]	#####	#####	#####	#####	#####	#####		
	2479	#####	#####	#####	#####	#####	2479	0.000
42 2,4-DDD [2C]	#####	#####	#####	#####	#####	#####		
	1258	#####	#####	#####	#####	#####	1258	0.000
44 4,4-DDE [2C]	#####	#####	#####	#####	#####	#####		
	1581	#####	#####	#####	#####	#####	1581	0.000
45 4,4-DDD/2,4-DDT [2C]	#####	#####	#####	#####	#####	#####		
	1766	#####	#####	#####	#####	#####	1766	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	721	+++++	+++++	+++++	+++++	+++++	721	0.000
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 2 Tetrachloro-m-xylene [2C]	1.03468	1.01403	1.03858	1.04776	1.01141	1.02186		
	+++++	+++++	+++++	+++++	+++++	+++++	1.02805	1.413
$ 13 Decachlorobiphenyl [2C]	1.71739	1.72015	1.80269	1.83464	1.81311	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	1.77760	3.090

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m
Last Edit : 14-Aug-2021 15:07 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\210813.b\08132105.D
Level 2: \\target\share\chem4\ecd7.i\210813.b\08132106.D
Level 3: \\target\share\chem4\ecd7.i\210813.b\08132107.D
Level 4: \\target\share\chem4\ecd7.i\210813.b\08132108.D
Level 5: \\target\share\chem4\ecd7.i\210813.b\08132109.D
Level 6: \\target\share\chem4\ecd7.i\210813.b\08132110.D
Level 8: \\target\share\chem4\ecd7.i\210813.b\08132147.D
Level 9: \\target\share\chem4\ecd7.i\210813.b\08132136.D
Level 10: \\target\share\chem4\ecd7.i\210813.b\08132137.D
Level 11: \\target\share\chem4\ecd7.i\210813.b\08132138.D
Level 12: \\target\share\chem4\ecd7.i\210813.b\08132139.D
Level 13: \\target\share\chem4\ecd7.i\210813.b\08132140.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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00610	0.00662	0.00692	0.00670	0.00603	0.00554	0.00632	8.149
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00860	0.00838	0.00946	0.01119	0.01107	0.01071	0.00990	12.674
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02562	0.02587	0.02636	0.02881	0.02779	0.02607	0.02675	4.734
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01895	0.02153	0.02336	0.02360	0.02299	0.02182	0.02204	7.849
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05664	0.05707	0.06611	0.07095	0.07201	0.07147	0.06571	10.923
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04584	0.03531	0.03720	0.03521	0.03565	0.03413	0.03722	11.648
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01766	0.01614	0.01630	0.01532	0.01376	0.01209	0.01521	13.110

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m
Last Edit : 14-Aug-2021 15:07 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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
4 Aroclor-1232(1)	#####	#####	#####	#####	#####	#####		
	0.00466	0.00425	0.00372	0.00370	0.00363	0.00333	0.00388	12.445
(2)	#####	#####	#####	#####	#####	#####		
	0.01976	0.01982	0.02119	0.02246	0.02214	0.02118	0.02109	5.349
(3)	#####	#####	#####	#####	#####	#####		
	0.02267	0.02831	0.03250	0.03502	0.03682	0.03781	0.03219	17.939
(4)	#####	#####	#####	#####	#####	#####		
	0.00901	0.01125	0.01399	0.01466	0.01537	0.01516	0.01324	19.289
7 Aroclor-1016(1)	0.02649	0.02912	0.02940	0.02964	0.02850	0.02709		
	#####	#####	#####	#####	#####	#####	0.02837	4.572
(2)	0.07428	0.08423	0.08746	0.09203	0.09182	0.09075		
	#####	#####	#####	#####	#####	#####	0.08676	7.851
(3)	0.03555	0.04093	0.04059	0.04075	0.03888	0.03692		
	#####	#####	#####	#####	#####	#####	0.03894	5.798
(4)	0.01991	0.02422	0.02511	0.02593	0.02582	0.02547		
	#####	#####	#####	#####	#####	#####	0.02441	9.375
6 Aroclor-1248(1)	#####	#####	#####	#####	#####	#####		
	0.03027	0.03457	0.03263	0.03464	0.03494	0.03410	0.03353	5.345
(2)	#####	#####	#####	#####	#####	#####		
	0.03873	0.04418	0.04305	0.04595	0.04599	0.04467	0.04376	6.183
(3)	#####	#####	#####	#####	#####	#####		
	0.06153	0.06329	0.06557	0.06632	0.06567	0.06210	0.06408	3.183

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m
Last Edit : 14-Aug-2021 15:07 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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04055	0.04143	0.03788	0.03603	0.03352	0.03006	0.03658	11.799
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.07164	0.06947	0.06903	0.07004	0.06892	0.06502	0.06902	3.182
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03299	0.03465	0.03312	0.03312	0.03112	0.02670	0.03195	8.779
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04923	0.04279	0.04318	0.04501	0.04521	0.04450	0.04499	5.104
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.07660	0.08623	0.08820	0.09027	0.08929	0.08506	0.08594	5.774
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04626	0.05174	0.05350	0.05694	0.05786	0.05754	0.05397	8.342
9 Aroclor-1260(1)	0.03649	0.03600	0.03588	0.03720	0.03606	0.03432		
	+++++	+++++	+++++	+++++	+++++	+++++	0.03599	2.646
(2)	0.03493	0.03435	0.03497	0.03686	0.03620	0.03463		
	+++++	+++++	+++++	+++++	+++++	+++++	0.03533	2.785
(3)	0.09844	0.09113	0.09296	0.09789	0.10200	0.09044		
	+++++	+++++	+++++	+++++	+++++	+++++	0.09547	4.862
(4)	0.03984	0.04042	0.04182	0.04477	0.04503	0.04333		
	+++++	+++++	+++++	+++++	+++++	+++++	0.04254	5.160
(5)	0.02079	0.02106	0.02133	0.02210	0.02175	0.02075		
	+++++	+++++	+++++	+++++	+++++	+++++	0.02130	2.541

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
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Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m
Last Edit : 14-Aug-2021 15:07 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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05134	0.04713	0.04785	0.04922	0.04998	0.04739	0.04882	3.393
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03097	0.02863	0.03076	0.03227	0.03369	0.03336	0.03161	5.969
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04656	0.04368	0.04524	0.04611	0.04682	0.04504	0.04557	2.553
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03832	0.03599	0.03700	0.03807	0.03947	0.03564	0.03741	3.935
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.10988	0.10672	0.10649	0.10735	0.10848	0.10507	0.10733	1.559
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.11682	0.11257	0.11230	0.11238	0.11318	0.10827	0.11259	2.418
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.09347	0.08830	0.08761	0.08780	0.08876	0.08540	0.08856	3.015
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.30216	0.28855	0.28544	0.27866	0.27892	0.28011	0.28564	3.154
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	1168	+++++	+++++	+++++	+++++	+++++	1168	0.000
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	1454	+++++	+++++	+++++	+++++	+++++	1454	0.000
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m
Last Edit : 14-Aug-2021 15:07 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
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	1936	+++++	+++++	+++++	+++++	+++++	1936	0.000
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	2956	+++++	+++++	+++++	+++++	+++++	2956	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	709	+++++	+++++	+++++	+++++	+++++	709	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 1 Tetrachloro-m-xylene	0.93937	0.91421	0.97581	1.01321	0.99259	0.96662		
	+++++	+++++	+++++	+++++	+++++	+++++	0.96697	3.705
$ 13 Decachlorobiphenyl	0.74318	0.73021	0.74556	0.75250	0.71633	0.66941		
	+++++	+++++	+++++	+++++	+++++	+++++	0.72620	4.219

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132105	08132106	08132107	08132108	08132109	08132110
INJ.DATE:	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021
INJ.TIME:	20:03	20:24	20:44	21:05	21:25	21:46

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.853	2.852	2.854	2.853	2.852	2.851	2.853	2.753-2.953	2.852	0.001
$ 1 Tetrachloro-m-xylene	5.068	5.068	5.068	5.067	5.068	5.069	5.068	4.968-5.168	5.068	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.015	3.915-4.115	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.660	6.560-6.760	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	6.660	6.659	6.660	6.659	6.659	6.658	6.660	6.560-6.760	6.659	0.001
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.699-7.899	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	8.675	8.575-8.775	+++++	+++++
9 Aroclor-1260	10.387	10.385	10.385	10.384	10.384	10.383	10.387	10.287-10.487	10.385	0.001
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.384	10.284-10.484	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.163	13.164	13.164	13.164	13.165	13.165	13.163	13.063-13.263	13.164	0.001
* 12 IS-HBBP	13.517	13.519	13.518	13.519	13.519	13.518	13.517	13.417-13.617	13.518	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

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

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
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\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132111	08132112	08132113	08132114	08132115	08132116
INJ.DATE:	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021
INJ.TIME:	22:06	22:27	22:47	23:08	23:28	23:49

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.852	2.854	2.853	2.855	2.854	2.853	2.852	2.752-2.952	2.853	0.001
$ 1 Tetrachloro-m-xylene	5.069	5.068	5.068	5.069	5.070	5.069	5.069	4.969-5.169	5.069	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.015	3.915-4.115	+++++	+++++
3 Aroclor-1242	6.661	6.662	6.661	6.660	6.660	6.659	6.661	6.561-6.761	6.660	0.001
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	6.658	6.558-6.758	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.699-7.899	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	8.675	8.575-8.775	+++++	+++++
9 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	10.383	10.283-10.483	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.384	10.284-10.484	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.165	13.165	13.165	13.165	13.165	13.166	13.165	13.065-13.265	13.165	0.000
* 12 IS-HBBP	13.520	13.519	13.520	13.521	13.520	13.520	13.520	13.420-13.620	13.520	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

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

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
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\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132117	08132118	08132119	08132120	08132121	08132122
INJ.DATE:	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021
INJ.TIME:	00:09	00:30	00:50	01:11	01:31	01:52

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.853	2.854	2.852	2.853	2.853	2.854	2.853	2.753-2.953	2.853	0.001
$ 1 Tetrachloro-m-xylene	5.068	5.069	5.068	5.068	5.069	5.070	5.068	4.968-5.168	5.069	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.015	3.915-4.115	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.659	6.559-6.759	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	6.658	6.558-6.758	+++++	+++++
6 Aroclor-1248	7.799	7.803	7.800	7.800	7.801	7.799	7.799	7.699-7.899	7.800	0.001
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	8.675	8.575-8.775	+++++	+++++
9 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	10.383	10.283-10.483	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.384	10.284-10.484	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.165	13.164	13.165	13.165	13.164	13.166	13.165	13.065-13.265	13.165	0.001
* 12 IS-HBBP	13.520	13.520	13.521	13.521	13.520	13.520	13.520	13.420-13.620	13.520	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

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

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
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\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132123	08132124	08132125	08132126	08132127	08132128
INJ.DATE:	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021
INJ.TIME:	02:12	02:33	02:53	03:13	03:34	03:54

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.852	2.851	2.852	2.851	2.853	2.853	2.852	2.752-2.952	2.852	0.001
$ 1 Tetrachloro-m-xylene	5.069	5.068	5.068	5.067	5.069	5.069	5.069	4.969-5.169	5.068	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.015	3.915-4.115	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.659	6.559-6.759	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	6.658	6.558-6.758	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.699-7.899	+++++	+++++
8 Aroclor-1254	8.681	8.680	8.680	8.677	8.676	8.675	8.681	8.581-8.781	8.678	0.002
9 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	10.383	10.283-10.483	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.384	10.284-10.484	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.166	13.165	13.166	13.166	13.166	13.166	13.166	13.066-13.266	13.166	0.000
* 12 IS-HBBP	13.521	13.521	13.522	13.521	13.520	13.520	13.521	13.421-13.621	13.520	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

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

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
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\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132129	08132130	08132131	08132132	08132133	08132134
INJ.DATE:	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021
INJ.TIME:	04:15	04:35	04:56	05:16	05:37	05:57

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.854	2.852	2.852	2.854	2.855	2.855	2.854	2.754-2.954	2.853	0.001
$ 1 Tetrachloro-m-xylene	5.068	5.068	5.068	5.069	5.070	5.070	5.068	4.968-5.168	5.069	0.001
2 Aroclor-1221	4.020	4.015	4.015	4.015	4.015	4.015	4.020	3.920-4.120	4.016	0.002
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.659	6.559-6.759	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	6.658	6.558-6.758	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.699-7.899	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	8.675	8.575-8.775	+++++	+++++
9 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	10.383	10.283-10.483	+++++	+++++
10 Aroclor-1262	10.388	10.388	10.387	10.386	10.384	10.384	10.388	10.288-10.488	10.386	0.002
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.165	13.165	13.165	13.165	13.165	13.166	13.165	13.065-13.265	13.165	0.000
* 12 IS-HBBP	13.520	13.522	13.519	13.519	13.520	13.519	13.520	13.420-13.620	13.520	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

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

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
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\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132135	08132136	08132137	08132138	08132139	08132140
INJ.DATE:	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021
INJ.TIME:	06:18	06:38	06:59	07:19	07:40	08:00

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.853	2.854	2.856	2.856	2.854	2.855	2.853	2.753-2.953	2.855	0.001
$ 1 Tetrachloro-m-xylene	5.069	5.069	5.071	5.071	5.071	5.072	5.069	4.969-5.169	5.070	0.001
2 Aroclor-1221	#####	#####	#####	#####	#####	#####	4.015	3.915-4.115	#####	#####
3 Aroclor-1242	#####	#####	#####	#####	#####	#####	6.659	6.559-6.759	#####	#####
4 Aroclor-1232	4.020	4.014	4.017	4.018	4.016	4.018	4.020	3.920-4.120	4.017	0.002
7 Aroclor-1016	#####	#####	#####	#####	#####	#####	6.658	6.558-6.758	#####	#####
6 Aroclor-1248	#####	#####	#####	#####	#####	#####	7.799	7.699-7.899	#####	#####
8 Aroclor-1254	#####	#####	#####	#####	#####	#####	8.675	8.575-8.775	#####	#####
9 Aroclor-1260	#####	#####	#####	#####	#####	#####	10.383	10.283-10.483	#####	#####
10 Aroclor-1262	#####	#####	#####	#####	#####	#####	10.384	10.284-10.484	#####	#####
11 Aroclor-1268	11.560	11.559	11.558	11.557	11.557	11.557	11.560	11.460-11.660	11.558	0.001
$ 13 Decachlorobiphenyl	13.165	13.165	13.165	13.165	13.165	13.166	13.165	13.065-13.265	13.165	0.000
* 12 IS-HBBP	13.520	13.520	13.521	13.521	13.519	13.519	13.520	13.420-13.620	13.520	0.001
42 2,4-DDE	#####	#####	#####	#####	#####	#####	8.655	8.605-8.705	#####	#####
43 2,4-DDD	#####	#####	#####	#####	#####	#####	9.186	9.136-9.236	#####	#####
44 2,4-DDT	#####	#####	#####	#####	#####	#####	9.668	9.618-9.718	#####	#####
46 4,4-DDE	#####	#####	#####	#####	#####	#####	9.066	8.966-9.166	#####	#####

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

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

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

Data file 1: /210813.b/08132104ECD7.D
Data file 2: /210813.b/210813.b/08132104ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-IBL1
Client ID:
Injection Date: 13-AUG-2021 19:43
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	126172	5.412	-0.004	360712	44.0	42.2	4.2	Tetrachloro-m-xylene
13.165	-0.001	154941	13.847	-0.033	746026	43.2	42.7	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	237189	-8.4
Hexabromobiphenyl	425681	395219	-7.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	664936	-7.8
Hexabromobiphenyl	863111	787155	-8.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	---			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	6.090	0.018	4395	38.5
Aroclor-1221	3	---			0.0	3	6.402	-0.007	1203	6.0
	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	8.108	0.002	393	1.4
Aroclor-1248	2	---			0.0	2	8.585	0.065	186	0.6
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	9.462	0.086	5866	12.9
	Col1Ave: <3 Quant Peaks					Col2Ave: 5.0				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	9.834	-0.080	4733	5.0
Aroclor-1254	5	---			0.0	5	10.236	0.088	987	1.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	11.439	0.014	341	0.5
Aroclor-1260	2	---			0.0	2	11.681	-0.000	888	0.5
Aroclor-1260	3	11.055	0.004	138	0.3	3	12.198	-0.063	704	0.6
Aroclor-1260	4	11.473	0.021	110	0.5	4	13.049	0.077	4672	8.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: 2.4				
Aroclor-1262	1	---			0.0	1	10.985	0.015	687	0.7
Aroclor-1262	2	---			0.0	2	11.681	-0.005	888	0.4
Aroclor-1262	3	---			0.0	3	12.198	0.010	704	0.8
Aroclor-1262	4	---			0.0	4	13.049	0.076	4672	5.6
	Col1Ave: <3 Quant Peaks					Col2Ave: 1.9				
Aroclor-1268	1	11.473	-0.084	110	0.2	1	12.198	-0.002	704	0.3
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.909	-0.092	1145	2.6	3	12.645	0.001	717	0.3
Aroclor-1268	4	12.771	-0.000	685	0.5	4	13.458	0.675	1064	2.0

Total Col1Ave (3 peaks): 1.1 Total Col2Ave (3 peaks): 0.9 RPD = 22

Corrected Ave: < 3 Peaks Corrected Ave: < 3 Peaks

Total PCB Area Col1 (5.169 - 13.066) = 10309 Col1 Total PCB = 0.0 ppm*

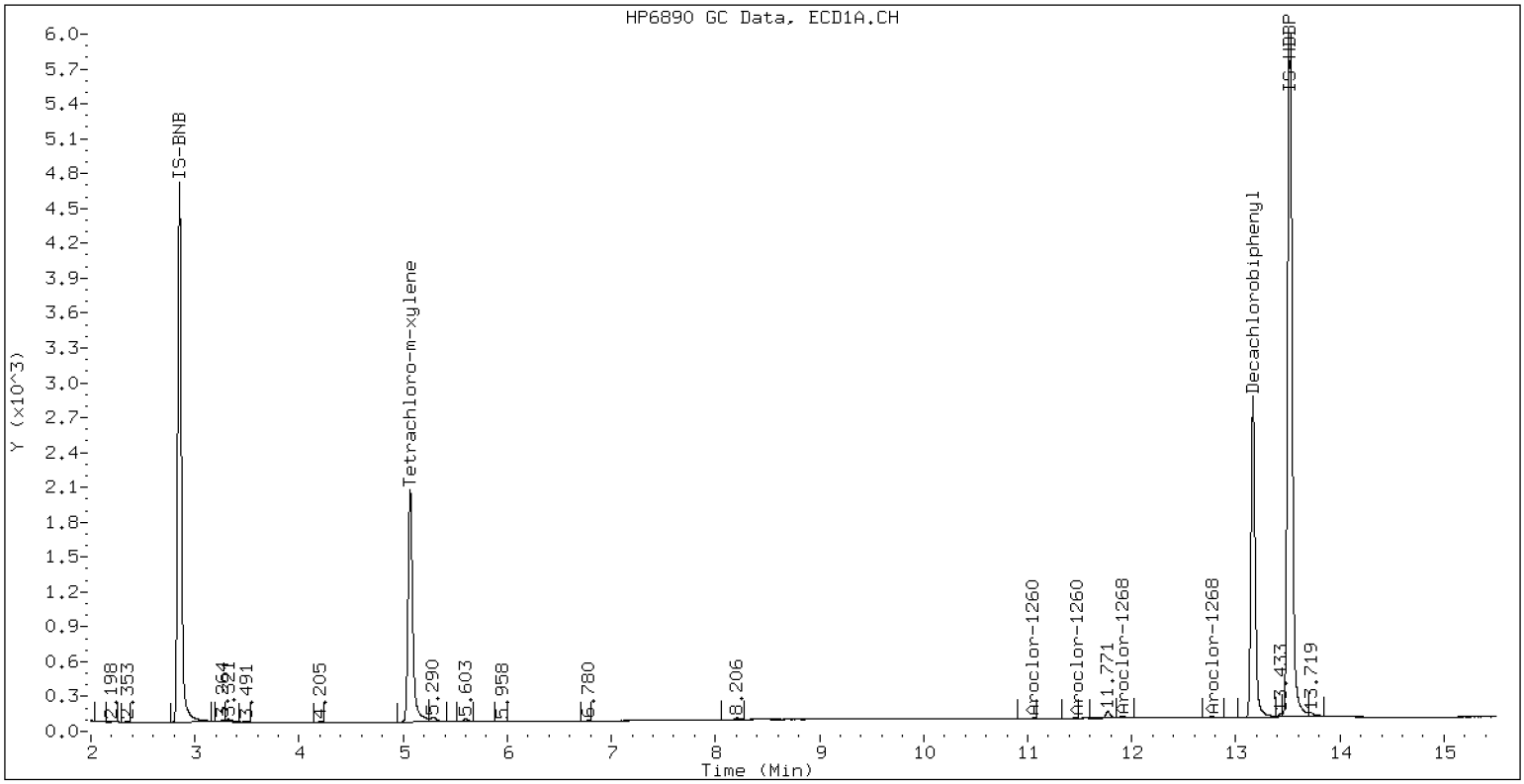
Total PCB Area Col2 (5.169 - 13.066) = 427198 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

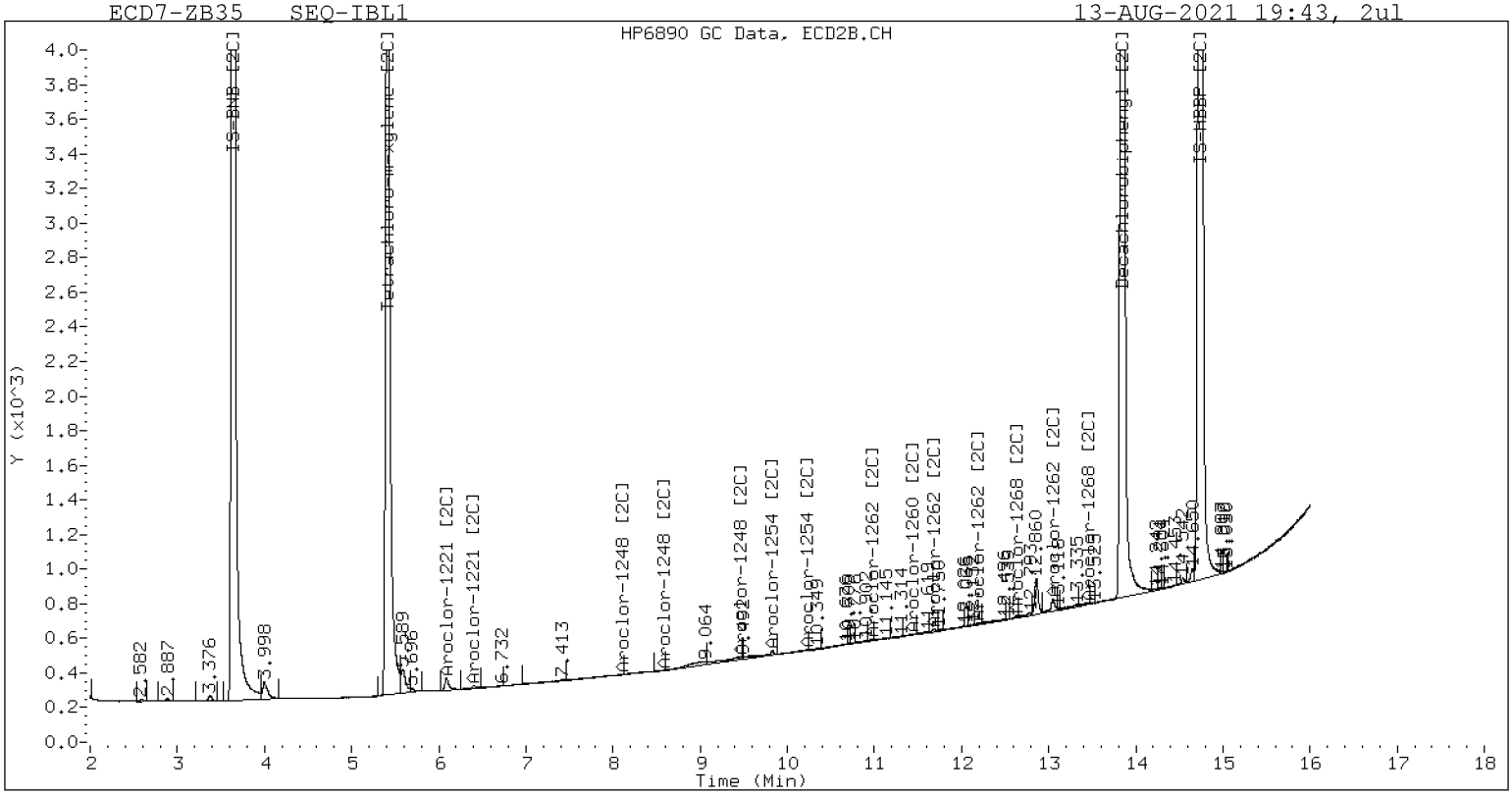
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-IBL1 13-AUG-2021 19:43, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-IBL1 13-AUG-2021 19:43, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132105ECD7.D
Data file 2: /210813.b/210813.b/08132105ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL1
Client ID:
Injection Date: 13-AUG-2021 20:03
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	9617	5.413	-0.004	29440	3.1	3.2	3.5	Tetrachloro-m-xylene
13.163	-0.003	12564	13.845	-0.035	57292	3.3	3.1	5.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	255944	-1.1
Hexabromobiphenyl	425681	422645	-0.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	711334	-1.3
Hexabromobiphenyl	863111	833996	-3.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.002	1695	18.7	1	7.056	-0.000	8681	21.4
Aroclor-1016	2	7.033	0.004	4753	17.1	2	7.654	0.007	17802	19.6
Aroclor-1016	3	7.181	0.005	2275	18.3	3	7.862	0.007	6842	19.2
Aroclor-1016	4	7.290	0.006	1274	16.3	4	8.107	0.002	4300	20.0
Total Col1Ave (4 peaks):				17.6		Total Col2Ave (4 peaks):			20.0	RPD = 13
Corrected Ave (3 peaks):				17.2		Corrected Ave (3 peaks):			19.6	RPD = 13
CalAmt %D:				-12.0		CalAmt %D:			0.2	
Aroclor-1260	1	10.387	0.004	3856	20.3	1	11.427	0.002	14898	21.5
Aroclor-1260	2	10.705	0.005	3691	19.8	2	11.682	0.000	42446	21.1
Aroclor-1260	3	11.056	0.005	10401	20.6	3	12.263	0.002	28256	21.8
Aroclor-1260	4	11.458	0.006	4210	18.7	4	12.974	0.001	12202	19.7
Aroclor-1260	5	11.557	0.003	2197	19.5	NS	---			----
Total Col1Ave (5 peaks):				19.8		Total Col2Ave (4 peaks):			21.0	RPD = 6
Corrected Ave (4 peaks):				19.6		Corrected Ave (3 peaks):			20.8	RPD = 6
CalAmt %D:				-1.1		CalAmt %D:			5.1	

Total PCB Area Col1 (5.169 - 13.066) = 102366 Col1 Total PCB = 0.0 ppm*

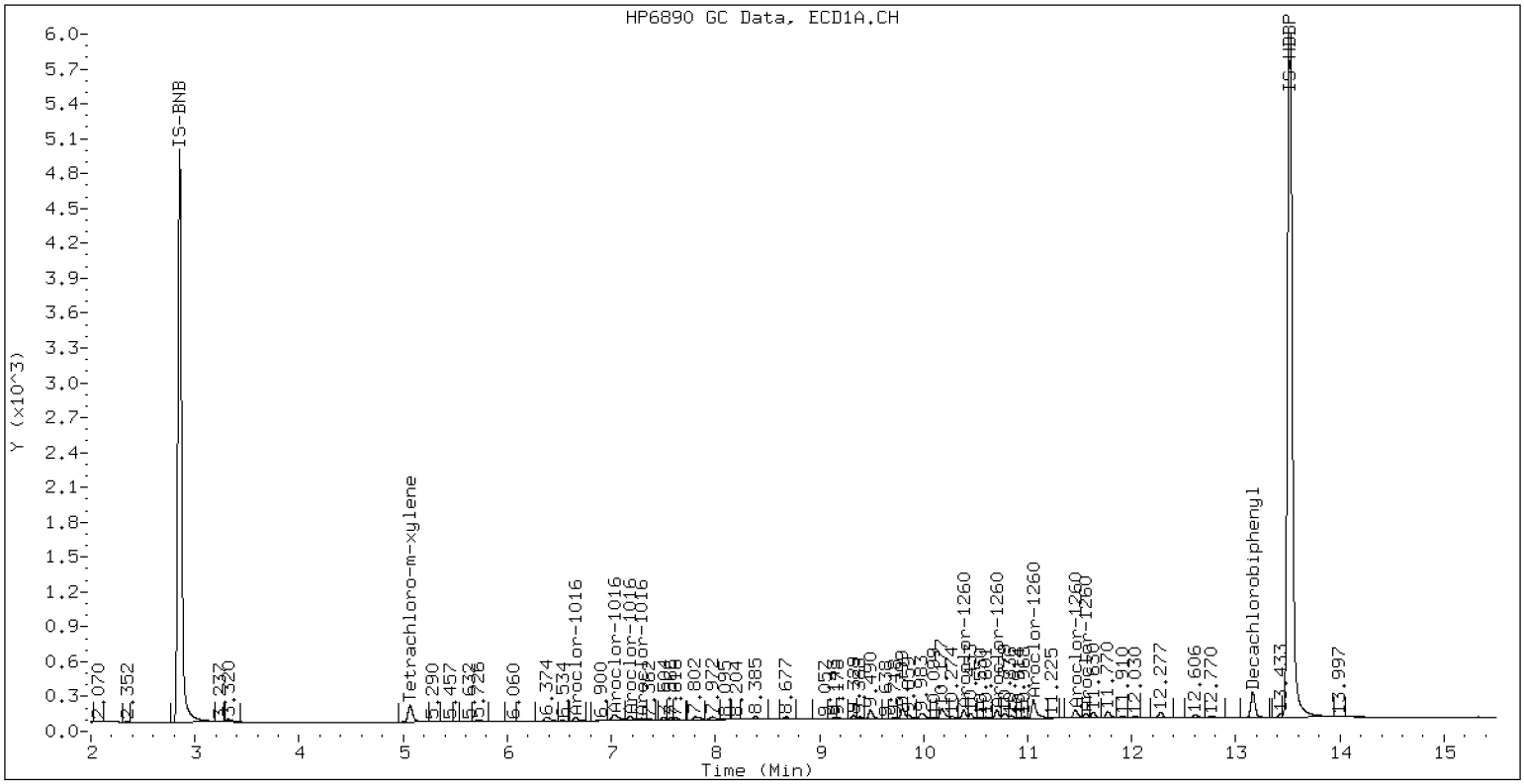
Total PCB Area Col2 (5.169 - 13.066) = 412493 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

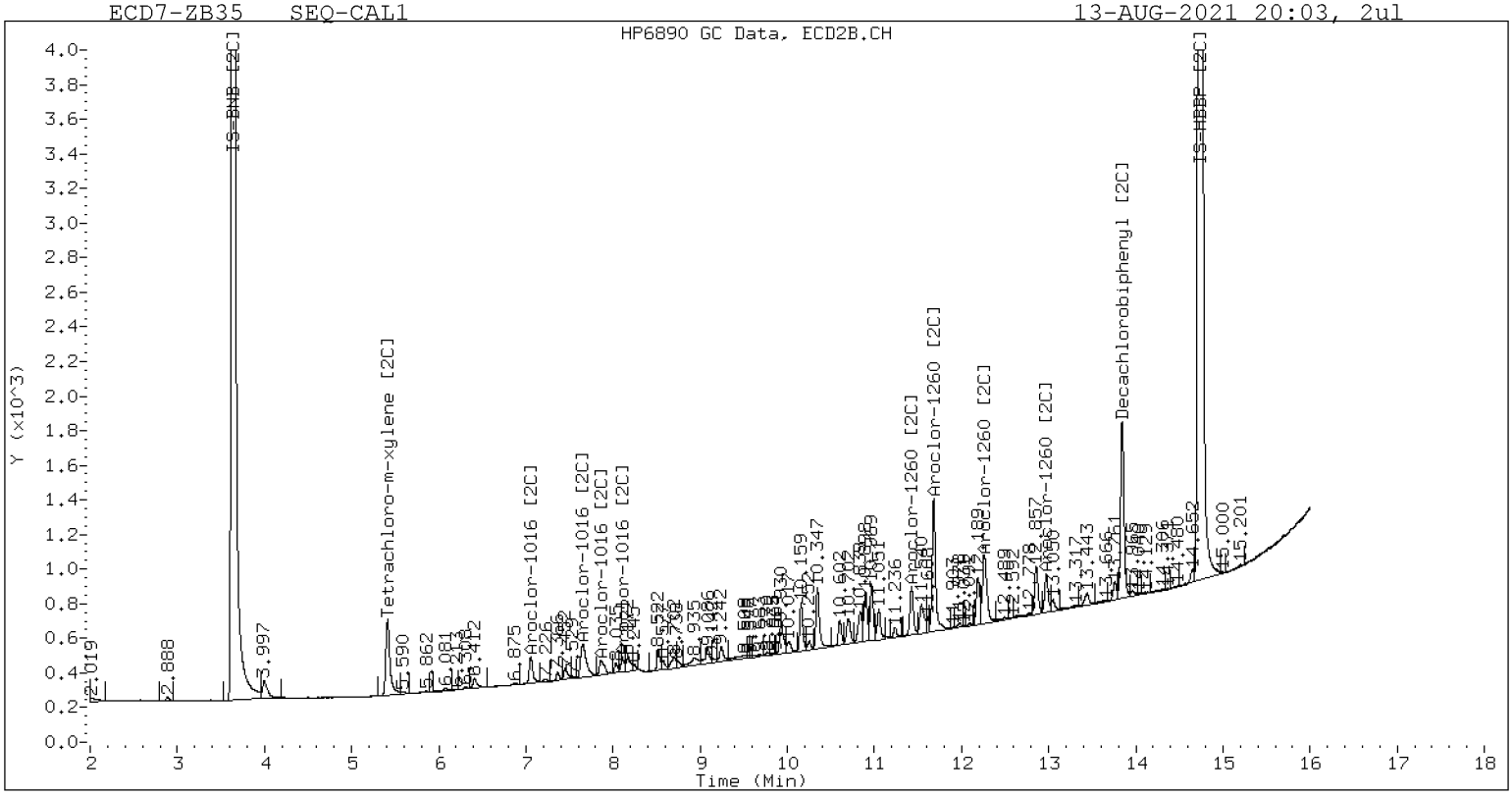
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL1 13-AUG-2021 20:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL1 13-AUG-2021 20:03, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132106ECD7.D
Data file 2: /210813.b/210813.b/08132106ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL2
Client ID:
Injection Date: 13-AUG-2021 20:24
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	23332	5.413	-0.004	72878	7.6	7.9	4.2	Tetrachloro-m-xylene
13.164	-0.002	31052	13.846	-0.034	144891	8.0	7.7	3.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	255215	-1.4
Hexabromobiphenyl	425681	425246	-0.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	718694	-0.3
Hexabromobiphenyl	863111	842315	-2.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.659	0.001	4645	51.3	1	7.056	-0.000	21261	51.9
Aroclor-1016	2	7.034	0.005	13436	48.5	2	7.655	0.007	44431	48.5
Aroclor-1016	3	7.181	0.005	6528	52.6	3	7.861	0.006	16510	45.9
Aroclor-1016	4	7.291	0.006	3864	49.6	4	8.107	0.002	10254	47.1

Total Col1Ave (4 peaks): 50.5 Total Col2Ave (4 peaks): 48.3 RPD = 4
Corrected Ave (3 peaks): 49.8 Corrected Ave (3 peaks): 47.2 RPD = 6

CalAmt %D: 1.0 CalAmt %D: -3.3

Aroclor-1260	1	10.385	0.002	9567	50.0	1	11.427	0.002	36882	52.7
Aroclor-1260	2	10.703	0.003	9130	48.6	2	11.680	-0.001	103868	51.0
Aroclor-1260	3	11.054	0.004	24220	47.7	3	12.264	0.003	67124	51.3
Aroclor-1260	4	11.456	0.003	10743	47.5	4	12.972	-0.001	29907	47.8
Aroclor-1260	5	11.556	0.002	5597	49.4	NS	---			----

Total Col1Ave (5 peaks): 48.7 Total Col2Ave (4 peaks): 50.7 RPD = 4
Corrected Ave (4 peaks): 48.3 Corrected Ave (3 peaks): 50.0 RPD = 3

CalAmt %D: -2.7 CalAmt %D: 1.4

Total PCB Area Col1 (5.169 - 13.066) = 251626 Col1 Total PCB = 0.1 ppm*

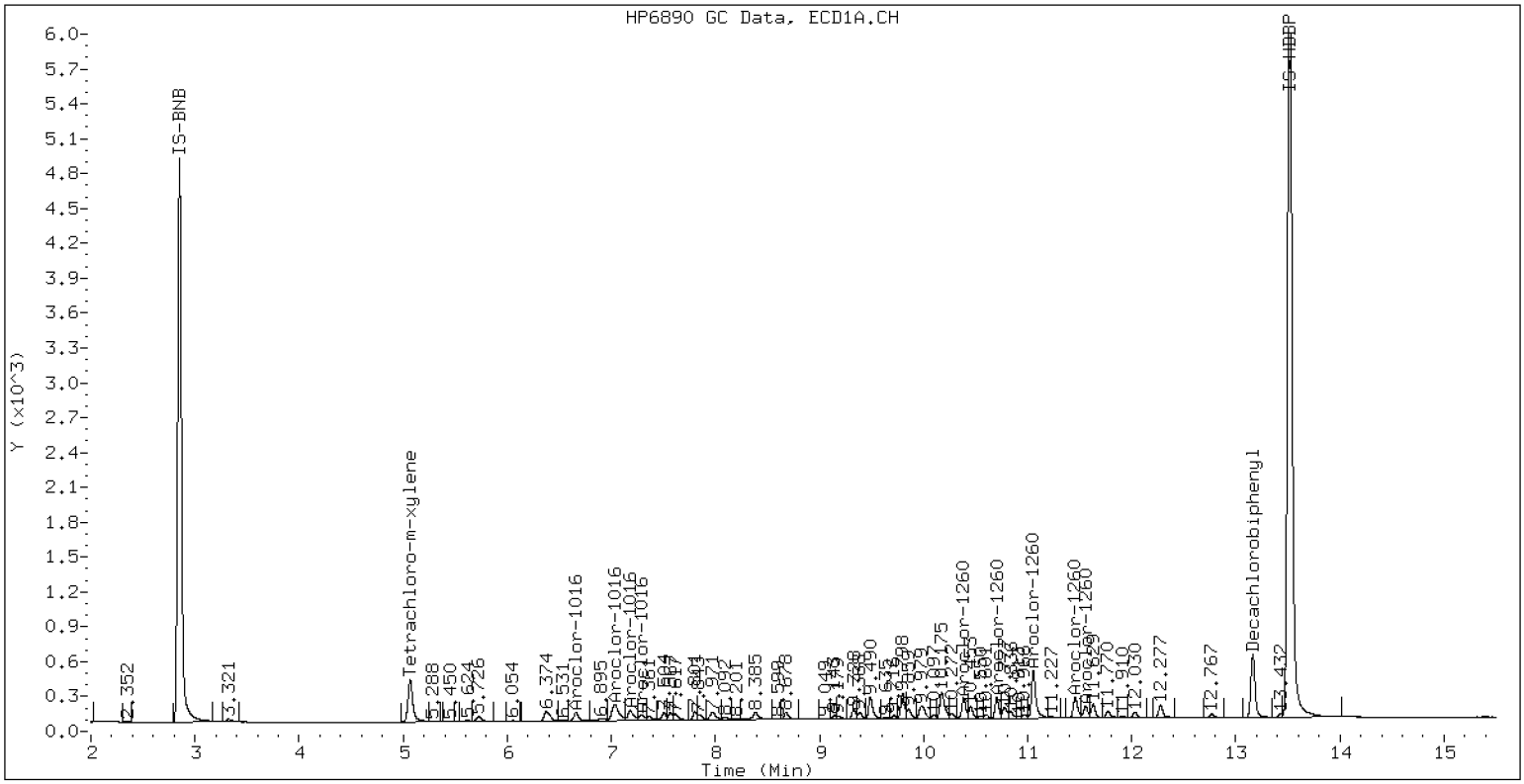
Total PCB Area Col2 (5.169 - 13.066) = 951053 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

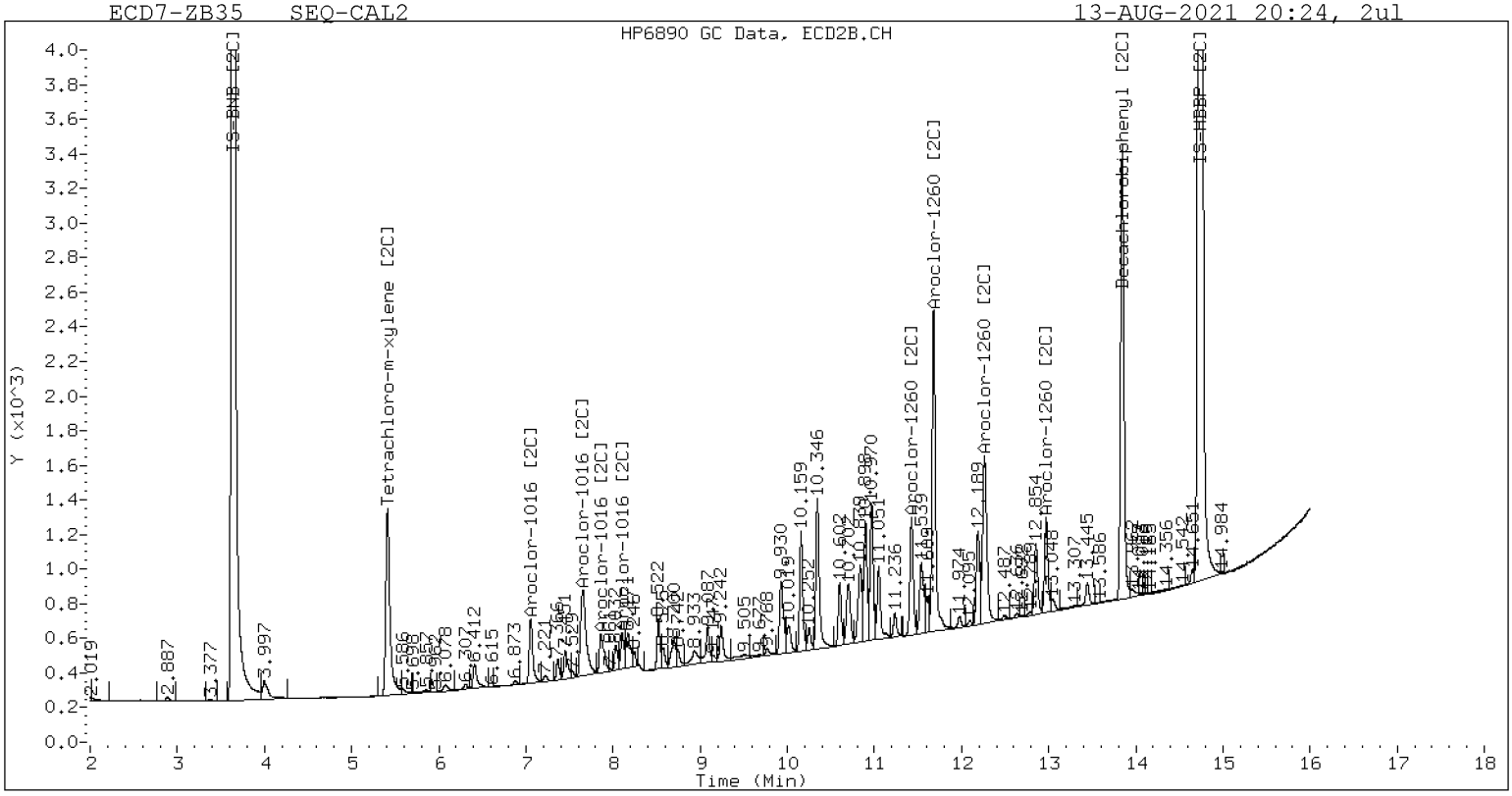
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL2 13-AUG-2021 20:24, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL2 13-AUG-2021 20:24, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132107ECD7.D
Data file 2: /210813.b/210813.b/08132107ECD7.D
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Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL3
Client ID:
Injection Date: 13-AUG-2021 20:44
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	50667	5.414	-0.003	150921	16.1	16.2	0.1	Tetrachloro-m-xylene
13.164	-0.002	64497	13.846	-0.034	311850	16.4	16.2	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	259615	0.3
Hexabromobiphenyl	425681	432543	1.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	726577	0.8
Hexabromobiphenyl	863111	864959	0.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.002	9540	103.6	1	7.057	0.000	43541	105.1
Aroclor-1016	2	7.033	0.003	28383	100.8	2	7.653	0.005	97461	105.2
Aroclor-1016	3	7.180	0.004	13172	104.2	3	7.860	0.005	39365	108.2
Aroclor-1016	4	7.290	0.005	8150	102.9	4	8.106	0.001	24189	109.9

Total Col1Ave (4 peaks): 102.9 Total Col2Ave (4 peaks): 107.1 RPD = 4
Corrected Ave (3 peaks): 102.4 Corrected Ave (3 peaks): 106.2 RPD = 4

CalAmt %D: 2.9 CalAmt %D: 7.1

Aroclor-1260	1	10.385	0.002	19398	99.7	1	11.426	0.001	74307	103.3
Aroclor-1260	2	10.702	0.002	18907	99.0	2	11.680	-0.001	211815	101.4
Aroclor-1260	3	11.054	0.003	50259	97.4	3	12.263	0.002	136563	101.6
Aroclor-1260	4	11.456	0.003	22610	98.3	4	12.972	-0.001	68139	106.1
Aroclor-1260	5	11.555	0.001	11534	100.2	NS	---			----

Total Col1Ave (5 peaks): 98.9 Total Col2Ave (4 peaks): 103.1 RPD = 4
Corrected Ave (4 peaks): 98.6 Corrected Ave (3 peaks): 102.1 RPD = 4

CalAmt %D: -1.1 CalAmt %D: 3.1

Total PCB Area Col1 (5.169 - 13.066) = 512158 Col1 Total PCB = 0.2 ppm*

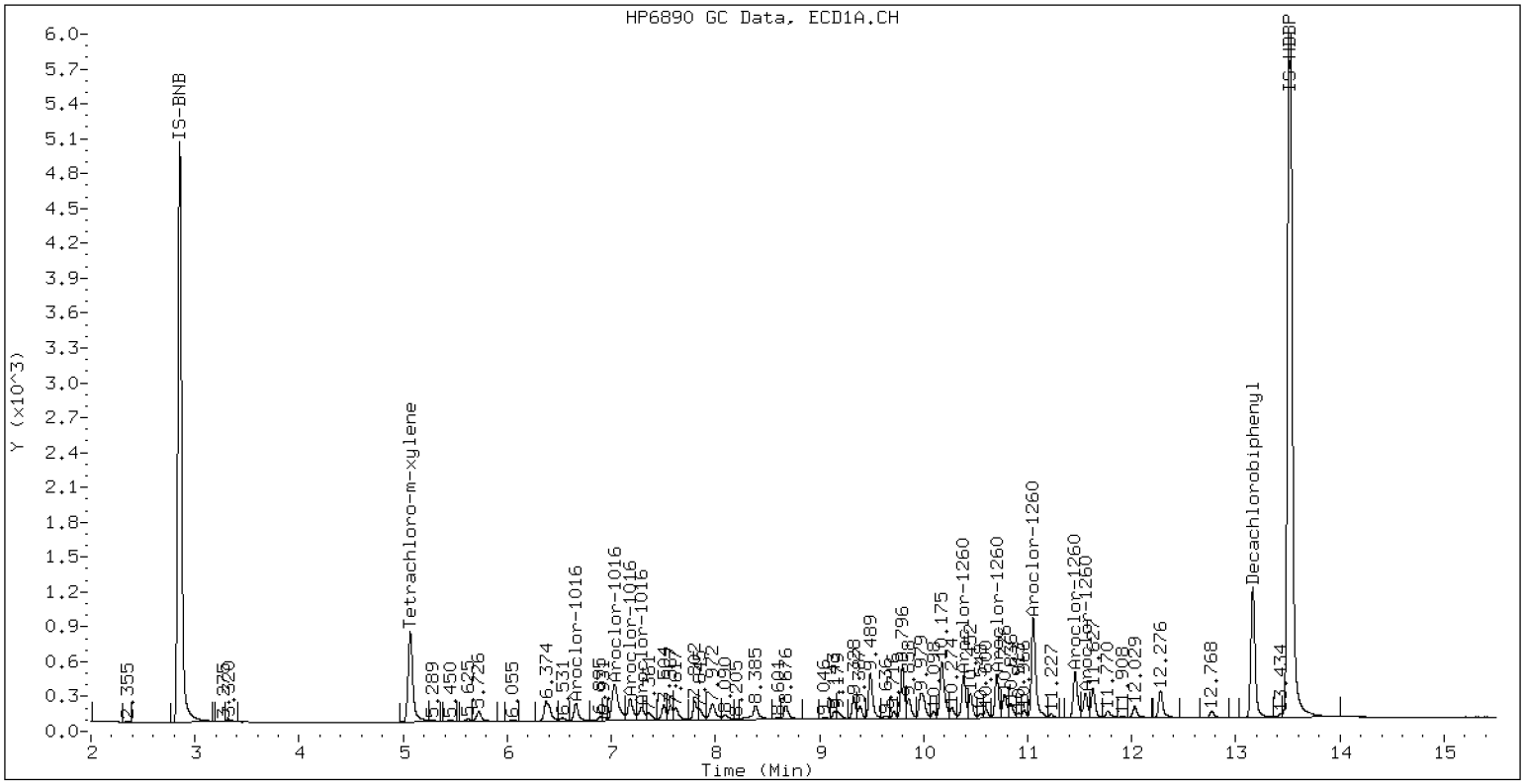
Total PCB Area Col2 (5.169 - 13.066) = 1949350 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

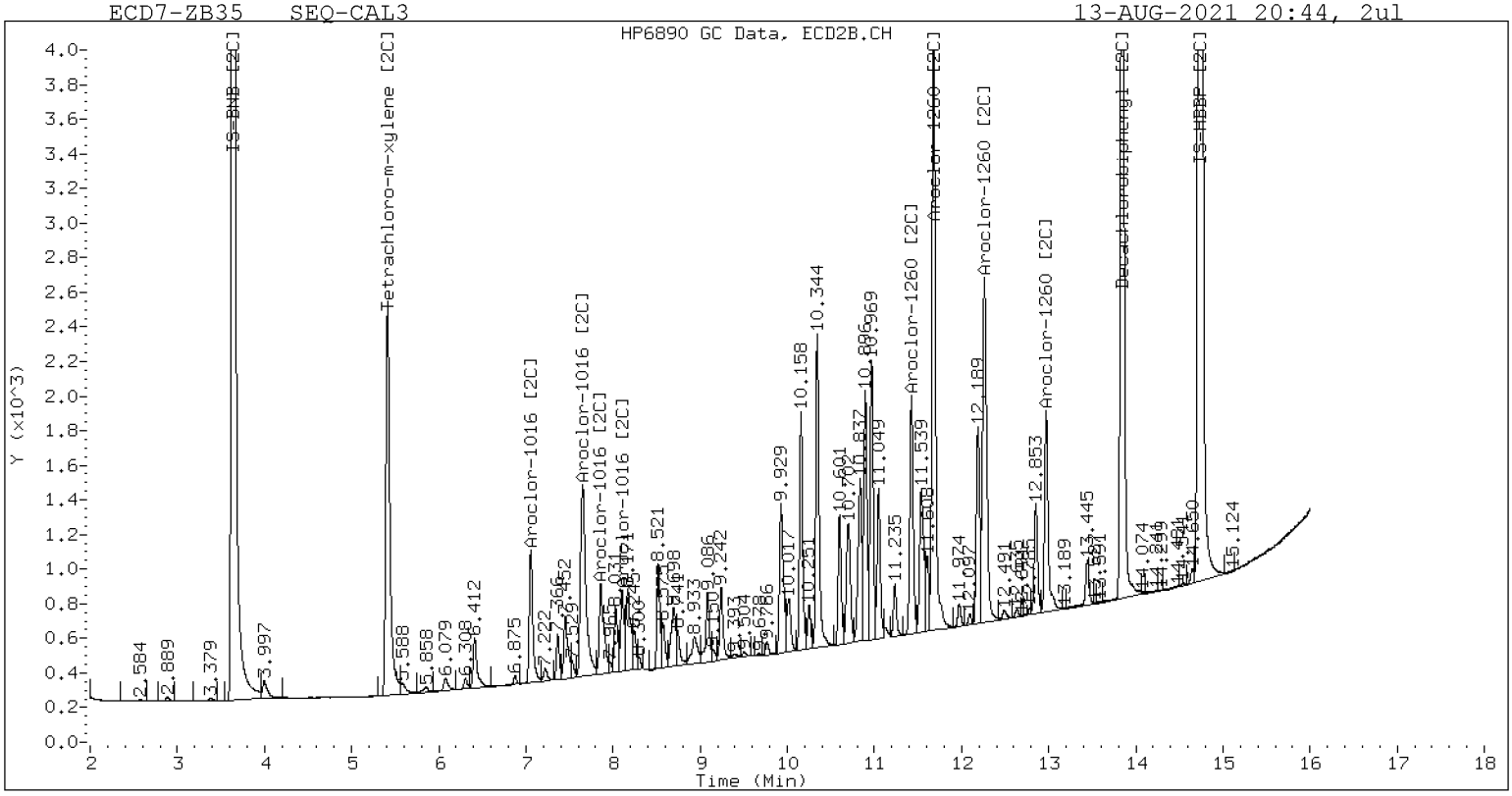
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL3 13-AUG-2021 20:44, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL3 13-AUG-2021 20:44, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132108ECD7.D
Data file 2: /210813.b/210813.b/08132108ECD7.D
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Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL4
Client ID:
Injection Date: 13-AUG-2021 21:05
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.002	131143	5.413	-0.004	377693	41.9	40.8	2.8	Tetrachloro-m-xylene
13.164	-0.002	160163	13.848	-0.032	791748	41.4	41.3	0.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258866	0.0
Hexabromobiphenyl	425681	425681	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	720956	0.0
Hexabromobiphenyl	863111	863111	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.659	0.001	23977	261.2	1	7.056	-0.000	105852	257.5
Aroclor-1016	2	7.032	0.002	74451	265.2	2	7.652	0.004	241603	262.7
Aroclor-1016	3	7.178	0.002	32969	261.7	3	7.857	0.002	96677	267.9
Aroclor-1016	4	7.287	0.002	20978	265.6	4	8.106	0.001	57673	264.1

Total Col1Ave (4 peaks): 263.4 Total Col2Ave (4 peaks): 263.0 RPD = 0
Corrected Ave (3 peaks): 262.7 Corrected Ave (3 peaks): 261.4 RPD = 0

CalAmt %D: 5.4 CalAmt %D: 5.2

Aroclor-1260	1	10.384	0.001	49492	258.4	1	11.426	0.000	183135	255.2
Aroclor-1260	2	10.702	0.002	49037	260.9	2	11.679	-0.002	525133	251.8
Aroclor-1260	3	11.053	0.002	130219	256.3	3	12.261	0.000	338031	252.1
Aroclor-1260	4	11.455	0.002	59560	263.1	4	12.972	-0.001	168369	262.6
Aroclor-1260	5	11.555	0.001	29402	259.4	NS	---			----

Total Col1Ave (5 peaks): 259.6 Total Col2Ave (4 peaks): 255.4 RPD = 2
Corrected Ave (4 peaks): 258.8 Corrected Ave (3 peaks): 253.0 RPD = 2

CalAmt %D: 3.9 CalAmt %D: 2.2

Total PCB Area Col1 (5.169 - 13.066) = 1310985 Col1 Total PCB = 0.5 ppm*

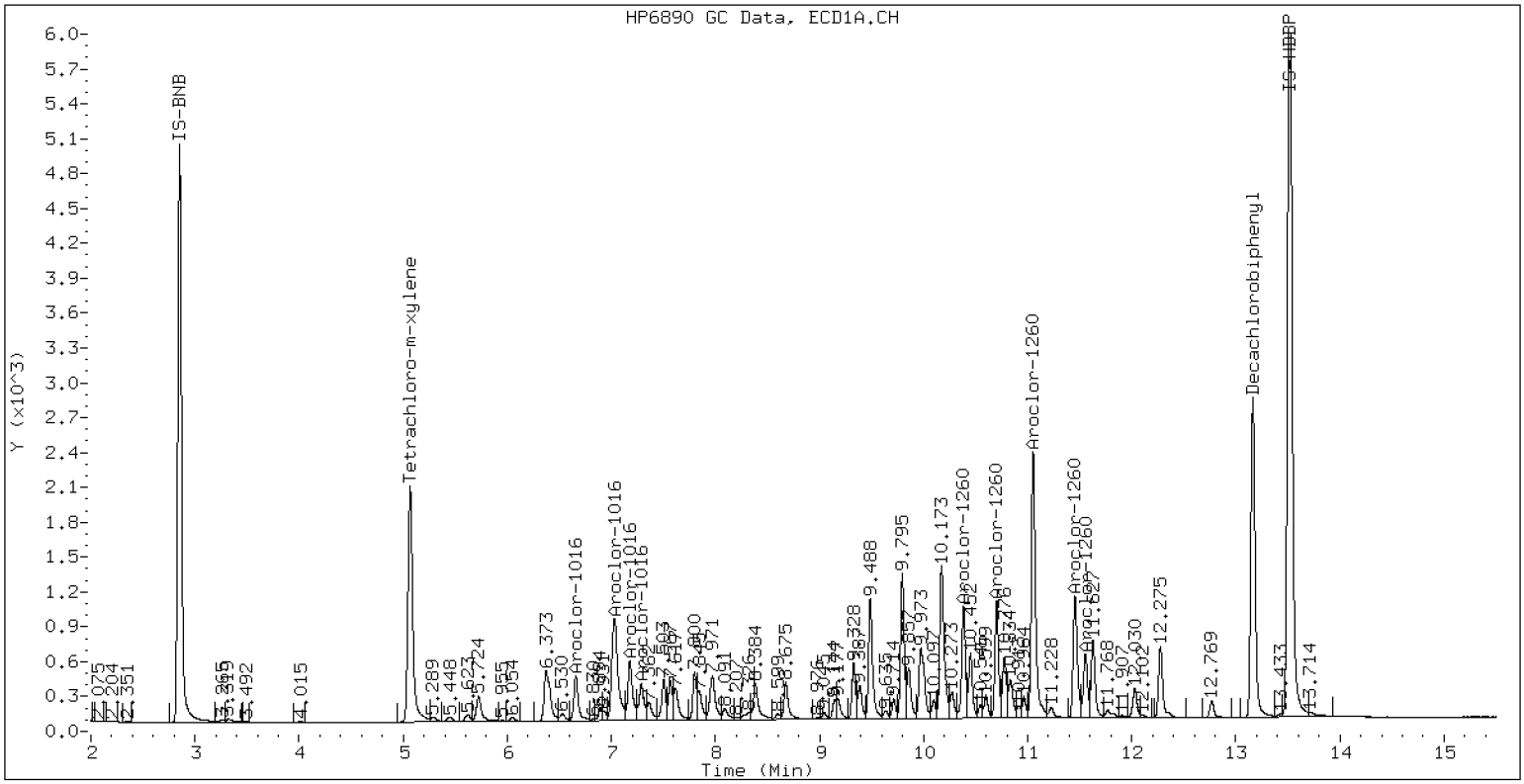
Total PCB Area Col2 (5.169 - 13.066) = 4836988 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

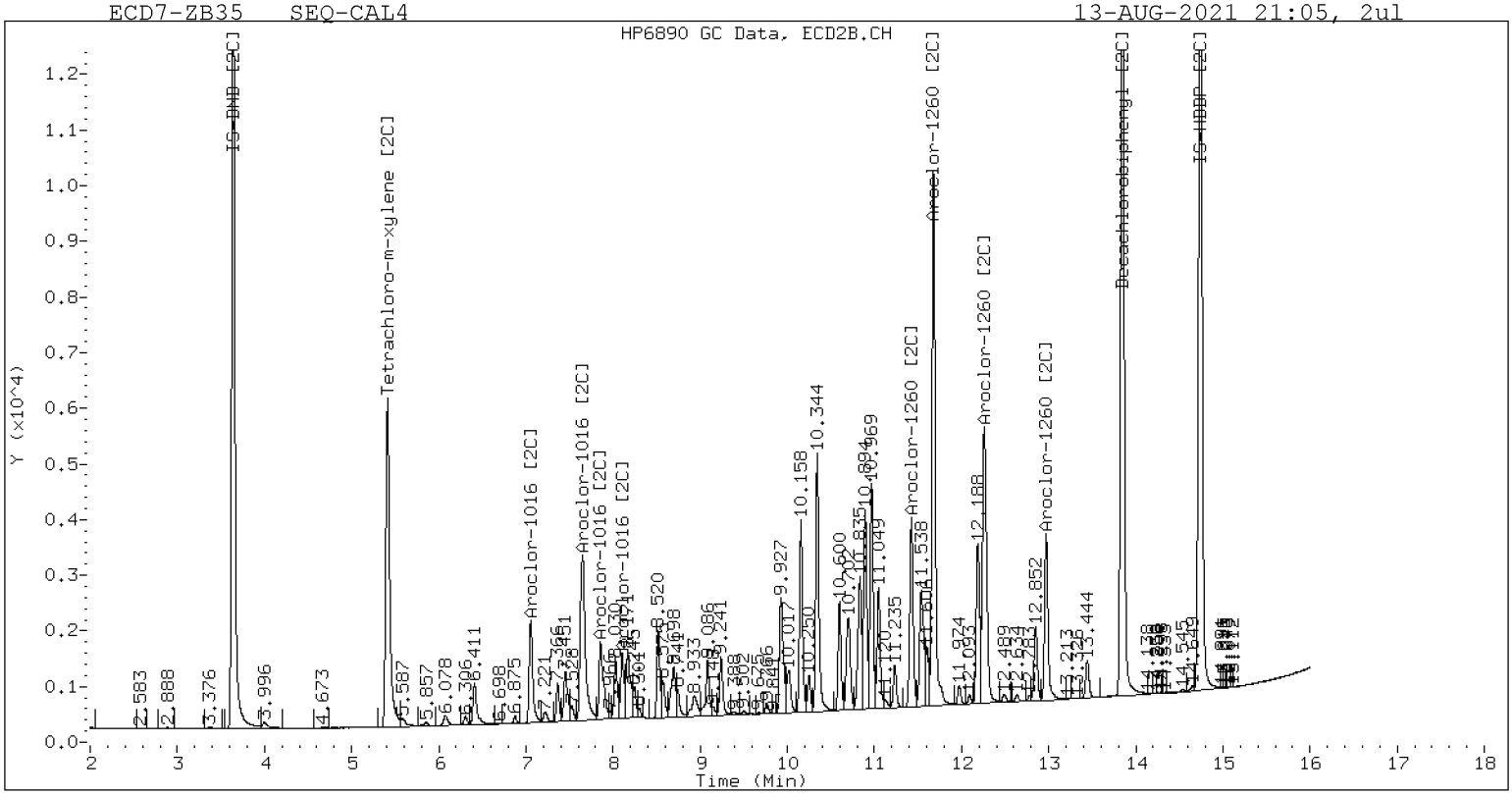
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL4 13-AUG-2021 21:05, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL4 13-AUG-2021 21:05, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132109ECD7.D
Data file 2: /210813.b/210813.b/08132109ECD7.D
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Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL5
Client ID:
Injection Date: 13-AUG-2021 21:25
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	258118	5.413	-0.004	732448	82.1	78.7	4.2	Tetrachloro-m-xylene
13.165	-0.001	309072	13.849	-0.031	1602822	78.9	81.6	3.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	260046	0.5
Hexabromobiphenyl	425681	431467	1.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724186	0.4
Hexabromobiphenyl	863111	884020	2.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.659	0.000	46320	502.2	1	7.057	0.000	197055	477.2
Aroclor-1016	2	7.031	0.001	149242	529.2	2	7.650	0.002	461244	499.4
Aroclor-1016	3	7.177	0.001	63193	499.3	3	7.856	0.001	183963	507.5
Aroclor-1016	4	7.286	0.001	41958	528.8	4	8.105	0.000	108095	492.7

Total Col1Ave (4 peaks): 514.9 Total Col2Ave (4 peaks): 494.2 RPD = 4
Corrected Ave (3 peaks): 510.1 Corrected Ave (3 peaks): 489.8 RPD = 4

CalAmt %D: 3.0 CalAmt %D: -1.2

Aroclor-1260	1	10.384	0.001	97246	501.0	1	11.426	0.001	347996	473.5
Aroclor-1260	2	10.702	0.002	97621	512.4	2	11.679	-0.002	1000503	468.4
Aroclor-1260	3	11.052	0.002	275048	534.2	3	12.261	-0.000	661157	481.4
Aroclor-1260	4	11.453	0.000	121425	529.3	4	12.972	-0.001	329450	501.7
Aroclor-1260	5	11.556	0.002	58651	510.6	NS	---			----

Total Col1Ave (5 peaks): 517.5 Total Col2Ave (4 peaks): 481.3 RPD = 7
Corrected Ave (4 peaks): 513.3 Corrected Ave (3 peaks): 474.4 RPD = 8

CalAmt %D: 3.5 CalAmt %D: -3.7

Total PCB Area Col1 (5.169 - 13.066) = 2655201 Col1 Total PCB = 1.0 ppm*

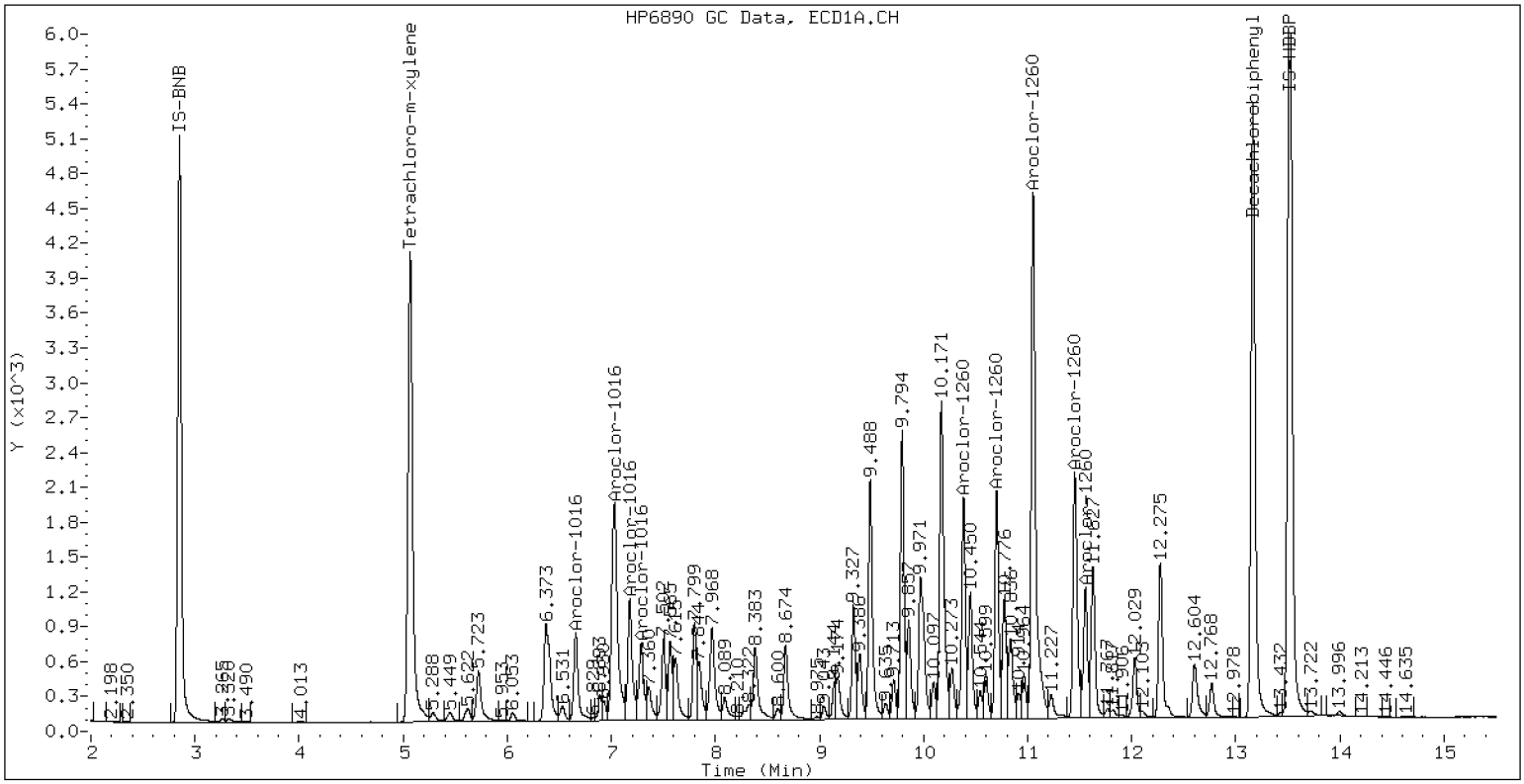
Total PCB Area Col2 (5.169 - 13.066) = 9365705 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

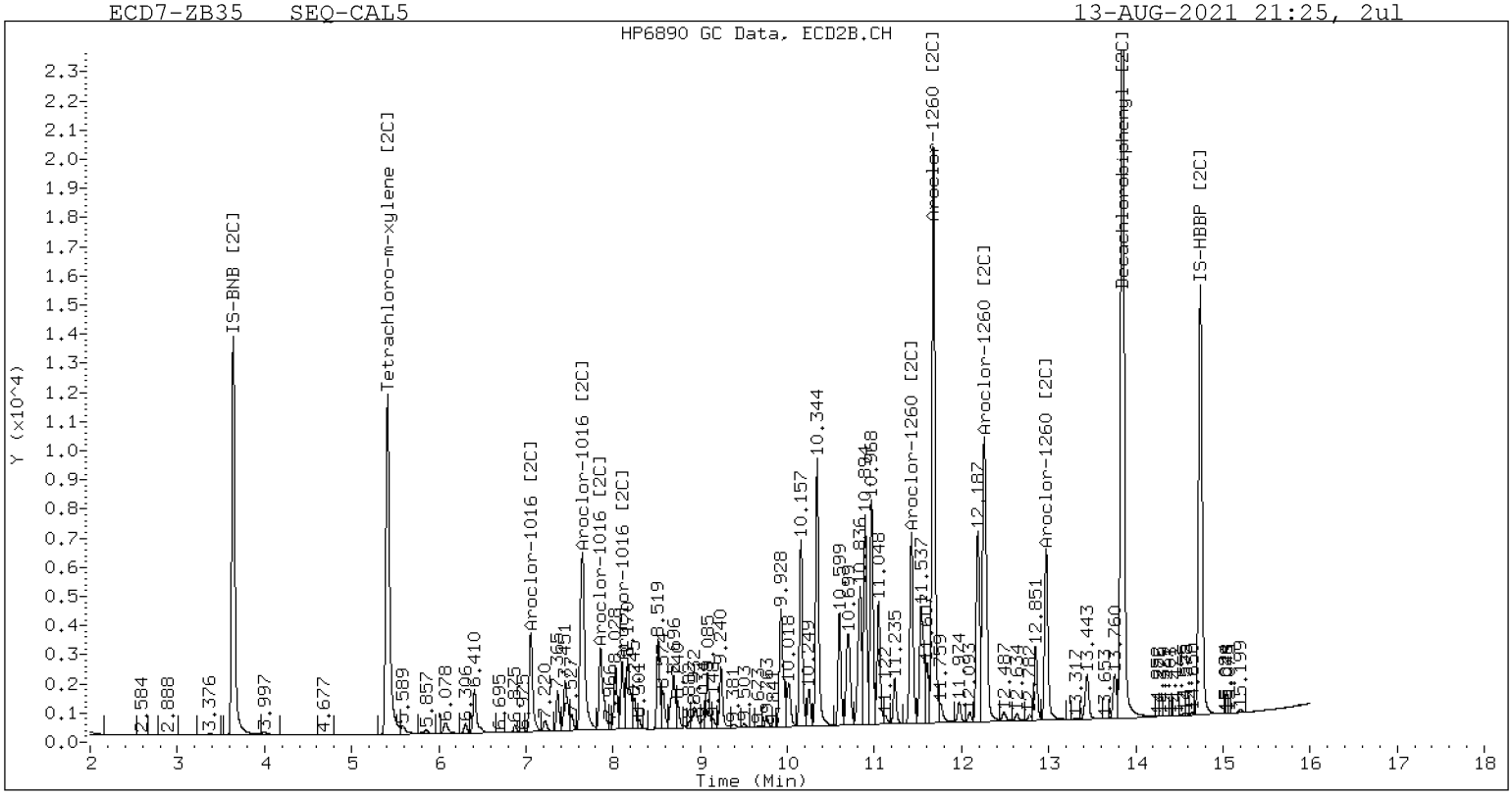
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL5 13-AUG-2021 21:25, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL5 13-AUG-2021 21:25, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132110ECD7.D
Data file 2: /210813.b/210813.b/08132110ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL6
Client ID:
Injection Date: 13-AUG-2021 21:46
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	541706	5.414	-0.003	1597689	159.9	159.0	0.6	Tetrachloro-m-xylene
13.165	-0.001	637119	13.857	-0.023	4083557	147.5	182.1	21.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	280205	8.2
Hexabromobiphenyl	425681	475884	11.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	781756	8.4
Hexabromobiphenyl	863111	1009000	16.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.658	0.000	94894	954.9	1	7.056	0.000	382038	857.0
Aroclor-1016	2	7.029	0.000	317873	1046.0	2	7.648	0.000	945478	948.2
Aroclor-1016	3	7.176	0.000	129330	948.3	3	7.855	0.000	372755	952.6
Aroclor-1016	4	7.285	0.000	89202	1043.3	4	8.105	0.000	217812	919.7

Total Col1Ave (4 peaks): 998.1 Total Col2Ave (4 peaks): 919.4 RPD = 8
Corrected Ave (3 peaks): 982.1 Corrected Ave (3 peaks): 908.3 RPD = 8

CalAmt %D: -0.2 CalAmt %D: -8.1

Aroclor-1260	1	10.383	0.000	204156	953.5	1	11.425	0.000	730248	870.6
Aroclor-1260	2	10.700	0.000	206019	980.4	2	11.681	0.000	2360936	968.4
Aroclor-1260	3	11.051	0.000	537974	947.2	3	12.261	0.000	1405398	896.5
Aroclor-1260	4	11.452	0.000	257778	1018.8	4	12.972	0.000	707923	944.6
Aroclor-1260	5	11.554	0.000	123435	974.3	NS	---			----

Total Col1Ave (5 peaks): 974.9 Total Col2Ave (4 peaks): 920.0 RPD = 6
Corrected Ave (4 peaks): 963.9 Corrected Ave (3 peaks): 903.9 RPD = 6

CalAmt %D: -2.5 CalAmt %D: -8.0

Total PCB Area Col1 (5.169 - 13.066) = 5423849 Col1 Total PCB = 1.9 ppm*

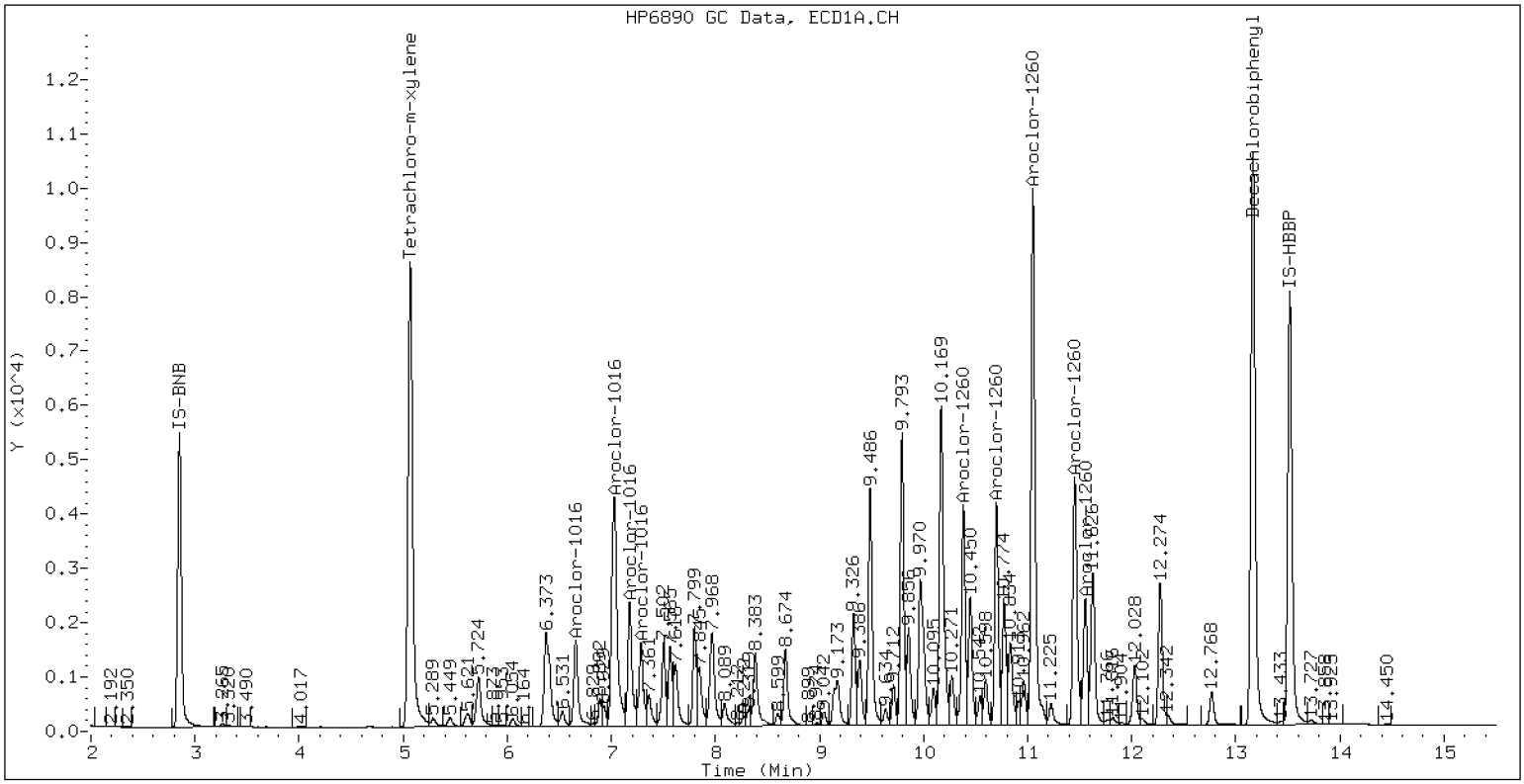
Total PCB Area Col2 (5.169 - 13.066) = 19780755 Col2 Total PCB = 1.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

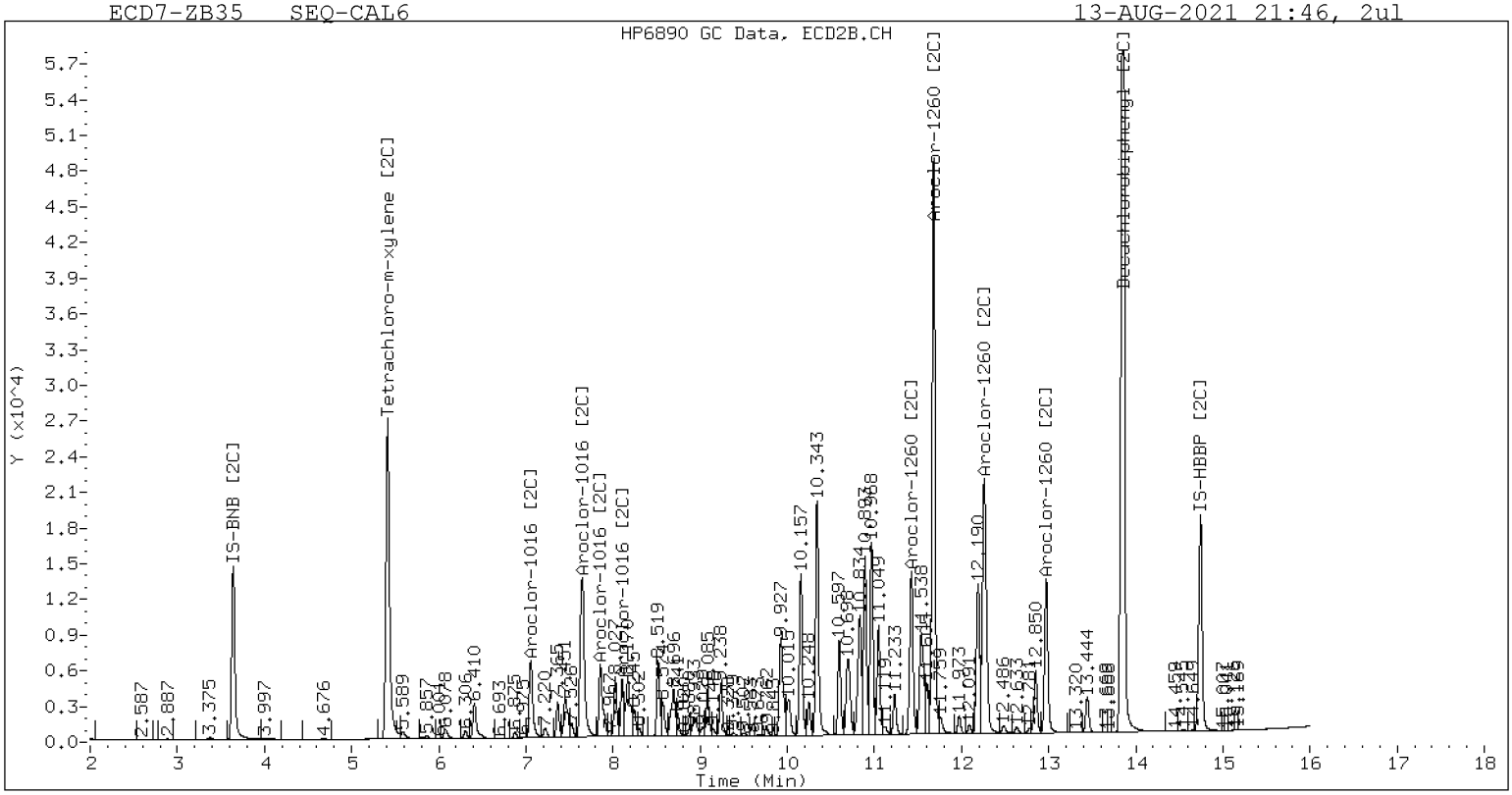
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL6 13-AUG-2021 21:46, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL6 13-AUG-2021 21:46, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132111ECD7.D
Data file 2: /210813.b/210813.b/08132111ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL7
Client ID:
Injection Date: 13-AUG-2021 22:06
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.000	8876	5.414	-0.003	30000	2.9	3.3	12.3	Tetrachloro-m-xylene
13.165	-0.001	13011	13.846	-0.034	60849	3.3	3.1	6.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	250794	-3.1
Hexabromobiphenyl	425681	428399	0.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	704880	-2.2
Hexabromobiphenyl	863111	870180	0.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.661	0.003	1188	17.2	1	7.057	0.000	7002	21.6
Aroclor-1242	2	7.036	0.006	3551	17.2	2	7.656	0.007	14507	20.6
Aroclor-1242	3	8.379	0.005	2874	24.6	3	8.961	0.012	8080	24.6
Aroclor-1242	4	8.669	-0.004	1107	23.2	4	9.055	0.028	9034	24.2

Total Col1Ave (4 peaks): 20.6 Total Col2Ave (4 peaks): 22.7 RPD = 10

Corrected Ave (3 peaks): 19.2 Corrected Ave (3 peaks): 22.1 RPD = 14

Total PCB Area Col1 (5.169 - 13.066) = 29886 Col1 Total PCB = 0.0 ppm*

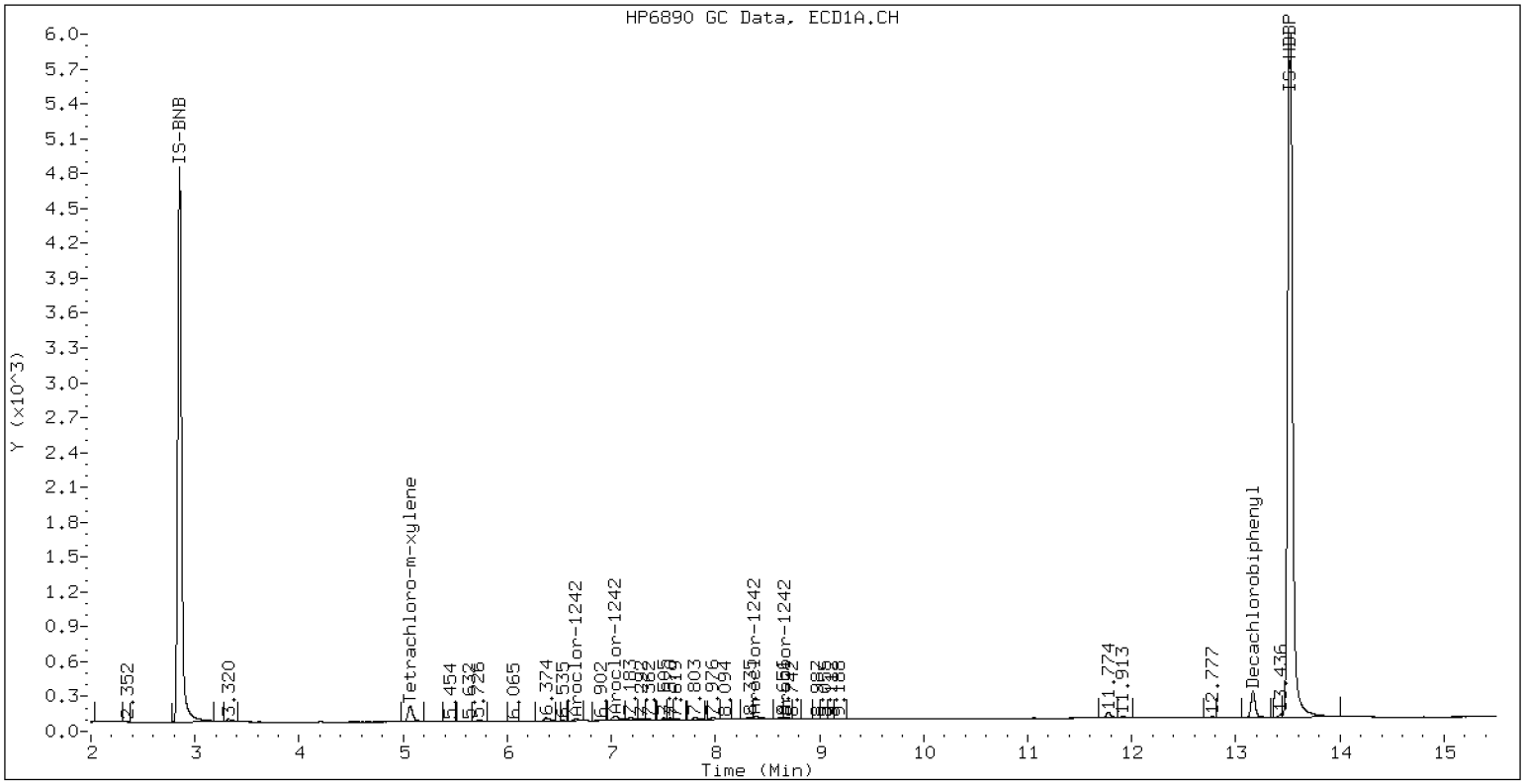
Total PCB Area Col2 (5.169 - 13.066) = 165162 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

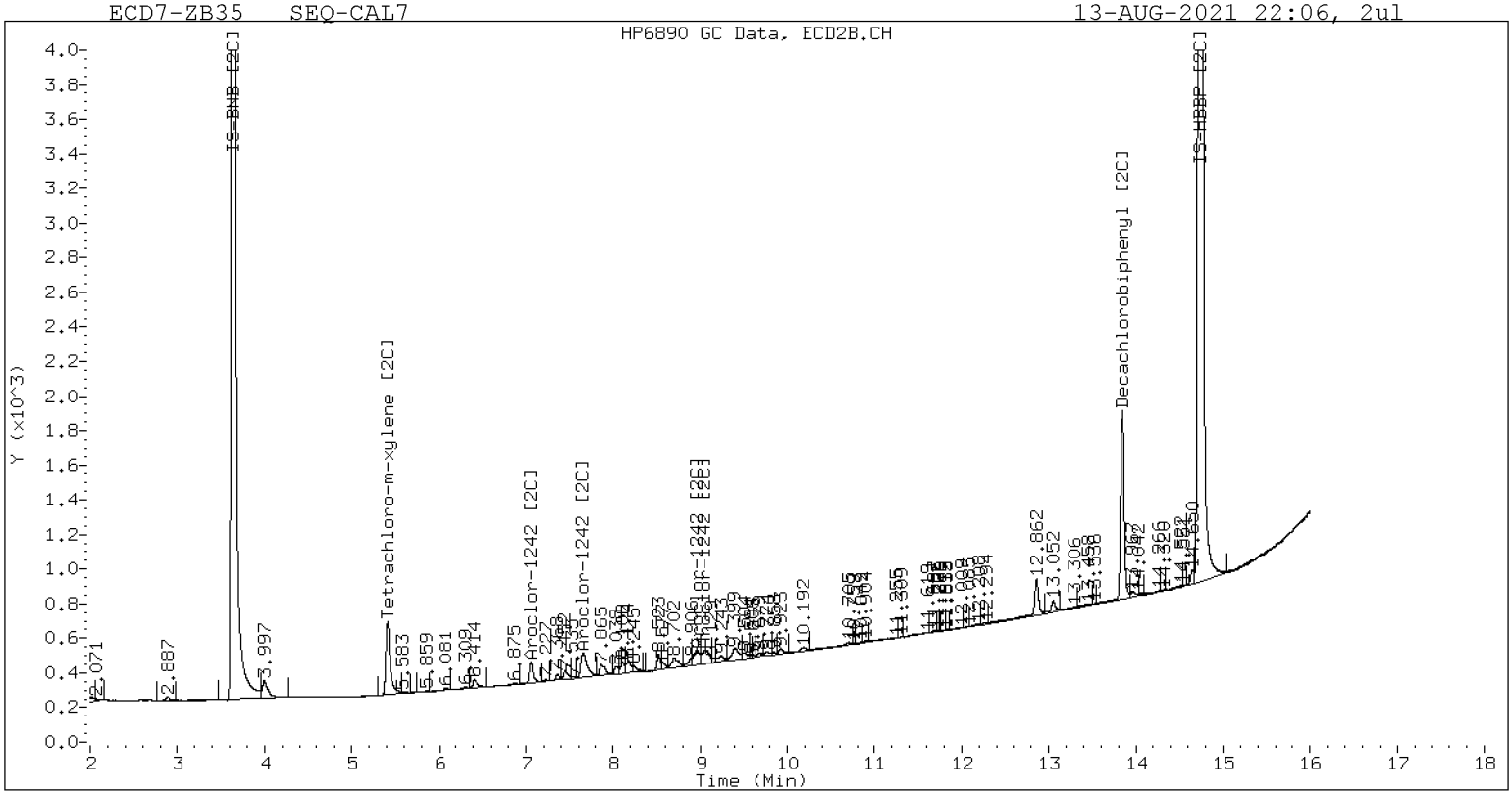
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL7 13-AUG-2021 22:06, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CAL7 13-AUG-2021 22:06, 2ul

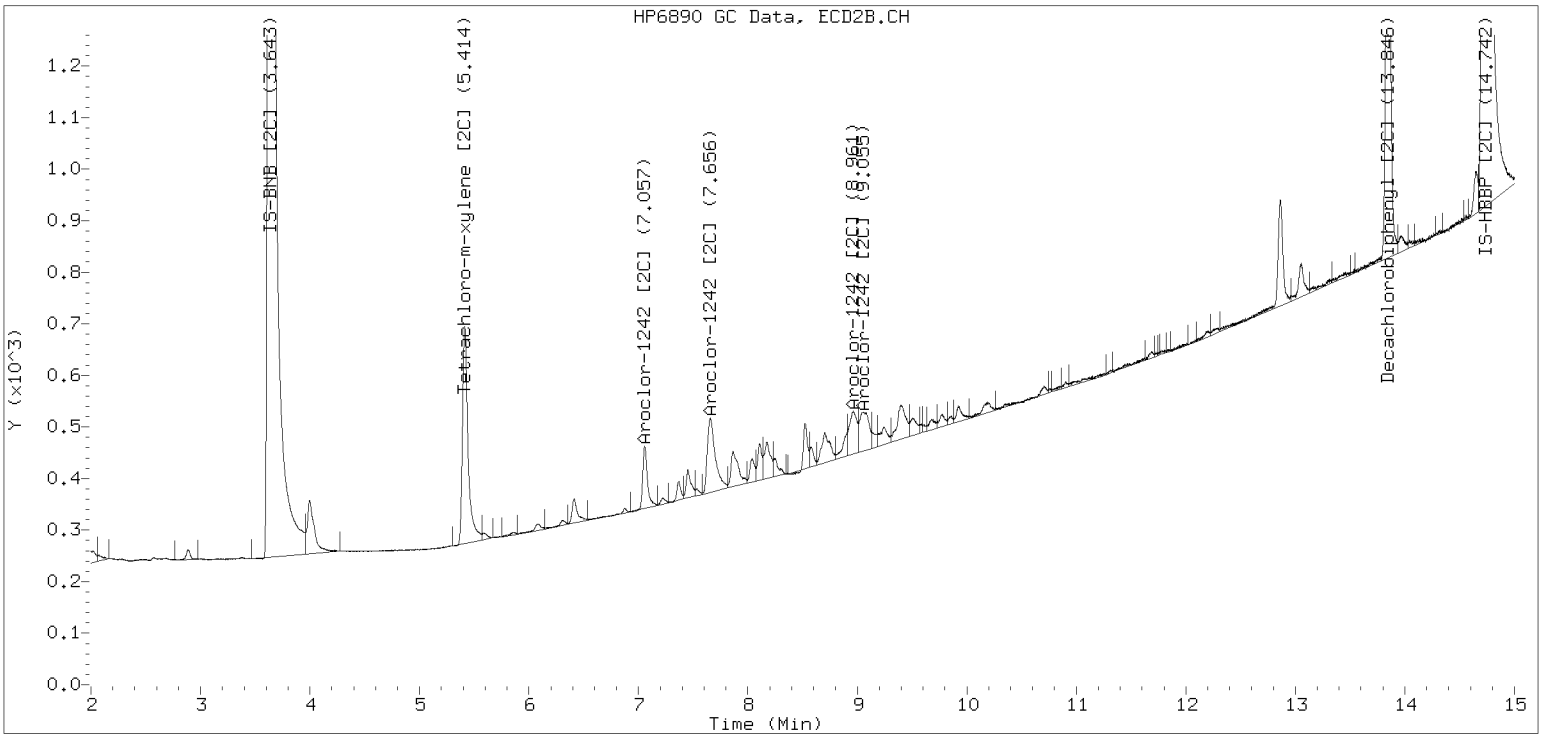


ZB-35 Manual Integration: YES

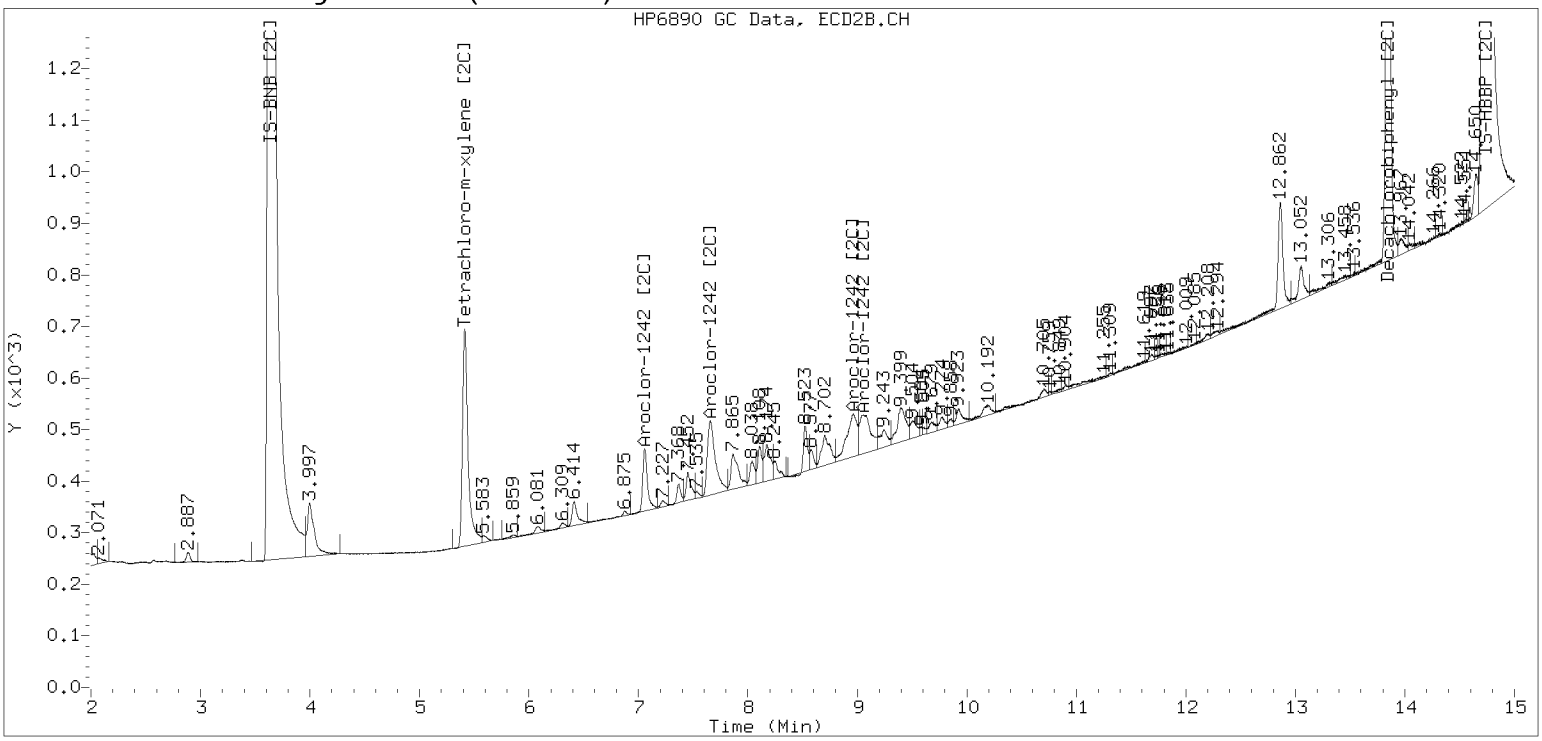
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132111.D Injection Date: 13-AUG-2021 22:0

Manual Integration (After)



Processed Integration (Before)



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

Data file 1: /210813.b/08132112ECD7.D
Data file 2: /210813.b/210813.b/08132112ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL8
Client ID:
Injection Date: 13-AUG-2021 22:27
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	22775	5.413	-0.004	72347	7.4	7.8	5.0	Tetrachloro-m-xylene
13.165	-0.001	30955	13.846	-0.034	147761	7.9	7.6	3.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	254431	-1.7
Hexabromobiphenyl	425681	432936	1.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	722925	0.3
Hexabromobiphenyl	863111	877354	1.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.003	3423	48.8	1	7.058	0.001	16875	50.8
Aroclor-1242	2	7.036	0.005	9075	43.4	2	7.657	0.008	34600	47.9
Aroclor-1242	3	8.386	0.011	5615	47.4	3	8.960	0.011	17574	52.1
Aroclor-1242	4	8.677	0.003	2567	53.1	4	9.045	0.017	18353	48.0

Total Col1Ave (4 peaks): 48.2 Total Col2Ave (4 peaks): 49.7 RPD = 3

Corrected Ave (3 peaks): 46.6 Corrected Ave (3 peaks): 48.9 RPD = 5

Total PCB Area Col1 (5.169 - 13.066) = 74664 Col1 Total PCB = 0.0 ppm*

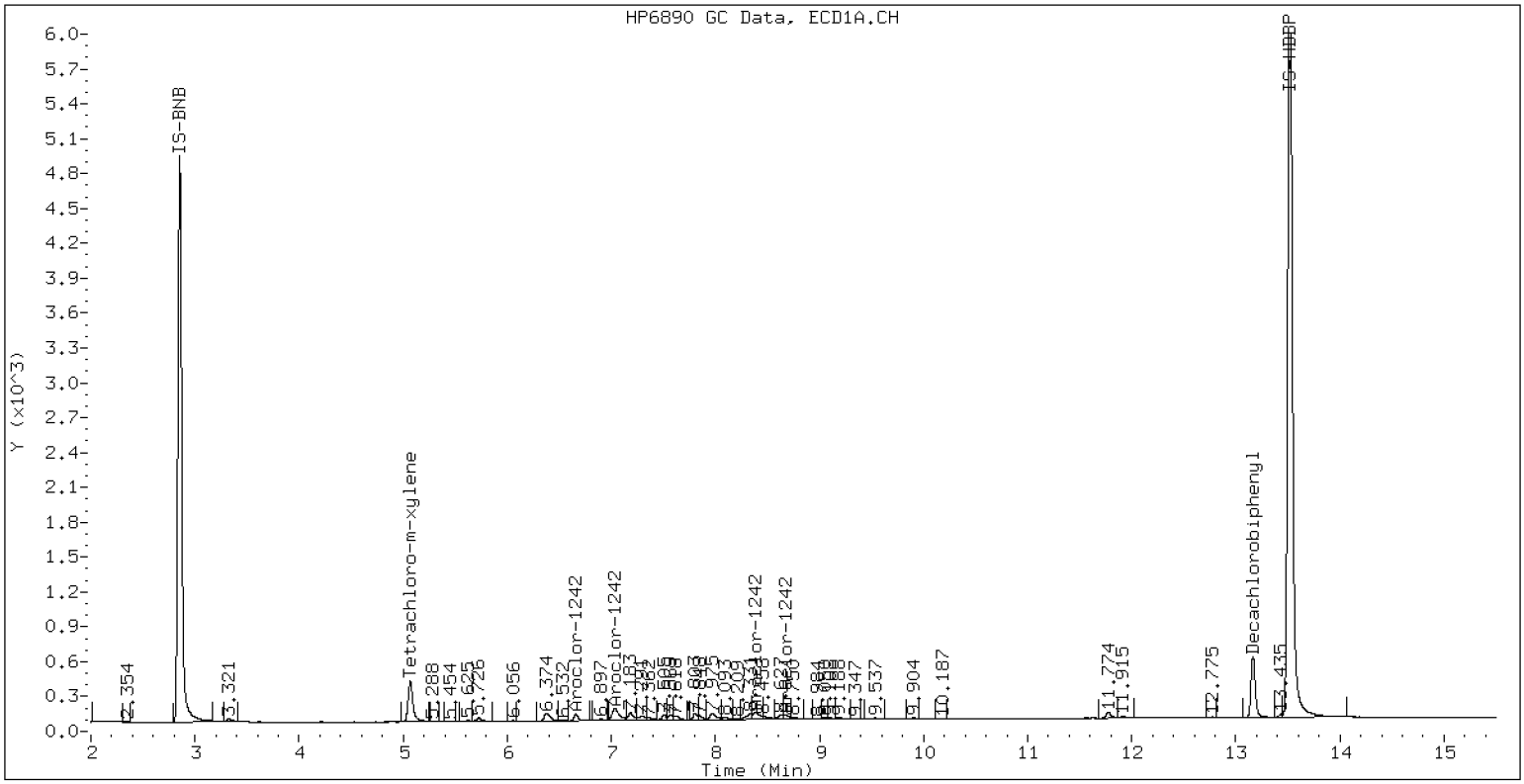
Total PCB Area Col2 (5.169 - 13.066) = 351076 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

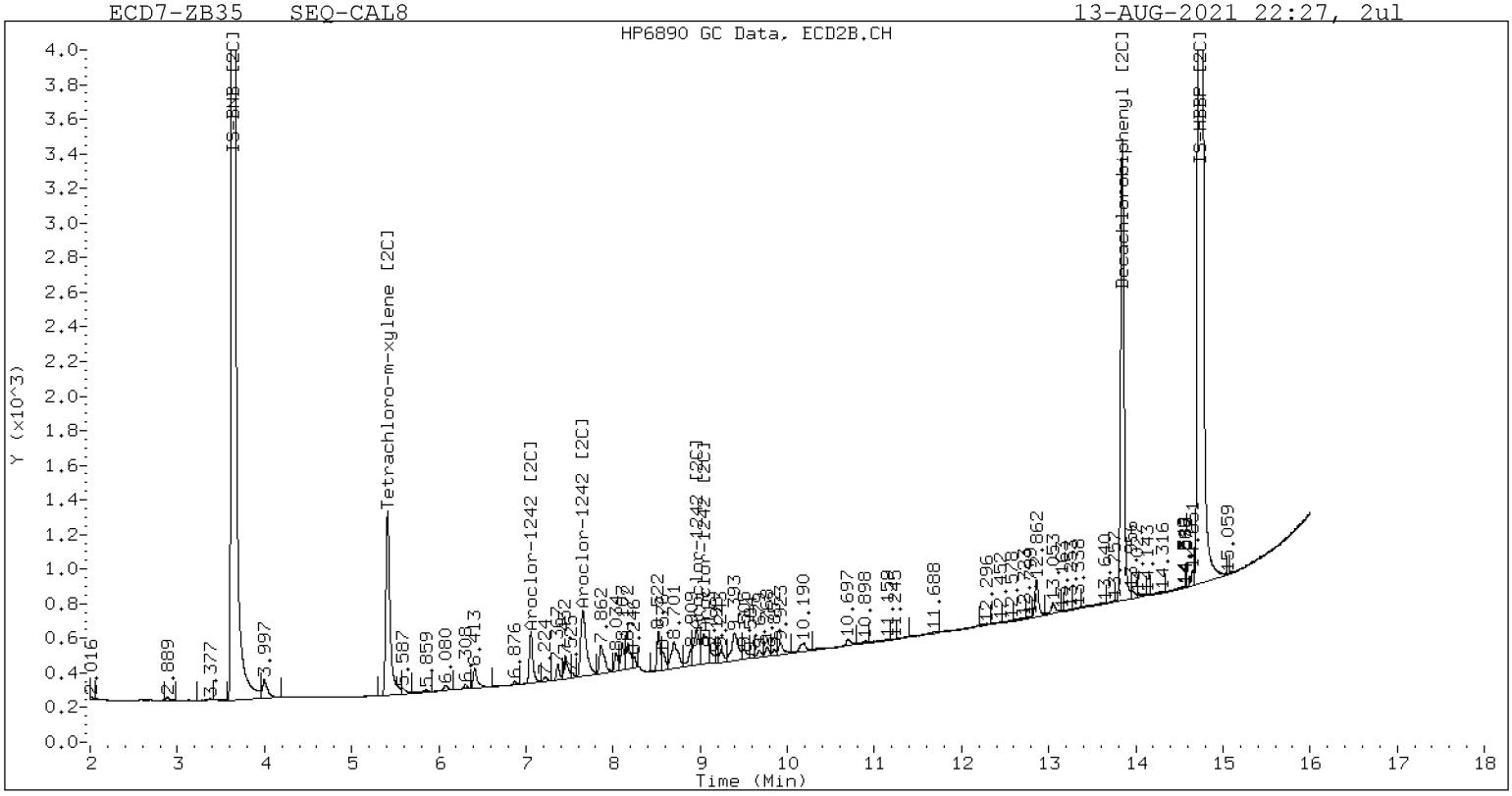
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL8 13-AUG-2021 22:27, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CAL8 13-AUG-2021 22:27, 2ul

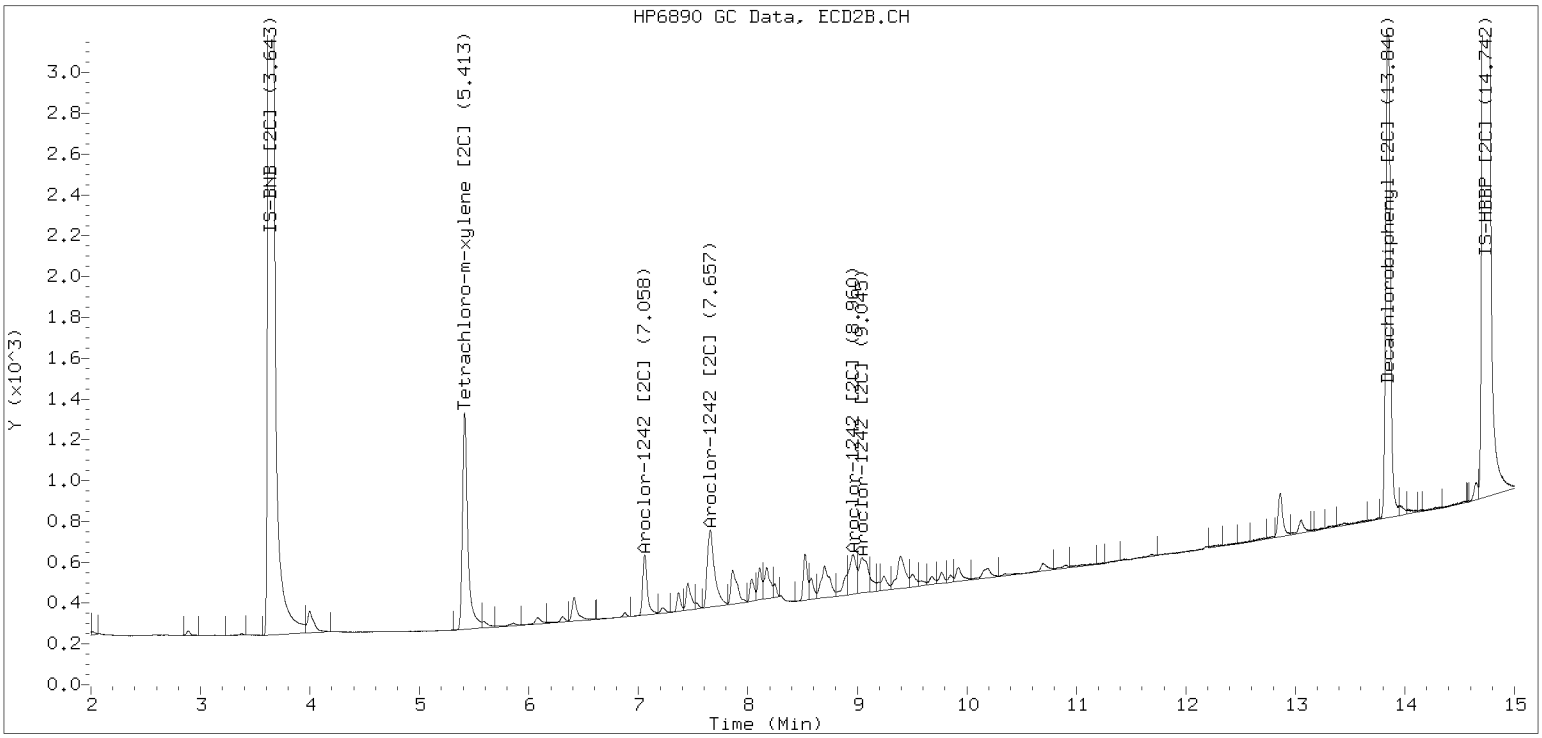


ZB-35 Manual Integration: YES

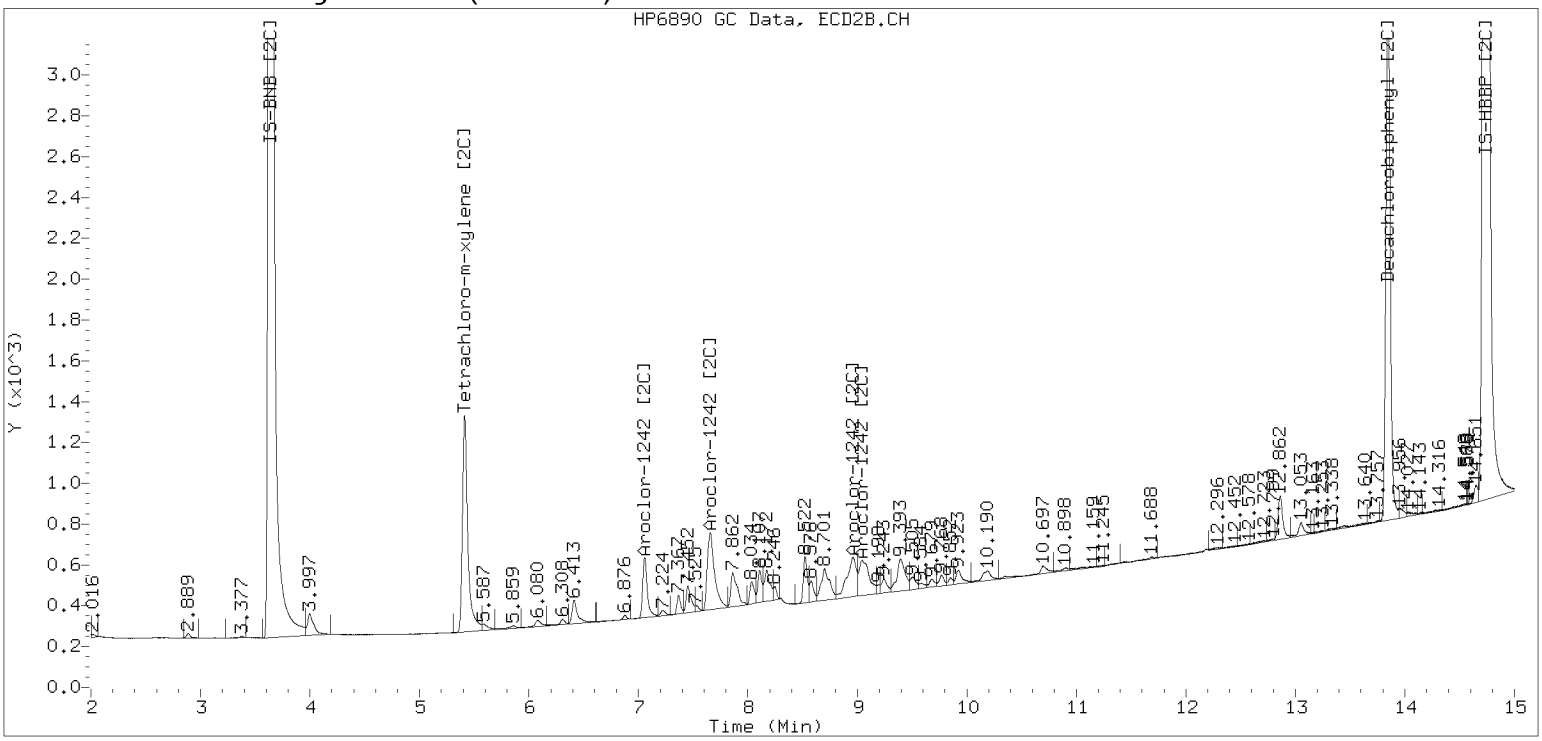
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132112.D Injection Date: 13-AUG-2021 22:2

Manual Integration (After)



Processed Integration (Before)



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

Data file 1: /210813.b/08132113ECD7.D
Data file 2: /210813.b/210813.b/08132113ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL9
Client ID:
Injection Date: 13-AUG-2021 22:47
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	49575	5.413	-0.004	149310	15.6	15.7	0.9	Tetrachloro-m-xylene
13.165	-0.001	64075	13.847	-0.033	317373	15.8	15.7	0.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263477	1.8
Hexabromobiphenyl	425681	447686	5.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	739775	2.6
Hexabromobiphenyl	863111	908046	5.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1242	1	6.661	0.002	7695	106.0	1	7.057	-0.000	35210	103.5
Aroclor-1242	2	7.034	0.004	21772	100.6	2	7.654	0.006	72738	98.5
Aroclor-1242	3	8.380	0.006	12252	99.9	3	8.954	0.006	33982	98.5
Aroclor-1242	4	8.676	0.002	5367	107.1	4	9.039	0.012	41373	105.6

Total Col1Ave (4 peaks): 103.4 Total Col2Ave (4 peaks): 101.5 RPD = 2

Corrected Ave (3 peaks): 102.2 Corrected Ave (3 peaks): 100.1 RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 168568 Col1 Total PCB = 0.1 ppm*

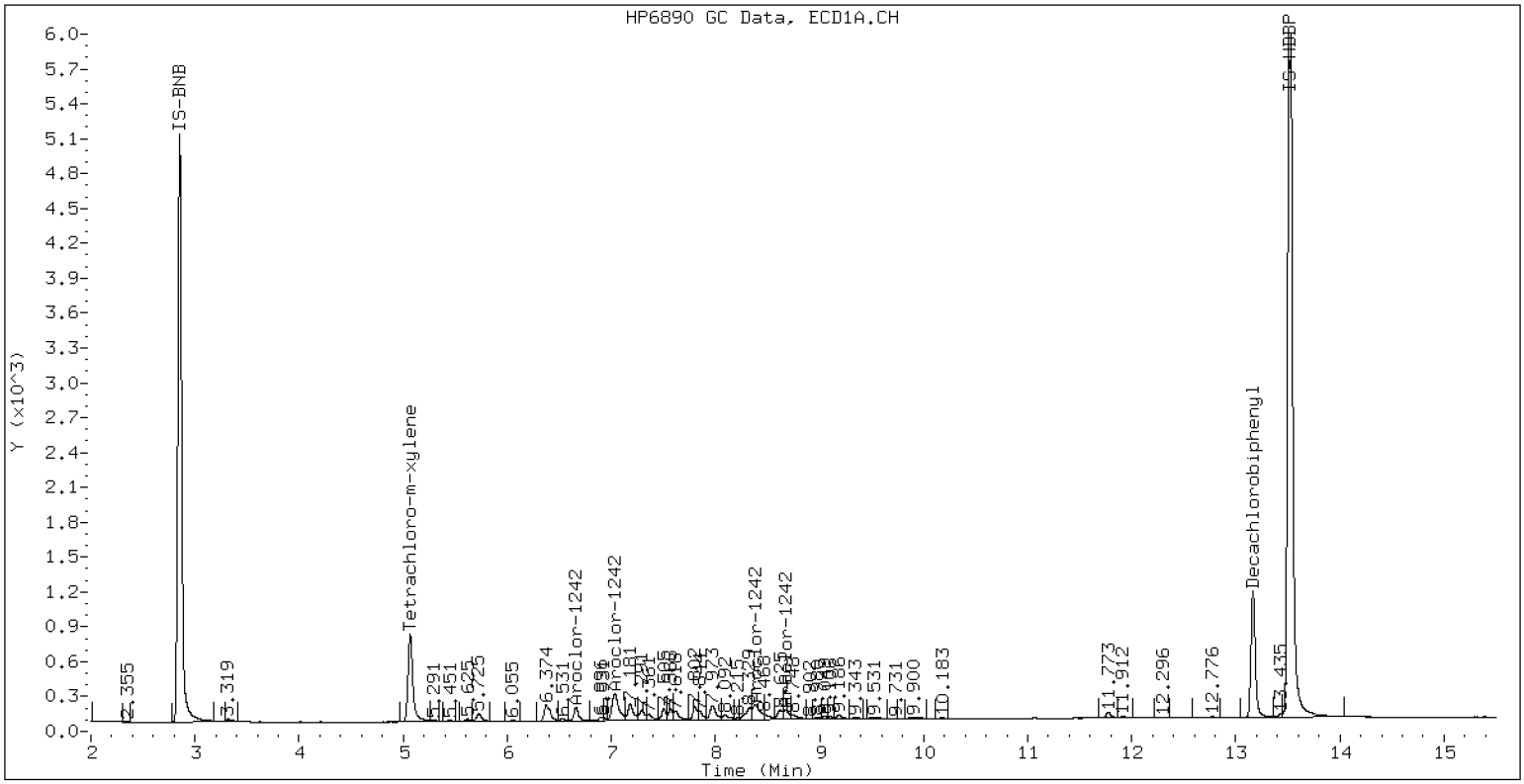
Total PCB Area Col2 (5.169 - 13.066) = 685751 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

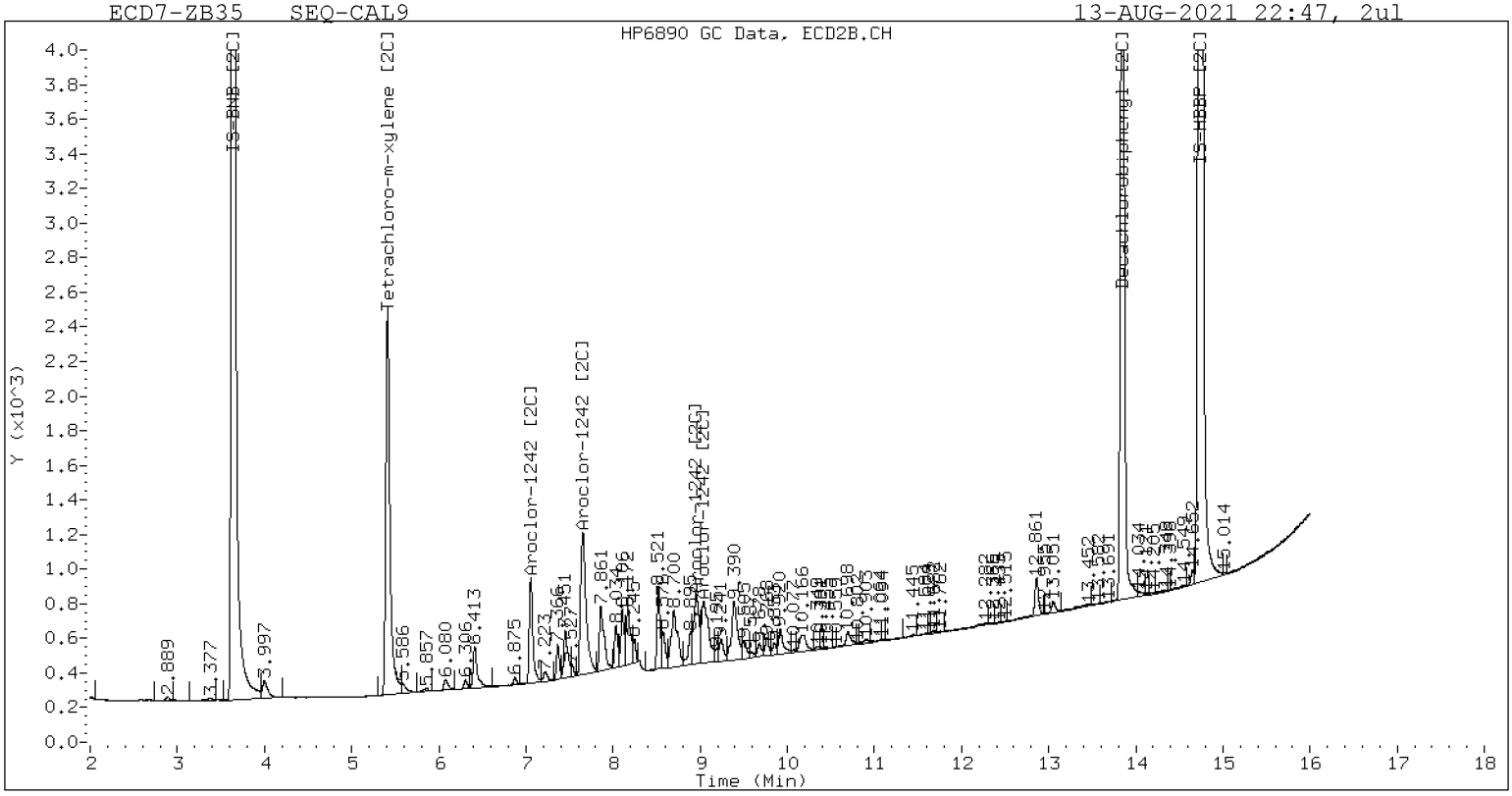
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL9 13-AUG-2021 22:47, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CAL9 13-AUG-2021 22:47, 2ul

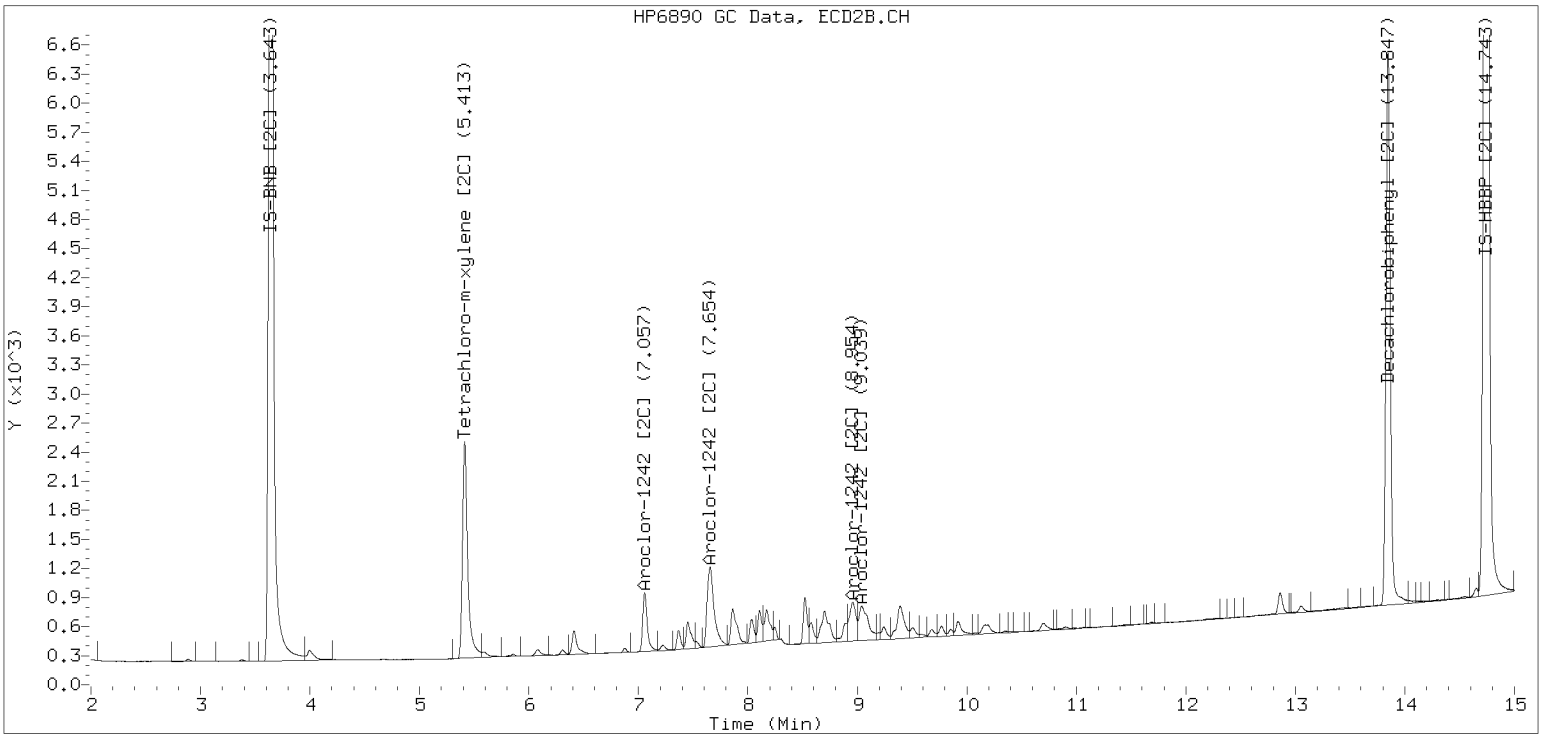


ZB-35 Manual Integration: YES

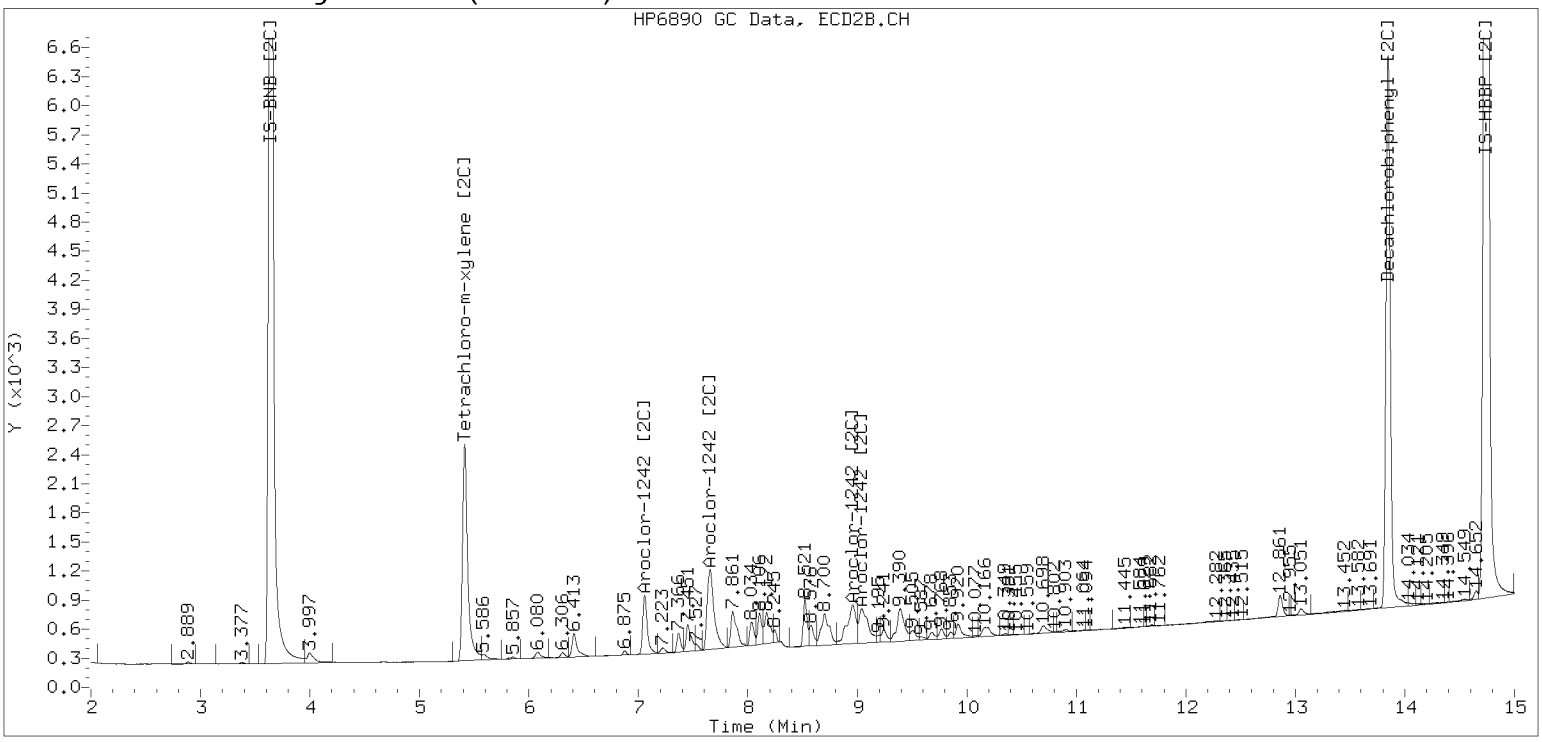
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132113.D Injection Date: 13-AUG-2021 22:4

Manual Integration (After)



Processed Integration (Before)



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

Data file 1: /210813.b/08132114ECD7.D
Data file 2: /210813.b/210813.b/08132114ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALA
Client ID:
Injection Date: 13-AUG-2021 23:08
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.000	131882	5.414	-0.003	383756	41.3	40.0	3.3	Tetrachloro-m-xylene
13.165	-0.000	163389	13.847	-0.033	822599	39.5	40.3	2.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263941	2.0
Hexabromobiphenyl	425681	455818	7.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	746878	3.6
Hexabromobiphenyl	863111	917589	6.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.002	19465	267.7	1	7.056	-0.001	87705	255.4
Aroclor-1242	2	7.033	0.003	58524	270.0	2	7.652	0.004	196218	263.1
Aroclor-1242	3	8.379	0.004	29043	236.5	3	8.953	0.005	84240	241.7
Aroclor-1242	4	8.674	0.000	12640	251.9	4	9.034	0.006	98564	249.3

Total Col1Ave (4 peaks): 256.5 Total Col2Ave (4 peaks): 252.4 RPD = 2
Corrected Ave (3 peaks): 252.0 Corrected Ave (3 peaks): 248.8 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 436801 Col1 Total PCB = 0.2 ppm*

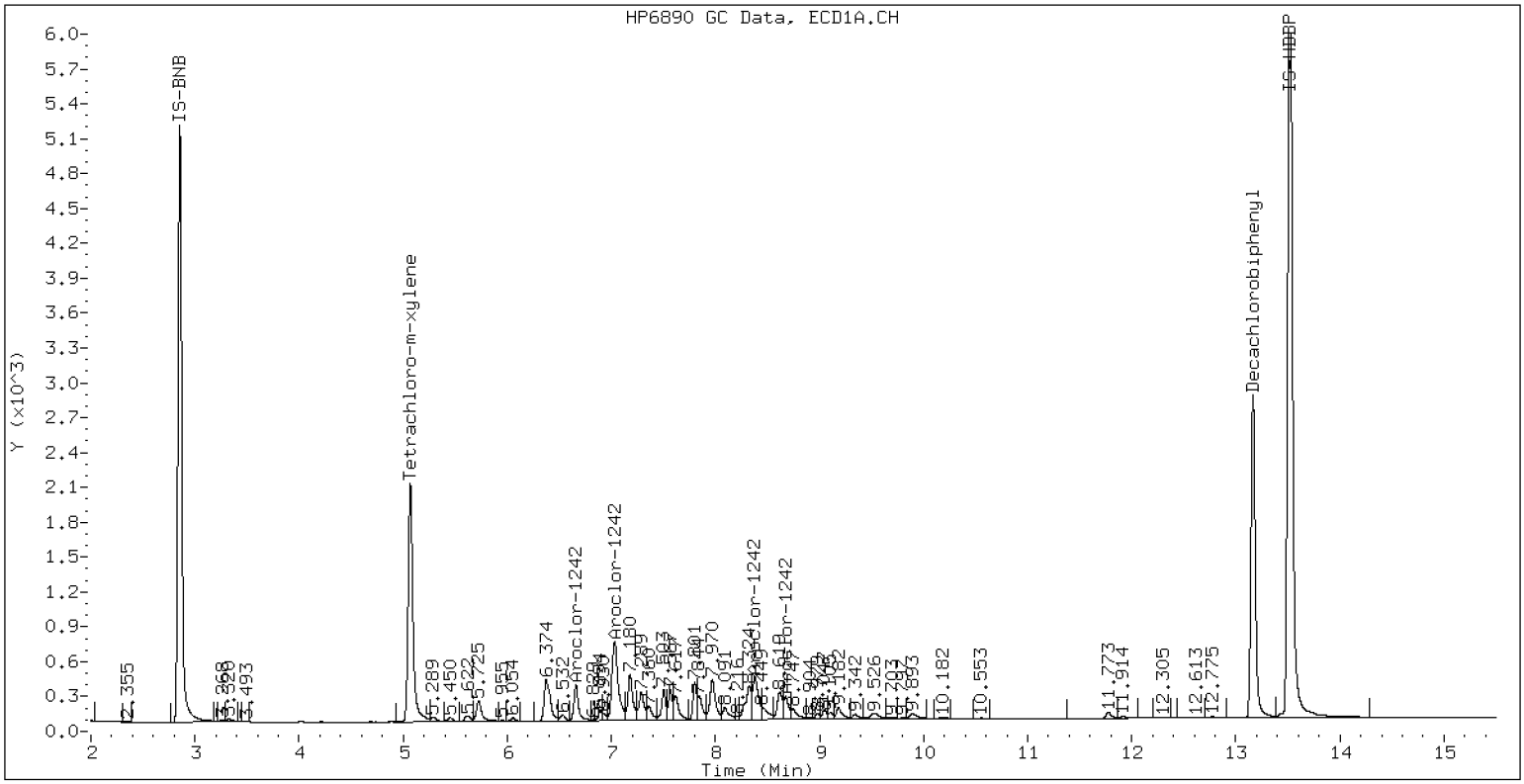
Total PCB Area Col2 (5.169 - 13.066) = 1777148 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

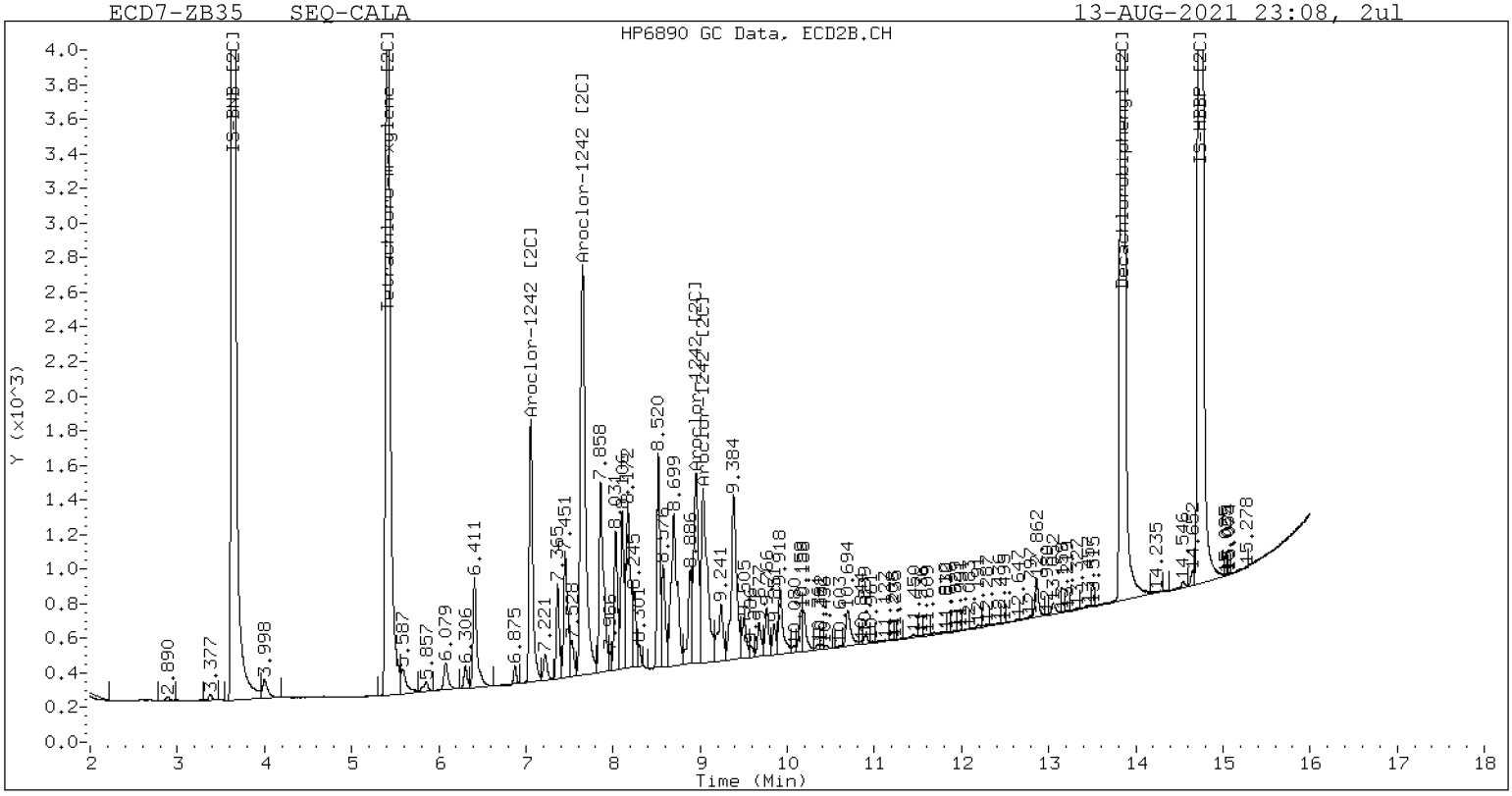
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALA 13-AUG-2021 23:08, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALA 13-AUG-2021 23:08, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132115ECD7.D
Data file 2: /210813.b/210813.b/08132115ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALB
Client ID:
Injection Date: 13-AUG-2021 23:28
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.070	0.001	258643	5.414	-0.003	740328	81.7	78.2	4.4	Tetrachloro-m-xylene
13.165	-0.001	313998	13.854	-0.026	1754204	77.8	86.3	10.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261764	1.1
Hexabromobiphenyl	425681	444869	4.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	736715	2.2
Hexabromobiphenyl	863111	914686	6.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1242	1	6.660	0.001	37614	521.5	1	7.057	0.000	164453	485.5
Aroclor-1242	2	7.033	0.003	117814	548.0	2	7.651	0.002	375288	510.1
Aroclor-1242	3	8.379	0.004	58323	478.9	3	8.952	0.003	157727	458.9
Aroclor-1242	4	8.674	0.001	22510	452.3	4	9.032	0.004	183930	471.6

Total Col1Ave (4 peaks): 500.2 Total Col2Ave (4 peaks): 481.5 RPD = 4

Corrected Ave (3 peaks): 484.2 Corrected Ave (3 peaks): 472.0 RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 859256 Col1 Total PCB = 0.3 ppm*

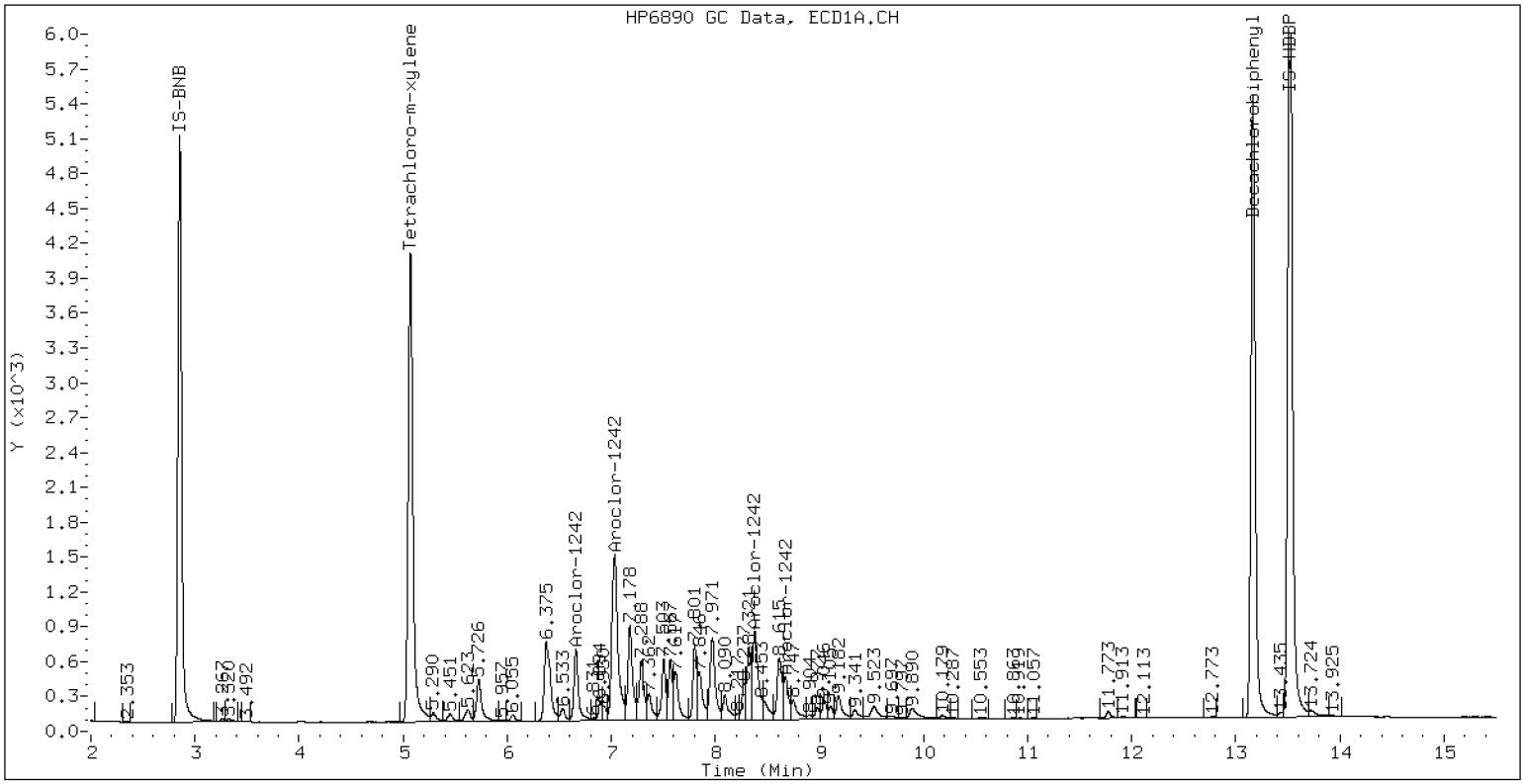
Total PCB Area Col2 (5.169 - 13.066) = 3382751 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

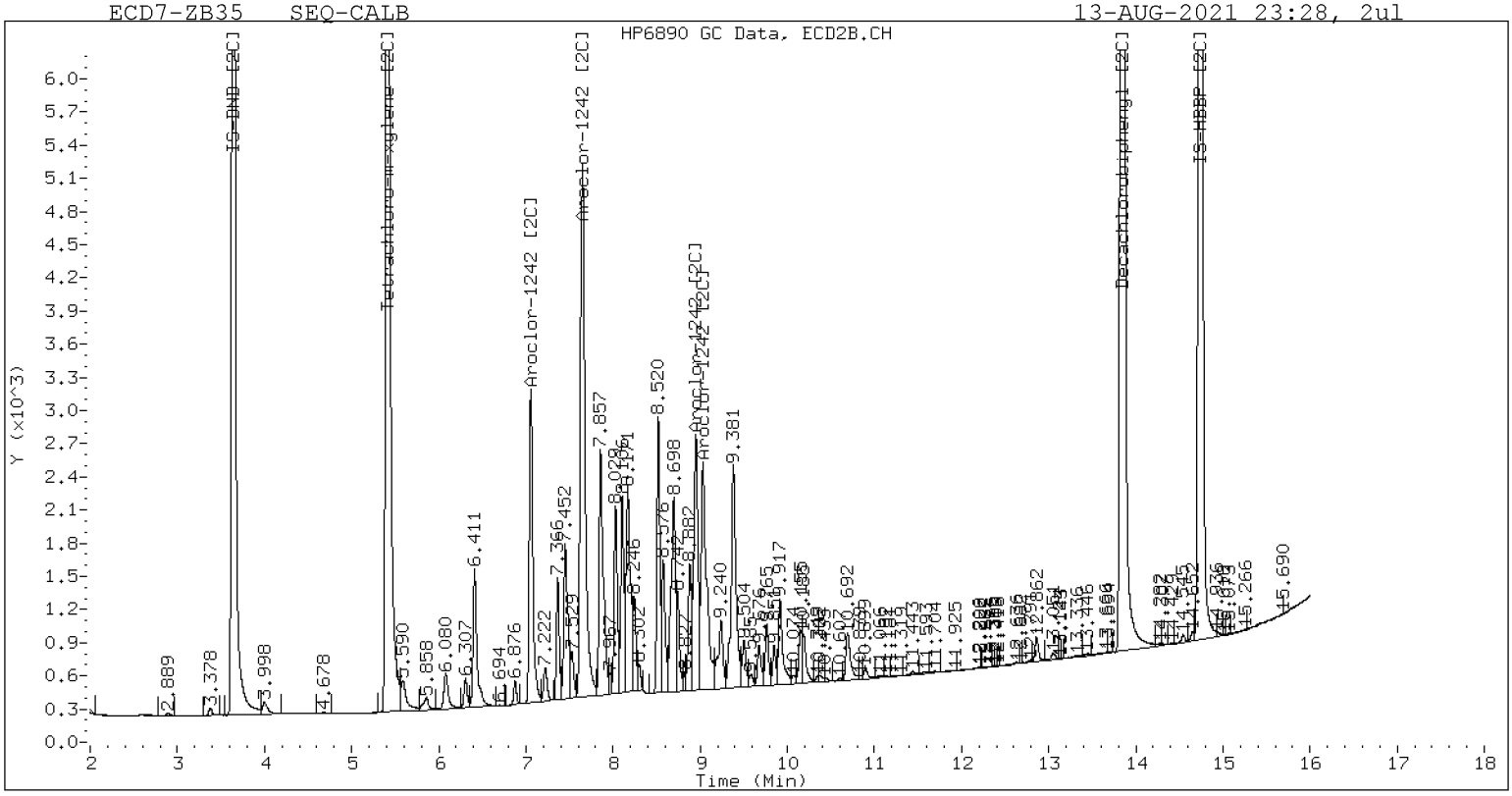
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALB 13-AUG-2021 23:28, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALB 13-AUG-2021 23:28, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132116ECD7.D
Data file 2: /210813.b/210813.b/08132116ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALC
Client ID:
Injection Date: 13-AUG-2021 23:49
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.000	563122	5.415	-0.001	1673143	158.2	158.3	0.1	Tetrachloro-m-xylene
13.166	0.000	671473	13.861	-0.019	4321811	147.6	182.7	21.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	294406	13.7
Hexabromobiphenyl	425681	501108	17.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	822336	14.1
Hexabromobiphenyl	863111	1064644	23.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	6.659	0.000	80300	990.0	1	7.057	0.000	331356	876.4
Aroclor-1242	2	7.030	0.000	263010	1087.7	2	7.649	0.000	783780	954.3
Aroclor-1242	3	8.374	0.000	125591	916.8	3	8.949	0.000	330073	860.3
Aroclor-1242	4	8.674	0.000	44493	794.8	4	9.028	0.000	363121	834.0

Total Col1Ave (4 peaks): 947.3 Total Col2Ave (4 peaks): 881.3 RPD = 7

Corrected Ave (3 peaks): 900.5 Corrected Ave (3 peaks): 856.9 RPD = 5

Total PCB Area Col1 (5.169 - 13.066) = 1871416 Col1 Total PCB = 0.6 ppm*

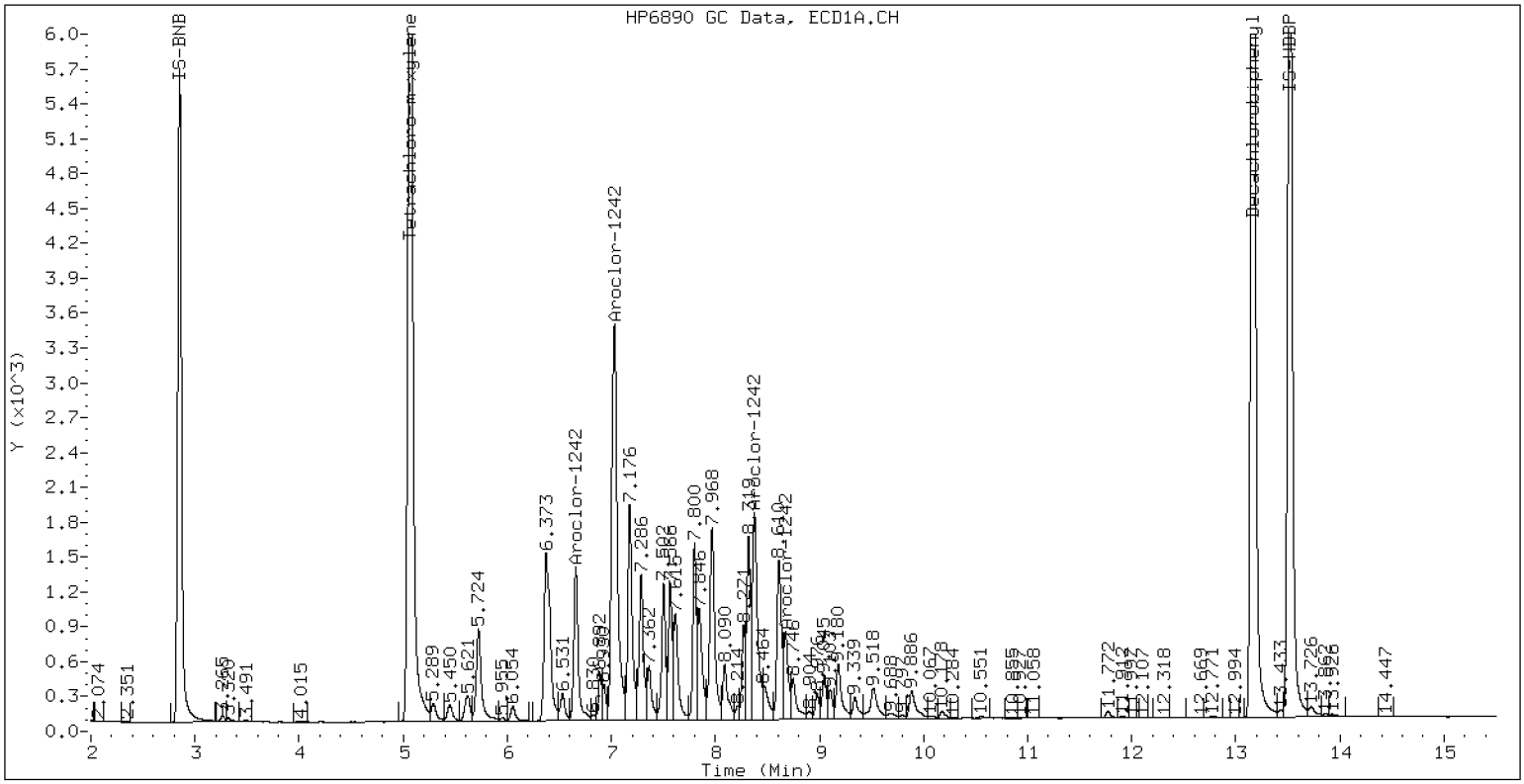
Total PCB Area Col2 (5.169 - 13.066) = 7225430 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

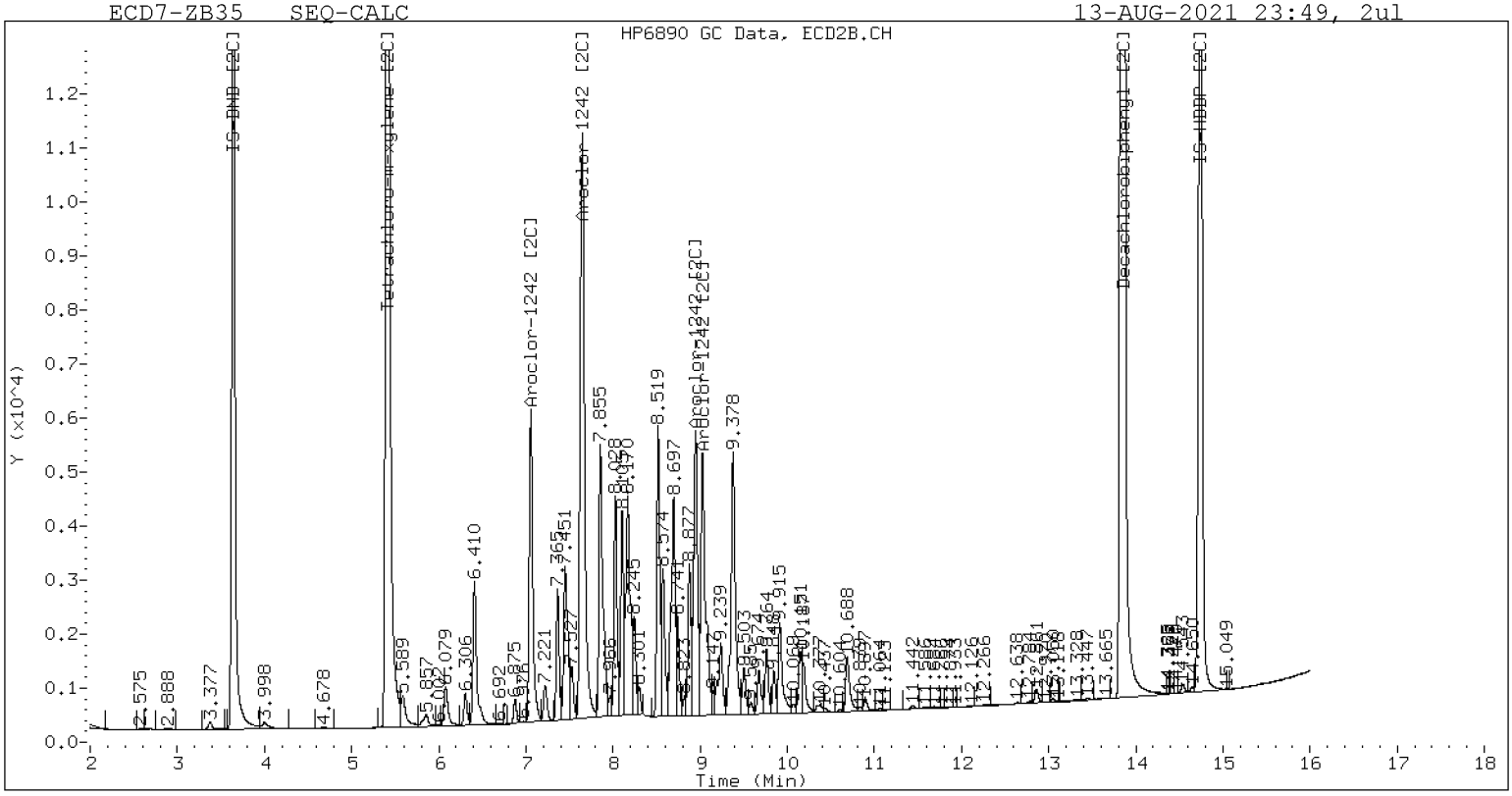
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALC 13-AUG-2021 23:49, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALC 13-AUG-2021 23:49, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132117ECD7.D
Data file 2: /210813.b/210813.b/08132117ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALD
Client ID:
Injection Date: 14-AUG-2021 00:09
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.068	-0.001	9201	5.414	-0.003	29778	3.0	3.3	8.1	Tetrachloro-m-xylene
13.165	-0.001	13166	13.846	-0.034	62709	3.4	3.2	5.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	250266	-3.3
Hexabromobiphenyl	425681	429293	0.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	702828	-2.5
Hexabromobiphenyl	863111	880526	2.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	7.799	0.001	1894	18.1	1	8.109	0.003	6606	22.7
Aroclor-1248	2	7.974	0.006	2423	17.7	2	8.525	0.005	6970	19.7
Aroclor-1248	3	8.385	0.011	3850	19.2	3	8.964	0.018	12645	22.4
Aroclor-1248	4	8.675	0.002	2537	22.2	4	9.397	0.021	10906	22.7

Total Col1Ave (4 peaks): 19.3 Total Col2Ave (4 peaks): 21.9 RPD = 13

Corrected Ave (3 peaks): 18.3 Corrected Ave (3 peaks): 21.6 RPD = 16

Total PCB Area Col1 (5.169 - 13.066) = 41564 Col1 Total PCB = 0.0 ppm*

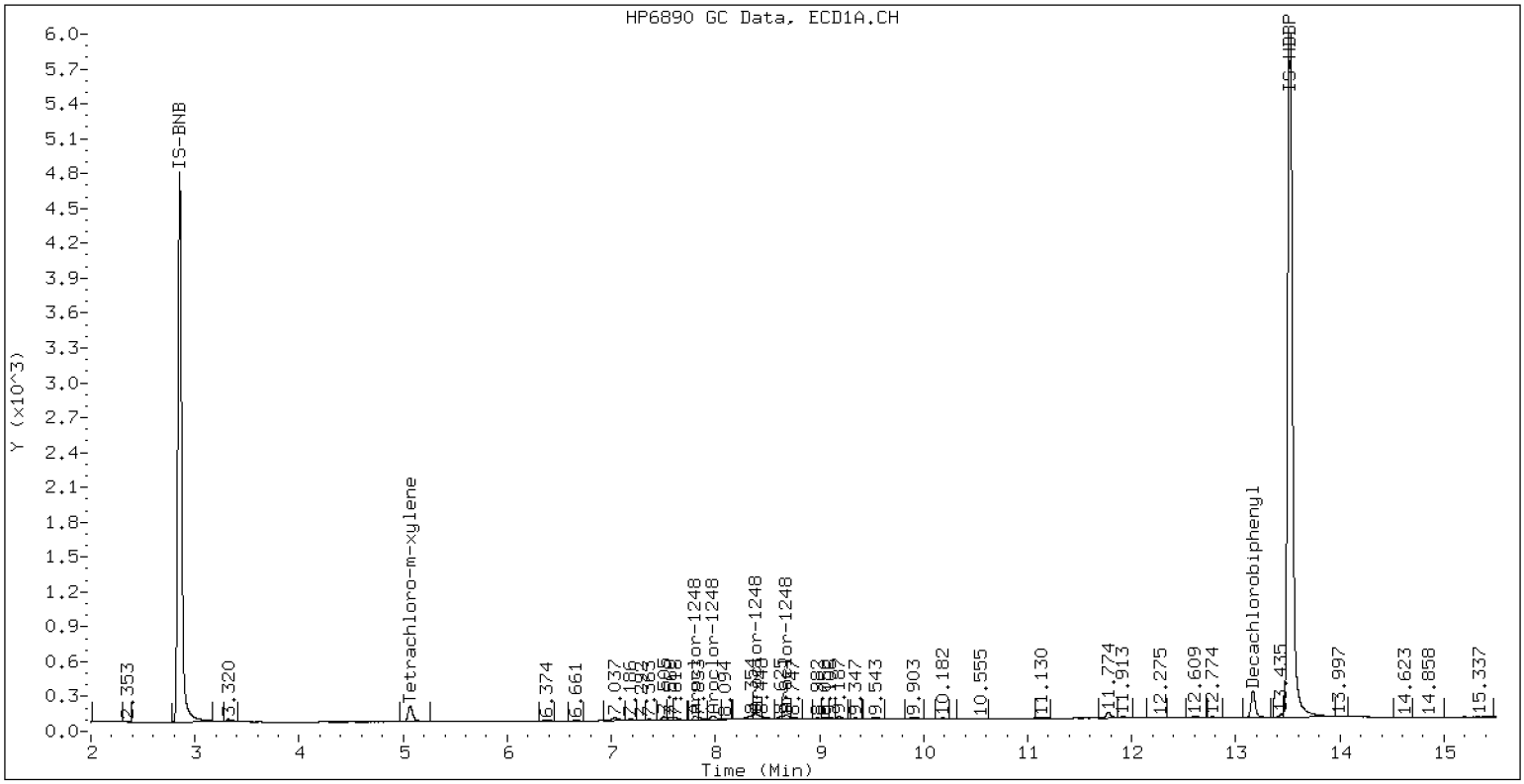
Total PCB Area Col2 (5.169 - 13.066) = 212063 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

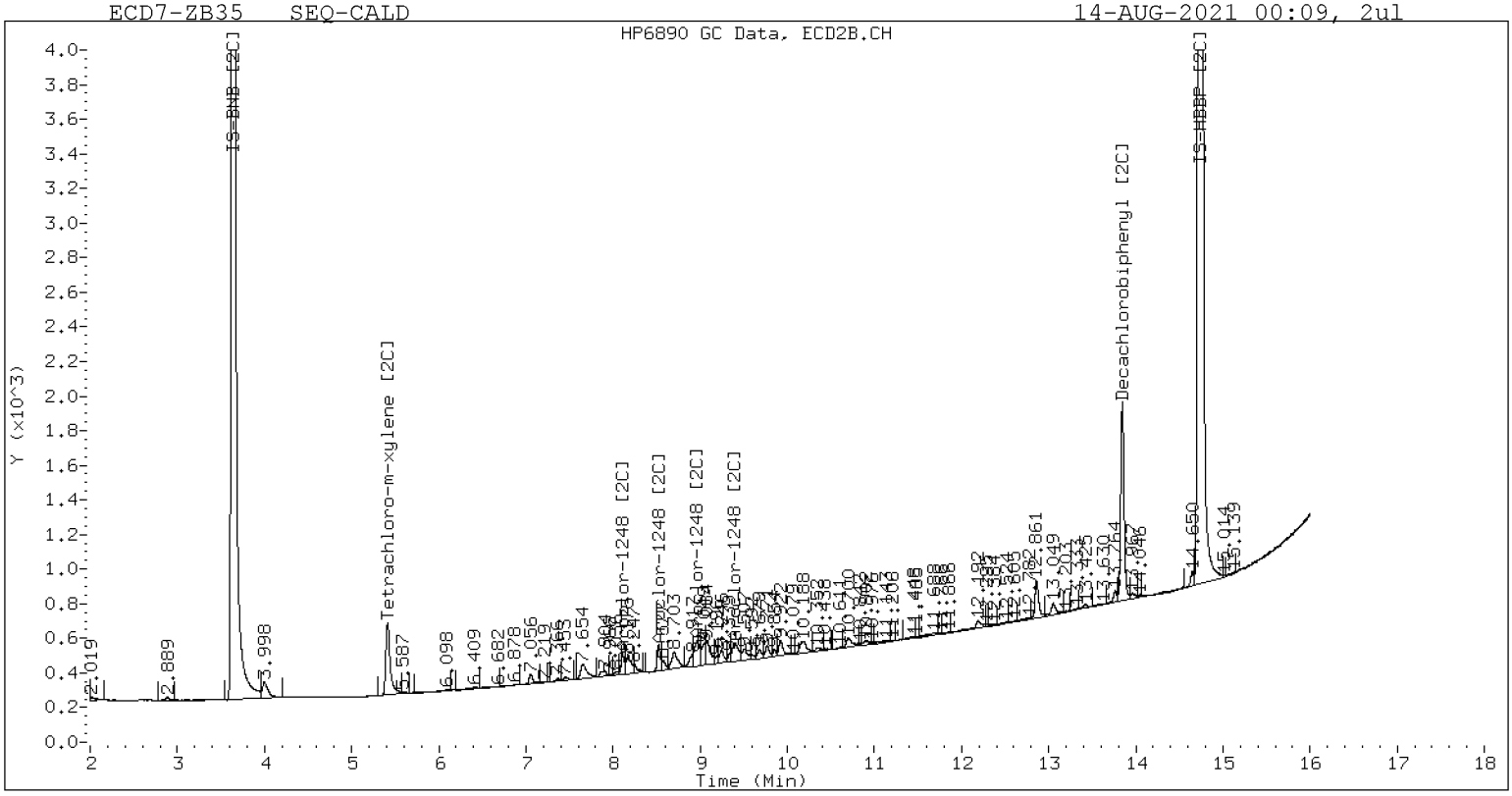
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALD 14-AUG-2021 00:09, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALD 14-AUG-2021 00:09, 2ul

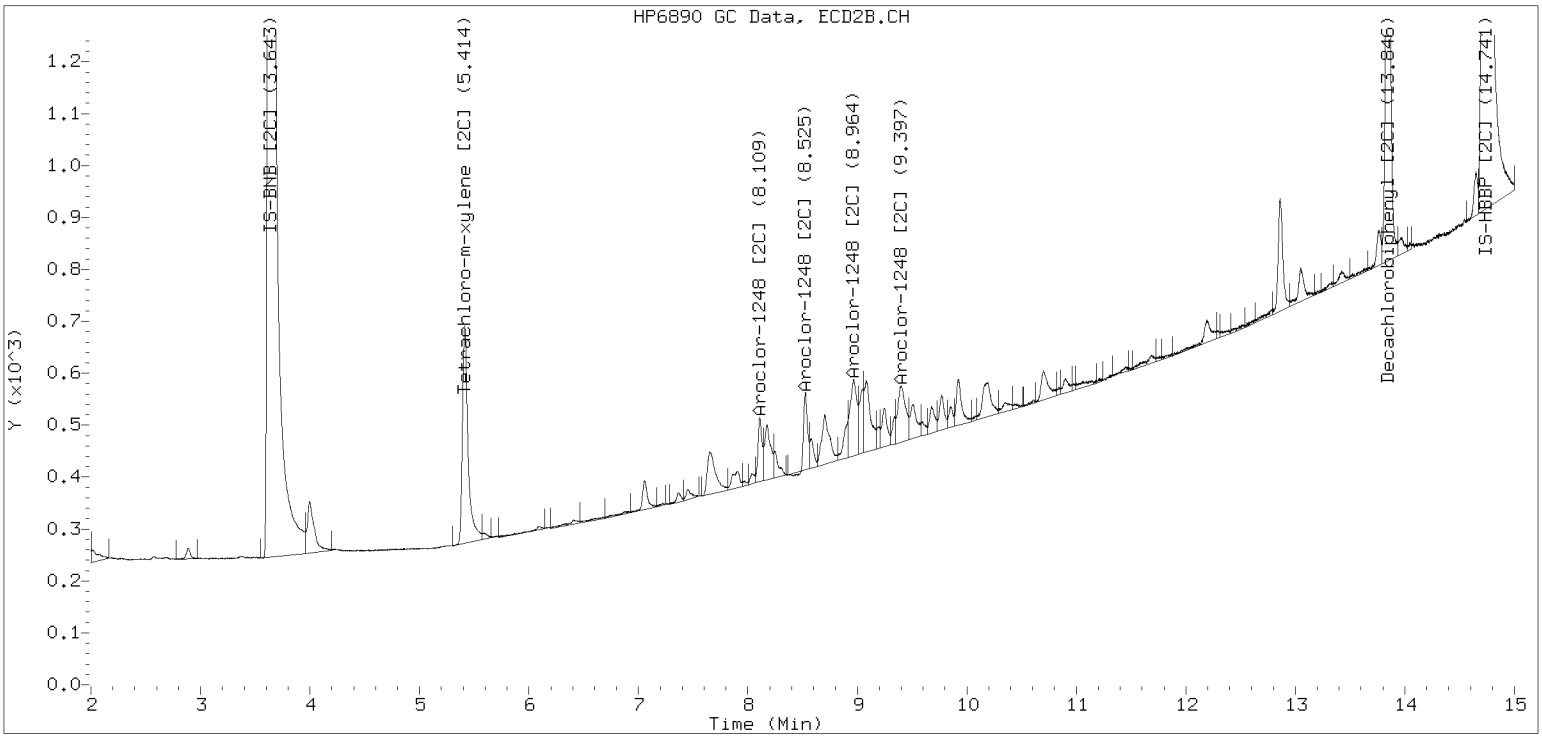


ZB-35 Manual Integration: YES

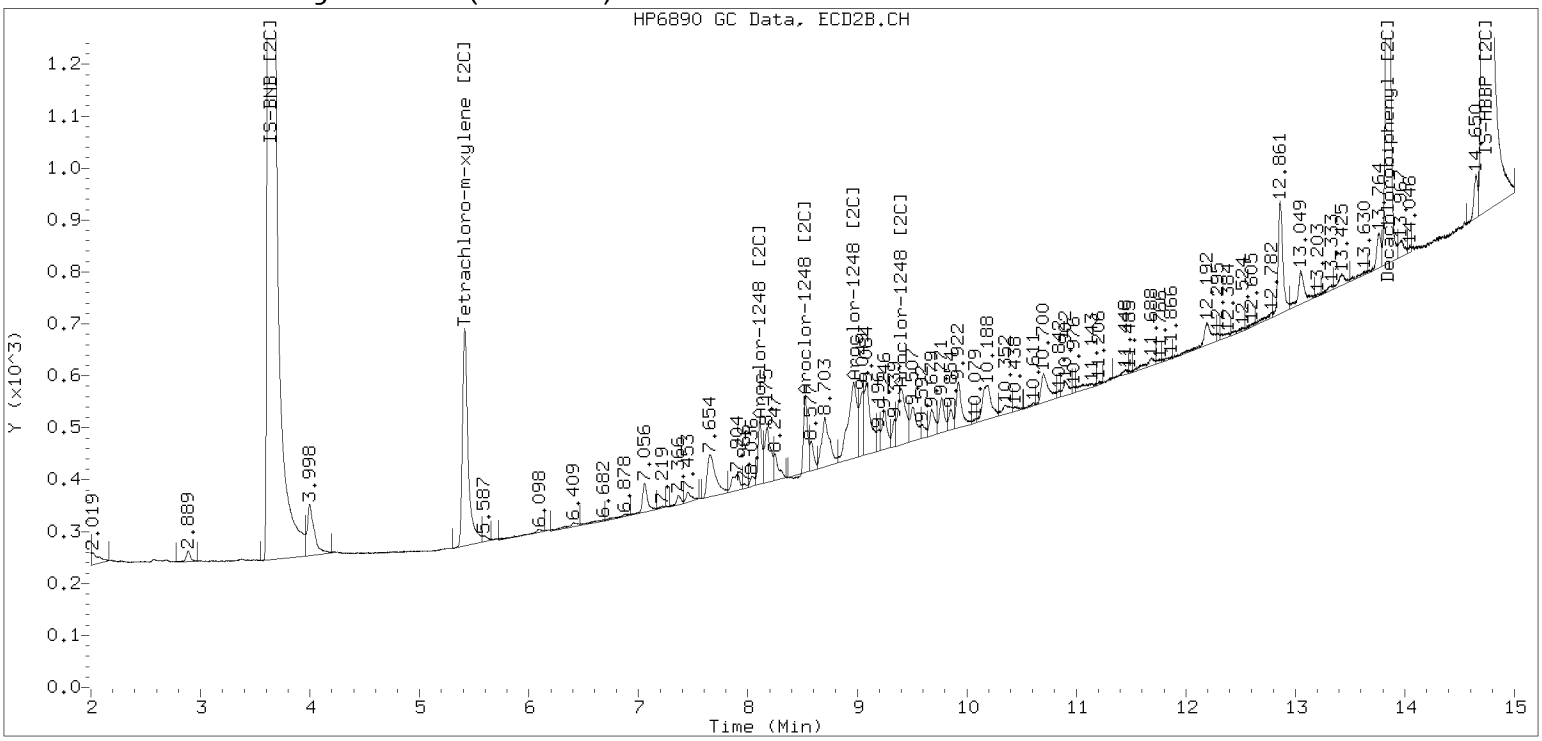
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132117.D Injection Date: 14-AUG-2021 00:0

Manual Integration (After)



Processed Integration (Before)



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

Data file 1: /210813.b/08132118ECD7.D
Data file 2: /210813.b/210813.b/08132118ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALE
Client ID:
Injection Date: 14-AUG-2021 00:30
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	-0.000	23276	5.413	-0.003	72230	7.6	7.8	3.6	Tetrachloro-m-xylene
13.164	-0.001	31855	13.847	-0.033	153320	8.0	7.7	4.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	254685	-1.6
Hexabromobiphenyl	425681	438579	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	717244	-0.5
Hexabromobiphenyl	863111	898162	4.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	7.803	0.004	5503	51.6	1	8.109	0.003	15513	52.2
Aroclor-1248	2	7.975	0.007	7033	50.5	2	8.523	0.003	17641	48.8
Aroclor-1248	3	8.384	0.010	10074	49.4	3	8.963	0.016	29702	51.5
Aroclor-1248	4	8.679	0.005	6595	56.6	4	9.391	0.015	24165	49.4

Total Col1Ave (4 peaks): 52.0 Total Col2Ave (4 peaks): 50.5 RPD = 3

Corrected Ave (3 peaks): 50.5 Corrected Ave (3 peaks): 49.9 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 108961 Col1 Total PCB = 0.0 ppm*

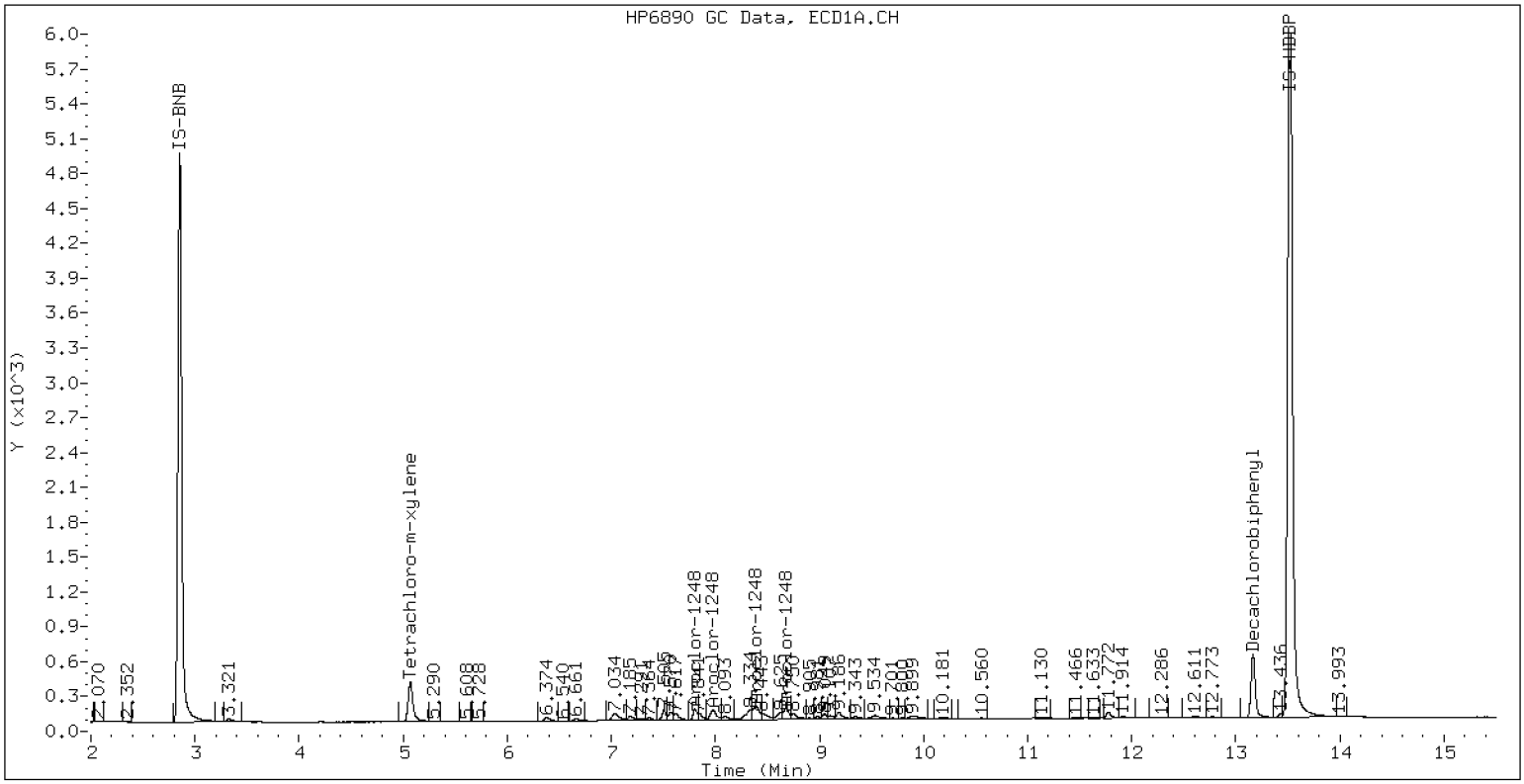
Total PCB Area Col2 (5.169 - 13.066) = 441717 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

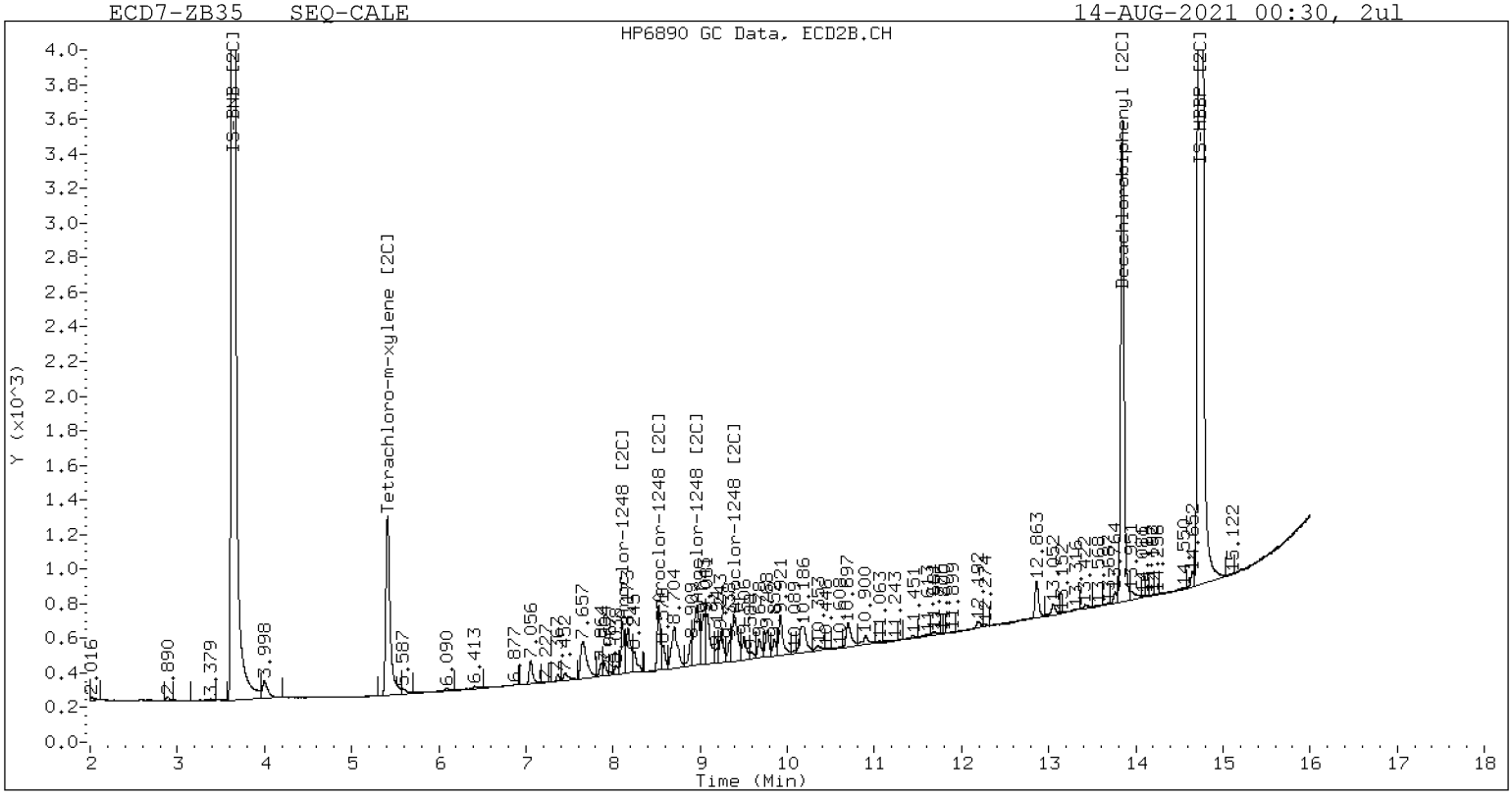
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALE 14-AUG-2021 00:30, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALE 14-AUG-2021 00:30, 2ul

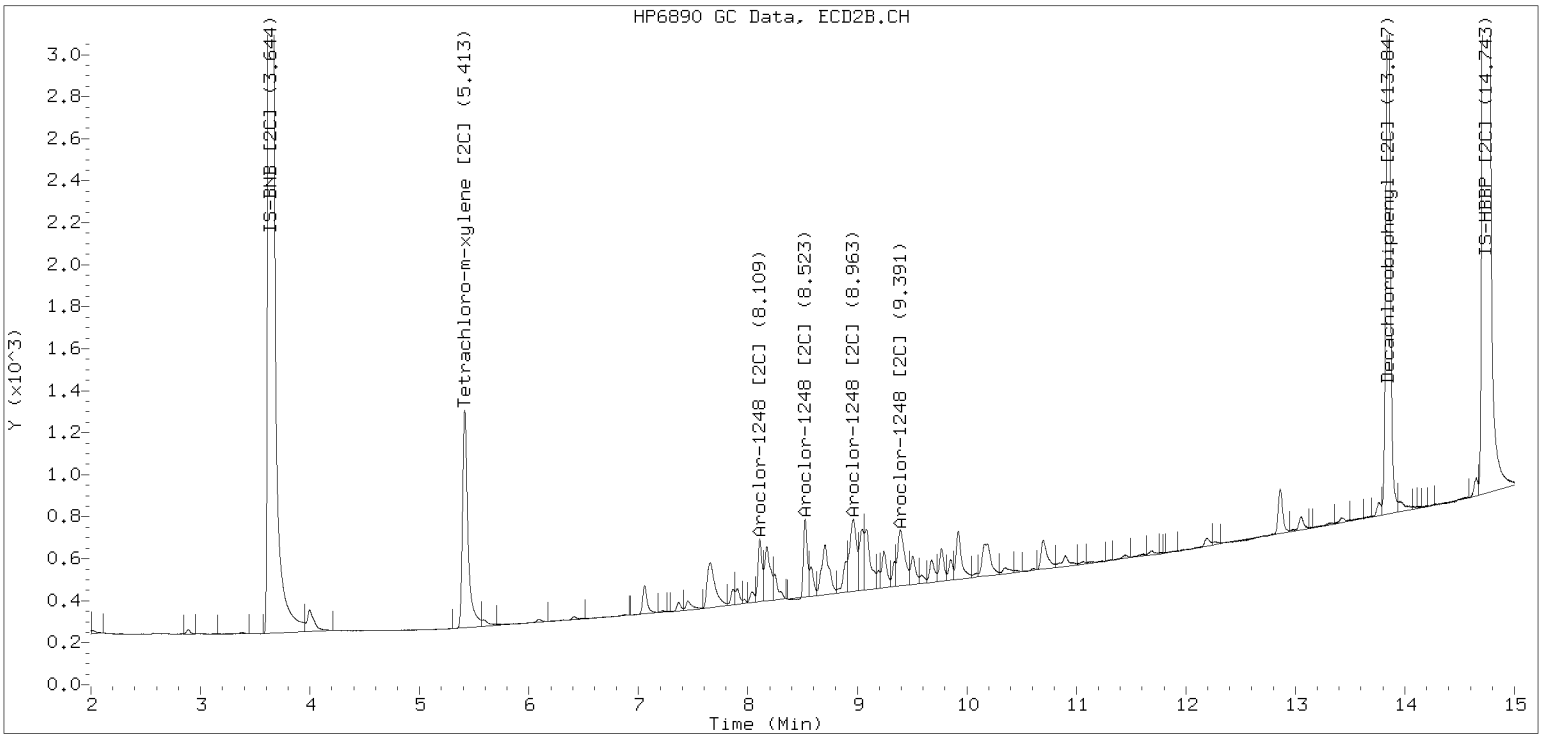


ZB-35 Manual Integration: YES

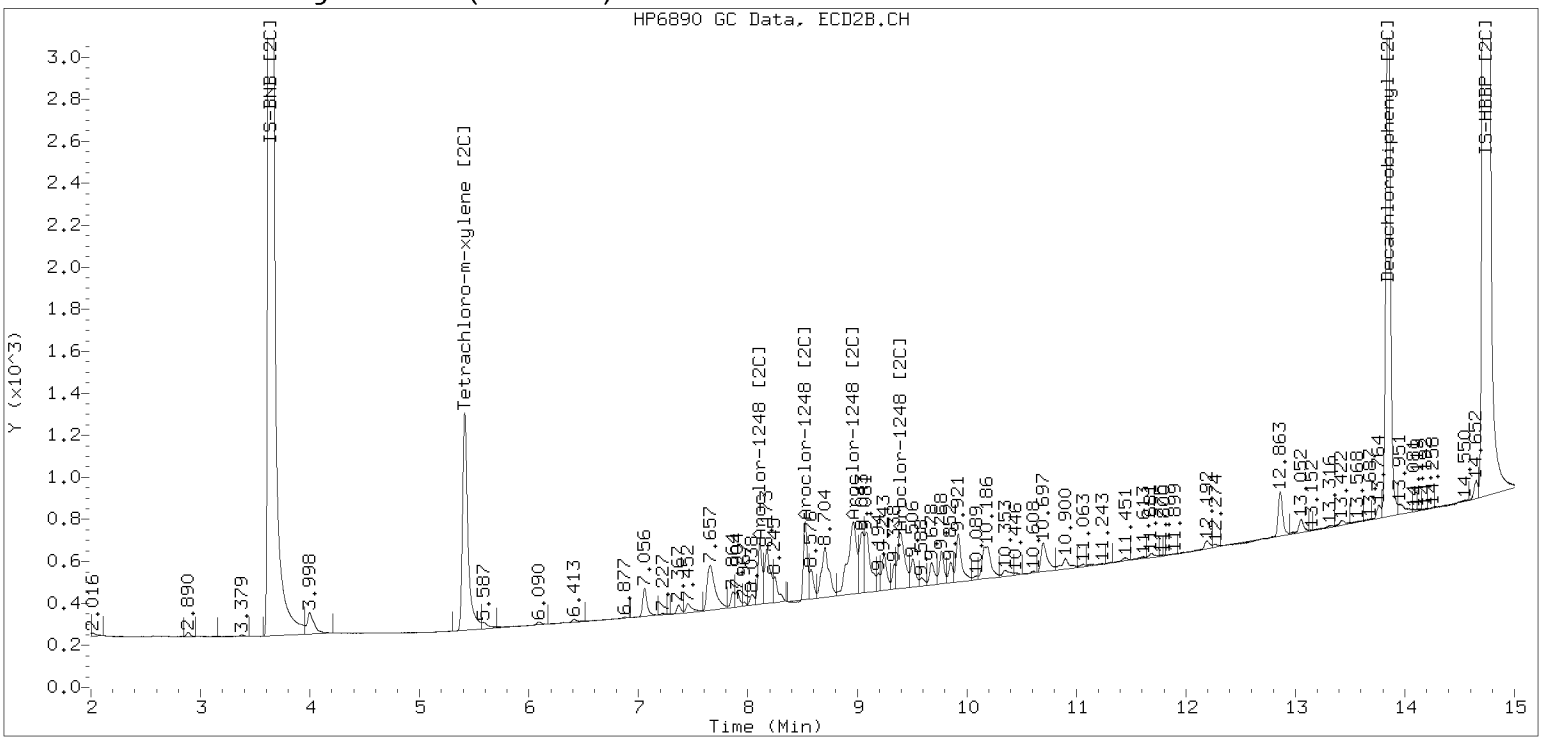
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132118.D Injection Date: 14-AUG-2021 00:3

Manual Integration (After)



Processed Integration (Before)



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

Data file 1: /210813.b/08132119ECD7.D
Data file 2: /210813.b/210813.b/08132119ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALF
Client ID:
Injection Date: 14-AUG-2021 00:50
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	49122	5.413	-0.004	147629	15.5	15.6	1.1	Tetrachloro-m-xylene
13.165	-0.001	65855	13.847	-0.033	329717	15.9	15.8	0.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	262535	1.4
Hexabromobiphenyl	425681	455997	7.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	734209	1.8
Hexabromobiphenyl	863111	938375	8.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	7.800	0.001	10709	97.3	1	8.107	0.001	28558	93.9
Aroclor-1248	2	7.973	0.005	14129	98.4	2	8.522	0.002	38111	102.9
Aroclor-1248	3	8.383	0.008	21518	102.3	3	8.959	0.013	61308	103.9
Aroclor-1248	4	8.677	0.003	12431	103.6	4	9.388	0.012	48948	97.7

Total Col1Ave (4 peaks): 100.4 Total Col2Ave (4 peaks): 99.6 RPD = 1

Corrected Ave (3 peaks): 99.3 Corrected Ave (3 peaks): 98.2 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 238597 Col1 Total PCB = 0.1 ppm*

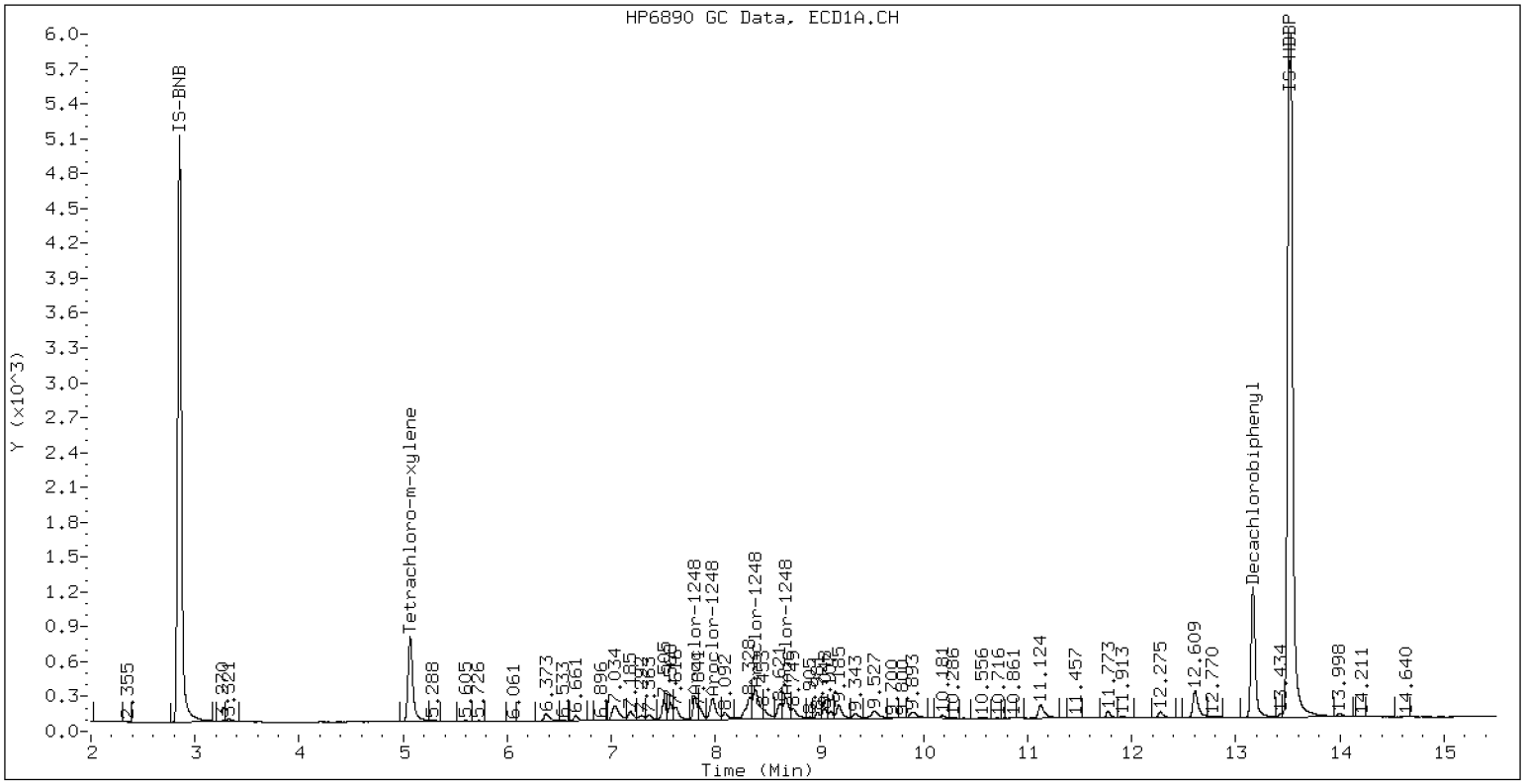
Total PCB Area Col2 (5.169 - 13.066) = 907743 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

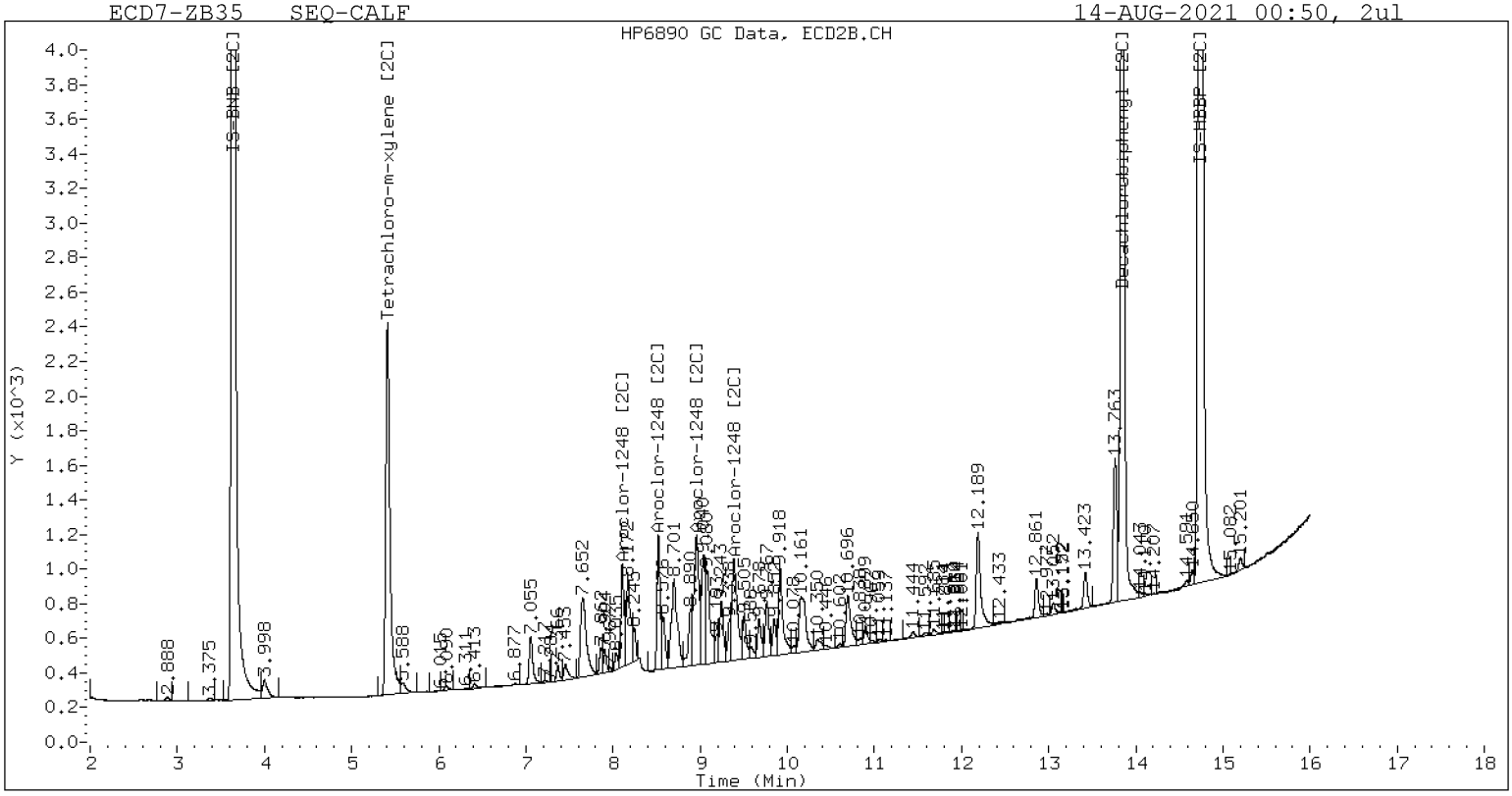
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALF 14-AUG-2021 00:50, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALF 14-AUG-2021 00:50, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132120ECD7.D
Data file 2: /210813.b/210813.b/08132120ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALG
Client ID:
Injection Date: 14-AUG-2021 01:11
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	129037	5.413	-0.004	373143	40.5	39.6	2.4	Tetrachloro-m-xylene
13.165	-0.000	162705	13.848	-0.032	830692	40.1	40.0	0.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263302	1.7
Hexabromobiphenyl	425681	446916	5.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	733764	1.8
Hexabromobiphenyl	863111	933874	8.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	7.800	0.002	28501	258.3	1	8.107	0.001	76584	251.9
Aroclor-1248	2	7.971	0.003	37812	262.5	2	8.521	0.001	96409	260.5
Aroclor-1248	3	8.381	0.006	54570	258.7	3	8.953	0.007	144251	244.7
Aroclor-1248	4	8.676	0.002	29650	246.3	4	9.382	0.005	122847	245.4

Total Col1Ave (4 peaks): 256.5 Total Col2Ave (4 peaks): 250.6 RPD = 2
Corrected Ave (3 peaks): 254.4 Corrected Ave (3 peaks): 247.3 RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 569475 Col1 Total PCB = 0.2 ppm*

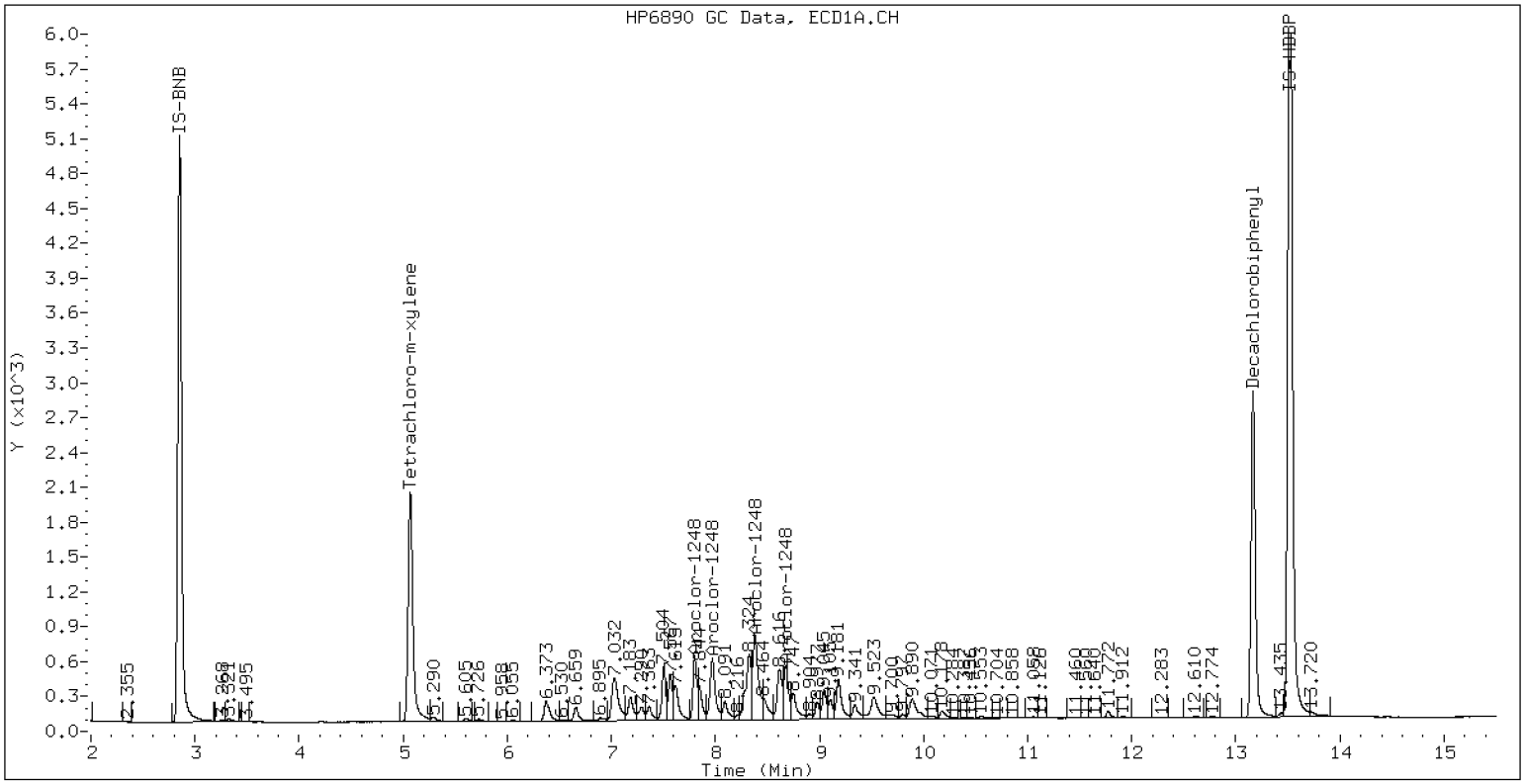
Total PCB Area Col2 (5.169 - 13.066) = 2178081 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

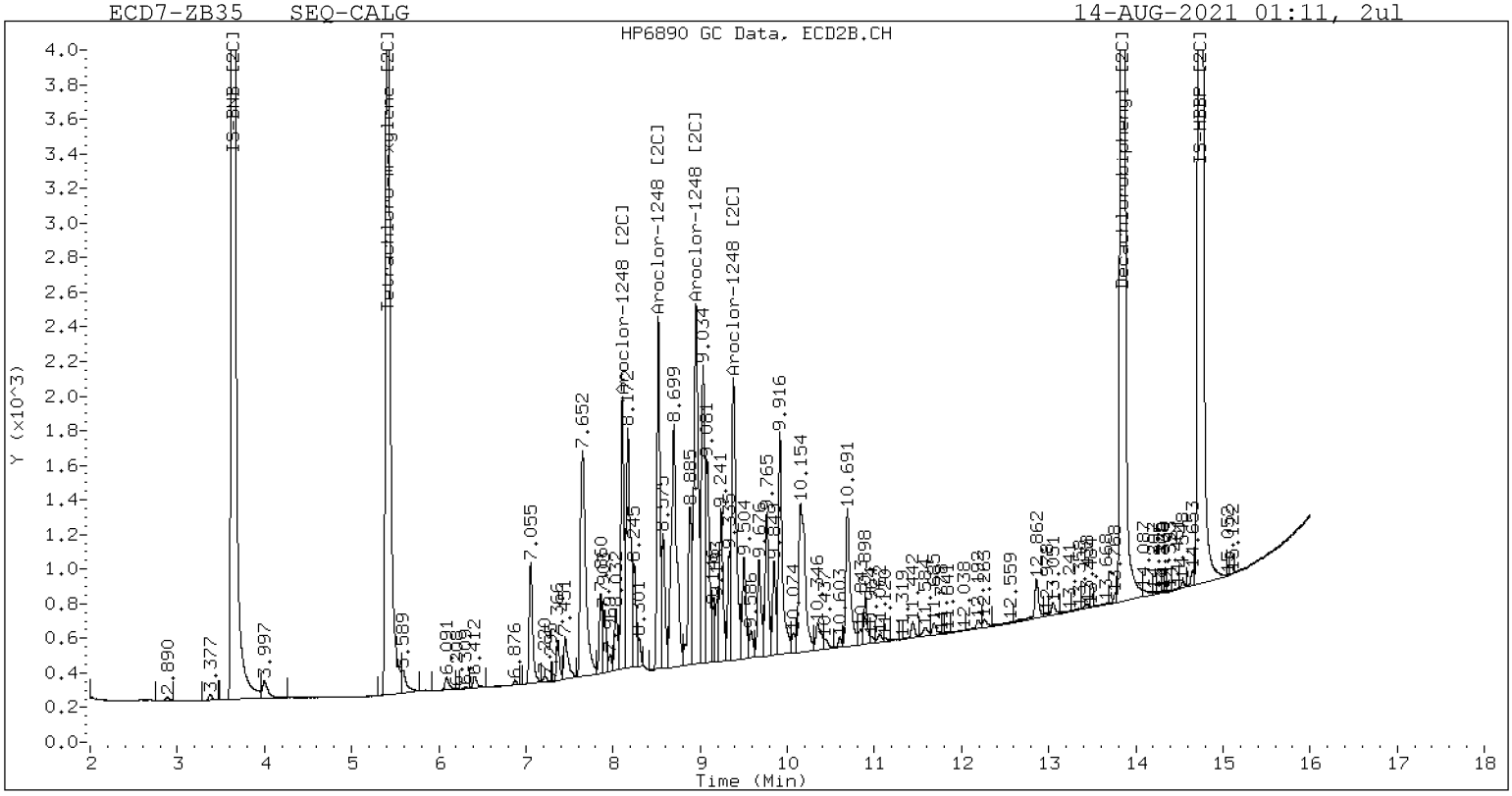
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALG 14-AUG-2021 01:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALG 14-AUG-2021 01:11, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132121ECD7.D
Data file 2: /210813.b/210813.b/08132121ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALH
Client ID:
Injection Date: 14-AUG-2021 01:31
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.000	259806	5.414	-0.003	733120	82.3	78.0	5.3	Tetrachloro-m-xylene
13.164	-0.001	317292	13.852	-0.028	1796528	78.7	86.8	9.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261194	0.9
Hexabromobiphenyl	425681	444403	4.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	731293	1.4
Hexabromobiphenyl	863111	931394	7.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	7.801	0.003	57044	521.1	1	8.107	0.001	147388	486.4
Aroclor-1248	2	7.970	0.003	75071	525.4	2	8.521	0.001	187163	507.4
Aroclor-1248	3	8.380	0.005	107206	512.4	3	8.951	0.004	278978	474.8
Aroclor-1248	4	8.676	0.002	54715	458.1	4	9.379	0.003	241446	483.9

Total Col1Ave (4 peaks): 504.3 Total Col2Ave (4 peaks): 488.1 RPD = 3

Corrected Ave (3 peaks): 497.2 Corrected Ave (3 peaks): 481.7 RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 1127483 Col1 Total PCB = 0.4 ppm*

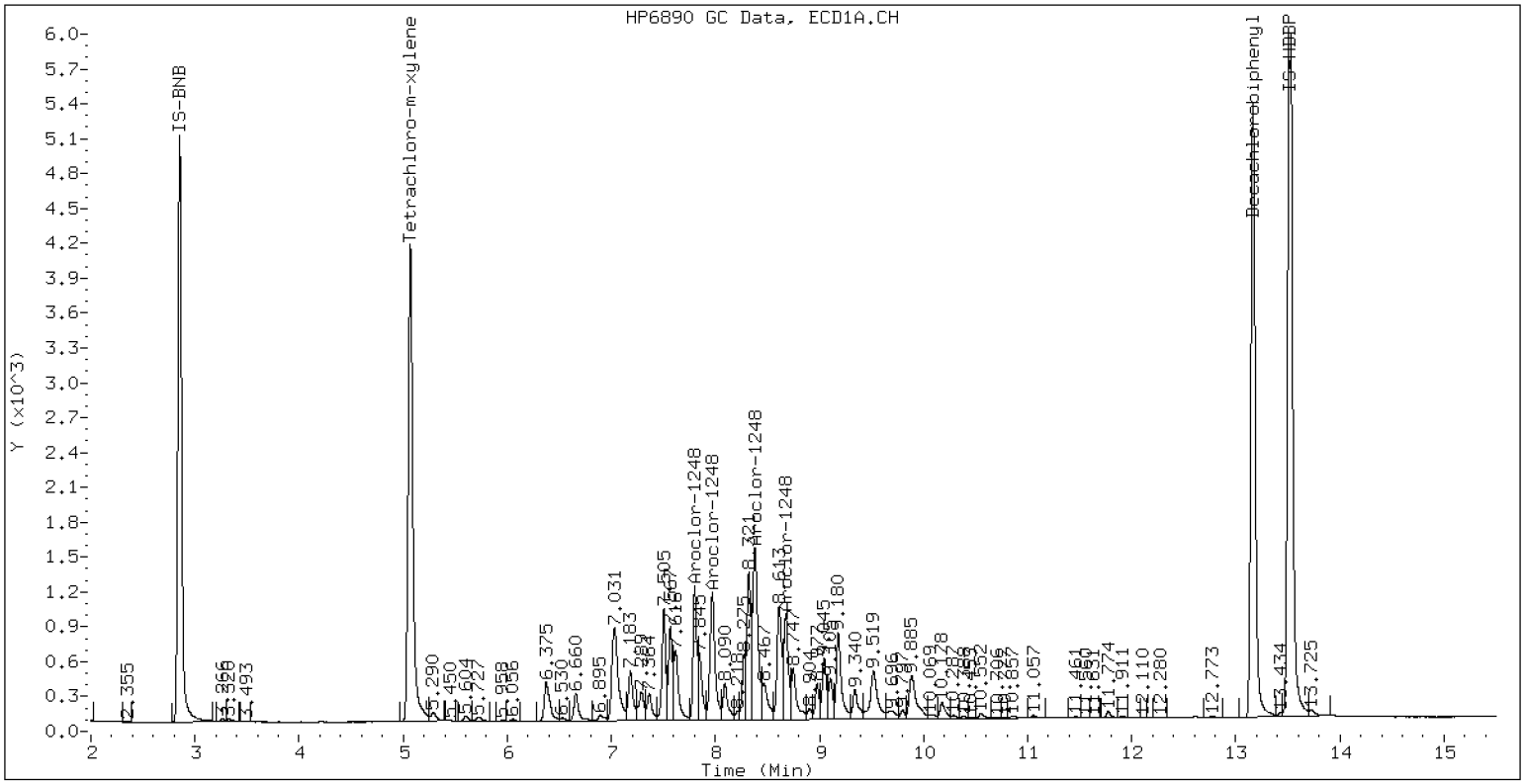
Total PCB Area Col2 (5.169 - 13.066) = 4224820 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

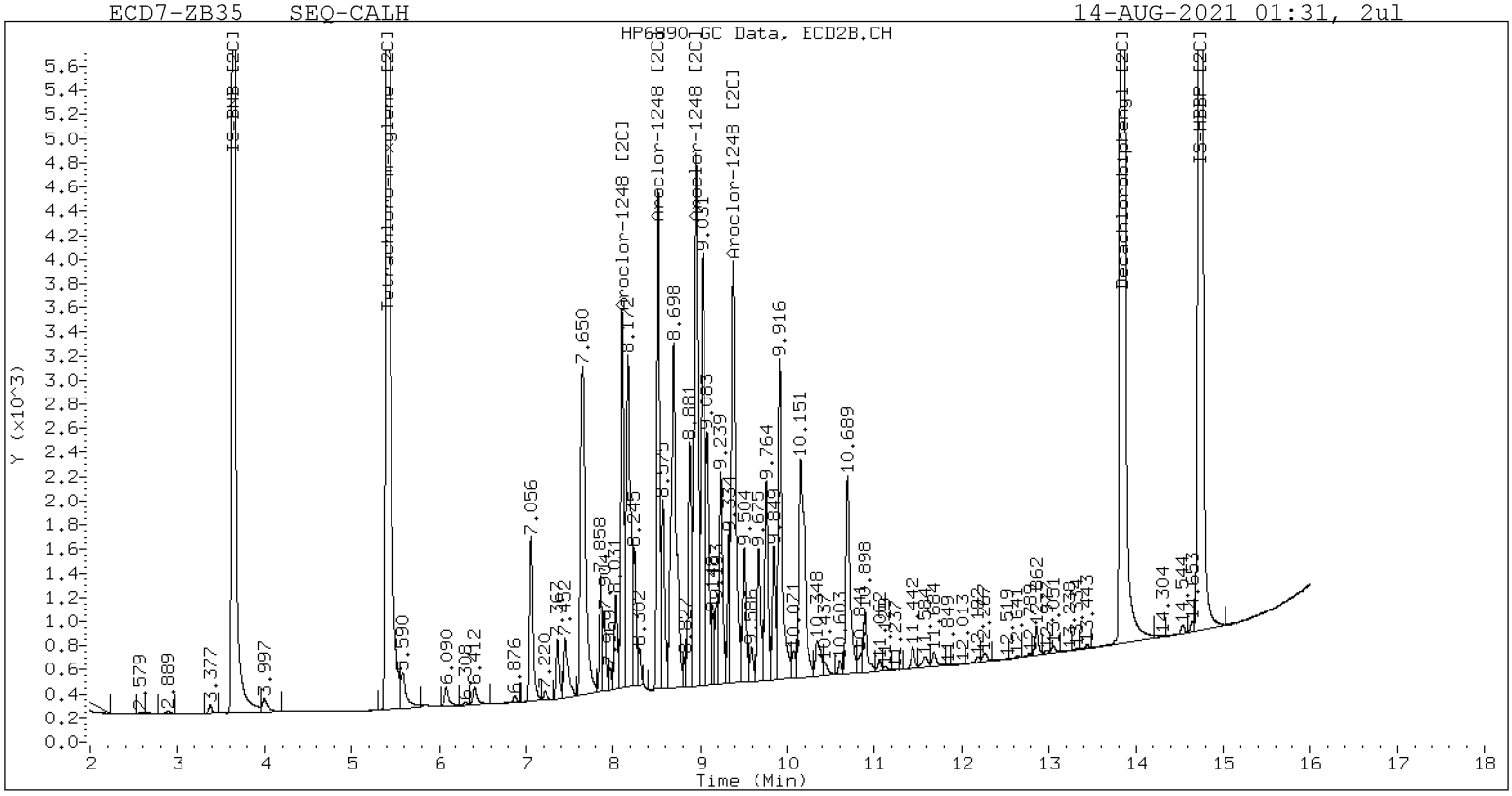
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALH 14-AUG-2021 01:31, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALH 14-AUG-2021 01:31, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132122ECD7.D
Data file 2: /210813.b/210813.b/08132122ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALI
Client ID:
Injection Date: 14-AUG-2021 01:52
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.070	0.001	582913	5.416	-0.001	1679809	163.4	158.5	3.0	Tetrachloro-m-xylene
13.166	-0.000	680323	13.864	-0.016	4446270	147.6	182.2	21.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	295167	14.0
Hexabromobiphenyl	425681	507659	19.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	824788	14.4
Hexabromobiphenyl	863111	1098014	27.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	7.799	0.000	125808	1017.1	1	8.106	0.000	308725	903.3
Aroclor-1248	2	7.968	0.000	164812	1020.7	2	8.520	0.000	397648	955.8
Aroclor-1248	3	8.375	0.000	229127	969.1	3	8.947	0.000	584191	881.6
Aroclor-1248	4	8.674	0.000	110918	821.8	4	9.377	0.000	534195	949.2

Total Col1Ave (4 peaks): 957.2 Total Col2Ave (4 peaks): 922.5 RPD = 4
Corrected Ave (3 peaks): 936.0 Corrected Ave (3 peaks): 911.4 RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 2472059 Col1 Total PCB = 0.8 ppm*

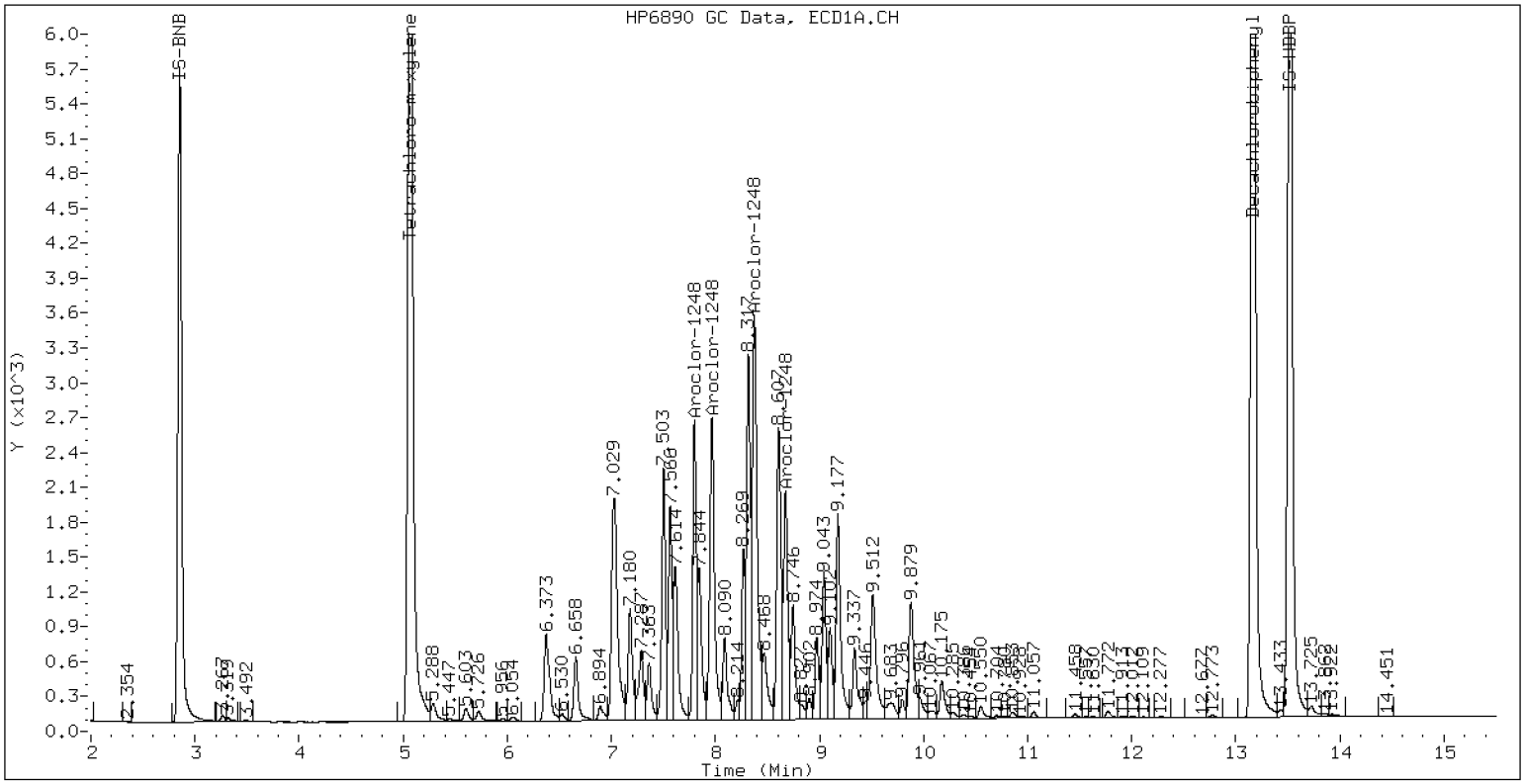
Total PCB Area Col2 (5.169 - 13.066) = 9114889 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

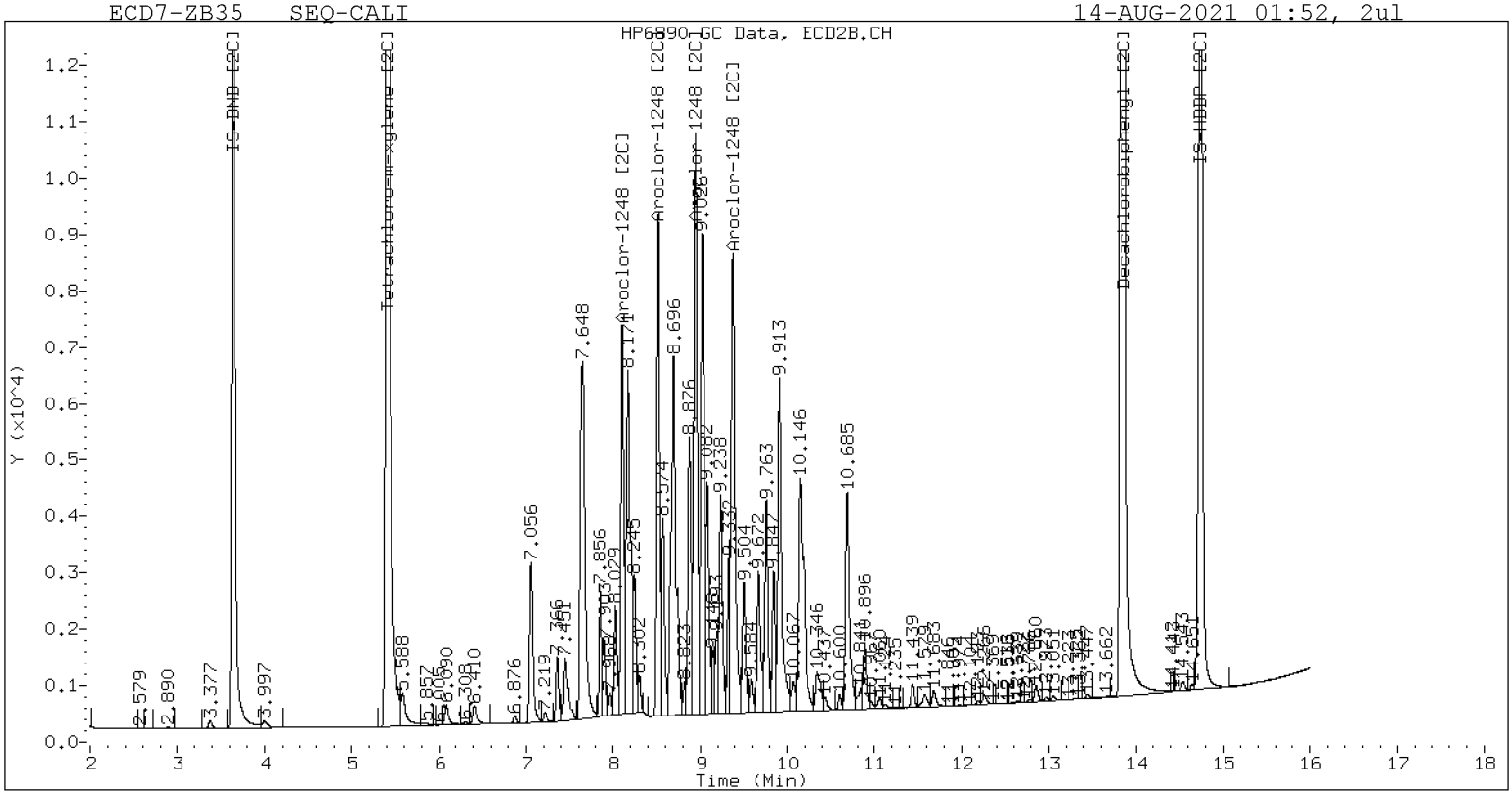
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALI 14-AUG-2021 01:52, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALI 14-AUG-2021 01:52, 2ul

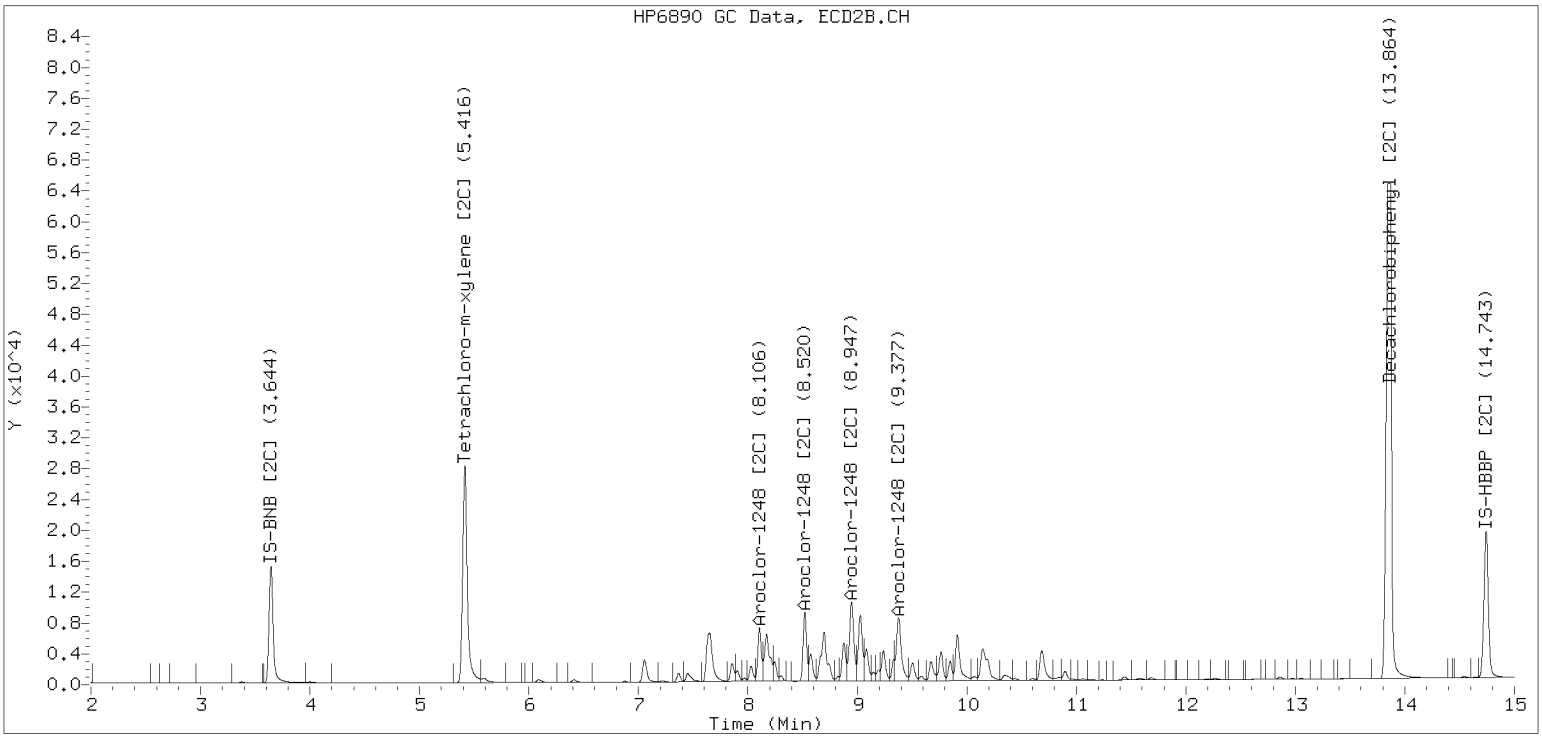


ZB-35 Manual Integration: YES

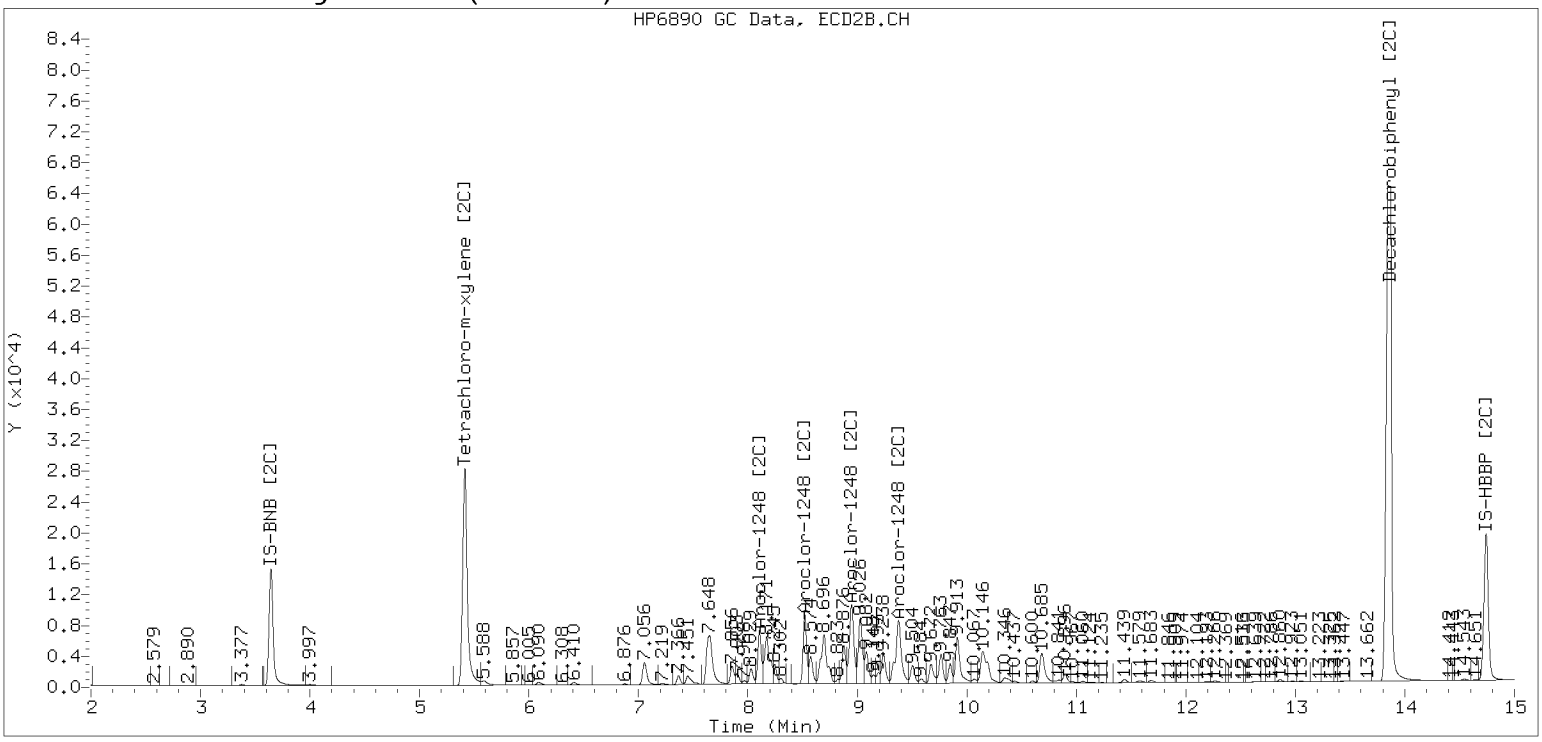
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132122.D Injection Date: 14-AUG-2021 01:5

Manual Integration (After)



Processed Integration (Before)



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

Data file 1: /210813.b/08132123ECD7.D
Data file 2: /210813.b/210813.b/08132123ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALJ
Client ID:
Injection Date: 14-AUG-2021 02:12
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	8962	5.414	-0.003	30209	3.0	3.3	11.8	Tetrachloro-m-xylene
13.166	-0.000	13286	13.848	-0.032	64539	3.4	3.2	5.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	250594	-3.2
Hexabromobiphenyl	425681	434759	2.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	705804	-2.1
Hexabromobiphenyl	863111	908740	5.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	8.681	0.006	4488	20.8	1	9.246	0.006	13920	23.2
Aroclor-1254	2	8.753	0.007	2067	20.7	2	9.340	0.009	9031	25.6
Aroclor-1254	3	9.050	0.008	3084	21.9	3	9.771	0.008	10488	22.9
Aroclor-1254	4	9.188	0.012	4799	17.8	4	9.923	0.009	24430	24.1
Aroclor-1254	5	9.870	0.003	2898	17.1	5	10.163	0.015	22175	21.6

Total Col1Ave (5 peaks): 19.7 Total Col2Ave (5 peaks): 23.5 RPD = 18

Corrected Ave (4 peaks): 19.1 Corrected Ave (4 peaks): 22.9 RPD = 18

Total PCB Area Col1 (5.169 - 13.066) = 50204 Col1 Total PCB = 0.0 ppm*

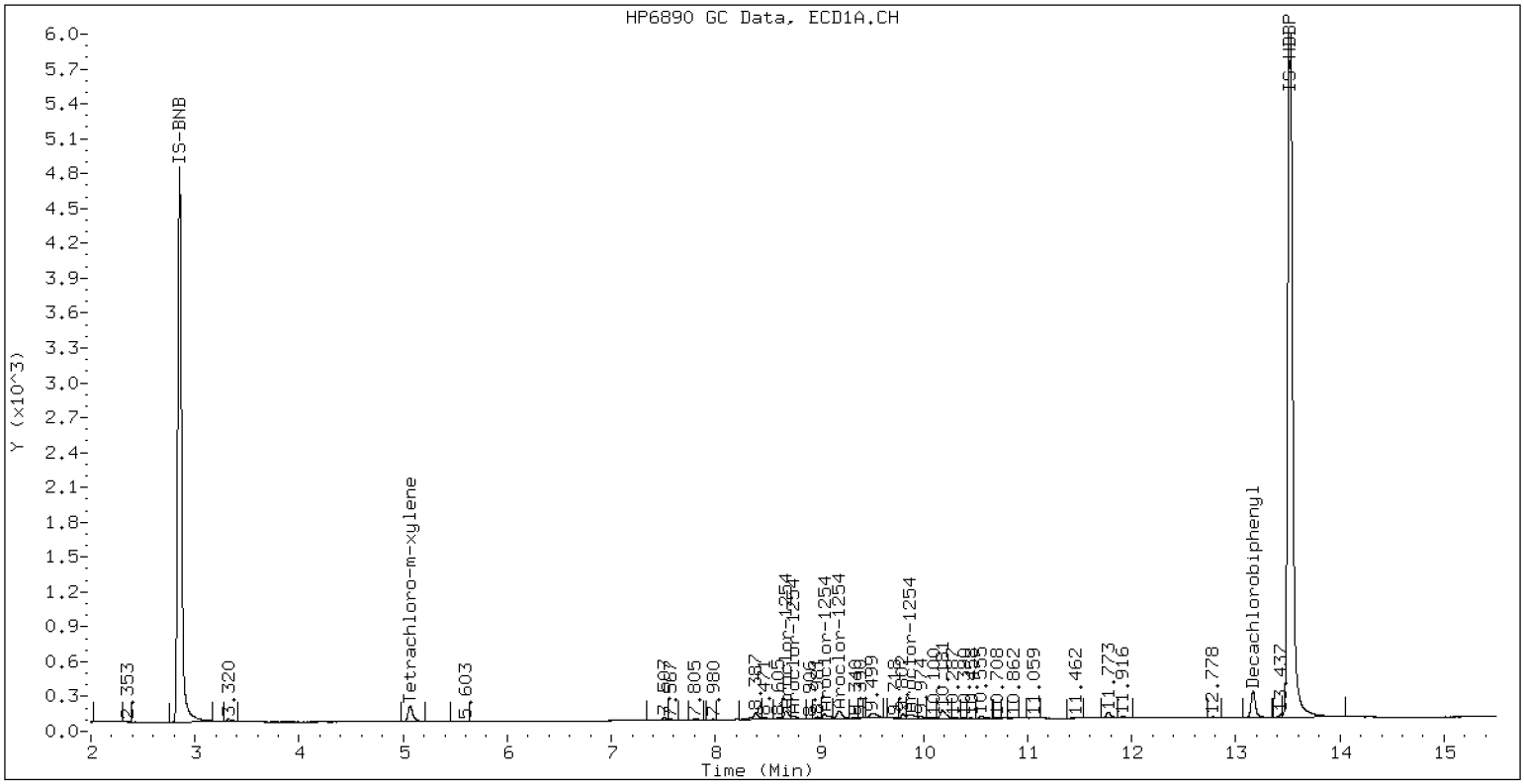
Total PCB Area Col2 (5.169 - 13.066) = 262235 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

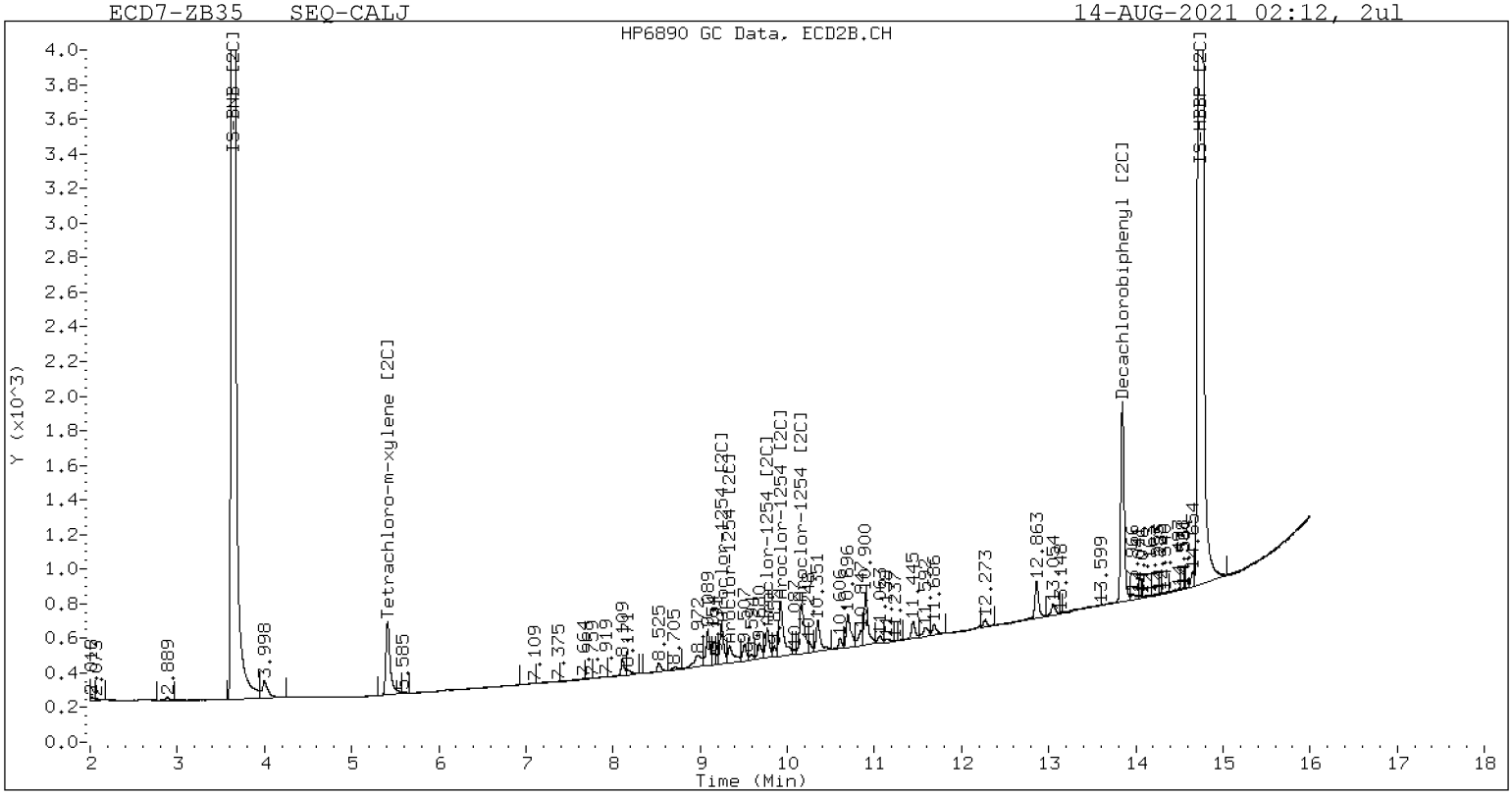
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALJ 14-AUG-2021 02:12, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALJ 14-AUG-2021 02:12, 2ul



ZB-35 Manual Integration: NO

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

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Data file 2: /210813.b/210813.b/08132124ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALK
Client ID:
Injection Date: 14-AUG-2021 02:33
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	23301	5.413	-0.004	73808	7.5	7.9	6.1	Tetrachloro-m-xylene
13.165	-0.001	32607	13.846	-0.034	161371	8.1	7.8	3.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258452	-0.2
Hexabromobiphenyl	425681	444493	4.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724096	0.4
Hexabromobiphenyl	863111	930444	7.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	8.680	0.004	11221	50.3	1	9.243	0.004	32682	53.0
Aroclor-1254	2	8.751	0.005	5597	54.2	2	9.338	0.006	19336	53.5
Aroclor-1254	3	9.049	0.008	6912	47.6	3	9.769	0.006	24144	51.4
Aroclor-1254	4	9.186	0.010	13929	50.2	4	9.921	0.007	53197	51.1
Aroclor-1254	5	9.868	0.000	8358	47.9	5	10.160	0.012	53520	50.7

Total Col1Ave (5 peaks): 50.0 Total Col2Ave (5 peaks): 52.0 RPD = 4

Corrected Ave (4 peaks): 49.0 Corrected Ave (4 peaks): 51.6 RPD = 5

Total PCB Area Col1 (5.169 - 13.066) = 139190 Col1 Total PCB = 0.1 ppm*

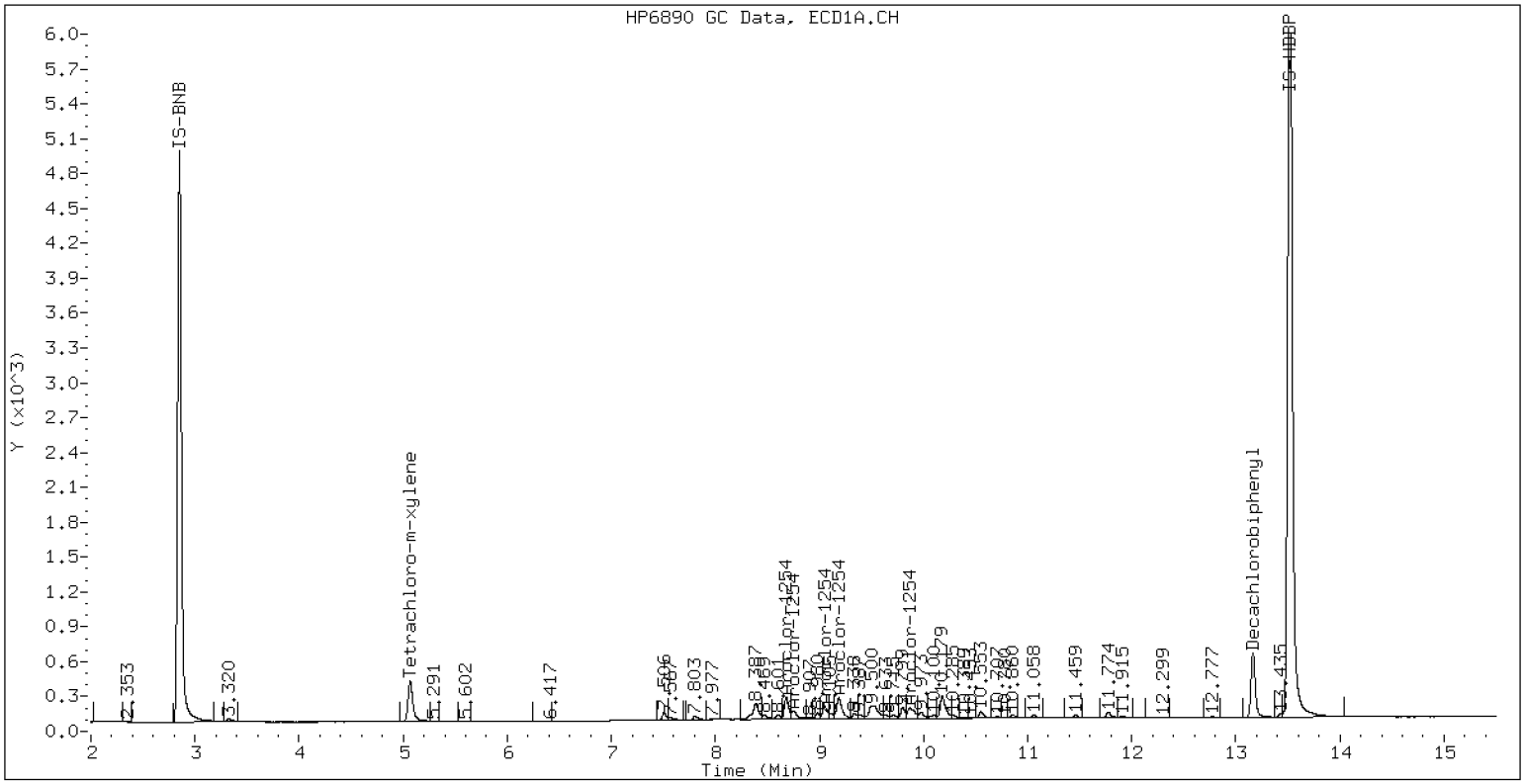
Total PCB Area Col2 (5.169 - 13.066) = 597839 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

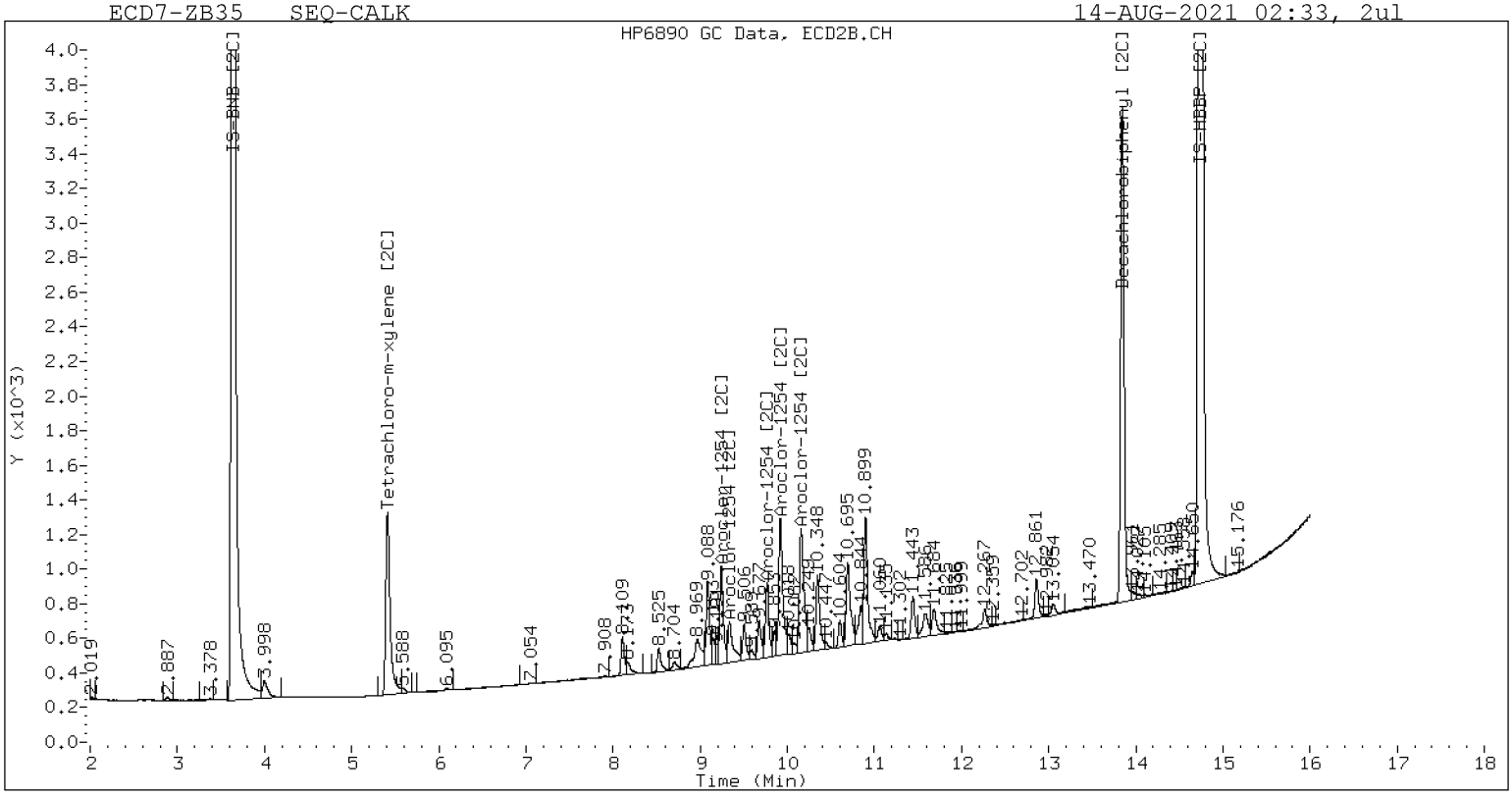
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALK 14-AUG-2021 02:33, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALK 14-AUG-2021 02:33, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132125ECD7.D
Data file 2: /210813.b/210813.b/08132125ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALL
Client ID:
Injection Date: 14-AUG-2021 02:53
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	50378	5.414	-0.003	153493	15.6	16.0	2.4	Tetrachloro-m-xylene
13.166	0.000	66760	13.847	-0.033	338703	16.0	15.8	0.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	266772	3.1
Hexabromobiphenyl	425681	460841	8.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	746546	3.5
Hexabromobiphenyl	863111	963688	11.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	8.680	0.004	23018	100.0	1	9.243	0.003	64493	101.5
Aroclor-1254	2	8.751	0.005	11045	103.7	2	9.337	0.006	37205	99.8
Aroclor-1254	3	9.049	0.008	14399	96.0	3	9.768	0.005	48720	100.6
Aroclor-1254	4	9.184	0.008	29413	102.6	4	9.919	0.006	108022	100.7
Aroclor-1254	5	9.870	0.003	17840	99.1	5	10.158	0.011	110407	101.5

Total Col1Ave (5 peaks): 100.3 Total Col2Ave (5 peaks): 100.8 RPD = 1
Corrected Ave (4 peaks): 99.4 Corrected Ave (4 peaks): 100.6 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 293494 Col1 Total PCB = 0.1 ppm*

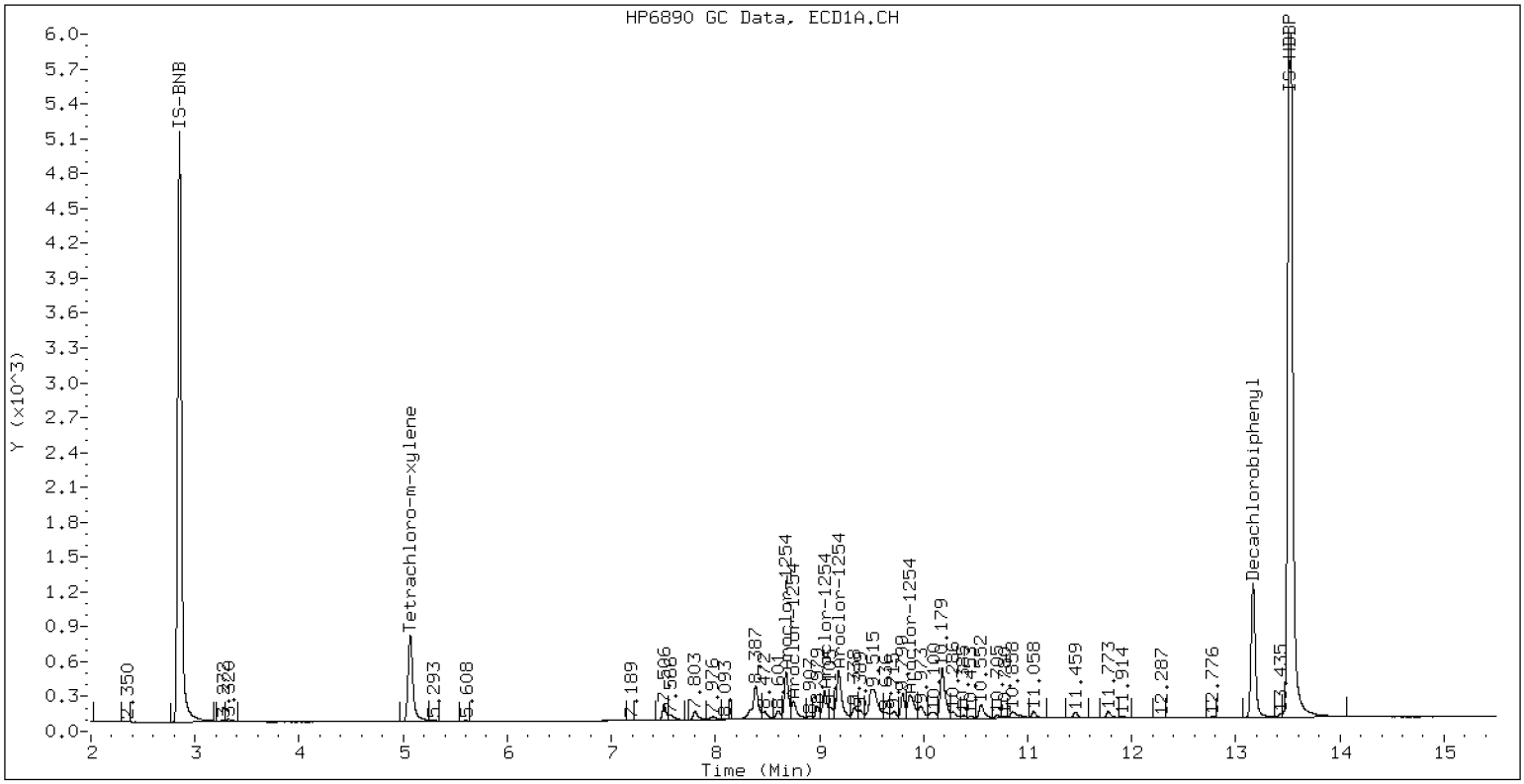
Total PCB Area Col2 (5.169 - 13.066) = 1195216 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

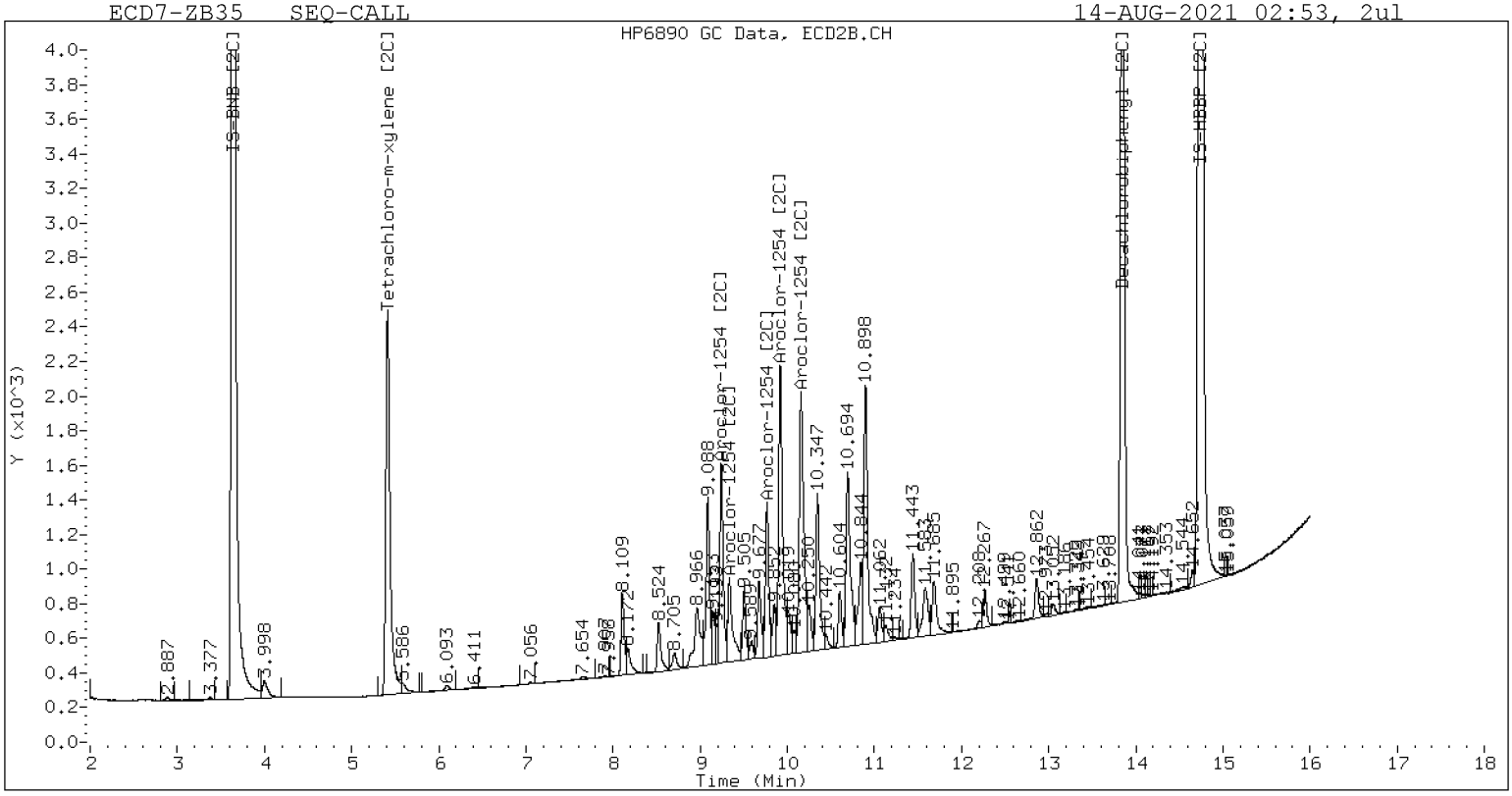
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALL 14-AUG-2021 02:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALL 14-AUG-2021 02:53, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132126ECD7.D
Data file 2: /210813.b/210813.b/08132126ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALM
Client ID:
Injection Date: 14-AUG-2021 03:13
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.002	129839	5.412	-0.005	378453	40.6	39.8	2.1	Tetrachloro-m-xylene
13.166	-0.000	164488	13.847	-0.033	851014	39.5	39.7	0.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264494	2.2
Hexabromobiphenyl	425681	458580	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740295	2.7
Hexabromobiphenyl	863111	964396	11.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	8.677	0.002	57893	253.7	1	9.241	0.002	152457	242.1
Aroclor-1254	2	8.748	0.002	27373	259.1	2	9.334	0.003	86362	233.6
Aroclor-1254	3	9.045	0.004	37206	250.2	3	9.765	0.002	117837	245.4
Aroclor-1254	4	9.180	0.004	74612	262.6	4	9.917	0.003	252955	237.7
Aroclor-1254	5	9.870	0.003	47061	263.7	5	10.154	0.007	267905	248.3

Total Col1Ave (5 peaks): 257.9 Total Col2Ave (5 peaks): 241.4 RPD = 7
Corrected Ave (4 peaks): 256.4 Corrected Ave (4 peaks): 239.7 RPD = 7

Total PCB Area Col1 (5.169 - 13.066) = 753890 Col1 Total PCB = 0.3 ppm*

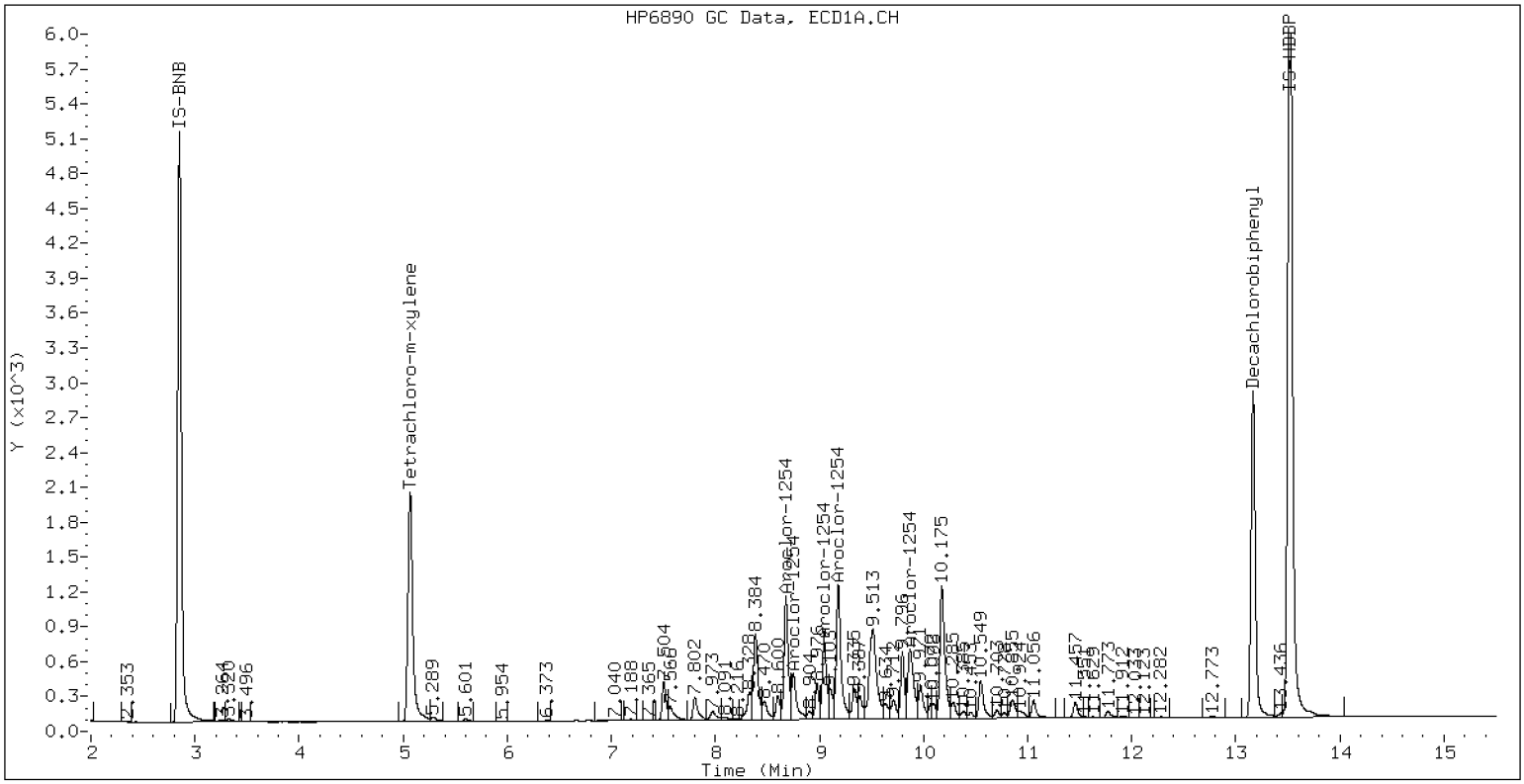
Total PCB Area Col2 (5.169 - 13.066) = 2870074 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

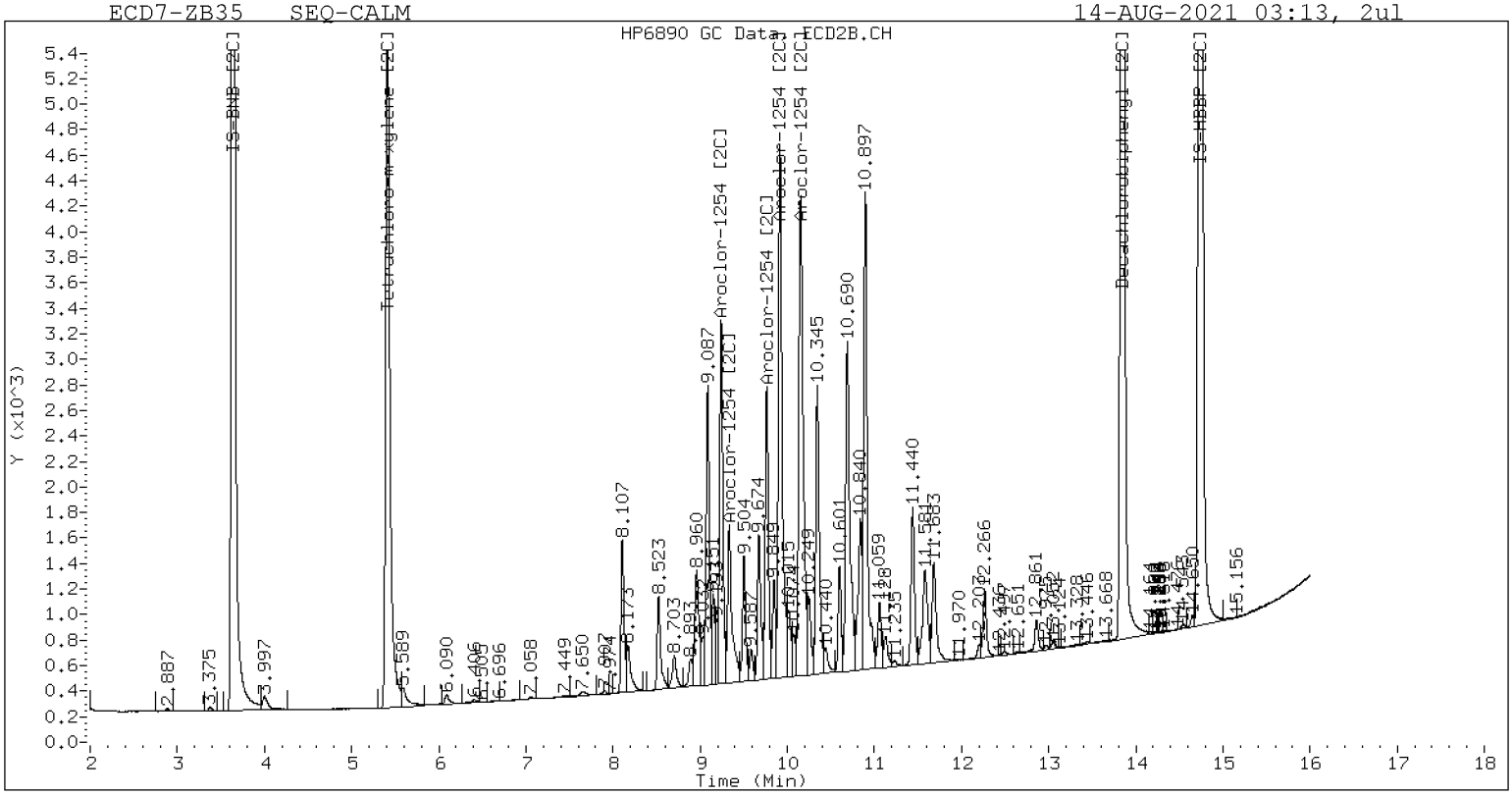
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALM 14-AUG-2021 03:13, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALM 14-AUG-2021 03:13, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132127ECD7.D
Data file 2: /210813.b/210813.b/08132127ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALN
Client ID:
Injection Date: 14-AUG-2021 03:34
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	-0.000	265807	5.414	-0.003	746945	82.3	78.5	4.8	Tetrachloro-m-xylene
13.166	0.000	321408	13.852	-0.028	1865676	78.5	87.1	10.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	267061	3.2
Hexabromobiphenyl	425681	451316	6.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740536	2.7
Hexabromobiphenyl	863111	963913	11.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	8.676	0.001	115032	499.3	1	9.240	0.001	293539	465.9
Aroclor-1254	2	8.748	0.002	51941	487.0	2	9.332	0.001	165511	447.6
Aroclor-1254	3	9.043	0.002	75458	502.5	3	9.764	0.001	228480	475.7
Aroclor-1254	4	9.178	0.002	149029	519.4	4	9.914	0.001	491425	461.7
Aroclor-1254	5	9.869	0.002	96576	536.0	5	10.151	0.003	526835	488.1

Total Col1Ave (5 peaks): 508.8 Total Col2Ave (5 peaks): 467.8 RPD = 8
Corrected Ave (4 peaks): 502.0 Corrected Ave (4 peaks): 462.7 RPD = 8

Total PCB Area Col1 (5.169 - 13.066) = 1500587 Col1 Total PCB = 0.6 ppm*

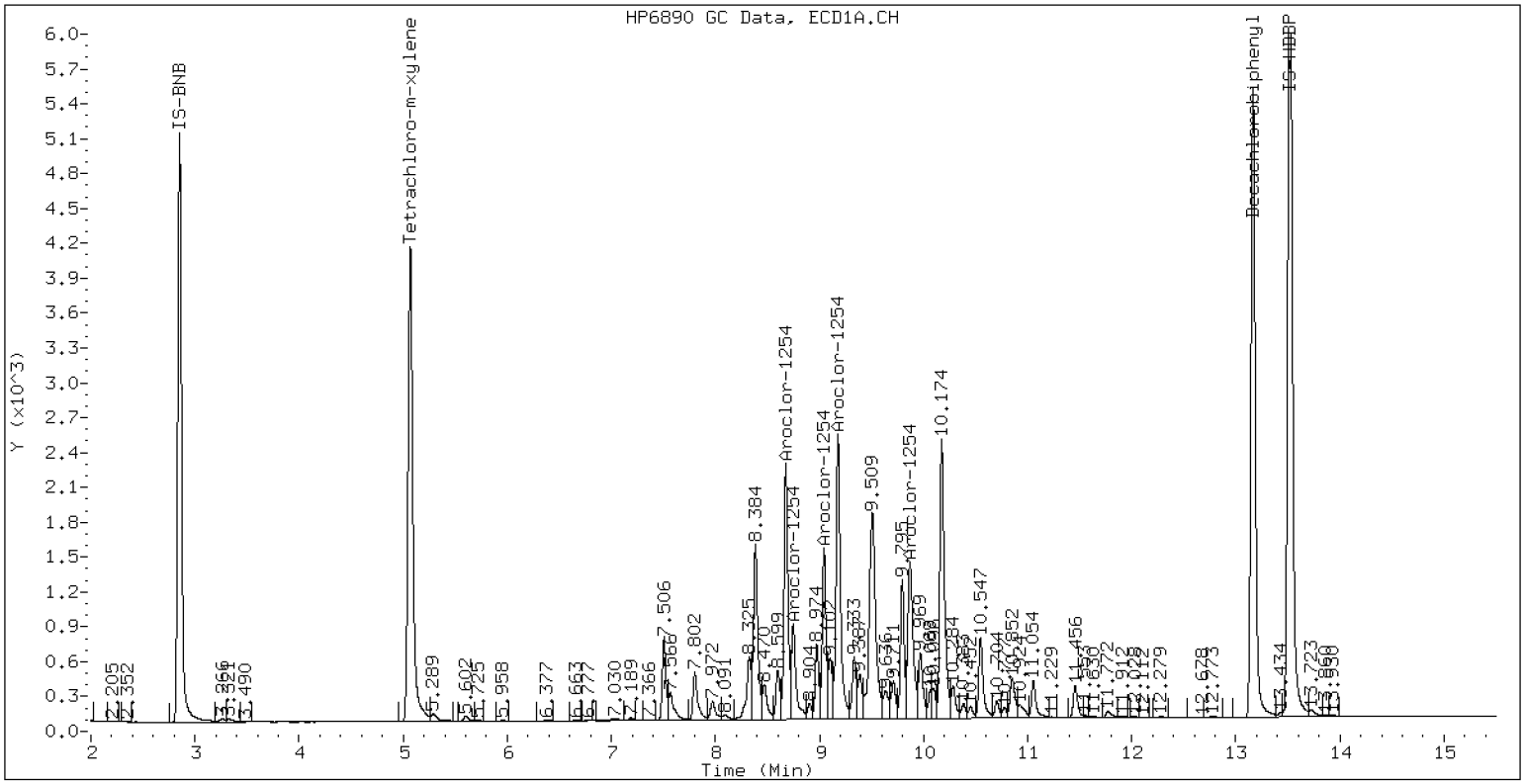
Total PCB Area Col2 (5.169 - 13.066) = 5575259 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

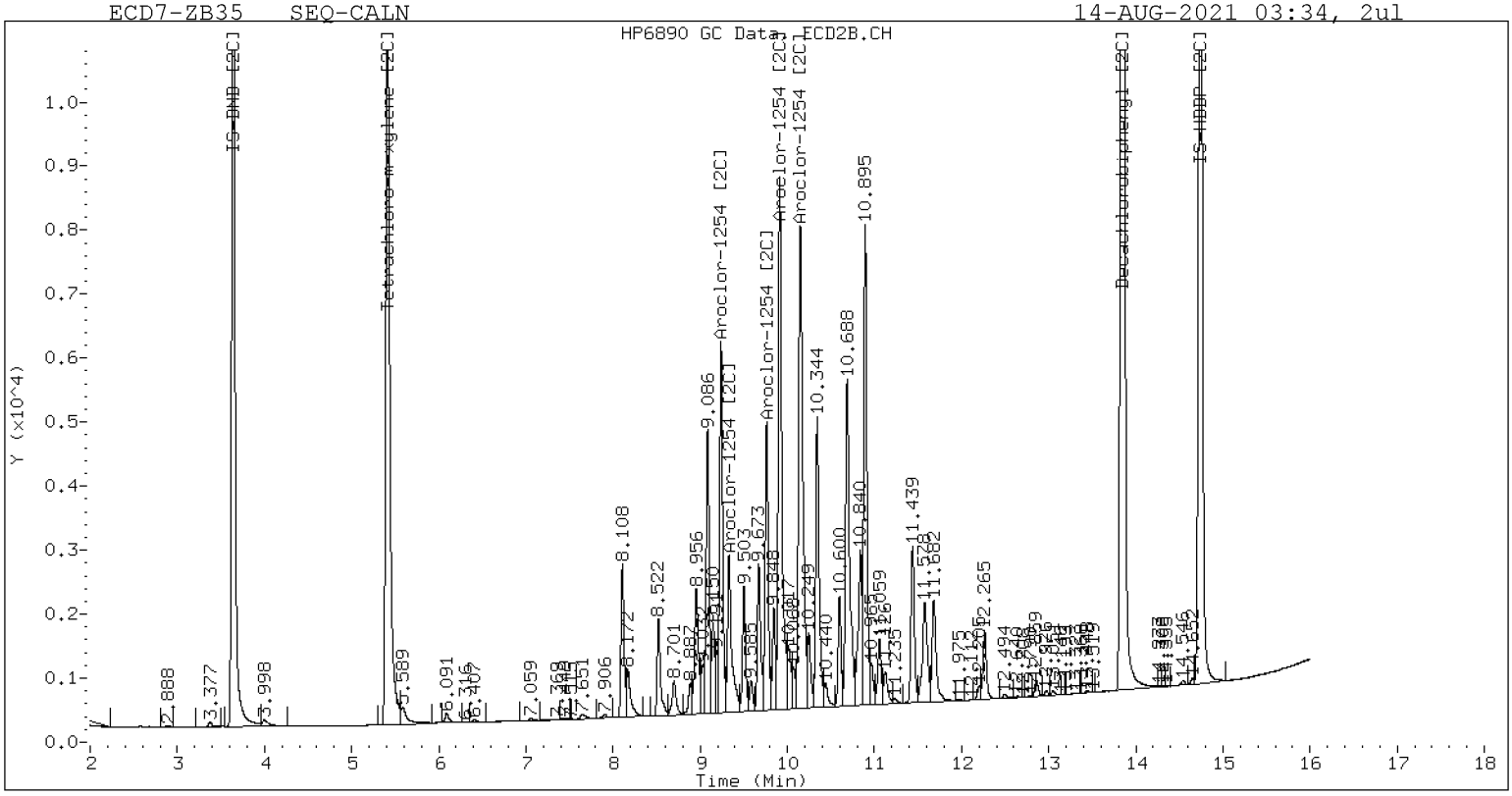
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALN 14-AUG-2021 03:34, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALN 14-AUG-2021 03:34, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132128ECD7.D
Data file 2: /210813.b/210813.b/08132128ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALO
Client ID:
Injection Date: 14-AUG-2021 03:54
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.000	586983	5.415	-0.002	1678624	161.8	156.5	3.4	Tetrachloro-m-xylene
13.166	0.000	682825	13.863	-0.017	4502724	146.2	180.1	20.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	300162	16.0
Hexabromobiphenyl	425681	514689	20.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	834903	15.8
Hexabromobiphenyl	863111	1125324	30.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	8.675	0.000	243956	942.1	1	9.239	0.000	614196	864.6
Aroclor-1254	2	8.746	0.000	100189	835.7	2	9.331	0.000	342359	821.2
Aroclor-1254	3	9.041	0.000	166951	989.1	3	9.763	0.000	480470	887.2
Aroclor-1254	4	9.176	0.000	319165	989.8	4	9.914	0.000	1070997	892.5
Aroclor-1254	5	9.867	0.000	215902	1066.1	5	10.147	0.000	1124677	924.2

Total Col1Ave (5 peaks): 964.6 Total Col2Ave (5 peaks): 878.0 RPD = 9

Corrected Ave (4 peaks): 939.2 Corrected Ave (4 peaks): 866.4 RPD = 8

Total PCB Area Col1 (5.169 - 13.066) = 3250417 Col1 Total PCB = 1.1 ppm*

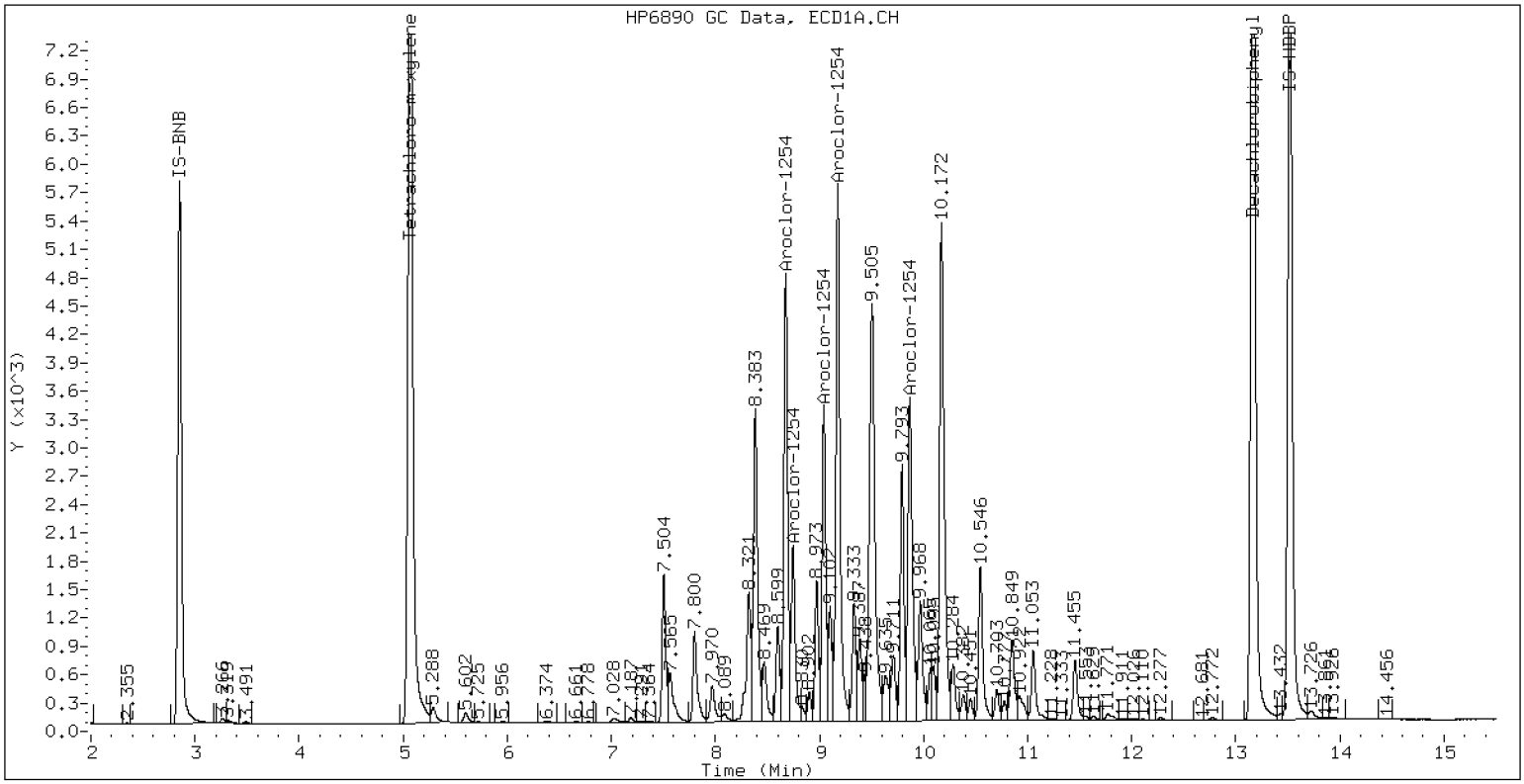
Total PCB Area Col2 (5.169 - 13.066) = 11917701 Col2 Total PCB = 1.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

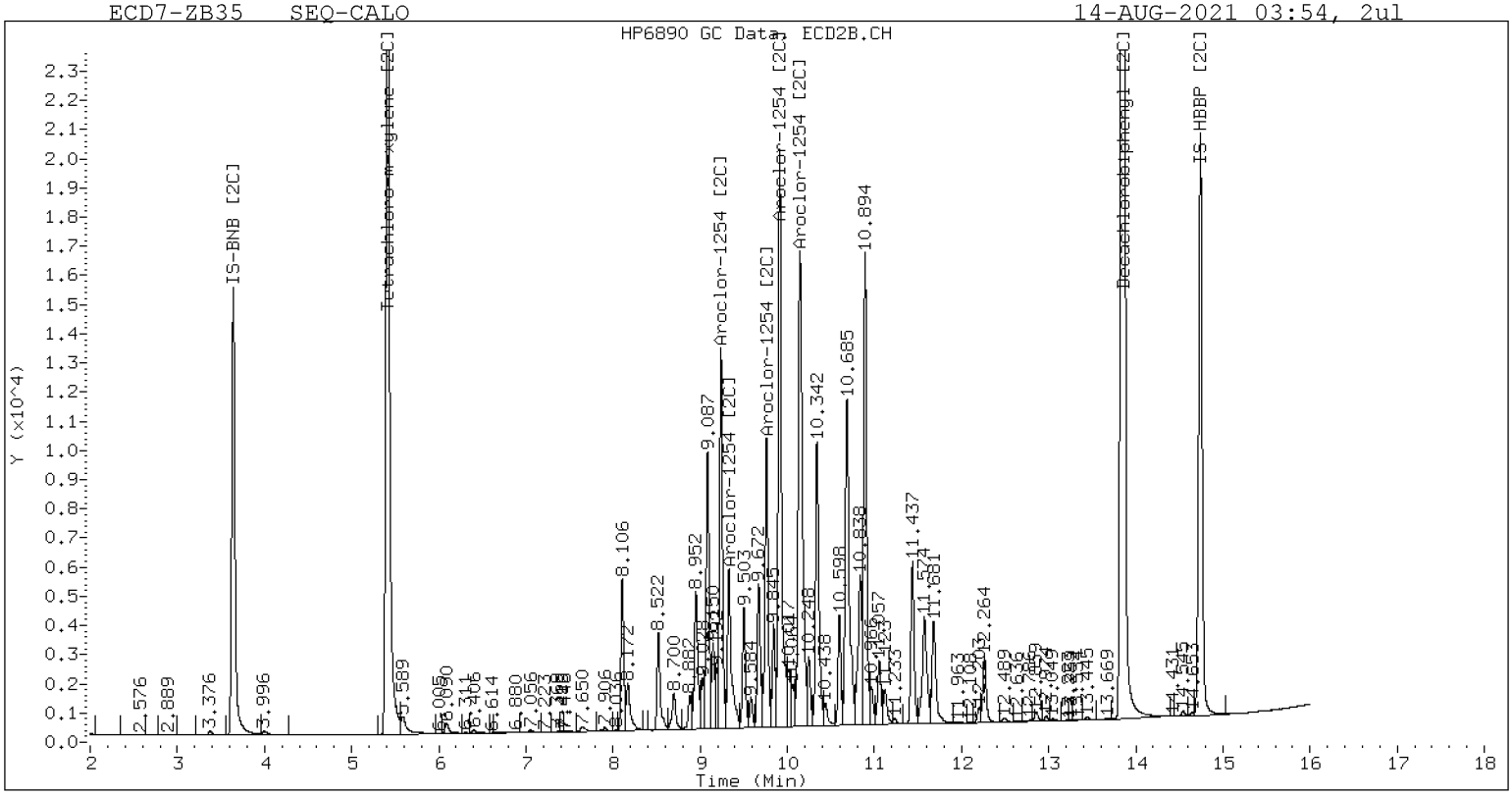
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALO 14-AUG-2021 03:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALO 14-AUG-2021 03:54, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132129ECD7.D
Data file 2: /210813.b/210813.b/08132129ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALP
Client ID:
Injection Date: 14-AUG-2021 04:15
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.000	8898	5.414	-0.002	31562	3.0	3.6	16.8	Tetrachloro-m-xylene
13.165	-0.001	13265	13.846	-0.034	65033	3.4	3.2	5.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	245136	-5.3
Hexabromobiphenyl	425681	426488	0.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	690863	-4.2
Hexabromobiphenyl	863111	906417	5.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1221	1	4.020	0.005	374	19.3	1	4.676	-0.000	1086	20.9
Aroclor-1221	2	5.451	0.000	527	17.4	2	6.075	0.003	2479	20.9
Aroclor-1221	3	5.727	0.003	1570	19.2	3	6.414	0.005	4328	20.9
Total Col1Ave (3 peaks):				18.6		Total Col2Ave (3 peaks):			20.9	RPD = 12
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.388	0.004	5474	21.0	1	10.971	0.001	25181	22.7
Aroclor-1262	2	11.461	0.007	3302	19.6	2	11.682	-0.003	50188	21.5
Aroclor-1262	3	11.631	0.004	4964	20.4	3	12.188	0.000	22103	21.3
Aroclor-1262	4	12.279	0.005	4086	20.5	4	12.974	0.001	19713	20.4
Total Col1Ave (4 peaks):				20.4		Total Col2Ave (4 peaks):			21.5	RPD = 5
Corrected Ave (3 peaks):				20.2		Corrected Ave (3 peaks):			21.0	RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 81438 Col1 Total PCB = 0.0 ppm*

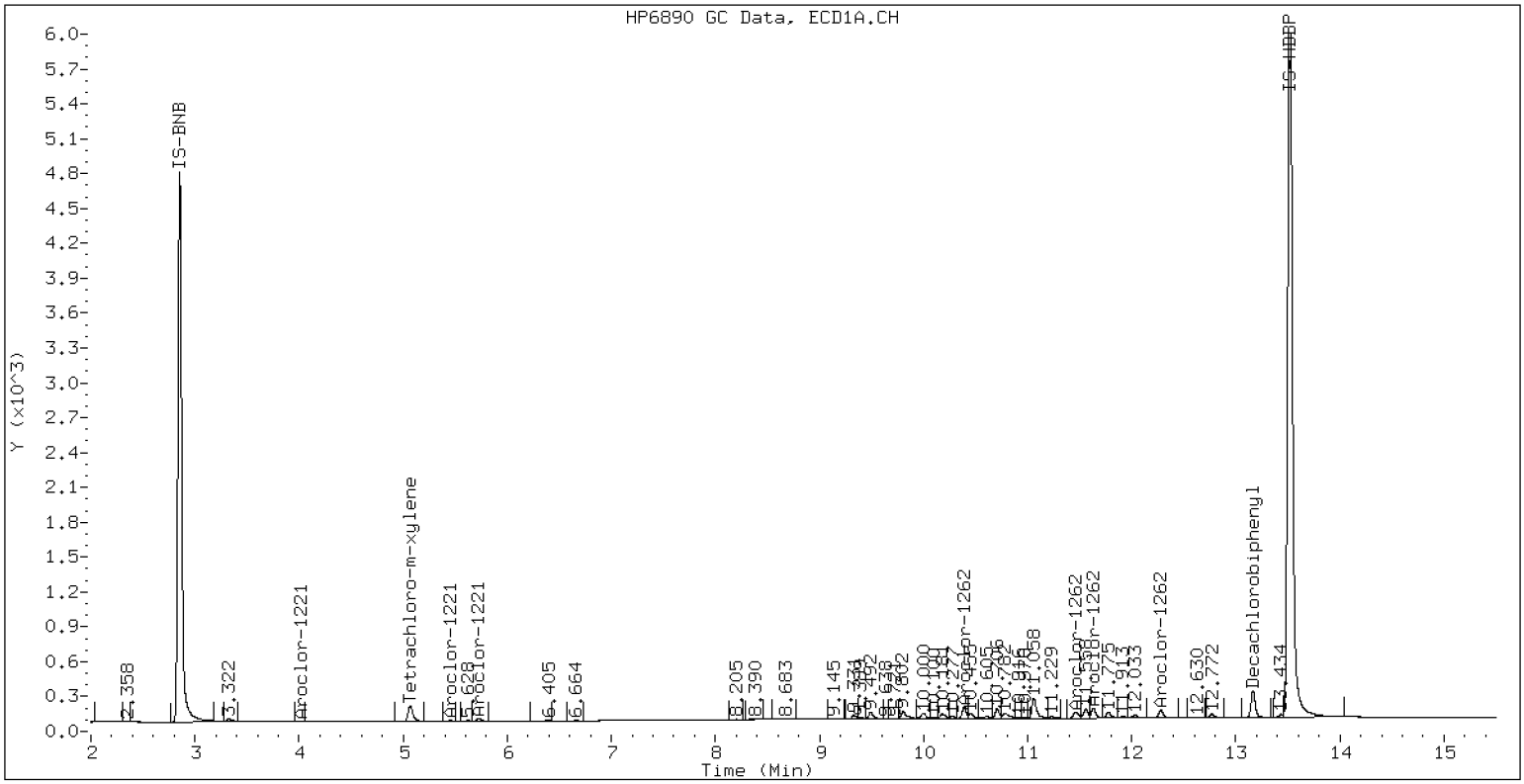
Total PCB Area Col2 (5.169 - 13.066) = 371772 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

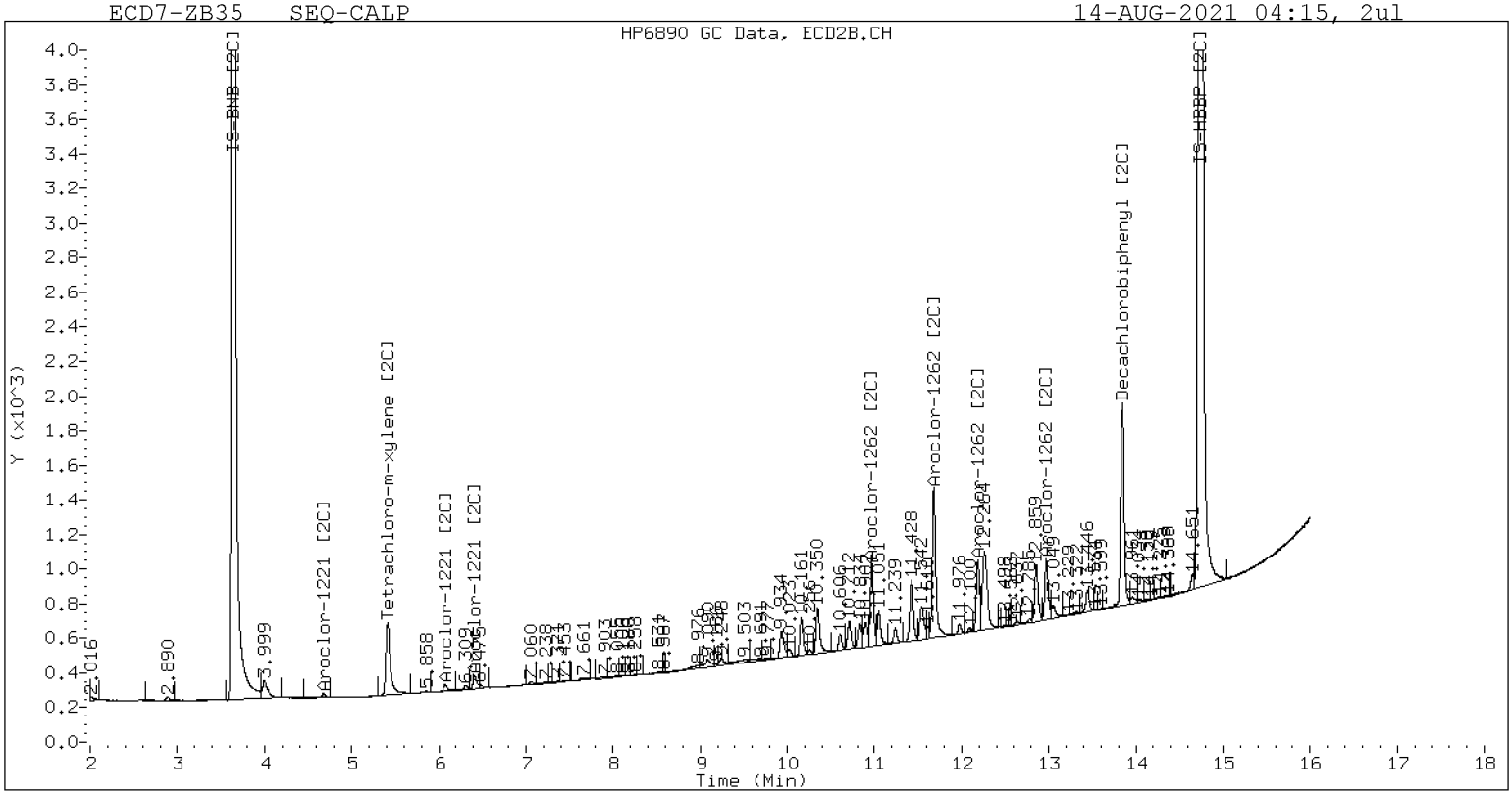
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALP 14-AUG-2021 04:15, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALP 14-AUG-2021 04:15, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132130ECD7.D
Data file 2: /210813.b/210813.b/08132130ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALQ
Client ID:
Injection Date: 14-AUG-2021 04:35
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	24022	5.414	-0.003	75627	7.6	8.0	5.5	Tetrachloro-m-xylene
13.165	-0.000	32624	13.846	-0.034	168101	7.9	7.8	1.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261668	1.1
Hexabromobiphenyl	425681	453964	6.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	733252	1.7
Hexabromobiphenyl	863111	968090	12.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1221	1	4.015	-0.000	1082	52.4	1	4.677	0.000	3140	57.1
Aroclor-1221	2	5.454	0.003	1371	42.3	2	6.075	0.003	6195	49.2
Aroclor-1221	3	5.727	0.002	4231	48.3	3	6.413	0.004	11143	50.7
Total Col1Ave (3 peaks):				47.7		Total Col2Ave (3 peaks):			52.3	RPD = 9
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.388	0.005	13372	48.3	1	10.971	0.001	61110	51.6
Aroclor-1262	2	11.461	0.007	8124	45.3	2	11.683	-0.003	122171	48.9
Aroclor-1262	3	11.630	0.004	12394	47.9	3	12.189	0.001	55035	49.6
Aroclor-1262	4	12.280	0.005	10210	48.1	4	12.974	0.001	49243	47.7
Total Col1Ave (4 peaks):				47.4		Total Col2Ave (4 peaks):			49.5	RPD = 4
Corrected Ave (3 peaks):				47.1		Corrected Ave (3 peaks):			48.7	RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 195251 Col1 Total PCB = 0.1 ppm*

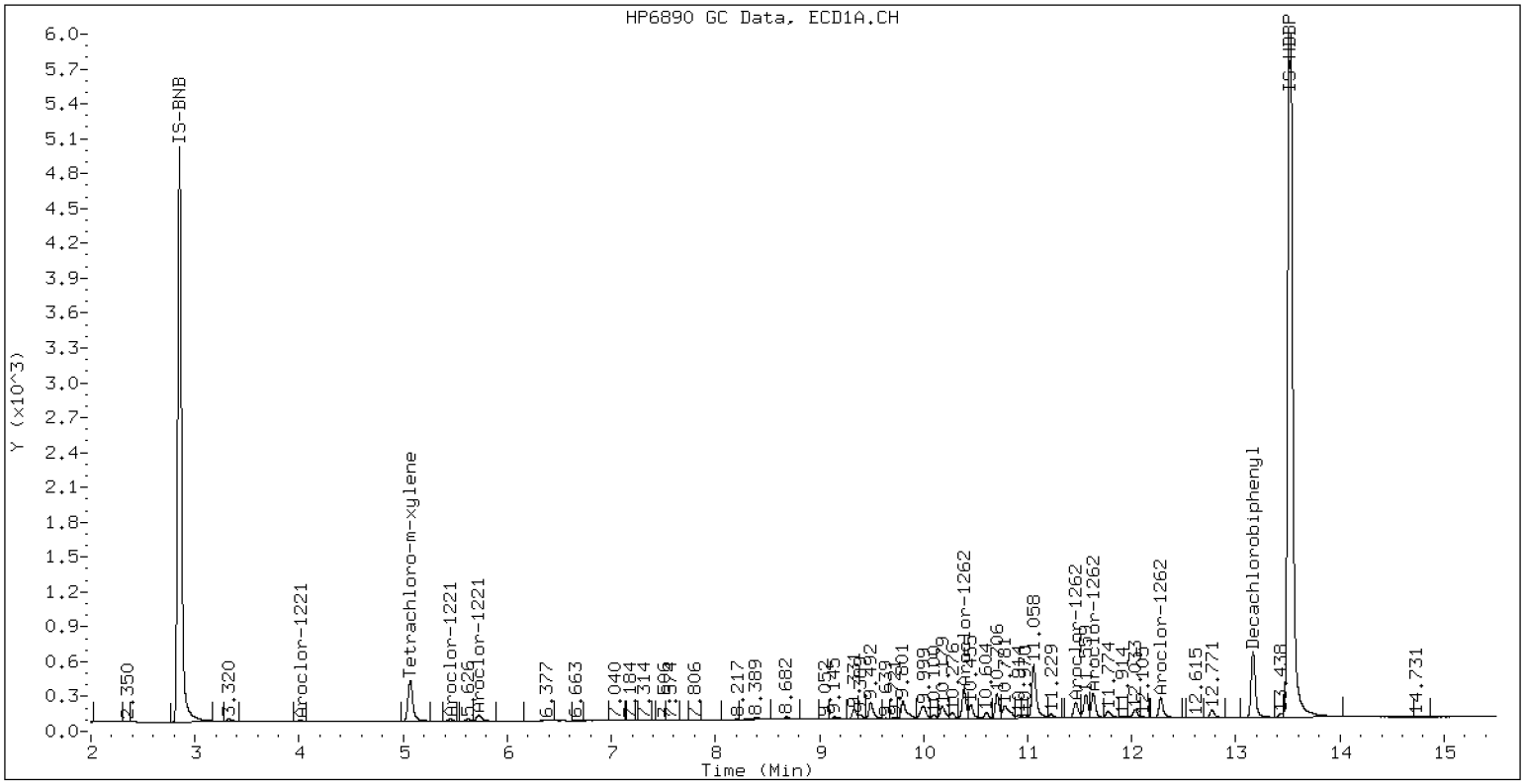
Total PCB Area Col2 (5.169 - 13.066) = 866797 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

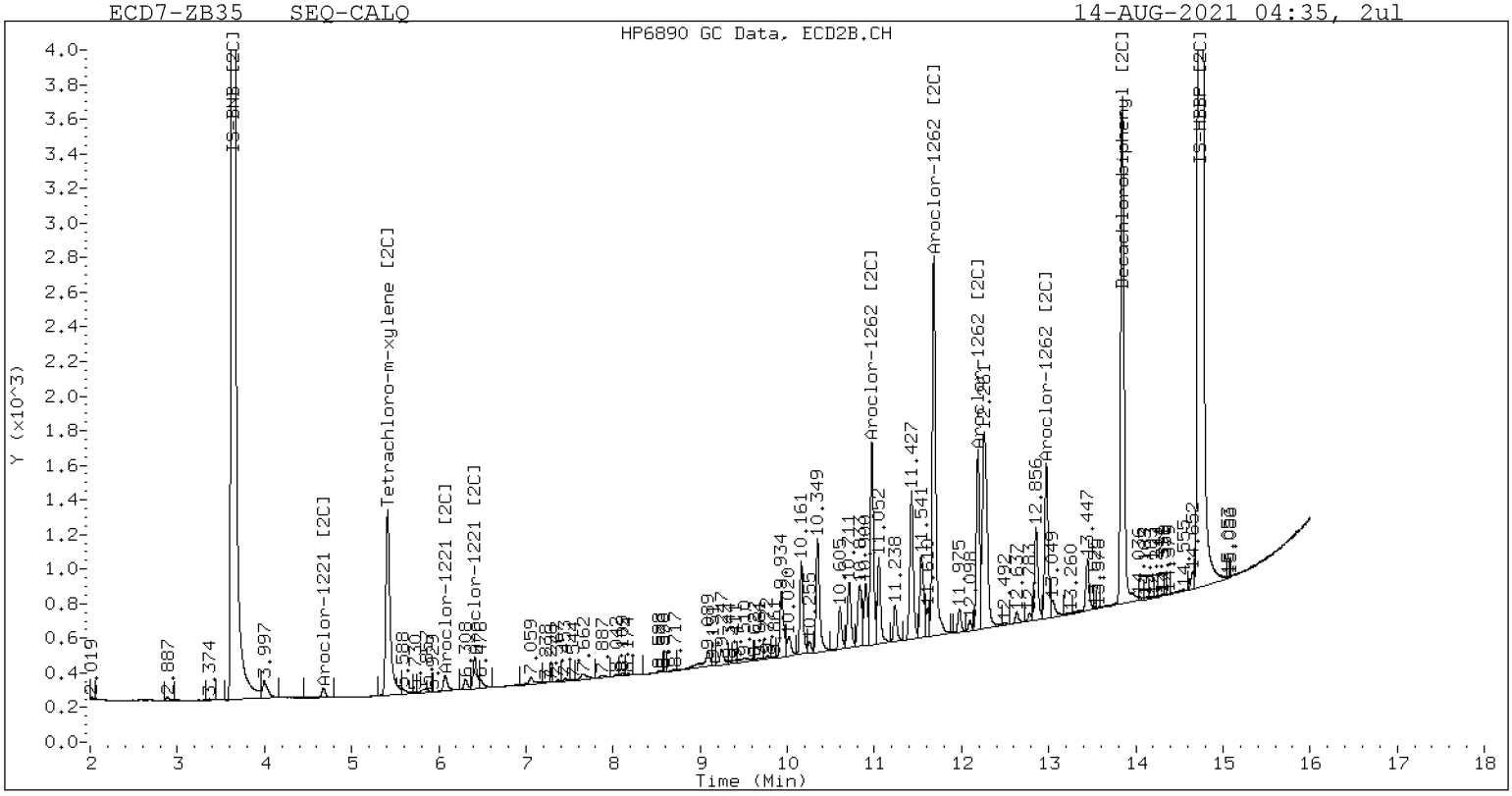
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALQ 14-AUG-2021 04:35, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALQ 14-AUG-2021 04:35, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132131ECD7.D
Data file 2: /210813.b/210813.b/08132131ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALR
Client ID:
Injection Date: 14-AUG-2021 04:56
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	50997	5.413	-0.004	151702	16.0	16.1	0.4	Tetrachloro-m-xylene
13.165	-0.001	66428	13.847	-0.033	341243	16.0	15.7	2.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263747	1.9
Hexabromobiphenyl	425681	456506	7.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	735138	2.0
Hexabromobiphenyl	863111	978830	13.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1221	1	4.015	-0.000	2280	109.5	1	4.677	0.000	6199	112.3
Aroclor-1221	2	5.452	0.001	3120	95.6	2	6.074	0.002	12753	101.0
Aroclor-1221	3	5.727	0.002	8691	98.5	3	6.411	0.002	22972	104.3
Total Col1Ave (3 peaks):					101.2	Total Col2Ave (3 peaks):				105.9 RPD = 5
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.387	0.004	27305	98.0	1	10.970	-0.000	121062	101.1
Aroclor-1262	2	11.458	0.004	17551	97.3	2	11.681	-0.005	245852	97.3
Aroclor-1262	3	11.629	0.002	25813	99.3	3	12.187	-0.001	111421	99.4
Aroclor-1262	4	12.278	0.003	21111	98.9	4	12.973	0.000	106511	101.9
Total Col1Ave (4 peaks):					98.4	Total Col2Ave (4 peaks):				100.0 RPD = 2
Corrected Ave (3 peaks):					98.1	Corrected Ave (3 peaks):				99.3 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 401239 Col1 Total PCB = 0.2 ppm*

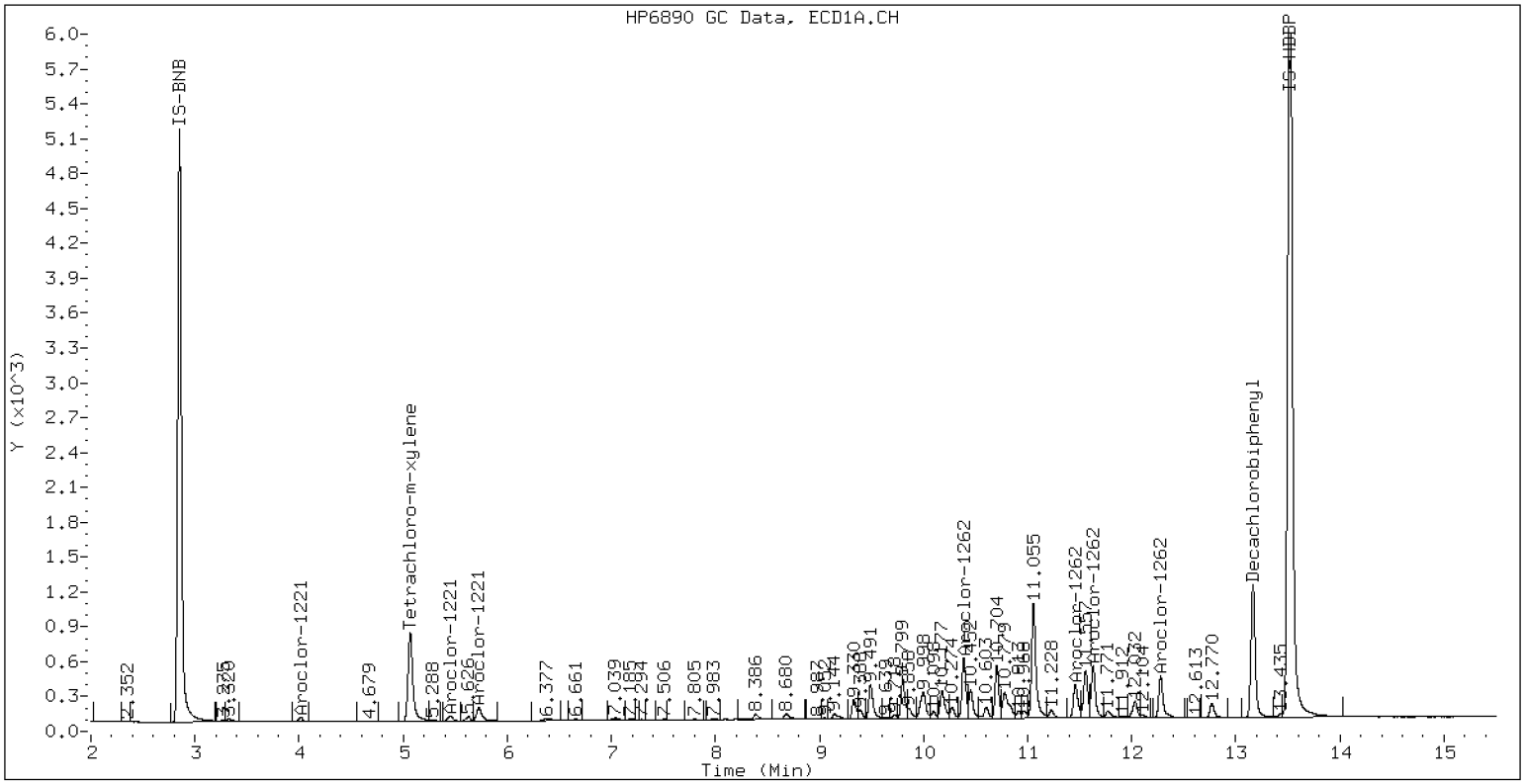
Total PCB Area Col2 (5.169 - 13.066) = 1724757 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

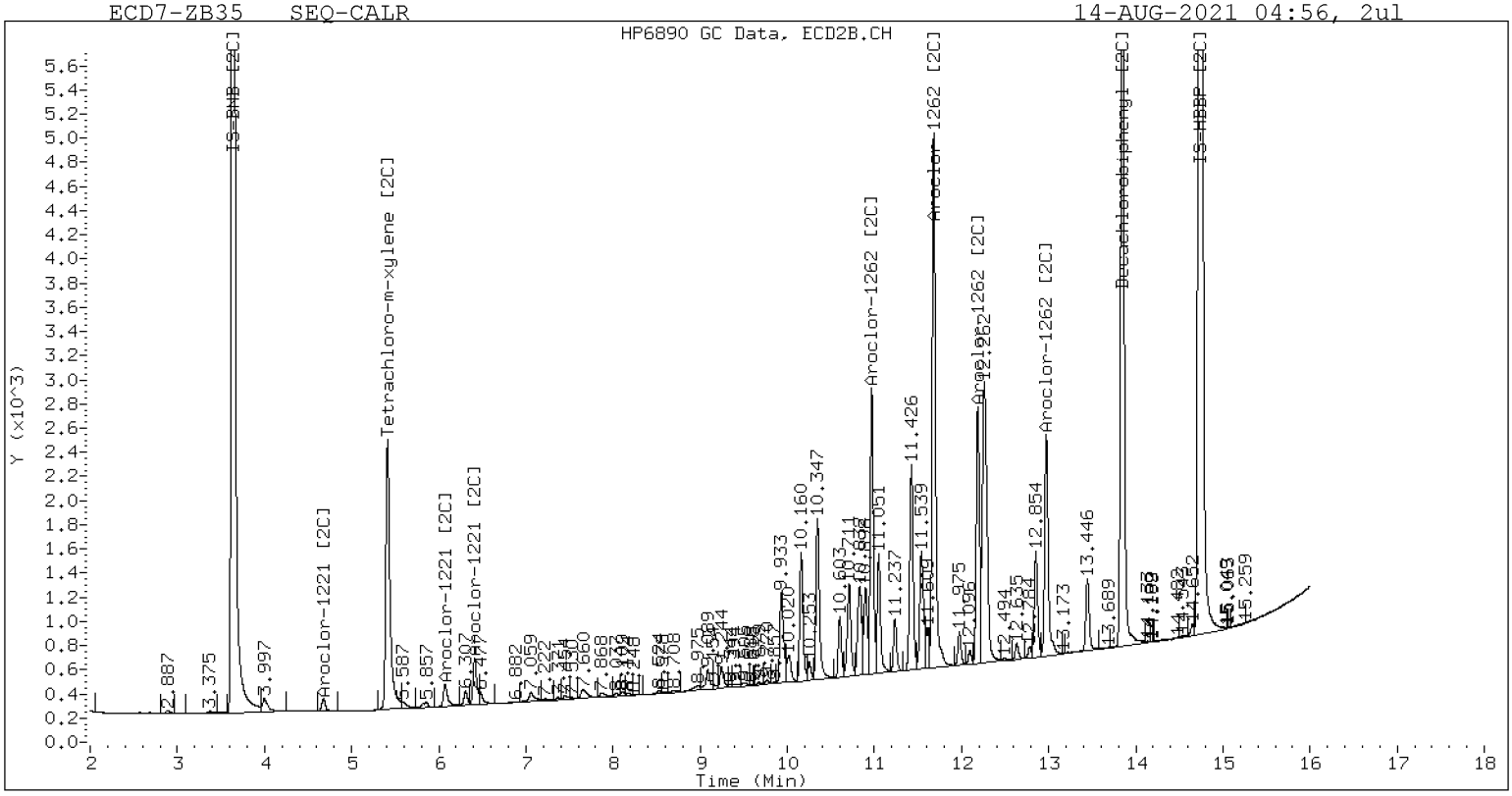
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALR 14-AUG-2021 04:56, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALR 14-AUG-2021 04:56, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132132ECD7.D
Data file 2: /210813.b/210813.b/08132132ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALS
Client ID:
Injection Date: 14-AUG-2021 05:16
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	131883	5.414	-0.003	376179	41.3	39.7	4.1	Tetrachloro-m-xylene
13.165	-0.000	165056	13.848	-0.032	866022	39.8	39.8	0.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264011	2.0
Hexabromobiphenyl	425681	456505	7.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	737936	2.4
Hexabromobiphenyl	863111	979376	13.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1221	1	4.015	-0.001	5527	265.1	1	4.677	0.000	13672	246.8
Aroclor-1221	2	5.452	0.001	9235	282.6	2	6.073	0.001	31880	251.4
Aroclor-1221	3	5.726	0.002	23772	269.2	3	6.411	0.002	56108	253.9
Total Col1Ave (3 peaks):				272.3		Total Col2Ave (3 peaks):			250.7	RPD = 8
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.386	0.002	70219	252.1	1	10.970	-0.001	293255	244.9
Aroclor-1262	2	11.456	0.002	46040	255.2	2	11.680	-0.005	600428	237.6
Aroclor-1262	3	11.629	0.002	65776	252.9	3	12.188	-0.000	279413	249.1
Aroclor-1262	4	12.277	0.003	54311	254.4	4	12.973	0.000	266174	254.6
Total Col1Ave (4 peaks):				253.7		Total Col2Ave (4 peaks):			246.6	RPD = 3
Corrected Ave (3 peaks):				253.1		Corrected Ave (3 peaks):			243.9	RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 1026843 Col1 Total PCB = 0.4 ppm*

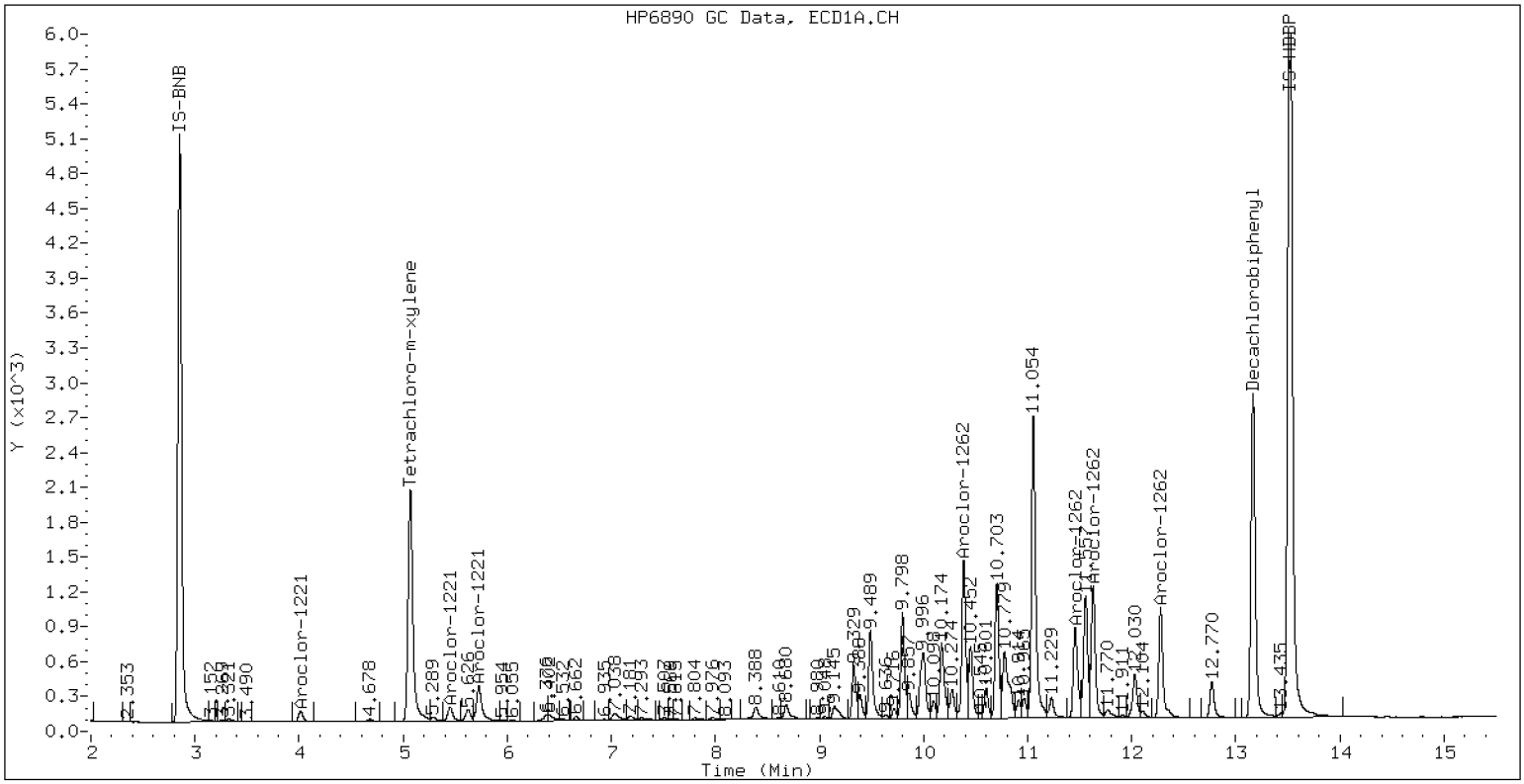
Total PCB Area Col2 (5.169 - 13.066) = 4215822 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

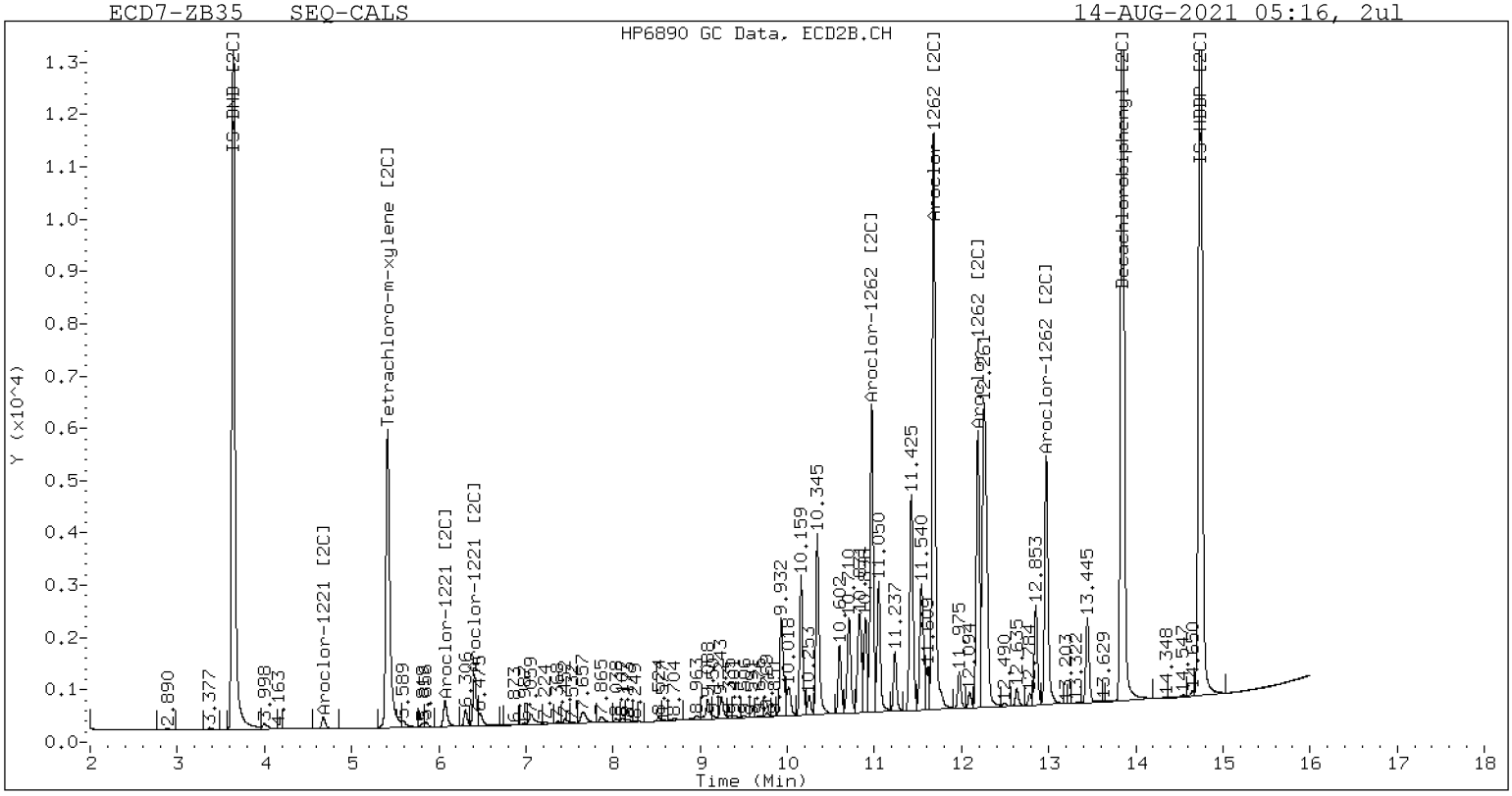
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALS 14-AUG-2021 05:16, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALS 14-AUG-2021 05:16, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132133ECD7.D
Data file 2: /210813.b/210813.b/08132133ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALT
Client ID:
Injection Date: 14-AUG-2021 05:37
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.070	0.001	261593	5.415	-0.002	728542	82.3	77.4	6.1	Tetrachloro-m-xylene
13.165	-0.001	319878	13.850	-0.030	1884507	78.6	86.8	9.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	262948	1.6
Hexabromobiphenyl	425681	448089	5.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	732298	1.6
Hexabromobiphenyl	863111	976792	13.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	4.015	0.000	9914	477.4	1	4.678	0.001	24750	450.3
Aroclor-1221	2	5.452	0.001	18189	558.8	2	6.073	0.001	62987	500.6
Aroclor-1221	3	5.727	0.002	45677	519.4	3	6.411	0.002	107101	488.4
Total Col1Ave (3 peaks): 518.6						Total Col2Ave (3 peaks): 479.7 RPD = 8				
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.384	0.000	139981	511.9	1	10.969	-0.002	560729	469.4
Aroclor-1262	2	11.455	0.001	94339	532.8	2	11.680	-0.006	1209233	479.8
Aroclor-1262	3	11.627	0.001	131117	513.6	3	12.187	-0.001	553441	494.7
Aroclor-1262	4	12.276	0.002	110529	527.4	4	12.972	-0.000	528567	507.0
Total Col1Ave (4 peaks): 521.5						Total Col2Ave (4 peaks): 487.7 RPD = 7				
Corrected Ave (3 peaks): 517.7						Corrected Ave (3 peaks): 481.3 RPD = 7				

Total PCB Area Col1 (5.169 - 13.066) = 2051470 Col1 Total PCB = 0.8 ppm*

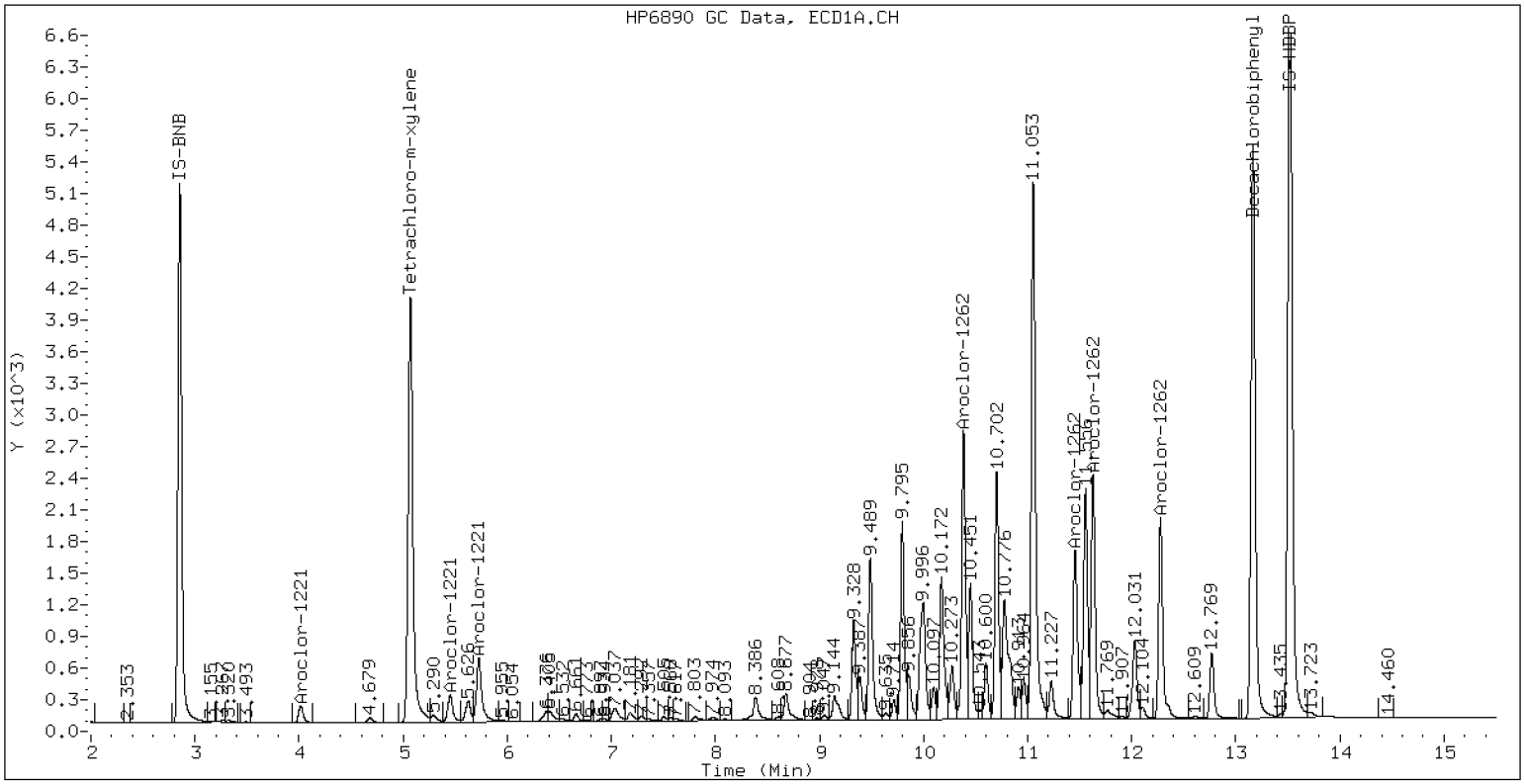
Total PCB Area Col2 (5.169 - 13.066) = 8265740 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

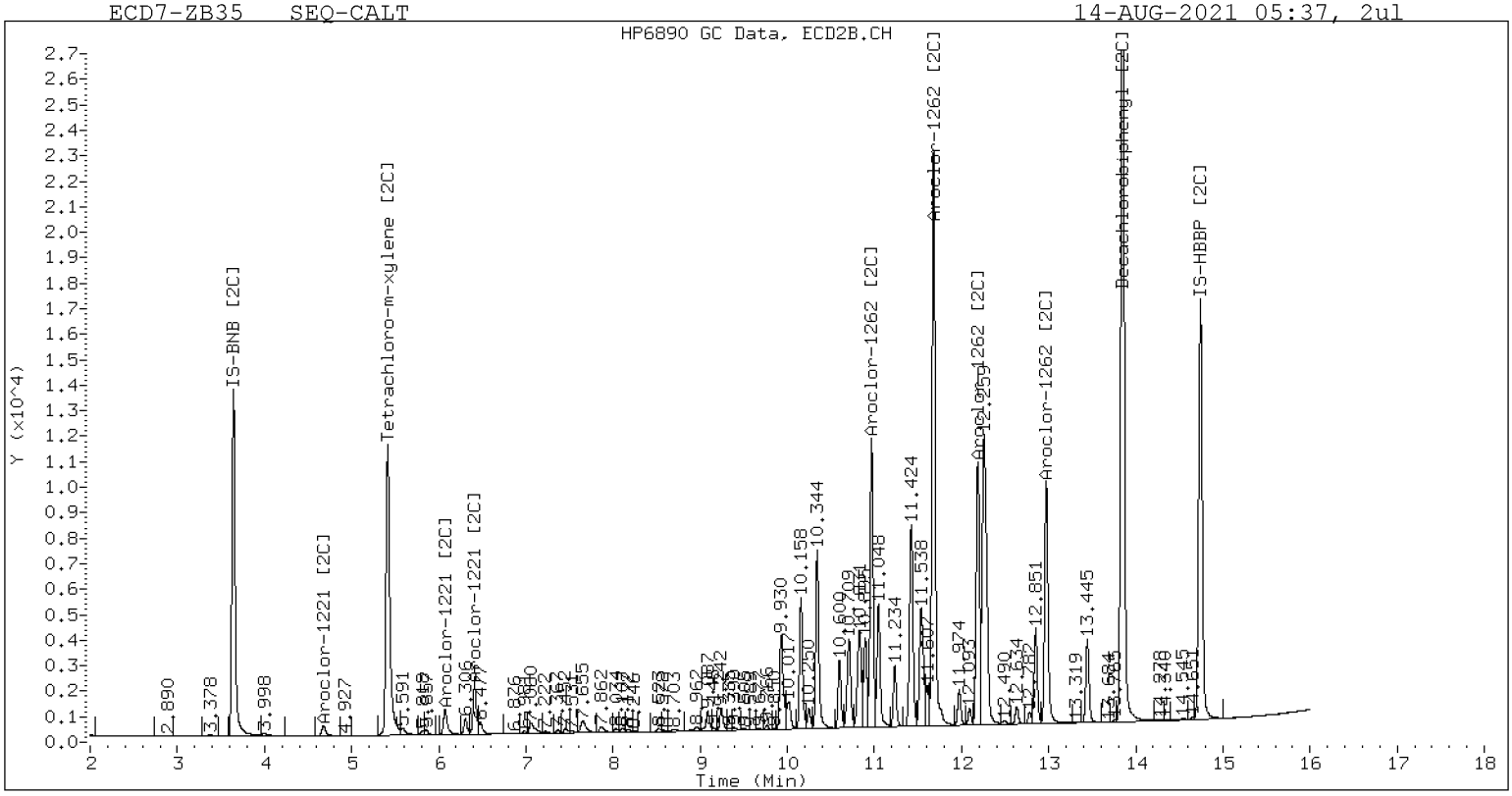
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALT 14-AUG-2021 05:37, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALT 14-AUG-2021 05:37, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132134ECD7.D
Data file 2: /210813.b/210813.b/08132134ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALU
Client ID:
Injection Date: 14-AUG-2021 05:57
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.070	0.001	562556	5.415	-0.002	1625558	158.0	155.7	1.5	Tetrachloro-m-xylene
13.166	0.000	683202	13.866	-0.014	4564195	148.8	181.4	19.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	294577	13.8
Hexabromobiphenyl	425681	505654	18.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	812370	12.7
Hexabromobiphenyl	863111	1132299	31.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	4.015	0.000	20398	876.9	1	4.677	0.000	48805	800.4
Aroclor-1221	2	5.451	0.000	39437	1081.5	2	6.072	0.000	133436	955.9
Aroclor-1221	3	5.724	0.000	95979	974.3	3	6.409	0.000	219752	903.3
Total Col1Ave (3 peaks): 977.5						Total Col2Ave (3 peaks): 886.5 RPD = 10				
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.384	0.000	299522	970.7	1	10.970	0.000	1249012	902.0
Aroclor-1262	2	11.454	0.000	210846	1055.2	2	11.685	0.000	3112273	1065.3
Aroclor-1262	3	11.627	0.000	284707	988.4	3	12.188	0.000	1248804	963.0
Aroclor-1262	4	12.274	0.000	225267	952.6	4	12.973	0.000	1179580	976.0
Total Col1Ave (4 peaks): 991.7						Total Col2Ave (4 peaks): 976.6 RPD = 2				
Corrected Ave (3 peaks): 970.5						Corrected Ave (3 peaks): 947.0 RPD = 2				

Total PCB Area Col1 (5.169 - 13.066) = 4488163 Col1 Total PCB = 1.5 ppm*

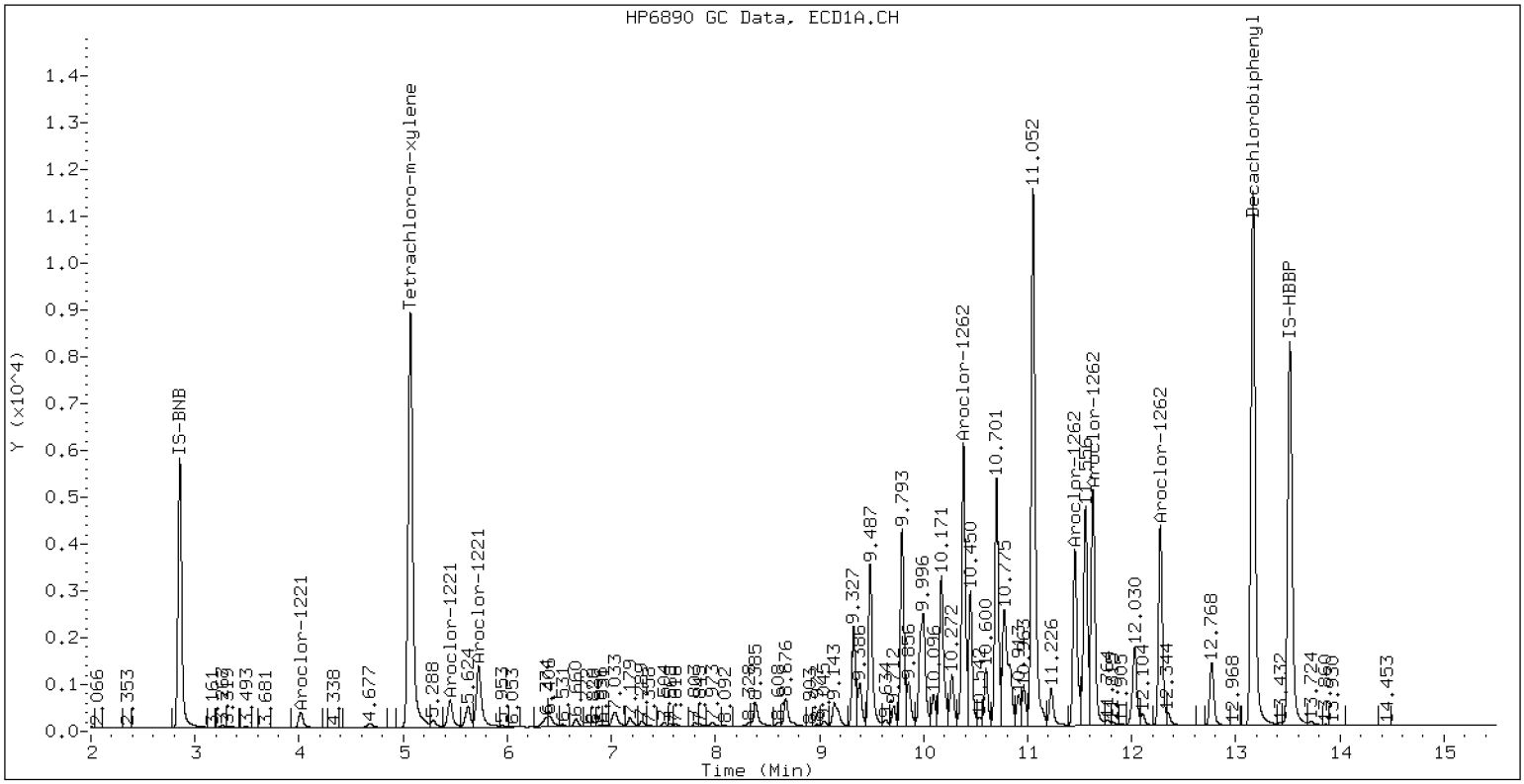
Total PCB Area Col2 (5.169 - 13.066) = 18583060 Col2 Total PCB = 1.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

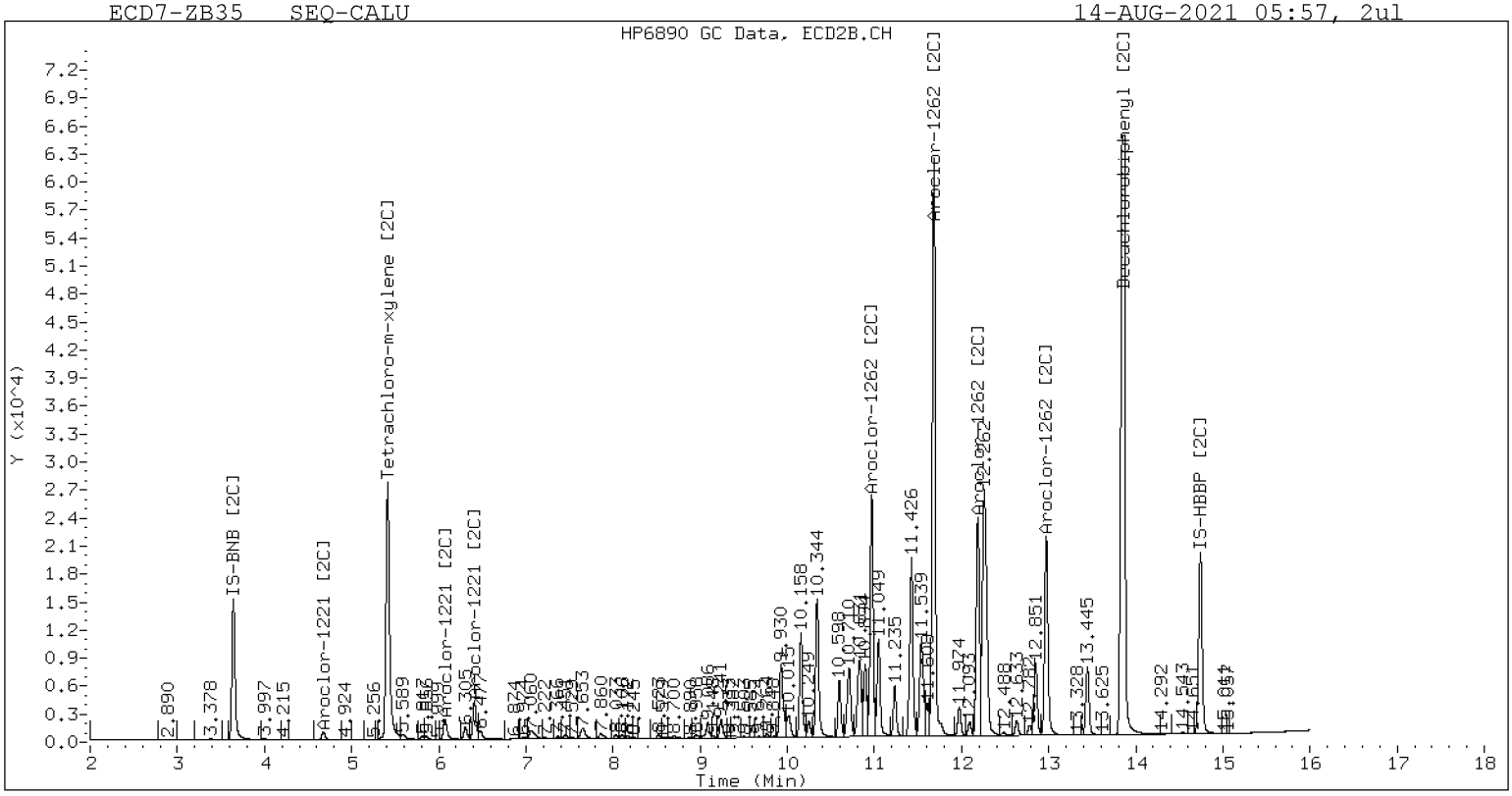
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALU 14-AUG-2021 05:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALU 14-AUG-2021 05:57, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132135ECD7.D
Data file 2: /210813.b/210813.b/08132135ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALV
Client ID:
Injection Date: 14-AUG-2021 06:18
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.000	9643	5.414	-0.003	29934	3.1	3.3	4.8	Tetrachloro-m-xylene
13.165	-0.001	19968	13.846	-0.034	99143	4.9	4.6	6.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	254258	-1.8
Hexabromobiphenyl	425681	446149	4.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	707863	-1.8
Hexabromobiphenyl	863111	962738	11.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1232	1	4.020	0.002	296	24.0	1	4.678	-0.001	716	22.6
Aroclor-1232	2	5.727	0.000	1256	18.7	2	7.057	-0.001	3688	20.0
Aroclor-1232	3	7.038	0.004	1441	14.1	3	7.661	0.010	7261	19.6
Aroclor-1232	4	7.976	0.003	573	13.6	4	8.524	0.002	1337	13.9
Total Col1Ave (4 peaks):					17.6	Total Col2Ave (4 peaks):				19.0 RPD = 8
Corrected Ave (3 peaks):					15.5	Corrected Ave (3 peaks):				17.8 RPD = 14
Aroclor-1268	1	11.560	0.003	12256	20.5	1	12.187	-0.013	58194	21.0
Aroclor-1268	2	11.629	0.003	13030	20.8	2	12.254	-0.013	63463	21.0
Aroclor-1268	3	12.001	0.001	10425	21.1	3	12.635	-0.009	52750	20.2
Aroclor-1268	4	12.771	-0.001	33702	21.2	4	12.783	0.000	12903	20.0
Total Col1Ave (4 peaks):					20.9	Total Col2Ave (4 peaks):				20.6 RPD = 1
Corrected Ave (3 peaks):					20.8	Corrected Ave (3 peaks):				20.4 RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 102693 Col1 Total PCB = 0.0 ppm*

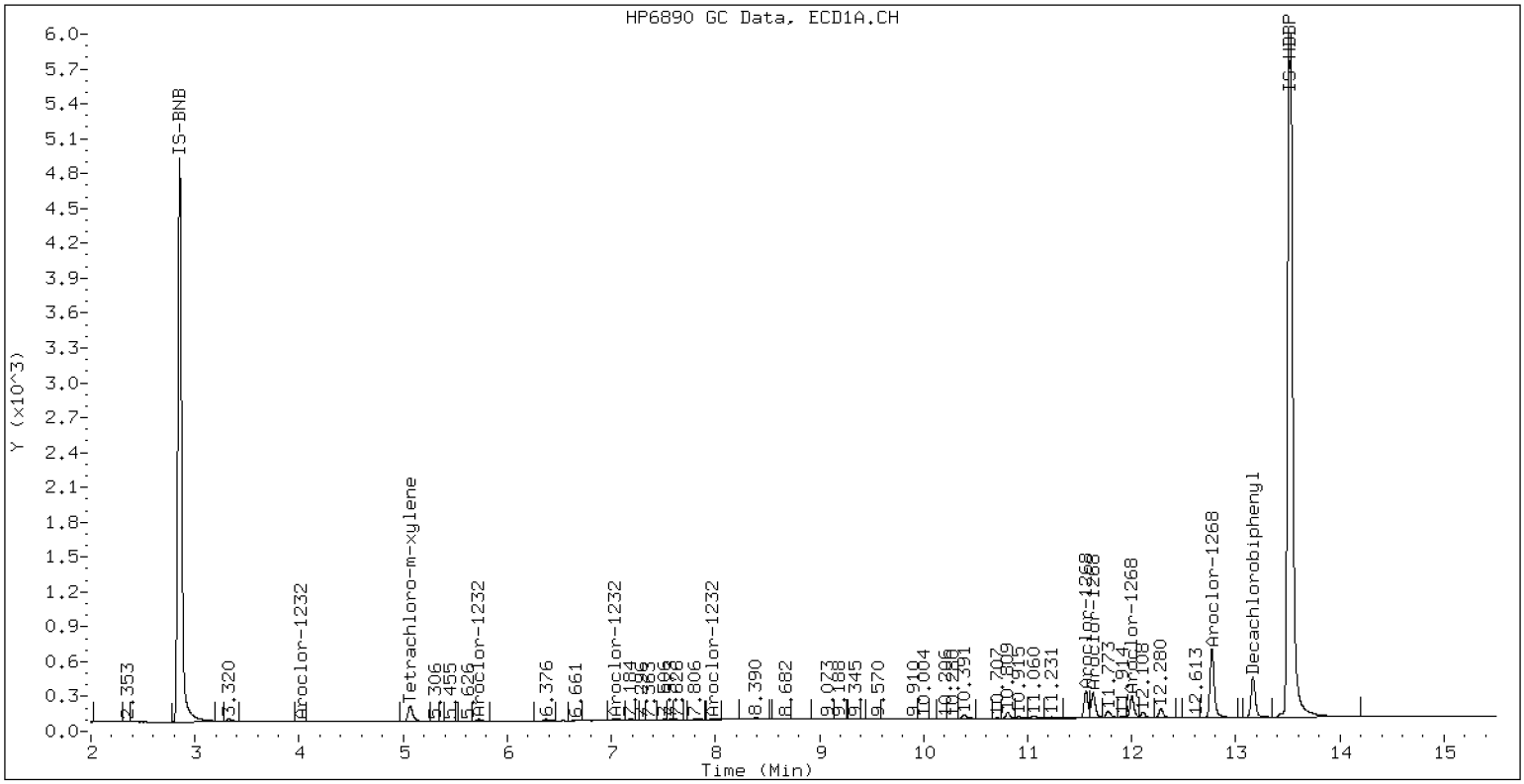
Total PCB Area Col2 (5.169 - 13.066) = 354263 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

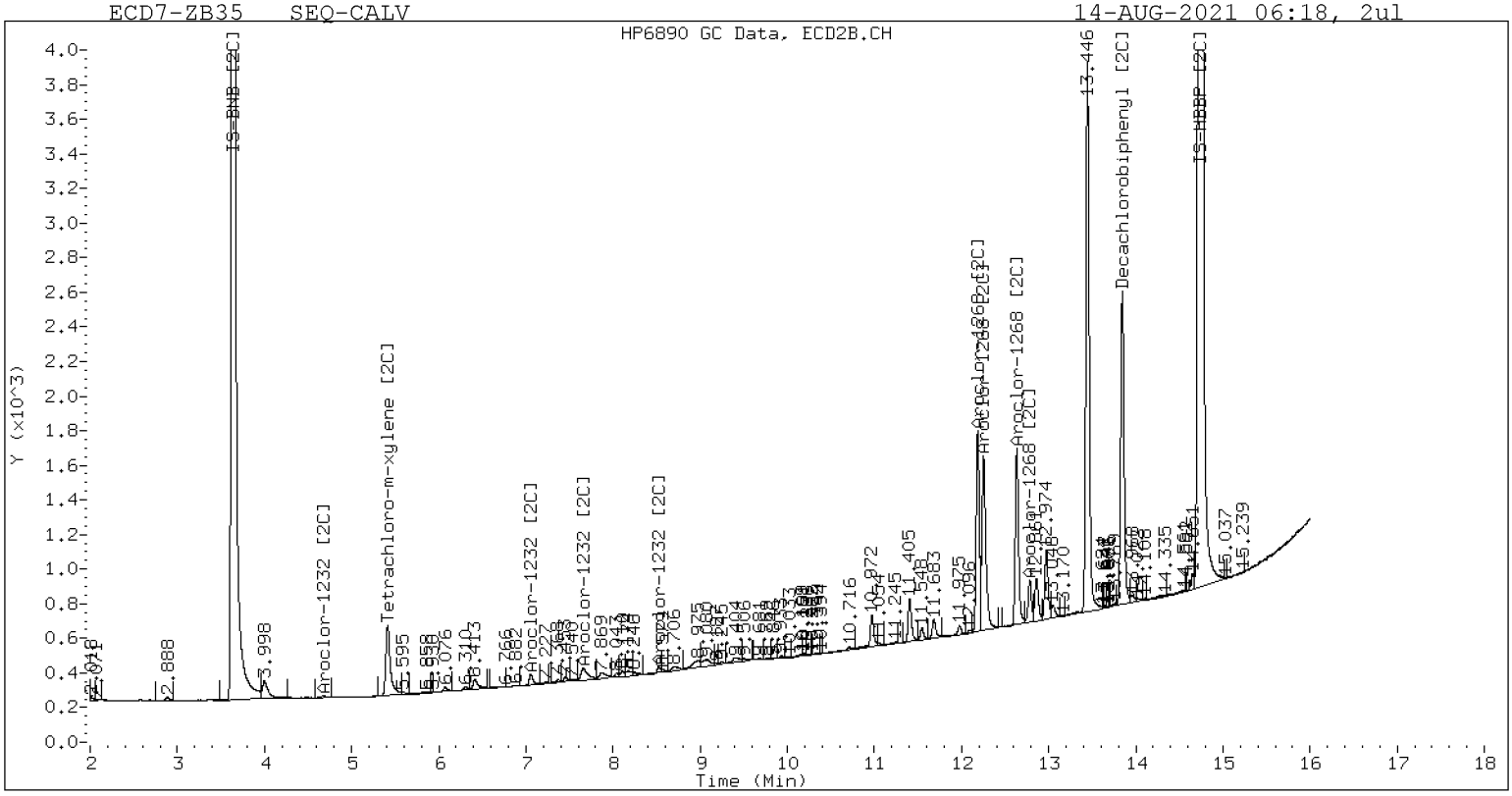
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALV 14-AUG-2021 06:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALV 14-AUG-2021 06:18, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132136ECD7.D
Data file 2: /210813.b/210813.b/08132136ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALW
Client ID:
Injection Date: 14-AUG-2021 06:38
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	24003	5.415	-0.002	72978	7.6	7.8	2.3	Tetrachloro-m-xylene
13.165	-0.000	48223	13.847	-0.033	249169	11.7	11.3	3.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261082	0.9
Hexabromobiphenyl	425681	453384	6.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	729748	1.2
Hexabromobiphenyl	863111	990035	14.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1232	1	4.014	-0.004	693	54.7	1	4.679	-0.000	1713	52.5
Aroclor-1232	2	5.728	0.001	3234	47.0	2	7.059	0.001	9583	50.3
Aroclor-1232	3	7.038	0.005	4620	44.0	3	7.657	0.006	19044	49.9
Aroclor-1232	4	7.976	0.004	1836	42.5	4	8.525	0.003	4225	42.5
Total Col1Ave (4 peaks):				47.0		Total Col2Ave (4 peaks):			48.8	RPD = 4
Corrected Ave (3 peaks):				44.5		Corrected Ave (3 peaks):			47.6	RPD = 7
Aroclor-1268	1	11.559	0.001	30240	49.7	1	12.187	-0.013	141412	49.7
Aroclor-1268	2	11.629	0.004	31897	50.0	2	12.255	-0.012	153603	49.5
Aroclor-1268	3	12.001	-0.000	25020	49.9	3	12.636	-0.008	132778	49.5
Aroclor-1268	4	12.771	-0.001	81764	50.5	4	12.783	0.000	32071	48.3
Total Col1Ave (4 peaks):				50.0		Total Col2Ave (4 peaks):			49.3	RPD = 2
Corrected Ave (3 peaks):				49.9		Corrected Ave (3 peaks):			49.1	RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 250584 Col1 Total PCB = 0.1 ppm*

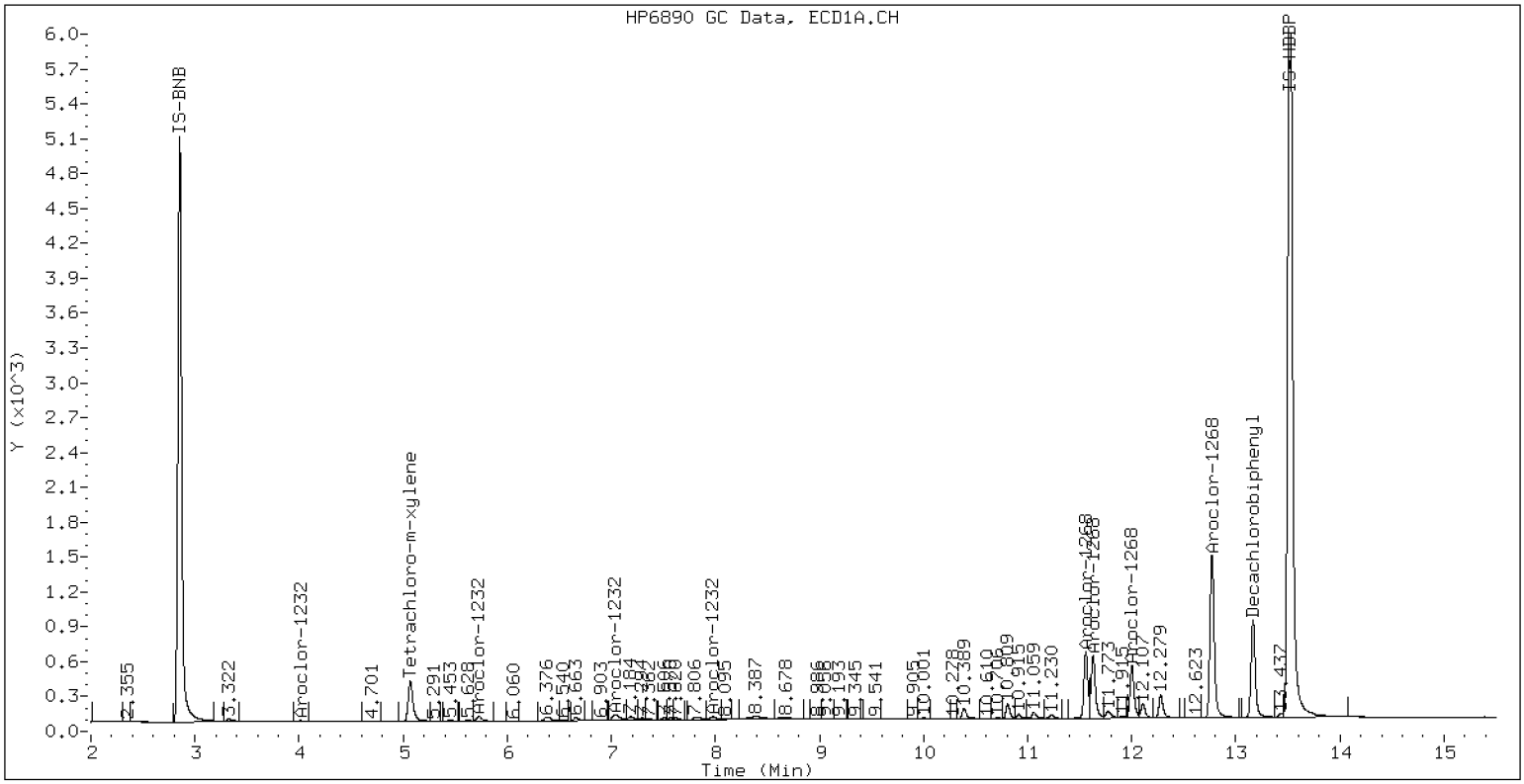
Total PCB Area Col2 (5.169 - 13.066) = 853194 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

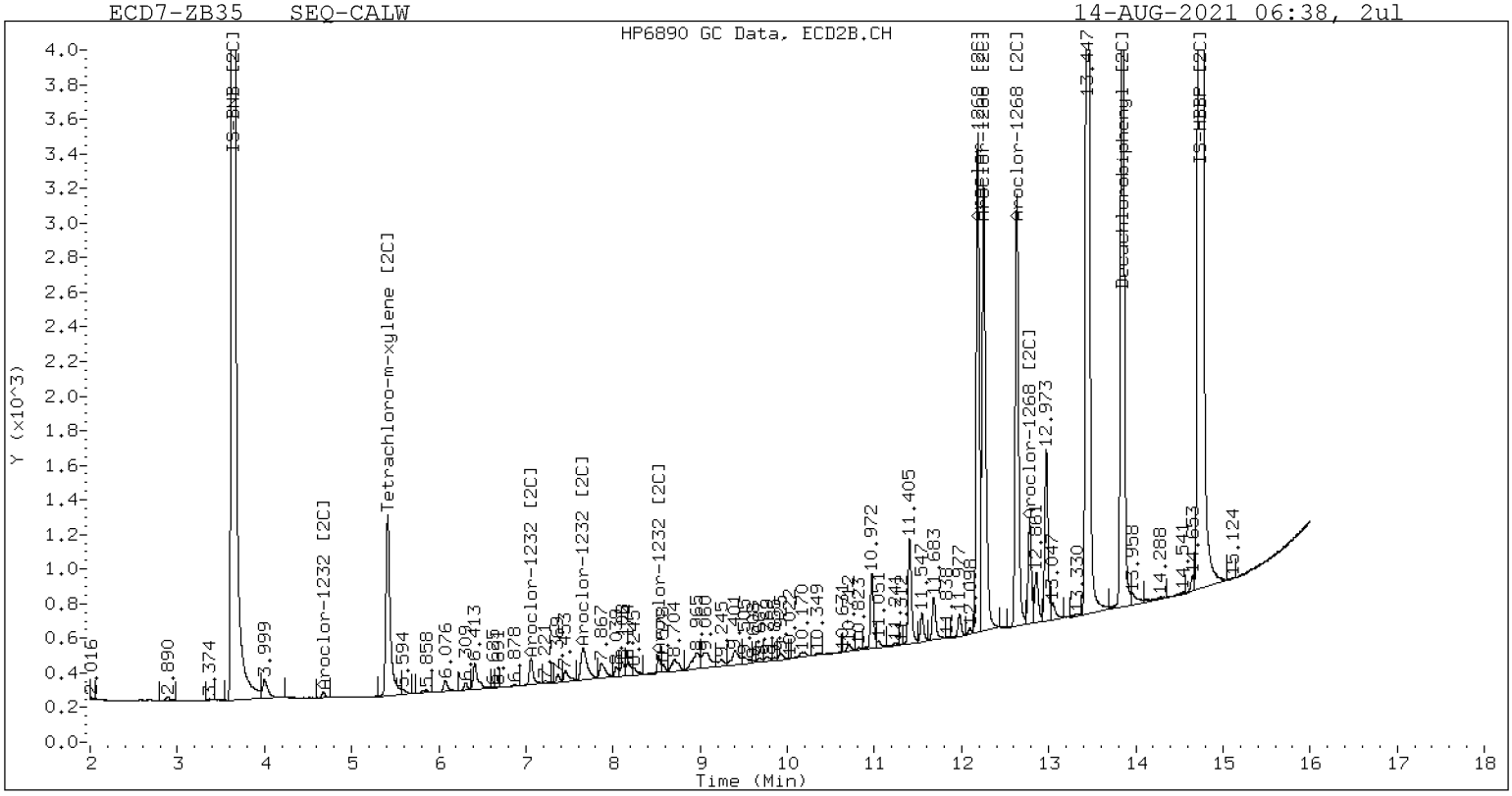
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALW 14-AUG-2021 06:38, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALW 14-AUG-2021 06:38, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132137ECD7.D
Data file 2: /210813.b/210813.b/08132137ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALX
Client ID:
Injection Date: 14-AUG-2021 06:59
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	49889	5.416	-0.001	148390	15.6	15.6	0.3	Tetrachloro-m-xylene
13.165	-0.001	98406	13.848	-0.032	525364	23.4	22.9	2.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	265413	2.5
Hexabromobiphenyl	425681	463901	9.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740090	2.7
Hexabromobiphenyl	863111	1032553	19.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1232	1	4.017	-0.001	1235	95.9	1	4.680	0.001	3647	110.3
Aroclor-1232	2	5.728	0.001	7030	100.5	2	7.058	0.000	19630	101.6
Aroclor-1232	3	7.038	0.004	10782	101.0	3	7.657	0.006	37360	96.6
Aroclor-1232	4	7.976	0.003	4640	105.6	4	8.524	0.002	10591	105.1

Total Col1Ave (4 peaks): 100.8 Total Col2Ave (4 peaks): 103.4 RPD = 3
Corrected Ave (3 peaks): 99.1 Corrected Ave (3 peaks): 101.1 RPD = 2

Aroclor-1268	1	11.558	0.001	61752	99.2	1	12.187	-0.013	286554	96.6
Aroclor-1268	2	11.627	0.001	65121	99.7	2	12.254	-0.013	318003	98.2
Aroclor-1268	3	12.000	-0.001	50803	98.9	3	12.635	-0.009	274169	98.0
Aroclor-1268	4	12.771	-0.001	165518	99.9	4	12.784	0.001	67494	97.5

Total Col1Ave (4 peaks): 99.5 Total Col2Ave (4 peaks): 97.6 RPD = 2
Corrected Ave (3 peaks): 99.3 Corrected Ave (3 peaks): 97.4 RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 513695 Col1 Total PCB = 0.2 ppm*

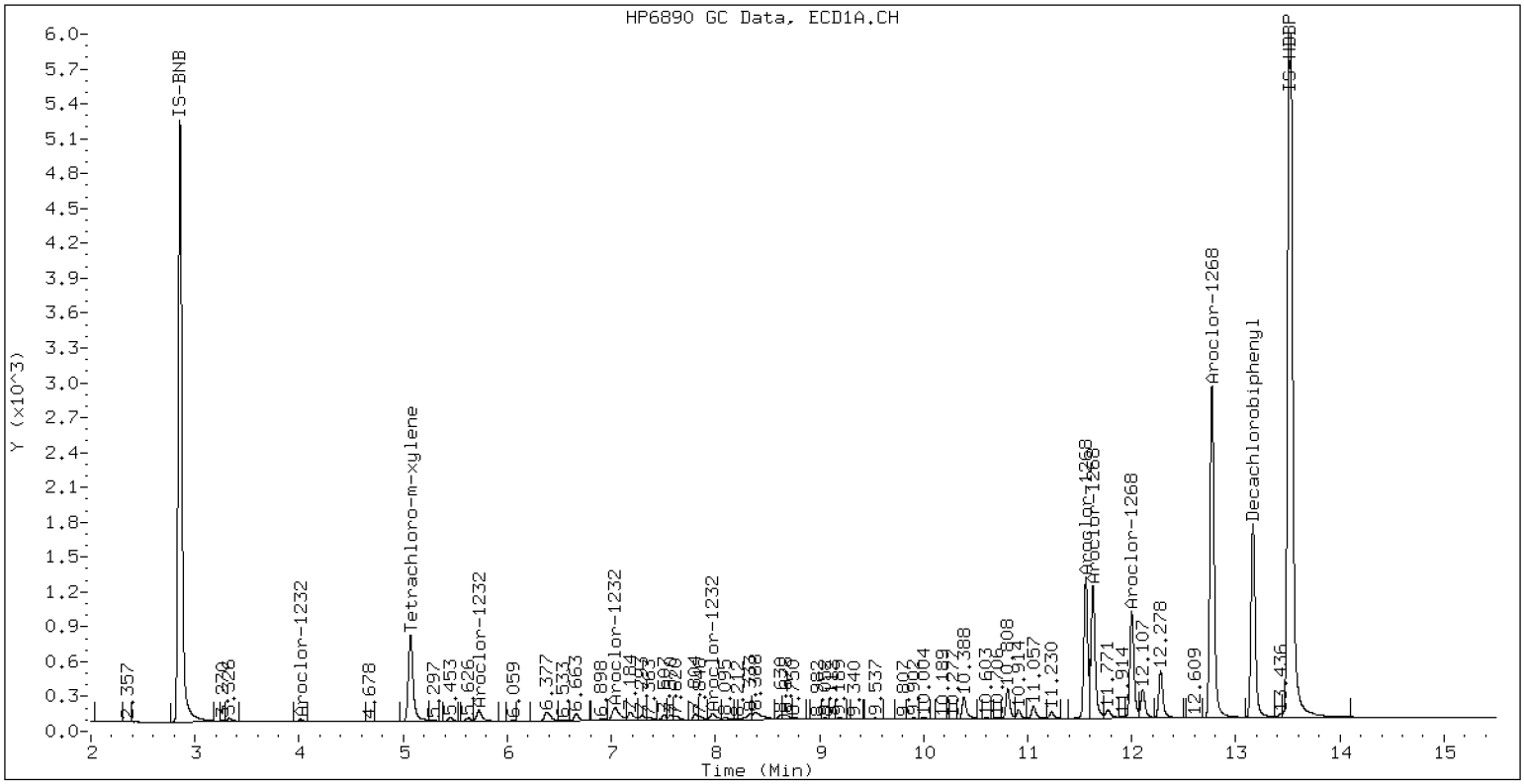
Total PCB Area Col2 (5.169 - 13.066) = 1706857 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

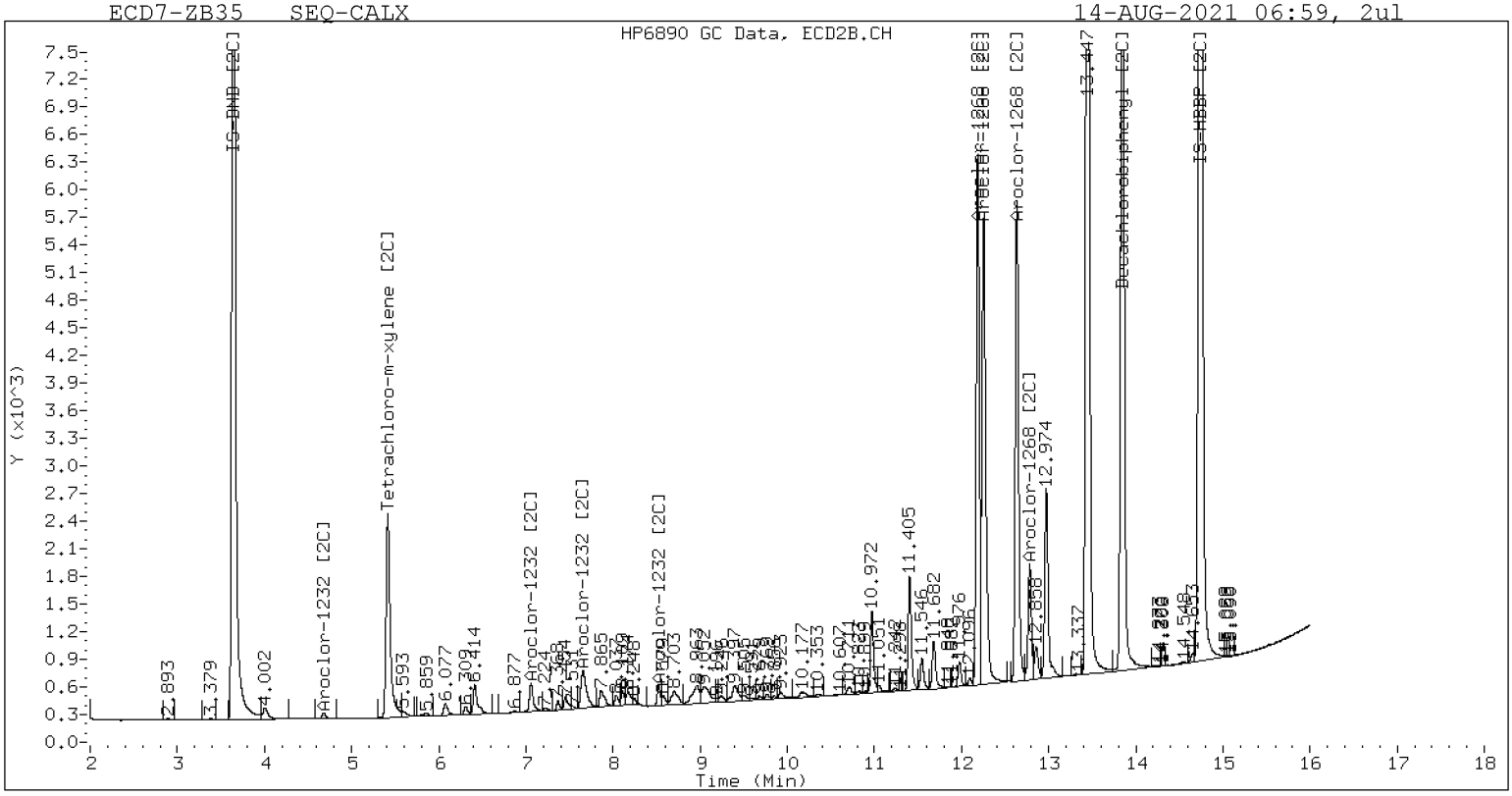
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALX 14-AUG-2021 06:59, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALX 14-AUG-2021 06:59, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132138ECD7.D
Data file 2: /210813.b/210813.b/08132138ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALY
Client ID:
Injection Date: 14-AUG-2021 07:19
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	129369	5.416	-0.001	369707	40.2	38.8	3.6	Tetrachloro-m-xylene
13.165	-0.000	244475	13.848	-0.032	1336972	57.7	58.2	0.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	266253	2.9
Hexabromobiphenyl	425681	467157	9.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	742059	2.9
Hexabromobiphenyl	863111	1034201	19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1232	1	4.018	0.000	3075	238.1	1	4.679	-0.000	8167	246.2
Aroclor-1232	2	5.727	0.001	18684	266.2	2	7.059	0.001	49856	257.3
Aroclor-1232	3	7.036	0.002	29135	272.0	3	7.656	0.005	96288	248.3
Aroclor-1232	4	7.975	0.003	12195	276.7	4	8.523	0.001	28914	286.2
Total Col1Ave (4 peaks):					263.3	Total Col2Ave (4 peaks):				259.5 RPD = 1
Corrected Ave (3 peaks):					258.8	Corrected Ave (3 peaks):				250.6 RPD = 3
Aroclor-1268	1	11.557	-0.000	156710	250.0	1	12.186	-0.014	708061	238.3
Aroclor-1268	2	11.625	-0.000	164056	249.5	2	12.255	-0.012	797204	245.9
Aroclor-1268	3	12.000	-0.001	128182	247.9	3	12.636	-0.008	704909	251.5
Aroclor-1268	4	12.770	-0.002	406812	243.9	4	12.784	0.001	176627	254.8
Total Col1Ave (4 peaks):					247.8	Total Col2Ave (4 peaks):				247.6 RPD = 0
Corrected Ave (3 peaks):					247.1	Corrected Ave (3 peaks):				245.2 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 1301292 Col1 Total PCB = 0.5 ppm*

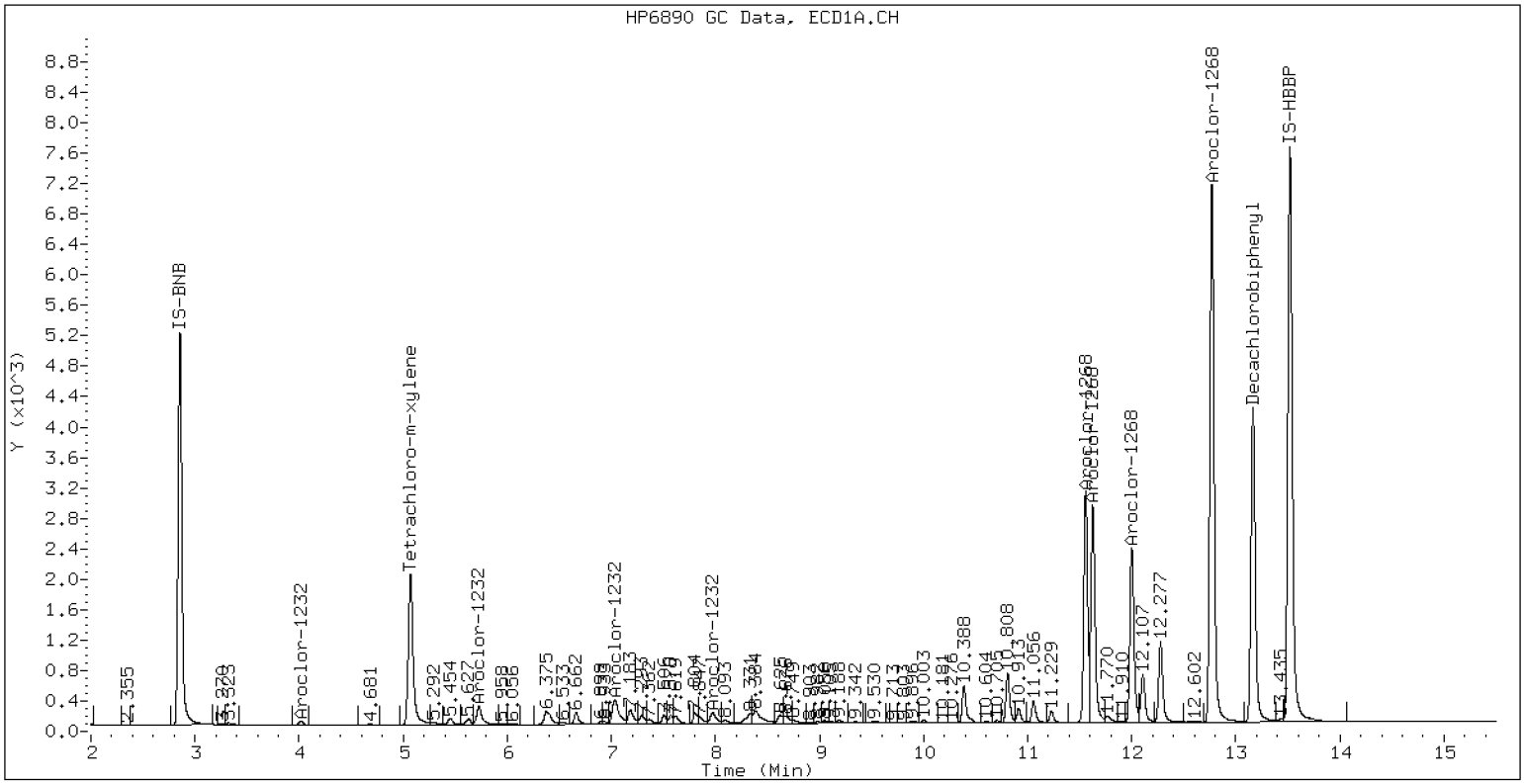
Total PCB Area Col2 (5.169 - 13.066) = 4281499 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

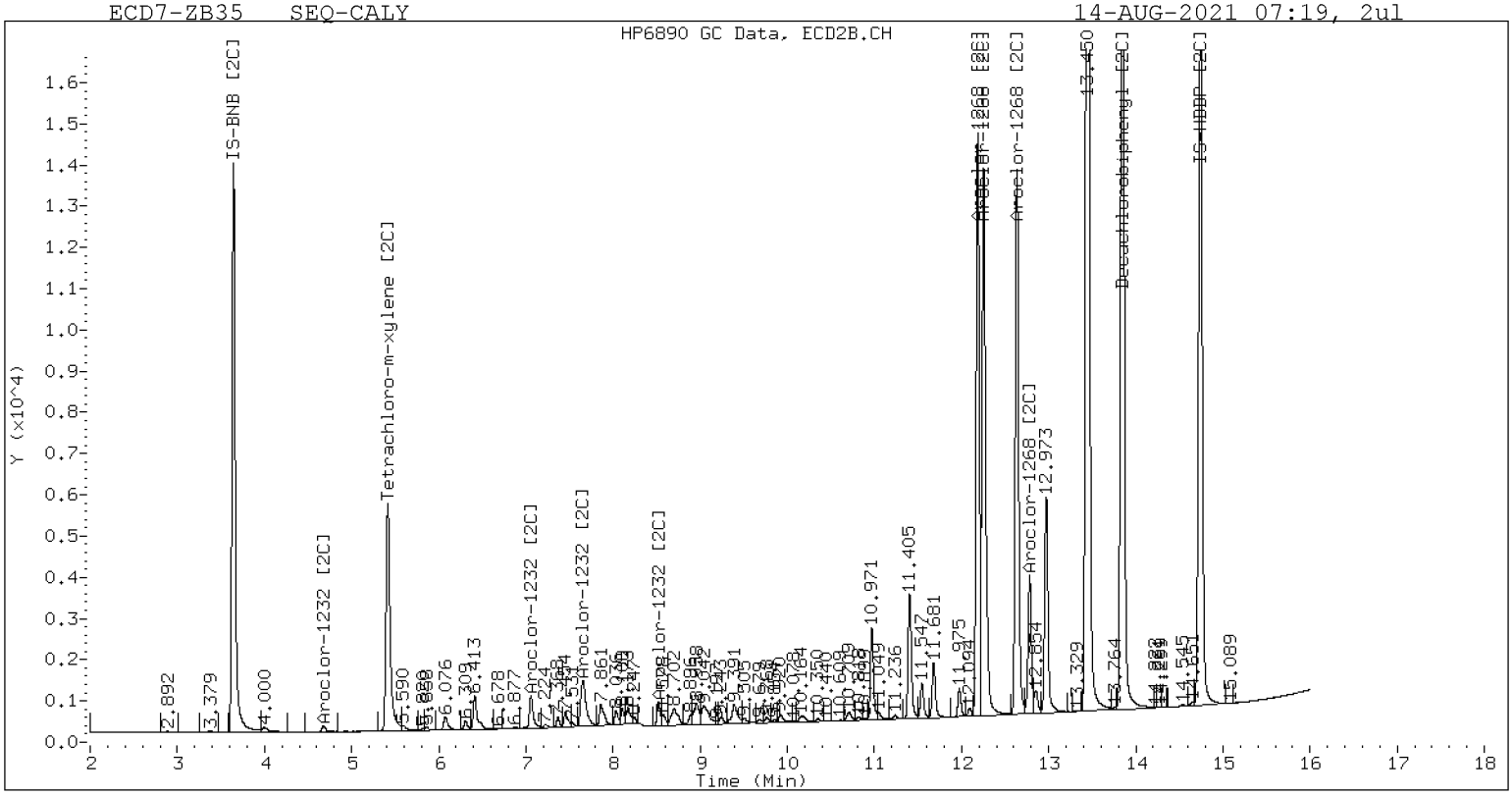
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALY 14-AUG-2021 07:19, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALY 14-AUG-2021 07:19, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132139ECD7.D
Data file 2: /210813.b/210813.b/08132139ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALZ
Client ID:
Injection Date: 14-AUG-2021 07:40
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.071	0.002	257867	5.415	-0.001	723234	80.8	76.2	5.8	Tetrachloro-m-xylene
13.165	-0.001	471498	13.853	-0.027	2944011	114.3	128.5	11.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264183	2.1
Hexabromobiphenyl	425681	454251	6.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	738334	2.4
Hexabromobiphenyl	863111	1031400	19.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1232	1	4.016	-0.002	5996	468.0	1	4.679	-0.000	14925	452.3
Aroclor-1232	2	5.728	0.001	36550	524.8	2	7.059	0.000	96476	500.3
Aroclor-1232	3	7.036	0.002	60788	571.9	3	7.654	0.003	201408	521.9
Aroclor-1232	4	7.973	0.001	25380	580.5	4	8.523	0.001	56734	564.3
Total Col1Ave (4 peaks):					536.3	Total Col2Ave (4 peaks):				509.7 RPD = 5
Corrected Ave (3 peaks):					521.6	Corrected Ave (3 peaks):				491.5 RPD = 6
Aroclor-1268	1	11.557	-0.000	307970	505.3	1	12.192	-0.008	1533537	517.5
Aroclor-1268	2	11.626	0.001	321316	502.6	2	12.256	-0.011	1606143	496.7
Aroclor-1268	3	12.001	0.000	251993	501.1	3	12.638	-0.006	1415992	506.6
Aroclor-1268	4	12.770	-0.002	791865	488.2	4	12.783	-0.000	359269	519.7
Total Col1Ave (4 peaks):					499.3	Total Col2Ave (4 peaks):				510.1 RPD = 2
Corrected Ave (3 peaks):					497.3	Corrected Ave (3 peaks):				506.9 RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 2578632 Col1 Total PCB = 1.0 ppm*

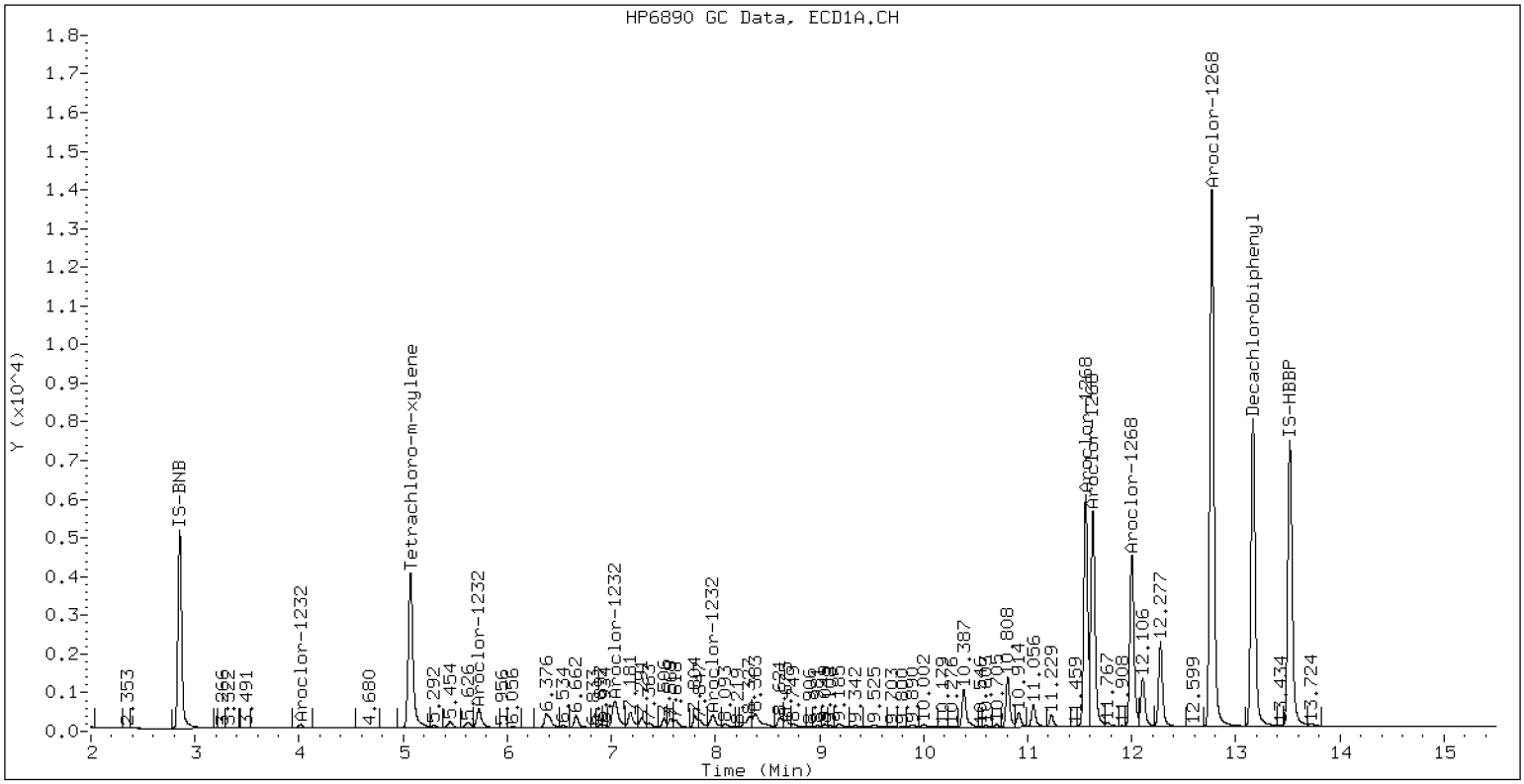
Total PCB Area Col2 (5.169 - 13.066) = 8685361 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

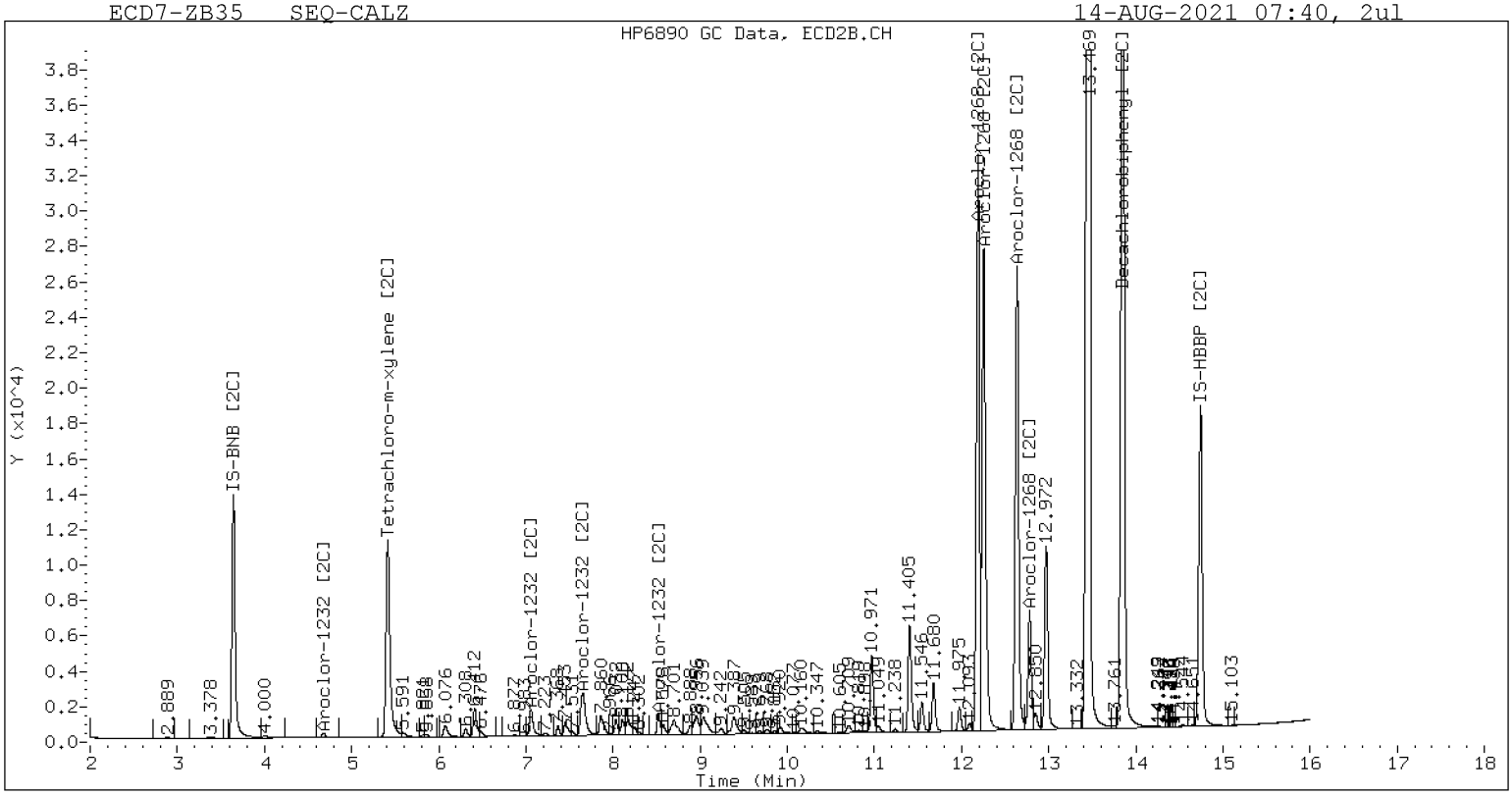
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALZ 14-AUG-2021 07:40, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALZ 14-AUG-2021 07:40, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132140ECD7.D
Data file 2: /210813.b/210813.b/08132140ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALAA
Client ID:
Injection Date: 14-AUG-2021 08:00
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.072	0.003	559035	5.417	0.000	1626007	157.4	154.5	1.9	Tetrachloro-m-xylene
13.166	-0.000	1024984	13.880	-0.000	6105079	220.9	239.7	8.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	293830	13.5
Hexabromobiphenyl	425681	511240	20.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	819127	13.6
Hexabromobiphenyl	863111	1146408	32.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1232	1	4.018	0.000	12215	857.2	1	4.679	-0.000	30237	825.9
Aroclor-1232	2	5.726	0.000	77780	1004.1	2	7.058	0.000	203525	951.4
Aroclor-1232	3	7.034	0.000	138859	1174.6	3	7.651	0.000	435631	1017.5
Aroclor-1232	4	7.972	0.000	55694	1145.2	4	8.522	-0.000	126225	1131.7
Total Col1Ave (4 peaks): 1045.3						Total Col2Ave (4 peaks): 981.6				RPD = 6
Corrected Ave (3 peaks): 1002.2						Corrected Ave (3 peaks): 931.6				RPD = 7
Aroclor-1268	1	11.557	0.000	671468	979.0	1	12.200	-0.000	3980707	1208.5
Aroclor-1268	2	11.626	0.000	691891	961.7	2	12.267	-0.000	4248856	1182.1
Aroclor-1268	3	12.001	0.000	545758	964.4	3	12.644	0.000	3756866	1209.3
Aroclor-1268	4	12.772	0.000	1790032	980.6	4	12.783	0.000	815617	1061.4
Total Col1Ave (4 peaks): 971.4						Total Col2Ave (4 peaks): 1165.3				RPD = 18
Corrected Ave (3 peaks): 968.3						Corrected Ave (3 peaks): 1150.7				RPD = 17

Total PCB Area Col1 (5.169 - 13.066) = 5695380 Col1 Total PCB = 1.9 ppm*

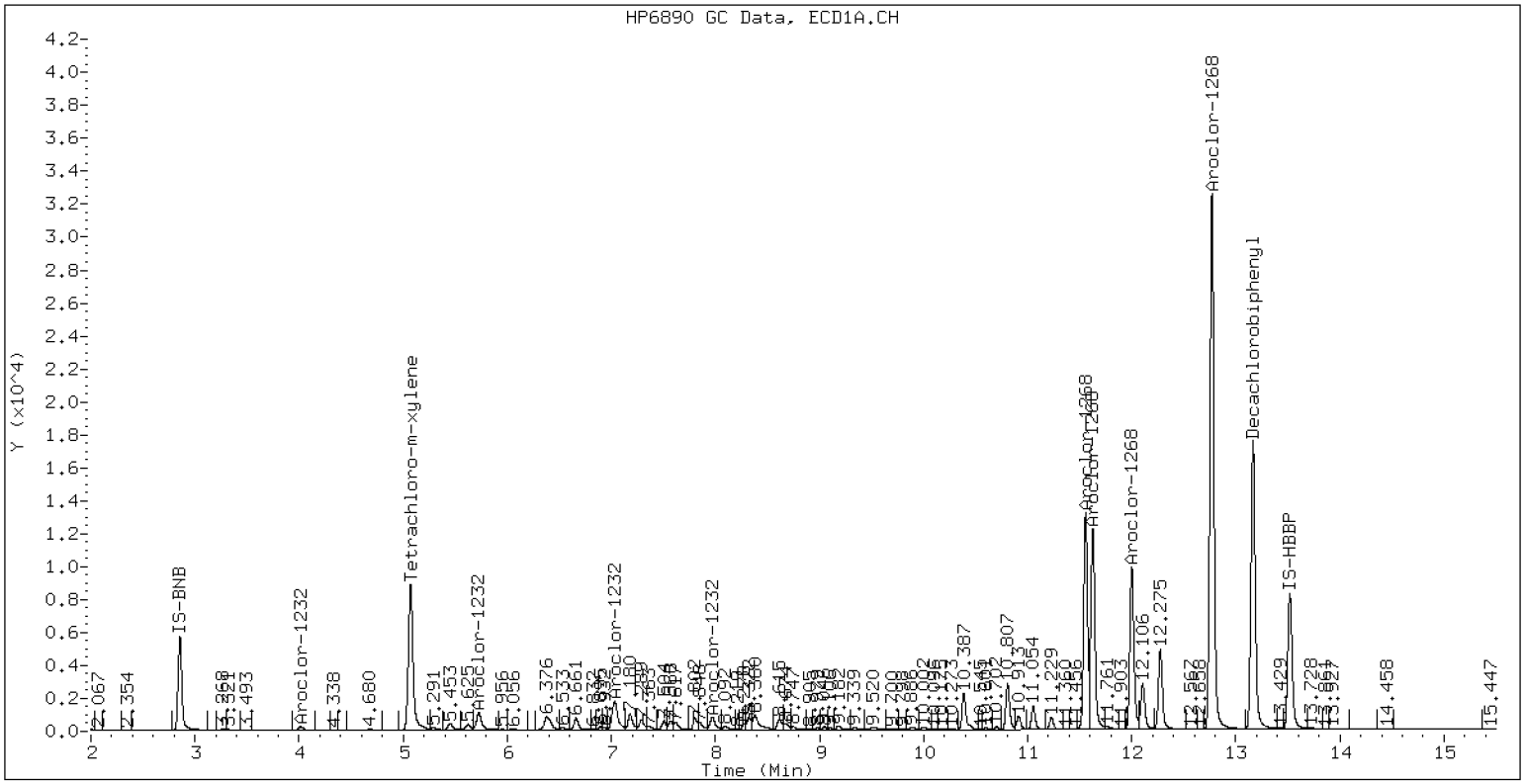
Total PCB Area Col2 (5.169 - 13.066) = 21104177 Col2 Total PCB = 1.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

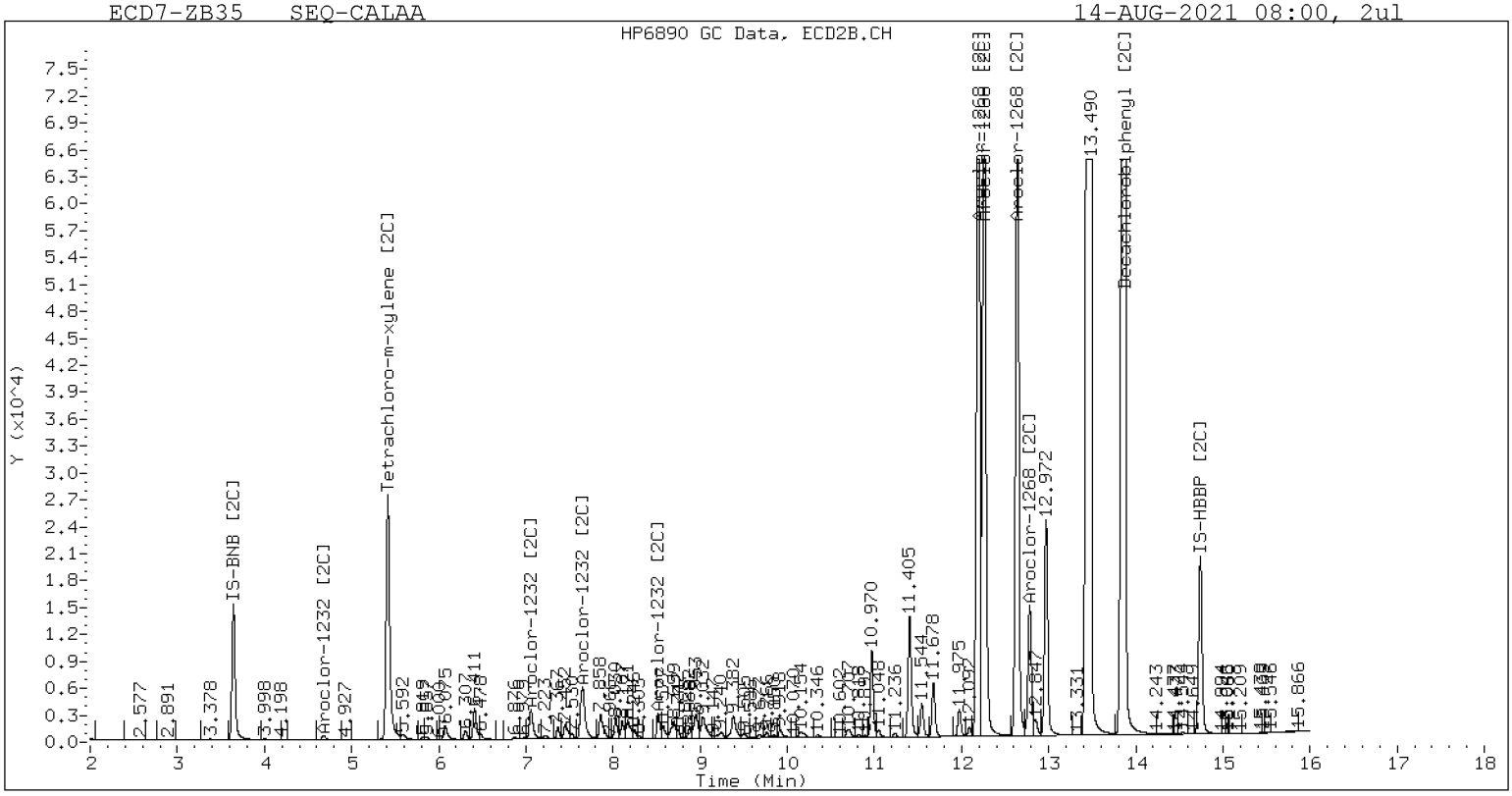
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALAA 14-AUG-2021 08:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALAA 14-AUG-2021 08:00, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132141ECD7.D
Data file 2: /210813.b/210813.b/08132141ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV1
Client ID:
Injection Date: 14-AUG-2021 08:21
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	130620	5.416	-0.001	380301	43.6	41.9	4.0	Tetrachloro-m-xylene
13.166	0.000	166891	13.848	-0.032	891664	41.9	41.2	1.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	247644	-4.3
Hexabromobiphenyl	425681	438534	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	705551	-2.1
Hexabromobiphenyl	863111	973863	12.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.004	25008	284.7	1	7.059	0.002	110603	274.9
Aroclor-1016	2	7.036	0.006	75849	282.4	2	7.653	0.006	251287	279.2
Aroclor-1016	3	7.182	0.006	34421	285.6	3	7.860	0.005	101098	286.3
Aroclor-1016	4	7.291	0.006	21611	286.0	4	8.108	0.003	60866	284.8
Total Col1Ave (4 peaks):					284.7	Total Col2Ave (4 peaks):				281.3 RPD = 1
Corrected Ave (3 peaks):					284.2	Corrected Ave (3 peaks):				279.6 RPD = 2
Aroclor-1221	1	4.024	0.008	183	9.4	1	4.683	0.006	532	10.0
Aroclor-1221	2	5.453	0.002	3388	110.5	2	6.080	0.008	14283	117.8
Aroclor-1221	3	5.728	0.004	17440	210.6	3	6.414	0.005	53146	251.5
Total Col1Ave (3 peaks):					110.2	Total Col2Ave (3 peaks):				126.5 RPD = 14
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.024	0.006	183	15.2	1	4.683	0.004	532	16.9
Aroclor-1232	2	5.728	0.002	17440	267.1	2	7.059	0.001	110603	600.3
Aroclor-1232	3	7.036	0.002	75849	761.3	3	7.653	0.002	251287	681.4
Aroclor-1232	4	7.973	0.001	32123	783.7	4	8.522	0.000	77885	810.7
Total Col1Ave (4 peaks):					456.8	Total Col2Ave (4 peaks):				527.3 RPD = 14
Corrected Ave (3 peaks):					347.9	Corrected Ave (3 peaks):				432.8 RPD = 22
Aroclor-1242	1	6.662	0.003	25008	366.5	1	7.059	0.002	110603	341.0
Aroclor-1242	2	7.036	0.006	75849	372.9	2	7.653	0.005	251287	356.6
Aroclor-1242	3	8.386	0.011	23127	200.7	3	8.934	-0.015	43631	132.5
Aroclor-1242	4	8.601	-0.072	2264	48.1	4	9.087	0.060	61086	163.5
Total Col1Ave (4 peaks):					247.1	Total Col2Ave (4 peaks):				248.4 RPD = 1
Corrected Ave (3 peaks):					205.1	Corrected Ave (3 peaks):				212.3 RPD = 3
Aroclor-1248	1	7.803	0.005	21981	211.8	1	8.108	0.002	60866	208.2
Aroclor-1248	2	7.973	0.005	32123	237.1	2	8.522	0.002	77885	218.9
Aroclor-1248	3	8.386	0.011	23127	116.6	3	8.934	-0.013	43631	77.0
Aroclor-1248	4	8.678	0.004	18050	159.4	4	9.393	0.016	3902	8.1
Total Col1Ave (4 peaks):					181.2	Total Col2Ave (4 peaks):				128.0 RPD = 34
Corrected Ave (3 peaks):					162.6	Corrected Ave (3 peaks):				97.8 RPD = 50*
Aroclor-1254	1	8.678	0.003	18050	84.5	1	9.242	0.003	55374	92.2
Aroclor-1254	2	---			0.0	2	9.393	0.062	3902	11.1
Aroclor-1254	3	9.048	0.006	1874	13.5	3	9.768	0.005	7503	16.4
Aroclor-1254	4	9.179	0.003	8064	30.3	4	9.930	0.017	138725	136.8
Aroclor-1254	5	9.859	-0.008	24786	148.4	5	10.160	0.012	181859	176.8
Total Col1Ave (4 peaks):					69.2	Total Col2Ave (5 peaks):				86.7 RPD = 22
Corrected Ave (3 peaks):					42.8	Corrected Ave (4 peaks):				64.1 RPD = 40*
Aroclor-1260	1	10.386	0.003	52476	266.0	1	11.427	0.002	206923	255.6
Aroclor-1260	2	10.705	0.005	54460	281.2	2	11.681	-0.000	606031	257.6
Aroclor-1260	3	11.055	0.005	146267	279.5	3	12.264	0.003	390976	258.4
Aroclor-1260	4	11.458	0.005	67567	289.8	4	12.974	0.002	190042	262.7
Aroclor-1260	5	11.557	0.003	30592	262.0	NS	---			----
Total Col1Ave (5 peaks):					275.7	Total Col2Ave (4 peaks):				258.6 RPD = 6
Corrected Ave (4 peaks):					272.2	Corrected Ave (3 peaks):				257.2 RPD = 6
Aroclor-1262	1	10.386	0.002	52476	196.1	1	10.970	-0.000	227139	190.7
Aroclor-1262	2	11.458	0.003	67567	389.9	2	11.681	-0.004	606031	241.2
Aroclor-1262	3	11.630	0.003	39662	158.8	3	12.190	0.002	176119	157.9
Aroclor-1262	4	12.278	0.004	37281	181.8	4	12.974	0.001	190042	182.8
Total Col1Ave (4 peaks):					231.6	Total Col2Ave (4 peaks):				193.2 RPD = 18
Corrected Ave (3 peaks):					178.9	Corrected Ave (3 peaks):				177.2 RPD = 1
Aroclor-1268	1	11.557	-0.000	30592	52.0	1	12.190	-0.010	176119	62.9
Aroclor-1268	2	11.630	0.004	39662	64.3	2	12.264	-0.003	390976	128.0
Aroclor-1268	3	12.031	0.031	15649	32.2	3	12.637	-0.007	5866	2.2
Aroclor-1268	4	12.771	-0.001	7371	4.7	4	12.784	0.001	4262	6.5
Total Col1Ave (4 peaks):					38.3	Total Col2Ave (4 peaks):				49.9 RPD = 26

Corrected Ave (3 peaks): 29.6 Corrected Ave (3 peaks): 23.9 RPD = 21

Total PCB Area Col1 (5.169 - 13.066) = 1398917 Col1 Total PCB = 0.6 ppm*

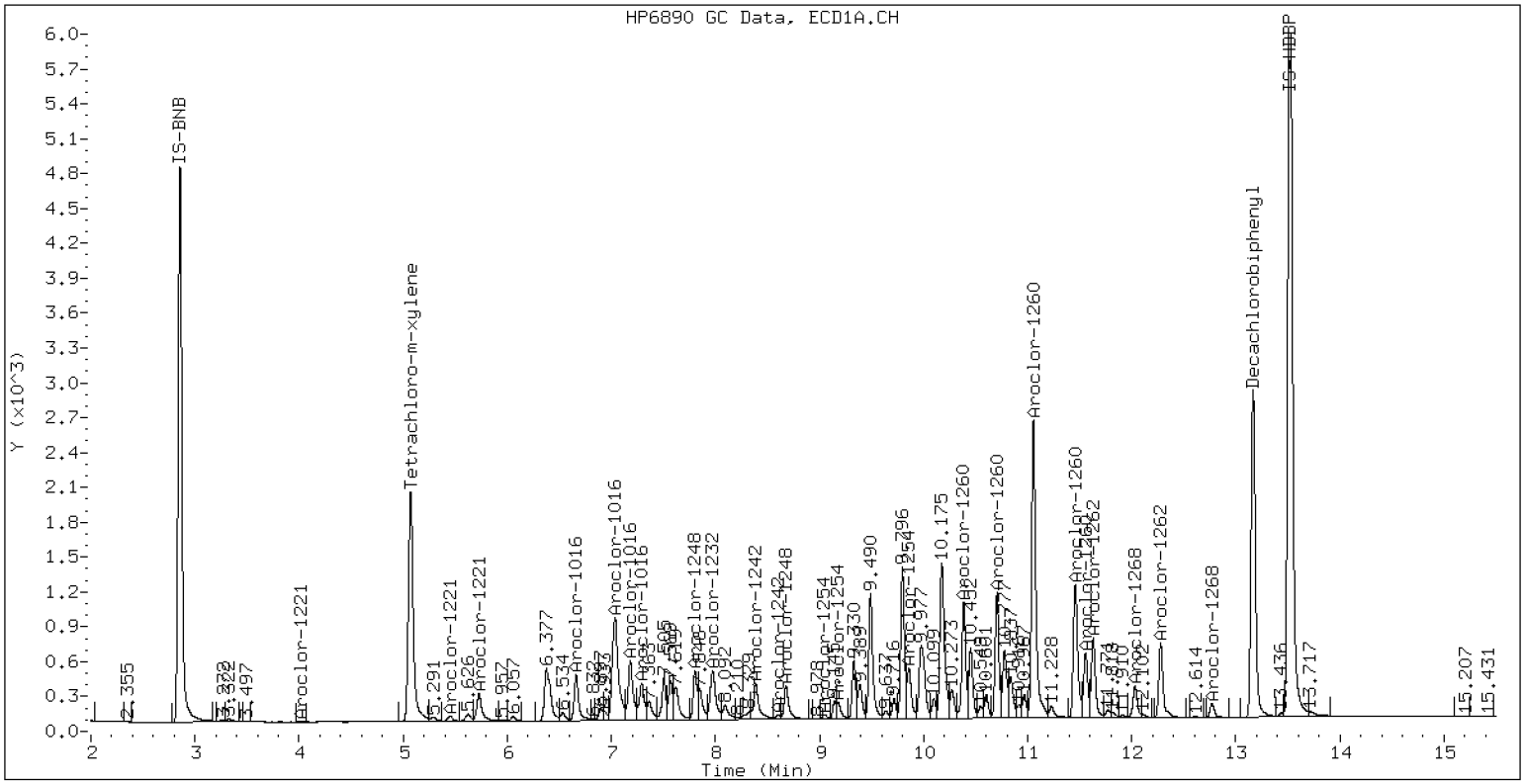
Total PCB Area Col2 (5.169 - 13.066) = 5304779 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

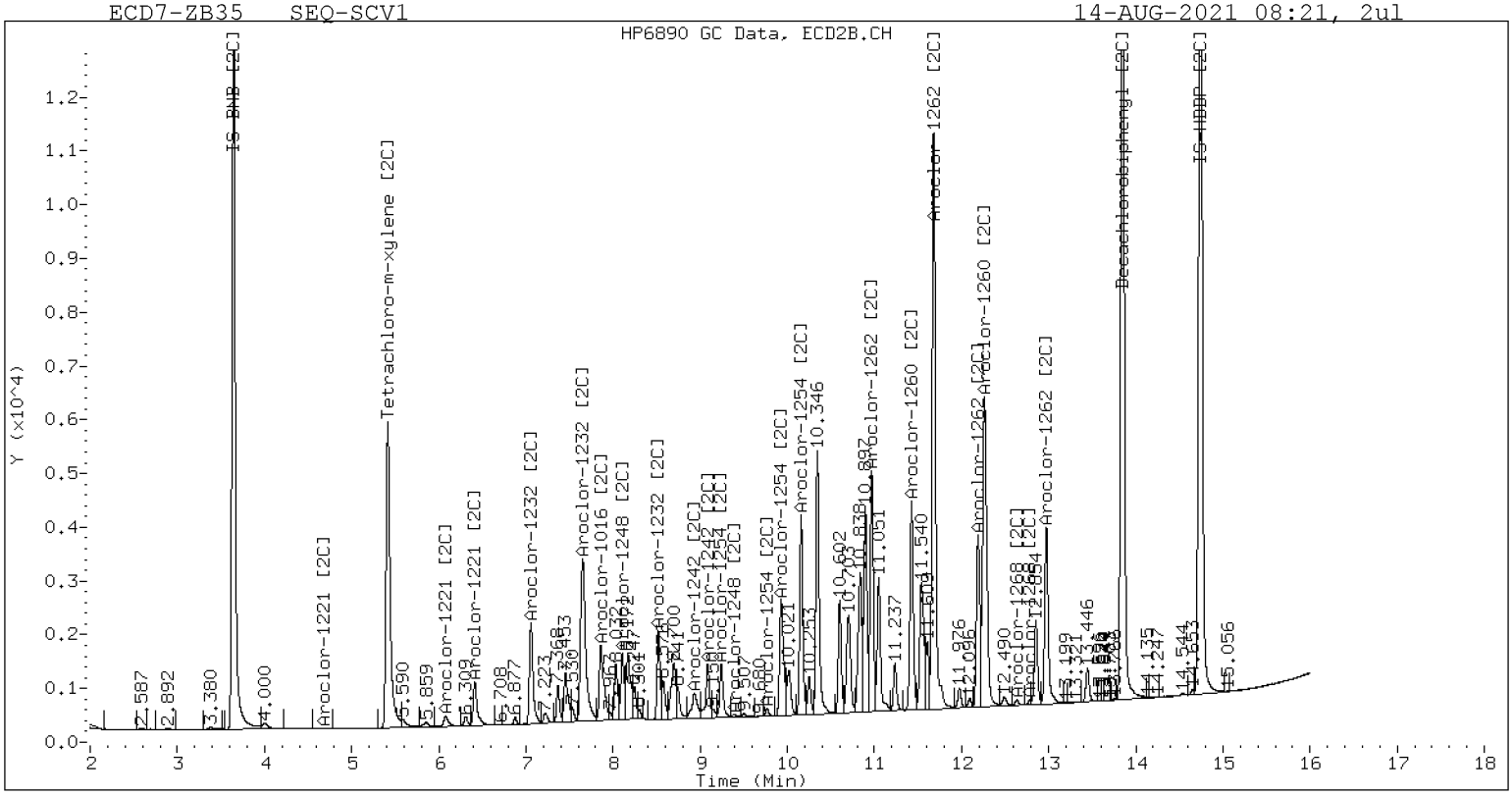
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132142ECD7.D
Data file 2: /210813.b/210813.b/08132142ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV2
Client ID:
Injection Date: 14-AUG-2021 08:41
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.071	0.002	132285	5.416	-0.001	383386	42.4	41.2	2.9	Tetrachloro-m-xylene
13.167	0.001	167664	13.849	-0.031	892912	40.6	40.1	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258029	-0.3
Hexabromobiphenyl	425681	455205	6.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724238	0.5
Hexabromobiphenyl	863111	1002202	16.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.004	19016	207.8	1	7.058	0.002	84149	203.8
Aroclor-1016	2	7.036	0.007	56530	202.0	2	7.655	0.007	190019	205.7
Aroclor-1016	3	7.182	0.006	26016	207.1	3	7.861	0.006	75921	209.4
Aroclor-1016	4	7.291	0.006	16388	208.1	4	8.108	0.003	48471	220.9
Total Col1Ave (4 peaks):				206.3		Total Col2Ave (4 peaks):			210.0	RPD = 2
Corrected Ave (3 peaks):				205.6		Corrected Ave (3 peaks):			206.3	RPD = 0
Aroclor-1221	1	4.028	0.013	116	5.7	1	---			0.0
Aroclor-1221	2	5.452	0.001	2495	78.1	2	6.082	0.010	11569	93.0
Aroclor-1221	3	5.727	0.003	12904	149.5	3	6.414	0.005	39789	183.5
Total Col1Ave (3 peaks):				77.8		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.028	0.010	116	9.3	1	---			0.0
Aroclor-1232	2	5.727	0.001	12904	189.7	2	7.058	0.000	84149	444.9
Aroclor-1232	3	7.036	0.003	56530	544.5	3	7.655	0.004	190019	502.0
Aroclor-1232	4	7.974	0.001	26547	621.6	4	8.522	0.000	61015	618.7
Total Col1Ave (4 peaks):				341.3		Total Col2Ave (3 peaks):			521.9	RPD = 42*
Corrected Ave (3 peaks):				247.8		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.662	0.003	19016	267.5	1	7.058	0.001	84149	252.7
Aroclor-1242	2	7.036	0.006	56530	266.7	2	7.655	0.006	190019	262.7
Aroclor-1242	3	8.383	0.009	29618	246.7	3	8.960	0.011	88042	260.5
Aroclor-1242	4	8.677	0.003	16945	345.4	4	9.035	0.007	96759	252.3
Total Col1Ave (4 peaks):				281.6		Total Col2Ave (4 peaks):			257.1	RPD = 9
Corrected Ave (3 peaks):				260.3		Corrected Ave (3 peaks):			255.2	RPD = 2
Aroclor-1248	1	7.804	0.005	17658	163.3	1	8.108	0.002	48471	161.5
Aroclor-1248	2	7.974	0.006	26547	188.1	2	8.522	0.002	61015	167.0
Aroclor-1248	3	8.383	0.009	29618	143.3	3	8.960	0.014	88042	151.3
Aroclor-1248	4	8.677	0.004	16945	143.6	4	9.387	0.011	85570	173.2
Total Col1Ave (4 peaks):				159.6		Total Col2Ave (4 peaks):			163.2	RPD = 2
Corrected Ave (3 peaks):				150.1		Corrected Ave (3 peaks):			159.9	RPD = 6
Aroclor-1254	1	8.677	0.002	16945	76.1	1	9.243	0.003	29242	47.5
Aroclor-1254	2	8.749	0.003	9630	93.4	2	9.387	0.056	85570	236.6
Aroclor-1254	3	9.048	0.007	7009	48.3	3	9.768	0.005	22605	48.1
Aroclor-1254	4	9.185	0.010	12002	43.3	4	9.920	0.006	43258	41.6
Aroclor-1254	5	9.892	0.025	8818	50.7	5	10.159	0.012	45764	43.4
Total Col1Ave (5 peaks):				62.4		Total Col2Ave (5 peaks):			83.4	RPD = 29
Corrected Ave (4 peaks):				54.6		Corrected Ave (4 peaks):			45.1	RPD = 19
Aroclor-1260	1	10.393	0.010	159	0.8	1	11.445	0.020	5299	6.4
Aroclor-1260	2	10.708	0.008	221	1.1	2	11.687	0.006	3878	1.6
Aroclor-1260	3	11.059	0.009	267	0.5	3	12.271	0.010	3933	2.5
Aroclor-1260	4	11.460	0.007	376	1.6	4	13.053	0.081	5398	7.3
Aroclor-1260	5	---			0.0	NS	---			----
Total Col1Ave (4 peaks):				1.0		Total Col2Ave (4 peaks):			4.4	RPD = 128*
Corrected Ave (3 peaks):				0.8		Corrected Ave (3 peaks):			3.5	RPD = 126*
Aroclor-1262	1	10.393	0.009	159	0.6	1	10.901	-0.069	17524	14.3
Aroclor-1262	2	11.460	0.005	376	2.1	2	11.687	0.001	3878	1.5
Aroclor-1262	3	---			0.0	3	12.271	0.083	3933	3.4
Aroclor-1262	4	---			0.0	4	13.053	0.081	5398	5.0
Col1Ave: <3 Quant Peaks						Col2Ave:			6.1	
Aroclor-1268	1	11.460	-0.097	376	0.6	1	12.271	0.071	3933	1.4
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.914	-0.086	1770	3.5	3	12.639	-0.005	1023	0.4
Aroclor-1268	4	12.775	0.003	794	0.5	4	12.790	0.006	1260	1.9
Total Col1Ave (3 peaks):				1.5		Total Col2Ave (3 peaks):			1.2	RPD = 24
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.169 - 13.066) = 482960 Col1 Total PCB = 0.2 ppm*

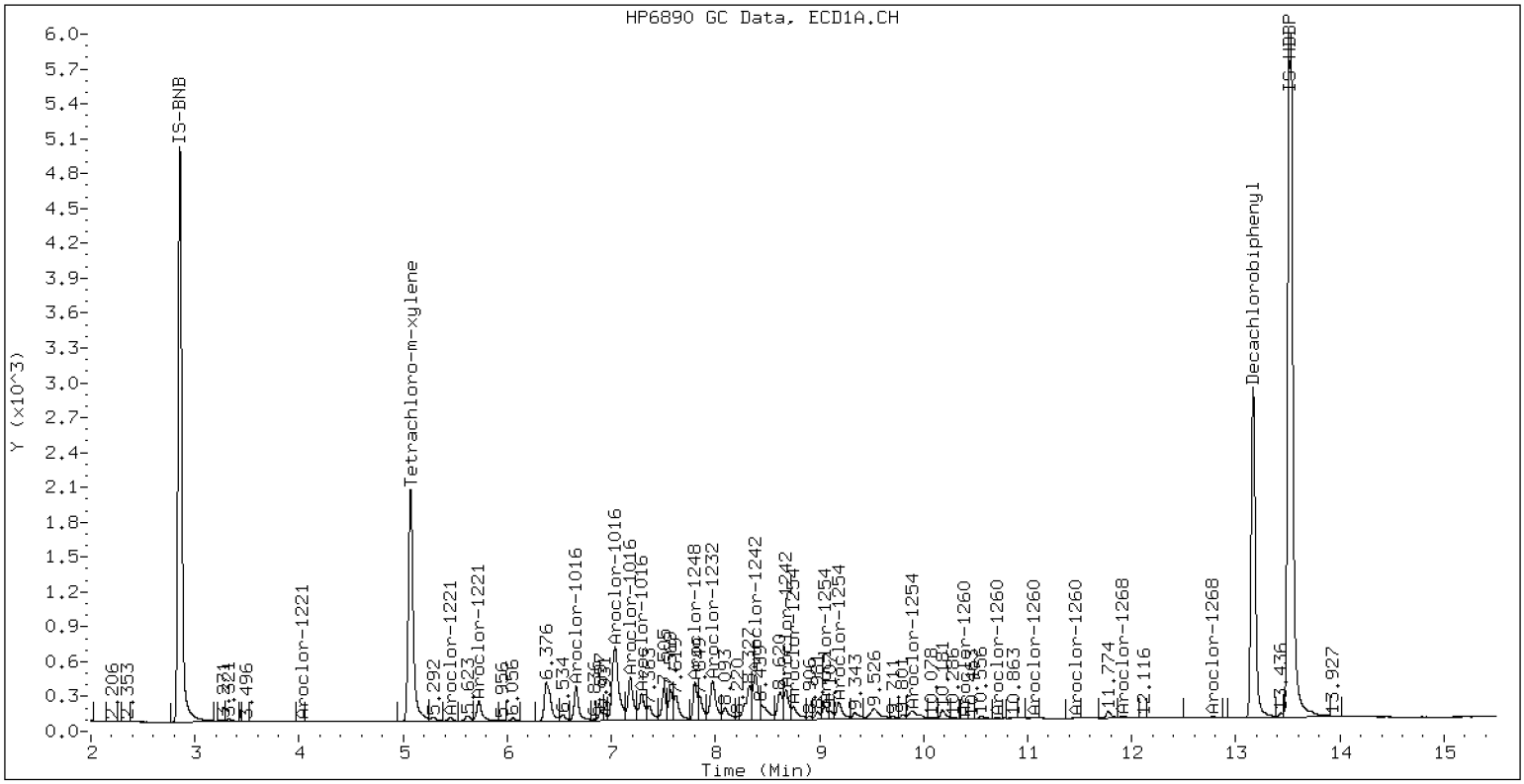
Total PCB Area Col2 (5.169 - 13.066) = 1884416 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

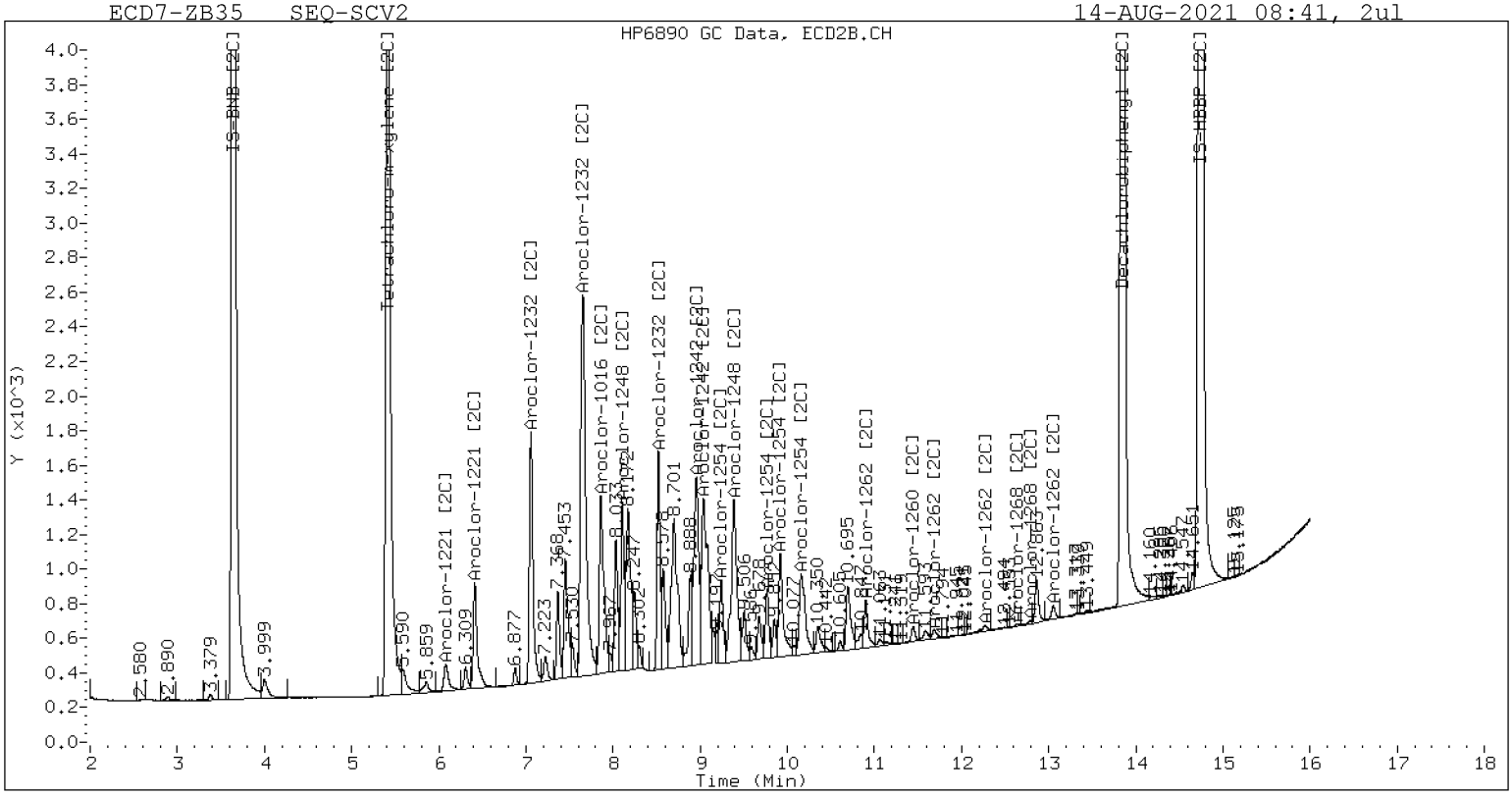
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV2 14-AUG-2021 08:41, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV2 14-AUG-2021 08:41, 2ul

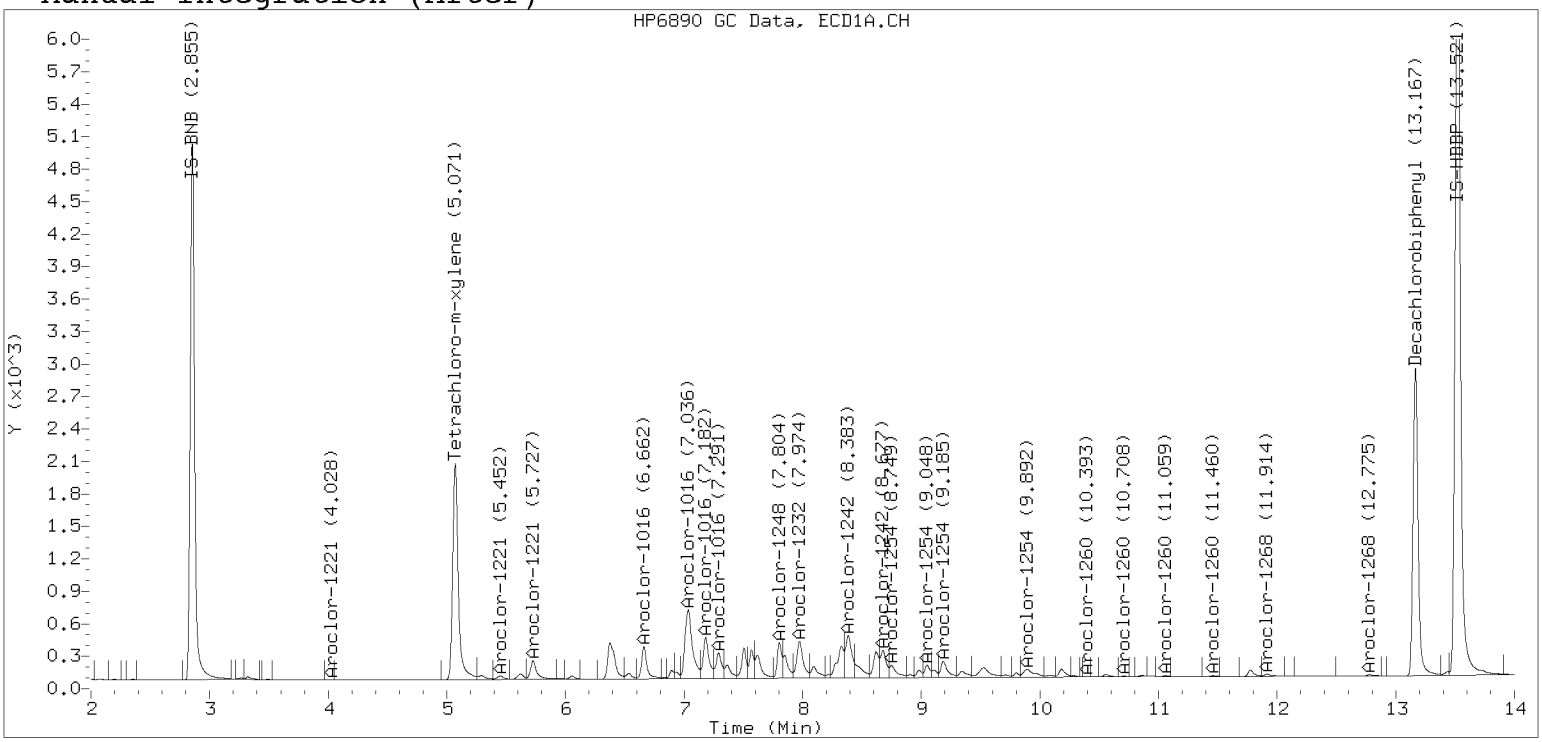


ZB-35 Manual Integration: YES

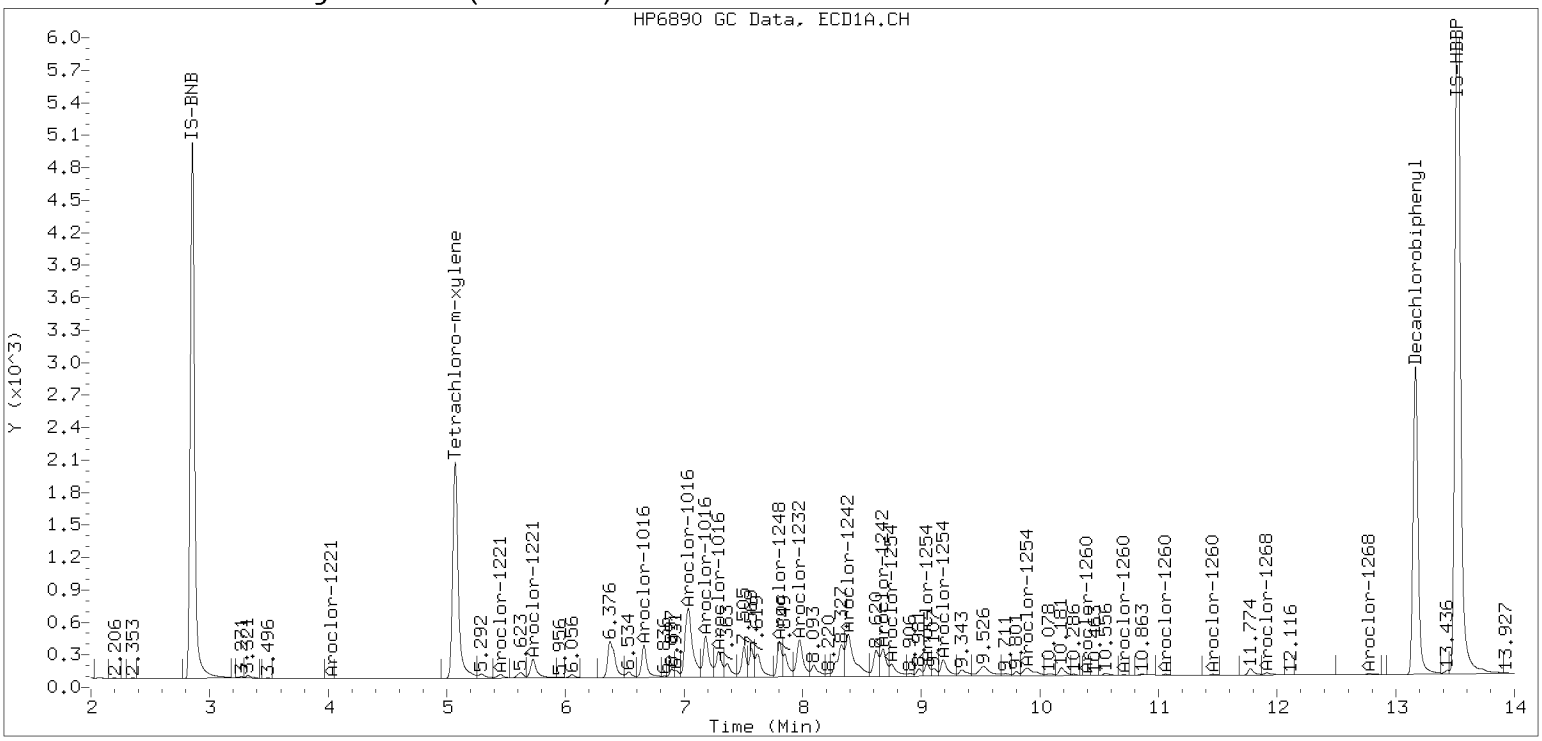
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132142ECD7.D Injection Date: 14-AUG-2021 08:41

Manual Integration (After)



Processed Integration (Before)



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

Data file 1: /210813.b/08132143ECD7.D
Data file 2: /210813.b/210813.b/08132143ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV3
Client ID:
Injection Date: 14-AUG-2021 09:02
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	133217	5.416	-0.001	384693	41.7	40.4	3.0	Tetrachloro-m-xylene
13.165	-0.001	166922	13.848	-0.032	892438	39.5	38.4	2.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264526	2.2
Hexabromobiphenyl	425681	465895	9.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740726	2.7
Hexabromobiphenyl	863111	1045189	21.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	9682	103.2	1	7.058	0.001	46276	109.6
Aroclor-1016	2	7.035	0.006	37972	132.4	2	7.654	0.006	128803	136.3
Aroclor-1016	3	7.185	0.009	16001	124.3	3	7.862	0.007	26557	71.6
Aroclor-1016	4	7.292	0.007	10150	125.7	4	8.107	0.002	83644	372.8
Total Col1Ave (4 peaks):					121.4	Total Col2Ave (4 peaks):				172.6 RPD = 35
Corrected Ave (3 peaks):					117.7	Corrected Ave (3 peaks):				105.8 RPD = 11
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	5.455	0.004	449	13.7	2	6.091	0.019	6638	52.2
Aroclor-1221	3	5.728	0.004	2260	25.5	3	6.414	0.005	8501	38.3
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	5.728	0.002	2260	32.4	2	7.058	-0.000	46276	239.2
Aroclor-1232	3	7.035	0.002	37972	356.8	3	7.654	0.003	128803	332.7
Aroclor-1232	4	7.972	-0.000	39250	896.5	4	8.523	0.001	102298	1014.3
Total Col1Ave (3 peaks):					428.6	Total Col2Ave (3 peaks):				528.7 RPD = 21
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.663	0.004	9682	132.8	1	7.058	0.000	46276	135.9
Aroclor-1242	2	7.035	0.005	37972	174.8	2	7.654	0.005	128803	174.1
Aroclor-1242	3	8.381	0.007	54555	443.2	3	8.956	0.007	151640	438.8
Aroclor-1242	4	8.678	0.004	31259	621.5	4	9.034	0.006	104178	265.6
Total Col1Ave (4 peaks):					343.1	Total Col2Ave (4 peaks):				253.6 RPD = 30
Corrected Ave (3 peaks):					250.3	Corrected Ave (3 peaks):				191.9 RPD = 26
Aroclor-1248	1	7.802	0.004	28742	259.3	1	8.107	0.002	83644	272.5
Aroclor-1248	2	7.972	0.004	39250	271.2	2	8.523	0.003	102298	273.8
Aroclor-1248	3	8.381	0.007	54555	257.5	3	8.956	0.009	151640	254.8
Aroclor-1248	4	8.678	0.004	31259	258.4	4	9.383	0.006	151004	298.8
Total Col1Ave (4 peaks):					261.6	Total Col2Ave (4 peaks):				275.0 RPD = 5
Corrected Ave (3 peaks):					258.4	Corrected Ave (3 peaks):				267.0 RPD = 3
Aroclor-1254	1	8.678	0.002	31259	137.0	1	9.242	0.003	54333	86.2
Aroclor-1254	2	8.749	0.003	18396	174.1	2	9.383	0.052	151004	408.3
Aroclor-1254	3	9.047	0.006	14863	99.9	3	9.767	0.004	47940	99.8
Aroclor-1254	4	9.184	0.008	25850	91.0	4	9.918	0.004	90159	84.7
Aroclor-1254	5	9.891	0.024	17966	100.7	5	10.157	0.010	92605	85.8
Total Col1Ave (5 peaks):					120.5	Total Col2Ave (5 peaks):				152.9 RPD = 24
Corrected Ave (4 peaks):					107.1	Corrected Ave (4 peaks):				89.1 RPD = 18
Aroclor-1260	1	10.390	0.007	578	2.8	1	11.440	0.015	6820	7.8
Aroclor-1260	2	10.706	0.006	437	2.1	2	11.683	0.002	7655	3.0
Aroclor-1260	3	11.059	0.008	1267	2.3	3	12.263	0.002	5159	3.2
Aroclor-1260	4	11.460	0.007	540	2.2	4	12.973	0.001	2451	3.2
Aroclor-1260	5	11.559	0.005	490	4.0	NS	---			----
Total Col1Ave (5 peaks):					2.7	Total Col2Ave (4 peaks):				4.3 RPD = 47*
Corrected Ave (4 peaks):					2.3	Corrected Ave (3 peaks):				3.1 RPD = 29
Aroclor-1262	1	10.390	0.006	578	2.0	1	10.972	0.001	4108	3.2
Aroclor-1262	2	11.460	0.005	540	2.9	2	11.683	-0.002	7655	2.8
Aroclor-1262	3	11.632	0.005	592	2.2	3	12.188	-0.000	3699	3.1
Aroclor-1262	4	12.278	0.004	571	2.6	4	12.973	0.001	2451	2.2
Total Col1Ave (4 peaks):					2.5	Total Col2Ave (4 peaks):				2.8 RPD = 14
Corrected Ave (3 peaks):					2.3	Corrected Ave (3 peaks):				2.7 RPD = 17
Aroclor-1268	1	11.559	0.002	490	0.8	1	12.188	-0.012	3699	1.2
Aroclor-1268	2	11.632	0.006	592	0.9	2	12.263	-0.004	5159	1.6
Aroclor-1268	3	11.915	-0.086	879	1.7	3	12.643	-0.001	909	0.3
Aroclor-1268	4	12.775	0.003	932	0.6	4	12.788	0.005	972	1.4
Total Col1Ave (4 peaks):					1.0	Total Col2Ave (4 peaks):				1.1 RPD = 13
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				1.0 RPD = 27

Total PCB Area Col1 (5.169 - 13.066) = 608290 Col1 Total PCB = 0.2 ppm*

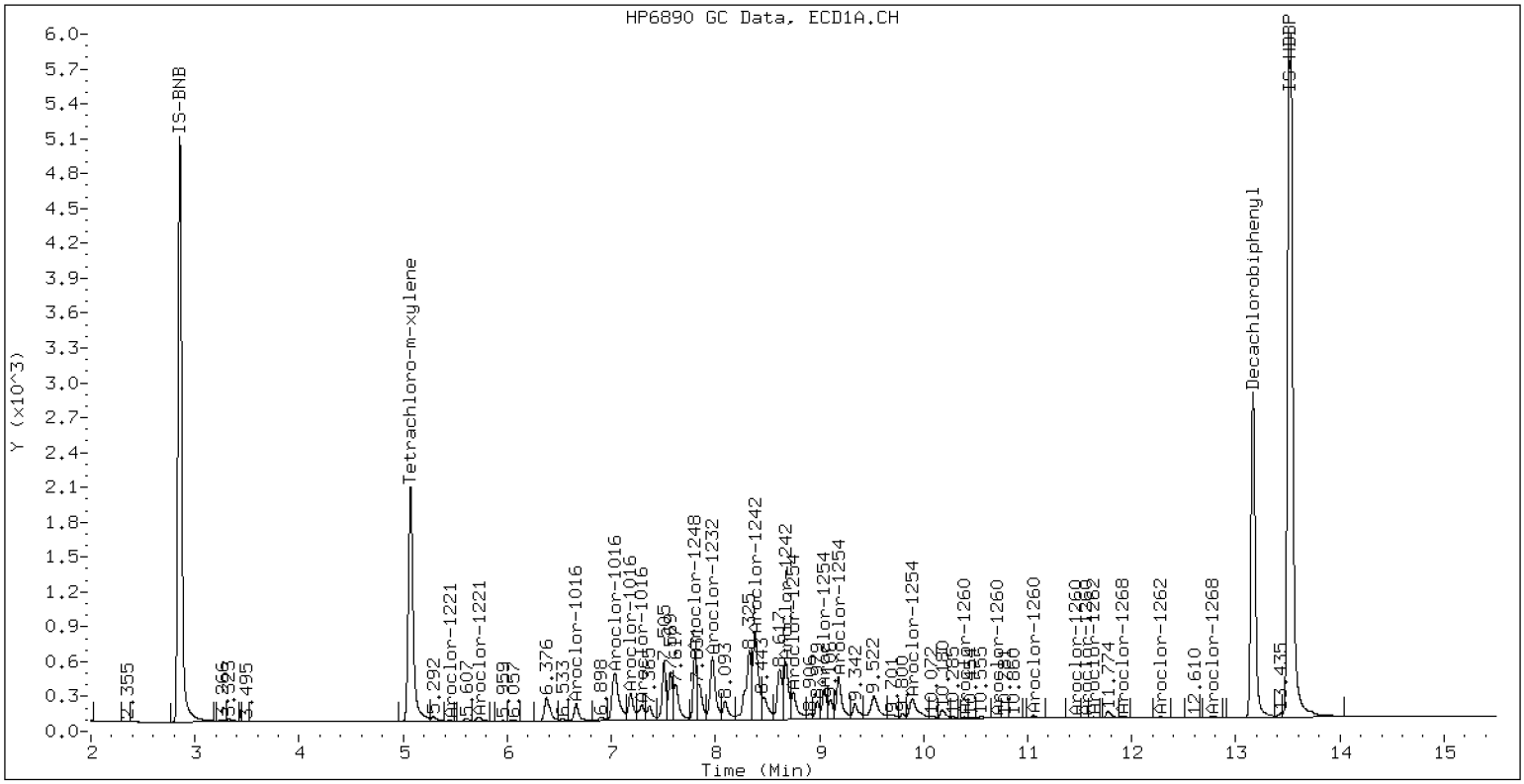
Total PCB Area Col2 (5.169 - 13.066) = 2317749 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

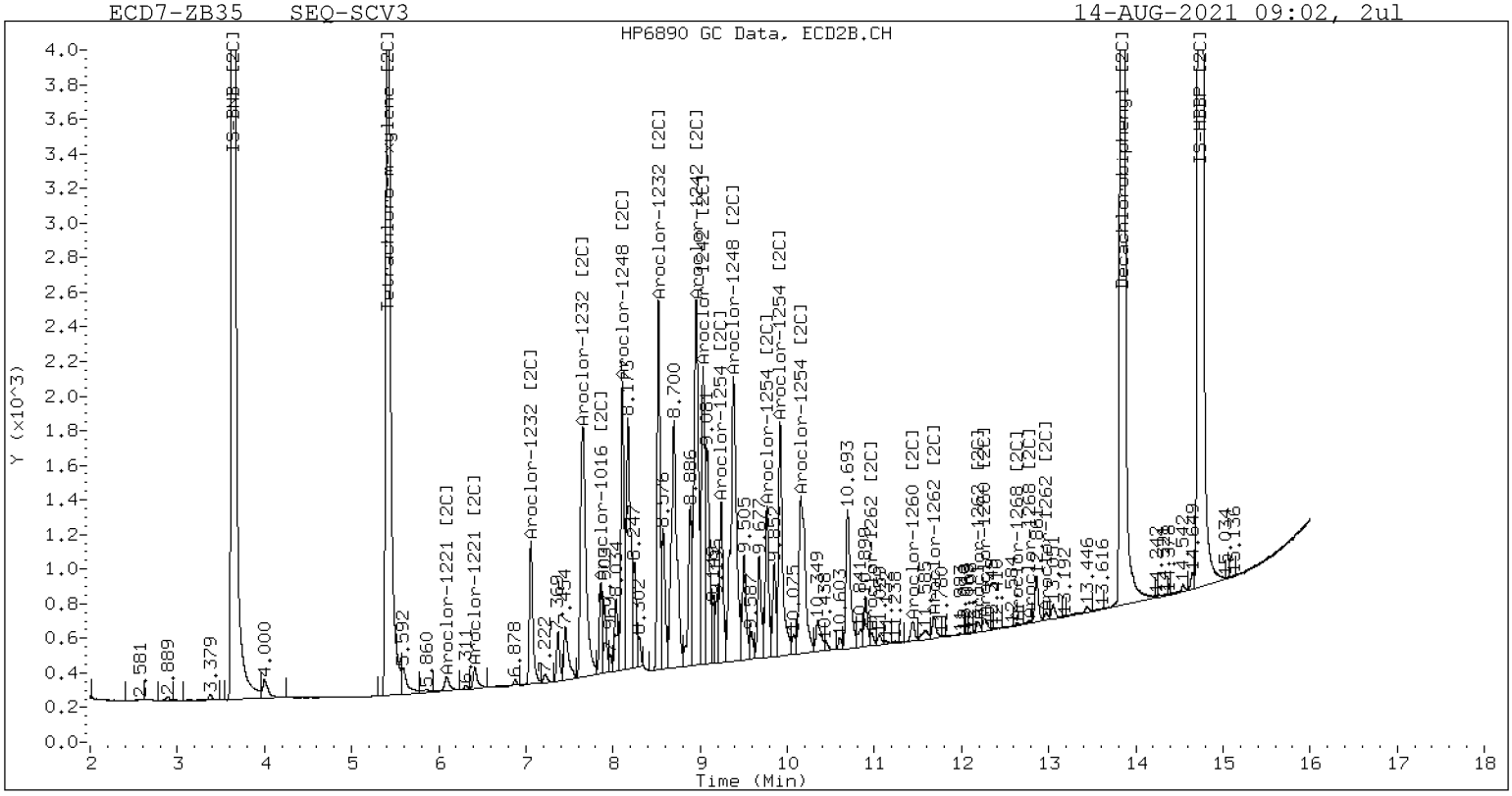
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV3 14-AUG-2021 09:02, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV3 14-AUG-2021 09:02, 2ul

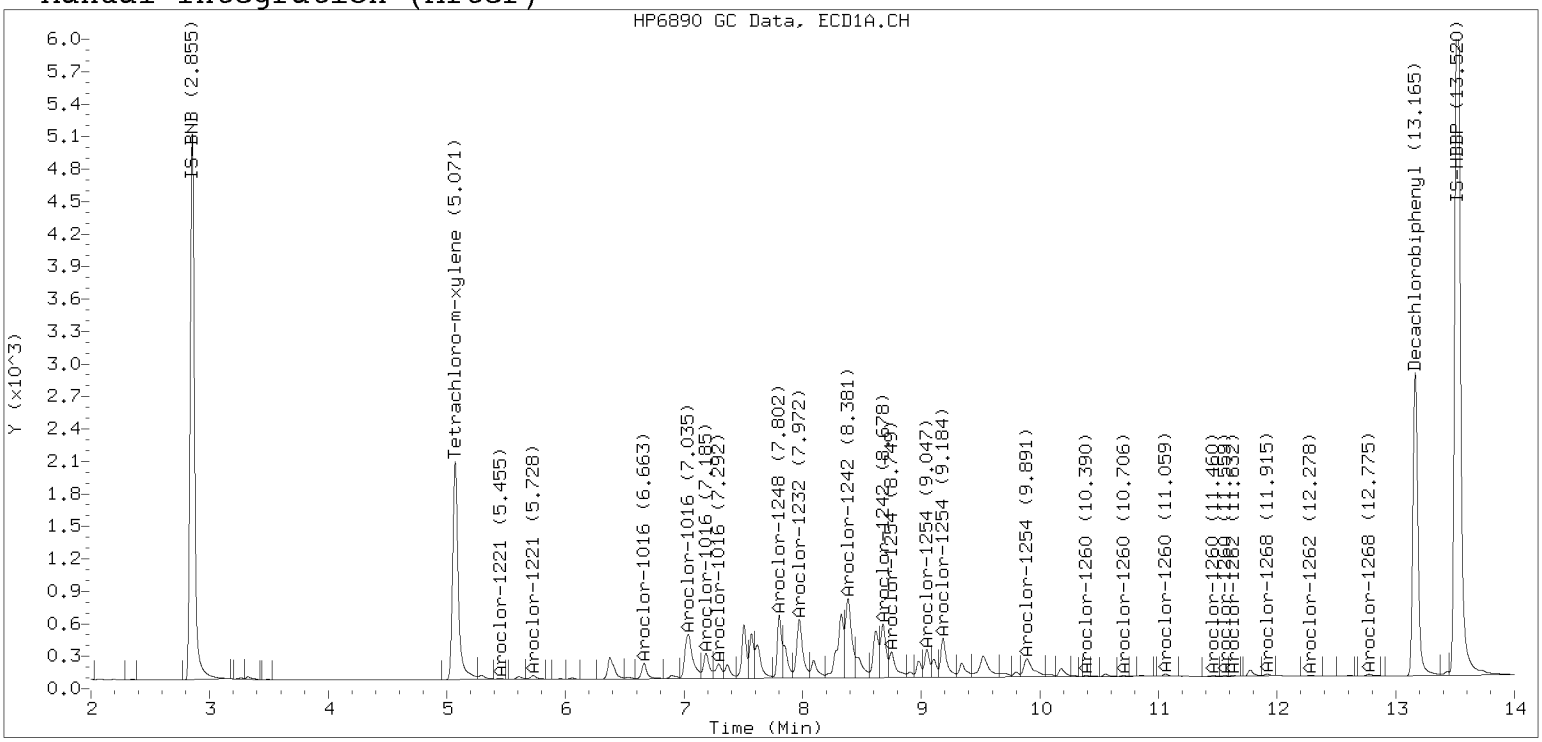


ZB-35 Manual Integration: NO

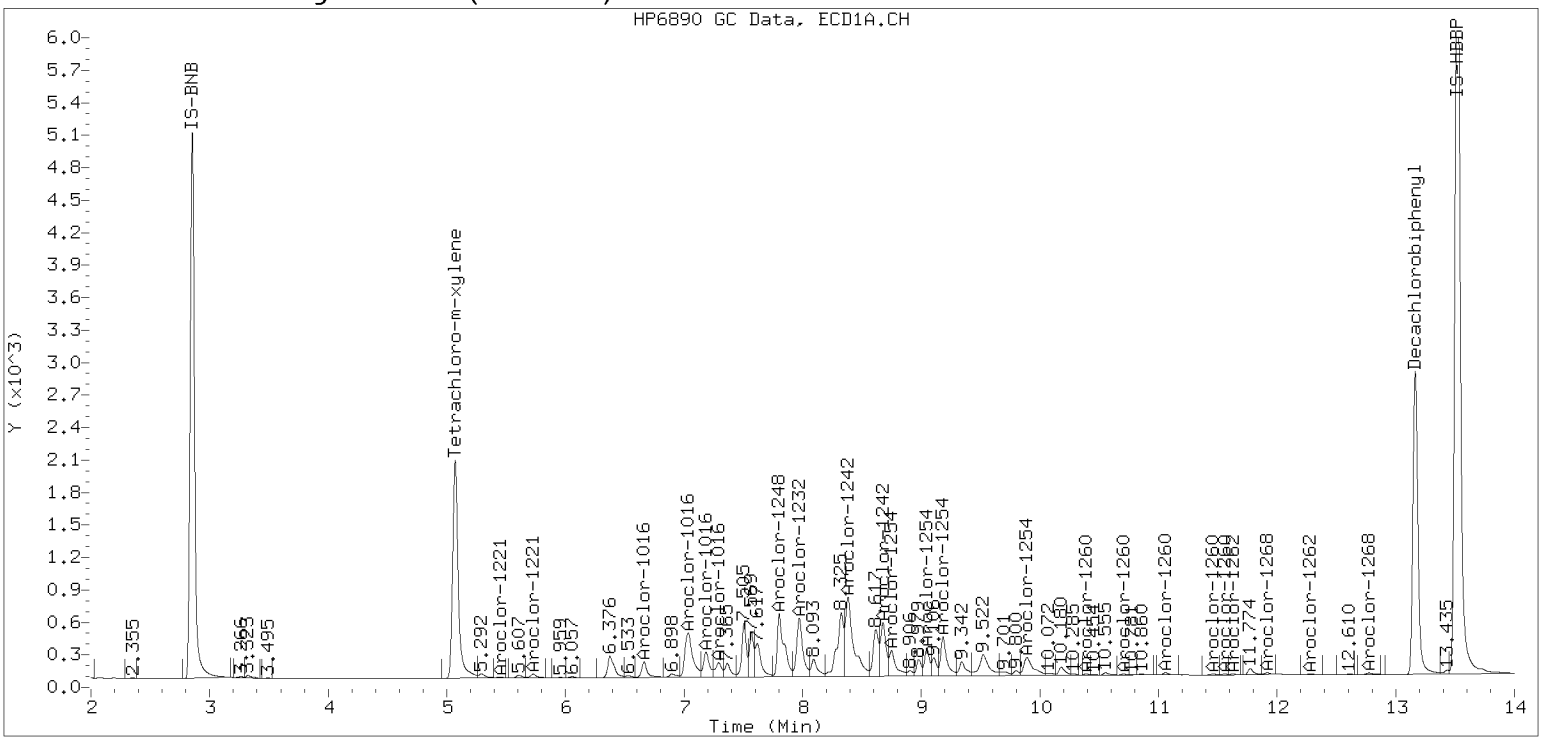
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132143ECD7.D Injection Date: 14-AUG-2021 09:02

Manual Integration (After)



Processed Integration (Before)



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

Data file 1: /210813.b/08132144ECD7.D
Data file 2: /210813.b/210813.b/08132144ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV4
Client ID:
Injection Date: 14-AUG-2021 09:22
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	134141	5.416	-0.001	389116	42.6	41.4	2.8	Tetrachloro-m-xylene
13.166	0.000	166634	13.848	-0.032	887620	40.1	38.6	3.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	260417	0.6
Hexabromobiphenyl	425681	458139	7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	730797	1.4
Hexabromobiphenyl	863111	1034233	19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	131	1.4	1	7.062	0.005	1136	2.7
Aroclor-1016	2	7.039	0.009	605	2.1	2	7.659	0.011	3270	3.5
Aroclor-1016	3	7.189	0.014	416	3.3	3	7.909	0.054	1836	5.0
Aroclor-1016	4	---			0.0	4	8.109	0.004	59728	269.8
Total Col1Ave (3 peaks): 2.3						Total Col2Ave (4 peaks): 70.3 RPD = 187*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 3.8				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.094	0.021	4462	35.5
Aroclor-1221	3	---			0.0	3	6.411	0.002	1085	5.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.062	0.004	1136	6.0
Aroclor-1232	3	7.039	0.005	605	5.8	3	7.659	0.008	3270	8.6
Aroclor-1232	4	7.975	0.003	5517	128.0	4	8.524	0.002	40317	405.2
Col1Ave: <3 Quant Peaks						Col2Ave: 139.9				
Aroclor-1242	1	6.663	0.004	131	1.8	1	7.062	0.005	1136	3.4
Aroclor-1242	2	7.039	0.008	605	2.8	2	7.659	0.010	3270	4.5
Aroclor-1242	3	8.385	0.011	48414	399.6	3	8.960	0.012	63036	184.9
Aroclor-1242	4	8.679	0.005	62054	1253.2	4	9.035	0.007	12438	32.1
Total Col1Ave (4 peaks): 414.4						Total Col2Ave (4 peaks): 56.2 RPD = 152*				
Corrected Ave (3 peaks): 134.7						Corrected Ave (3 peaks): 13.3 RPD = 164*				
Aroclor-1248	1	7.804	0.005	12376	113.4	1	8.109	0.003	59728	197.2
Aroclor-1248	2	7.975	0.007	5517	38.7	2	8.524	0.004	40317	109.4
Aroclor-1248	3	8.385	0.011	48414	232.1	3	8.960	0.014	63036	107.4
Aroclor-1248	4	8.679	0.005	62054	521.1	4	9.335	-0.041	91889	184.3
Total Col1Ave (4 peaks): 226.3						Total Col2Ave (4 peaks): 149.6 RPD = 41*				
Corrected Ave (3 peaks): 128.1						Corrected Ave (3 peaks): 133.7 RPD = 4				
Aroclor-1254	1	8.679	0.003	62054	276.2	1	9.242	0.003	166697	268.1
Aroclor-1254	2	8.751	0.005	29615	284.7	2	9.335	0.004	91889	251.8
Aroclor-1254	3	9.046	0.005	40463	276.3	3	9.766	0.003	128036	270.1
Aroclor-1254	4	9.181	0.005	78989	282.3	4	9.918	0.004	270040	257.1
Aroclor-1254	5	9.873	0.006	50845	289.4	5	10.155	0.008	293166	275.2
Total Col1Ave (5 peaks): 281.8						Total Col2Ave (5 peaks): 264.5 RPD = 6				
Corrected Ave (4 peaks): 279.9						Corrected Ave (4 peaks): 261.8 RPD = 7				
Aroclor-1260	1	10.386	0.003	4281	20.8	1	11.441	0.015	77320	89.9
Aroclor-1260	2	10.706	0.006	4756	23.5	2	11.684	0.003	61993	24.8
Aroclor-1260	3	11.057	0.007	11820	21.6	3	12.266	0.005	35733	22.2
Aroclor-1260	4	11.458	0.005	9286	38.1	4	12.973	0.001	1994	2.6
Aroclor-1260	5	11.627	0.073	440	3.6	NS	---			----
Total Col1Ave (5 peaks): 21.5						Total Col2Ave (4 peaks): 34.9 RPD = 47*				
Corrected Ave (4 peaks): 17.4						Corrected Ave (3 peaks): 16.5 RPD = 5				
Aroclor-1262	1	10.386	0.002	4281	15.3	1	10.897	-0.073	251611	198.9
Aroclor-1262	2	11.458	0.003	9286	51.3	2	11.684	-0.001	61993	23.2
Aroclor-1262	3	11.627	0.000	440	1.7	3	12.205	0.017	9780	8.3
Aroclor-1262	4	12.279	0.005	629	2.9	4	12.973	0.000	1994	1.8
Total Col1Ave (4 peaks): 17.8						Total Col2Ave (4 peaks): 58.1 RPD = 106*				
Corrected Ave (3 peaks): 6.6						Corrected Ave (3 peaks): 11.1 RPD = 50*				
Aroclor-1268	1	11.627	0.070	440	0.7	1	12.205	0.005	9780	3.3
Aroclor-1268	2	---			0.0	2	12.266	-0.001	35733	11.0
Aroclor-1268	3	11.912	-0.088	968	1.9	3	12.633	-0.011	400	0.1
Aroclor-1268	4	12.774	0.002	1001	0.6	4	12.861	0.078	15819	22.8
Total Col1Ave (3 peaks): 1.1						Total Col2Ave (4 peaks): 9.3 RPD = 158*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 4.8				

Total PCB Area Col1 (5.169 - 13.066) = 819275 Col1 Total PCB = 0.3 ppm*

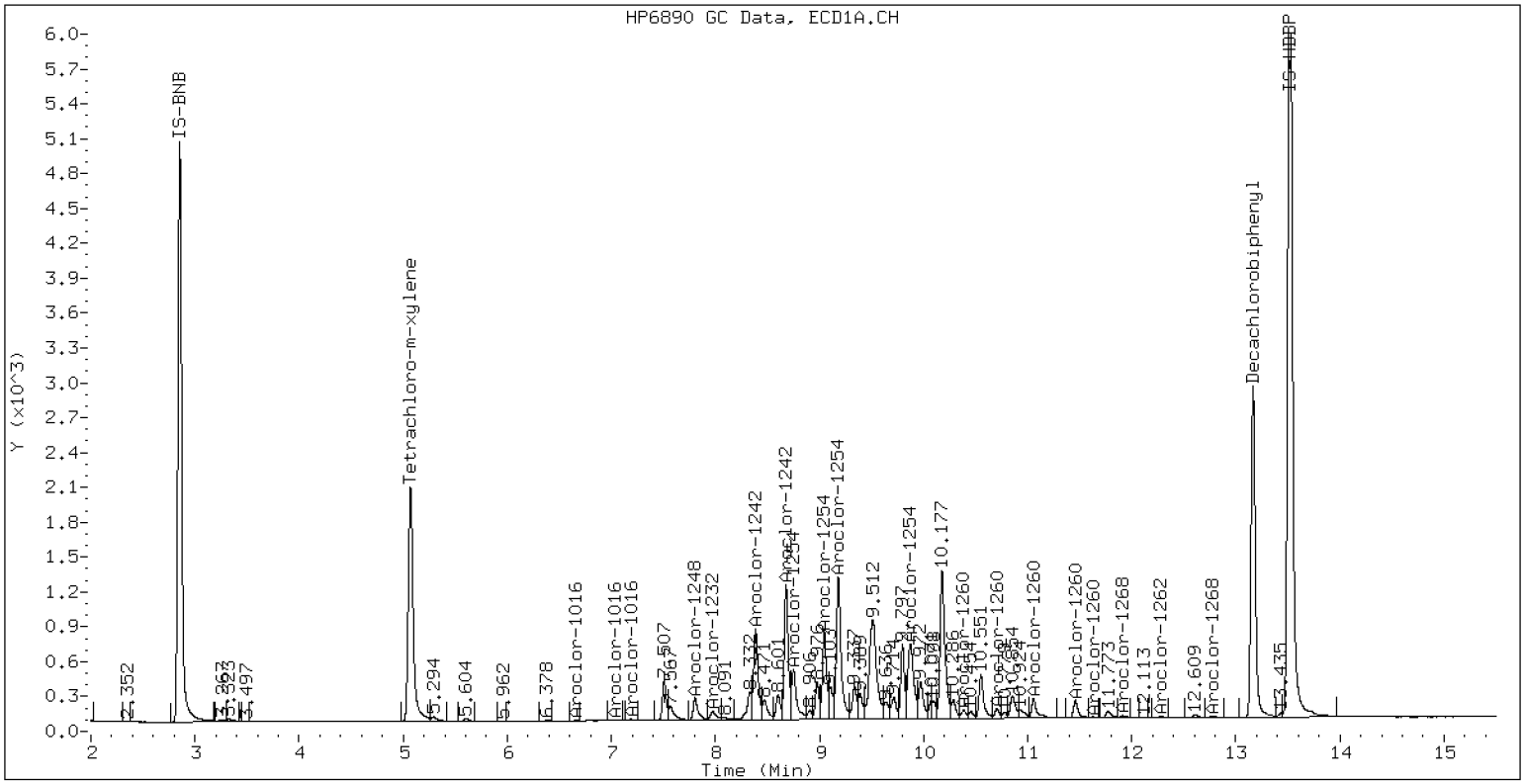
Total PCB Area Col2 (5.169 - 13.066) = 3111878 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

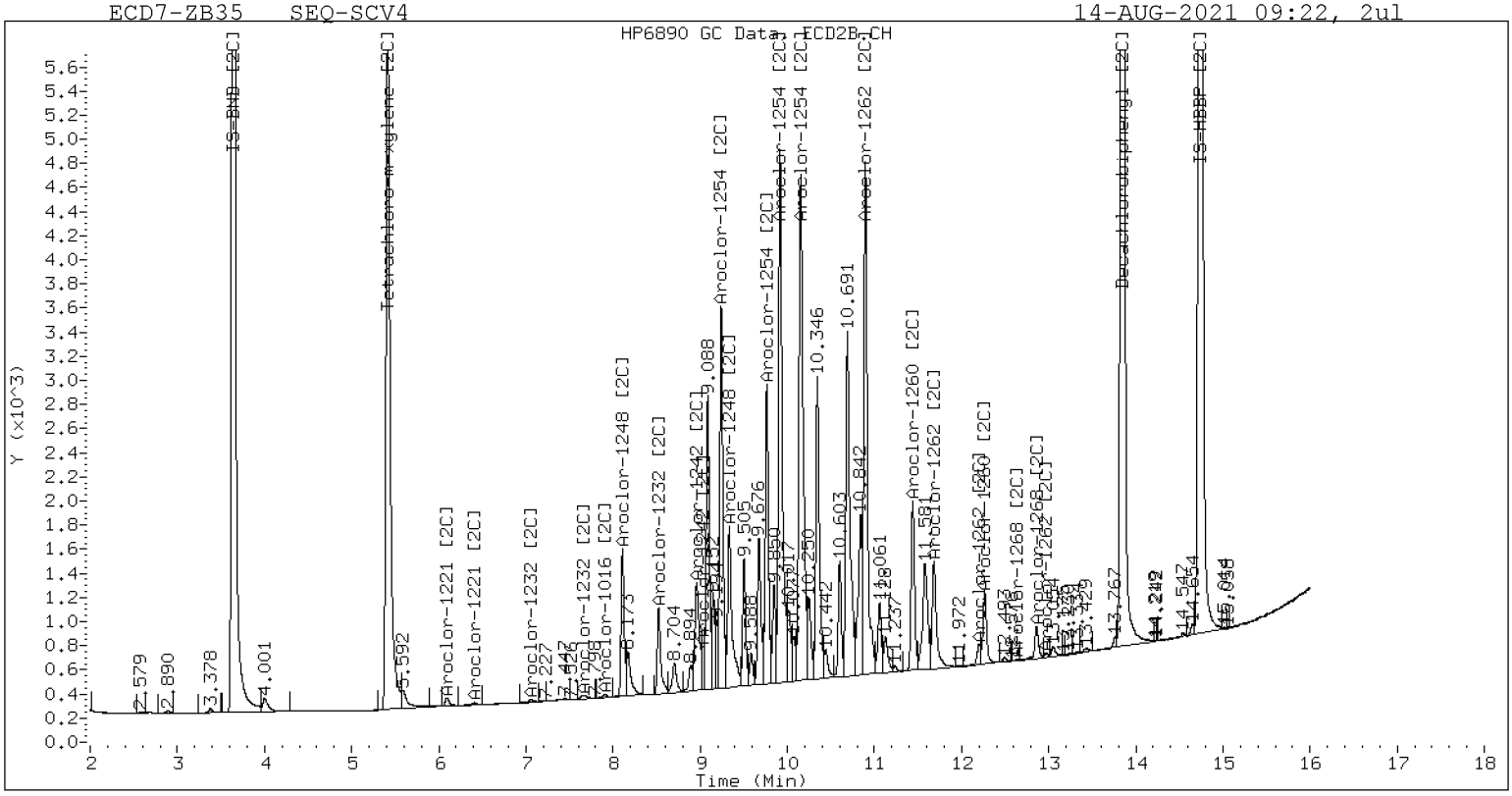
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132145ECD7.D
Data file 2: /210813.b/210813.b/08132145ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV5
Client ID:
Injection Date: 14-AUG-2021 09:43
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.072	0.003	131998	5.417	-0.000	375118	40.6	39.1	3.6	Tetrachloro-m-xylene
13.166	-0.000	164634	13.848	-0.032	881936	38.8	37.6	3.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	269058	3.9
Hexabromobiphenyl	425681	467004	9.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	745766	3.4
Hexabromobiphenyl	863111	1054321	22.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	1551	16.3	1	7.061	0.004	17081	40.2
Aroclor-1016	2	7.039	0.009	4280	14.7	2	7.658	0.011	15832	16.6
Aroclor-1016	3	7.184	0.008	2282	17.4	3	7.865	0.010	6703	18.0
Aroclor-1016	4	7.294	0.009	1564	19.1	4	8.109	0.004	3939	17.4
Total Col1Ave (4 peaks):				16.8		Total Col2Ave (4 peaks):			23.1	RPD = 31
Corrected Ave (3 peaks):				16.1		Corrected Ave (3 peaks):			17.3	RPD = 7
Aroclor-1221	1	4.018	0.002	6262	294.7	1	4.680	0.004	15071	269.2
Aroclor-1221	2	5.454	0.003	9982	299.7	2	6.075	0.003	33472	261.2
Aroclor-1221	3	5.728	0.004	25492	283.3	3	6.413	0.004	59675	267.2
Total Col1Ave (3 peaks):				292.6		Total Col2Ave (3 peaks):			265.9	RPD = 10
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.018	-0.000	6262	479.9	1	4.680	0.001	15071	452.2
Aroclor-1232	2	5.728	0.002	25492	359.4	2	7.061	0.003	17081	87.7
Aroclor-1232	3	7.039	0.005	4280	39.5	3	7.658	0.007	15832	40.6
Aroclor-1232	4	7.978	0.006	798	17.9	4	8.525	0.003	2523	24.8
Total Col1Ave (4 peaks):				224.2		Total Col2Ave (4 peaks):			151.3	RPD = 39
Corrected Ave (3 peaks):				139.0		Corrected Ave (3 peaks):			51.1	RPD = 93*
Aroclor-1242	1	6.663	0.004	1551	20.9	1	7.061	0.004	17081	49.8
Aroclor-1242	2	7.039	0.009	4280	19.4	2	7.658	0.010	15832	21.3
Aroclor-1242	3	8.388	0.013	9148	73.1	3	8.966	0.018	6505	18.7
Aroclor-1242	4	8.680	0.006	9619	188.0	4	9.089	0.061	25267	64.0
Total Col1Ave (4 peaks):				75.3		Total Col2Ave (4 peaks):			38.4	RPD = 65*
Corrected Ave (3 peaks):				37.8		Corrected Ave (3 peaks):			29.9	RPD = 23
Aroclor-1248	1	7.805	0.007	1067	9.5	1	8.109	0.003	3939	12.7
Aroclor-1248	2	7.978	0.010	798	5.4	2	8.525	0.005	2523	6.7
Aroclor-1248	3	8.388	0.013	9148	42.4	3	8.966	0.020	6505	10.9
Aroclor-1248	4	8.680	0.007	9619	78.2	4	9.396	0.019	4022	7.9
Total Col1Ave (4 peaks):				33.9		Total Col2Ave (4 peaks):			9.6	RPD = 112*
Corrected Ave (3 peaks):				19.1		Corrected Ave (3 peaks):			8.5	RPD = 77*
Aroclor-1254	1	8.680	0.005	9619	41.4	1	9.245	0.005	26890	42.4
Aroclor-1254	2	---			0.0	2	9.336	0.005	2650	7.1
Aroclor-1254	3	9.050	0.008	1343	8.9	3	9.769	0.007	4242	8.8
Aroclor-1254	4	9.145	-0.031	9990	34.6	4	9.932	0.019	121430	113.3
Aroclor-1254	5	9.858	-0.010	13751	75.8	5	10.160	0.013	143957	132.4
Total Col1Ave (4 peaks):				40.2		Total Col2Ave (5 peaks):			60.8	RPD = 41*
Corrected Ave (3 peaks):				28.3		Corrected Ave (4 peaks):			42.9	RPD = 41*
Aroclor-1260	1	10.387	0.004	74432	354.3	1	11.427	0.001	248521	283.6
Aroclor-1260	2	10.705	0.005	63581	308.3	2	11.682	0.001	656259	257.6
Aroclor-1260	3	11.056	0.005	158724	284.8	3	12.261	0.000	468343	285.9
Aroclor-1260	4	11.457	0.004	49425	199.0	4	12.974	0.001	287502	367.1
Aroclor-1260	5	11.557	0.003	61640	495.8	NS	---			----
Total Col1Ave (5 peaks):				328.4		Total Col2Ave (4 peaks):			298.6	RPD = 10
Corrected Ave (4 peaks):				286.6		Corrected Ave (3 peaks):			275.7	RPD = 4
Aroclor-1262	1	10.387	0.003	74432	261.2	1	10.970	-0.000	313779	243.4
Aroclor-1262	2	11.457	0.002	49425	267.8	2	11.682	-0.003	656259	241.2
Aroclor-1262	3	11.628	0.001	70335	264.4	3	12.188	0.000	303167	251.1
Aroclor-1262	4	12.278	0.003	58296	266.9	4	12.974	0.001	287502	255.5
Total Col1Ave (4 peaks):				265.1		Total Col2Ave (4 peaks):			247.8	RPD = 7
Corrected Ave (3 peaks):				264.2		Corrected Ave (3 peaks):			245.2	RPD = 7
Aroclor-1268	1	11.557	0.000	61640	98.4	1	12.188	-0.012	303167	100.1
Aroclor-1268	2	11.628	0.002	70335	107.0	2	12.261	-0.006	468343	141.7
Aroclor-1268	3	12.031	0.030	24251	46.9	3	12.635	-0.009	18559	6.5
Aroclor-1268	4	12.770	-0.001	19100	11.5	4	12.783	0.000	11203	15.9
Total Col1Ave (4 peaks):				65.9		Total Col2Ave (4 peaks):			66.0	RPD = 0

Corrected Ave (3 peaks): 52.2 Corrected Ave (3 peaks): 40.8 RPD = 25

Total PCB Area Col1 (5.169 - 13.066) = 1098701 Col1 Total PCB = 0.4 ppm*

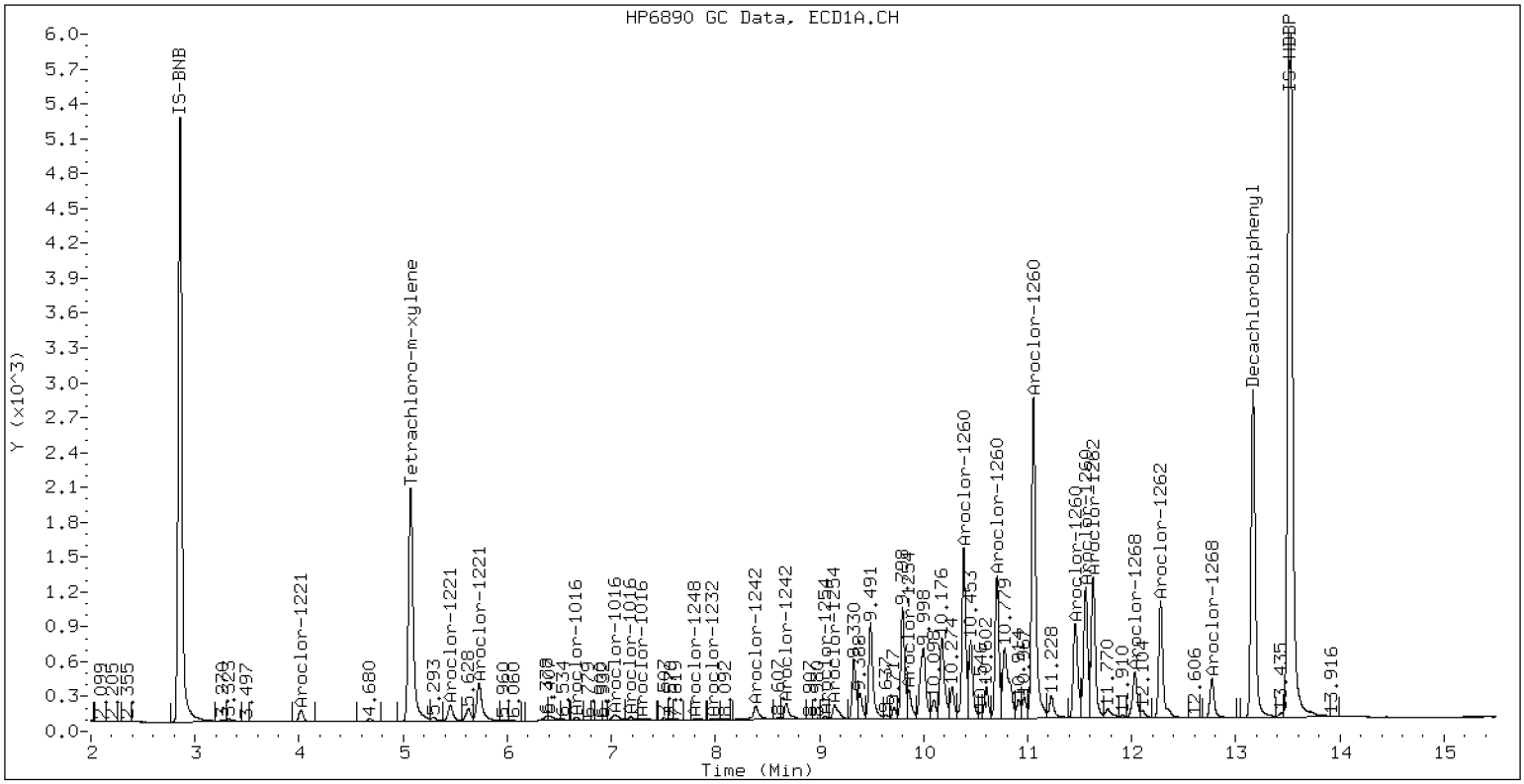
Total PCB Area Col2 (5.169 - 13.066) = 4504756 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

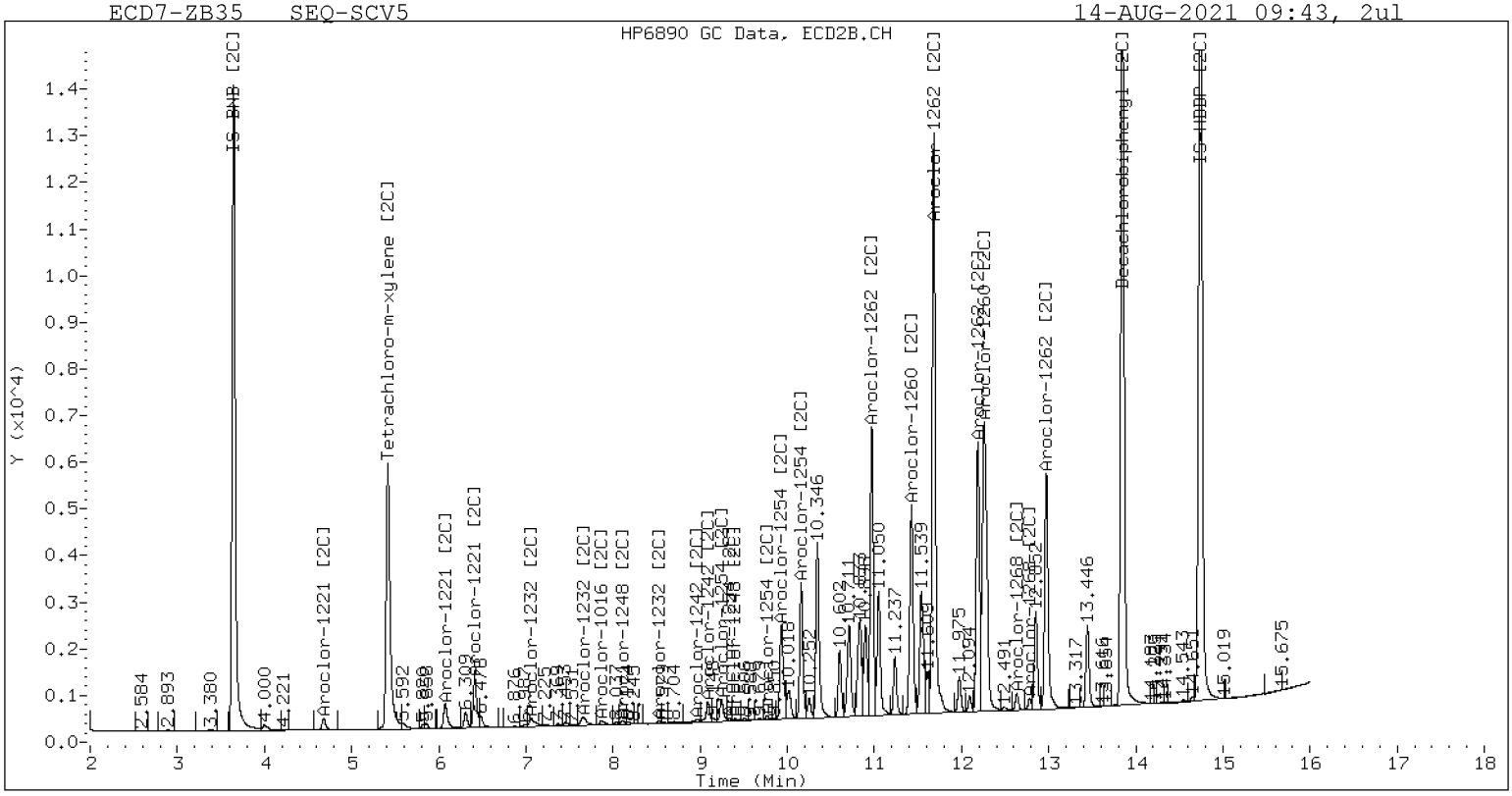
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-35 Manual Integration: NO

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

Data file 1: /210813.b/08132146ECD7.D
Data file 2: /210813.b/210813.b/08132146ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV6
Client ID:
Injection Date: 14-AUG-2021 10:03
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	131287	5.416	-0.000	375338	41.2	39.7	3.8	Tetrachloro-m-xylene
13.165	-0.001	248059	13.848	-0.032	1383308	59.6	59.3	0.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263445	1.8
Hexabromobiphenyl	425681	458283	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	736133	2.1
Hexabromobiphenyl	863111	1049914	21.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	11471	122.8	1	7.059	0.002	54454	129.7
Aroclor-1016	2	7.037	0.008	32172	112.6	2	7.656	0.009	111127	118.4
Aroclor-1016	3	7.183	0.007	15436	120.4	3	7.862	0.007	47184	128.0
Aroclor-1016	4	7.292	0.007	9103	113.2	4	8.108	0.003	26255	117.7
Total Col1Ave (4 peaks):				117.2		Total Col2Ave (4 peaks):			123.5	RPD = 5
Corrected Ave (3 peaks):				115.4		Corrected Ave (3 peaks):			121.4	RPD = 5
Aroclor-1221	1	4.017	0.002	3341	160.6	1	4.679	0.002	8452	153.0
Aroclor-1221	2	5.453	0.002	5429	166.5	2	6.077	0.004	21053	166.4
Aroclor-1221	3	5.727	0.003	17948	203.7	3	6.414	0.005	55556	252.0
Total Col1Ave (3 peaks):				176.9		Total Col2Ave (3 peaks):			190.5	RPD = 7
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.017	-0.001	3341	261.5	1	4.679	-0.000	8452	256.9
Aroclor-1232	2	5.727	0.001	17948	258.4	2	7.059	0.001	54454	283.3
Aroclor-1232	3	7.037	0.003	32172	303.5	3	7.656	0.005	111127	288.8
Aroclor-1232	4	7.974	0.002	13693	314.0	4	8.524	0.002	31722	316.5
Total Col1Ave (4 peaks):				284.4		Total Col2Ave (4 peaks):			286.4	RPD = 1
Corrected Ave (3 peaks):				274.5		Corrected Ave (3 peaks):			276.3	RPD = 1
Aroclor-1242	1	6.663	0.004	11471	158.0	1	7.059	0.002	54454	160.9
Aroclor-1242	2	7.037	0.007	32172	148.7	2	7.656	0.008	111127	151.2
Aroclor-1242	3	8.385	0.010	20544	167.6	3	8.959	0.010	61163	178.1
Aroclor-1242	4	8.676	0.002	6934	138.4	4	9.041	0.013	55525	142.5
Total Col1Ave (4 peaks):				153.2		Total Col2Ave (4 peaks):			158.1	RPD = 3
Corrected Ave (3 peaks):				148.4		Corrected Ave (3 peaks):			151.5	RPD = 2
Aroclor-1248	1	7.804	0.005	9056	82.0	1	8.108	0.002	26255	86.1
Aroclor-1248	2	7.974	0.006	13693	95.0	2	8.524	0.003	31722	85.4
Aroclor-1248	3	8.385	0.010	20544	97.4	3	8.959	0.012	61163	103.4
Aroclor-1248	4	8.676	0.002	6934	57.6	4	9.391	0.015	44441	88.5
Total Col1Ave (4 peaks):				83.0		Total Col2Ave (4 peaks):			90.8	RPD = 9
Corrected Ave (3 peaks):				78.2		Corrected Ave (3 peaks):			86.7	RPD = 10
Aroclor-1254	1	8.676	0.000	6934	30.5	1	9.243	0.003	10554	16.9
Aroclor-1254	2	8.748	0.002	3715	35.3	2	9.391	0.060	44441	120.9
Aroclor-1254	3	9.050	0.008	2122	14.3	3	9.769	0.007	7619	16.0
Aroclor-1254	4	9.187	0.011	3159	11.2	4	9.922	0.009	13052	12.3
Aroclor-1254	5	9.896	0.029	1953	11.0	5	10.167	0.020	14279	13.3
Total Col1Ave (5 peaks):				20.5		Total Col2Ave (5 peaks):			35.9	RPD = 55*
Corrected Ave (4 peaks):				16.7		Corrected Ave (4 peaks):			14.6	RPD = 14
Aroclor-1260	1	10.388	0.005	30028	145.6	1	11.405	-0.020	170014	194.8
Aroclor-1260	2	10.704	0.004	2256	11.1	2	11.680	-0.001	78239	30.8
Aroclor-1260	3	11.056	0.005	17997	32.9	3	12.254	-0.007	838267	513.9
Aroclor-1260	4	11.458	0.006	301	1.2	4	12.972	0.000	307546	394.4
Aroclor-1260	5	11.557	0.003	165147	1353.6	NS	---			----
Total Col1Ave (5 peaks):				308.9		Total Col2Ave (4 peaks):			283.5	RPD = 9
Corrected Ave (4 peaks):				47.7		Corrected Ave (3 peaks):			206.7	RPD = 125*
Aroclor-1262	1	10.388	0.004	30028	107.4	1	10.971	0.001	118268	92.1
Aroclor-1262	2	11.458	0.004	301	1.7	2	11.680	-0.005	78239	28.9
Aroclor-1262	3	11.626	-0.000	172148	659.4	3	12.187	-0.001	744741	619.3
Aroclor-1262	4	12.276	0.002	62869	293.3	4	12.972	-0.000	307546	274.4
Total Col1Ave (4 peaks):				265.4		Total Col2Ave (4 peaks):			253.7	RPD = 5
Corrected Ave (3 peaks):				134.1		Corrected Ave (3 peaks):			131.8	RPD = 2
Aroclor-1268	1	11.557	-0.000	165147	268.6	1	12.187	-0.013	744741	246.9
Aroclor-1268	2	11.626	0.001	172148	266.9	2	12.254	-0.013	838267	254.7
Aroclor-1268	3	12.000	-0.000	135416	266.9	3	12.635	-0.009	744001	261.5
Aroclor-1268	4	12.770	-0.002	428256	261.7	4	12.782	-0.001	187584	266.5
Total Col1Ave (4 peaks):				266.0		Total Col2Ave (4 peaks):			257.4	RPD = 3

Corrected Ave (3 peaks): 265.2 Corrected Ave (3 peaks): 254.3 RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 1378298 Col1 Total PCB = 0.5 ppm*

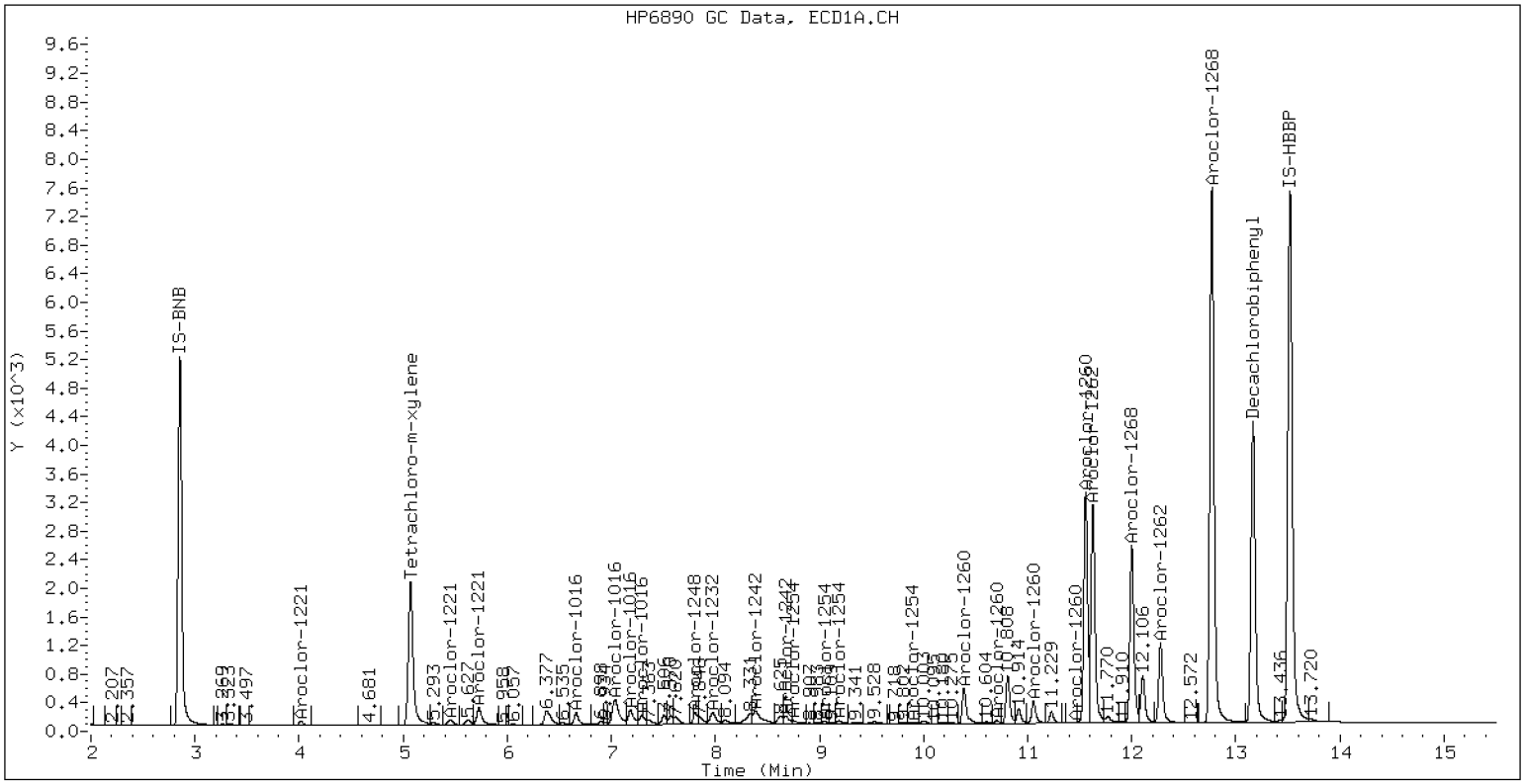
Total PCB Area Col2 (5.169 - 13.066) = 4537494 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

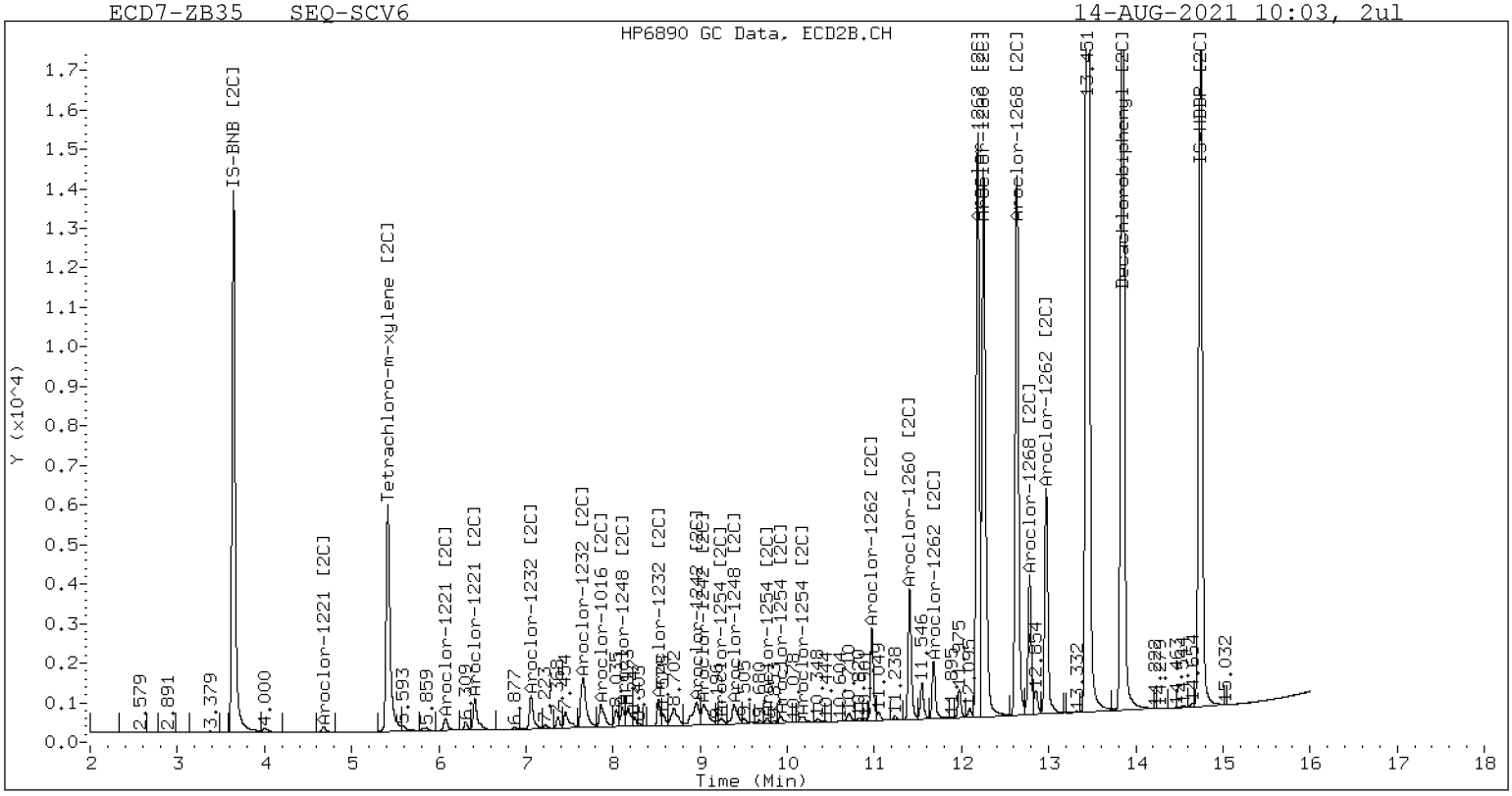
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /210813.b/08132147ECD7.D ARI ID: 0.1PPMDDTS

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
8.655	0.000	378282	9.708	0.000	2247303	0.100	0.100	0.0	2,4-DDE
0.000	-9.668	0	10.472	0.000	3202027	0.000	0.200#	----	2,4-DDT
9.066	0.000	627072	10.014	0.000	1432754	0.100	0.100	0.0	4,4-DDE
9.630	0.000	957342	10.472	0.000	3202027	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: /210813.b/08132148ECD7.D ARI ID: DS

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	-8.655	0	9.713	0.005	45188	0.000	0.002	----	2,4-DDE
0.000	-9.668	0	10.469	-0.002	386231	0.000	0.024#	----	2,4-DDT
9.074	0.008	8164	10.015	0.001	1431	0.001	0.000	171.3*	4,4-DDE
9.633	0.003	99838	10.469	-0.002	386231	0.010	0.024#	79.8*	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.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21G0321
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV1
Sequence Name: AR1660SCV1
Standard ID: J008139

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1016	250.00	285	13.9	20.00
Aroclor 1016 [2C]	250.00	281	12.5	20.00
Aroclor 1260	250.00	276	10.3	20.00
Aroclor 1260 [2C]	250.00	259	3.4	20.00
Decachlorobiphenyl	40.000	41.9	4.8	20.00
Tetrachlorometaxylene	40.000	43.6	9.1	20.00
Decachlorobiphenyl [2C]	40.000	41.2	3.0	20.00
Tetrachlorometaxylene [2C]	40.000	41.9	4.9	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: /210813.b/08132141ECD7.D
Data file 2: /210813.b/210813.b/08132141ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV1
Client ID:
Injection Date: 14-AUG-2021 08:21
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	130620	5.416	-0.001	380301	43.6	41.9	4.0	Tetrachloro-m-xylene
13.166	0.000	166891	13.848	-0.032	891664	41.9	41.2	1.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	247644	-4.3
Hexabromobiphenyl	425681	438534	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	705551	-2.1
Hexabromobiphenyl	863111	973863	12.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.004	25008	284.7	1	7.059	0.002	110603	274.9
Aroclor-1016	2	7.036	0.006	75849	282.4	2	7.653	0.006	251287	279.2
Aroclor-1016	3	7.182	0.006	34421	285.6	3	7.860	0.005	101098	286.3
Aroclor-1016	4	7.291	0.006	21611	286.0	4	8.108	0.003	60866	284.8
Total Col1Ave (4 peaks):					284.7	Total Col2Ave (4 peaks):				281.3 RPD = 1
Corrected Ave (3 peaks):					284.2	Corrected Ave (3 peaks):				279.6 RPD = 2
Aroclor-1221	1	4.024	0.008	183	9.4	1	4.683	0.006	532	10.0
Aroclor-1221	2	5.453	0.002	3388	110.5	2	6.080	0.008	14283	117.8
Aroclor-1221	3	5.728	0.004	17440	210.6	3	6.414	0.005	53146	251.5
Total Col1Ave (3 peaks):					110.2	Total Col2Ave (3 peaks):				126.5 RPD = 14
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.024	0.006	183	15.2	1	4.683	0.004	532	16.9
Aroclor-1232	2	5.728	0.002	17440	267.1	2	7.059	0.001	110603	600.3
Aroclor-1232	3	7.036	0.002	75849	761.3	3	7.653	0.002	251287	681.4
Aroclor-1232	4	7.973	0.001	32123	783.7	4	8.522	0.000	77885	810.7
Total Col1Ave (4 peaks):					456.8	Total Col2Ave (4 peaks):				527.3 RPD = 14
Corrected Ave (3 peaks):					347.9	Corrected Ave (3 peaks):				432.8 RPD = 22
Aroclor-1242	1	6.662	0.003	25008	366.5	1	7.059	0.002	110603	341.0
Aroclor-1242	2	7.036	0.006	75849	372.9	2	7.653	0.005	251287	356.6
Aroclor-1242	3	8.386	0.011	23127	200.7	3	8.934	-0.015	43631	132.5
Aroclor-1242	4	8.601	-0.072	2264	48.1	4	9.087	0.060	61086	163.5
Total Col1Ave (4 peaks):					247.1	Total Col2Ave (4 peaks):				248.4 RPD = 1
Corrected Ave (3 peaks):					205.1	Corrected Ave (3 peaks):				212.3 RPD = 3
Aroclor-1248	1	7.803	0.005	21981	211.8	1	8.108	0.002	60866	208.2
Aroclor-1248	2	7.973	0.005	32123	237.1	2	8.522	0.002	77885	218.9
Aroclor-1248	3	8.386	0.011	23127	116.6	3	8.934	-0.013	43631	77.0
Aroclor-1248	4	8.678	0.004	18050	159.4	4	9.393	0.016	3902	8.1
Total Col1Ave (4 peaks):					181.2	Total Col2Ave (4 peaks):				128.0 RPD = 34
Corrected Ave (3 peaks):					162.6	Corrected Ave (3 peaks):				97.8 RPD = 50*
Aroclor-1254	1	8.678	0.003	18050	84.5	1	9.242	0.003	55374	92.2
Aroclor-1254	2	---			0.0	2	9.393	0.062	3902	11.1
Aroclor-1254	3	9.048	0.006	1874	13.5	3	9.768	0.005	7503	16.4
Aroclor-1254	4	9.179	0.003	8064	30.3	4	9.930	0.017	138725	136.8
Aroclor-1254	5	9.859	-0.008	24786	148.4	5	10.160	0.012	181859	176.8
Total Col1Ave (4 peaks):					69.2	Total Col2Ave (5 peaks):				86.7 RPD = 22
Corrected Ave (3 peaks):					42.8	Corrected Ave (4 peaks):				64.1 RPD = 40*
Aroclor-1260	1	10.386	0.003	52476	266.0	1	11.427	0.002	206923	255.6
Aroclor-1260	2	10.705	0.005	54460	281.2	2	11.681	-0.000	606031	257.6
Aroclor-1260	3	11.055	0.005	146267	279.5	3	12.264	0.003	390976	258.4
Aroclor-1260	4	11.458	0.005	67567	289.8	4	12.974	0.002	190042	262.7
Aroclor-1260	5	11.557	0.003	30592	262.0	NS	---			----
Total Col1Ave (5 peaks):					275.7	Total Col2Ave (4 peaks):				258.6 RPD = 6
Corrected Ave (4 peaks):					272.2	Corrected Ave (3 peaks):				257.2 RPD = 6
Aroclor-1262	1	10.386	0.002	52476	196.1	1	10.970	-0.000	227139	190.7
Aroclor-1262	2	11.458	0.003	67567	389.9	2	11.681	-0.004	606031	241.2
Aroclor-1262	3	11.630	0.003	39662	158.8	3	12.190	0.002	176119	157.9
Aroclor-1262	4	12.278	0.004	37281	181.8	4	12.974	0.001	190042	182.8
Total Col1Ave (4 peaks):					231.6	Total Col2Ave (4 peaks):				193.2 RPD = 18
Corrected Ave (3 peaks):					178.9	Corrected Ave (3 peaks):				177.2 RPD = 1
Aroclor-1268	1	11.557	-0.000	30592	52.0	1	12.190	-0.010	176119	62.9
Aroclor-1268	2	11.630	0.004	39662	64.3	2	12.264	-0.003	390976	128.0
Aroclor-1268	3	12.031	0.031	15649	32.2	3	12.637	-0.007	5866	2.2
Aroclor-1268	4	12.771	-0.001	7371	4.7	4	12.784	0.001	4262	6.5
Total Col1Ave (4 peaks):					38.3	Total Col2Ave (4 peaks):				49.9 RPD = 26

Corrected Ave (3 peaks): 29.6 Corrected Ave (3 peaks): 23.9 RPD = 21

Total PCB Area Col1 (5.169 - 13.066) = 1398917 Col1 Total PCB = 0.6 ppm*

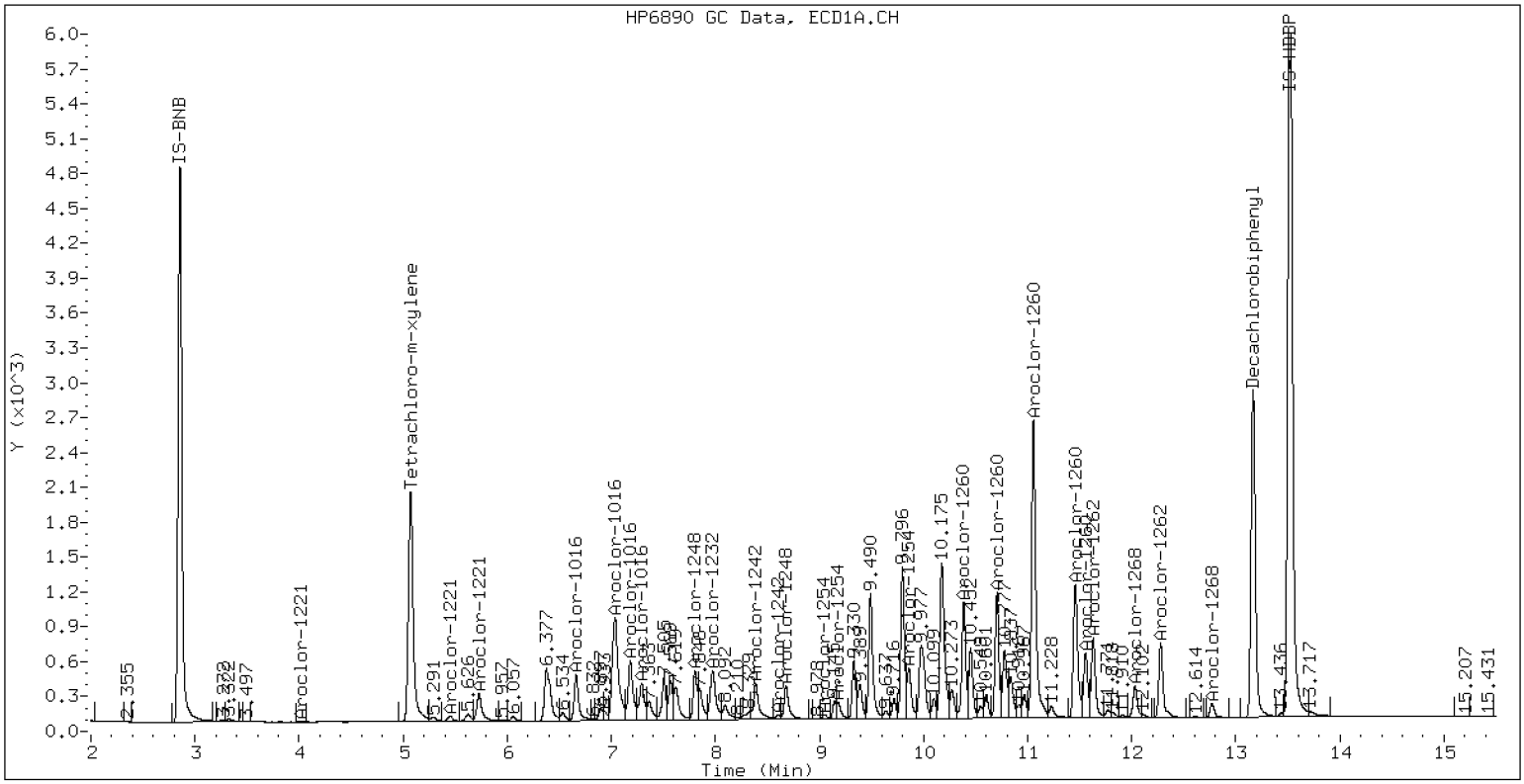
Total PCB Area Col2 (5.169 - 13.066) = 5304779 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

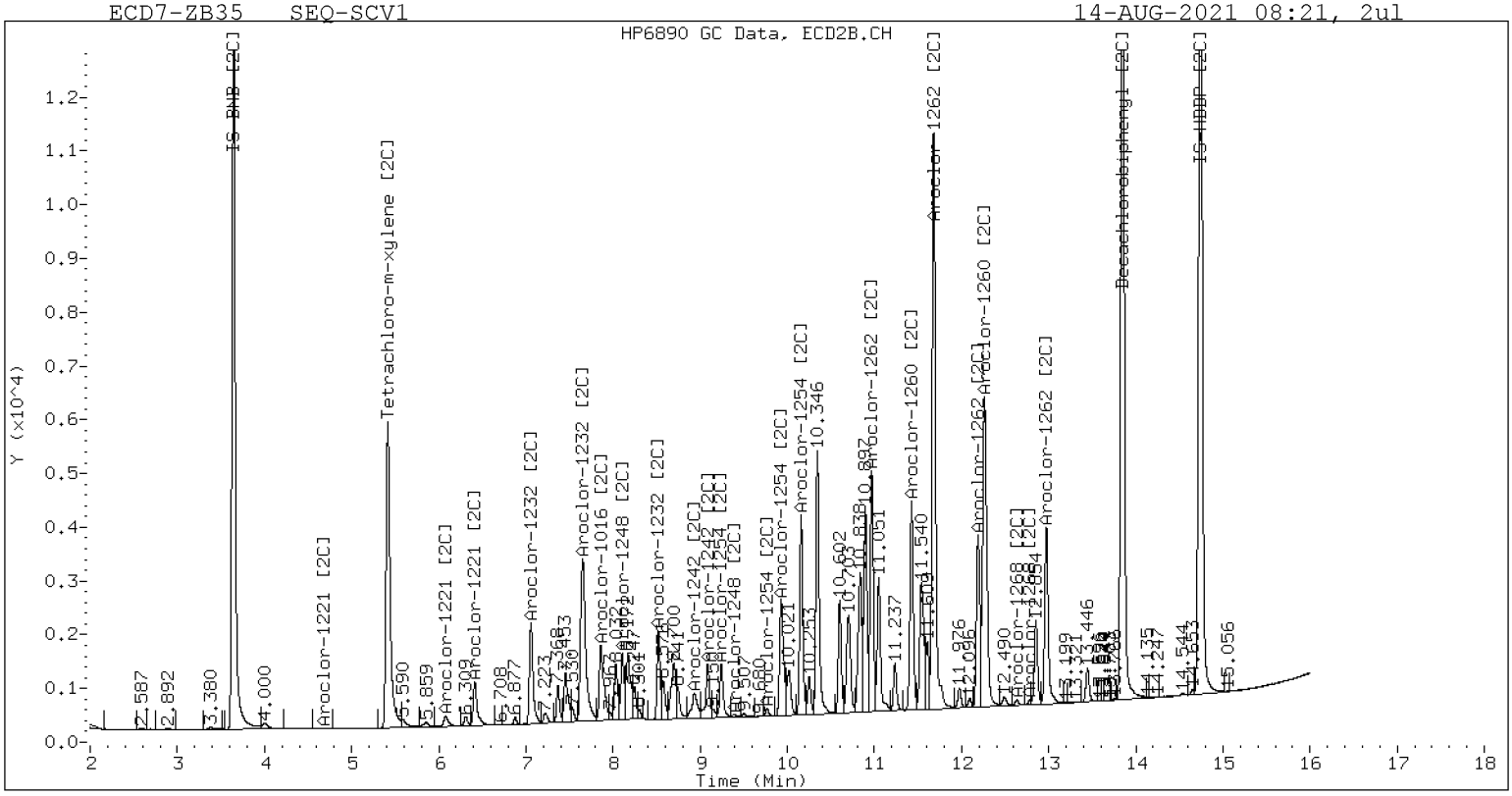
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21G0321
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV2
Sequence Name: AR1242SCV2
Standard ID: J008140

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1242	250.00	282	12.6	20.00
Aroclor 1242 [2C]	250.00	257	2.8	20.00
Decachlorobiphenyl	40.000	40.6	1.4	20.00
Tetrachlorometaxylene	40.000	42.4	6.0	20.00
Decachlorobiphenyl [2C]	40.000	40.1	0.2	20.00
Tetrachlorometaxylene [2C]	40.000	41.2	3.0	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: /210813.b/08132142ECD7.D
Data file 2: /210813.b/210813.b/08132142ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV2
Client ID:
Injection Date: 14-AUG-2021 08:41
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.071	0.002	132285	5.416	-0.001	383386	42.4	41.2	2.9	Tetrachloro-m-xylene
13.167	0.001	167664	13.849	-0.031	892912	40.6	40.1	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258029	-0.3
Hexabromobiphenyl	425681	455205	6.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724238	0.5
Hexabromobiphenyl	863111	1002202	16.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.004	19016	207.8	1	7.058	0.002	84149	203.8
Aroclor-1016	2	7.036	0.007	56530	202.0	2	7.655	0.007	190019	205.7
Aroclor-1016	3	7.182	0.006	26016	207.1	3	7.861	0.006	75921	209.4
Aroclor-1016	4	7.291	0.006	16388	208.1	4	8.108	0.003	48471	220.9
Total Col1Ave (4 peaks):				206.3		Total Col2Ave (4 peaks):			210.0	RPD = 2
Corrected Ave (3 peaks):				205.6		Corrected Ave (3 peaks):			206.3	RPD = 0
Aroclor-1221	1	4.028	0.013	116	5.7	1	---			0.0
Aroclor-1221	2	5.452	0.001	2495	78.1	2	6.082	0.010	11569	93.0
Aroclor-1221	3	5.727	0.003	12904	149.5	3	6.414	0.005	39789	183.5
Total Col1Ave (3 peaks):				77.8		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.028	0.010	116	9.3	1	---			0.0
Aroclor-1232	2	5.727	0.001	12904	189.7	2	7.058	0.000	84149	444.9
Aroclor-1232	3	7.036	0.003	56530	544.5	3	7.655	0.004	190019	502.0
Aroclor-1232	4	7.974	0.001	26547	621.6	4	8.522	0.000	61015	618.7
Total Col1Ave (4 peaks):				341.3		Total Col2Ave (3 peaks):			521.9	RPD = 42*
Corrected Ave (3 peaks):				247.8		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.662	0.003	19016	267.5	1	7.058	0.001	84149	252.7
Aroclor-1242	2	7.036	0.006	56530	266.7	2	7.655	0.006	190019	262.7
Aroclor-1242	3	8.383	0.009	29618	246.7	3	8.960	0.011	88042	260.5
Aroclor-1242	4	8.677	0.003	16945	345.4	4	9.035	0.007	96759	252.3
Total Col1Ave (4 peaks):				281.6		Total Col2Ave (4 peaks):			257.1	RPD = 9
Corrected Ave (3 peaks):				260.3		Corrected Ave (3 peaks):			255.2	RPD = 2
Aroclor-1248	1	7.804	0.005	17658	163.3	1	8.108	0.002	48471	161.5
Aroclor-1248	2	7.974	0.006	26547	188.1	2	8.522	0.002	61015	167.0
Aroclor-1248	3	8.383	0.009	29618	143.3	3	8.960	0.014	88042	151.3
Aroclor-1248	4	8.677	0.004	16945	143.6	4	9.387	0.011	85570	173.2
Total Col1Ave (4 peaks):				159.6		Total Col2Ave (4 peaks):			163.2	RPD = 2
Corrected Ave (3 peaks):				150.1		Corrected Ave (3 peaks):			159.9	RPD = 6
Aroclor-1254	1	8.677	0.002	16945	76.1	1	9.243	0.003	29242	47.5
Aroclor-1254	2	8.749	0.003	9630	93.4	2	9.387	0.056	85570	236.6
Aroclor-1254	3	9.048	0.007	7009	48.3	3	9.768	0.005	22605	48.1
Aroclor-1254	4	9.185	0.010	12002	43.3	4	9.920	0.006	43258	41.6
Aroclor-1254	5	9.892	0.025	8818	50.7	5	10.159	0.012	45764	43.4
Total Col1Ave (5 peaks):				62.4		Total Col2Ave (5 peaks):			83.4	RPD = 29
Corrected Ave (4 peaks):				54.6		Corrected Ave (4 peaks):			45.1	RPD = 19
Aroclor-1260	1	10.393	0.010	159	0.8	1	11.445	0.020	5299	6.4
Aroclor-1260	2	10.708	0.008	221	1.1	2	11.687	0.006	3878	1.6
Aroclor-1260	3	11.059	0.009	267	0.5	3	12.271	0.010	3933	2.5
Aroclor-1260	4	11.460	0.007	376	1.6	4	13.053	0.081	5398	7.3
Aroclor-1260	5	---			0.0	NS	---			----
Total Col1Ave (4 peaks):				1.0		Total Col2Ave (4 peaks):			4.4	RPD = 128*
Corrected Ave (3 peaks):				0.8		Corrected Ave (3 peaks):			3.5	RPD = 126*
Aroclor-1262	1	10.393	0.009	159	0.6	1	10.901	-0.069	17524	14.3
Aroclor-1262	2	11.460	0.005	376	2.1	2	11.687	0.001	3878	1.5
Aroclor-1262	3	---			0.0	3	12.271	0.083	3933	3.4
Aroclor-1262	4	---			0.0	4	13.053	0.081	5398	5.0
Col1Ave: <3 Quant Peaks						Col2Ave:			6.1	
Aroclor-1268	1	11.460	-0.097	376	0.6	1	12.271	0.071	3933	1.4
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.914	-0.086	1770	3.5	3	12.639	-0.005	1023	0.4
Aroclor-1268	4	12.775	0.003	794	0.5	4	12.790	0.006	1260	1.9
Total Col1Ave (3 peaks):				1.5		Total Col2Ave (3 peaks):			1.2	RPD = 24
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.169 - 13.066) = 482960 Col1 Total PCB = 0.2 ppm*

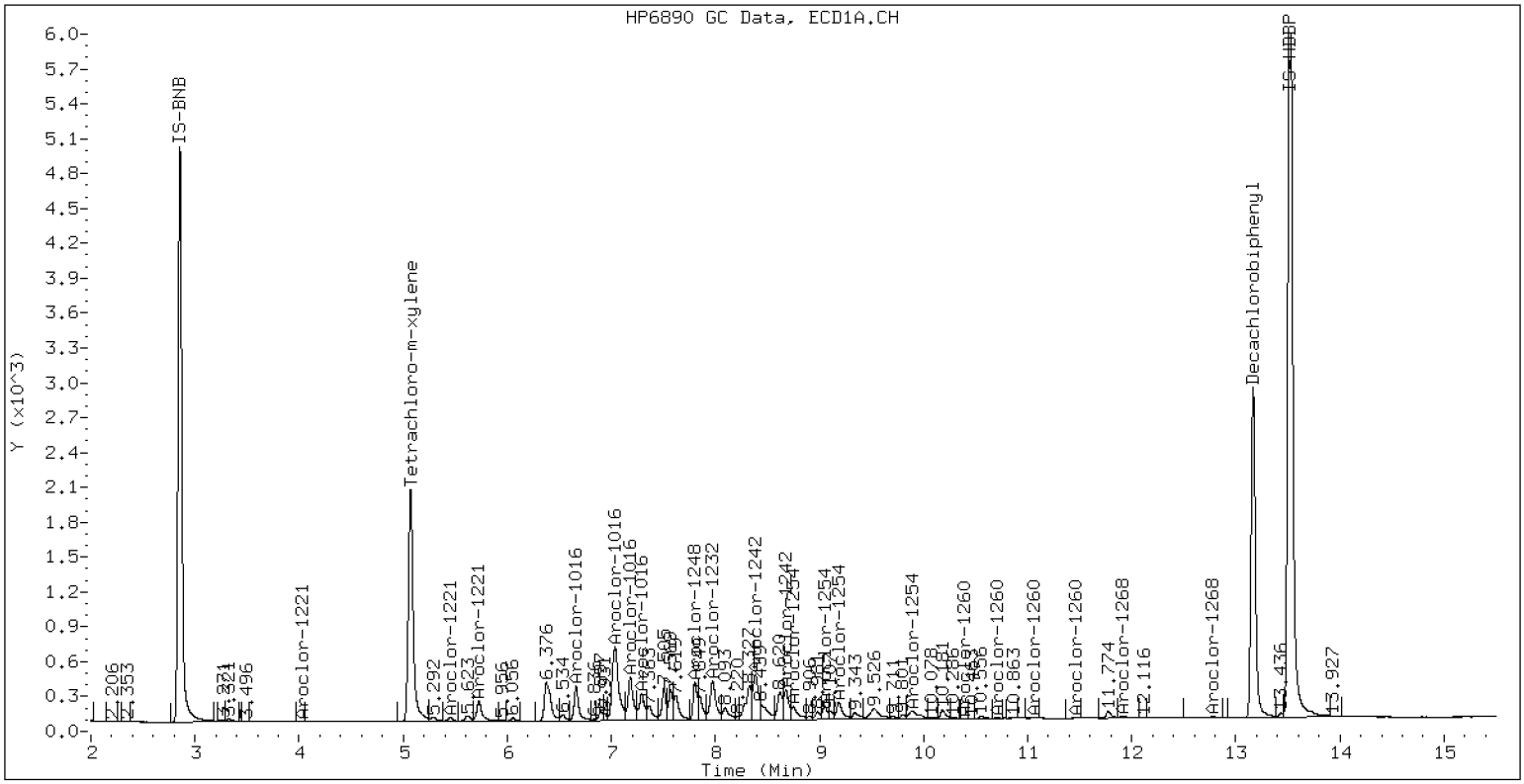
Total PCB Area Col2 (5.169 - 13.066) = 1884416 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

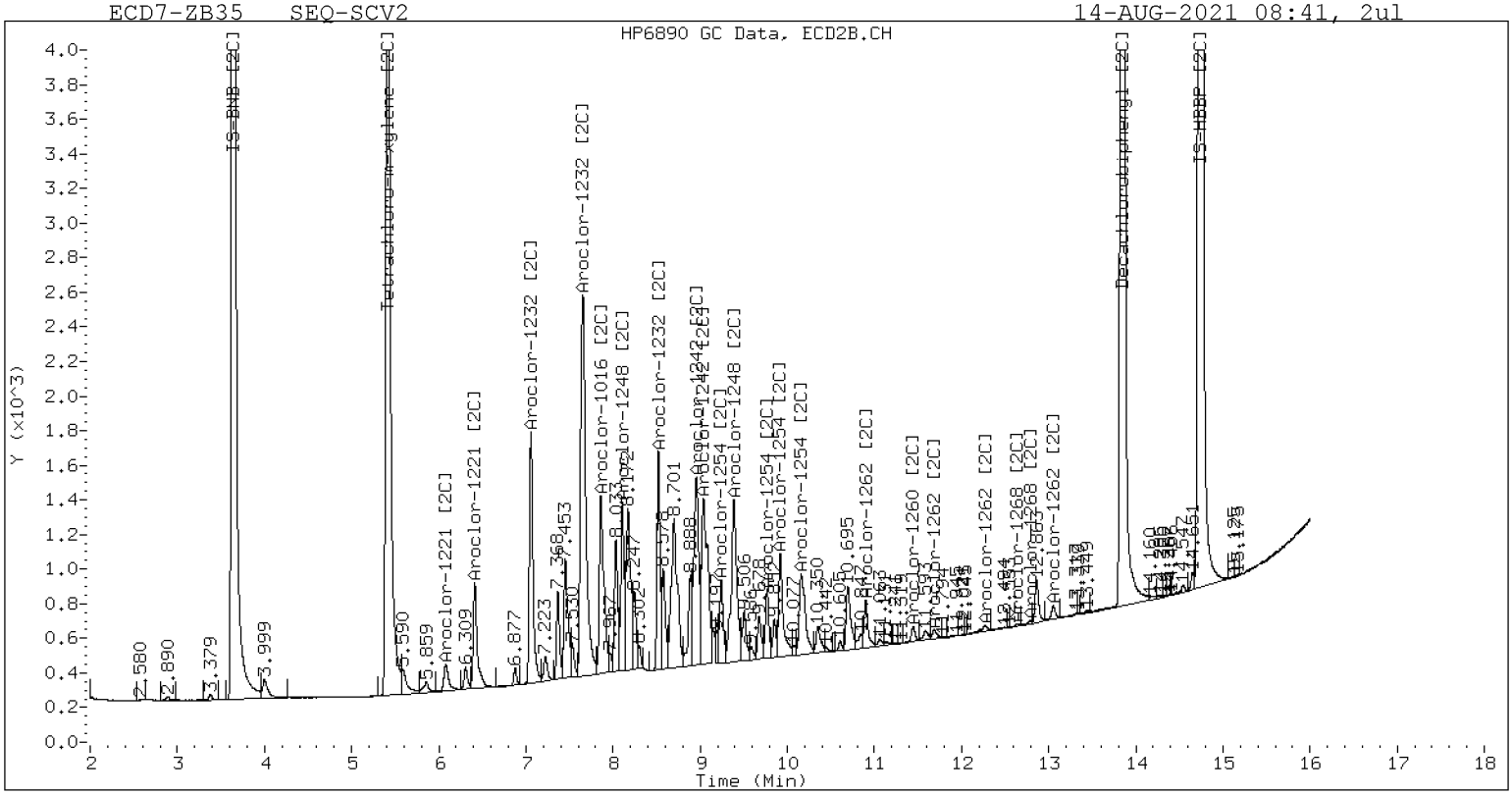
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV2 14-AUG-2021 08:41, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV2 14-AUG-2021 08:41, 2ul

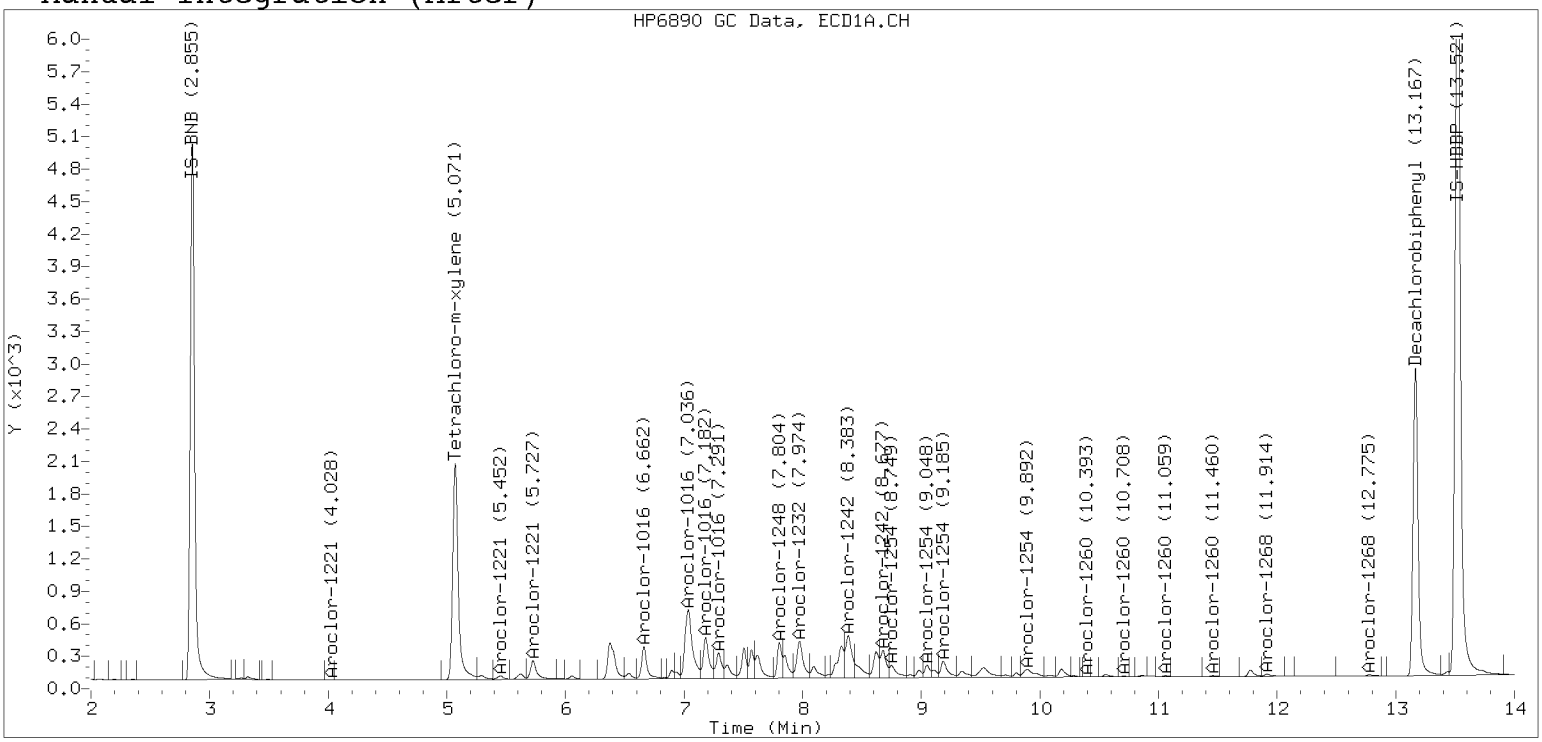


ZB-35 Manual Integration: YES

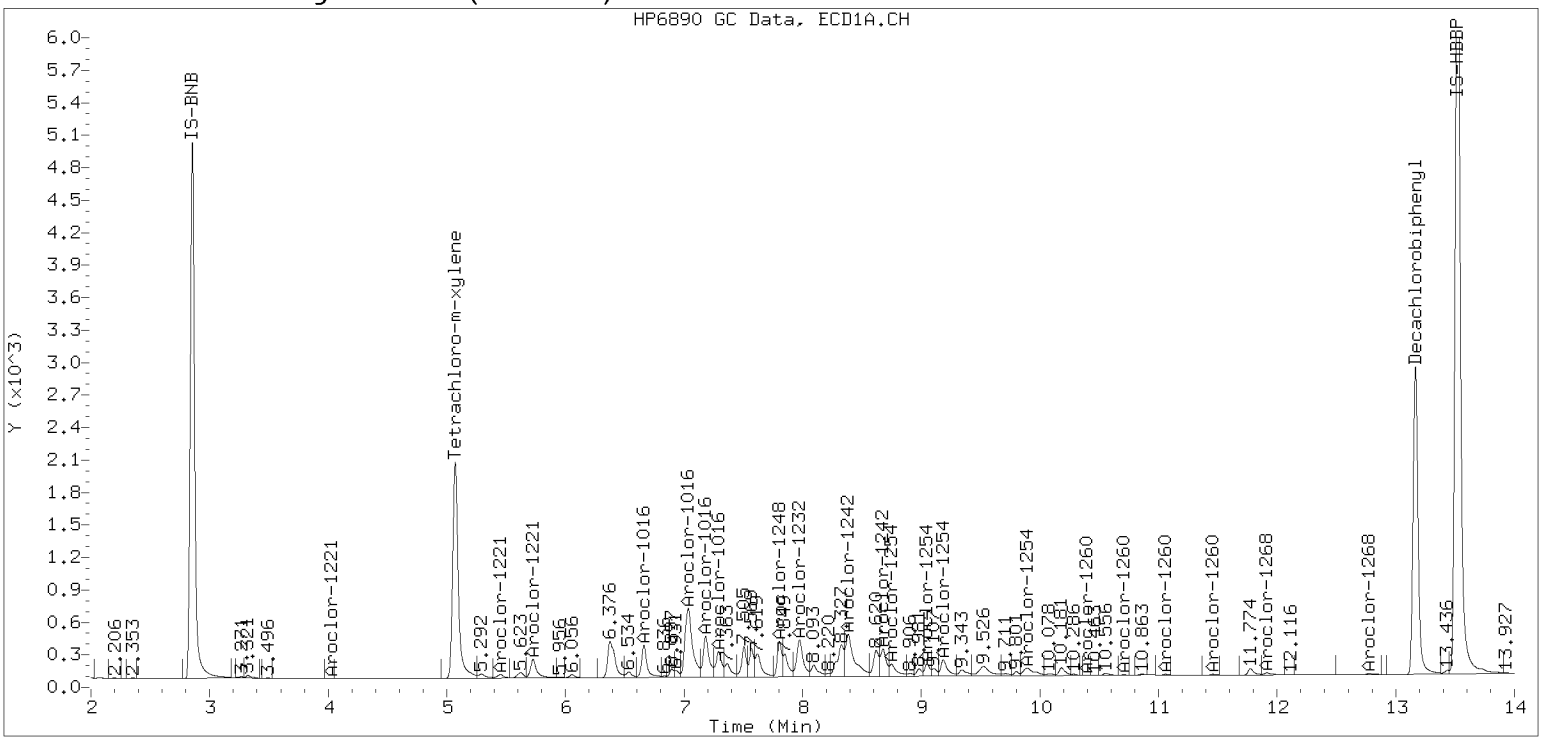
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132142ECD7.D Injection Date: 14-AUG-2021 08:41

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21G0321
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV3
Sequence Name: AR1248SCV3
Standard ID: J008141

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1248	250.00	262	4.6	20.00
Aroclor 1248 [2C]	250.00	275	10.0	20.00
Decachlorobiphenyl	40.000	39.5	-1.3	20.00
Tetrachlorometaxylene	40.000	41.7	4.2	20.00
Decachlorobiphenyl [2C]	40.000	38.4	-3.9	20.00
Tetrachlorometaxylene [2C]	40.000	40.4	1.0	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: /210813.b/08132143ECD7.D
Data file 2: /210813.b/210813.b/08132143ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV3
Client ID:
Injection Date: 14-AUG-2021 09:02
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	133217	5.416	-0.001	384693	41.7	40.4	3.0	Tetrachloro-m-xylene
13.165	-0.001	166922	13.848	-0.032	892438	39.5	38.4	2.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264526	2.2
Hexabromobiphenyl	425681	465895	9.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740726	2.7
Hexabromobiphenyl	863111	1045189	21.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	9682	103.2	1	7.058	0.001	46276	109.6
Aroclor-1016	2	7.035	0.006	37972	132.4	2	7.654	0.006	128803	136.3
Aroclor-1016	3	7.185	0.009	16001	124.3	3	7.862	0.007	26557	71.6
Aroclor-1016	4	7.292	0.007	10150	125.7	4	8.107	0.002	83644	372.8
Total Col1Ave (4 peaks):					121.4	Total Col2Ave (4 peaks):				172.6 RPD = 35
Corrected Ave (3 peaks):					117.7	Corrected Ave (3 peaks):				105.8 RPD = 11
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	5.455	0.004	449	13.7	2	6.091	0.019	6638	52.2
Aroclor-1221	3	5.728	0.004	2260	25.5	3	6.414	0.005	8501	38.3
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	5.728	0.002	2260	32.4	2	7.058	-0.000	46276	239.2
Aroclor-1232	3	7.035	0.002	37972	356.8	3	7.654	0.003	128803	332.7
Aroclor-1232	4	7.972	-0.000	39250	896.5	4	8.523	0.001	102298	1014.3
Total Col1Ave (3 peaks):					428.6	Total Col2Ave (3 peaks):				528.7 RPD = 21
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.663	0.004	9682	132.8	1	7.058	0.000	46276	135.9
Aroclor-1242	2	7.035	0.005	37972	174.8	2	7.654	0.005	128803	174.1
Aroclor-1242	3	8.381	0.007	54555	443.2	3	8.956	0.007	151640	438.8
Aroclor-1242	4	8.678	0.004	31259	621.5	4	9.034	0.006	104178	265.6
Total Col1Ave (4 peaks):					343.1	Total Col2Ave (4 peaks):				253.6 RPD = 30
Corrected Ave (3 peaks):					250.3	Corrected Ave (3 peaks):				191.9 RPD = 26
Aroclor-1248	1	7.802	0.004	28742	259.3	1	8.107	0.002	83644	272.5
Aroclor-1248	2	7.972	0.004	39250	271.2	2	8.523	0.003	102298	273.8
Aroclor-1248	3	8.381	0.007	54555	257.5	3	8.956	0.009	151640	254.8
Aroclor-1248	4	8.678	0.004	31259	258.4	4	9.383	0.006	151004	298.8
Total Col1Ave (4 peaks):					261.6	Total Col2Ave (4 peaks):				275.0 RPD = 5
Corrected Ave (3 peaks):					258.4	Corrected Ave (3 peaks):				267.0 RPD = 3
Aroclor-1254	1	8.678	0.002	31259	137.0	1	9.242	0.003	54333	86.2
Aroclor-1254	2	8.749	0.003	18396	174.1	2	9.383	0.052	151004	408.3
Aroclor-1254	3	9.047	0.006	14863	99.9	3	9.767	0.004	47940	99.8
Aroclor-1254	4	9.184	0.008	25850	91.0	4	9.918	0.004	90159	84.7
Aroclor-1254	5	9.891	0.024	17966	100.7	5	10.157	0.010	92605	85.8
Total Col1Ave (5 peaks):					120.5	Total Col2Ave (5 peaks):				152.9 RPD = 24
Corrected Ave (4 peaks):					107.1	Corrected Ave (4 peaks):				89.1 RPD = 18
Aroclor-1260	1	10.390	0.007	578	2.8	1	11.440	0.015	6820	7.8
Aroclor-1260	2	10.706	0.006	437	2.1	2	11.683	0.002	7655	3.0
Aroclor-1260	3	11.059	0.008	1267	2.3	3	12.263	0.002	5159	3.2
Aroclor-1260	4	11.460	0.007	540	2.2	4	12.973	0.001	2451	3.2
Aroclor-1260	5	11.559	0.005	490	4.0	NS	---			----
Total Col1Ave (5 peaks):					2.7	Total Col2Ave (4 peaks):				4.3 RPD = 47*
Corrected Ave (4 peaks):					2.3	Corrected Ave (3 peaks):				3.1 RPD = 29
Aroclor-1262	1	10.390	0.006	578	2.0	1	10.972	0.001	4108	3.2
Aroclor-1262	2	11.460	0.005	540	2.9	2	11.683	-0.002	7655	2.8
Aroclor-1262	3	11.632	0.005	592	2.2	3	12.188	-0.000	3699	3.1
Aroclor-1262	4	12.278	0.004	571	2.6	4	12.973	0.001	2451	2.2
Total Col1Ave (4 peaks):					2.5	Total Col2Ave (4 peaks):				2.8 RPD = 14
Corrected Ave (3 peaks):					2.3	Corrected Ave (3 peaks):				2.7 RPD = 17
Aroclor-1268	1	11.559	0.002	490	0.8	1	12.188	-0.012	3699	1.2
Aroclor-1268	2	11.632	0.006	592	0.9	2	12.263	-0.004	5159	1.6
Aroclor-1268	3	11.915	-0.086	879	1.7	3	12.643	-0.001	909	0.3
Aroclor-1268	4	12.775	0.003	932	0.6	4	12.788	0.005	972	1.4
Total Col1Ave (4 peaks):					1.0	Total Col2Ave (4 peaks):				1.1 RPD = 13
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				1.0 RPD = 27

Total PCB Area Col1 (5.169 - 13.066) = 608290 Col1 Total PCB = 0.2 ppm*

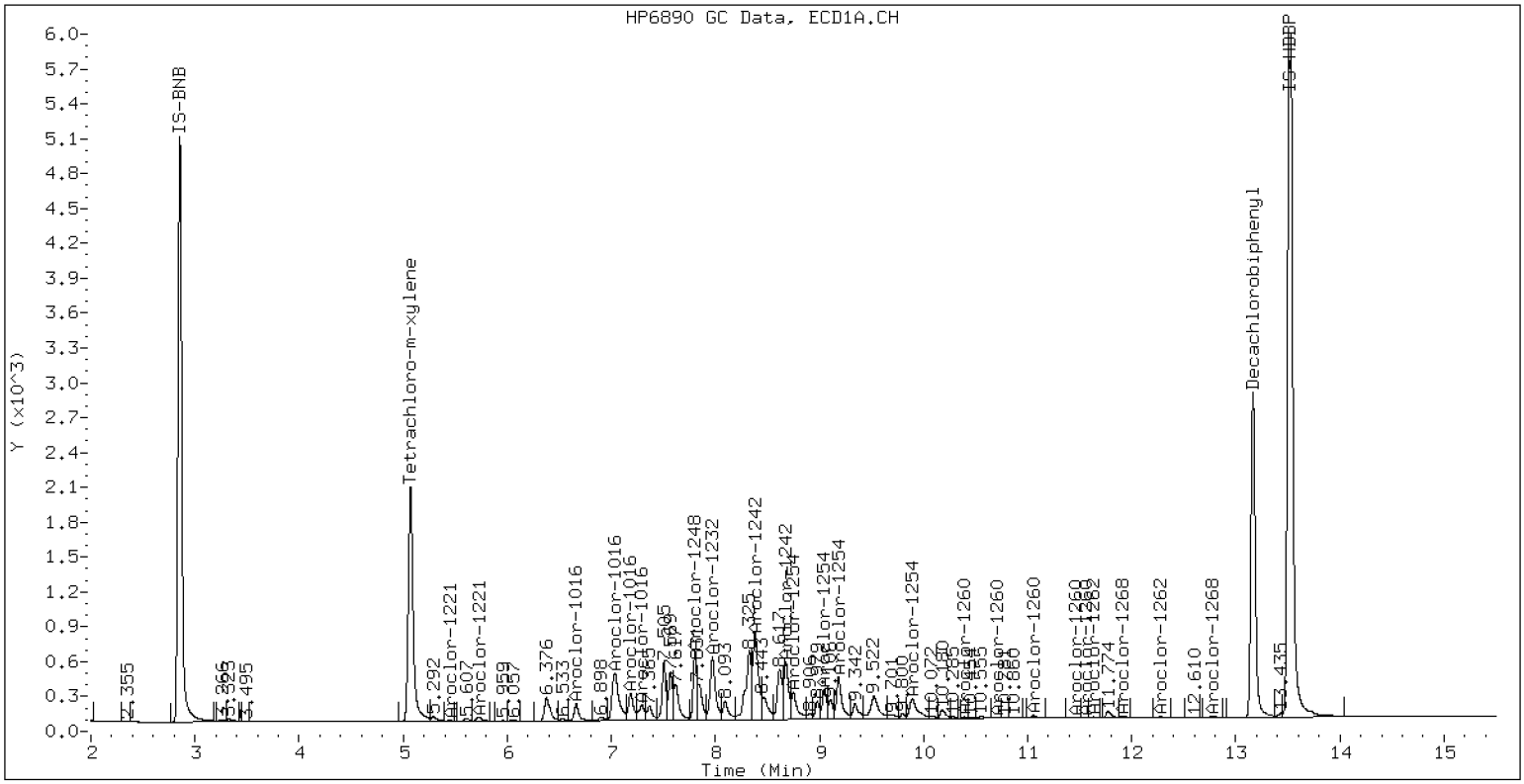
Total PCB Area Col2 (5.169 - 13.066) = 2317749 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

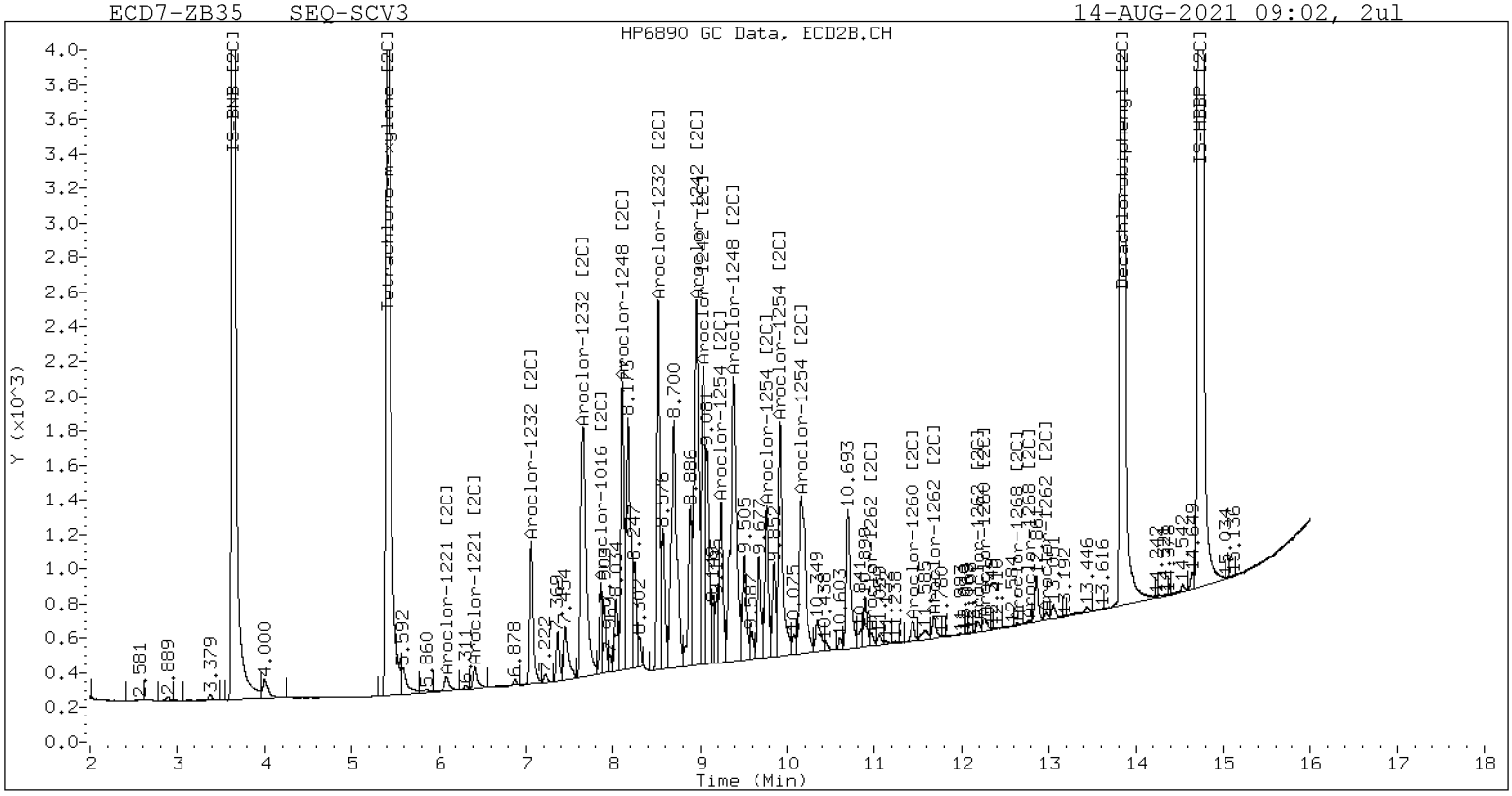
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV3 14-AUG-2021 09:02, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV3 14-AUG-2021 09:02, 2ul

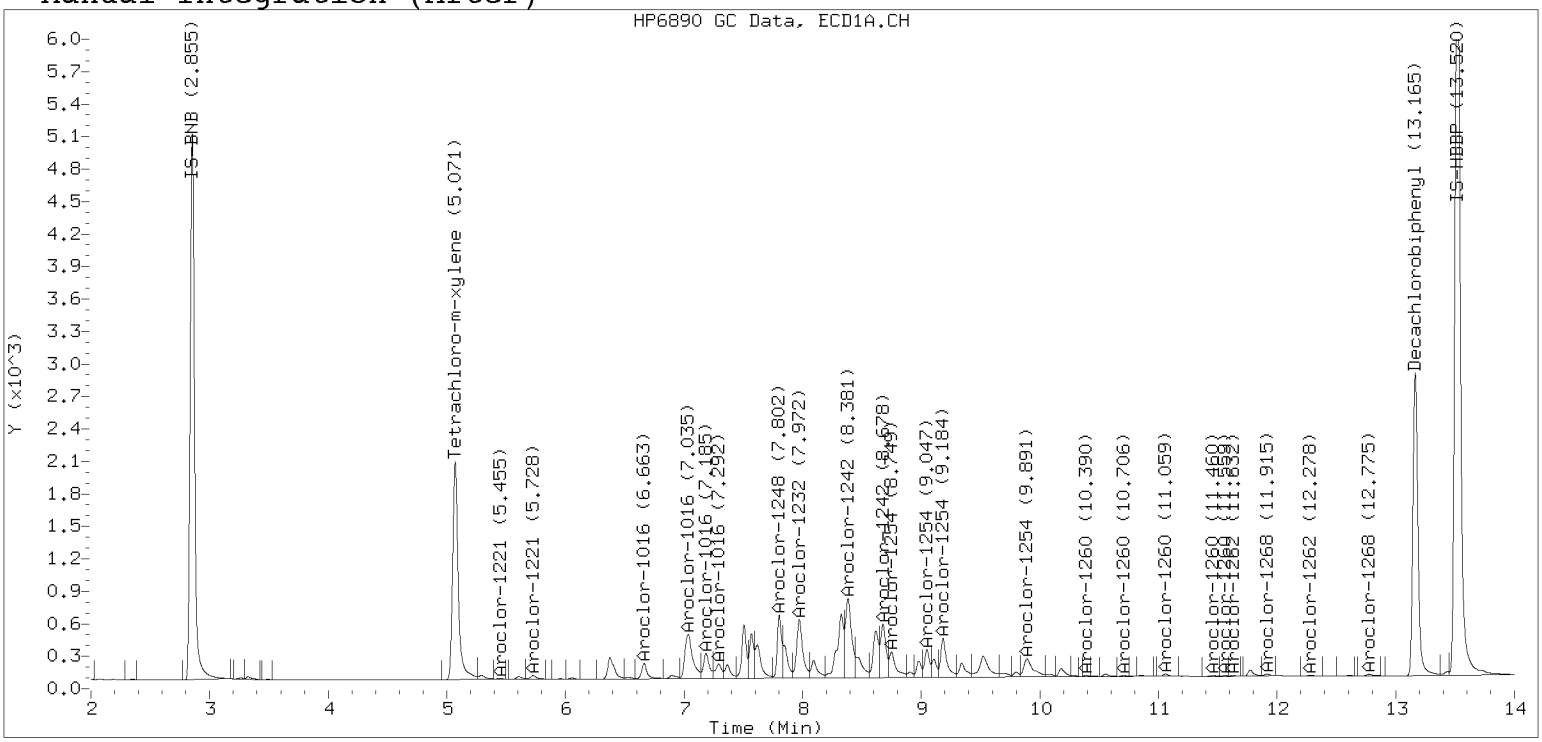


ZB-35 Manual Integration: NO

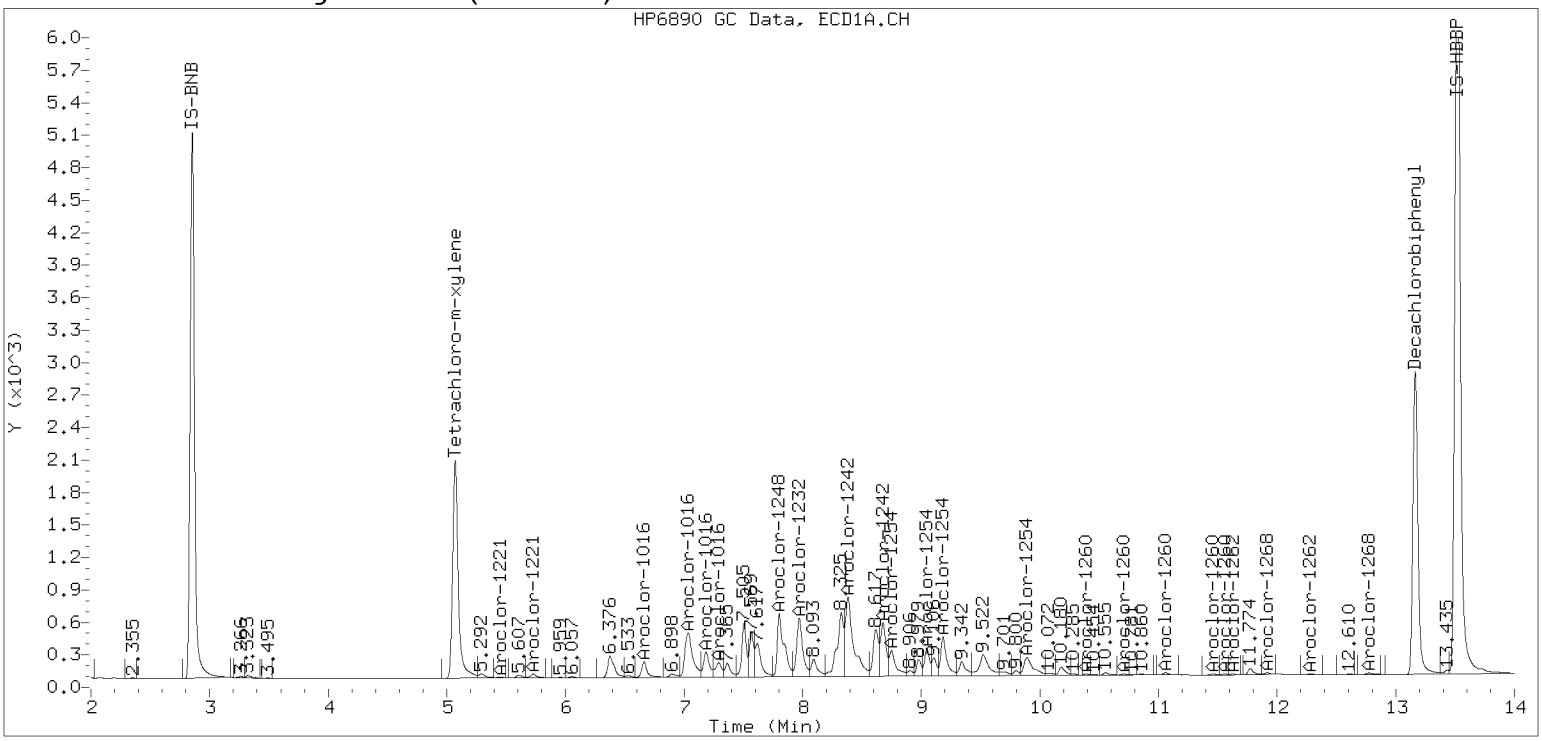
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132143ECD7.D Injection Date: 14-AUG-2021 09:02

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21G0321
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV4
Sequence Name: AR1254SCV4
Standard ID: J008142

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1254	250.00	282	12.7	20.00
Aroclor 1254 [2C]	250.00	264	5.8	20.00
Decachlorobiphenyl	40.000	40.1	0.2	20.00
Tetrachlorometaxylene	40.000	42.6	6.5	20.00
Decachlorobiphenyl [2C]	40.000	38.6	-3.4	20.00
Tetrachlorometaxylene [2C]	40.000	41.4	3.6	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: /210813.b/08132144ECD7.D
Data file 2: /210813.b/210813.b/08132144ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV4
Client ID:
Injection Date: 14-AUG-2021 09:22
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	134141	5.416	-0.001	389116	42.6	41.4	2.8	Tetrachloro-m-xylene
13.166	0.000	166634	13.848	-0.032	887620	40.1	38.6	3.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	260417	0.6
Hexabromobiphenyl	425681	458139	7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	730797	1.4
Hexabromobiphenyl	863111	1034233	19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	131	1.4	1	7.062	0.005	1136	2.7
Aroclor-1016	2	7.039	0.009	605	2.1	2	7.659	0.011	3270	3.5
Aroclor-1016	3	7.189	0.014	416	3.3	3	7.909	0.054	1836	5.0
Aroclor-1016	4	---			0.0	4	8.109	0.004	59728	269.8
Total Col1Ave (3 peaks): 2.3						Total Col2Ave (4 peaks): 70.3 RPD = 187*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 3.8				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.094	0.021	4462	35.5
Aroclor-1221	3	---			0.0	3	6.411	0.002	1085	5.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.062	0.004	1136	6.0
Aroclor-1232	3	7.039	0.005	605	5.8	3	7.659	0.008	3270	8.6
Aroclor-1232	4	7.975	0.003	5517	128.0	4	8.524	0.002	40317	405.2
Col1Ave: <3 Quant Peaks						Col2Ave: 139.9				
Aroclor-1242	1	6.663	0.004	131	1.8	1	7.062	0.005	1136	3.4
Aroclor-1242	2	7.039	0.008	605	2.8	2	7.659	0.010	3270	4.5
Aroclor-1242	3	8.385	0.011	48414	399.6	3	8.960	0.012	63036	184.9
Aroclor-1242	4	8.679	0.005	62054	1253.2	4	9.035	0.007	12438	32.1
Total Col1Ave (4 peaks): 414.4						Total Col2Ave (4 peaks): 56.2 RPD = 152*				
Corrected Ave (3 peaks): 134.7						Corrected Ave (3 peaks): 13.3 RPD = 164*				
Aroclor-1248	1	7.804	0.005	12376	113.4	1	8.109	0.003	59728	197.2
Aroclor-1248	2	7.975	0.007	5517	38.7	2	8.524	0.004	40317	109.4
Aroclor-1248	3	8.385	0.011	48414	232.1	3	8.960	0.014	63036	107.4
Aroclor-1248	4	8.679	0.005	62054	521.1	4	9.335	-0.041	91889	184.3
Total Col1Ave (4 peaks): 226.3						Total Col2Ave (4 peaks): 149.6 RPD = 41*				
Corrected Ave (3 peaks): 128.1						Corrected Ave (3 peaks): 133.7 RPD = 4				
Aroclor-1254	1	8.679	0.003	62054	276.2	1	9.242	0.003	166697	268.1
Aroclor-1254	2	8.751	0.005	29615	284.7	2	9.335	0.004	91889	251.8
Aroclor-1254	3	9.046	0.005	40463	276.3	3	9.766	0.003	128036	270.1
Aroclor-1254	4	9.181	0.005	78989	282.3	4	9.918	0.004	270040	257.1
Aroclor-1254	5	9.873	0.006	50845	289.4	5	10.155	0.008	293166	275.2
Total Col1Ave (5 peaks): 281.8						Total Col2Ave (5 peaks): 264.5 RPD = 6				
Corrected Ave (4 peaks): 279.9						Corrected Ave (4 peaks): 261.8 RPD = 7				
Aroclor-1260	1	10.386	0.003	4281	20.8	1	11.441	0.015	77320	89.9
Aroclor-1260	2	10.706	0.006	4756	23.5	2	11.684	0.003	61993	24.8
Aroclor-1260	3	11.057	0.007	11820	21.6	3	12.266	0.005	35733	22.2
Aroclor-1260	4	11.458	0.005	9286	38.1	4	12.973	0.001	1994	2.6
Aroclor-1260	5	11.627	0.073	440	3.6	NS	---			----
Total Col1Ave (5 peaks): 21.5						Total Col2Ave (4 peaks): 34.9 RPD = 47*				
Corrected Ave (4 peaks): 17.4						Corrected Ave (3 peaks): 16.5 RPD = 5				
Aroclor-1262	1	10.386	0.002	4281	15.3	1	10.897	-0.073	251611	198.9
Aroclor-1262	2	11.458	0.003	9286	51.3	2	11.684	-0.001	61993	23.2
Aroclor-1262	3	11.627	0.000	440	1.7	3	12.205	0.017	9780	8.3
Aroclor-1262	4	12.279	0.005	629	2.9	4	12.973	0.000	1994	1.8
Total Col1Ave (4 peaks): 17.8						Total Col2Ave (4 peaks): 58.1 RPD = 106*				
Corrected Ave (3 peaks): 6.6						Corrected Ave (3 peaks): 11.1 RPD = 50*				
Aroclor-1268	1	11.627	0.070	440	0.7	1	12.205	0.005	9780	3.3
Aroclor-1268	2	---			0.0	2	12.266	-0.001	35733	11.0
Aroclor-1268	3	11.912	-0.088	968	1.9	3	12.633	-0.011	400	0.1
Aroclor-1268	4	12.774	0.002	1001	0.6	4	12.861	0.078	15819	22.8
Total Col1Ave (3 peaks): 1.1						Total Col2Ave (4 peaks): 9.3 RPD = 158*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 4.8				

Total PCB Area Col1 (5.169 - 13.066) = 819275 Col1 Total PCB = 0.3 ppm*

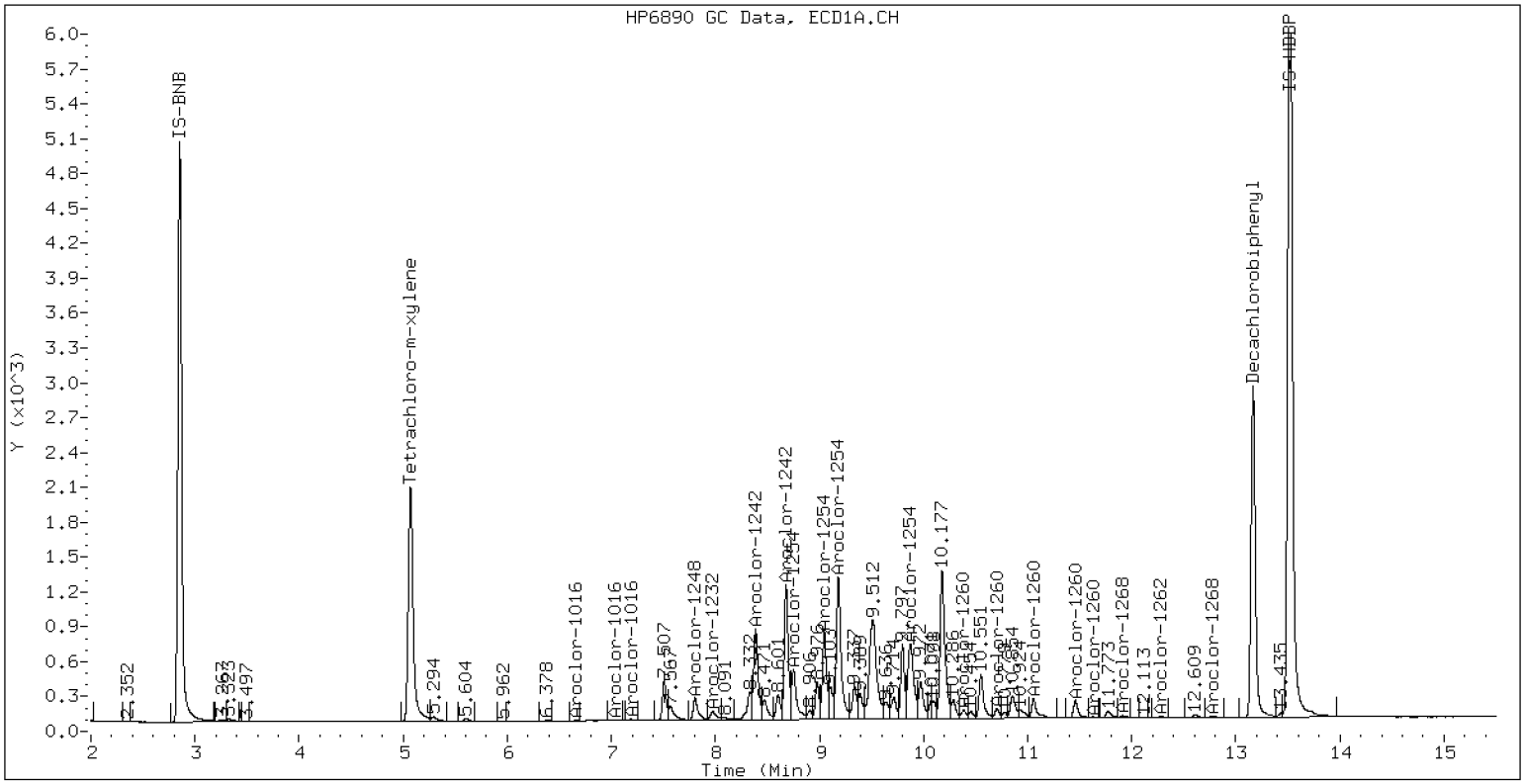
Total PCB Area Col2 (5.169 - 13.066) = 3111878 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

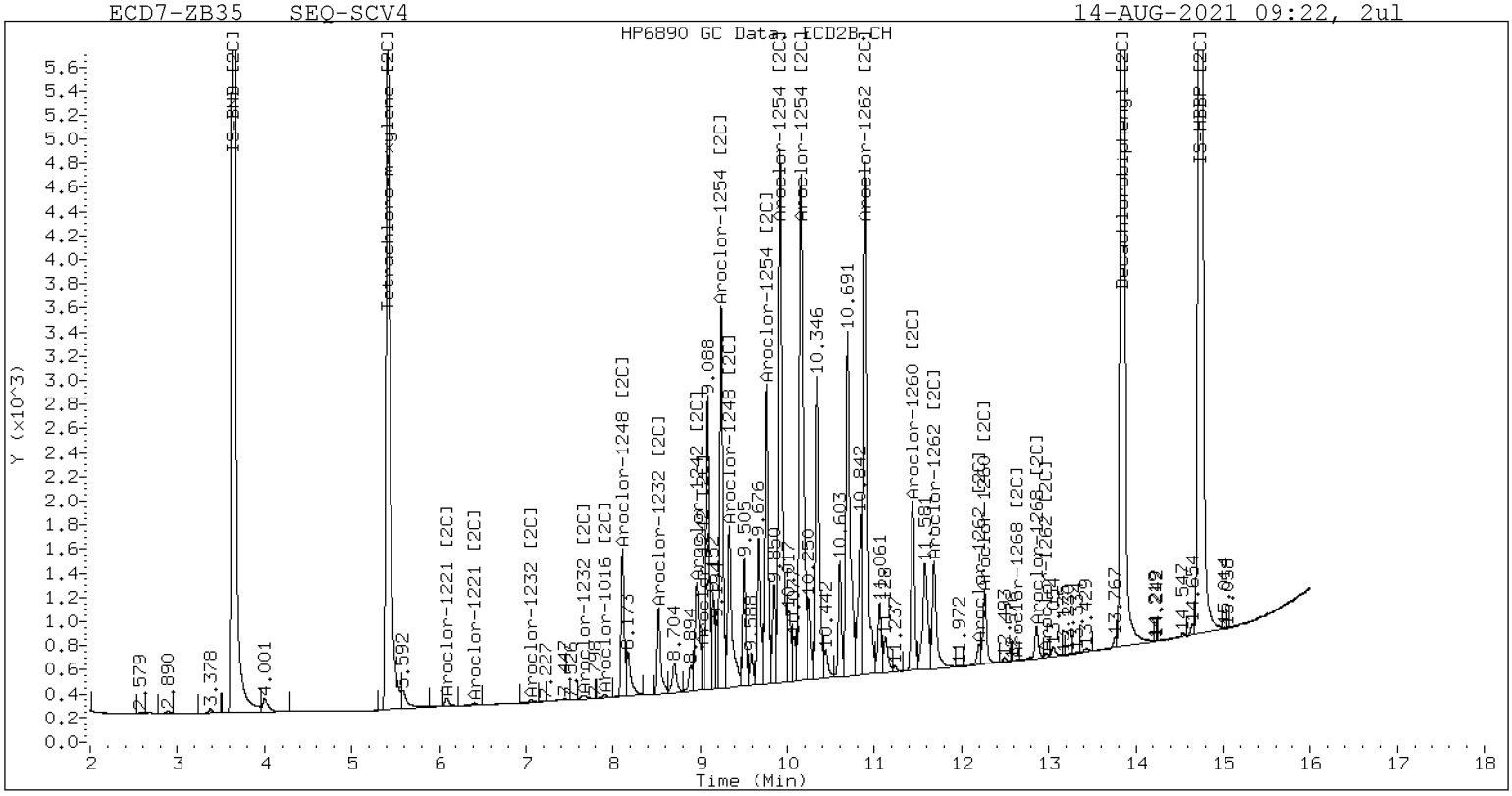
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21G0321
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV5
Sequence Name: AR2162SCV5
Standard ID: J008143

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1221	250.00	293	17.0	20.00
Aroclor 1221 [2C]	250.00	266	6.4	20.00
Decachlorobiphenyl	40.000	38.8	-2.9	20.00
Tetrachlorometaxylene	40.000	40.6	1.5	20.00
Decachlorobiphenyl [2C]	40.000	37.6	-5.9	20.00
Tetrachlorometaxylene [2C]	40.000	39.1	-2.1	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: /210813.b/08132145ECD7.D
Data file 2: /210813.b/210813.b/08132145ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV5
Client ID:
Injection Date: 14-AUG-2021 09:43
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.072	0.003	131998	5.417	-0.000	375118	40.6	39.1	3.6	Tetrachloro-m-xylene
13.166	-0.000	164634	13.848	-0.032	881936	38.8	37.6	3.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	269058	3.9
Hexabromobiphenyl	425681	467004	9.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	745766	3.4
Hexabromobiphenyl	863111	1054321	22.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	1551	16.3	1	7.061	0.004	17081	40.2
Aroclor-1016	2	7.039	0.009	4280	14.7	2	7.658	0.011	15832	16.6
Aroclor-1016	3	7.184	0.008	2282	17.4	3	7.865	0.010	6703	18.0
Aroclor-1016	4	7.294	0.009	1564	19.1	4	8.109	0.004	3939	17.4
Total Col1Ave (4 peaks): 16.8						Total Col2Ave (4 peaks): 23.1 RPD = 31				
Corrected Ave (3 peaks): 16.1						Corrected Ave (3 peaks): 17.3 RPD = 7				
Aroclor-1221	1	4.018	0.002	6262	294.7	1	4.680	0.004	15071	269.2
Aroclor-1221	2	5.454	0.003	9982	299.7	2	6.075	0.003	33472	261.2
Aroclor-1221	3	5.728	0.004	25492	283.3	3	6.413	0.004	59675	267.2
Total Col1Ave (3 peaks): 292.6						Total Col2Ave (3 peaks): 265.9 RPD = 10				
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.018	-0.000	6262	479.9	1	4.680	0.001	15071	452.2
Aroclor-1232	2	5.728	0.002	25492	359.4	2	7.061	0.003	17081	87.7
Aroclor-1232	3	7.039	0.005	4280	39.5	3	7.658	0.007	15832	40.6
Aroclor-1232	4	7.978	0.006	798	17.9	4	8.525	0.003	2523	24.8
Total Col1Ave (4 peaks): 224.2						Total Col2Ave (4 peaks): 151.3 RPD = 39				
Corrected Ave (3 peaks): 139.0						Corrected Ave (3 peaks): 51.1 RPD = 93*				
Aroclor-1242	1	6.663	0.004	1551	20.9	1	7.061	0.004	17081	49.8
Aroclor-1242	2	7.039	0.009	4280	19.4	2	7.658	0.010	15832	21.3
Aroclor-1242	3	8.388	0.013	9148	73.1	3	8.966	0.018	6505	18.7
Aroclor-1242	4	8.680	0.006	9619	188.0	4	9.089	0.061	25267	64.0
Total Col1Ave (4 peaks): 75.3						Total Col2Ave (4 peaks): 38.4 RPD = 65*				
Corrected Ave (3 peaks): 37.8						Corrected Ave (3 peaks): 29.9 RPD = 23				
Aroclor-1248	1	7.805	0.007	1067	9.5	1	8.109	0.003	3939	12.7
Aroclor-1248	2	7.978	0.010	798	5.4	2	8.525	0.005	2523	6.7
Aroclor-1248	3	8.388	0.013	9148	42.4	3	8.966	0.020	6505	10.9
Aroclor-1248	4	8.680	0.007	9619	78.2	4	9.396	0.019	4022	7.9
Total Col1Ave (4 peaks): 33.9						Total Col2Ave (4 peaks): 9.6 RPD = 112*				
Corrected Ave (3 peaks): 19.1						Corrected Ave (3 peaks): 8.5 RPD = 77*				
Aroclor-1254	1	8.680	0.005	9619	41.4	1	9.245	0.005	26890	42.4
Aroclor-1254	2	---			0.0	2	9.336	0.005	2650	7.1
Aroclor-1254	3	9.050	0.008	1343	8.9	3	9.769	0.007	4242	8.8
Aroclor-1254	4	9.145	-0.031	9990	34.6	4	9.932	0.019	121430	113.3
Aroclor-1254	5	9.858	-0.010	13751	75.8	5	10.160	0.013	143957	132.4
Total Col1Ave (4 peaks): 40.2						Total Col2Ave (5 peaks): 60.8 RPD = 41*				
Corrected Ave (3 peaks): 28.3						Corrected Ave (4 peaks): 42.9 RPD = 41*				
Aroclor-1260	1	10.387	0.004	74432	354.3	1	11.427	0.001	248521	283.6
Aroclor-1260	2	10.705	0.005	63581	308.3	2	11.682	0.001	656259	257.6
Aroclor-1260	3	11.056	0.005	158724	284.8	3	12.261	0.000	468343	285.9
Aroclor-1260	4	11.457	0.004	49425	199.0	4	12.974	0.001	287502	367.1
Aroclor-1260	5	11.557	0.003	61640	495.8	NS	---			----
Total Col1Ave (5 peaks): 328.4						Total Col2Ave (4 peaks): 298.6 RPD = 10				
Corrected Ave (4 peaks): 286.6						Corrected Ave (3 peaks): 275.7 RPD = 4				
Aroclor-1262	1	10.387	0.003	74432	261.2	1	10.970	-0.000	313779	243.4
Aroclor-1262	2	11.457	0.002	49425	267.8	2	11.682	-0.003	656259	241.2
Aroclor-1262	3	11.628	0.001	70335	264.4	3	12.188	0.000	303167	251.1
Aroclor-1262	4	12.278	0.003	58296	266.9	4	12.974	0.001	287502	255.5
Total Col1Ave (4 peaks): 265.1						Total Col2Ave (4 peaks): 247.8 RPD = 7				
Corrected Ave (3 peaks): 264.2						Corrected Ave (3 peaks): 245.2 RPD = 7				
Aroclor-1268	1	11.557	0.000	61640	98.4	1	12.188	-0.012	303167	100.1
Aroclor-1268	2	11.628	0.002	70335	107.0	2	12.261	-0.006	468343	141.7
Aroclor-1268	3	12.031	0.030	24251	46.9	3	12.635	-0.009	18559	6.5
Aroclor-1268	4	12.770	-0.001	19100	11.5	4	12.783	0.000	11203	15.9
Total Col1Ave (4 peaks): 65.9						Total Col2Ave (4 peaks): 66.0 RPD = 0				

Corrected Ave (3 peaks): 52.2 Corrected Ave (3 peaks): 40.8 RPD = 25

Total PCB Area Col1 (5.169 - 13.066) = 1098701 Col1 Total PCB = 0.4 ppm*

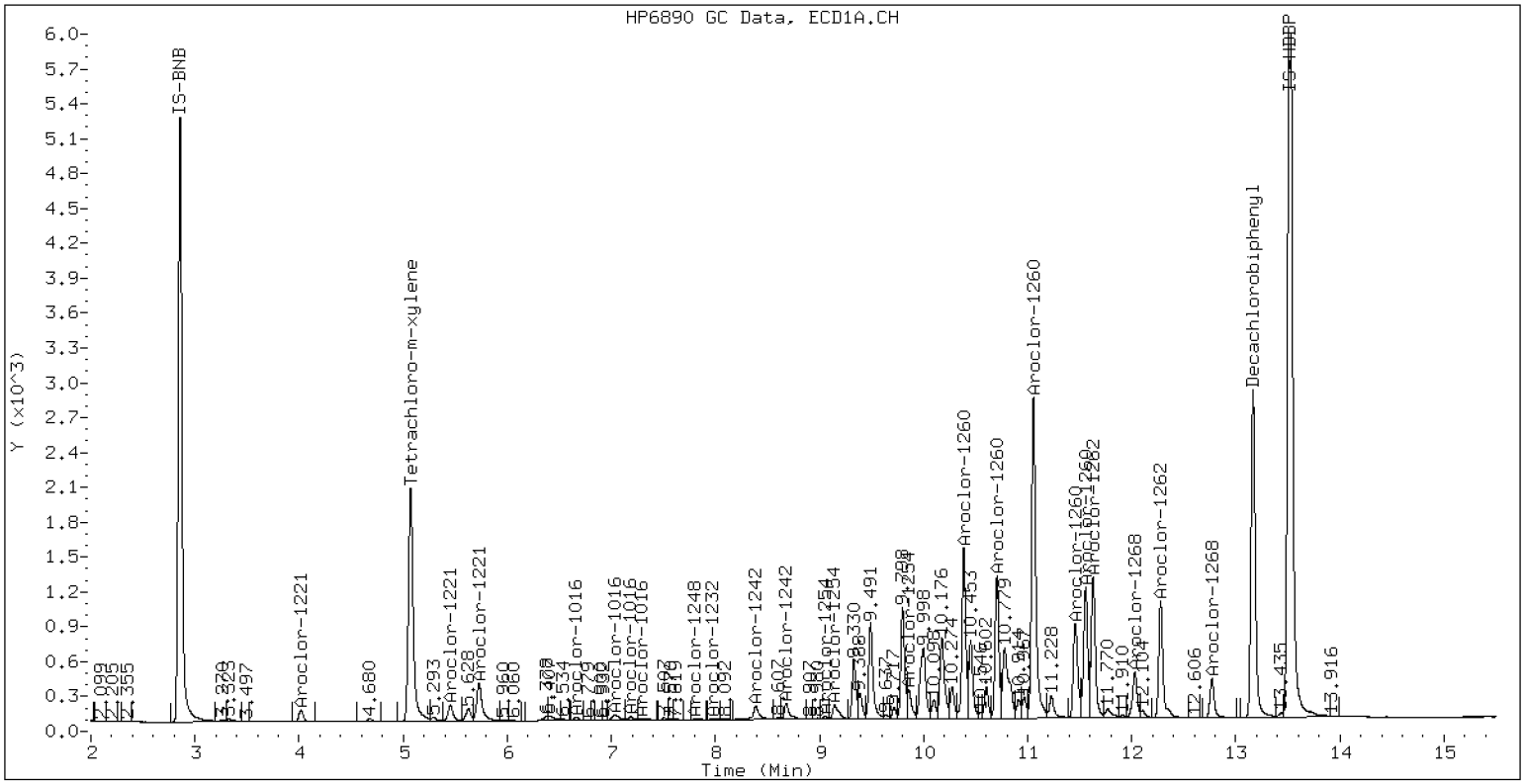
Total PCB Area Col2 (5.169 - 13.066) = 4504756 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

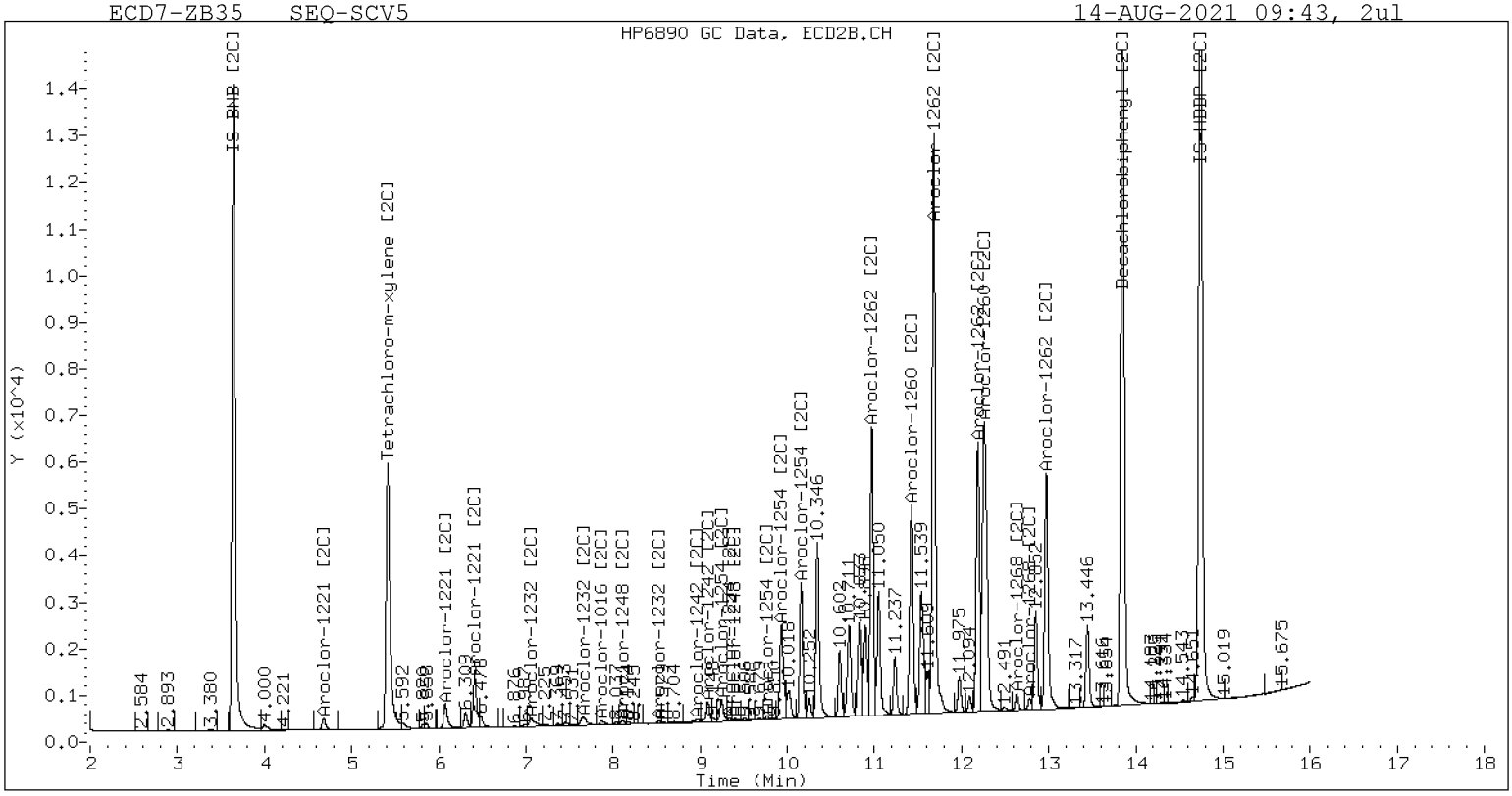
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21G0321
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV6
Sequence Name: AR3268SCV6
Standard ID: J008144

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1232	250.00	284	13.8	20.00
Aroclor 1232 [2C]	250.00	286	14.5	20.00
Decachlorobiphenyl	40.000	59.6	49.1	20.00
Tetrachlorometaxylene	40.000	41.2	3.1	20.00
Decachlorobiphenyl [2C]	40.000	59.3	48.2	20.00
Tetrachlorometaxylene [2C]	40.000	39.7	-0.8	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: /210813.b/08132146ECD7.D
Data file 2: /210813.b/210813.b/08132146ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV6
Client ID:
Injection Date: 14-AUG-2021 10:03
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	131287	5.416	-0.000	375338	41.2	39.7	3.8	Tetrachloro-m-xylene
13.165	-0.001	248059	13.848	-0.032	1383308	59.6	59.3	0.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263445	1.8
Hexabromobiphenyl	425681	458283	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	736133	2.1
Hexabromobiphenyl	863111	1049914	21.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	11471	122.8	1	7.059	0.002	54454	129.7
Aroclor-1016	2	7.037	0.008	32172	112.6	2	7.656	0.009	111127	118.4
Aroclor-1016	3	7.183	0.007	15436	120.4	3	7.862	0.007	47184	128.0
Aroclor-1016	4	7.292	0.007	9103	113.2	4	8.108	0.003	26255	117.7
Total Col1Ave (4 peaks):				117.2		Total Col2Ave (4 peaks):			123.5	RPD = 5
Corrected Ave (3 peaks):				115.4		Corrected Ave (3 peaks):			121.4	RPD = 5
Aroclor-1221	1	4.017	0.002	3341	160.6	1	4.679	0.002	8452	153.0
Aroclor-1221	2	5.453	0.002	5429	166.5	2	6.077	0.004	21053	166.4
Aroclor-1221	3	5.727	0.003	17948	203.7	3	6.414	0.005	55556	252.0
Total Col1Ave (3 peaks):				176.9		Total Col2Ave (3 peaks):			190.5	RPD = 7
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.017	-0.001	3341	261.5	1	4.679	-0.000	8452	256.9
Aroclor-1232	2	5.727	0.001	17948	258.4	2	7.059	0.001	54454	283.3
Aroclor-1232	3	7.037	0.003	32172	303.5	3	7.656	0.005	111127	288.8
Aroclor-1232	4	7.974	0.002	13693	314.0	4	8.524	0.002	31722	316.5
Total Col1Ave (4 peaks):				284.4		Total Col2Ave (4 peaks):			286.4	RPD = 1
Corrected Ave (3 peaks):				274.5		Corrected Ave (3 peaks):			276.3	RPD = 1
Aroclor-1242	1	6.663	0.004	11471	158.0	1	7.059	0.002	54454	160.9
Aroclor-1242	2	7.037	0.007	32172	148.7	2	7.656	0.008	111127	151.2
Aroclor-1242	3	8.385	0.010	20544	167.6	3	8.959	0.010	61163	178.1
Aroclor-1242	4	8.676	0.002	6934	138.4	4	9.041	0.013	55525	142.5
Total Col1Ave (4 peaks):				153.2		Total Col2Ave (4 peaks):			158.1	RPD = 3
Corrected Ave (3 peaks):				148.4		Corrected Ave (3 peaks):			151.5	RPD = 2
Aroclor-1248	1	7.804	0.005	9056	82.0	1	8.108	0.002	26255	86.1
Aroclor-1248	2	7.974	0.006	13693	95.0	2	8.524	0.003	31722	85.4
Aroclor-1248	3	8.385	0.010	20544	97.4	3	8.959	0.012	61163	103.4
Aroclor-1248	4	8.676	0.002	6934	57.6	4	9.391	0.015	44441	88.5
Total Col1Ave (4 peaks):				83.0		Total Col2Ave (4 peaks):			90.8	RPD = 9
Corrected Ave (3 peaks):				78.2		Corrected Ave (3 peaks):			86.7	RPD = 10
Aroclor-1254	1	8.676	0.000	6934	30.5	1	9.243	0.003	10554	16.9
Aroclor-1254	2	8.748	0.002	3715	35.3	2	9.391	0.060	44441	120.9
Aroclor-1254	3	9.050	0.008	2122	14.3	3	9.769	0.007	7619	16.0
Aroclor-1254	4	9.187	0.011	3159	11.2	4	9.922	0.009	13052	12.3
Aroclor-1254	5	9.896	0.029	1953	11.0	5	10.167	0.020	14279	13.3
Total Col1Ave (5 peaks):				20.5		Total Col2Ave (5 peaks):			35.9	RPD = 55*
Corrected Ave (4 peaks):				16.7		Corrected Ave (4 peaks):			14.6	RPD = 14
Aroclor-1260	1	10.388	0.005	30028	145.6	1	11.405	-0.020	170014	194.8
Aroclor-1260	2	10.704	0.004	2256	11.1	2	11.680	-0.001	78239	30.8
Aroclor-1260	3	11.056	0.005	17997	32.9	3	12.254	-0.007	838267	513.9
Aroclor-1260	4	11.458	0.006	301	1.2	4	12.972	0.000	307546	394.4
Aroclor-1260	5	11.557	0.003	165147	1353.6	NS	---			----
Total Col1Ave (5 peaks):				308.9		Total Col2Ave (4 peaks):			283.5	RPD = 9
Corrected Ave (4 peaks):				47.7		Corrected Ave (3 peaks):			206.7	RPD = 125*
Aroclor-1262	1	10.388	0.004	30028	107.4	1	10.971	0.001	118268	92.1
Aroclor-1262	2	11.458	0.004	301	1.7	2	11.680	-0.005	78239	28.9
Aroclor-1262	3	11.626	-0.000	172148	659.4	3	12.187	-0.001	744741	619.3
Aroclor-1262	4	12.276	0.002	62869	293.3	4	12.972	-0.000	307546	274.4
Total Col1Ave (4 peaks):				265.4		Total Col2Ave (4 peaks):			253.7	RPD = 5
Corrected Ave (3 peaks):				134.1		Corrected Ave (3 peaks):			131.8	RPD = 2
Aroclor-1268	1	11.557	-0.000	165147	268.6	1	12.187	-0.013	744741	246.9
Aroclor-1268	2	11.626	0.001	172148	266.9	2	12.254	-0.013	838267	254.7
Aroclor-1268	3	12.000	-0.000	135416	266.9	3	12.635	-0.009	744001	261.5
Aroclor-1268	4	12.770	-0.002	428256	261.7	4	12.782	-0.001	187584	266.5
Total Col1Ave (4 peaks):				266.0		Total Col2Ave (4 peaks):			257.4	RPD = 3

Corrected Ave (3 peaks): 265.2 Corrected Ave (3 peaks): 254.3 RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 1378298 Col1 Total PCB = 0.5 ppm*

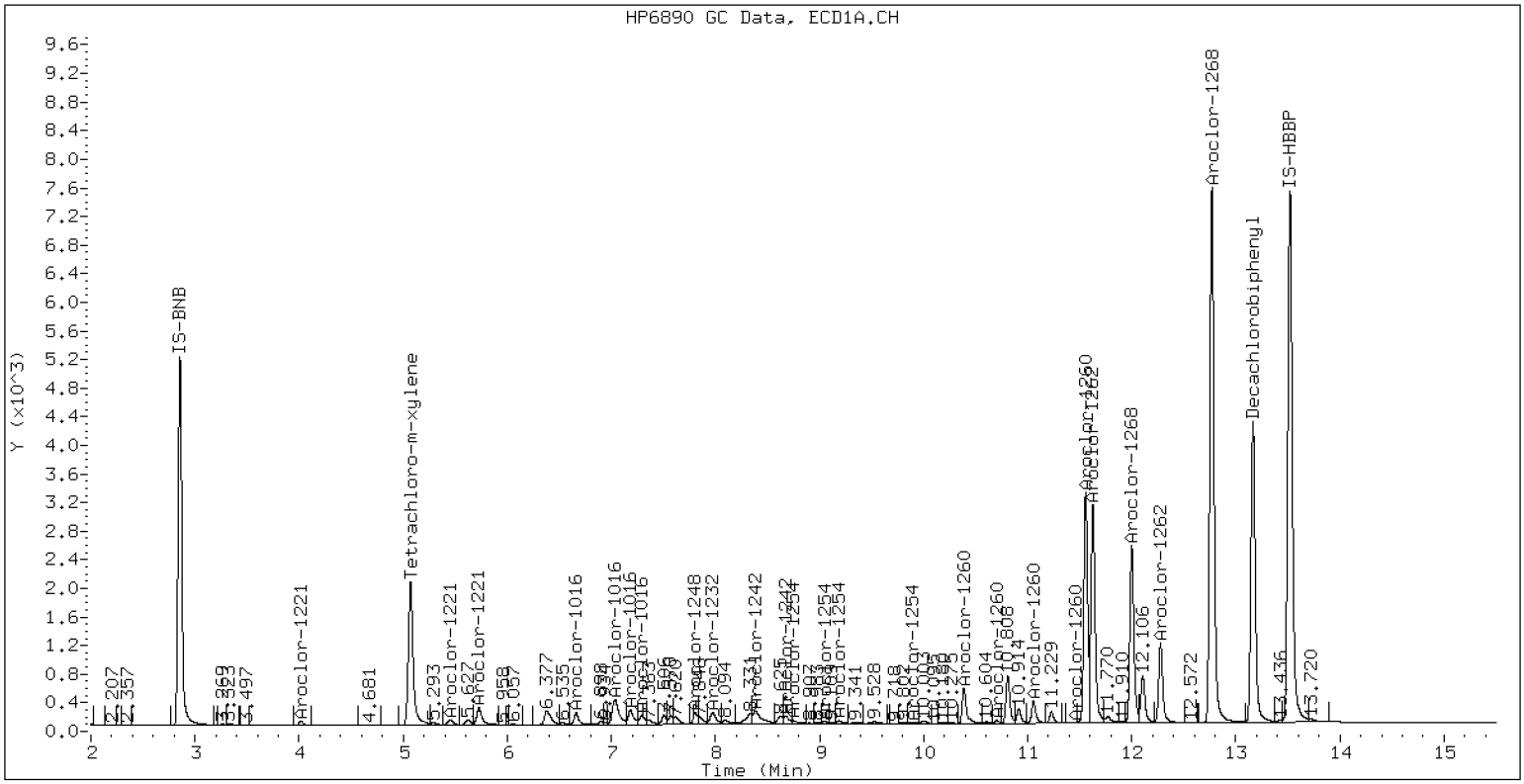
Total PCB Area Col2 (5.169 - 13.066) = 4537494 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

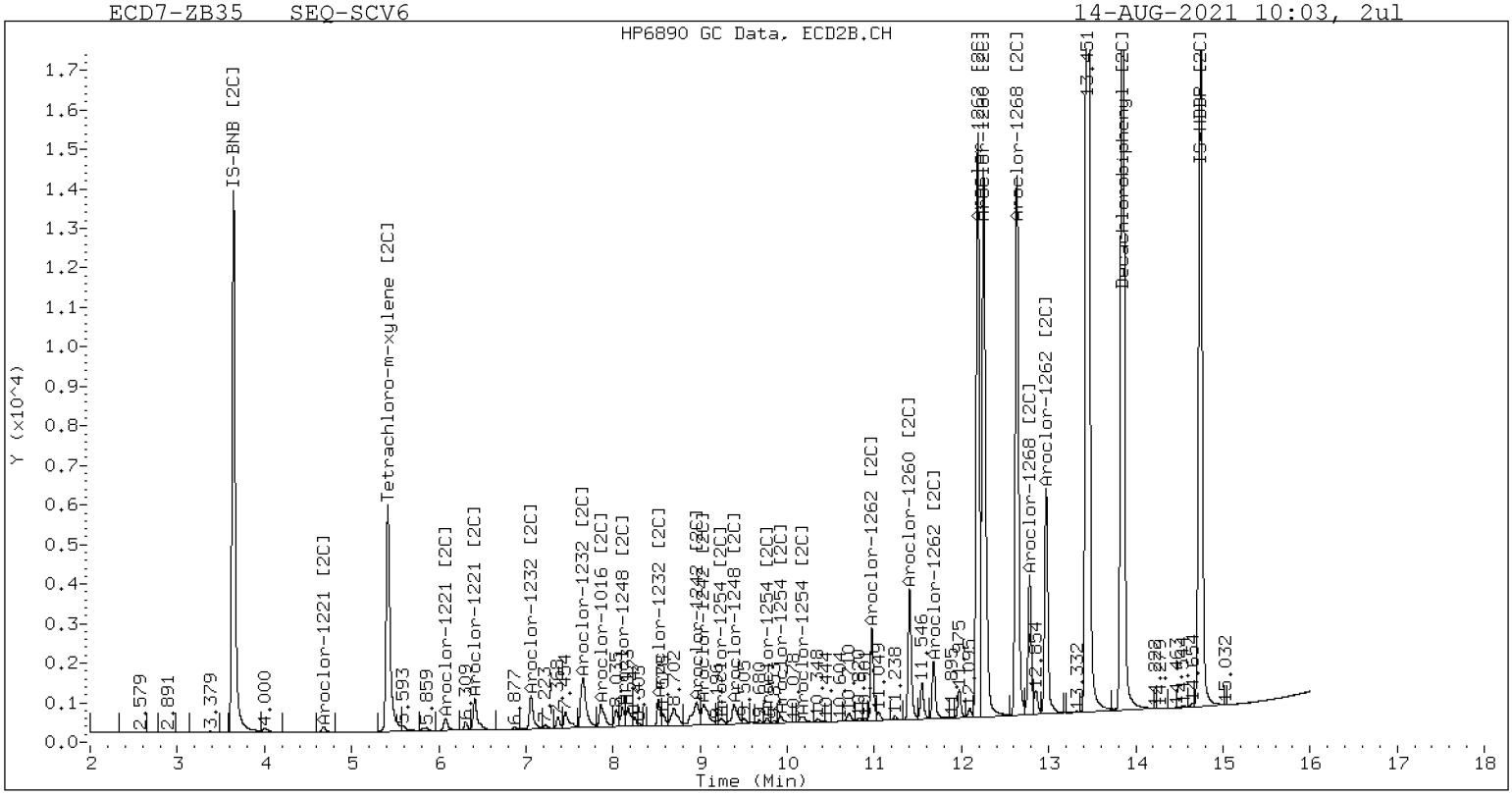
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192102ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/19/21
Lab Sample ID:	SJH0254-ICV1	Injection Time:	10:39
Sequence Name:	AR1254ICV1		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	248	0.0571741	0.0575038		-0.6	
Aroclor-1254 (1)	A	250.00	261	0.0690183	0.0720818		4.4	
Aroclor-1254 (2)	A	250.00	254	0.0319506	0.0324231		1.6	
Aroclor-1254 (3)	A	250.00	195	0.0449859	0.0350941		-22.0	
Aroclor-1254 (4)	A	250.00	258	0.0859427	0.0887195		3.2	
Aroclor-1254 (5)	A	250.00	274	0.0539731	0.0592008		9.6	
Aroclor 1254 [2C]	A	250.00	238	0.0782980	0.0742678		-4.8	
Aroclor-1254 (1) [2C]	A	250.00	238	0.0680651	0.0649330		-4.8	
Aroclor-1254 (2) [2C]	A	250.00	239	0.0399453	0.0381640		-4.4	
Aroclor-1254 (3) [2C]	A	250.00	242	0.0518895	0.0501739		-3.2	
Aroclor-1254 (4) [2C]	A	250.00	222	0.1149829	0.1019829		-11.2	
Aroclor-1254 (5) [2C]	A	250.00	249	0.1166073	0.1160852		-0.4	
Decachlorobiphenyl	A	40.000	40.7	0.7261970	0.7383723		1.8	
Tetrachlorometaxylene	A	40.000	41.7	0.9669678	1.0073410		4.3	
Decachlorobiphenyl [2C]	A	40.000	36.5	1.7775950	1.6232050		-8.8	
Tetrachlorometaxylene [2C]	A	40.000	40.6	1.0280520	1.0438010		1.5	

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210819.b/08192102ECD7.D
Data file 2: /210819.b/210819.b/08192102ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV1
Client ID:
Injection Date: 19-AUG-2021 10:39
Report Date: 08/19/2021 16:55
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.002	131244	5.410	-0.001	380158	41.7	40.6	2.6	Tetrachloro-m-xylene
13.166	0.002	160579	13.845	-0.000	750704	40.7	36.5	10.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	260575	0.7
Hexabromobiphenyl	425681	434954	2.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	728411	1.0
Hexabromobiphenyl	863111	924965	7.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	8.677	0.000	58696	261.1	1	9.238	0.000	147806	238.5
Aroclor-1254	2	8.750	0.000	26402	253.7	2	9.331	0.000	86872	238.9
Aroclor-1254	3	9.042	0.000	28577	195.0	3	9.761	0.000	114210	241.7
Aroclor-1254	4	9.180	0.000	72244	258.1	4	9.913	0.000	232142	221.7
Aroclor-1254	5	9.871	0.000	48207	274.2	5	10.148	0.000	264243	248.9

Total Col1Ave (5 peaks): 248.4 Total Col2Ave (5 peaks): 237.9 RPD = 4

Corrected Ave (4 peaks): 242.0 Corrected Ave (4 peaks): 235.2 RPD = 3

CalAmt %D: -0.6 CalAmt %D: -4.8

Total PCB Area Col1 (5.168 - 13.064) = 740718 Col1 Total PCB = 0.3 ppm*

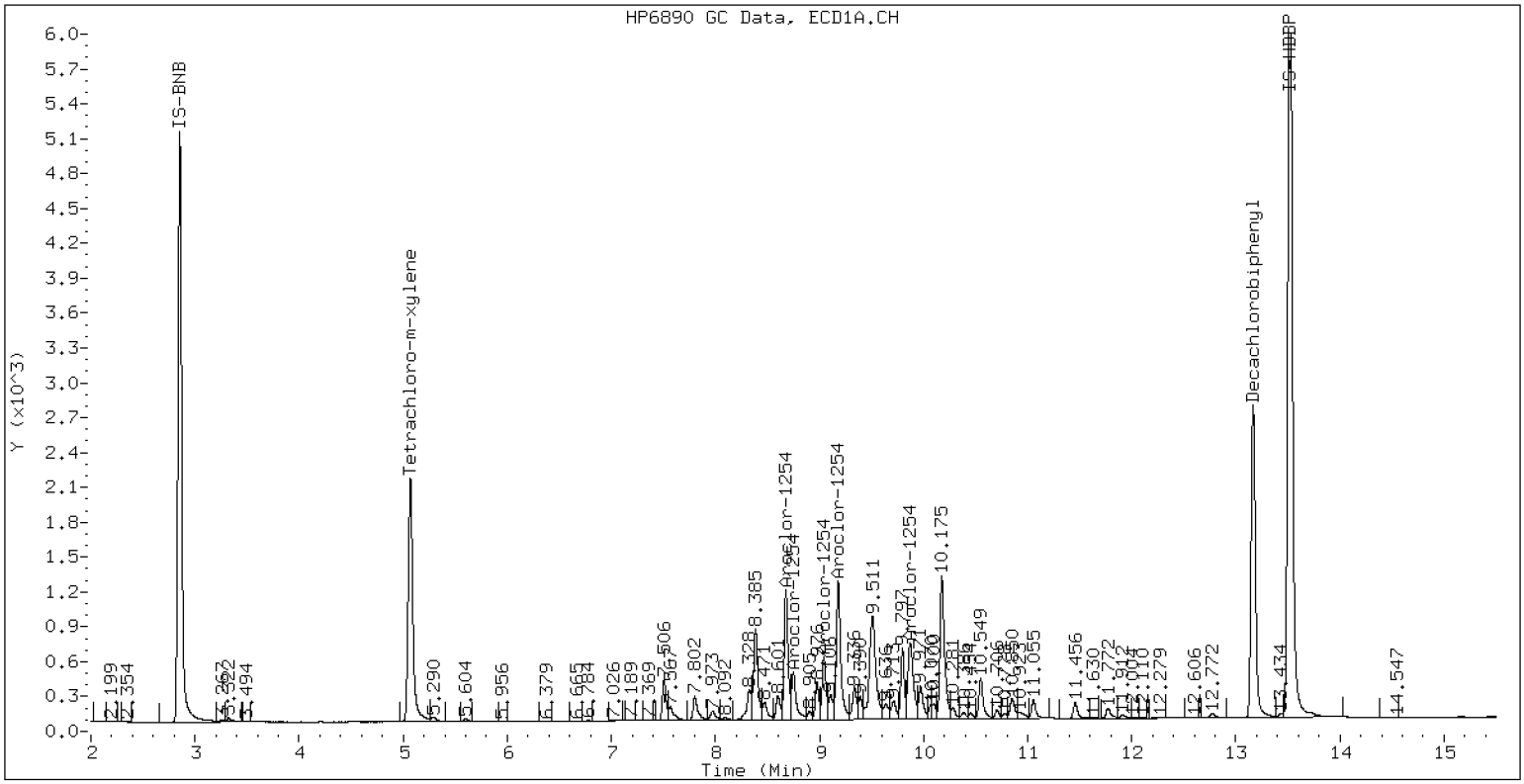
Total PCB Area Col2 (5.168 - 13.064) = 2792394 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

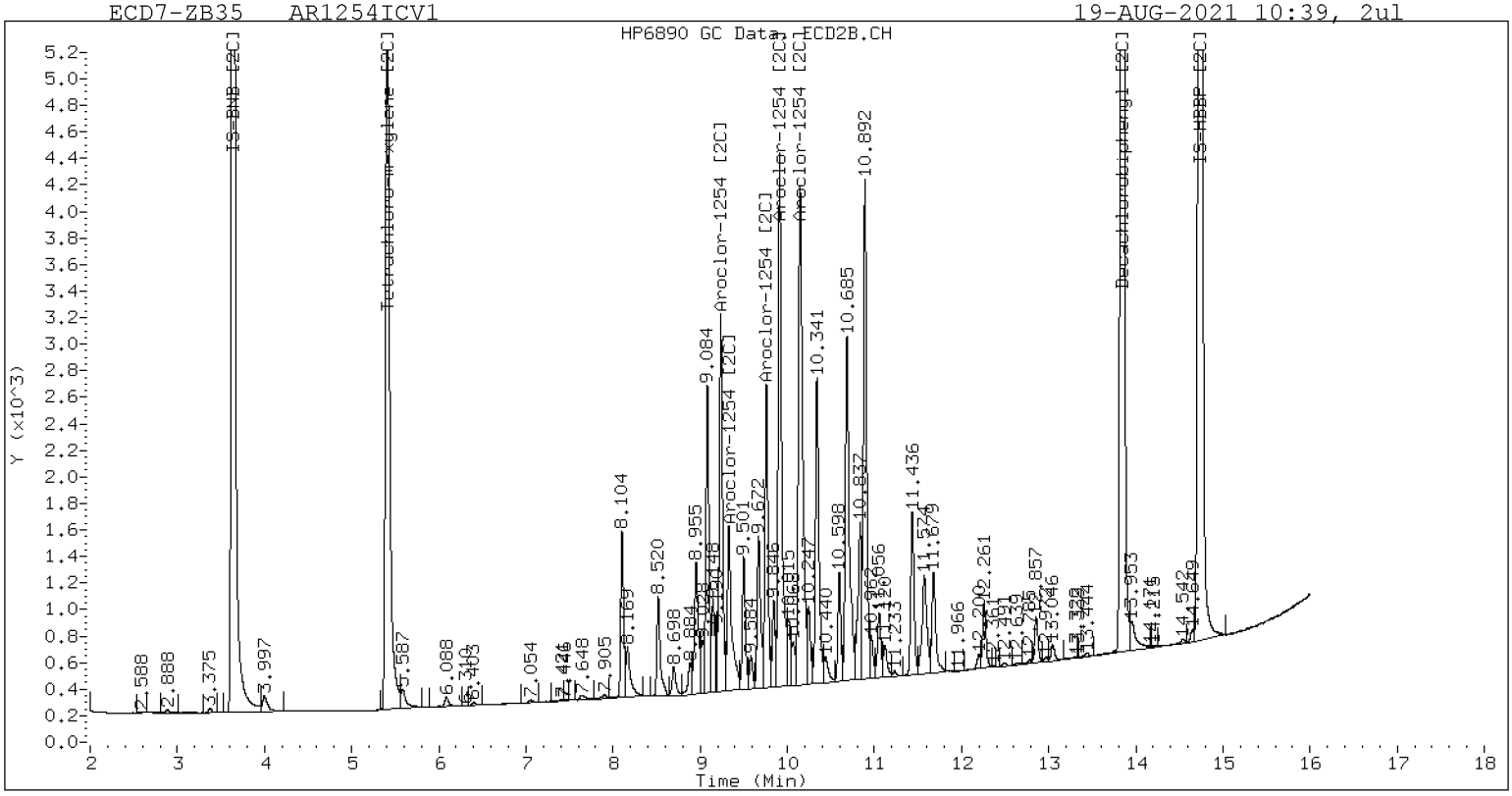
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1 19-AUG-2021 10:39, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1 19-AUG-2021 10:39, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192103ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/19/21
Lab Sample ID:	SJH0254-ICV2	Injection Time:	11:00
Sequence Name:	AR1660ICV2		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	272	0.0446218	0.0486416		8.6	
Aroclor-1016 (1)	A	250.00	269	0.0283733	0.0305241		7.6	
Aroclor-1016 (2)	A	250.00	275	0.0867650	0.0955237		10.0	
Aroclor-1016 (3)	A	250.00	268	0.0389383	0.0417929		7.2	
Aroclor-1016 (4)	A	250.00	274	0.0244108	0.0267258		9.6	
Aroclor 1016 [2C]	A	250.00	271	0.0529840	0.0573952		8.4	
Aroclor-1016 (1) [2C]	A	250.00	265	0.0456173	0.0484390		6.0	
Aroclor-1016 (2) [2C]	A	250.00	270	0.1020378	0.1104334		8.0	
Aroclor-1016 (3) [2C]	A	250.00	276	0.0400455	0.0442740		10.4	
Aroclor-1016 (4) [2C]	A	250.00	273	0.0242353	0.0264343		9.2	
Aroclor 1260	A	250.00	264	0.0461251	0.0487502		5.5	
Aroclor-1260 (1)	A	250.00	252	0.0359923	0.0362264		0.8	
Aroclor-1260 (2)	A	250.00	268	0.0353250	0.0379305		7.2	
Aroclor-1260 (3)	A	250.00	265	0.0954741	0.1011038		6.0	
Aroclor-1260 (4)	A	250.00	271	0.0425365	0.0461128		8.4	
Aroclor-1260 (5)	A	250.00	263	0.0212978	0.0223774		5.2	
Aroclor 1260 [2C]	A	250.00	236	0.1108773	0.1046060		-5.7	
Aroclor-1260 (1) [2C]	A	250.00	239	0.0665032	0.0635638		-4.4	
Aroclor-1260 (2) [2C]	A	250.00	236	0.1932922	0.1822856		-5.6	
Aroclor-1260 (3) [2C]	A	250.00	236	0.1242917	0.1173889		-5.6	
Aroclor-1260 (4) [2C]	A	250.00	232	0.0594222	0.0551856		-7.2	
Decachlorobiphenyl	A	40.000	42.4	0.7261970	0.7689728		6.0	
Tetrachlorometaxylene	A	40.000	43.5	0.9669678	1.0511950		8.8	
Decachlorobiphenyl [2C]	A	40.000	38.0	1.7775950	1.6887470		-5.0	
Tetrachlorometaxylene [2C]	A	40.000	41.9	1.0280520	1.0776370		4.8	

* Values outside of QC limits

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

Data file 1: /210819.b/08192103ECD7.D
Data file 2: /210819.b/210819.b/08192103ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV2
Client ID:
Injection Date: 19-AUG-2021 11:00
Report Date: 08/19/2021 16:55
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.001	131956	5.411	0.000	385946	43.5	41.9	3.6	Tetrachloro-m-xylene
13.166	0.001	160713	13.846	0.001	783489	42.4	38.0	10.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	251059	-3.0
Hexabromobiphenyl	425681	417994	-1.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	716282	-0.6
Hexabromobiphenyl	863111	927894	7.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.000	23948	269.0	1	7.055	-0.000	108425	265.5
Aroclor-1016	2	7.032	-0.000	74944	275.2	2	7.650	-0.001	247192	270.6
Aroclor-1016	3	7.179	0.000	32789	268.3	3	7.856	-0.001	99102	276.4
Aroclor-1016	4	7.288	-0.000	20968	273.7	4	8.105	0.000	59170	272.7

Total Col1Ave (4 peaks): 271.6 Total Col2Ave (4 peaks): 271.3 RPD = 0
Corrected Ave (3 peaks): 270.3 Corrected Ave (3 peaks): 269.6 RPD = 0

CalAmt %D: 8.6 CalAmt %D: 8.5

Aroclor-1260	1	10.386	0.001	47320	251.6	1	11.424	0.001	184314	239.0
Aroclor-1260	2	10.703	0.000	49546	268.4	2	11.677	0.000	528568	235.8
Aroclor-1260	3	11.054	-0.001	132065	264.7	3	12.260	0.001	340389	236.1
Aroclor-1260	4	11.455	-0.000	60234	271.0	4	12.971	0.001	160020	232.2
Aroclor-1260	5	11.556	0.001	29230	262.7	NS	---			----

Total Col1Ave (5 peaks): 263.7 Total Col2Ave (4 peaks): 235.8 RPD = 11
Corrected Ave (4 peaks): 261.9 Corrected Ave (3 peaks): 234.7 RPD = 11

CalAmt %D: 5.5 CalAmt %D: -5.7

Total PCB Area Col1 (5.168 - 13.064) = 1312782 Col1 Total PCB = 0.5 ppm*

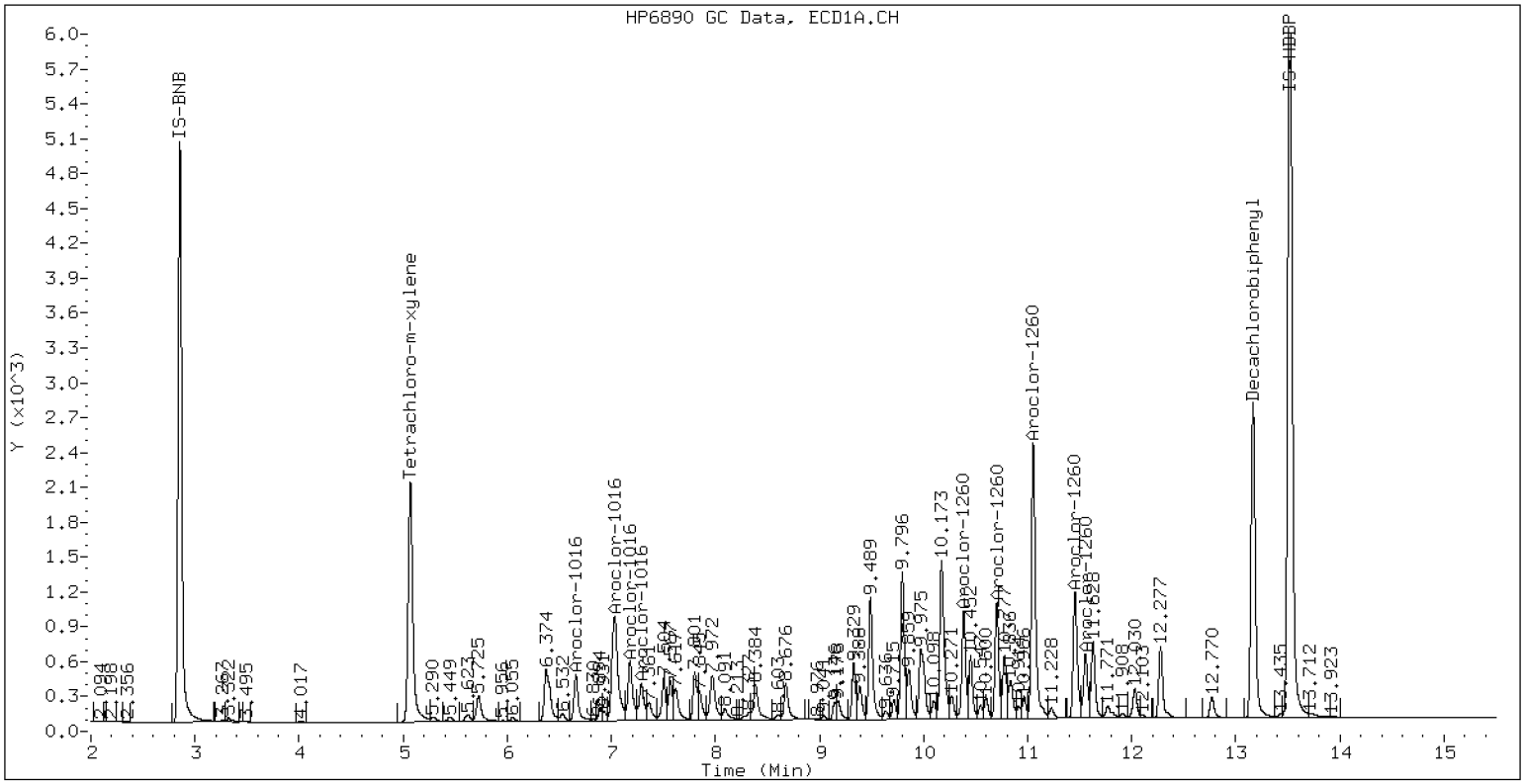
Total PCB Area Col2 (5.168 - 13.064) = 4934190 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

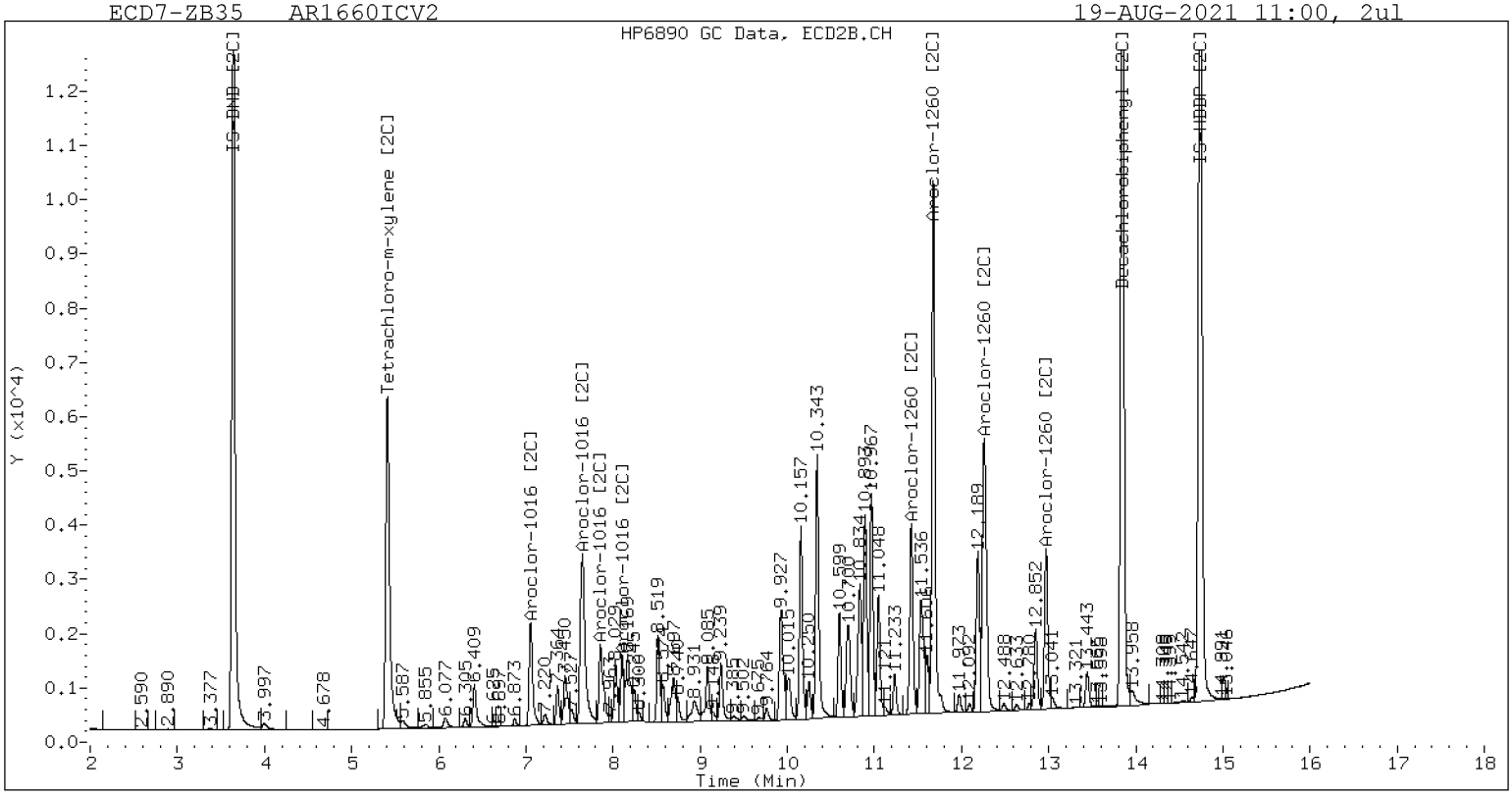
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660ICV2 19-AUG-2021 11:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660ICV2 19-AUG-2021 11:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08272103ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/27/21
Lab Sample ID:	SJH0396-ICV1	Injection Time:	16:39
Sequence Name:	AR1254ICV1		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	237	0.0571741	0.0549412		-5.1	+/-20
Aroclor-1254 (1)	A	250.00	242	0.0690183	0.0667671		-3.2	
Aroclor-1254 (2)	A	250.00	262	0.0319506	0.0334395		4.8	
Aroclor-1254 (3)	A	250.00	151	0.0449859	0.0272019		-39.6	
Aroclor-1254 (4)	A	250.00	255	0.0859427	0.0877861		2.0	
Aroclor-1254 (5)	A	250.00	276	0.0539731	0.0595112		10.4	
Aroclor 1254 [2C]	A	250.00	228	0.0782980	0.0710141		-8.7	+/-20
Aroclor-1254 (1) [2C]	A	250.00	222	0.0680651	0.0605961		-11.2	
Aroclor-1254 (2) [2C]	A	250.00	238	0.0399453	0.0379800		-4.8	
Aroclor-1254 (3) [2C]	A	250.00	230	0.0518895	0.0476401		-8.0	
Aroclor-1254 (4) [2C]	A	250.00	208	0.1149829	0.0956121		-16.8	
Aroclor-1254 (5) [2C]	A	250.00	243	0.1166073	0.1132422		-2.8	
Decachlorobiphenyl	A	40.000	42.1	0.7261970	0.7644939		5.3	+/-20
Tetrachlorometaxylene	A	40.000	41.9	0.9669678	1.0131240		4.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.7	1.7775950	1.6761700		-5.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.8	1.0280520	1.0486190		2.0	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /2108127.b/08272103ECD7.D
Data file 2: /2108127.b/2108127.b/08272103ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV1
Client ID:
Injection Date: 27-AUG-2021 16:39
Report Date: 08/30/2021 14:36
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.070	0.001	130380	5.413	-0.001	363013	41.9	40.8	2.7	Tetrachloro-m-xylene
13.165	-0.001	158027	13.844	0.000	753276	42.1	37.7	11.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	257382	-0.6
Hexabromobiphenyl	425681	413416	-2.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	692364	-4.0
Hexabromobiphenyl	863111	898806	4.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	8.678	0.000	53702	241.8	1	9.238	0.000	131108	222.6
Aroclor-1254	2	8.749	0.000	26896	261.6	2	9.332	0.000	82175	237.7
Aroclor-1254	3	9.045	0.000	21879	151.2	3	9.762	0.000	103076	229.5
Aroclor-1254	4	9.181	0.000	70608	255.4	4	9.914	0.000	206870	207.9
Aroclor-1254	5	9.870	0.000	47866	275.7	5	10.151	0.000	245015	242.8

Total Col1Ave (5 peaks): 237.1 Total Col2Ave (5 peaks): 228.1 RPD = 4
Corrected Ave (4 peaks): 227.5 Corrected Ave (4 peaks): 224.4 RPD = 1

CalAmt %D: -5.1 CalAmt %D: -8.8

Total PCB Area Col1 (5.170 - 13.066) = 736831 Col1 Total PCB = 0.3 ppm*

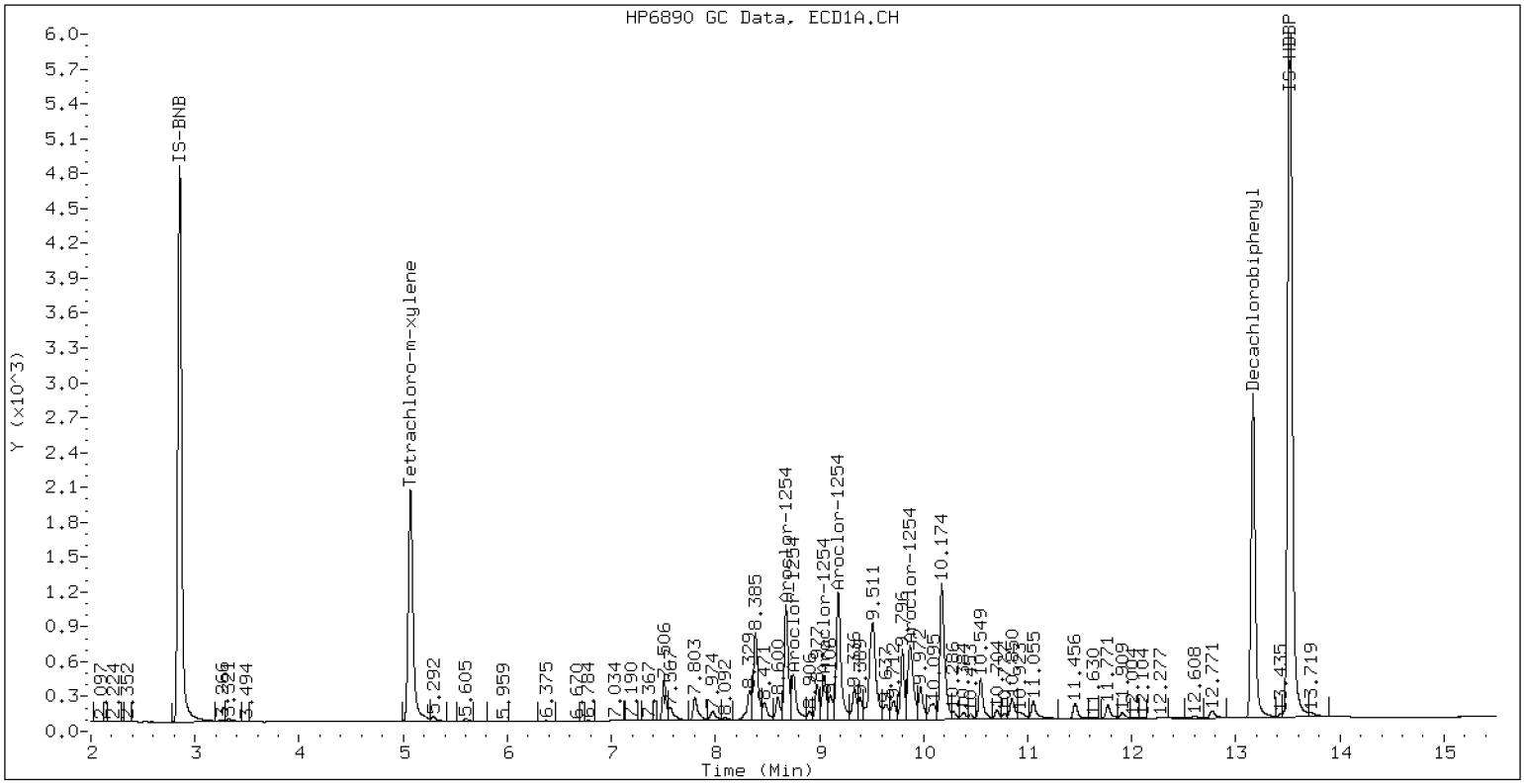
Total PCB Area Col2 (5.170 - 13.066) = 2641248 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

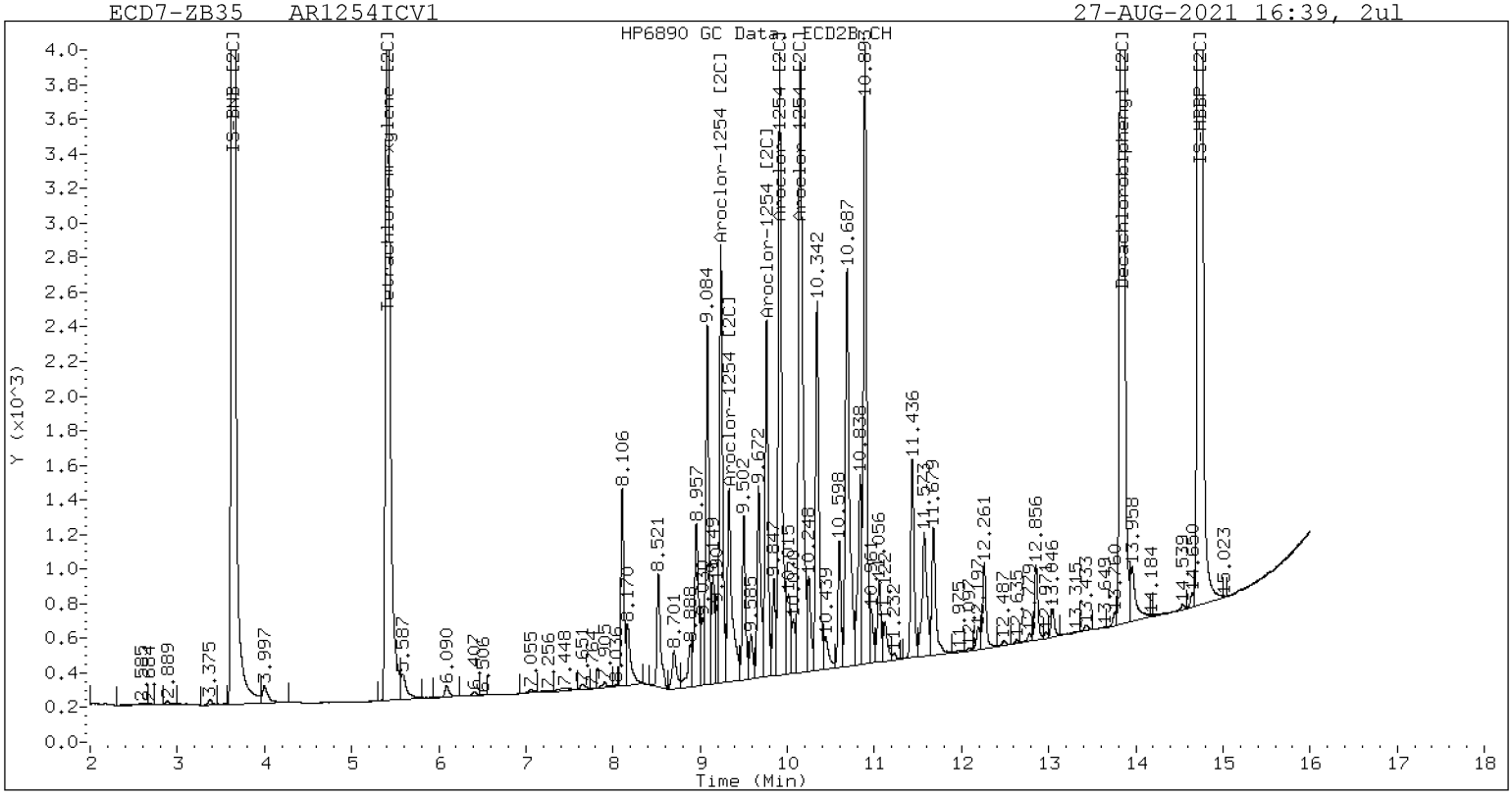
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1 27-AUG-2021 16:39, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1 27-AUG-2021 16:39, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08272104ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/27/21
Lab Sample ID:	SJH0396-ICV2	Injection Time:	17:00
Sequence Name:	AR1660ICV2		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	267	0.0446218	0.0478558		6.8	+/-20
Aroclor-1016 (1)	A	250.00	266	0.0283733	0.0301632		6.4	
Aroclor-1016 (2)	A	250.00	270	0.0867650	0.0938495		8.0	
Aroclor-1016 (3)	A	250.00	267	0.0389383	0.0415344		6.8	
Aroclor-1016 (4)	A	250.00	265	0.0244108	0.0258760		6.0	
Aroclor 1016 [2C]	A	250.00	268	0.0529840	0.0563061		7.0	+/-20
Aroclor-1016 (1) [2C]	A	250.00	263	0.0456173	0.0479480		5.2	
Aroclor-1016 (2) [2C]	A	250.00	263	0.1020378	0.1073291		5.2	
Aroclor-1016 (3) [2C]	A	250.00	271	0.0400455	0.0434571		8.4	
Aroclor-1016 (4) [2C]	A	250.00	273	0.0242353	0.0264904		9.2	
Aroclor 1260	A	250.00	267	0.0461251	0.0493090		6.8	+/-20
Aroclor-1260 (1)	A	250.00	254	0.0359923	0.0365437		1.6	
Aroclor-1260 (2)	A	250.00	272	0.0353250	0.0384237		8.8	
Aroclor-1260 (3)	A	250.00	267	0.0954741	0.1021194		6.8	
Aroclor-1260 (4)	A	250.00	274	0.0425365	0.0466413		9.6	
Aroclor-1260 (5)	A	250.00	268	0.0212978	0.0228168		7.2	
Aroclor 1260 [2C]	A	250.00	231	0.1108773	0.1026824		-7.5	+/-20
Aroclor-1260 (1) [2C]	A	250.00	230	0.0665032	0.0611951		-8.0	
Aroclor-1260 (2) [2C]	A	250.00	231	0.1932922	0.1787892		-7.6	
Aroclor-1260 (3) [2C]	A	250.00	233	0.1242917	0.1157632		-6.8	
Aroclor-1260 (4) [2C]	A	250.00	231	0.0594222	0.0549821		-7.6	
Decachlorobiphenyl	A	40.000	43.2	0.7261970	0.7846294		8.0	+/-20
Tetrachlorometaxylene	A	40.000	43.7	0.9669678	1.0570070		9.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.0	1.7775950	1.7344660		-2.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.8	1.0280520	1.0746990		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: /2108127.b/08272104ECD7.D
Data file 2: /2108127.b/2108127.b/08272104ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV2
Client ID:
Injection Date: 27-AUG-2021 17:00
Report Date: 08/30/2021 14:36
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.069	-0.001	129468	5.412	-0.002	360490	43.7	41.8	4.5	Tetrachloro-m-xylene
13.165	-0.001	154725	13.844	0.000	763484	43.2	39.0	10.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	244971	-5.4
Hexabromobiphenyl	425681	394390	-7.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	670867	-6.9
Hexabromobiphenyl	863111	880368	2.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	-0.002	23091	265.8	1	7.056	0.000	100521	262.8
Aroclor-1016	2	7.035	-0.003	71845	270.4	2	7.651	-0.002	225011	263.0
Aroclor-1016	3	7.182	-0.000	31796	266.7	3	7.858	0.000	91106	271.3
Aroclor-1016	4	7.291	-0.001	19809	265.0	4	8.105	-0.000	55536	273.3

Total Col1Ave (4 peaks): 267.0 Total Col2Ave (4 peaks): 267.6 RPD = 0
Corrected Ave (3 peaks): 265.8 Corrected Ave (3 peaks): 265.7 RPD = 0

CalAmt %D: 6.8 CalAmt %D: 7.0

Aroclor-1260	1	10.386	-0.001	45039	253.8	1	11.423	-0.001	168357	230.0
Aroclor-1260	2	10.703	-0.001	47356	271.9	2	11.677	0.000	491876	231.2
Aroclor-1260	3	11.053	-0.002	125859	267.4	3	12.259	0.000	318482	232.8
Aroclor-1260	4	11.454	-0.002	57484	274.1	4	12.969	-0.000	151264	231.3
Aroclor-1260	5	11.556	-0.001	28121	267.8	NS	---			----

Total Col1Ave (5 peaks): 267.0 Total Col2Ave (4 peaks): 231.4 RPD = 14
Corrected Ave (4 peaks): 265.2 Corrected Ave (3 peaks): 230.9 RPD = 14

CalAmt %D: 6.8 CalAmt %D: -7.5

Total PCB Area Col1 (5.170 - 13.066) = 1252364 Col1 Total PCB = 0.5 ppm*

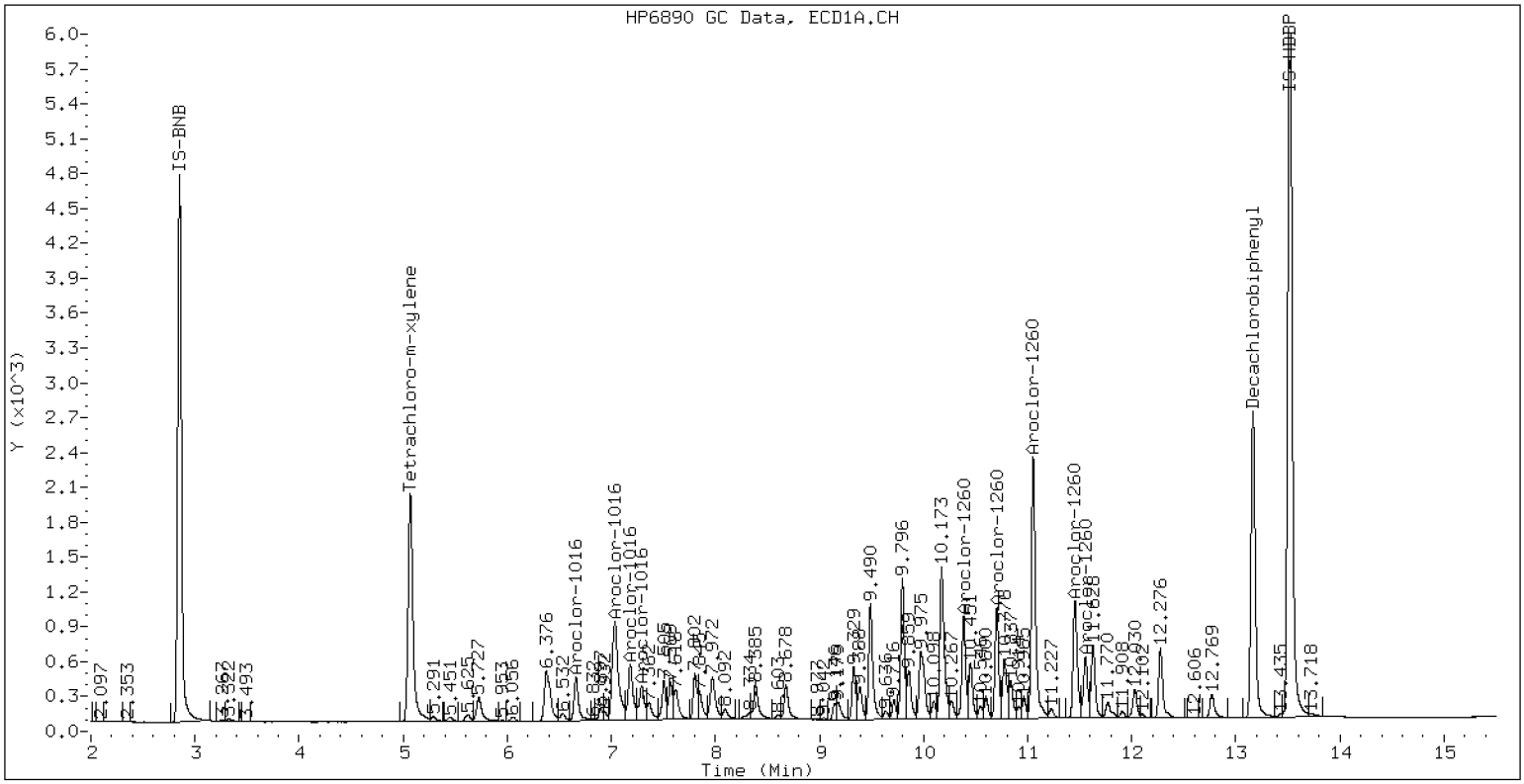
Total PCB Area Col2 (5.170 - 13.066) = 4563191 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

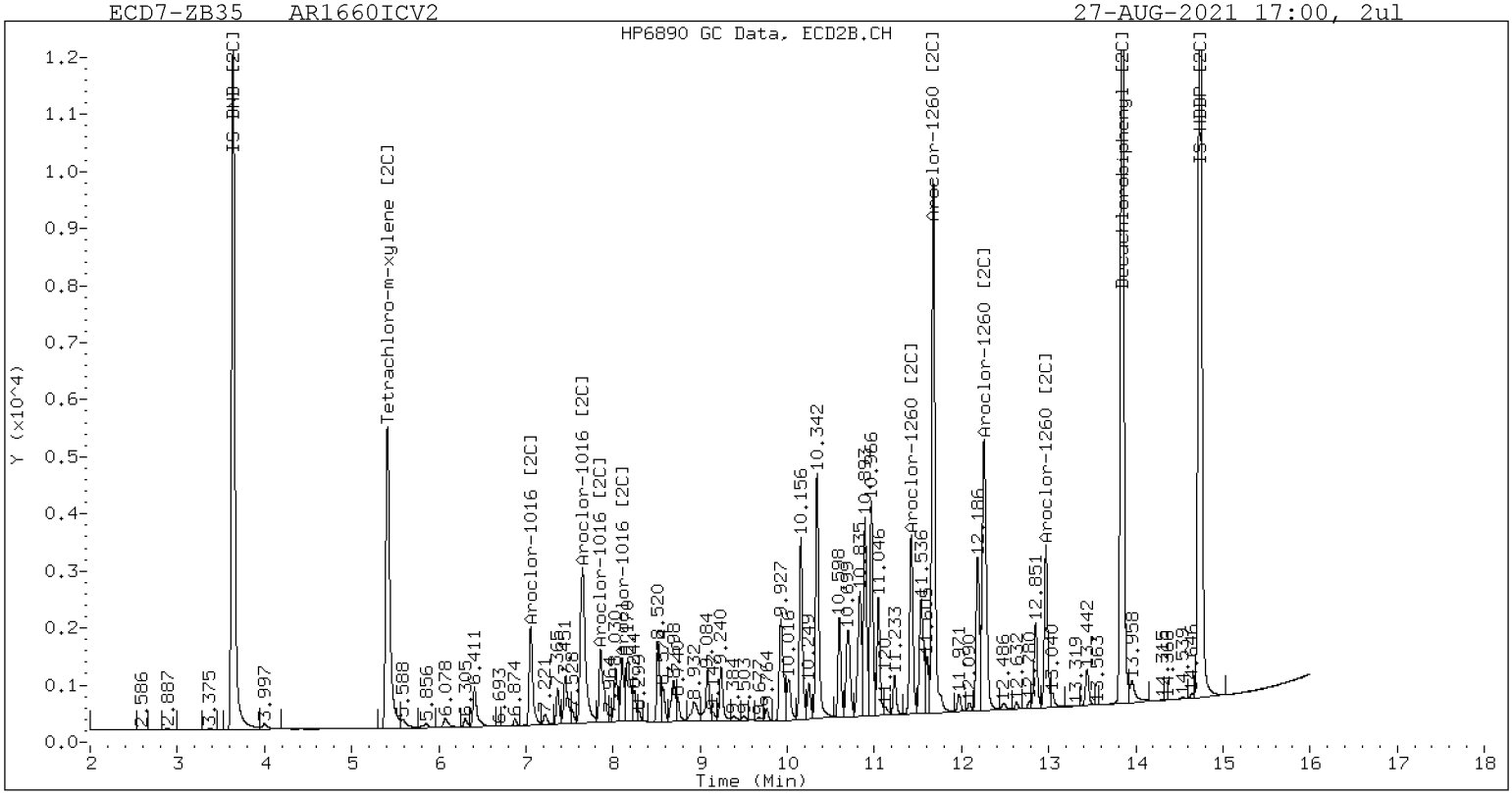
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660ICV2 27-AUG-2021 17:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660ICV2 27-AUG-2021 17:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08282102ECD7B.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/28/21
Lab Sample ID:	SJH0396-ICV3	Injection Time:	17:04
Sequence Name:	AR1254ICV3		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	257	0.0571741	0.0591579		3.0	+/-20
Aroclor-1254 (1)	A	250.00	254	0.0690183	0.0700549		1.6	
Aroclor-1254 (2)	A	250.00	257	0.0319506	0.0328994		2.8	
Aroclor-1254 (3)	A	250.00	248	0.0449859	0.0446613		-0.8	
Aroclor-1254 (4)	A	250.00	268	0.0859427	0.0921093		7.2	
Aroclor-1254 (5)	A	250.00	260	0.0539731	0.0560643		4.0	
Aroclor 1254 [2C]	A	250.00	236	0.0782980	0.0745929		-5.4	+/-20
Aroclor-1254 (1) [2C]	A	250.00	238	0.0680651	0.0647175		-4.8	
Aroclor-1254 (2) [2C]	A	250.00	225	0.0399453	0.0359936		-10.0	
Aroclor-1254 (3) [2C]	A	250.00	239	0.0518895	0.0496432		-4.4	
Aroclor-1254 (4) [2C]	A	250.00	238	0.1149829	0.1096324		-4.8	
Aroclor-1254 (5) [2C]	A	250.00	242	0.1166073	0.1129777		-3.2	
Decachlorobiphenyl	A	40.000	45.9	0.7261970	0.8335397		14.8	+/-20
Tetrachlorometaxylene	A	40.000	40.2	0.9669678	0.9723244		0.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	42.4	1.7775950	1.8821870		6.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.0	1.0280520	1.0031430		-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: /210828.b/08282102ECD7.D
Data file 2: /210828.b/210828.b/08282102ECD7.D
Method: \\target\share\chem4\ecd7.i\210828.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV1
Client ID:
Injection Date: 28-AUG-2021 17:04
Report Date: 08/31/2021 08:40
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.070	0.002	137440	5.410	-0.000	377539	40.2	39.0	3.0	Tetrachloro-m-xylene
13.167	0.004	202333	13.847	0.004	1010248	45.9	42.4	8.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	282704	9.2
Hexabromobiphenyl	425681	485479	14.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	752712	4.4
Hexabromobiphenyl	863111	1073483	24.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	8.679	0.000	61890	253.8	1	9.238	0.000	152230	237.7
Aroclor-1254	2	8.751	0.000	29065	257.4	2	9.332	0.000	84665	225.3
Aroclor-1254	3	9.047	0.000	39456	248.2	3	9.762	0.000	116772	239.2
Aroclor-1254	4	9.182	0.000	81374	267.9	4	9.914	0.000	257880	238.4
Aroclor-1254	5	9.873	0.000	49530	259.7	5	10.151	0.000	265749	242.2

Total Col1Ave (5 peaks): 257.4 Total Col2Ave (5 peaks): 236.5 RPD = 8

Corrected Ave (4 peaks): 254.8 Corrected Ave (4 peaks): 235.1 RPD = 8

CalAmt %D: 3.0 CalAmt %D: -5.4

Total PCB Area Col1 (5.168 - 13.064) = 805426 Col1 Total PCB = 0.3 ppm*

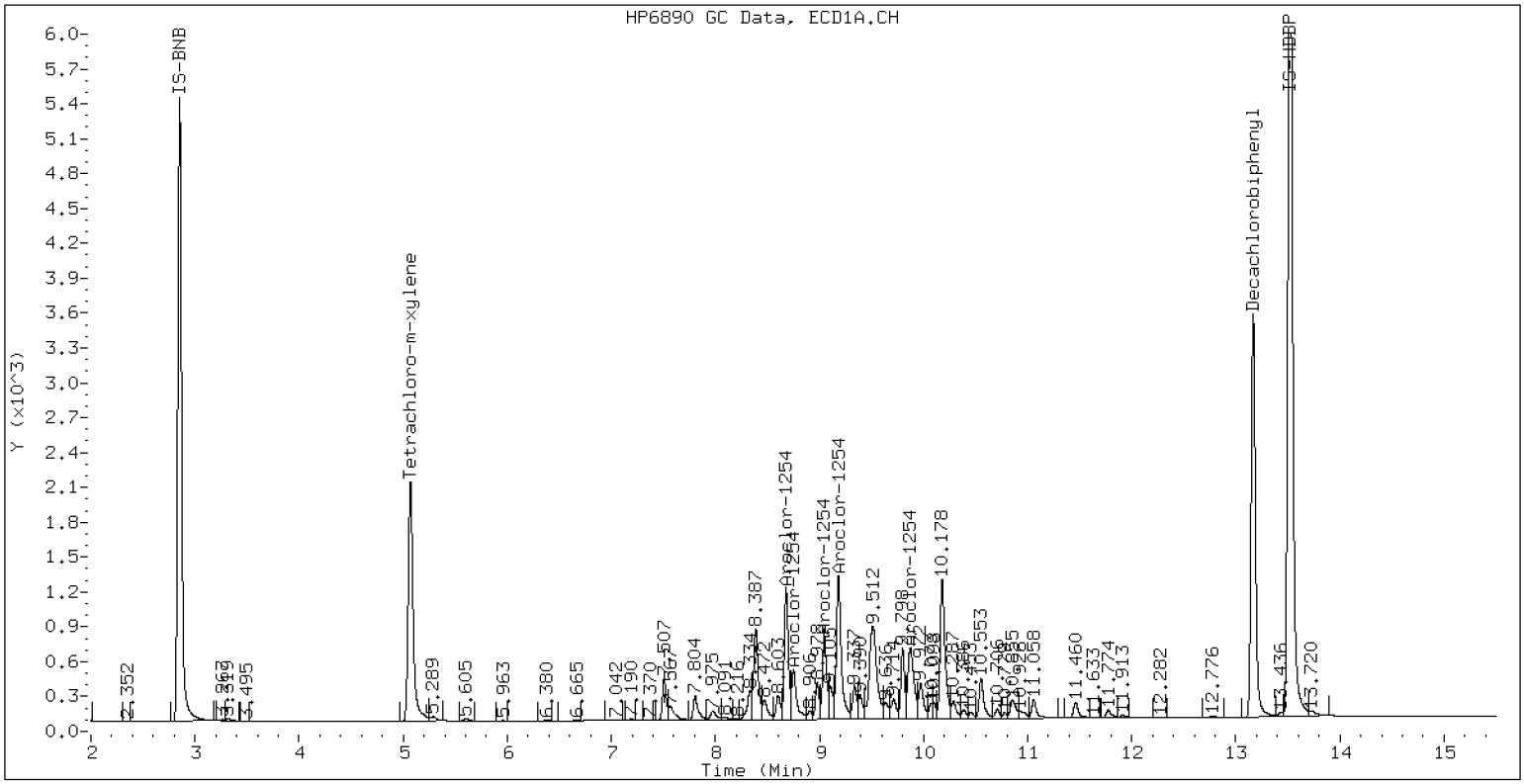
Total PCB Area Col2 (5.168 - 13.064) = 2839315 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

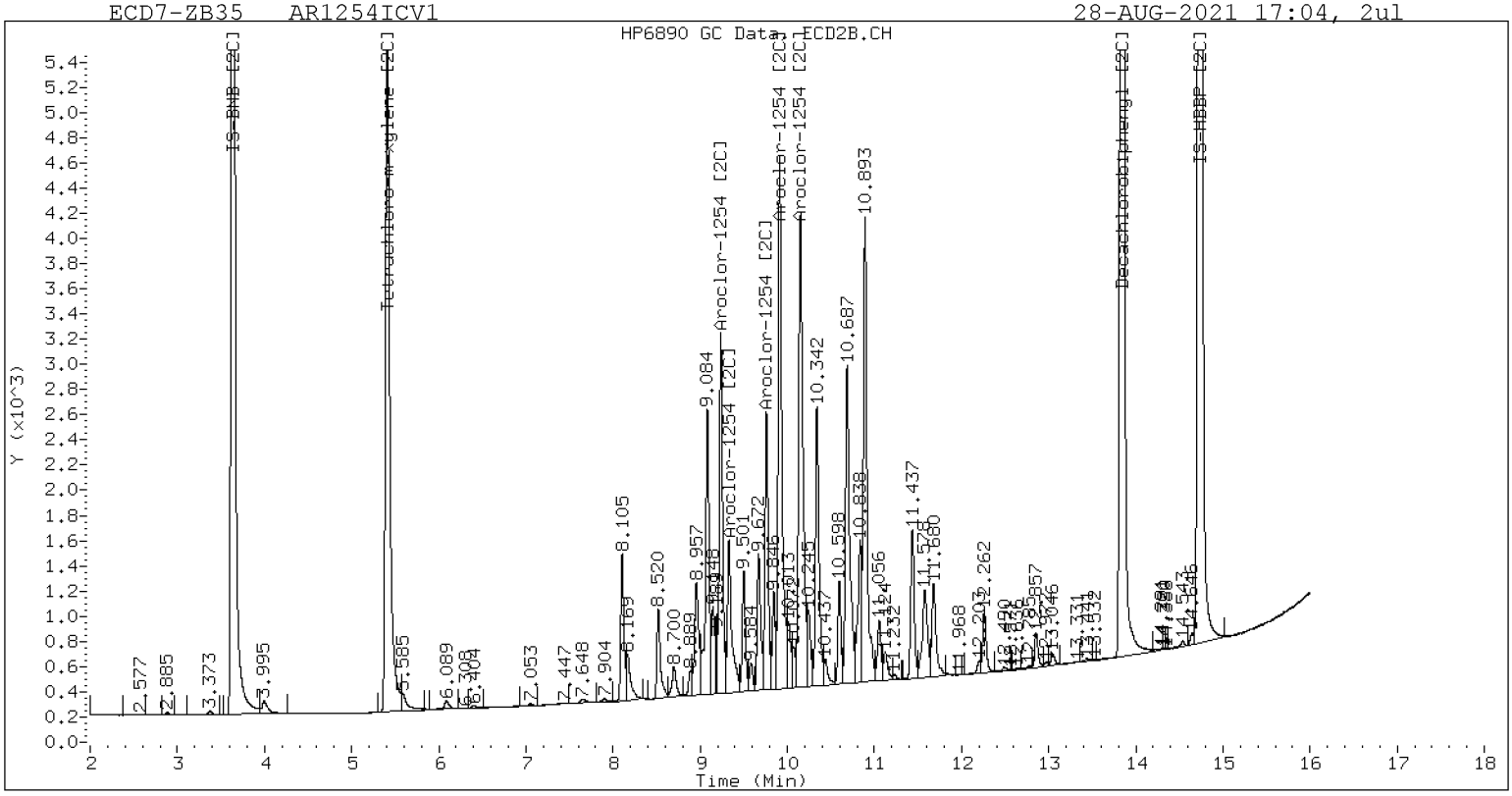
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1 28-AUG-2021 17:04, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1 28-AUG-2021 17:04, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08282103ECD7B.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/28/21
Lab Sample ID:	SJH0396-ICV4	Injection Time:	17:24
Sequence Name:	AR1660ICV4		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	271	0.0446218	0.0483169		8.4	+/-20
Aroclor-1016 (1)	A	250.00	272	0.0283733	0.0309132		8.8	
Aroclor-1016 (2)	A	250.00	268	0.0867650	0.0932065		7.2	
Aroclor-1016 (3)	A	250.00	275	0.0389383	0.0428449		10.0	
Aroclor-1016 (4)	A	250.00	269	0.0244108	0.0263029		7.6	
Aroclor 1016 [2C]	A	250.00	269	0.0529840	0.0565520		7.5	+/-20
Aroclor-1016 (1) [2C]	A	250.00	264	0.0456173	0.0482037		5.6	
Aroclor-1016 (2) [2C]	A	250.00	265	0.1020378	0.1080499		6.0	
Aroclor-1016 (3) [2C]	A	250.00	269	0.0400455	0.0431006		7.6	
Aroclor-1016 (4) [2C]	A	250.00	277	0.0242353	0.0268536		10.8	
Aroclor 1260	A	250.00	265	0.0461251	0.0489452		5.9	+/-20
Aroclor-1260 (1)	A	250.00	250	0.0359923	0.0359945		0.0	
Aroclor-1260 (2)	A	250.00	270	0.0353250	0.0382078		8.0	
Aroclor-1260 (3)	A	250.00	266	0.0954741	0.1017146		6.4	
Aroclor-1260 (4)	A	250.00	270	0.0425365	0.0459331		8.0	
Aroclor-1260 (5)	A	250.00	268	0.0212978	0.0228758		7.2	
Aroclor 1260 [2C]	A	250.00	223	0.1108773	0.0981716		-10.9	+/-20
Aroclor-1260 (1) [2C]	A	250.00	222	0.0665032	0.0591302		-11.2	
Aroclor-1260 (2) [2C]	A	250.00	215	0.1932922	0.1663898		-14.0	
Aroclor-1260 (3) [2C]	A	250.00	228	0.1242917	0.1135496		-8.8	
Aroclor-1260 (4) [2C]	A	250.00	226	0.0594222	0.0536167		-9.6	
Decachlorobiphenyl	A	40.000	43.1	0.7261970	0.7833672		7.8	+/-20
Tetrachlorometaxylene	A	40.000	43.4	0.9669678	1.0493650		8.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.6	1.7775950	1.7135480		-3.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	42.0	1.0280520	1.0789350		5.0	+/-20

* Values outside of QC limits

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

Data file 1: /210828.b/08282103ECD7.D
Data file 2: /210828.b/210828.b/08282103ECD7.D
Method: \\target\share\chem4\ecd7.i\210828.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV2
Client ID:
Injection Date: 28-AUG-2021 17:24
Report Date: 08/31/2021 08:40
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	0.000	121199	5.411	0.000	330639	43.4	42.0	3.3	Tetrachloro-m-xylene
13.164	0.000	145711	13.844	0.000	713524	43.1	38.6	11.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	230995	-10.8
Hexabromobiphenyl	425681	372012	-12.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	612899	-15.0
Hexabromobiphenyl	863111	832803	-3.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.000	22315	272.4	1	7.054	-0.000	92325	264.2
Aroclor-1016	2	7.034	-0.001	67282	268.6	2	7.651	-0.001	206949	264.7
Aroclor-1016	3	7.182	0.000	30928	275.1	3	7.857	-0.001	82551	269.1
Aroclor-1016	4	7.290	-0.000	18987	269.4	4	8.104	0.000	51433	277.0

Total Col1Ave (4 peaks): 271.3 Total Col2Ave (4 peaks): 268.7 RPD = 1
Corrected Ave (3 peaks): 270.1 Corrected Ave (3 peaks): 266.0 RPD = 2

CalAmt %D: 8.5 CalAmt %D: 7.5

Aroclor-1260	1	10.386	-0.000	41845	250.0	1	11.423	-0.000	153887	222.3
Aroclor-1260	2	10.703	-0.000	44418	270.4	2	11.676	-0.000	433031	215.2
Aroclor-1260	3	11.054	0.000	118247	266.3	3	12.258	-0.001	295514	228.4
Aroclor-1260	4	11.455	-0.000	53399	270.0	4	12.969	-0.001	139538	225.6
Aroclor-1260	5	11.556	0.001	26594	268.5	NS	---			----

Total Col1Ave (5 peaks): 265.0 Total Col2Ave (4 peaks): 222.9 RPD = 17
Corrected Ave (4 peaks): 263.7 Corrected Ave (3 peaks): 221.0 RPD = 18

CalAmt %D: 6.0 CalAmt %D: -10.9

Total PCB Area Col1 (5.168 - 13.064) = 1197256 Col1 Total PCB = 0.5 ppm*

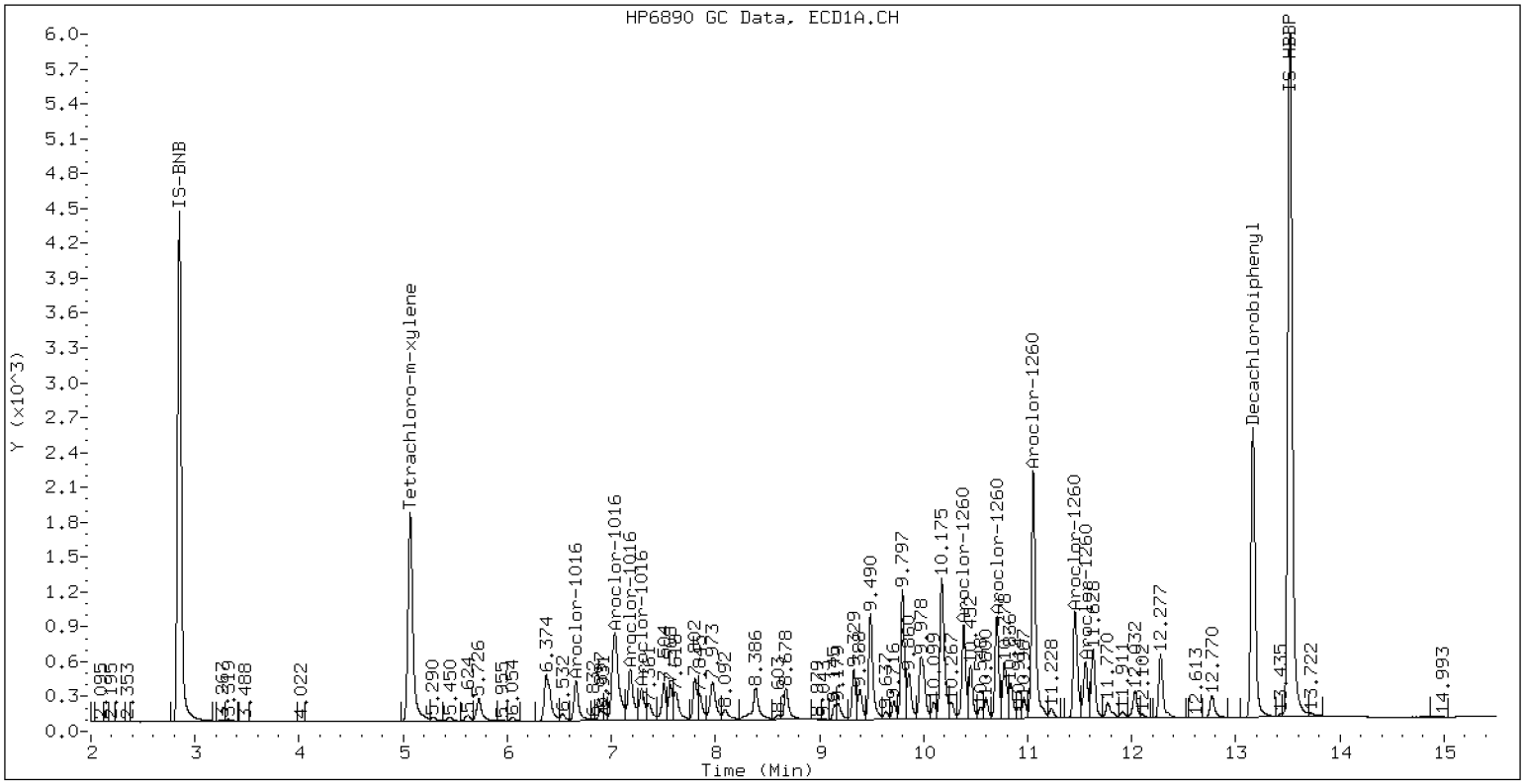
Total PCB Area Col2 (5.168 - 13.064) = 4191443 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

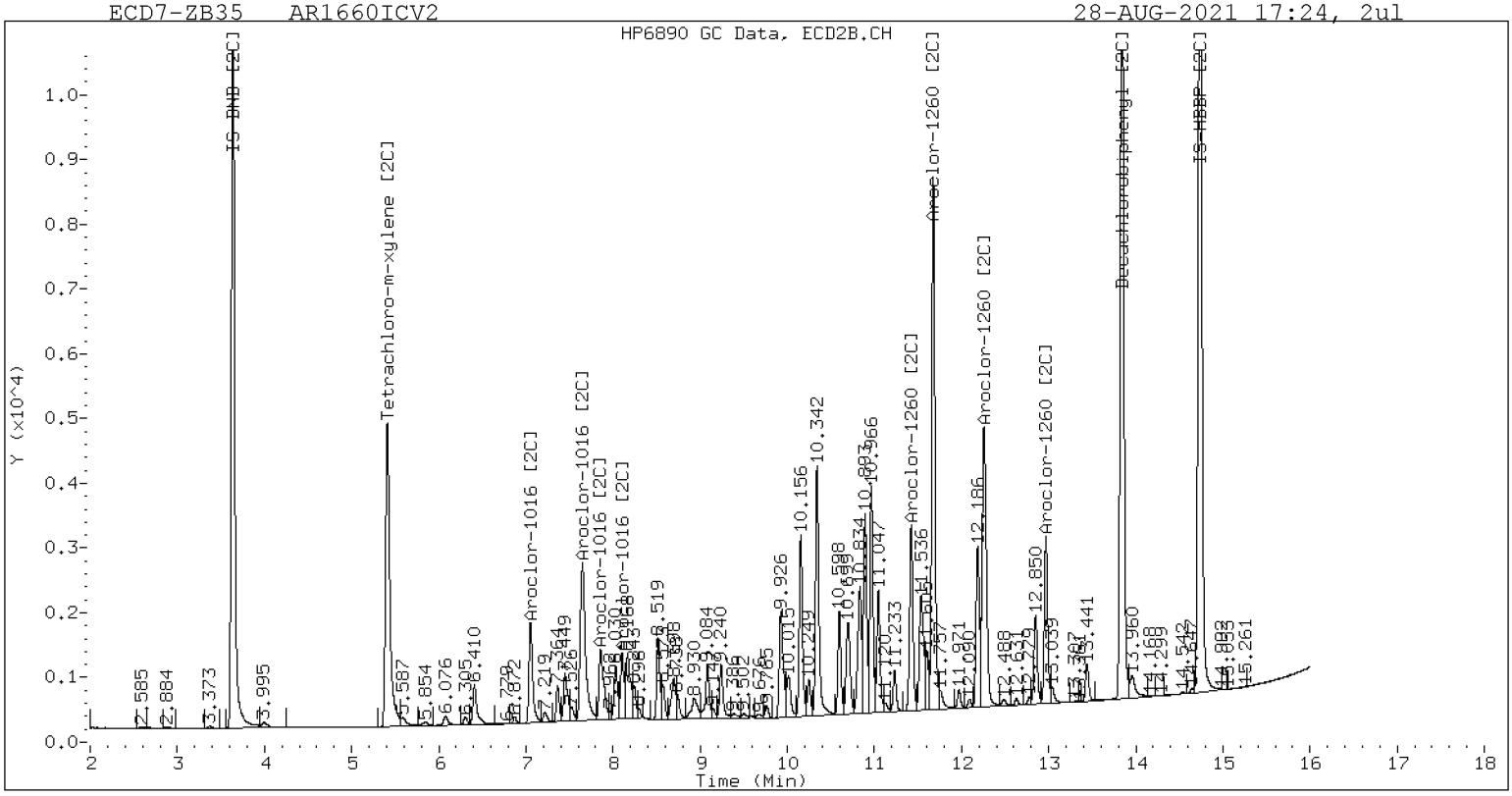
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660ICV2 28-AUG-2021 17:24, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660ICV2 28-AUG-2021 17:24, 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:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132141ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV1	Injection Time:	08:21
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	285	0.0446218	0.0506821		13.9	+/-20
Aroclor 1016 [2C]	A	250.00	281	0.0529840	0.0593980		12.5	+/-20
Aroclor 1260	A	250.00	276	0.0461251	0.0512781		10.3	+/-20
Aroclor 1260 [2C]	A	250.00	259	0.1108773	0.1145107		3.4	+/-20
Decachlorobiphenyl	A	40.000	41.9	0.7261970	0.7611314		4.8	+/-20
Tetrachlorometaxylene	A	40.000	43.6	0.9669678	1.0549010		9.1	+/-20
Decachlorobiphenyl [2C]	A	40.000	41.2	1.7775950	1.8311900		3.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.9	1.0280520	1.0780260		4.9	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210813.b/08132141ECD7.D
Data file 2: /210813.b/210813.b/08132141ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV1
Client ID:
Injection Date: 14-AUG-2021 08:21
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	130620	5.416	-0.001	380301	43.6	41.9	4.0	Tetrachloro-m-xylene
13.166	0.000	166891	13.848	-0.032	891664	41.9	41.2	1.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	247644	-4.3
Hexabromobiphenyl	425681	438534	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	705551	-2.1
Hexabromobiphenyl	863111	973863	12.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.004	25008	284.7	1	7.059	0.002	110603	274.9
Aroclor-1016	2	7.036	0.006	75849	282.4	2	7.653	0.006	251287	279.2
Aroclor-1016	3	7.182	0.006	34421	285.6	3	7.860	0.005	101098	286.3
Aroclor-1016	4	7.291	0.006	21611	286.0	4	8.108	0.003	60866	284.8
Total Col1Ave (4 peaks):					284.7	Total Col2Ave (4 peaks):				281.3 RPD = 1
Corrected Ave (3 peaks):					284.2	Corrected Ave (3 peaks):				279.6 RPD = 2
Aroclor-1221	1	4.024	0.008	183	9.4	1	4.683	0.006	532	10.0
Aroclor-1221	2	5.453	0.002	3388	110.5	2	6.080	0.008	14283	117.8
Aroclor-1221	3	5.728	0.004	17440	210.6	3	6.414	0.005	53146	251.5
Total Col1Ave (3 peaks):					110.2	Total Col2Ave (3 peaks):				126.5 RPD = 14
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.024	0.006	183	15.2	1	4.683	0.004	532	16.9
Aroclor-1232	2	5.728	0.002	17440	267.1	2	7.059	0.001	110603	600.3
Aroclor-1232	3	7.036	0.002	75849	761.3	3	7.653	0.002	251287	681.4
Aroclor-1232	4	7.973	0.001	32123	783.7	4	8.522	0.000	77885	810.7
Total Col1Ave (4 peaks):					456.8	Total Col2Ave (4 peaks):				527.3 RPD = 14
Corrected Ave (3 peaks):					347.9	Corrected Ave (3 peaks):				432.8 RPD = 22
Aroclor-1242	1	6.662	0.003	25008	366.5	1	7.059	0.002	110603	341.0
Aroclor-1242	2	7.036	0.006	75849	372.9	2	7.653	0.005	251287	356.6
Aroclor-1242	3	8.386	0.011	23127	200.7	3	8.934	-0.015	43631	132.5
Aroclor-1242	4	8.601	-0.072	2264	48.1	4	9.087	0.060	61086	163.5
Total Col1Ave (4 peaks):					247.1	Total Col2Ave (4 peaks):				248.4 RPD = 1
Corrected Ave (3 peaks):					205.1	Corrected Ave (3 peaks):				212.3 RPD = 3
Aroclor-1248	1	7.803	0.005	21981	211.8	1	8.108	0.002	60866	208.2
Aroclor-1248	2	7.973	0.005	32123	237.1	2	8.522	0.002	77885	218.9
Aroclor-1248	3	8.386	0.011	23127	116.6	3	8.934	-0.013	43631	77.0
Aroclor-1248	4	8.678	0.004	18050	159.4	4	9.393	0.016	3902	8.1
Total Col1Ave (4 peaks):					181.2	Total Col2Ave (4 peaks):				128.0 RPD = 34
Corrected Ave (3 peaks):					162.6	Corrected Ave (3 peaks):				97.8 RPD = 50*
Aroclor-1254	1	8.678	0.003	18050	84.5	1	9.242	0.003	55374	92.2
Aroclor-1254	2	---			0.0	2	9.393	0.062	3902	11.1
Aroclor-1254	3	9.048	0.006	1874	13.5	3	9.768	0.005	7503	16.4
Aroclor-1254	4	9.179	0.003	8064	30.3	4	9.930	0.017	138725	136.8
Aroclor-1254	5	9.859	-0.008	24786	148.4	5	10.160	0.012	181859	176.8
Total Col1Ave (4 peaks):					69.2	Total Col2Ave (5 peaks):				86.7 RPD = 22
Corrected Ave (3 peaks):					42.8	Corrected Ave (4 peaks):				64.1 RPD = 40*
Aroclor-1260	1	10.386	0.003	52476	266.0	1	11.427	0.002	206923	255.6
Aroclor-1260	2	10.705	0.005	54460	281.2	2	11.681	-0.000	606031	257.6
Aroclor-1260	3	11.055	0.005	146267	279.5	3	12.264	0.003	390976	258.4
Aroclor-1260	4	11.458	0.005	67567	289.8	4	12.974	0.002	190042	262.7
Aroclor-1260	5	11.557	0.003	30592	262.0	NS	---			----
Total Col1Ave (5 peaks):					275.7	Total Col2Ave (4 peaks):				258.6 RPD = 6
Corrected Ave (4 peaks):					272.2	Corrected Ave (3 peaks):				257.2 RPD = 6
Aroclor-1262	1	10.386	0.002	52476	196.1	1	10.970	-0.000	227139	190.7
Aroclor-1262	2	11.458	0.003	67567	389.9	2	11.681	-0.004	606031	241.2
Aroclor-1262	3	11.630	0.003	39662	158.8	3	12.190	0.002	176119	157.9
Aroclor-1262	4	12.278	0.004	37281	181.8	4	12.974	0.001	190042	182.8
Total Col1Ave (4 peaks):					231.6	Total Col2Ave (4 peaks):				193.2 RPD = 18
Corrected Ave (3 peaks):					178.9	Corrected Ave (3 peaks):				177.2 RPD = 1
Aroclor-1268	1	11.557	-0.000	30592	52.0	1	12.190	-0.010	176119	62.9
Aroclor-1268	2	11.630	0.004	39662	64.3	2	12.264	-0.003	390976	128.0
Aroclor-1268	3	12.031	0.031	15649	32.2	3	12.637	-0.007	5866	2.2
Aroclor-1268	4	12.771	-0.001	7371	4.7	4	12.784	0.001	4262	6.5
Total Col1Ave (4 peaks):					38.3	Total Col2Ave (4 peaks):				49.9 RPD = 26

Corrected Ave (3 peaks): 29.6 Corrected Ave (3 peaks): 23.9 RPD = 21

Total PCB Area Col1 (5.169 - 13.066) = 1398917 Col1 Total PCB = 0.6 ppm*

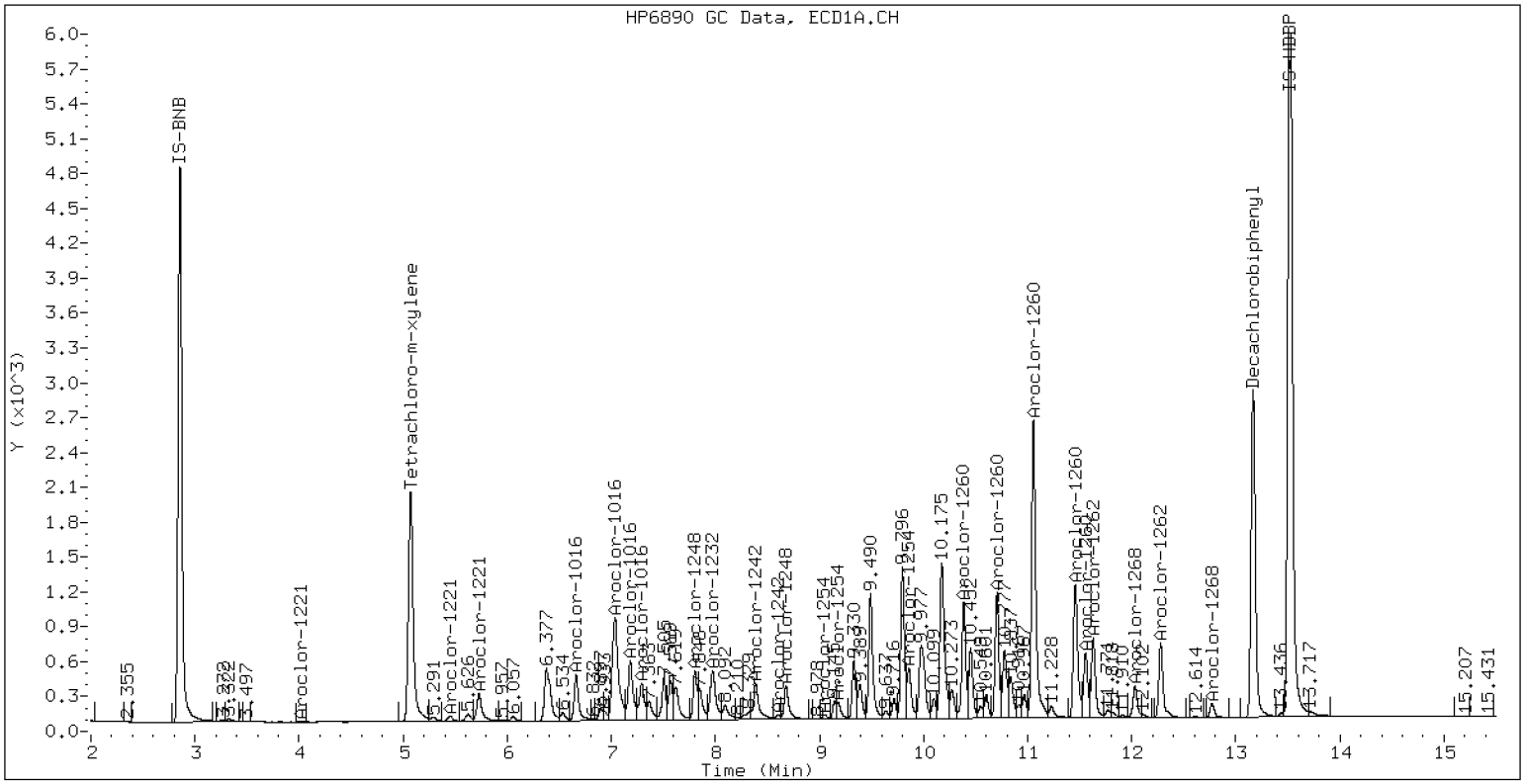
Total PCB Area Col2 (5.169 - 13.066) = 5304779 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

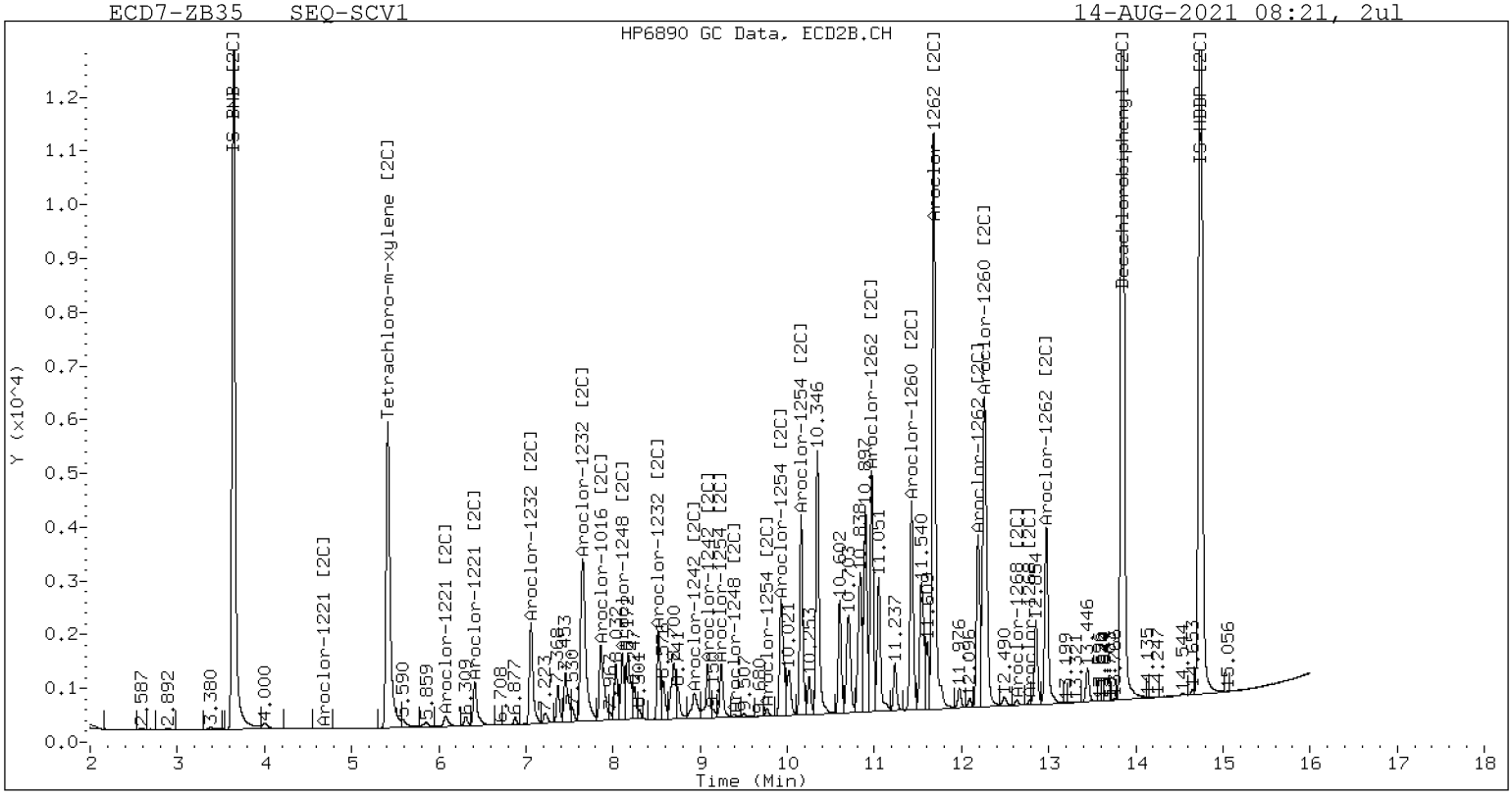
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV1 14-AUG-2021 08:21, 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:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132142ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV2	Injection Time:	08:41
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	282	0.0350459	0.0378590		12.6	+/-20
Aroclor 1242 [2C]	A	250.00	257	0.0490898	0.0506982		2.8	+/-20
Decachlorobiphenyl	A	40.000	40.6	0.7261970	0.7366527		1.4	+/-20
Tetrachlorometaxylene	A	40.000	42.4	0.9669678	1.0253500		6.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	40.1	1.7775950	1.7819000		0.2	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.2	1.0280520	1.0587290		3.0	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210813.b/08132142ECD7.D
Data file 2: /210813.b/210813.b/08132142ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV2
Client ID:
Injection Date: 14-AUG-2021 08:41
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.071	0.002	132285	5.416	-0.001	383386	42.4	41.2	2.9	Tetrachloro-m-xylene
13.167	0.001	167664	13.849	-0.031	892912	40.6	40.1	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258029	-0.3
Hexabromobiphenyl	425681	455205	6.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724238	0.5
Hexabromobiphenyl	863111	1002202	16.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.004	19016	207.8	1	7.058	0.002	84149	203.8
Aroclor-1016	2	7.036	0.007	56530	202.0	2	7.655	0.007	190019	205.7
Aroclor-1016	3	7.182	0.006	26016	207.1	3	7.861	0.006	75921	209.4
Aroclor-1016	4	7.291	0.006	16388	208.1	4	8.108	0.003	48471	220.9
Total Col1Ave (4 peaks):				206.3		Total Col2Ave (4 peaks):			210.0	RPD = 2
Corrected Ave (3 peaks):				205.6		Corrected Ave (3 peaks):			206.3	RPD = 0
Aroclor-1221	1	4.028	0.013	116	5.7	1	---			0.0
Aroclor-1221	2	5.452	0.001	2495	78.1	2	6.082	0.010	11569	93.0
Aroclor-1221	3	5.727	0.003	12904	149.5	3	6.414	0.005	39789	183.5
Total Col1Ave (3 peaks):				77.8		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.028	0.010	116	9.3	1	---			0.0
Aroclor-1232	2	5.727	0.001	12904	189.7	2	7.058	0.000	84149	444.9
Aroclor-1232	3	7.036	0.003	56530	544.5	3	7.655	0.004	190019	502.0
Aroclor-1232	4	7.974	0.001	26547	621.6	4	8.522	0.000	61015	618.7
Total Col1Ave (4 peaks):				341.3		Total Col2Ave (3 peaks):			521.9	RPD = 42*
Corrected Ave (3 peaks):				247.8		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.662	0.003	19016	267.5	1	7.058	0.001	84149	252.7
Aroclor-1242	2	7.036	0.006	56530	266.7	2	7.655	0.006	190019	262.7
Aroclor-1242	3	8.383	0.009	29618	246.7	3	8.960	0.011	88042	260.5
Aroclor-1242	4	8.677	0.003	16945	345.4	4	9.035	0.007	96759	252.3
Total Col1Ave (4 peaks):				281.6		Total Col2Ave (4 peaks):			257.1	RPD = 9
Corrected Ave (3 peaks):				260.3		Corrected Ave (3 peaks):			255.2	RPD = 2
Aroclor-1248	1	7.804	0.005	17658	163.3	1	8.108	0.002	48471	161.5
Aroclor-1248	2	7.974	0.006	26547	188.1	2	8.522	0.002	61015	167.0
Aroclor-1248	3	8.383	0.009	29618	143.3	3	8.960	0.014	88042	151.3
Aroclor-1248	4	8.677	0.004	16945	143.6	4	9.387	0.011	85570	173.2
Total Col1Ave (4 peaks):				159.6		Total Col2Ave (4 peaks):			163.2	RPD = 2
Corrected Ave (3 peaks):				150.1		Corrected Ave (3 peaks):			159.9	RPD = 6
Aroclor-1254	1	8.677	0.002	16945	76.1	1	9.243	0.003	29242	47.5
Aroclor-1254	2	8.749	0.003	9630	93.4	2	9.387	0.056	85570	236.6
Aroclor-1254	3	9.048	0.007	7009	48.3	3	9.768	0.005	22605	48.1
Aroclor-1254	4	9.185	0.010	12002	43.3	4	9.920	0.006	43258	41.6
Aroclor-1254	5	9.892	0.025	8818	50.7	5	10.159	0.012	45764	43.4
Total Col1Ave (5 peaks):				62.4		Total Col2Ave (5 peaks):			83.4	RPD = 29
Corrected Ave (4 peaks):				54.6		Corrected Ave (4 peaks):			45.1	RPD = 19
Aroclor-1260	1	10.393	0.010	159	0.8	1	11.445	0.020	5299	6.4
Aroclor-1260	2	10.708	0.008	221	1.1	2	11.687	0.006	3878	1.6
Aroclor-1260	3	11.059	0.009	267	0.5	3	12.271	0.010	3933	2.5
Aroclor-1260	4	11.460	0.007	376	1.6	4	13.053	0.081	5398	7.3
Aroclor-1260	5	---			0.0	NS	---			----
Total Col1Ave (4 peaks):				1.0		Total Col2Ave (4 peaks):			4.4	RPD = 128*
Corrected Ave (3 peaks):				0.8		Corrected Ave (3 peaks):			3.5	RPD = 126*
Aroclor-1262	1	10.393	0.009	159	0.6	1	10.901	-0.069	17524	14.3
Aroclor-1262	2	11.460	0.005	376	2.1	2	11.687	0.001	3878	1.5
Aroclor-1262	3	---			0.0	3	12.271	0.083	3933	3.4
Aroclor-1262	4	---			0.0	4	13.053	0.081	5398	5.0
Col1Ave: <3 Quant Peaks						Col2Ave:			6.1	
Aroclor-1268	1	11.460	-0.097	376	0.6	1	12.271	0.071	3933	1.4
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.914	-0.086	1770	3.5	3	12.639	-0.005	1023	0.4
Aroclor-1268	4	12.775	0.003	794	0.5	4	12.790	0.006	1260	1.9
Total Col1Ave (3 peaks):				1.5		Total Col2Ave (3 peaks):			1.2	RPD = 24
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.169 - 13.066) = 482960 Col1 Total PCB = 0.2 ppm*

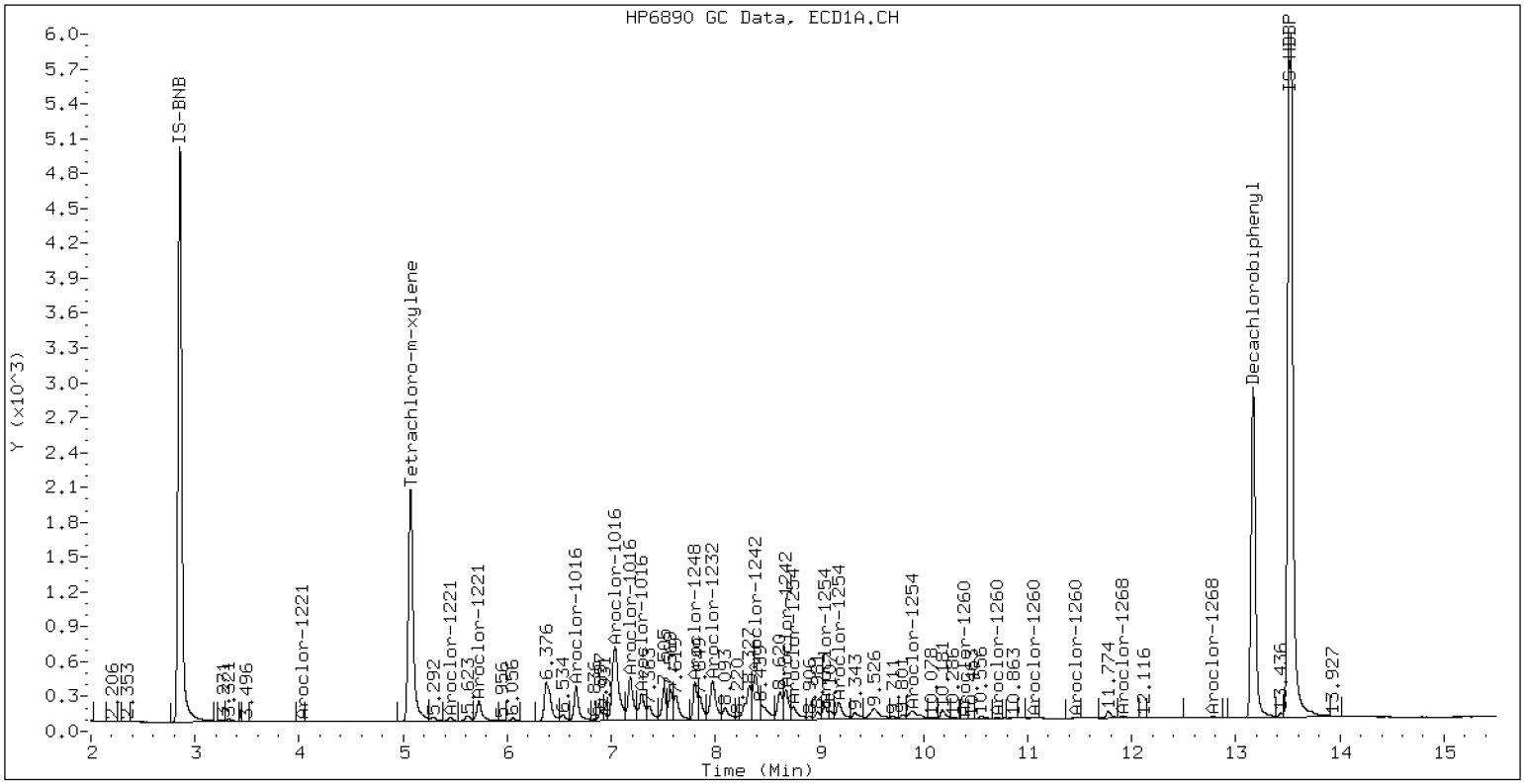
Total PCB Area Col2 (5.169 - 13.066) = 1884416 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

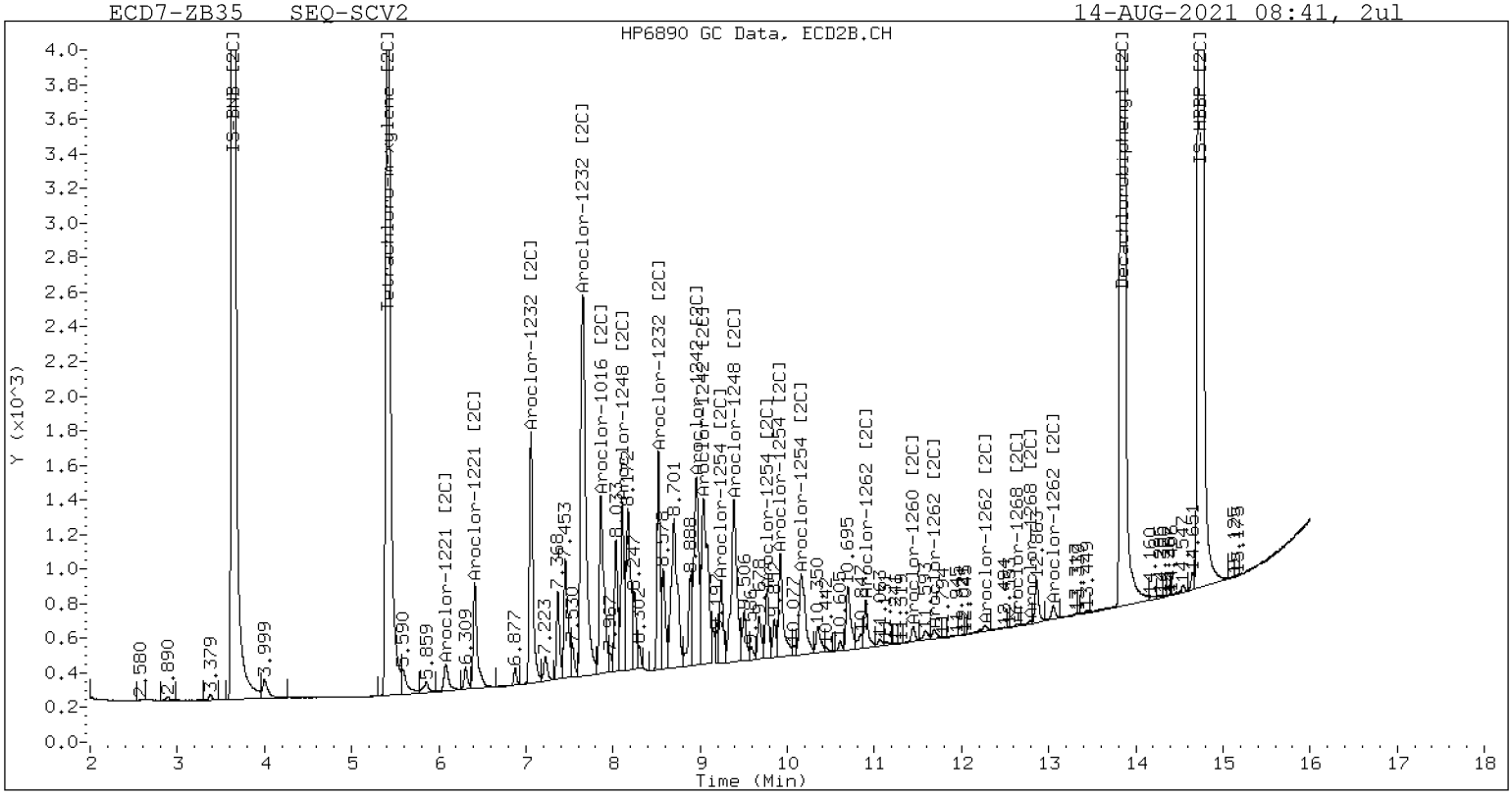
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV2 14-AUG-2021 08:41, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV2 14-AUG-2021 08:41, 2ul

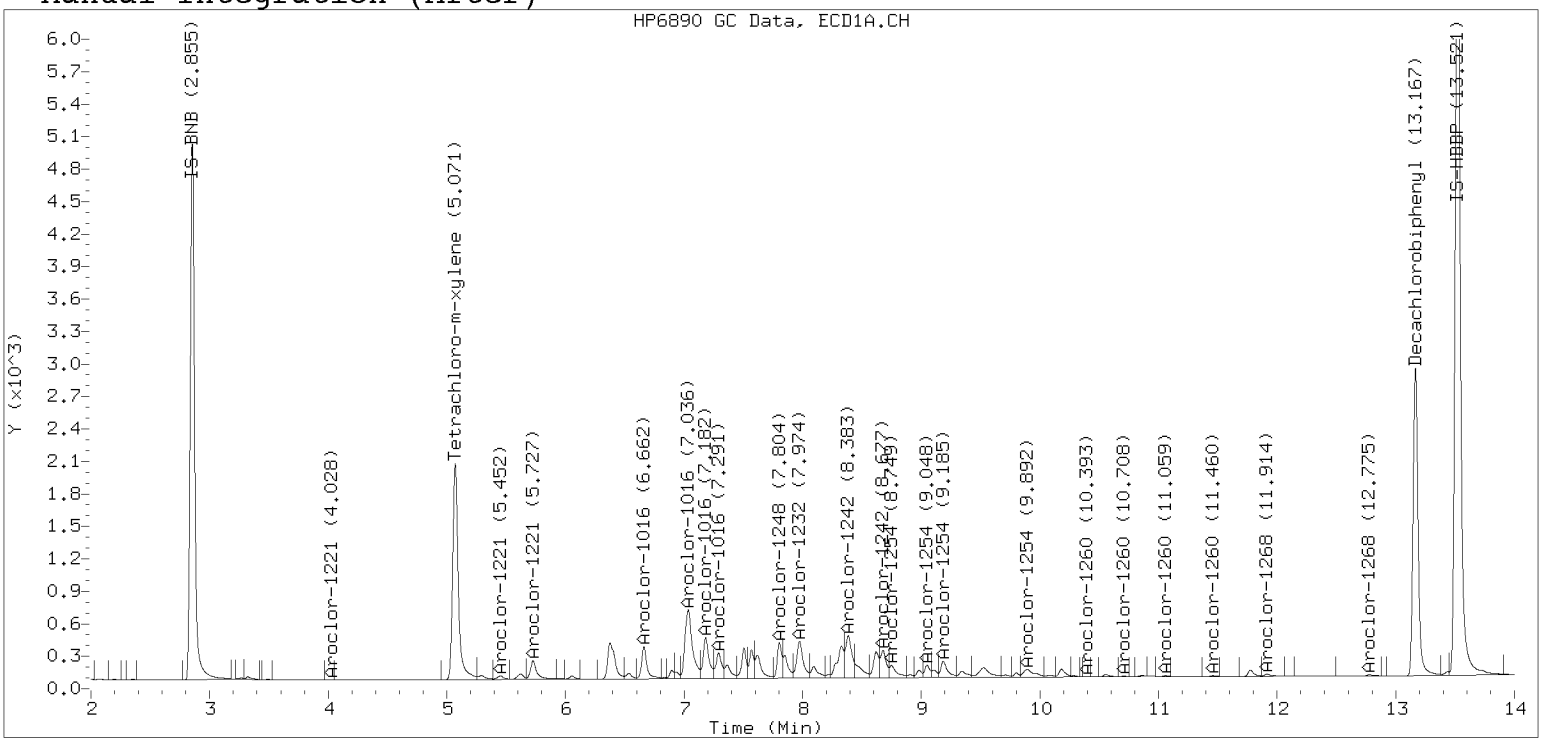


ZB-35 Manual Integration: YES

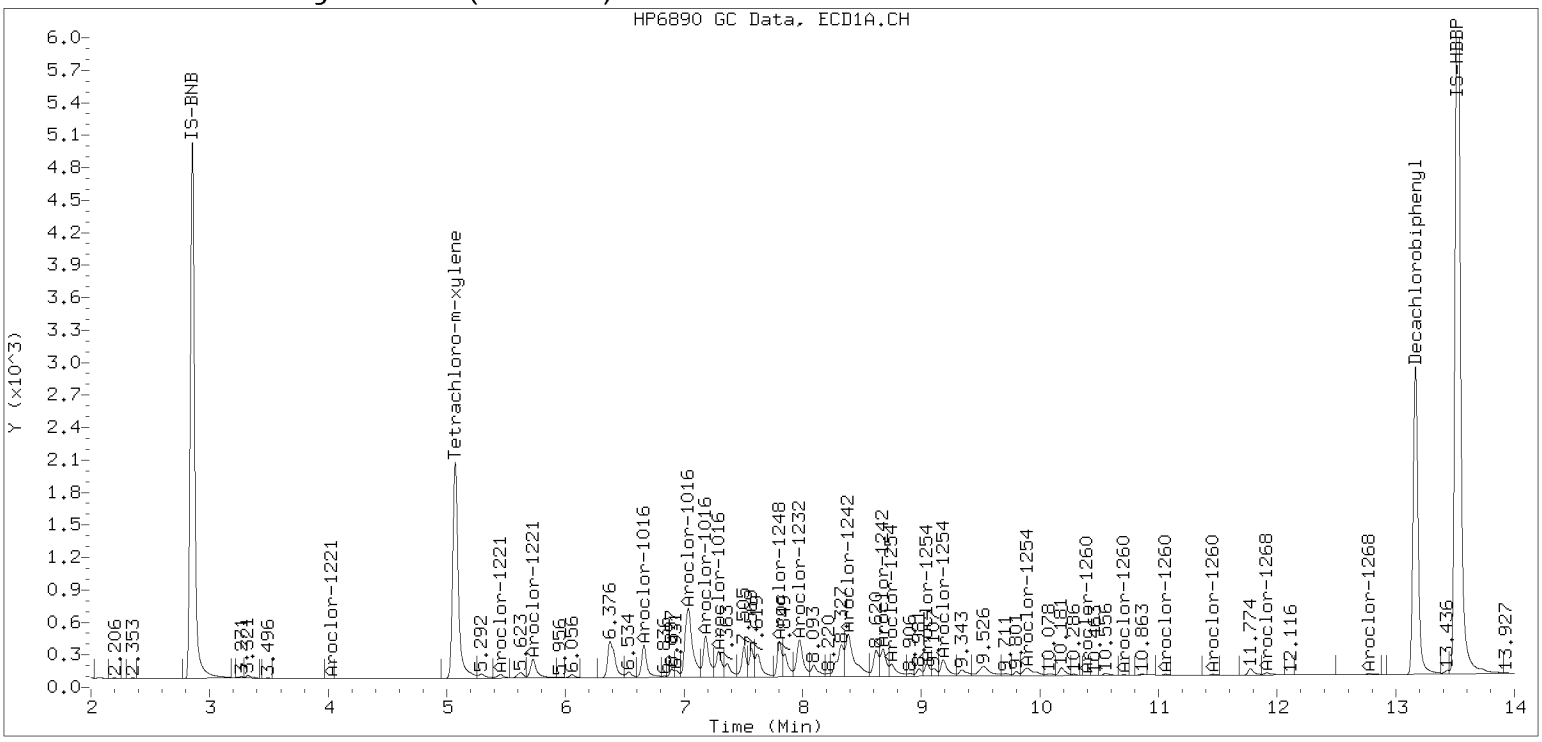
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132142ECD7.D Injection Date: 14-AUG-2021 08:41

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132143ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV3	Injection Time:	09:02
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	262	0.0444871	0.0465152		4.6	+/-20
Aroclor 1248 [2C]	A	250.00	275	0.0480909	0.0527683		10.0	+/-20
Decachlorobiphenyl	A	40.000	39.5	0.7261970	0.7165649		-1.3	+/-20
Tetrachlorometaxylene	A	40.000	41.7	0.9669678	1.0072130		4.2	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.4	1.7775950	1.7077060		-3.9	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.4	1.0280520	1.0386920		1.0	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210813.b/08132143ECD7.D
Data file 2: /210813.b/210813.b/08132143ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV3
Client ID:
Injection Date: 14-AUG-2021 09:02
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	133217	5.416	-0.001	384693	41.7	40.4	3.0	Tetrachloro-m-xylene
13.165	-0.001	166922	13.848	-0.032	892438	39.5	38.4	2.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264526	2.2
Hexabromobiphenyl	425681	465895	9.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740726	2.7
Hexabromobiphenyl	863111	1045189	21.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	9682	103.2	1	7.058	0.001	46276	109.6
Aroclor-1016	2	7.035	0.006	37972	132.4	2	7.654	0.006	128803	136.3
Aroclor-1016	3	7.185	0.009	16001	124.3	3	7.862	0.007	26557	71.6
Aroclor-1016	4	7.292	0.007	10150	125.7	4	8.107	0.002	83644	372.8
Total Col1Ave (4 peaks):					121.4	Total Col2Ave (4 peaks):				172.6 RPD = 35
Corrected Ave (3 peaks):					117.7	Corrected Ave (3 peaks):				105.8 RPD = 11
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	5.455	0.004	449	13.7	2	6.091	0.019	6638	52.2
Aroclor-1221	3	5.728	0.004	2260	25.5	3	6.414	0.005	8501	38.3
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	5.728	0.002	2260	32.4	2	7.058	-0.000	46276	239.2
Aroclor-1232	3	7.035	0.002	37972	356.8	3	7.654	0.003	128803	332.7
Aroclor-1232	4	7.972	-0.000	39250	896.5	4	8.523	0.001	102298	1014.3
Total Col1Ave (3 peaks):					428.6	Total Col2Ave (3 peaks):				528.7 RPD = 21
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.663	0.004	9682	132.8	1	7.058	0.000	46276	135.9
Aroclor-1242	2	7.035	0.005	37972	174.8	2	7.654	0.005	128803	174.1
Aroclor-1242	3	8.381	0.007	54555	443.2	3	8.956	0.007	151640	438.8
Aroclor-1242	4	8.678	0.004	31259	621.5	4	9.034	0.006	104178	265.6
Total Col1Ave (4 peaks):					343.1	Total Col2Ave (4 peaks):				253.6 RPD = 30
Corrected Ave (3 peaks):					250.3	Corrected Ave (3 peaks):				191.9 RPD = 26
Aroclor-1248	1	7.802	0.004	28742	259.3	1	8.107	0.002	83644	272.5
Aroclor-1248	2	7.972	0.004	39250	271.2	2	8.523	0.003	102298	273.8
Aroclor-1248	3	8.381	0.007	54555	257.5	3	8.956	0.009	151640	254.8
Aroclor-1248	4	8.678	0.004	31259	258.4	4	9.383	0.006	151004	298.8
Total Col1Ave (4 peaks):					261.6	Total Col2Ave (4 peaks):				275.0 RPD = 5
Corrected Ave (3 peaks):					258.4	Corrected Ave (3 peaks):				267.0 RPD = 3
Aroclor-1254	1	8.678	0.002	31259	137.0	1	9.242	0.003	54333	86.2
Aroclor-1254	2	8.749	0.003	18396	174.1	2	9.383	0.052	151004	408.3
Aroclor-1254	3	9.047	0.006	14863	99.9	3	9.767	0.004	47940	99.8
Aroclor-1254	4	9.184	0.008	25850	91.0	4	9.918	0.004	90159	84.7
Aroclor-1254	5	9.891	0.024	17966	100.7	5	10.157	0.010	92605	85.8
Total Col1Ave (5 peaks):					120.5	Total Col2Ave (5 peaks):				152.9 RPD = 24
Corrected Ave (4 peaks):					107.1	Corrected Ave (4 peaks):				89.1 RPD = 18
Aroclor-1260	1	10.390	0.007	578	2.8	1	11.440	0.015	6820	7.8
Aroclor-1260	2	10.706	0.006	437	2.1	2	11.683	0.002	7655	3.0
Aroclor-1260	3	11.059	0.008	1267	2.3	3	12.263	0.002	5159	3.2
Aroclor-1260	4	11.460	0.007	540	2.2	4	12.973	0.001	2451	3.2
Aroclor-1260	5	11.559	0.005	490	4.0	NS	---			----
Total Col1Ave (5 peaks):					2.7	Total Col2Ave (4 peaks):				4.3 RPD = 47*
Corrected Ave (4 peaks):					2.3	Corrected Ave (3 peaks):				3.1 RPD = 29
Aroclor-1262	1	10.390	0.006	578	2.0	1	10.972	0.001	4108	3.2
Aroclor-1262	2	11.460	0.005	540	2.9	2	11.683	-0.002	7655	2.8
Aroclor-1262	3	11.632	0.005	592	2.2	3	12.188	-0.000	3699	3.1
Aroclor-1262	4	12.278	0.004	571	2.6	4	12.973	0.001	2451	2.2
Total Col1Ave (4 peaks):					2.5	Total Col2Ave (4 peaks):				2.8 RPD = 14
Corrected Ave (3 peaks):					2.3	Corrected Ave (3 peaks):				2.7 RPD = 17
Aroclor-1268	1	11.559	0.002	490	0.8	1	12.188	-0.012	3699	1.2
Aroclor-1268	2	11.632	0.006	592	0.9	2	12.263	-0.004	5159	1.6
Aroclor-1268	3	11.915	-0.086	879	1.7	3	12.643	-0.001	909	0.3
Aroclor-1268	4	12.775	0.003	932	0.6	4	12.788	0.005	972	1.4
Total Col1Ave (4 peaks):					1.0	Total Col2Ave (4 peaks):				1.1 RPD = 13
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				1.0 RPD = 27

Total PCB Area Col1 (5.169 - 13.066) = 608290 Col1 Total PCB = 0.2 ppm*

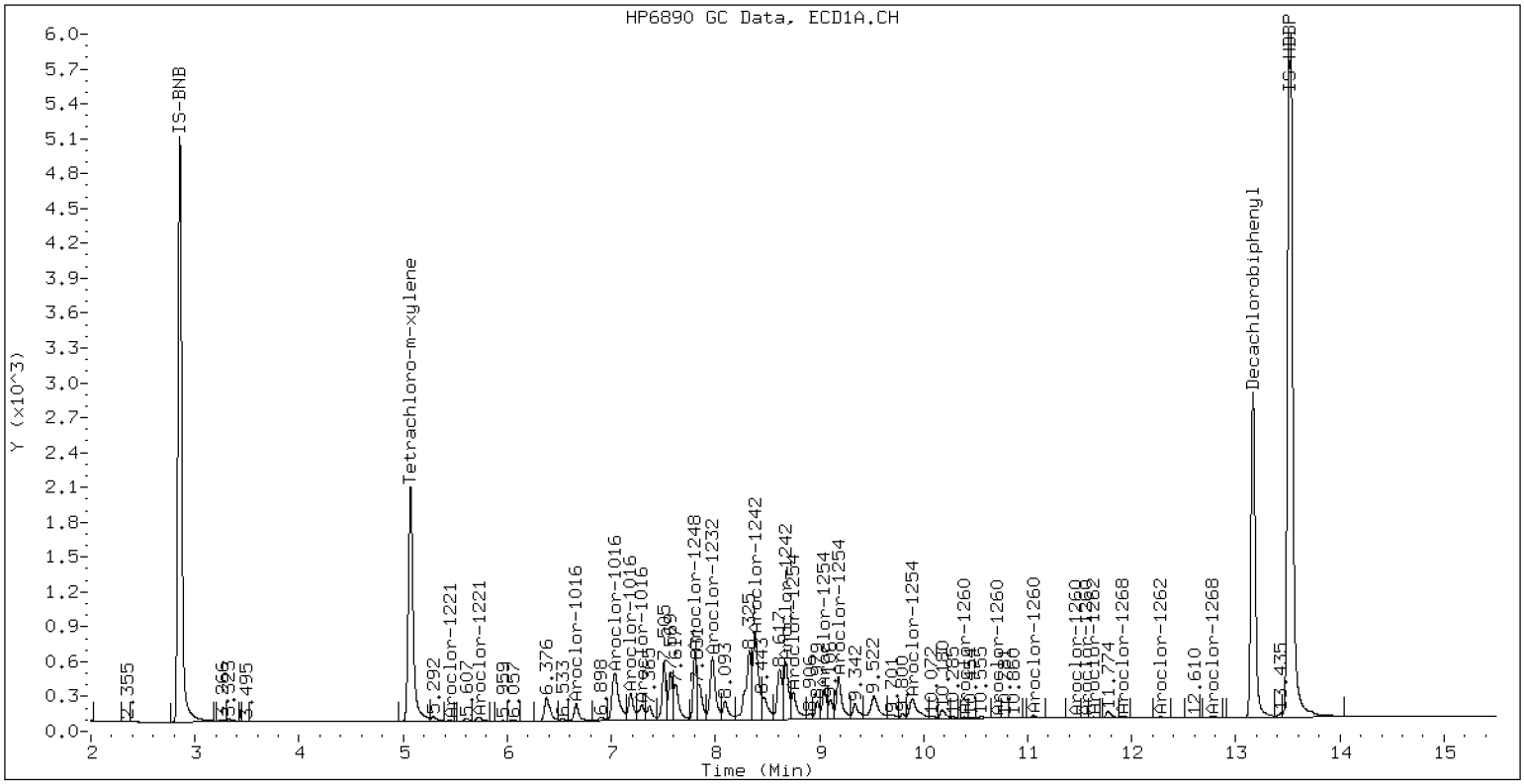
Total PCB Area Col2 (5.169 - 13.066) = 2317749 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

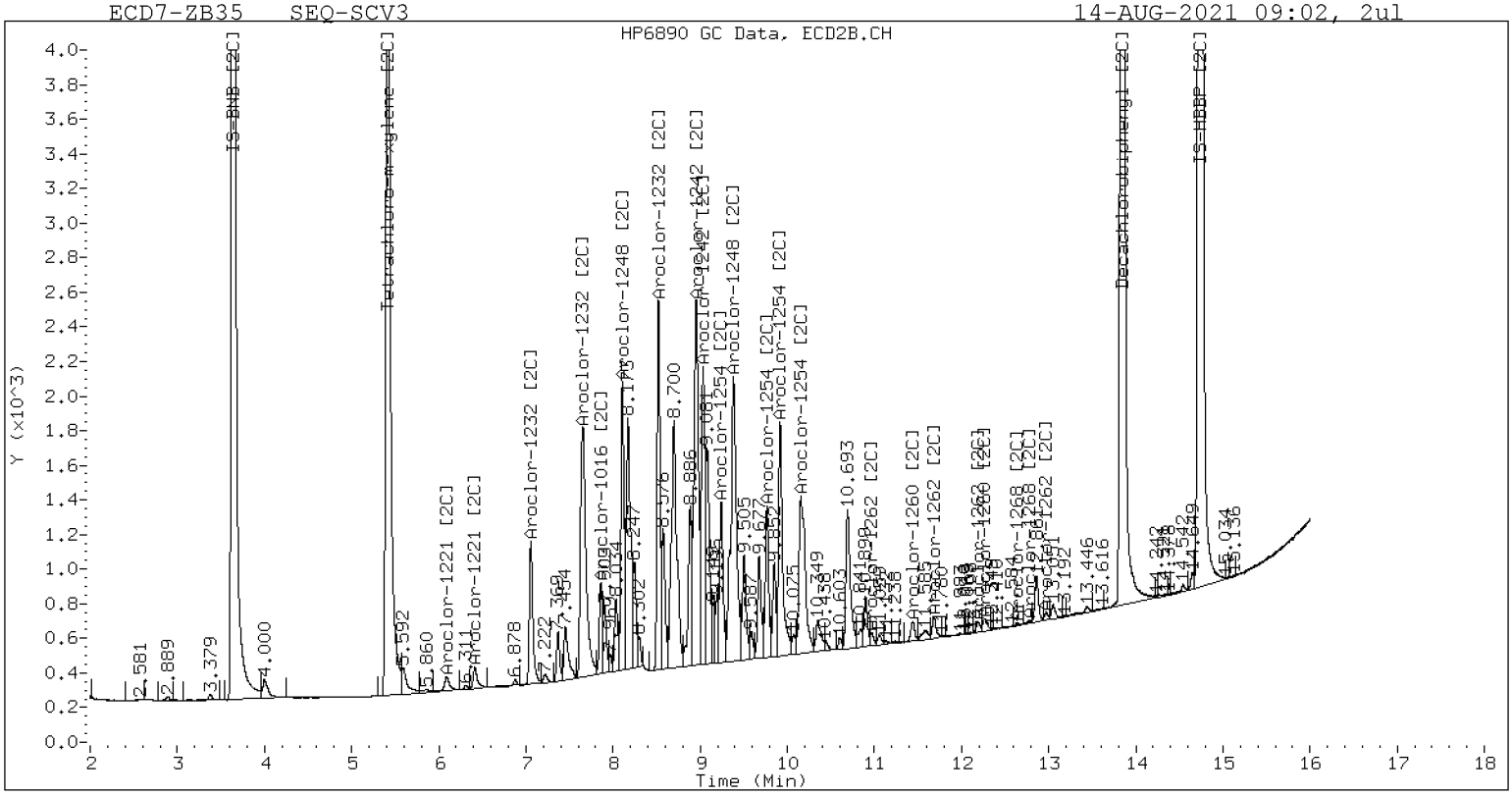
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV3 14-AUG-2021 09:02, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV3 14-AUG-2021 09:02, 2ul

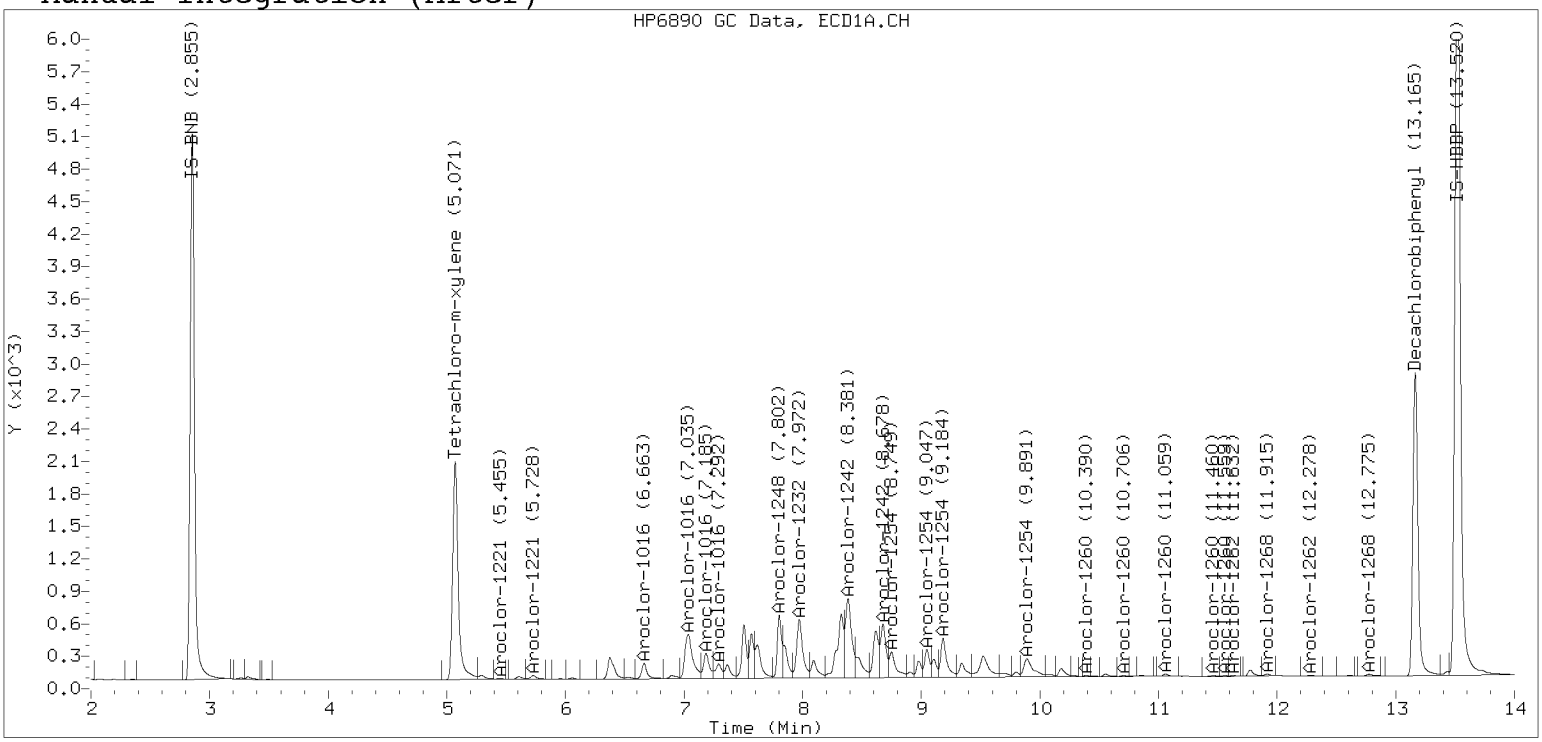


ZB-35 Manual Integration: NO

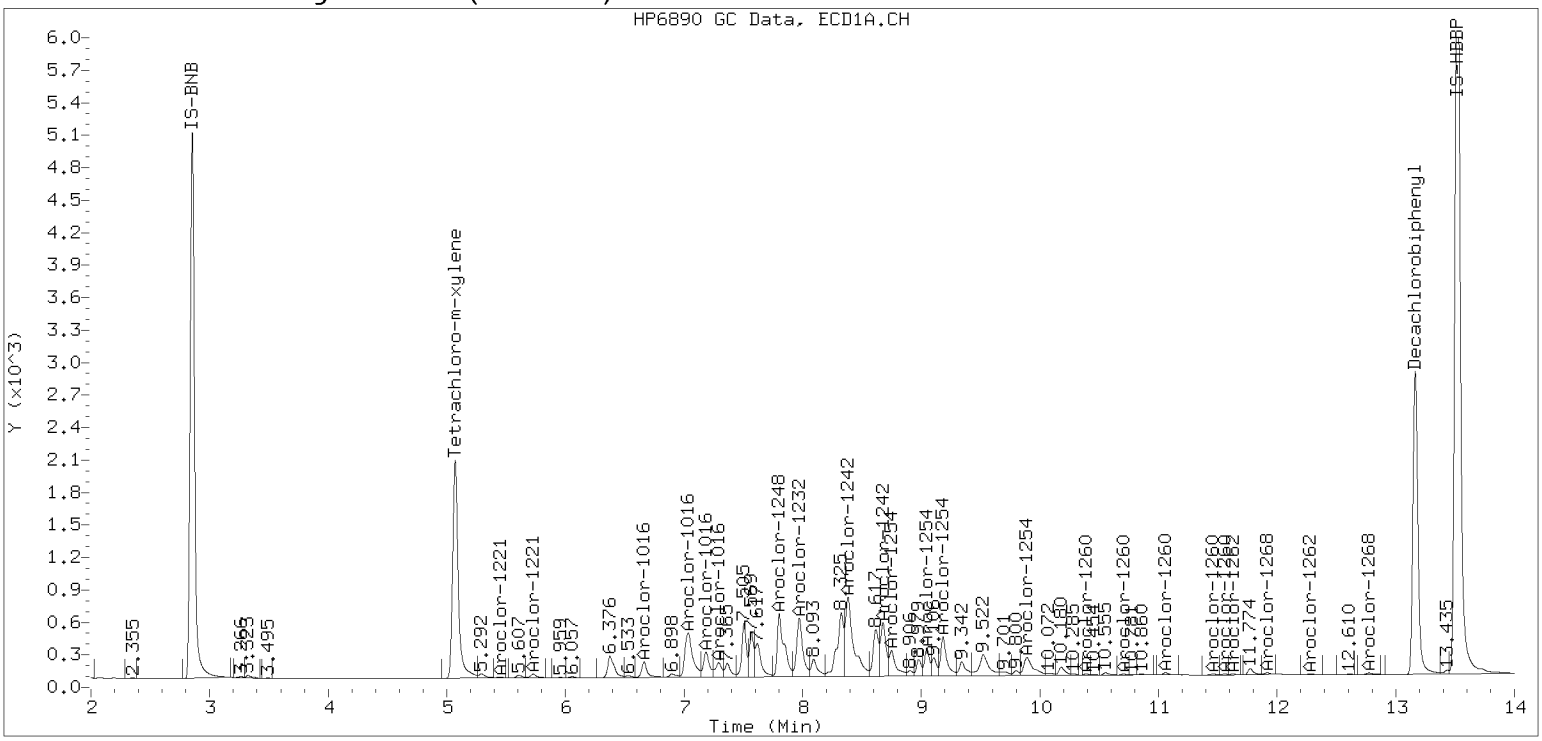
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132143ECD7.D Injection Date: 14-AUG-2021 09:02

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132144ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV4	Injection Time:	09:22
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	282	0.0571741	0.0643807		12.7	+/-20
Aroclor 1254 [2C]	A	250.00	264	0.0782980	0.0831818		5.8	+/-20
Decachlorobiphenyl	A	40.000	40.1	0.7261970	0.7274386		0.2	+/-20
Tetrachlorometaxylene	A	40.000	42.6	0.9669678	1.0302020		6.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.6	1.7775950	1.7164800		-3.4	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.4	1.0280520	1.0649090		3.6	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210813.b/08132144ECD7.D
Data file 2: /210813.b/210813.b/08132144ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV4
Client ID:
Injection Date: 14-AUG-2021 09:22
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	134141	5.416	-0.001	389116	42.6	41.4	2.8	Tetrachloro-m-xylene
13.166	0.000	166634	13.848	-0.032	887620	40.1	38.6	3.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	260417	0.6
Hexabromobiphenyl	425681	458139	7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	730797	1.4
Hexabromobiphenyl	863111	1034233	19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	131	1.4	1	7.062	0.005	1136	2.7
Aroclor-1016	2	7.039	0.009	605	2.1	2	7.659	0.011	3270	3.5
Aroclor-1016	3	7.189	0.014	416	3.3	3	7.909	0.054	1836	5.0
Aroclor-1016	4	---			0.0	4	8.109	0.004	59728	269.8
Total Col1Ave (3 peaks): 2.3						Total Col2Ave (4 peaks): 70.3 RPD = 187*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 3.8				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.094	0.021	4462	35.5
Aroclor-1221	3	---			0.0	3	6.411	0.002	1085	5.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.062	0.004	1136	6.0
Aroclor-1232	3	7.039	0.005	605	5.8	3	7.659	0.008	3270	8.6
Aroclor-1232	4	7.975	0.003	5517	128.0	4	8.524	0.002	40317	405.2
Col1Ave: <3 Quant Peaks						Col2Ave: 139.9				
Aroclor-1242	1	6.663	0.004	131	1.8	1	7.062	0.005	1136	3.4
Aroclor-1242	2	7.039	0.008	605	2.8	2	7.659	0.010	3270	4.5
Aroclor-1242	3	8.385	0.011	48414	399.6	3	8.960	0.012	63036	184.9
Aroclor-1242	4	8.679	0.005	62054	1253.2	4	9.035	0.007	12438	32.1
Total Col1Ave (4 peaks): 414.4						Total Col2Ave (4 peaks): 56.2 RPD = 152*				
Corrected Ave (3 peaks): 134.7						Corrected Ave (3 peaks): 13.3 RPD = 164*				
Aroclor-1248	1	7.804	0.005	12376	113.4	1	8.109	0.003	59728	197.2
Aroclor-1248	2	7.975	0.007	5517	38.7	2	8.524	0.004	40317	109.4
Aroclor-1248	3	8.385	0.011	48414	232.1	3	8.960	0.014	63036	107.4
Aroclor-1248	4	8.679	0.005	62054	521.1	4	9.335	-0.041	91889	184.3
Total Col1Ave (4 peaks): 226.3						Total Col2Ave (4 peaks): 149.6 RPD = 41*				
Corrected Ave (3 peaks): 128.1						Corrected Ave (3 peaks): 133.7 RPD = 4				
Aroclor-1254	1	8.679	0.003	62054	276.2	1	9.242	0.003	166697	268.1
Aroclor-1254	2	8.751	0.005	29615	284.7	2	9.335	0.004	91889	251.8
Aroclor-1254	3	9.046	0.005	40463	276.3	3	9.766	0.003	128036	270.1
Aroclor-1254	4	9.181	0.005	78989	282.3	4	9.918	0.004	270040	257.1
Aroclor-1254	5	9.873	0.006	50845	289.4	5	10.155	0.008	293166	275.2
Total Col1Ave (5 peaks): 281.8						Total Col2Ave (5 peaks): 264.5 RPD = 6				
Corrected Ave (4 peaks): 279.9						Corrected Ave (4 peaks): 261.8 RPD = 7				
Aroclor-1260	1	10.386	0.003	4281	20.8	1	11.441	0.015	77320	89.9
Aroclor-1260	2	10.706	0.006	4756	23.5	2	11.684	0.003	61993	24.8
Aroclor-1260	3	11.057	0.007	11820	21.6	3	12.266	0.005	35733	22.2
Aroclor-1260	4	11.458	0.005	9286	38.1	4	12.973	0.001	1994	2.6
Aroclor-1260	5	11.627	0.073	440	3.6	NS	---			----
Total Col1Ave (5 peaks): 21.5						Total Col2Ave (4 peaks): 34.9 RPD = 47*				
Corrected Ave (4 peaks): 17.4						Corrected Ave (3 peaks): 16.5 RPD = 5				
Aroclor-1262	1	10.386	0.002	4281	15.3	1	10.897	-0.073	251611	198.9
Aroclor-1262	2	11.458	0.003	9286	51.3	2	11.684	-0.001	61993	23.2
Aroclor-1262	3	11.627	0.000	440	1.7	3	12.205	0.017	9780	8.3
Aroclor-1262	4	12.279	0.005	629	2.9	4	12.973	0.000	1994	1.8
Total Col1Ave (4 peaks): 17.8						Total Col2Ave (4 peaks): 58.1 RPD = 106*				
Corrected Ave (3 peaks): 6.6						Corrected Ave (3 peaks): 11.1 RPD = 50*				
Aroclor-1268	1	11.627	0.070	440	0.7	1	12.205	0.005	9780	3.3
Aroclor-1268	2	---			0.0	2	12.266	-0.001	35733	11.0
Aroclor-1268	3	11.912	-0.088	968	1.9	3	12.633	-0.011	400	0.1
Aroclor-1268	4	12.774	0.002	1001	0.6	4	12.861	0.078	15819	22.8
Total Col1Ave (3 peaks): 1.1						Total Col2Ave (4 peaks): 9.3 RPD = 158*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 4.8				

Total PCB Area Col1 (5.169 - 13.066) = 819275 Col1 Total PCB = 0.3 ppm*

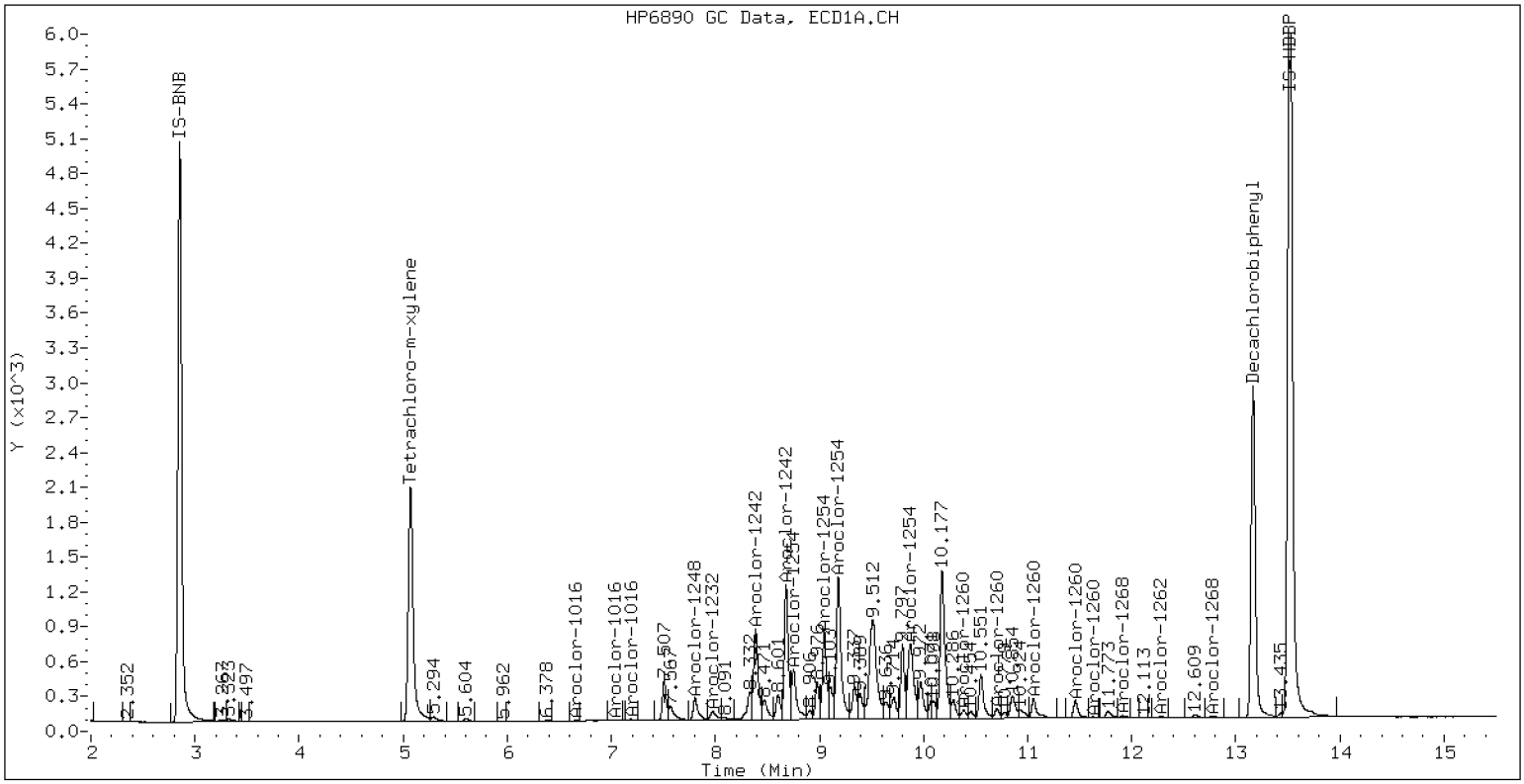
Total PCB Area Col2 (5.169 - 13.066) = 3111878 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

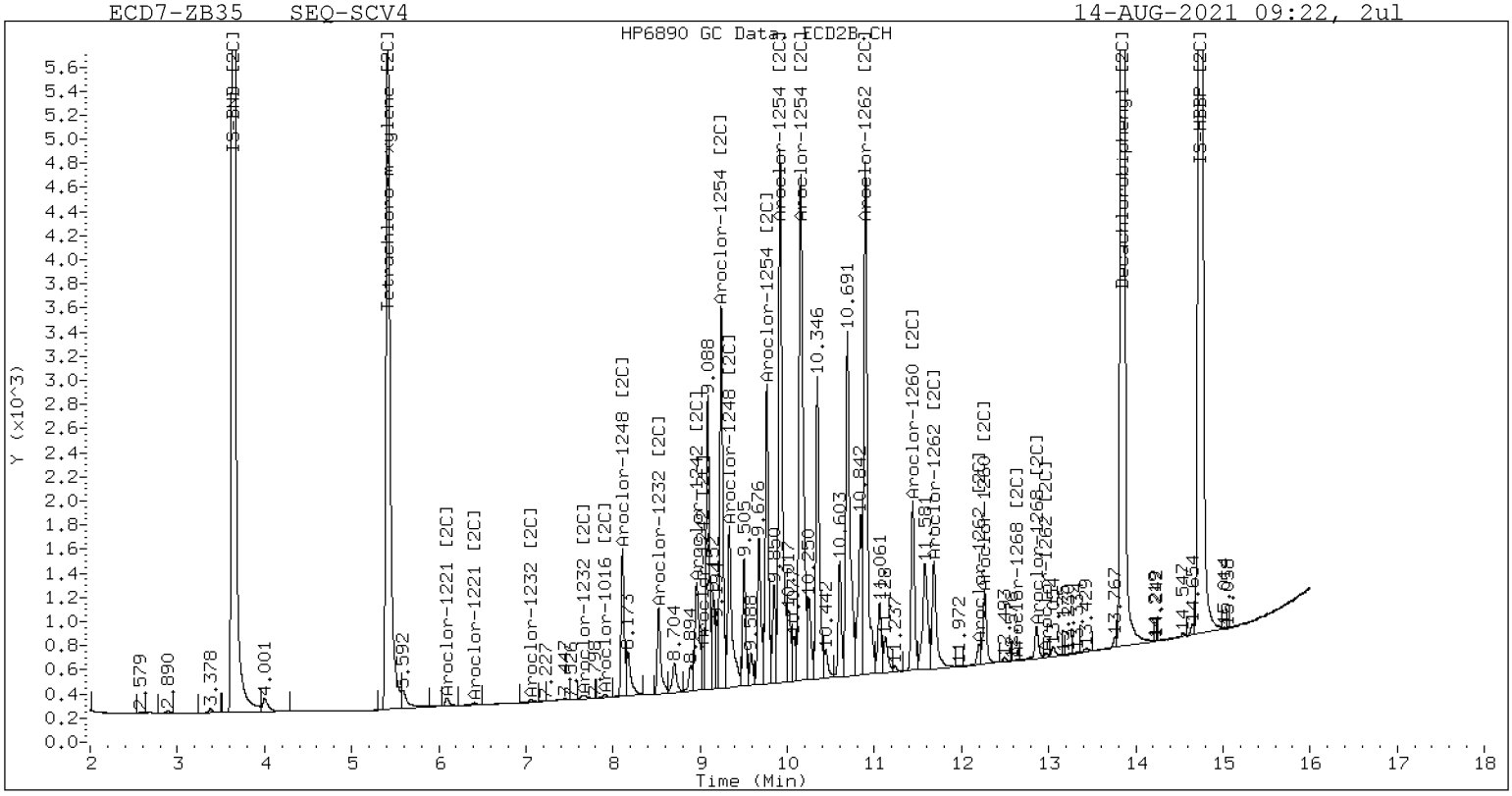
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV4 14-AUG-2021 09:22, 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:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132145ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV5	Injection Time:	09:43
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	293	0.0143248	0.0165460		17.0	+/-20
Aroclor 1221 [2C]	A	250.00	266	0.0145693	0.0154784		6.4	+/-20
Decachlorobiphenyl	A	40.000	38.8	0.7261970	0.7050646		-2.9	+/-20
Tetrachlorometaxylene	A	40.000	40.6	0.9669678	0.9811862		1.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.6	1.7775950	1.6729930		-5.9	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.1	1.0280520	1.0059940		-2.1	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210813.b/08132145ECD7.D
Data file 2: /210813.b/210813.b/08132145ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV5
Client ID:
Injection Date: 14-AUG-2021 09:43
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	131998	5.417	-0.000	375118	40.6	39.1	3.6	Tetrachloro-m-xylene
13.166	-0.000	164634	13.848	-0.032	881936	38.8	37.6	3.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	269058	3.9
Hexabromobiphenyl	425681	467004	9.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	745766	3.4
Hexabromobiphenyl	863111	1054321	22.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	1551	16.3	1	7.061	0.004	17081	40.2
Aroclor-1016	2	7.039	0.009	4280	14.7	2	7.658	0.011	15832	16.6
Aroclor-1016	3	7.184	0.008	2282	17.4	3	7.865	0.010	6703	18.0
Aroclor-1016	4	7.294	0.009	1564	19.1	4	8.109	0.004	3939	17.4
Total Col1Ave (4 peaks):				16.8		Total Col2Ave (4 peaks):			23.1	RPD = 31
Corrected Ave (3 peaks):				16.1		Corrected Ave (3 peaks):			17.3	RPD = 7
Aroclor-1221	1	4.018	0.002	6262	294.7	1	4.680	0.004	15071	269.2
Aroclor-1221	2	5.454	0.003	9982	299.7	2	6.075	0.003	33472	261.2
Aroclor-1221	3	5.728	0.004	25492	283.3	3	6.413	0.004	59675	267.2
Total Col1Ave (3 peaks):				292.6		Total Col2Ave (3 peaks):			265.9	RPD = 10
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.018	-0.000	6262	479.9	1	4.680	0.001	15071	452.2
Aroclor-1232	2	5.728	0.002	25492	359.4	2	7.061	0.003	17081	87.7
Aroclor-1232	3	7.039	0.005	4280	39.5	3	7.658	0.007	15832	40.6
Aroclor-1232	4	7.978	0.006	798	17.9	4	8.525	0.003	2523	24.8
Total Col1Ave (4 peaks):				224.2		Total Col2Ave (4 peaks):			151.3	RPD = 39
Corrected Ave (3 peaks):				139.0		Corrected Ave (3 peaks):			51.1	RPD = 93*
Aroclor-1242	1	6.663	0.004	1551	20.9	1	7.061	0.004	17081	49.8
Aroclor-1242	2	7.039	0.009	4280	19.4	2	7.658	0.010	15832	21.3
Aroclor-1242	3	8.388	0.013	9148	73.1	3	8.966	0.018	6505	18.7
Aroclor-1242	4	8.680	0.006	9619	188.0	4	9.089	0.061	25267	64.0
Total Col1Ave (4 peaks):				75.3		Total Col2Ave (4 peaks):			38.4	RPD = 65*
Corrected Ave (3 peaks):				37.8		Corrected Ave (3 peaks):			29.9	RPD = 23
Aroclor-1248	1	7.805	0.007	1067	9.5	1	8.109	0.003	3939	12.7
Aroclor-1248	2	7.978	0.010	798	5.4	2	8.525	0.005	2523	6.7
Aroclor-1248	3	8.388	0.013	9148	42.4	3	8.966	0.020	6505	10.9
Aroclor-1248	4	8.680	0.007	9619	78.2	4	9.396	0.019	4022	7.9
Total Col1Ave (4 peaks):				33.9		Total Col2Ave (4 peaks):			9.6	RPD = 112*
Corrected Ave (3 peaks):				19.1		Corrected Ave (3 peaks):			8.5	RPD = 77*
Aroclor-1254	1	8.680	0.005	9619	41.4	1	9.245	0.005	26890	42.4
Aroclor-1254	2	---			0.0	2	9.336	0.005	2650	7.1
Aroclor-1254	3	9.050	0.008	1343	8.9	3	9.769	0.007	4242	8.8
Aroclor-1254	4	9.145	-0.031	9990	34.6	4	9.932	0.019	121430	113.3
Aroclor-1254	5	9.858	-0.010	13751	75.8	5	10.160	0.013	143957	132.4
Total Col1Ave (4 peaks):				40.2		Total Col2Ave (5 peaks):			60.8	RPD = 41*
Corrected Ave (3 peaks):				28.3		Corrected Ave (4 peaks):			42.9	RPD = 41*
Aroclor-1260	1	10.387	0.004	74432	354.3	1	11.427	0.001	248521	283.6
Aroclor-1260	2	10.705	0.005	63581	308.3	2	11.682	0.001	656259	257.6
Aroclor-1260	3	11.056	0.005	158724	284.8	3	12.261	0.000	468343	285.9
Aroclor-1260	4	11.457	0.004	49425	199.0	4	12.974	0.001	287502	367.1
Aroclor-1260	5	11.557	0.003	61640	495.8	NS	---			----
Total Col1Ave (5 peaks):				328.4		Total Col2Ave (4 peaks):			298.6	RPD = 10
Corrected Ave (4 peaks):				286.6		Corrected Ave (3 peaks):			275.7	RPD = 4
Aroclor-1262	1	10.387	0.003	74432	261.2	1	10.970	-0.000	313779	243.4
Aroclor-1262	2	11.457	0.002	49425	267.8	2	11.682	-0.003	656259	241.2
Aroclor-1262	3	11.628	0.001	70335	264.4	3	12.188	0.000	303167	251.1
Aroclor-1262	4	12.278	0.003	58296	266.9	4	12.974	0.001	287502	255.5
Total Col1Ave (4 peaks):				265.1		Total Col2Ave (4 peaks):			247.8	RPD = 7
Corrected Ave (3 peaks):				264.2		Corrected Ave (3 peaks):			245.2	RPD = 7
Aroclor-1268	1	11.557	0.000	61640	98.4	1	12.188	-0.012	303167	100.1
Aroclor-1268	2	11.628	0.002	70335	107.0	2	12.261	-0.006	468343	141.7
Aroclor-1268	3	12.031	0.030	24251	46.9	3	12.635	-0.009	18559	6.5
Aroclor-1268	4	12.770	-0.001	19100	11.5	4	12.783	0.000	11203	15.9
Total Col1Ave (4 peaks):				65.9		Total Col2Ave (4 peaks):			66.0	RPD = 0

Corrected Ave (3 peaks): 52.2 Corrected Ave (3 peaks): 40.8 RPD = 25

Total PCB Area Col1 (5.169 - 13.066) = 1098701 Col1 Total PCB = 0.4 ppm*

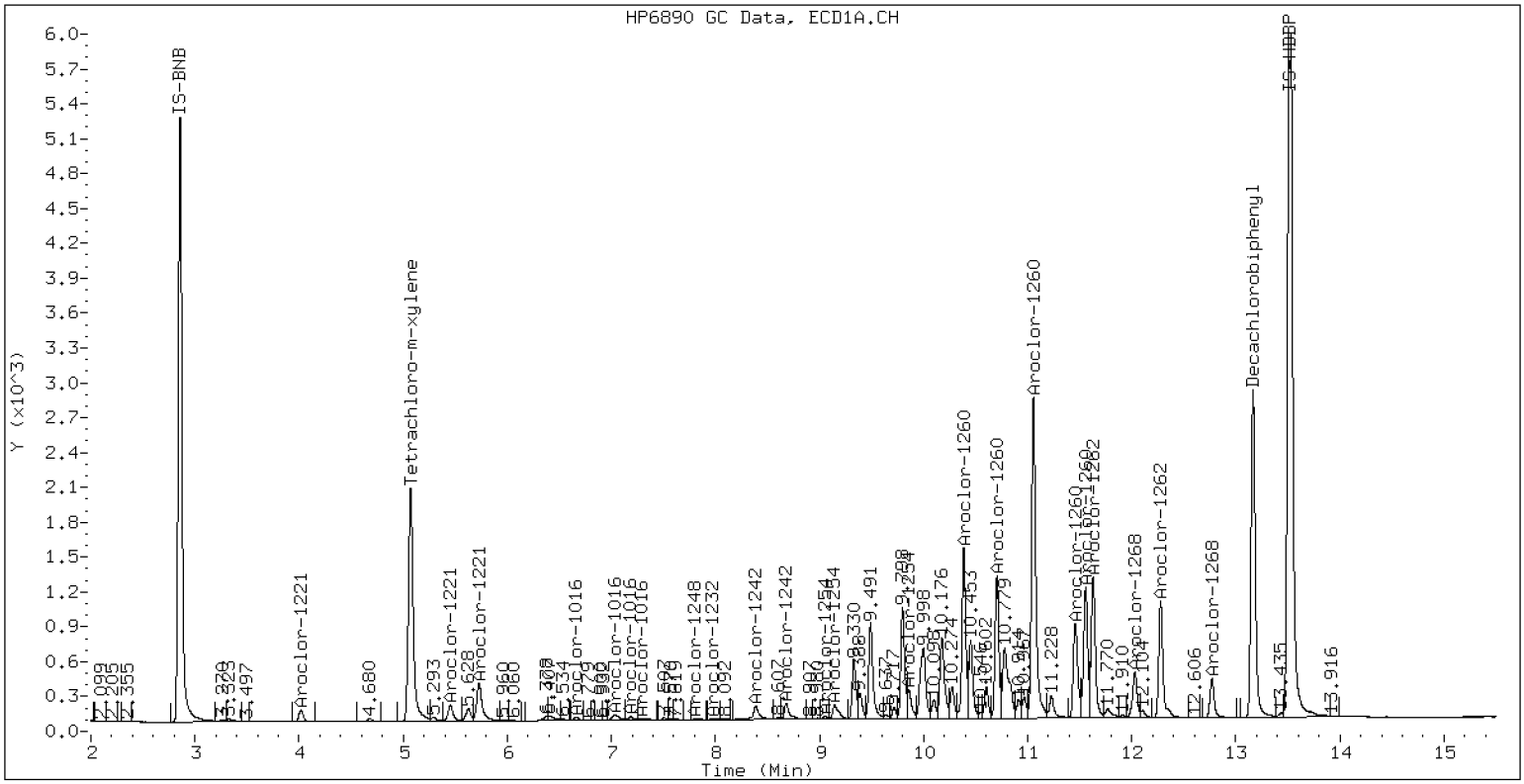
Total PCB Area Col2 (5.169 - 13.066) = 4504756 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

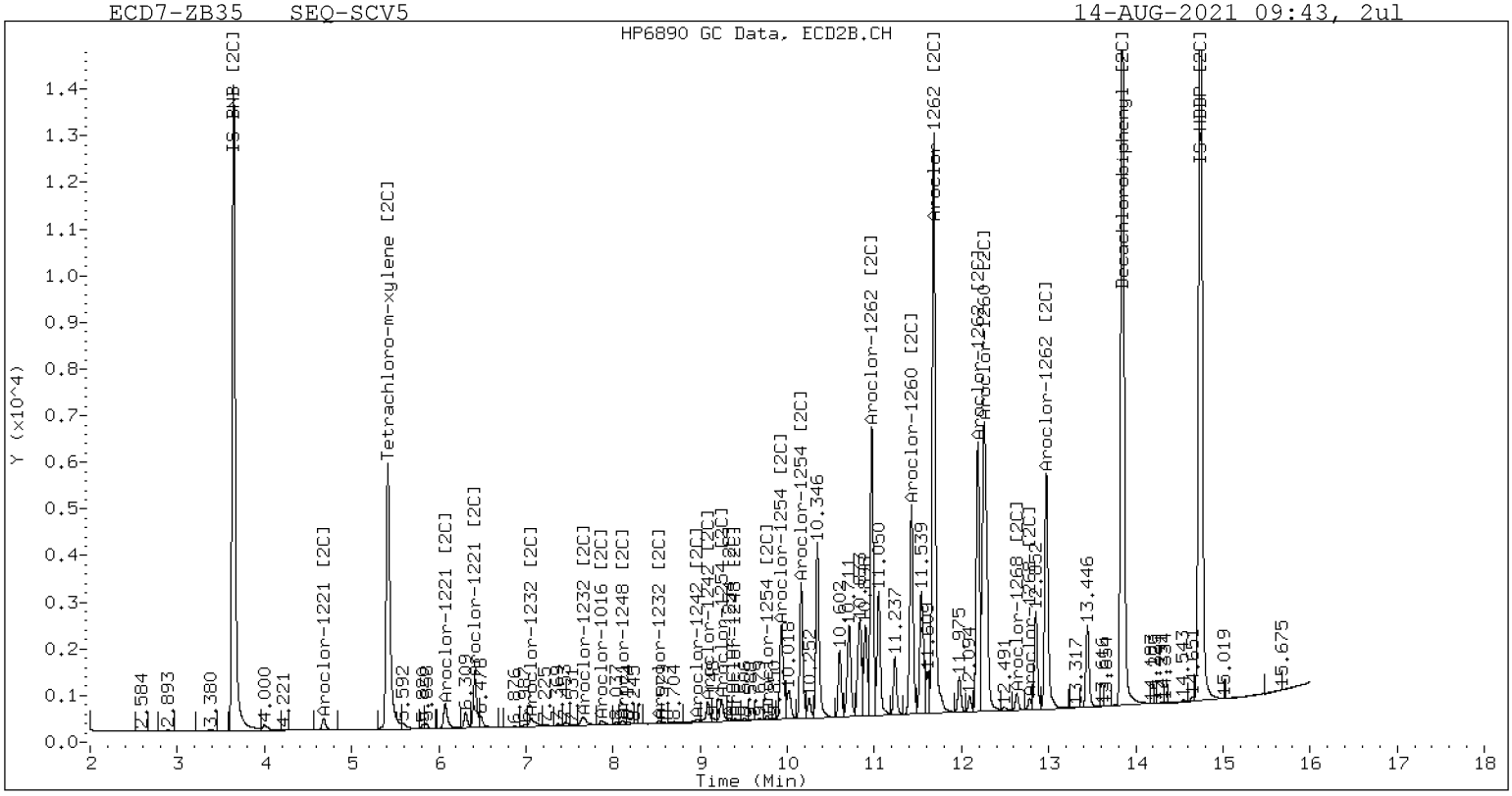
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV5 14-AUG-2021 09:43, 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:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132146ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV6	Injection Time:	10:03
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	284	0.0175991	0.0203926		13.8	+/-20
Aroclor 1232 [2C]	A	250.00	286	0.0192937	0.0223606		14.5	+/-20
Decachlorobiphenyl	A	40.000	59.6	0.7261970	1.0825580		49.1	+/-20
Tetrachlorometaxylene	A	40.000	41.2	0.9669678	0.9966938		3.1	+/-20
Decachlorobiphenyl [2C]	A	40.000	59.3	1.7775950	2.6350880		48.2	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.7	1.0280520	1.0197560		-0.8	+/-20

* Values outside of QC limits

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

Data file 1: /210813.b/08132146ECD7.D
Data file 2: /210813.b/210813.b/08132146ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV6
Client ID:
Injection Date: 14-AUG-2021 10:03
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.071	0.002	131287	5.416	-0.000	375338	41.2	39.7	3.8	Tetrachloro-m-xylene
13.165	-0.001	248059	13.848	-0.032	1383308	59.6	59.3	0.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263445	1.8
Hexabromobiphenyl	425681	458283	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	736133	2.1
Hexabromobiphenyl	863111	1049914	21.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.663	0.005	11471	122.8	1	7.059	0.002	54454	129.7
Aroclor-1016	2	7.037	0.008	32172	112.6	2	7.656	0.009	111127	118.4
Aroclor-1016	3	7.183	0.007	15436	120.4	3	7.862	0.007	47184	128.0
Aroclor-1016	4	7.292	0.007	9103	113.2	4	8.108	0.003	26255	117.7
Total Col1Ave (4 peaks):				117.2		Total Col2Ave (4 peaks):			123.5	RPD = 5
Corrected Ave (3 peaks):				115.4		Corrected Ave (3 peaks):			121.4	RPD = 5
Aroclor-1221	1	4.017	0.002	3341	160.6	1	4.679	0.002	8452	153.0
Aroclor-1221	2	5.453	0.002	5429	166.5	2	6.077	0.004	21053	166.4
Aroclor-1221	3	5.727	0.003	17948	203.7	3	6.414	0.005	55556	252.0
Total Col1Ave (3 peaks):				176.9		Total Col2Ave (3 peaks):			190.5	RPD = 7
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.017	-0.001	3341	261.5	1	4.679	-0.000	8452	256.9
Aroclor-1232	2	5.727	0.001	17948	258.4	2	7.059	0.001	54454	283.3
Aroclor-1232	3	7.037	0.003	32172	303.5	3	7.656	0.005	111127	288.8
Aroclor-1232	4	7.974	0.002	13693	314.0	4	8.524	0.002	31722	316.5
Total Col1Ave (4 peaks):				284.4		Total Col2Ave (4 peaks):			286.4	RPD = 1
Corrected Ave (3 peaks):				274.5		Corrected Ave (3 peaks):			276.3	RPD = 1
Aroclor-1242	1	6.663	0.004	11471	158.0	1	7.059	0.002	54454	160.9
Aroclor-1242	2	7.037	0.007	32172	148.7	2	7.656	0.008	111127	151.2
Aroclor-1242	3	8.385	0.010	20544	167.6	3	8.959	0.010	61163	178.1
Aroclor-1242	4	8.676	0.002	6934	138.4	4	9.041	0.013	55525	142.5
Total Col1Ave (4 peaks):				153.2		Total Col2Ave (4 peaks):			158.1	RPD = 3
Corrected Ave (3 peaks):				148.4		Corrected Ave (3 peaks):			151.5	RPD = 2
Aroclor-1248	1	7.804	0.005	9056	82.0	1	8.108	0.002	26255	86.1
Aroclor-1248	2	7.974	0.006	13693	95.0	2	8.524	0.003	31722	85.4
Aroclor-1248	3	8.385	0.010	20544	97.4	3	8.959	0.012	61163	103.4
Aroclor-1248	4	8.676	0.002	6934	57.6	4	9.391	0.015	44441	88.5
Total Col1Ave (4 peaks):				83.0		Total Col2Ave (4 peaks):			90.8	RPD = 9
Corrected Ave (3 peaks):				78.2		Corrected Ave (3 peaks):			86.7	RPD = 10
Aroclor-1254	1	8.676	0.000	6934	30.5	1	9.243	0.003	10554	16.9
Aroclor-1254	2	8.748	0.002	3715	35.3	2	9.391	0.060	44441	120.9
Aroclor-1254	3	9.050	0.008	2122	14.3	3	9.769	0.007	7619	16.0
Aroclor-1254	4	9.187	0.011	3159	11.2	4	9.922	0.009	13052	12.3
Aroclor-1254	5	9.896	0.029	1953	11.0	5	10.167	0.020	14279	13.3
Total Col1Ave (5 peaks):				20.5		Total Col2Ave (5 peaks):			35.9	RPD = 55*
Corrected Ave (4 peaks):				16.7		Corrected Ave (4 peaks):			14.6	RPD = 14
Aroclor-1260	1	10.388	0.005	30028	145.6	1	11.405	-0.020	170014	194.8
Aroclor-1260	2	10.704	0.004	2256	11.1	2	11.680	-0.001	78239	30.8
Aroclor-1260	3	11.056	0.005	17997	32.9	3	12.254	-0.007	838267	513.9
Aroclor-1260	4	11.458	0.006	301	1.2	4	12.972	0.000	307546	394.4
Aroclor-1260	5	11.557	0.003	165147	1353.6	NS	---			----
Total Col1Ave (5 peaks):				308.9		Total Col2Ave (4 peaks):			283.5	RPD = 9
Corrected Ave (4 peaks):				47.7		Corrected Ave (3 peaks):			206.7	RPD = 125*
Aroclor-1262	1	10.388	0.004	30028	107.4	1	10.971	0.001	118268	92.1
Aroclor-1262	2	11.458	0.004	301	1.7	2	11.680	-0.005	78239	28.9
Aroclor-1262	3	11.626	-0.000	172148	659.4	3	12.187	-0.001	744741	619.3
Aroclor-1262	4	12.276	0.002	62869	293.3	4	12.972	-0.000	307546	274.4
Total Col1Ave (4 peaks):				265.4		Total Col2Ave (4 peaks):			253.7	RPD = 5
Corrected Ave (3 peaks):				134.1		Corrected Ave (3 peaks):			131.8	RPD = 2
Aroclor-1268	1	11.557	-0.000	165147	268.6	1	12.187	-0.013	744741	246.9
Aroclor-1268	2	11.626	0.001	172148	266.9	2	12.254	-0.013	838267	254.7
Aroclor-1268	3	12.000	-0.000	135416	266.9	3	12.635	-0.009	744001	261.5
Aroclor-1268	4	12.770	-0.002	428256	261.7	4	12.782	-0.001	187584	266.5
Total Col1Ave (4 peaks):				266.0		Total Col2Ave (4 peaks):			257.4	RPD = 3

Corrected Ave (3 peaks): 265.2 Corrected Ave (3 peaks): 254.3 RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 1378298 Col1 Total PCB = 0.5 ppm*

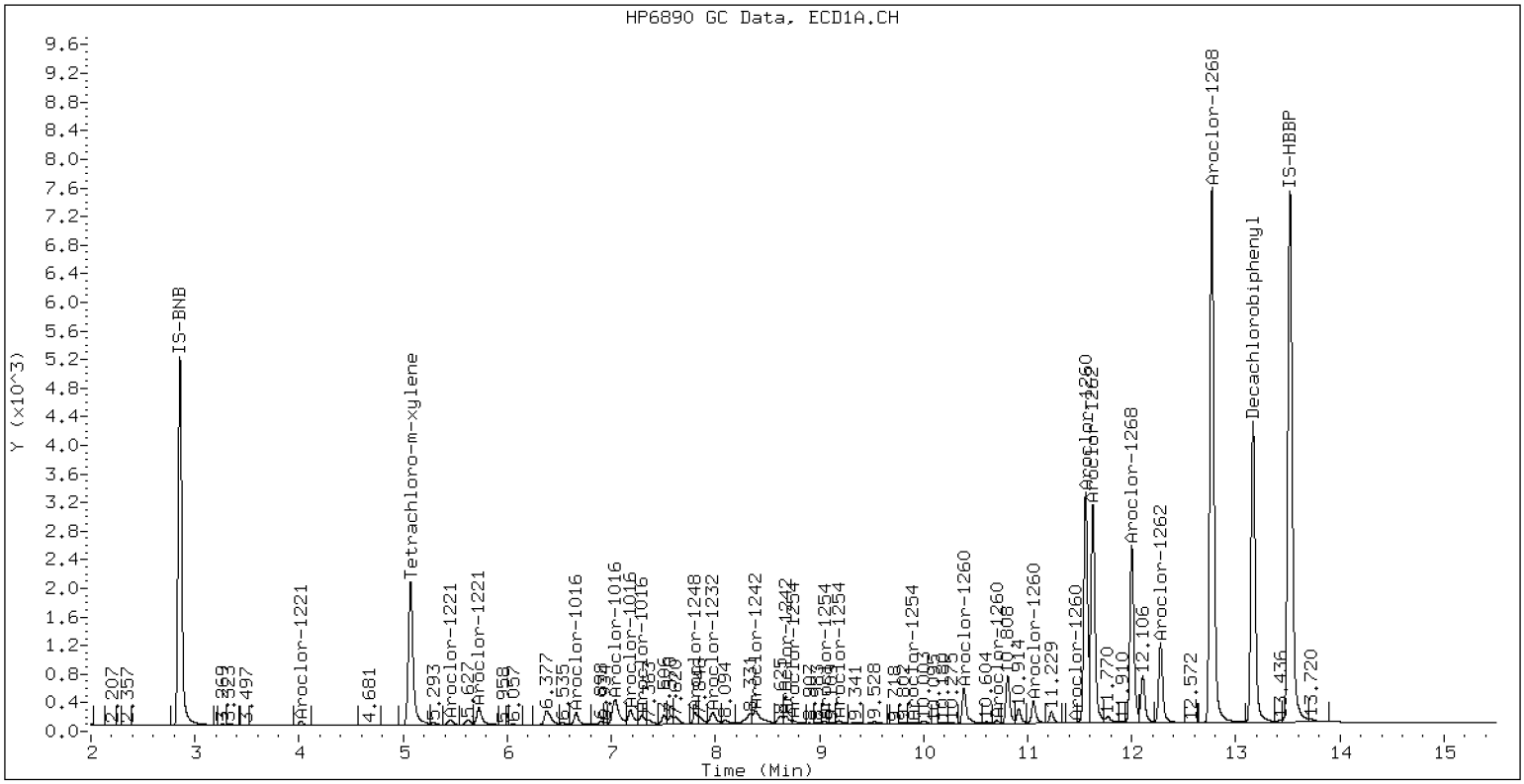
Total PCB Area Col2 (5.169 - 13.066) = 4537494 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

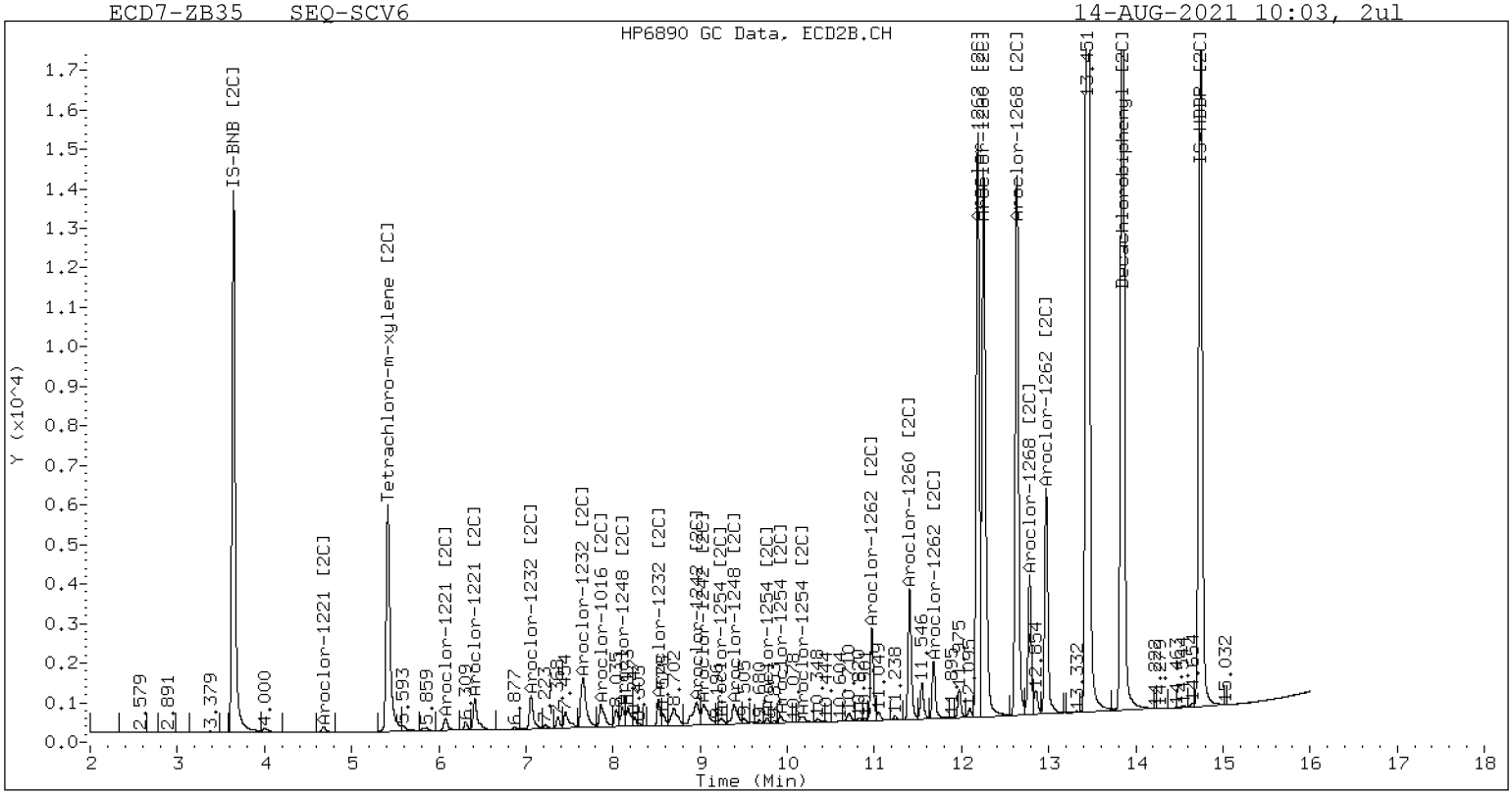
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192108ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/19/21
Lab Sample ID:	SJH0254-CCV1	Injection Time:	12:42
Sequence Name:	AR1248CCV1		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	265	0.0444871	0.0473075		5.9	
Aroclor-1248 (1)	A	250.00	267	0.0335259	0.0358615		6.8	
Aroclor-1248 (2)	A	250.00	273	0.0437624	0.0477680		9.2	
Aroclor-1248 (3)	A	250.00	270	0.0640809	0.0691951		8.0	
Aroclor-1248 (4)	A	250.00	249	0.0365791	0.0364053		-0.4	
Aroclor 1248 [2C]	A	250.00	256	0.0480909	0.0489445		2.2	
Aroclor-1248 (1) [2C]	A	250.00	262	0.0331517	0.0346898		4.8	
Aroclor-1248 (2) [2C]	A	250.00	257	0.0403519	0.0414411		2.8	
Aroclor-1248 (3) [2C]	A	250.00	254	0.0642727	0.0652041		1.6	
Aroclor-1248 (4) [2C]	A	250.00	249	0.0545874	0.0544429		-0.4	
Decachlorobiphenyl	A	40.000	41.0	0.7261970	0.7437866		2.5	
Tetrachlorometaxylene	A	40.000	41.7	0.9669678	1.0075650		4.3	
Decachlorobiphenyl [2C]	A	40.000	36.3	1.7775950	1.6141280		-9.3	
Tetrachlorometaxylene [2C]	A	40.000	40.1	1.0280520	1.0304760		0.3	

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210819.b/08192108ECD7.D
Data file 2: /210819.b/210819.b/08192108ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV1
Client ID:
Injection Date: 19-AUG-2021 12:42
Report Date: 08/19/2021 16:55
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.000	129264	5.411	-0.000	378314	41.7	40.1	3.9	Tetrachloro-m-xylene
13.164	-0.000	163610	13.844	-0.001	831088	41.0	36.3	12.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	256587	-0.9
Hexabromobiphenyl	425681	439938	3.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	734251	1.8
Hexabromobiphenyl	863111	1029767	19.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	7.801	0.000	28755	267.4	1	8.105	0.000	79597	261.6
Aroclor-1248	2	7.971	0.000	38302	272.9	2	8.520	0.000	95088	256.7
Aroclor-1248	3	8.380	0.000	55483	270.0	3	8.951	0.000	149613	253.6
Aroclor-1248	4	8.676	0.000	29191	248.8	4	9.380	0.000	124921	249.3

Total Col1Ave (4 peaks): 264.8 Total Col2Ave (4 peaks): 255.3 RPD = 4

Corrected Ave (3 peaks): 262.1 Corrected Ave (3 peaks): 253.2 RPD = 3

CalAmt %D: 5.9 CalAmt %D: 2.1

Total PCB Area Col1 (5.168 - 13.064) = 592263 Col1 Total PCB = 0.2 ppm*

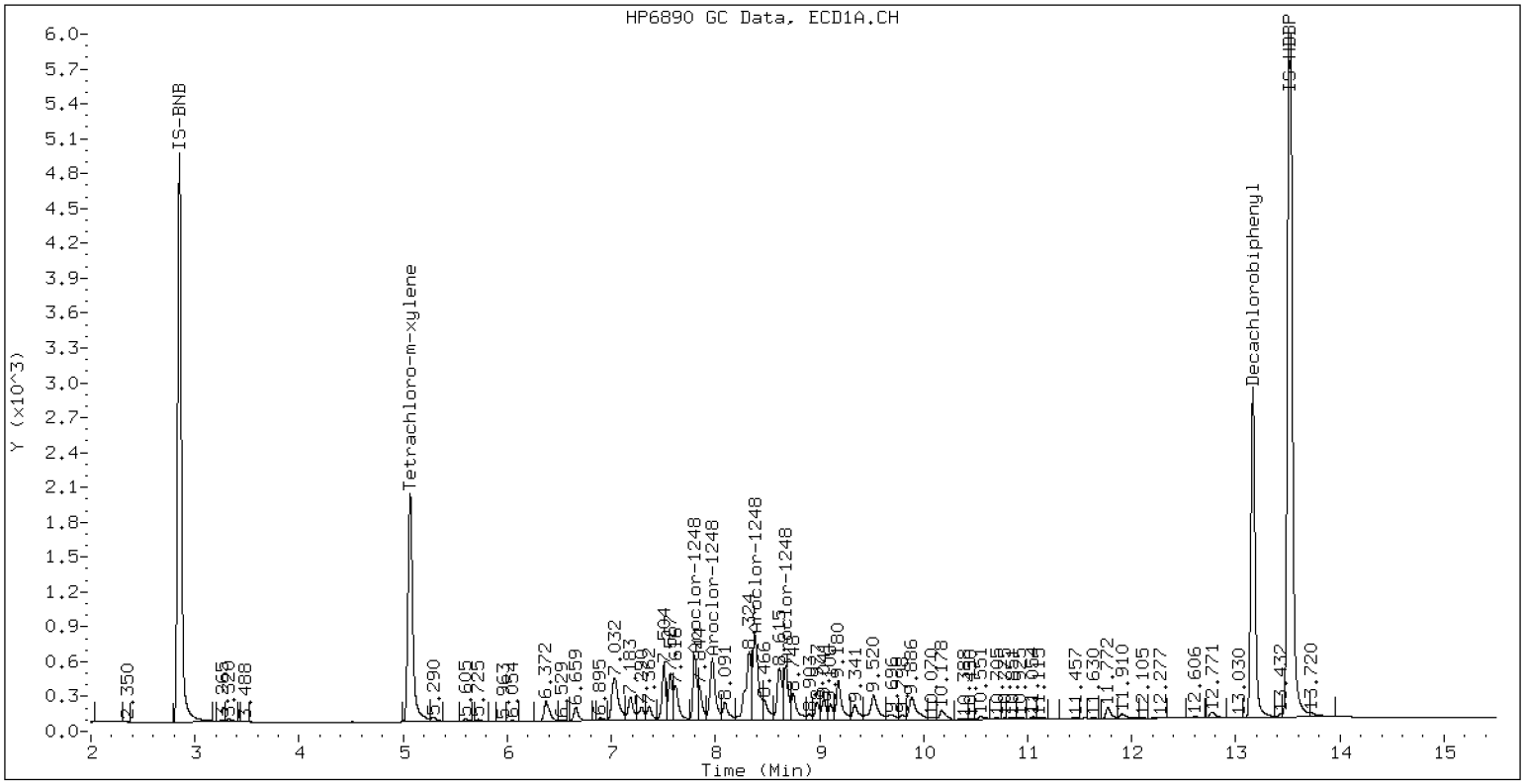
Total PCB Area Col2 (5.168 - 13.064) = 2176400 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

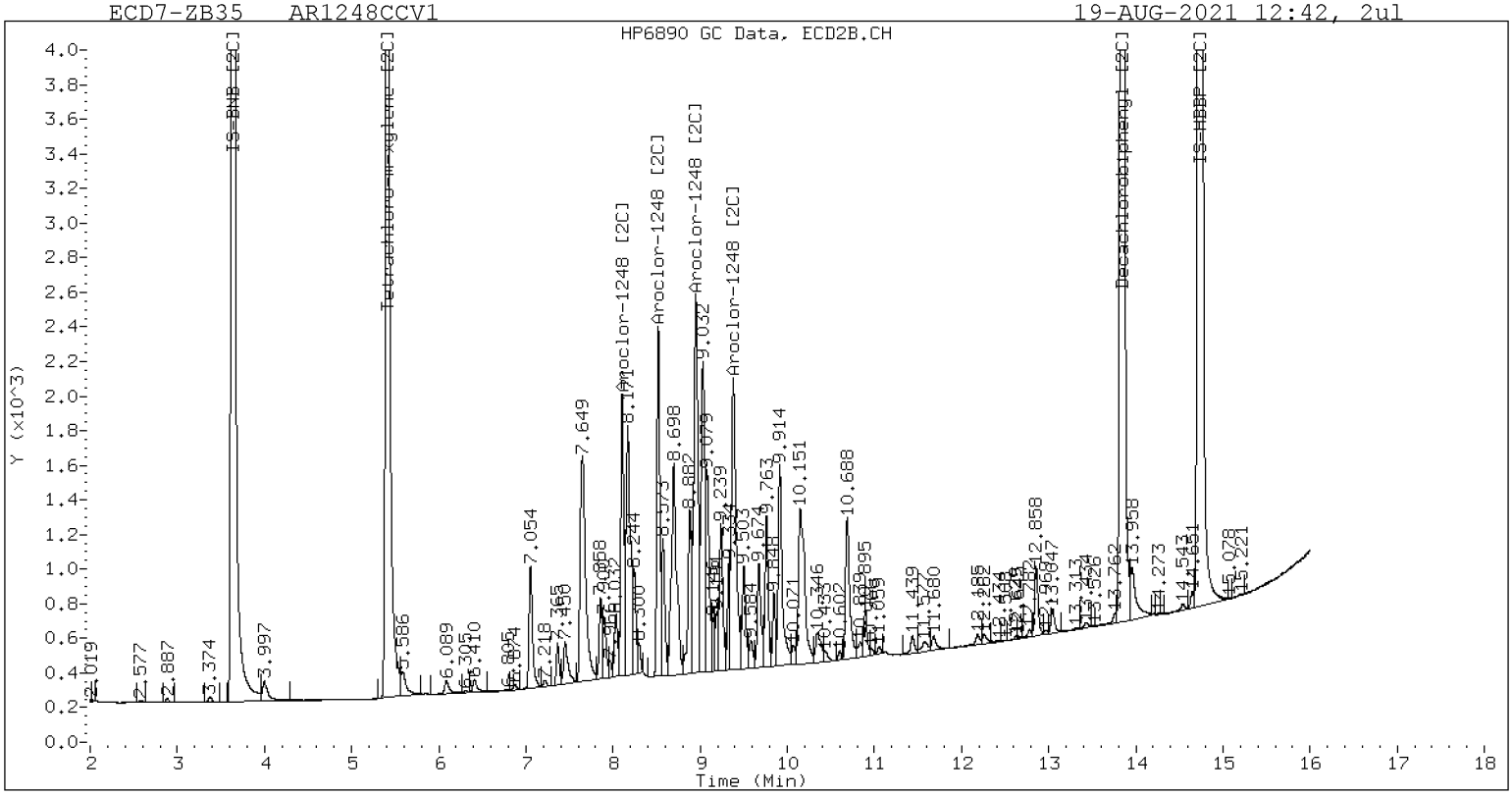
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1 19-AUG-2021 12:42, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248CCV1 19-AUG-2021 12:42, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192109ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/19/21
Lab Sample ID:	SJH0254-CCV2	Injection Time:	13:03
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	264	0.0446218	0.0473834		5.5	
Aroclor-1016 (1)	A	250.00	262	0.0283733	0.0298014		4.8	
Aroclor-1016 (2)	A	250.00	268	0.0867650	0.0930287		7.2	
Aroclor-1016 (3)	A	250.00	264	0.0389383	0.0411901		5.6	
Aroclor-1016 (4)	A	250.00	261	0.0244108	0.0255134		4.4	
Aroclor 1016 [2C]	A	250.00	273	0.0529840	0.0575186		9.0	
Aroclor-1016 (1) [2C]	A	250.00	265	0.0456173	0.0483843		6.0	
Aroclor-1016 (2) [2C]	A	250.00	270	0.1020378	0.1104054		8.0	
Aroclor-1016 (3) [2C]	A	250.00	276	0.0400455	0.0442402		10.4	
Aroclor-1016 (4) [2C]	A	250.00	279	0.0242353	0.0270445		11.6	
Aroclor 1260	A	250.00	259	0.0461251	0.0478391		3.5	
Aroclor-1260 (1)	A	250.00	245	0.0359923	0.0352178		-2.0	
Aroclor-1260 (2)	A	250.00	262	0.0353250	0.0371025		4.8	
Aroclor-1260 (3)	A	250.00	260	0.0954741	0.0994231		4.0	
Aroclor-1260 (4)	A	250.00	265	0.0425365	0.0451737		6.0	
Aroclor-1260 (5)	A	250.00	262	0.0212978	0.0222784		4.8	
Aroclor 1260 [2C]	A	250.00	236	0.1108773	0.1035037		-5.8	
Aroclor-1260 (1) [2C]	A	250.00	231	0.0665032	0.0613759		-7.6	
Aroclor-1260 (2) [2C]	A	250.00	230	0.1932922	0.1779058		-8.0	
Aroclor-1260 (3) [2C]	A	250.00	233	0.1242917	0.1157562		-6.8	
Aroclor-1260 (4) [2C]	A	250.00	248	0.0594222	0.0589767		-0.8	
Decachlorobiphenyl	A	40.000	42.2	0.7261970	0.7653051		5.5	
Tetrachlorometaxylene	A	40.000	43.0	0.9669678	1.0399570		7.5	
Decachlorobiphenyl [2C]	A	40.000	38.1	1.7775950	1.6937080		-4.8	
Tetrachlorometaxylene [2C]	A	40.000	41.9	1.0280520	1.0773550		4.8	

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210819.b/08192109ECD7.D
Data file 2: /210819.b/210819.b/08192109ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV2
Client ID:
Injection Date: 19-AUG-2021 13:03
Report Date: 08/19/2021 16:55
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	0.000	130149	5.411	0.000	384425	43.0	41.9	2.6	Tetrachloro-m-xylene
13.164	0.000	162361	13.845	0.000	837098	42.2	38.1	10.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	250297	-3.3
Hexabromobiphenyl	425681	424304	-0.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	713646	-1.0
Hexabromobiphenyl	863111	988480	14.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.659	0.000	23310	262.6	1	7.055	0.000	107904	265.2
Aroclor-1016	2	7.033	0.000	72765	268.0	2	7.651	0.000	246220	270.5
Aroclor-1016	3	7.179	0.000	32218	264.5	3	7.857	0.000	98662	276.2
Aroclor-1016	4	7.288	0.000	19956	261.3	4	8.104	0.000	60313	279.0

Total Col1Ave (4 peaks): 264.1 Total Col2Ave (4 peaks): 272.7 RPD = 3
Corrected Ave (3 peaks): 262.8 Corrected Ave (3 peaks): 270.6 RPD = 3

CalAmt %D: 5.6 CalAmt %D: 9.1

Aroclor-1260	1	10.385	0.000	46697	244.6	1	11.424	0.000	189590	230.7
Aroclor-1260	2	10.703	0.000	49196	262.6	2	11.677	0.000	549551	230.1
Aroclor-1260	3	11.055	0.000	131830	260.3	3	12.259	0.000	357571	232.8
Aroclor-1260	4	11.455	0.000	59898	265.5	4	12.970	0.000	182179	248.1
Aroclor-1260	5	11.555	0.000	29540	261.5	NS	---			----

Total Col1Ave (5 peaks): 258.9 Total Col2Ave (4 peaks): 235.4 RPD = 9
Corrected Ave (4 peaks): 257.3 Corrected Ave (3 peaks): 231.2 RPD = 11

CalAmt %D: 3.6 CalAmt %D: -5.8

Total PCB Area Col1 (5.168 - 13.064) = 1291280 Col1 Total PCB = 0.5 ppm*

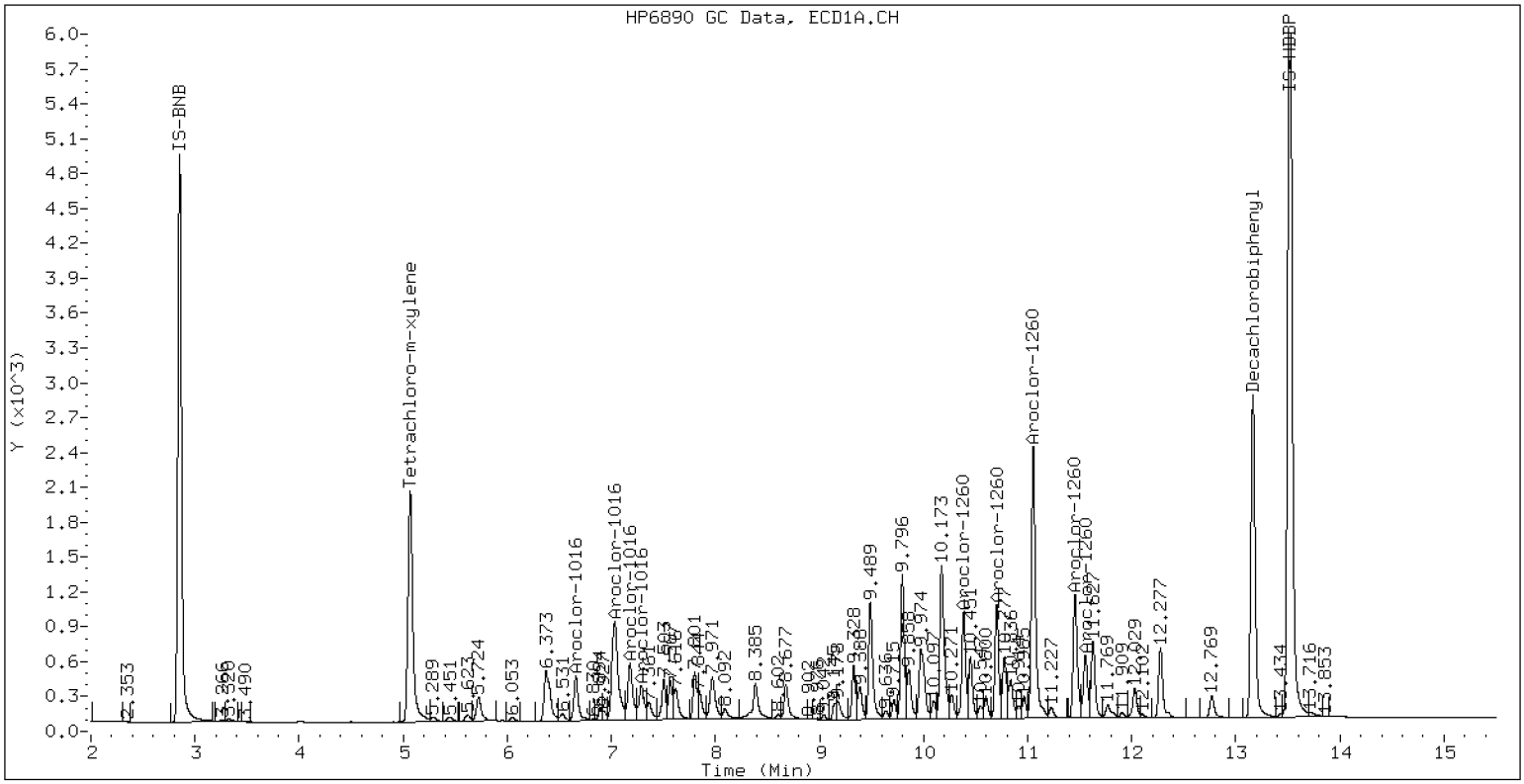
Total PCB Area Col2 (5.168 - 13.064) = 5039754 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

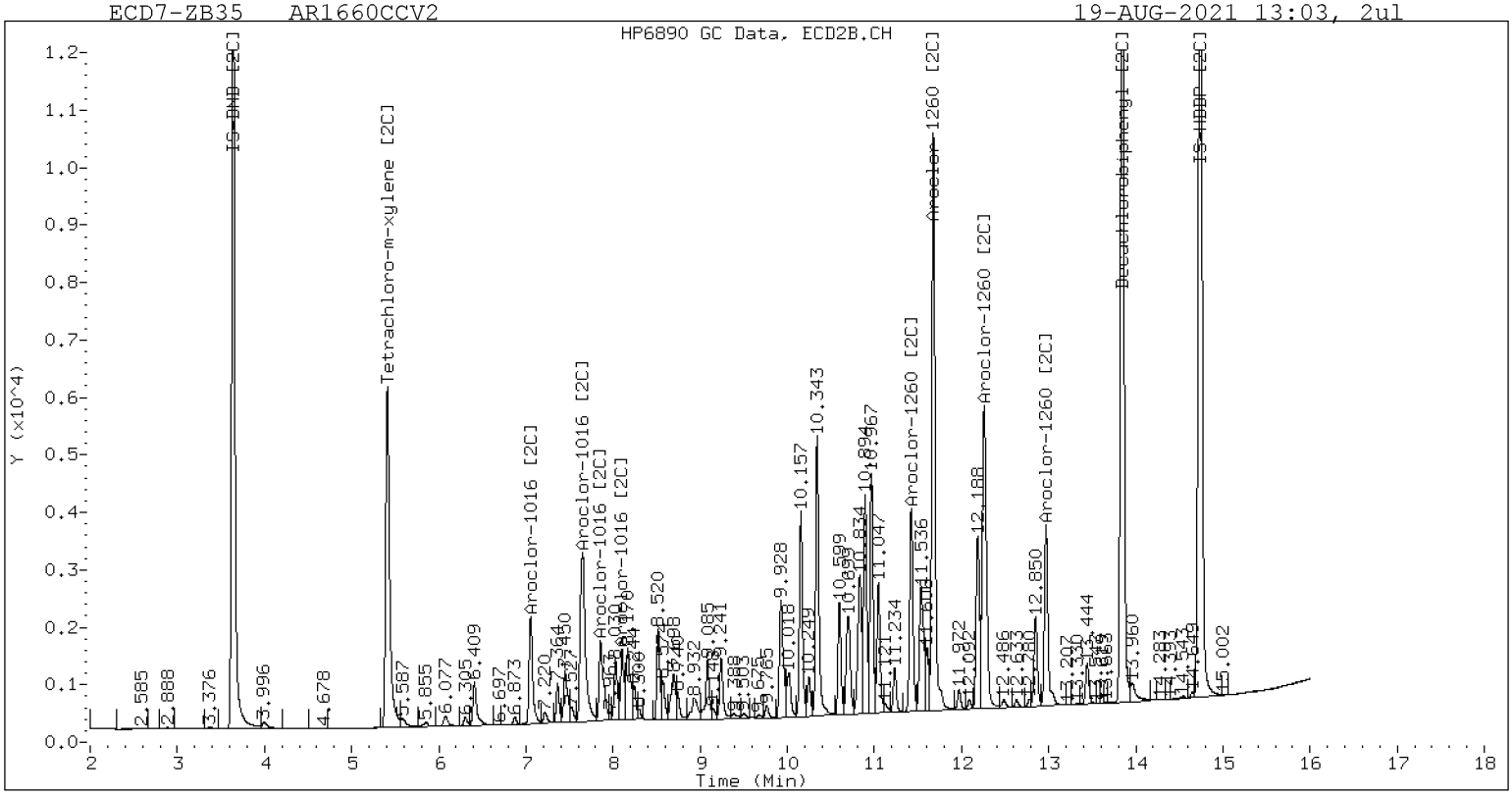
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2 19-AUG-2021 13:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2 19-AUG-2021 13:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192111ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/19/21
Lab Sample ID:	SJH0254-CCV3	Injection Time:	15:57
Sequence Name:	AR1242CCV3		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	262	0.0350459	0.0372571		4.6	
Aroclor-1242 (1)	A	250.00	273	0.0220414	0.0240986		9.2	
Aroclor-1242 (2)	A	250.00	278	0.0657077	0.0731288		11.2	
Aroclor-1242 (3)	A	250.00	247	0.0372229	0.0367306		-1.2	
Aroclor-1242 (4)	A	250.00	248	0.0152114	0.0150704		-0.8	
Aroclor 1242 [2C]	A	250.00	259	0.0490898	0.0510278		3.4	
Aroclor-1242 (1) [2C]	A	250.00	264	0.0367813	0.0388802		5.6	
Aroclor-1242 (2) [2C]	A	250.00	265	0.0798974	0.0847359		6.0	
Aroclor-1242 (3) [2C]	A	250.00	249	0.0373257	0.0371932		-0.4	
Aroclor-1242 (4) [2C]	A	250.00	256	0.0423546	0.0433021		2.4	
Decachlorobiphenyl	A	40.000	40.1	0.7261970	0.7279838		0.3	
Tetrachlorometaxylene	A	40.000	42.2	0.9669678	1.0213540		5.5	
Decachlorobiphenyl [2C]	A	40.000	36.5	1.7775950	1.6224000		-8.8	
Tetrachlorometaxylene [2C]	A	40.000	41.2	1.0280520	1.0603340		3.0	

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210819.b/08192111ECD7.D
Data file 2: /210819.b/210819.b/08192111ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242CCV3
Client ID:
Injection Date: 19-AUG-2021 15:57
Report Date: 08/23/2021 17:02
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.070	0.002	139665	5.411	-0.001	409104	42.2	41.3	2.4	Tetrachloro-m-xylene
13.168	0.003	175241	13.847	-0.002	877372	40.1	36.5	9.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	273490	5.6
Hexabromobiphenyl	425681	481442	13.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	771651	7.0
Hexabromobiphenyl	863111	1081573	25.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.000	20596	273.3	1	7.054	0.000	93756	264.3
Aroclor-1242	2	7.034	0.000	62500	278.2	2	7.650	0.000	204333	265.1
Aroclor-1242	3	8.382	0.000	38930	305.9	3	8.953	0.000	89688	249.1
Aroclor-1242	4	8.675	0.000	12880	247.7	4	9.033	0.000	104419	255.6

Total Col1Ave (4 peaks): 276.3 Total Col2Ave (4 peaks): 258.5 RPD = 7

Corrected Ave (3 peaks): 266.4 Corrected Ave (3 peaks): 256.3 RPD = 4

CalAmt %D: 10.5 CalAmt %D: 3.4

Total PCB Area Col1 (5.168 - 13.065) = 467708 Col1 Total PCB = 0.2 ppm*

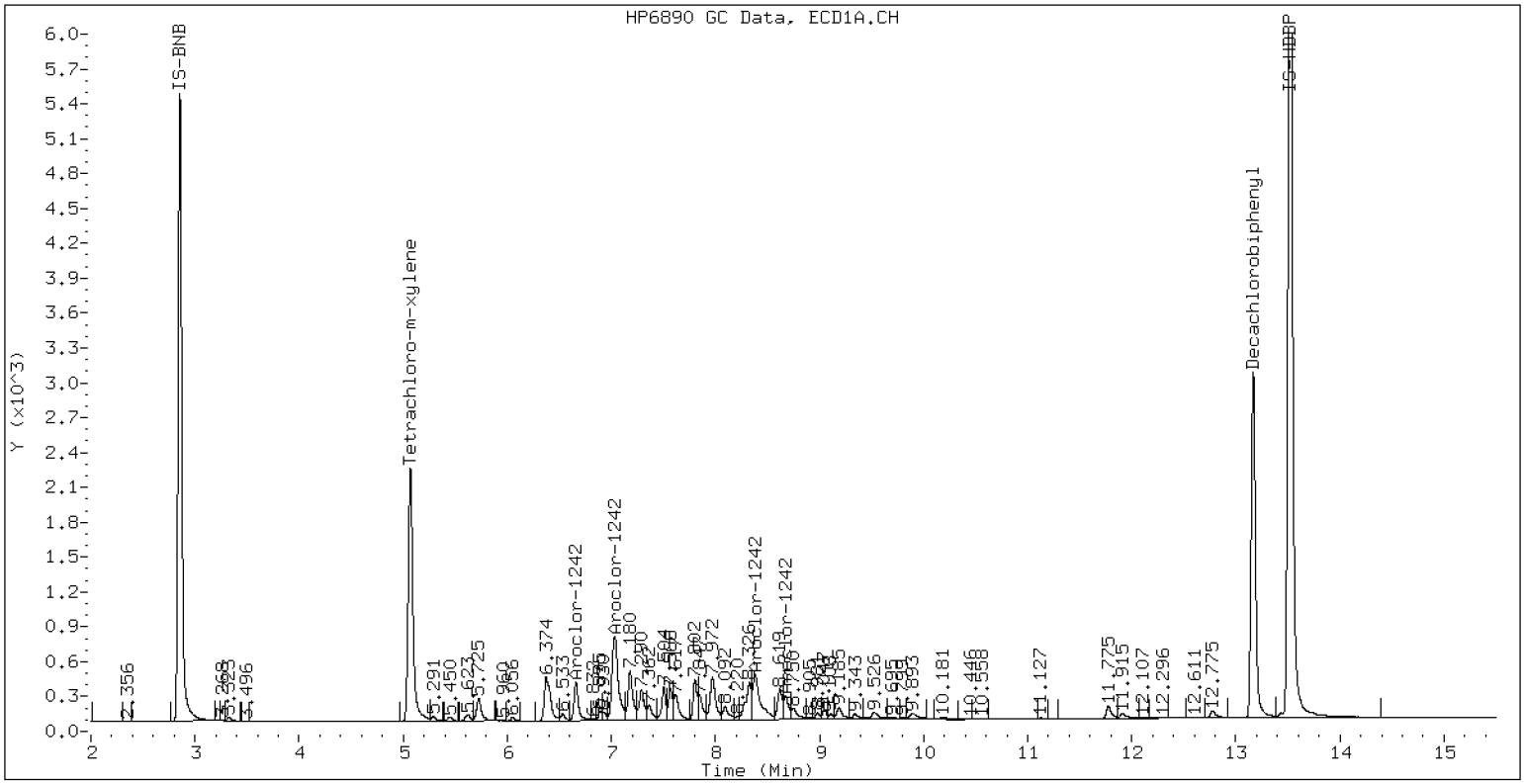
Total PCB Area Col2 (5.168 - 13.065) = 1898221 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

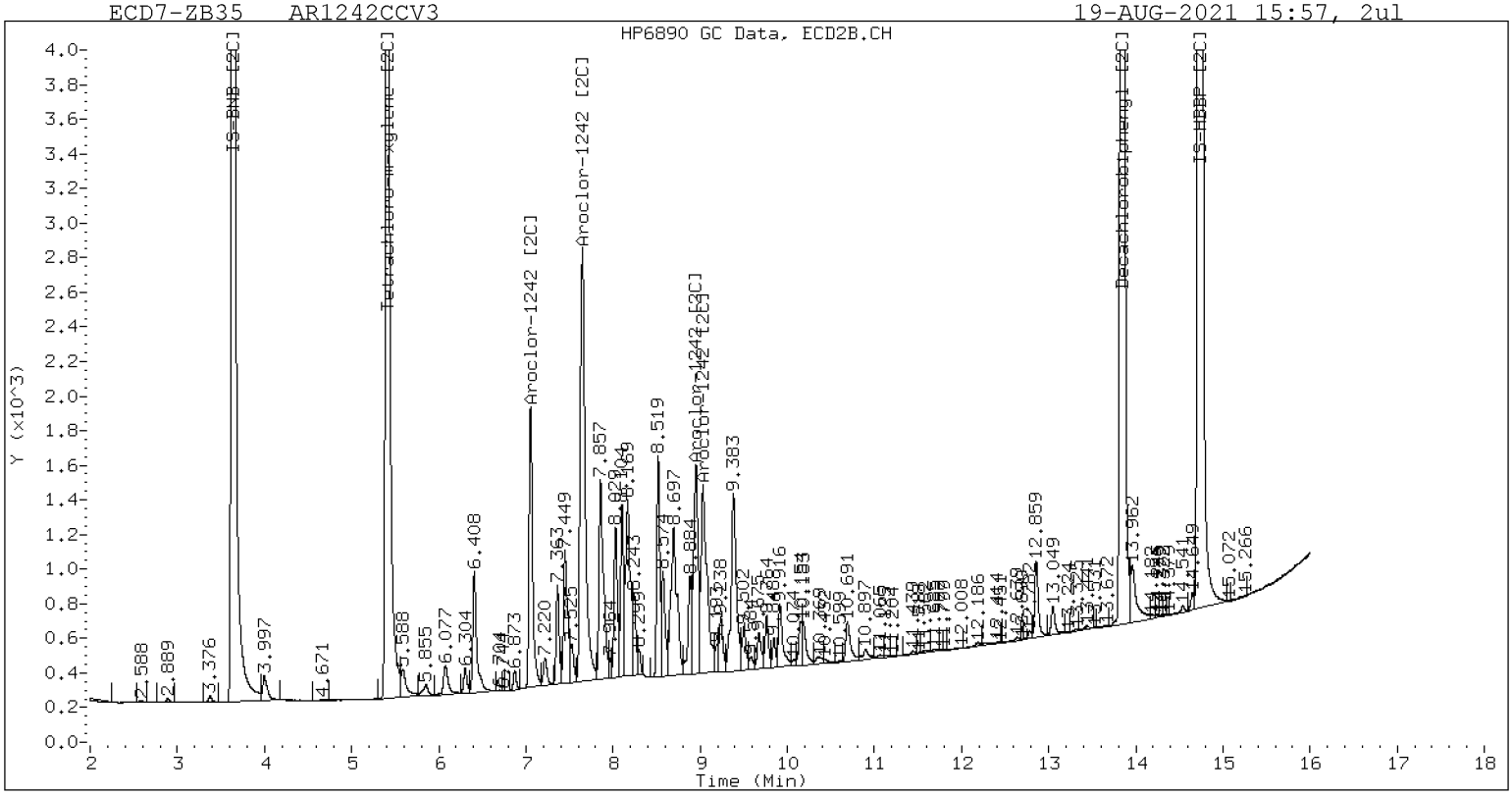
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242CCV3 19-AUG-2021 15:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242CCV3 19-AUG-2021 15:57, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192112ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/19/21
Lab Sample ID:	SJH0254-CCV4	Injection Time:	16:17
Sequence Name:	AR1660CCV4		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	270	0.0446218	0.0483098		8.0	
Aroclor-1016 (1)	A	250.00	268	0.0283733	0.0304771		7.2	
Aroclor-1016 (2)	A	250.00	272	0.0867650	0.0946042		8.8	
Aroclor-1016 (3)	A	250.00	266	0.0389383	0.0413805		6.4	
Aroclor-1016 (4)	A	250.00	274	0.0244108	0.0267772		9.6	
Aroclor 1016 [2C]	A	250.00	273	0.0529840	0.0576291		9.1	
Aroclor-1016 (1) [2C]	A	250.00	266	0.0456173	0.0485394		6.4	
Aroclor-1016 (2) [2C]	A	250.00	271	0.1020378	0.1107403		8.4	
Aroclor-1016 (3) [2C]	A	250.00	277	0.0400455	0.0443601		10.8	
Aroclor-1016 (4) [2C]	A	250.00	277	0.0242353	0.0268764		10.8	
Aroclor 1260	A	250.00	259	0.0461251	0.0479150		3.5	
Aroclor-1260 (1)	A	250.00	244	0.0359923	0.0351012		-2.4	
Aroclor-1260 (2)	A	250.00	263	0.0353250	0.0371971		5.2	
Aroclor-1260 (3)	A	250.00	261	0.0954741	0.0997728		4.4	
Aroclor-1260 (4)	A	250.00	266	0.0425365	0.0453247		6.4	
Aroclor-1260 (5)	A	250.00	260	0.0212978	0.0221788		4.0	
Aroclor 1260 [2C]	A	250.00	231	0.1108773	0.1014985		-7.6	
Aroclor-1260 (1) [2C]	A	250.00	226	0.0665032	0.0602414		-9.6	
Aroclor-1260 (2) [2C]	A	250.00	225	0.1932922	0.1740206		-10.0	
Aroclor-1260 (3) [2C]	A	250.00	228	0.1242917	0.1135503		-8.8	
Aroclor-1260 (4) [2C]	A	250.00	245	0.0594222	0.0581815		-2.0	
Decachlorobiphenyl	A	40.000	42.0	0.7261970	0.7629838		5.0	
Tetrachlorometaxylene	A	40.000	43.2	0.9669678	1.0451880		8.0	
Decachlorobiphenyl [2C]	A	40.000	37.2	1.7775950	1.6553970		-7.0	
Tetrachlorometaxylene [2C]	A	40.000	42.1	1.0280520	1.0812050		5.3	

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210819.b/08192112ECD7.D
Data file 2: /210819.b/210819.b/08192112ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV4
Client ID:
Injection Date: 19-AUG-2021 16:17
Report Date: 08/23/2021 17:03
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.070	0.002	134510	5.412	0.001	394474	43.2	42.1	2.7	Tetrachloro-m-xylene
13.165	-0.000	166002	13.845	-0.005	850437	42.0	37.3	12.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	257389	-0.6
Hexabromobiphenyl	425681	435139	2.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	729693	1.2
Hexabromobiphenyl	863111	1027472	19.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.001	24514	268.5	1	7.055	0.000	110684	266.0
Aroclor-1016	2	7.033	0.000	76094	272.6	2	7.651	0.000	252520	271.3
Aroclor-1016	3	7.179	0.000	33284	265.7	3	7.857	-0.000	101154	276.9
Aroclor-1016	4	7.289	0.001	21538	274.2	4	8.105	0.001	61286	277.2

Total Col1Ave (4 peaks): 270.3 Total Col2Ave (4 peaks): 272.9 RPD = 1
Corrected Ave (3 peaks): 268.9 Corrected Ave (3 peaks): 271.4 RPD = 1

CalAmt %D: 8.1 CalAmt %D: 9.2

Aroclor-1260	1	10.386	0.001	47731	243.8	1	11.424	-0.000	193426	226.5
Aroclor-1260	2	10.704	0.000	50581	263.2	2	11.676	-0.002	558754	225.1
Aroclor-1260	3	11.054	0.000	135672	261.3	3	12.260	-0.000	364593	228.4
Aroclor-1260	4	11.455	0.001	61633	266.4	4	12.970	-0.000	186812	244.8
Aroclor-1260	5	11.557	0.001	30159	260.3	NS	---			----

Total Col1Ave (5 peaks): 259.0 Total Col2Ave (4 peaks): 231.2 RPD = 11
Corrected Ave (4 peaks): 257.2 Corrected Ave (3 peaks): 226.6 RPD = 13

CalAmt %D: 3.6 CalAmt %D: -7.5

Total PCB Area Col1 (5.168 - 13.065) = 1347344 Col1 Total PCB = 0.5 ppm*

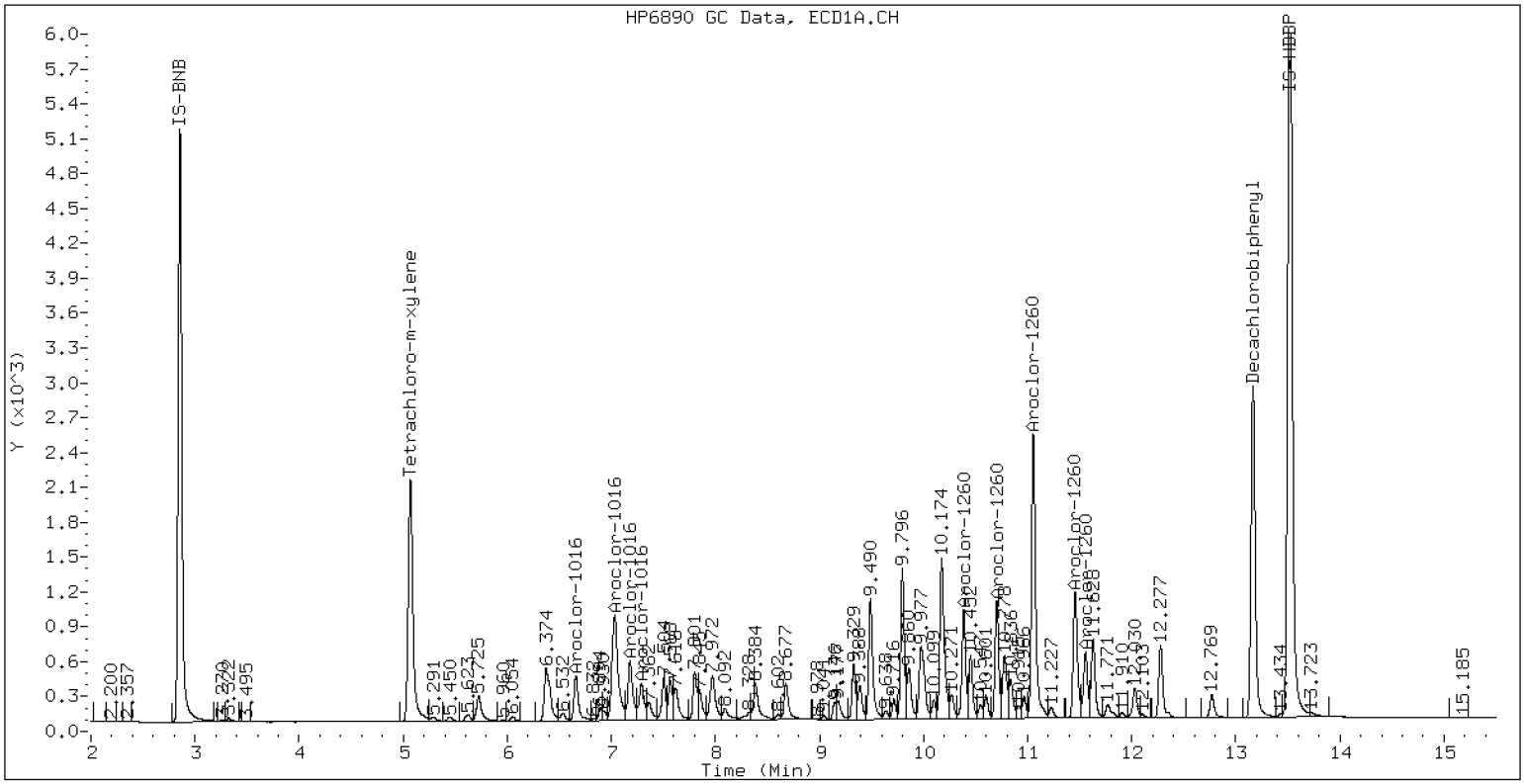
Total PCB Area Col2 (5.168 - 13.065) = 5142985 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

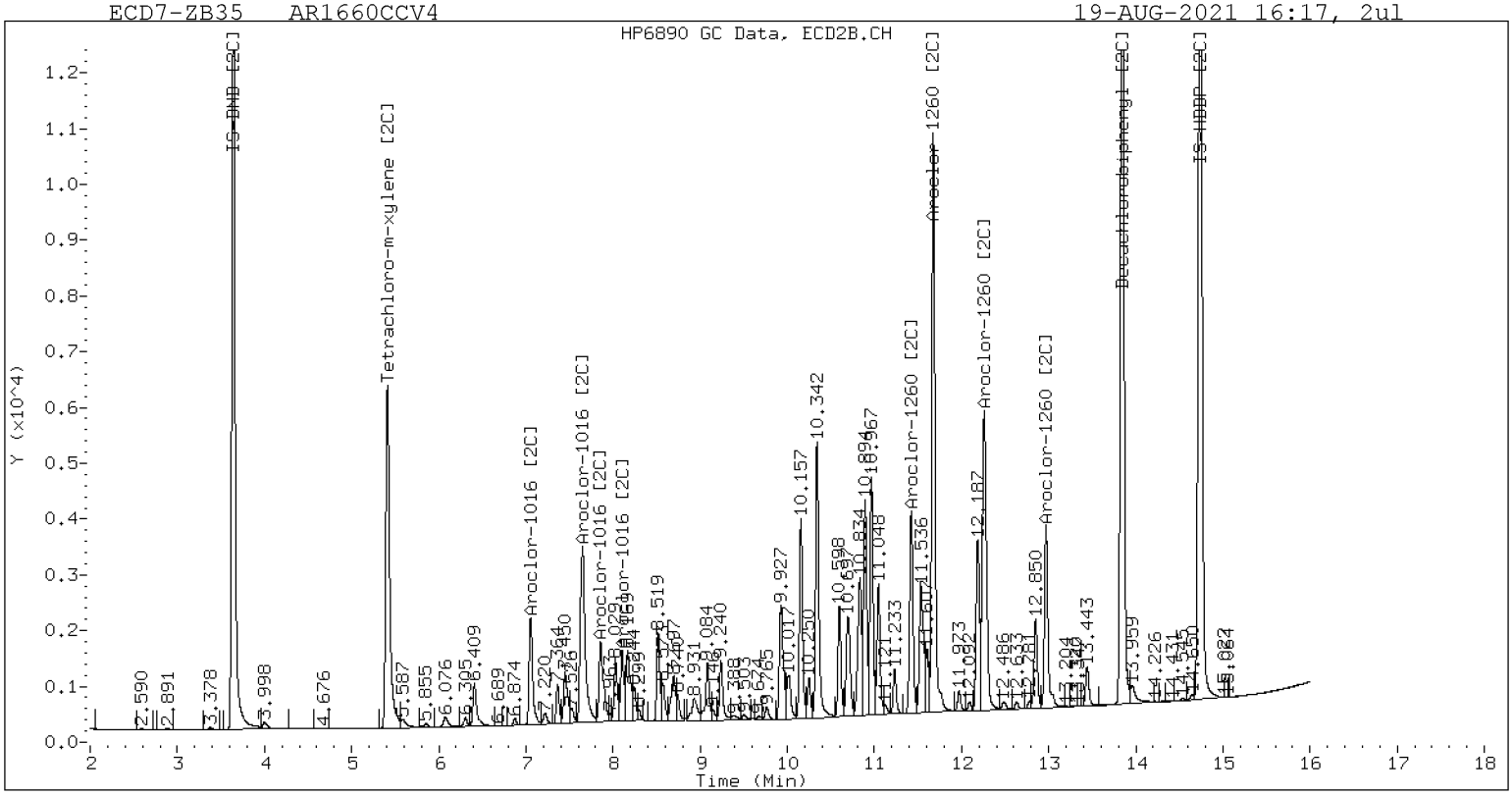
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV4 19-AUG-2021 16:17, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV4 19-AUG-2021 16:17, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192126ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/19/21
Lab Sample ID:	SJH0254-CCV5	Injection Time:	21:04
Sequence Name:	AR1254CCV5		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	254	0.0571741	0.0583305		1.6	
Aroclor-1254 (1)	A	250.00	261	0.0690183	0.0721212		4.4	
Aroclor-1254 (2)	A	250.00	266	0.0319506	0.0340657		6.4	
Aroclor-1254 (3)	A	250.00	211	0.0449859	0.0379318		-15.6	
Aroclor-1254 (4)	A	250.00	256	0.0859427	0.0878892		2.4	
Aroclor-1254 (5)	A	250.00	276	0.0539731	0.0596447		10.4	
Aroclor 1254 [2C]	A	250.00	248	0.0782980	0.0773646		-1.0	
Aroclor-1254 (1) [2C]	A	250.00	247	0.0680651	0.0673551		-1.2	
Aroclor-1254 (2) [2C]	A	250.00	244	0.0399453	0.0390178		-2.4	
Aroclor-1254 (3) [2C]	A	250.00	259	0.0518895	0.0538526		3.6	
Aroclor-1254 (4) [2C]	A	250.00	230	0.1149829	0.1060365		-8.0	
Aroclor-1254 (5) [2C]	A	250.00	258	0.1166073	0.1205608		3.2	
Decachlorobiphenyl	A	40.000	40.0	0.7261970	0.7261755		0.0	
Tetrachlorometaxylene	A	40.000	42.2	0.9669678	1.0212040		5.5	
Decachlorobiphenyl [2C]	A	40.000	38.1	1.7775950	1.6927460		-4.8	
Tetrachlorometaxylene [2C]	A	40.000	41.0	1.0280520	1.0547480		2.5	

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210819.b/08192126ECD7.D
Data file 2: /210819.b/210819.b/08192126ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254CCV5
Client ID:
Injection Date: 19-AUG-2021 21:04
Report Date: 08/23/2021 17:03
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.001	133383	5.412	0.001	397862	42.2	41.0	2.9	Tetrachloro-m-xylene
13.164	-0.001	167984	13.845	-0.004	895075	40.0	38.1	4.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261227	0.9
Hexabromobiphenyl	425681	462654	8.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	754421	4.6
Hexabromobiphenyl	863111	1057542	22.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	8.677	0.000	58875	261.2	1	9.239	0.000	158794	247.4
Aroclor-1254	2	8.748	0.000	27809	266.5	2	9.332	0.000	91987	244.2
Aroclor-1254	3	9.042	0.000	30965	210.8	3	9.763	0.000	126961	259.5
Aroclor-1254	4	9.180	0.000	71747	255.7	4	9.914	0.000	249988	230.5
Aroclor-1254	5	9.871	0.000	48690	276.3	5	10.151	0.000	284230	258.5

Total Col1Ave (5 peaks): 254.1 Total Col2Ave (5 peaks): 248.0 RPD = 2

Corrected Ave (4 peaks): 248.6 Corrected Ave (4 peaks): 245.2 RPD = 1

CalAmt %D: 1.6 CalAmt %D: -0.8

Total PCB Area Col1 (5.168 - 13.065) = 759319 Col1 Total PCB = 0.3 ppm*

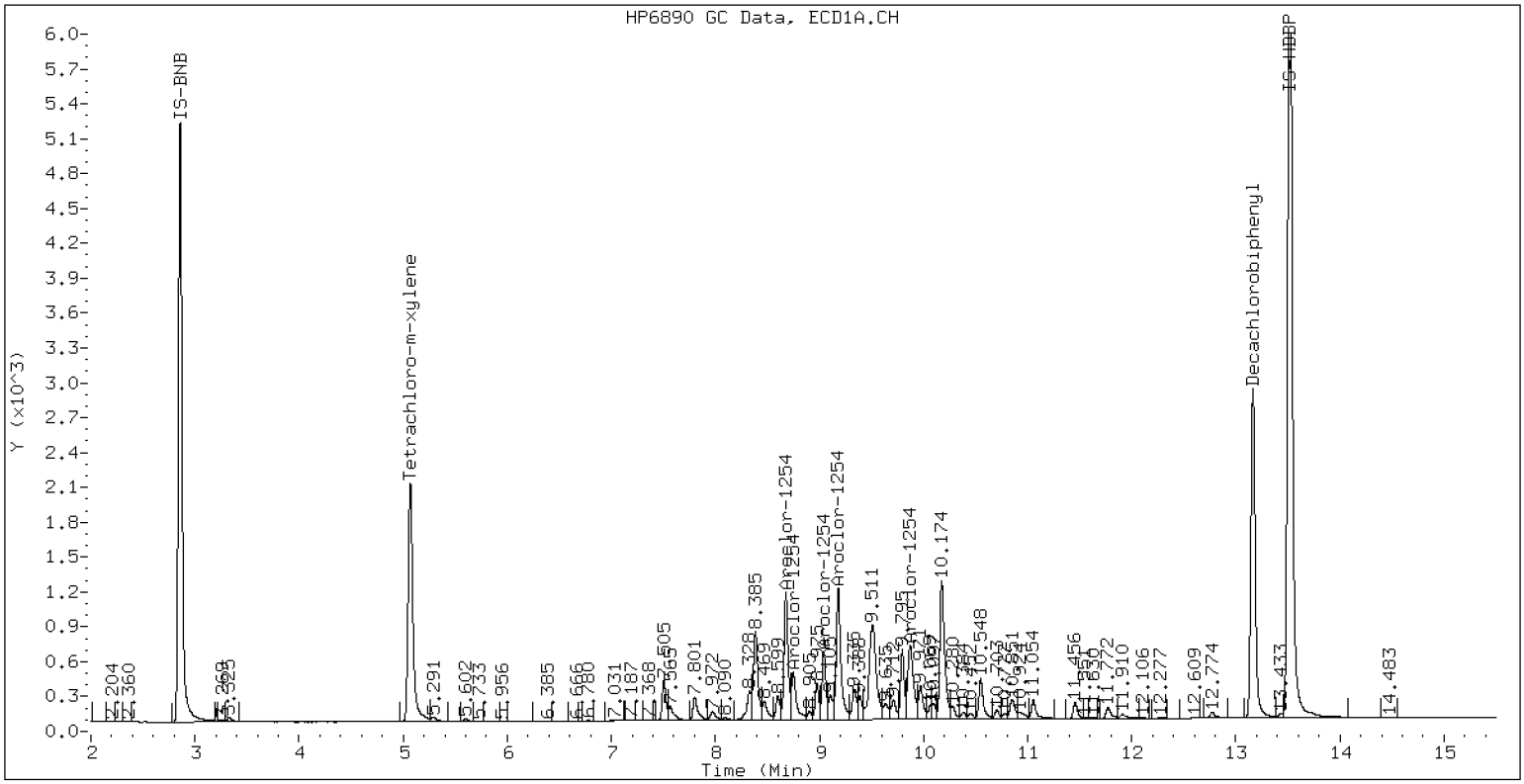
Total PCB Area Col2 (5.168 - 13.065) = 3020633 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

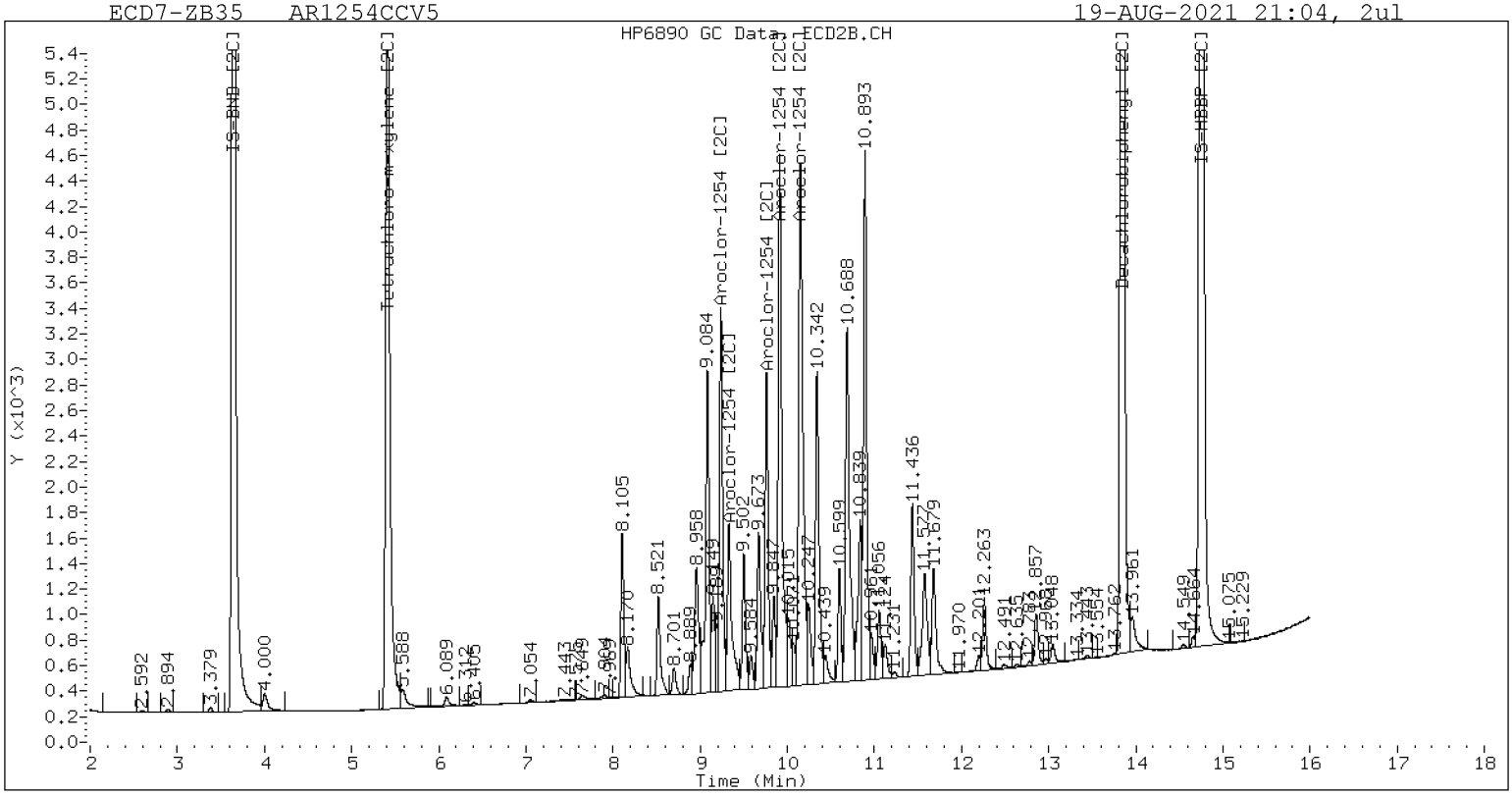
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254CCV5 19-AUG-2021 21:04, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254CCV5 19-AUG-2021 21:04, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192127ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/19/21
Lab Sample ID:	SJH0254-CCV6	Injection Time:	21:24
Sequence Name:	AR1660CCV6		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	272	0.0446218	0.0485823		8.6	
Aroclor-1016 (1)	A	250.00	269	0.0283733	0.0305642		7.6	
Aroclor-1016 (2)	A	250.00	274	0.0867650	0.0950744		9.6	
Aroclor-1016 (3)	A	250.00	270	0.0389383	0.0420665		8.0	
Aroclor-1016 (4)	A	250.00	273	0.0244108	0.0266241		9.2	
Aroclor 1016 [2C]	A	250.00	276	0.0529840	0.0582228		10.2	
Aroclor-1016 (1) [2C]	A	250.00	268	0.0456173	0.0488858		7.2	
Aroclor-1016 (2) [2C]	A	250.00	275	0.1020378	0.1122575		10.0	
Aroclor-1016 (3) [2C]	A	250.00	279	0.0400455	0.0446498		11.6	
Aroclor-1016 (4) [2C]	A	250.00	280	0.0242353	0.0270983		12.0	
Aroclor 1260	A	250.00	254	0.0461251	0.0470750		1.7	
Aroclor-1260 (1)	A	250.00	238	0.0359923	0.0342133		-4.8	
Aroclor-1260 (2)	A	250.00	258	0.0353250	0.0365280		3.2	
Aroclor-1260 (3)	A	250.00	257	0.0954741	0.0982157		2.8	
Aroclor-1260 (4)	A	250.00	262	0.0425365	0.0445924		4.8	
Aroclor-1260 (5)	A	250.00	256	0.0212978	0.0218257		2.4	
Aroclor 1260 [2C]	A	250.00	223	0.1108773	0.0987159		-10.7	
Aroclor-1260 (1) [2C]	A	250.00	220	0.0665032	0.0585413		-12.0	
Aroclor-1260 (2) [2C]	A	250.00	220	0.1932922	0.1699982		-12.0	
Aroclor-1260 (3) [2C]	A	250.00	226	0.1242917	0.1123583		-9.6	
Aroclor-1260 (4) [2C]	A	250.00	227	0.0594222	0.0539656		-9.2	
Decachlorobiphenyl	A	40.000	41.5	0.7261970	0.7533459		3.8	
Tetrachlorometaxylene	A	40.000	43.4	0.9669678	1.0486140		8.5	
Decachlorobiphenyl [2C]	A	40.000	37.8	1.7775950	1.6815250		-5.5	
Tetrachlorometaxylene [2C]	A	40.000	42.3	1.0280520	1.0872390		5.8	

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210819.b/08192127ECD7.D
Data file 2: /210819.b/210819.b/08192127ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV6
Client ID:
Injection Date: 19-AUG-2021 21:24
Report Date: 08/23/2021 17:04
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.001	135494	5.412	0.001	403519	43.4	42.3	2.5	Tetrachloro-m-xylene
13.163	-0.002	169600	13.845	-0.004	907017	41.5	37.8	9.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258425	-0.2
Hexabromobiphenyl	425681	450258	5.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	742282	3.0
Hexabromobiphenyl	863111	1078803	25.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.000	24683	269.3	1	7.055	0.000	113397	267.9
Aroclor-1016	2	7.032	-0.000	76780	273.9	2	7.650	-0.000	260396	275.0
Aroclor-1016	3	7.179	0.000	33972	270.1	3	7.856	-0.001	103571	278.7
Aroclor-1016	4	7.289	0.000	21501	272.7	4	8.105	0.000	62858	279.5

Total Col1Ave (4 peaks): 271.5 Total Col2Ave (4 peaks): 275.3 RPD = 1
Corrected Ave (3 peaks): 270.7 Corrected Ave (3 peaks): 273.9 RPD = 1

CalAmt %D: 8.6 CalAmt %D: 10.1

Aroclor-1260	1	10.384	-0.001	48140	237.6	1	11.424	0.000	197358	220.1
Aroclor-1260	2	10.702	-0.001	51397	258.5	2	11.677	-0.001	573108	219.9
Aroclor-1260	3	11.053	-0.001	138195	257.2	3	12.260	-0.000	378789	226.0
Aroclor-1260	4	11.454	-0.000	62744	262.1	4	12.971	0.000	181932	227.0
Aroclor-1260	5	11.556	-0.000	30710	256.2	NS	---			----

Total Col1Ave (5 peaks): 254.3 Total Col2Ave (4 peaks): 223.2 RPD = 13
Corrected Ave (4 peaks): 252.4 Corrected Ave (3 peaks): 222.0 RPD = 13

CalAmt %D: 1.7 CalAmt %D: -10.7

Total PCB Area Col1 (5.168 - 13.065) = 1366215 Col1 Total PCB = 0.5 ppm*

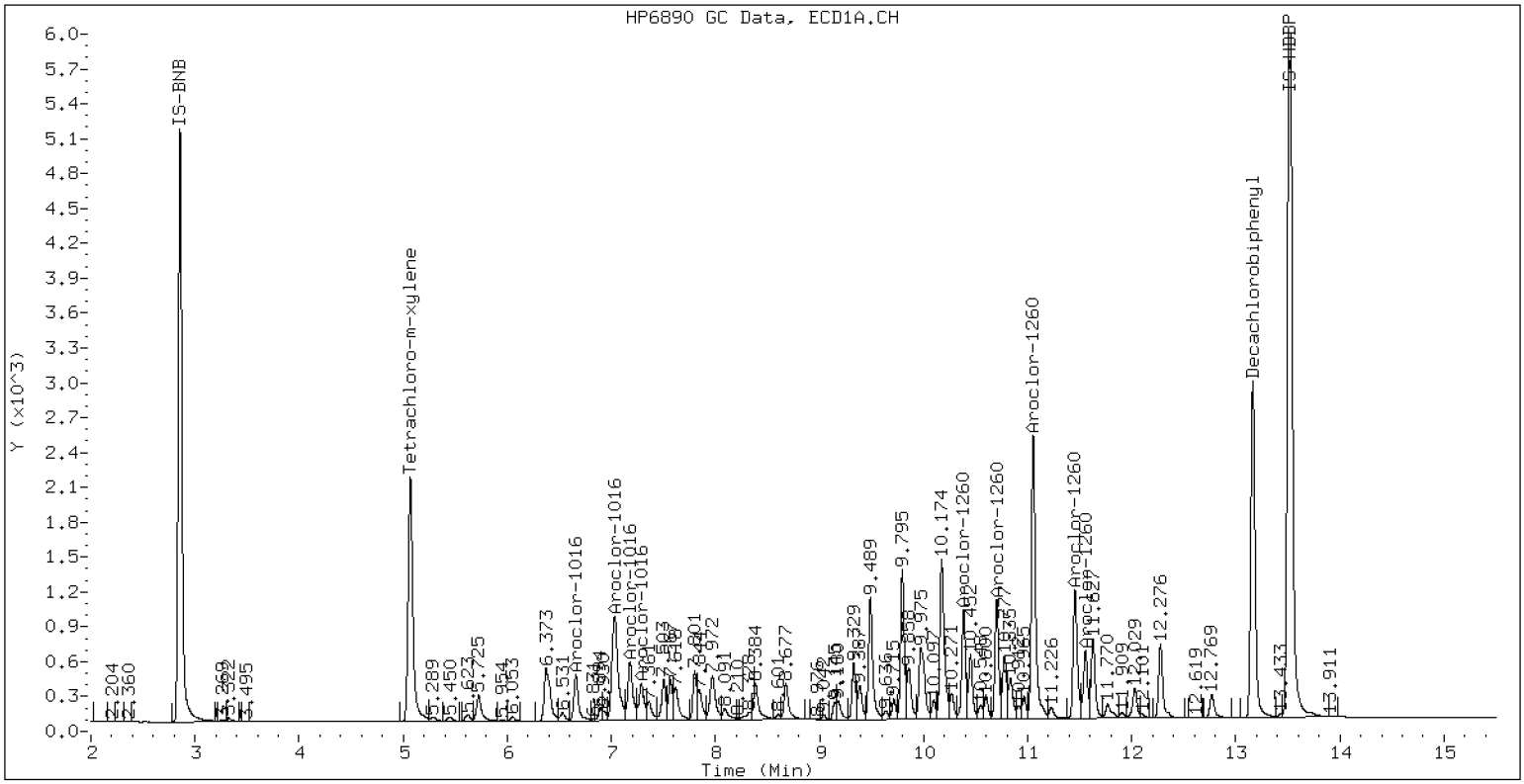
Total PCB Area Col2 (5.168 - 13.065) = 5274774 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

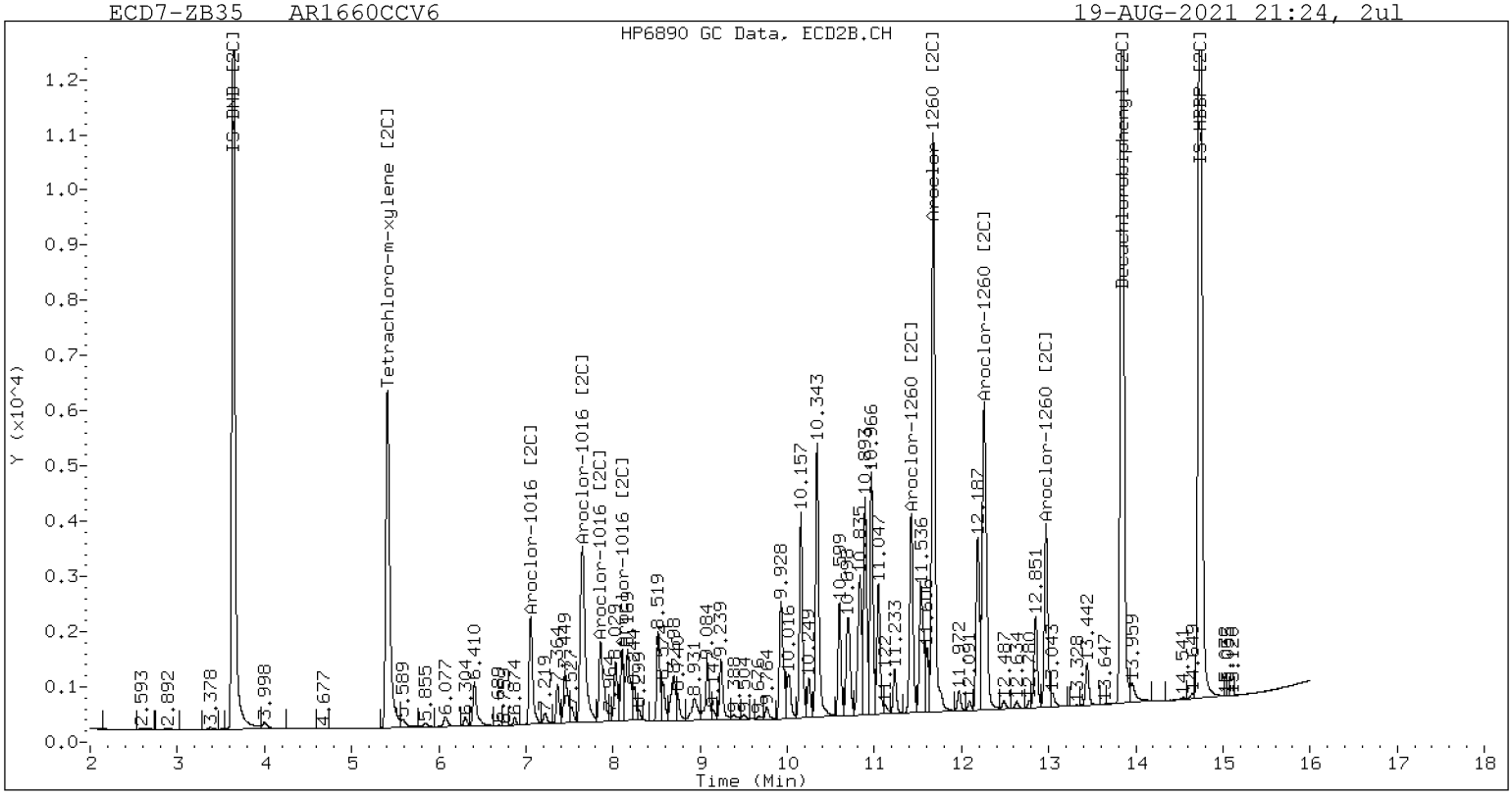
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV6 19-AUG-2021 21:24, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV6 19-AUG-2021 21:24, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192146ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/20/21
Lab Sample ID:	SJH0254-CCV7	Injection Time:	03:54
Sequence Name:	AR1248CCV7		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	264	0.0444871	0.0471952		5.7	
Aroclor-1248 (1)	A	250.00	268	0.0335259	0.0359361		7.2	
Aroclor-1248 (2)	A	250.00	273	0.0437624	0.0477480		9.2	
Aroclor-1248 (3)	A	250.00	269	0.0640809	0.0689752		7.6	
Aroclor-1248 (4)	A	250.00	247	0.0365791	0.0361215		-1.2	
Aroclor 1248 [2C]	A	250.00	257	0.0480909	0.0492128		2.7	
Aroclor-1248 (1) [2C]	A	250.00	264	0.0331517	0.0350100		5.6	
Aroclor-1248 (2) [2C]	A	250.00	259	0.0403519	0.0417828		3.6	
Aroclor-1248 (3) [2C]	A	250.00	255	0.0642727	0.0656064		2.0	
Aroclor-1248 (4) [2C]	A	250.00	249	0.0545874	0.0544519		-0.4	
Decachlorobiphenyl	A	40.000	40.2	0.7261970	0.7302663		0.5	
Tetrachlorometaxylene	A	40.000	41.5	0.9669678	1.0035690		3.8	
Decachlorobiphenyl [2C]	A	40.000	38.2	1.7775950	1.6971330		-4.5	
Tetrachlorometaxylene [2C]	A	40.000	40.1	1.0280520	1.0315080		0.3	

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210819.b/08192146ECD7.D
Data file 2: /210819.b/210819.b/08192146ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV7
Client ID:
Injection Date: 20-AUG-2021 03:54
Report Date: 08/23/2021 17:05
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.068	0.001	141174	5.411	0.000	420203	41.5	40.1	3.4	Tetrachloro-m-xylene
13.164	-0.001	177749	13.847	-0.003	1016250	40.2	38.2	5.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	281344	8.7
Hexabromobiphenyl	425681	486806	14.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	814735	13.0
Hexabromobiphenyl	863111	1197608	38.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	7.801	0.000	31595	268.0	1	8.105	0.000	89137	264.0
Aroclor-1248	2	7.971	0.000	41980	272.8	2	8.520	0.000	106381	258.9
Aroclor-1248	3	8.380	0.000	60643	269.1	3	8.952	0.000	167037	255.2
Aroclor-1248	4	8.676	0.000	31758	246.9	4	9.380	0.000	138637	249.4

Total Col1Ave (4 peaks): 264.2 Total Col2Ave (4 peaks): 256.9 RPD = 3

Corrected Ave (3 peaks): 261.3 Corrected Ave (3 peaks): 254.5 RPD = 3

CalAmt %D: 5.7 CalAmt %D: 2.7

Total PCB Area Col1 (5.168 - 13.065) = 653598 Col1 Total PCB = 0.2 ppm*

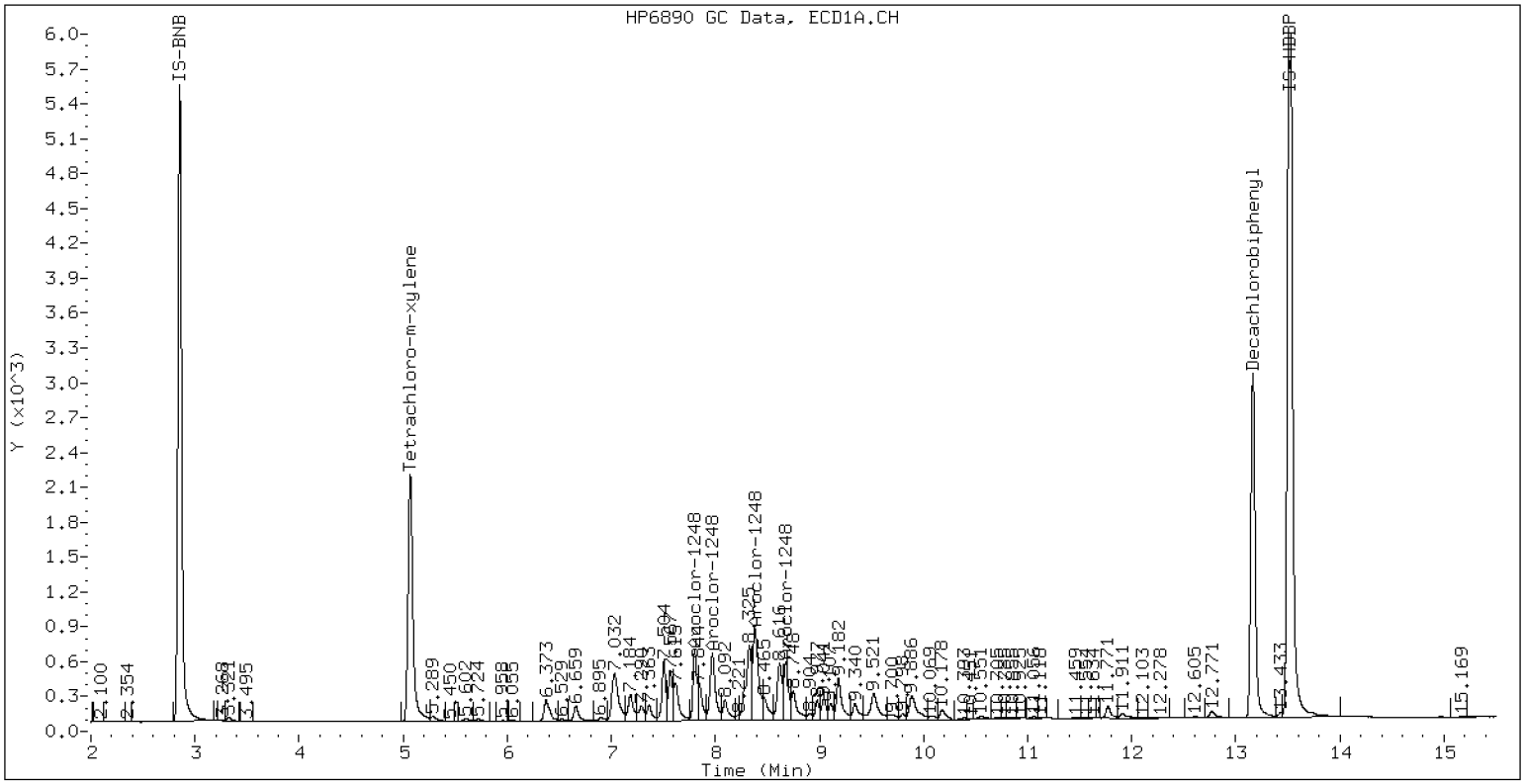
Total PCB Area Col2 (5.168 - 13.065) = 2434256 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

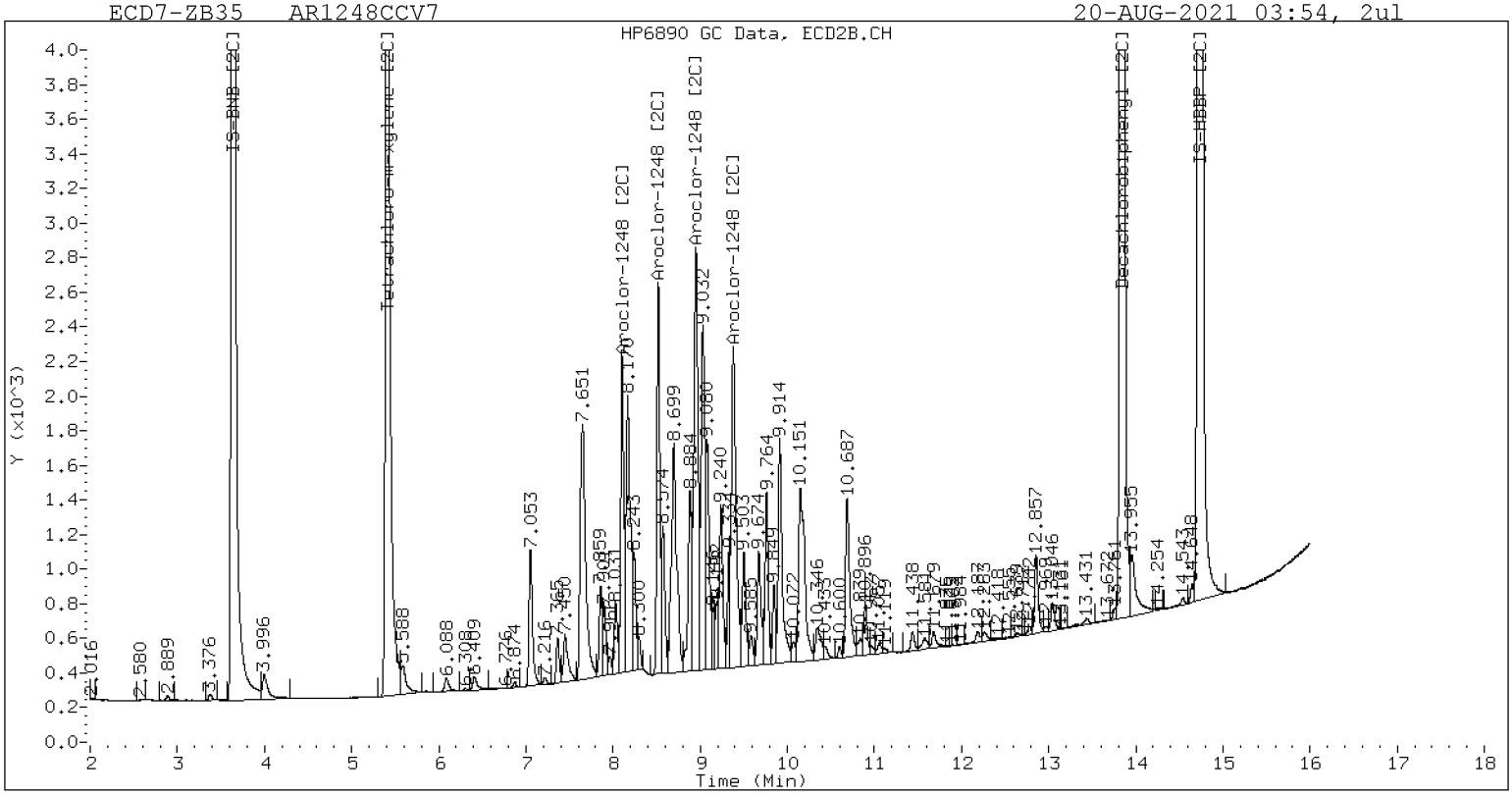
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV7 20-AUG-2021 03:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248CCV7 20-AUG-2021 03:54, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08192147ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0254	Injection Date:	08/20/21
Lab Sample ID:	SJH0254-CCV8	Injection Time:	04:14
Sequence Name:	AR1660CCV8		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	265	0.0446218	0.0471605		5.9	
Aroclor-1016 (1)	A	250.00	264	0.0283733	0.0299821		5.6	
Aroclor-1016 (2)	A	250.00	264	0.0867650	0.0915204		5.6	
Aroclor-1016 (3)	A	250.00	264	0.0389383	0.0410464		5.6	
Aroclor-1016 (4)	A	250.00	267	0.0244108	0.0260932		6.8	
Aroclor 1016 [2C]	A	250.00	271	0.0529840	0.0571700		8.3	
Aroclor-1016 (1) [2C]	A	250.00	262	0.0456173	0.0477745		4.8	
Aroclor-1016 (2) [2C]	A	250.00	270	0.1020378	0.1101371		8.0	
Aroclor-1016 (3) [2C]	A	250.00	273	0.0400455	0.0438064		9.2	
Aroclor-1016 (4) [2C]	A	250.00	278	0.0242353	0.0269619		11.2	
Aroclor 1260	A	250.00	255	0.0461251	0.0471524		2.0	
Aroclor-1260 (1)	A	250.00	239	0.0359923	0.0344010		-4.4	
Aroclor-1260 (2)	A	250.00	259	0.0353250	0.0365428		3.6	
Aroclor-1260 (3)	A	250.00	257	0.0954741	0.0981747		2.8	
Aroclor-1260 (4)	A	250.00	262	0.0425365	0.0446328		4.8	
Aroclor-1260 (5)	A	250.00	258	0.0212978	0.0220106		3.2	
Aroclor 1260 [2C]	A	250.00	226	0.1108773	0.0989892		-9.8	
Aroclor-1260 (1) [2C]	A	250.00	218	0.0665032	0.0580481		-12.8	
Aroclor-1260 (2) [2C]	A	250.00	218	0.1932922	0.1688774		-12.8	
Aroclor-1260 (3) [2C]	A	250.00	225	0.1242917	0.1117488		-10.0	
Aroclor-1260 (4) [2C]	A	250.00	241	0.0594222	0.0572824		-3.6	
Decachlorobiphenyl	A	40.000	41.4	0.7261970	0.7517756		3.5	
Tetrachlorometaxylene	A	40.000	42.2	0.9669678	1.0194320		5.5	
Decachlorobiphenyl [2C]	A	40.000	39.0	1.7775950	1.7352430		-2.5	
Tetrachlorometaxylene [2C]	A	40.000	41.3	1.0280520	1.0611770		3.3	

* Values outside of QC limits

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

Data file 1: /210819.b/08192147ECD7.D
Data file 2: /210819.b/210819.b/08192147ECD7.D
Method: \\target\share\chem4\ecd7.i\210819.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV8
Client ID:
Injection Date: 20-AUG-2021 04:14
Report Date: 08/23/2021 17:05
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	0.000	138029	5.411	0.000	413339	42.2	41.3	2.1	Tetrachloro-m-xylene
13.165	0.000	171683	13.849	0.000	988877	41.4	39.0	5.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	270796	4.6
Hexabromobiphenyl	425681	456740	7.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	779020	8.1
Hexabromobiphenyl	863111	1139756	32.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.659	0.000	25372	264.2	1	7.055	0.000	116304	261.8
Aroclor-1016	2	7.033	0.000	77448	263.7	2	7.651	0.000	268122	269.8
Aroclor-1016	3	7.179	0.000	34735	263.5	3	7.857	0.000	106644	273.5
Aroclor-1016	4	7.289	0.000	22081	267.2	4	8.104	0.000	65637	278.1
Total Col1Ave (4 peaks):				264.7		Total Col2Ave (4 peaks):			270.8	RPD = 2
Corrected Ave (3 peaks):				263.8		Corrected Ave (3 peaks):			268.4	RPD = 2
CalAmt %D:				5.9		CalAmt %D:			8.3	
Aroclor-1260	1	10.385	0.000	49101	238.9	1	11.424	0.000	206752	218.2
Aroclor-1260	2	10.703	0.000	52158	258.6	2	11.678	0.000	601497	218.4
Aroclor-1260	3	11.054	0.000	140126	257.1	3	12.260	0.000	398020	224.8
Aroclor-1260	4	11.454	0.000	63705	262.3	4	12.970	0.000	204025	241.0
Aroclor-1260	5	11.556	0.000	31416	258.4	NS	---			----
Total Col1Ave (5 peaks):				255.1		Total Col2Ave (4 peaks):			225.6	RPD = 12
Corrected Ave (4 peaks):				253.3		Corrected Ave (3 peaks):			220.5	RPD = 14
CalAmt %D:				2.0		CalAmt %D:			-9.8	

Total PCB Area Col1 (5.168 - 13.065) = 1392949 Col1 Total PCB = 0.5 ppm*

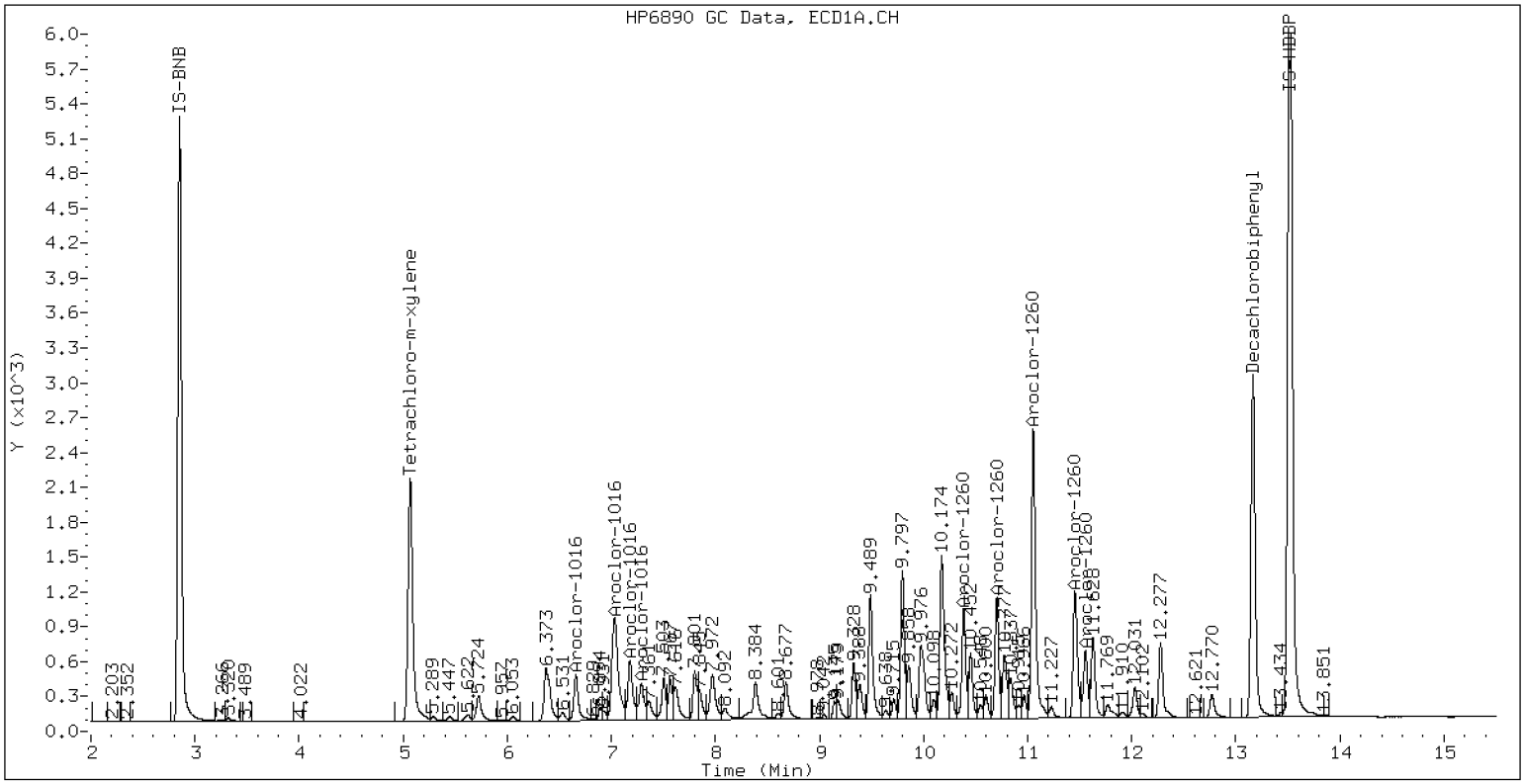
Total PCB Area Col2 (5.168 - 13.065) = 5470607 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

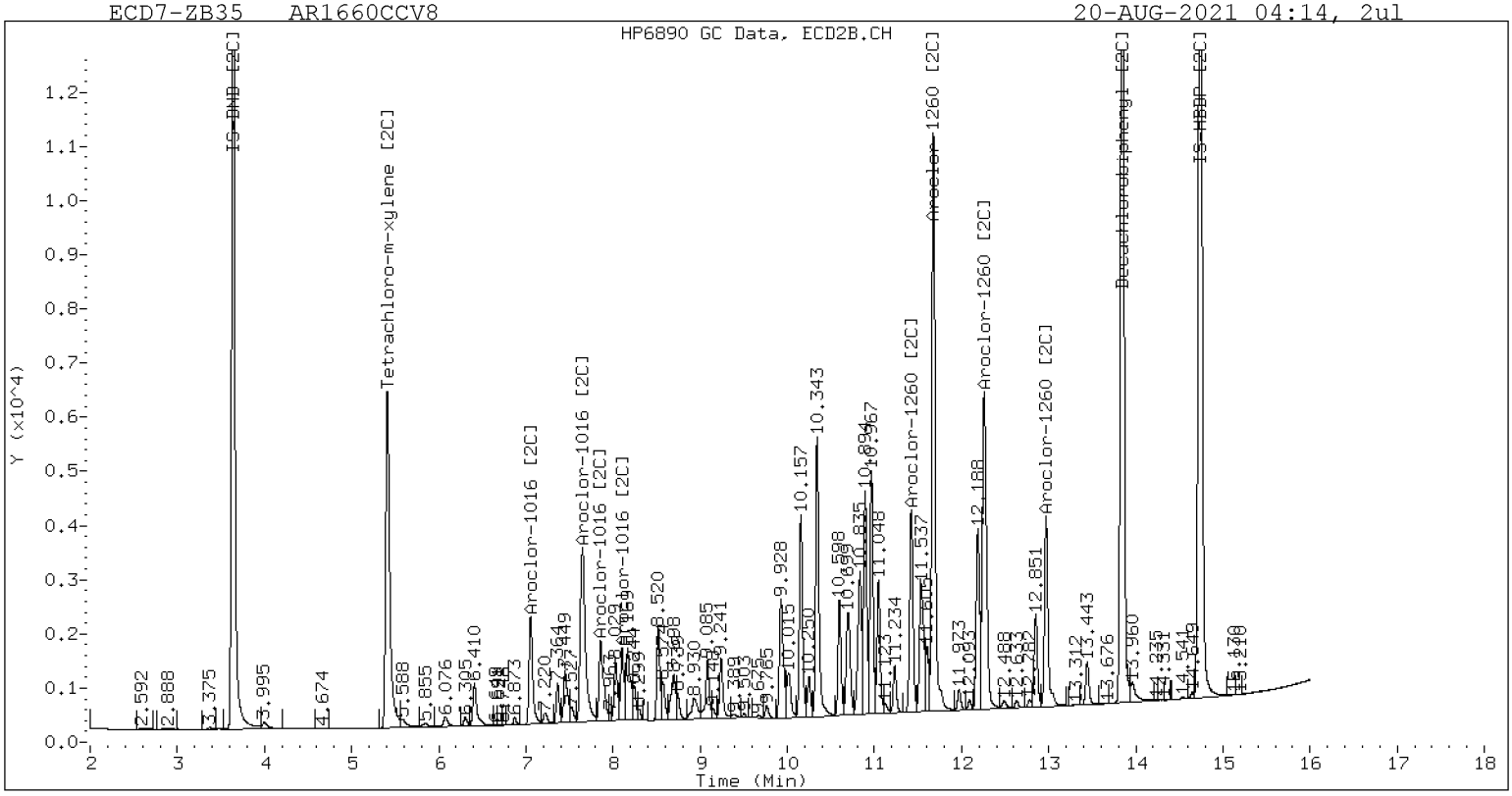
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV8 20-AUG-2021 04:14, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV8 20-AUG-2021 04:14, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08272119ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/27/21
Lab Sample ID:	SJH0396-CCV1	Injection Time:	22:06
Sequence Name:	AR1248CCV1		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	263	0.0444871	0.0469527		5.3	+/-20
Aroclor-1248 (1)	A	250.00	272	0.0335259	0.0364568		8.8	
Aroclor-1248 (2)	A	250.00	273	0.0437624	0.0478371		9.2	
Aroclor-1248 (3)	A	250.00	266	0.0640809	0.0680922		6.4	
Aroclor-1248 (4)	A	250.00	242	0.0365791	0.0354249		-3.2	
Aroclor 1248 [2C]	A	250.00	249	0.0480909	0.0479788		-0.4	+/-20
Aroclor-1248 (1) [2C]	A	250.00	252	0.0331517	0.0334232		0.8	
Aroclor-1248 (2) [2C]	A	250.00	235	0.0403519	0.0378681		-6.0	
Aroclor-1248 (3) [2C]	A	250.00	244	0.0642727	0.0627115		-2.4	
Aroclor-1248 (4) [2C]	A	250.00	265	0.0545874	0.0579126		6.0	
Decachlorobiphenyl	A	40.000	41.6	0.7261970	0.7562126		4.0	+/-20
Tetrachlorometaxylene	A	40.000	41.2	0.9669678	0.9955841		3.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	35.8	1.7775950	1.5935440		-10.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.5	1.0280520	1.0157630		-1.3	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /2108127.b/08272119ECD7.D
Data file 2: /2108127.b/2108127.b/08272119ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV1
Client ID:
Injection Date: 27-AUG-2021 22:06
Report Date: 08/30/2021 14:36
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.071	0.001	137076	5.413	-0.001	379644	41.2	39.5	4.1	Tetrachloro-m-xylene
13.163	-0.003	169848	13.844	0.000	846429	41.7	35.9	15.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	275368	6.4
Hexabromobiphenyl	425681	449207	5.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	747505	3.7
Hexabromobiphenyl	863111	1062323	23.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1248	1	7.803	0.000	31372	271.9	1	8.106	0.000	78075	252.0
Aroclor-1248	2	7.974	0.000	41165	273.3	2	8.521	0.000	88458	234.6
Aroclor-1248	3	8.383	0.000	58595	265.6	3	8.954	0.000	146491	243.9
Aroclor-1248	4	8.677	0.000	30484	242.1	4	9.382	0.000	135281	265.2

Total Col1Ave (4 peaks): 263.2 Total Col2Ave (4 peaks): 249.0 RPD = 6

Corrected Ave (3 peaks): 259.9 Corrected Ave (3 peaks): 243.5 RPD = 6

CalAmt %D: 5.3 CalAmt %D: -0.4

Total PCB Area Col1 (5.170 - 13.066) = 656695 Col1 Total PCB = 0.2 ppm*

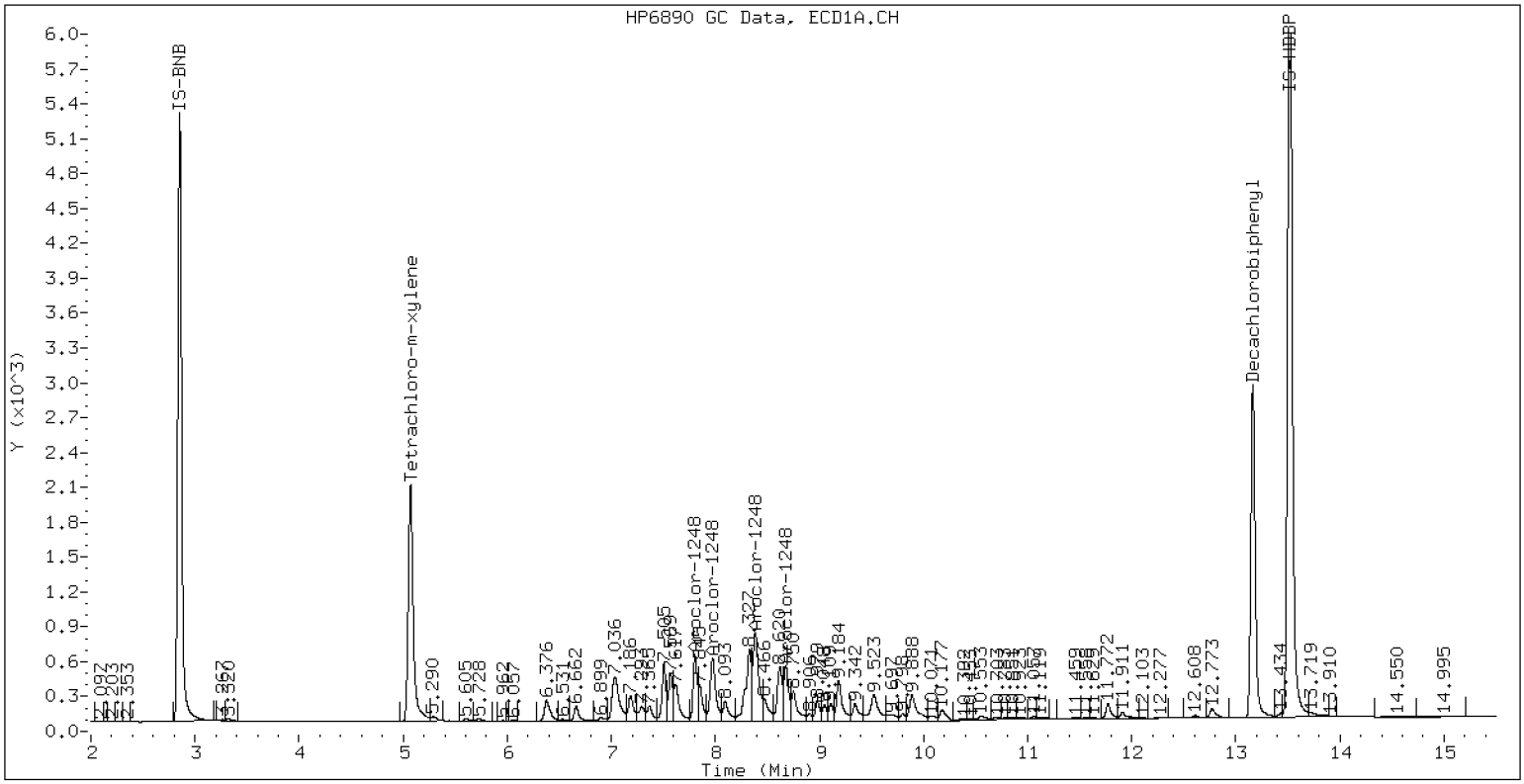
Total PCB Area Col2 (5.170 - 13.066) = 2104696 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

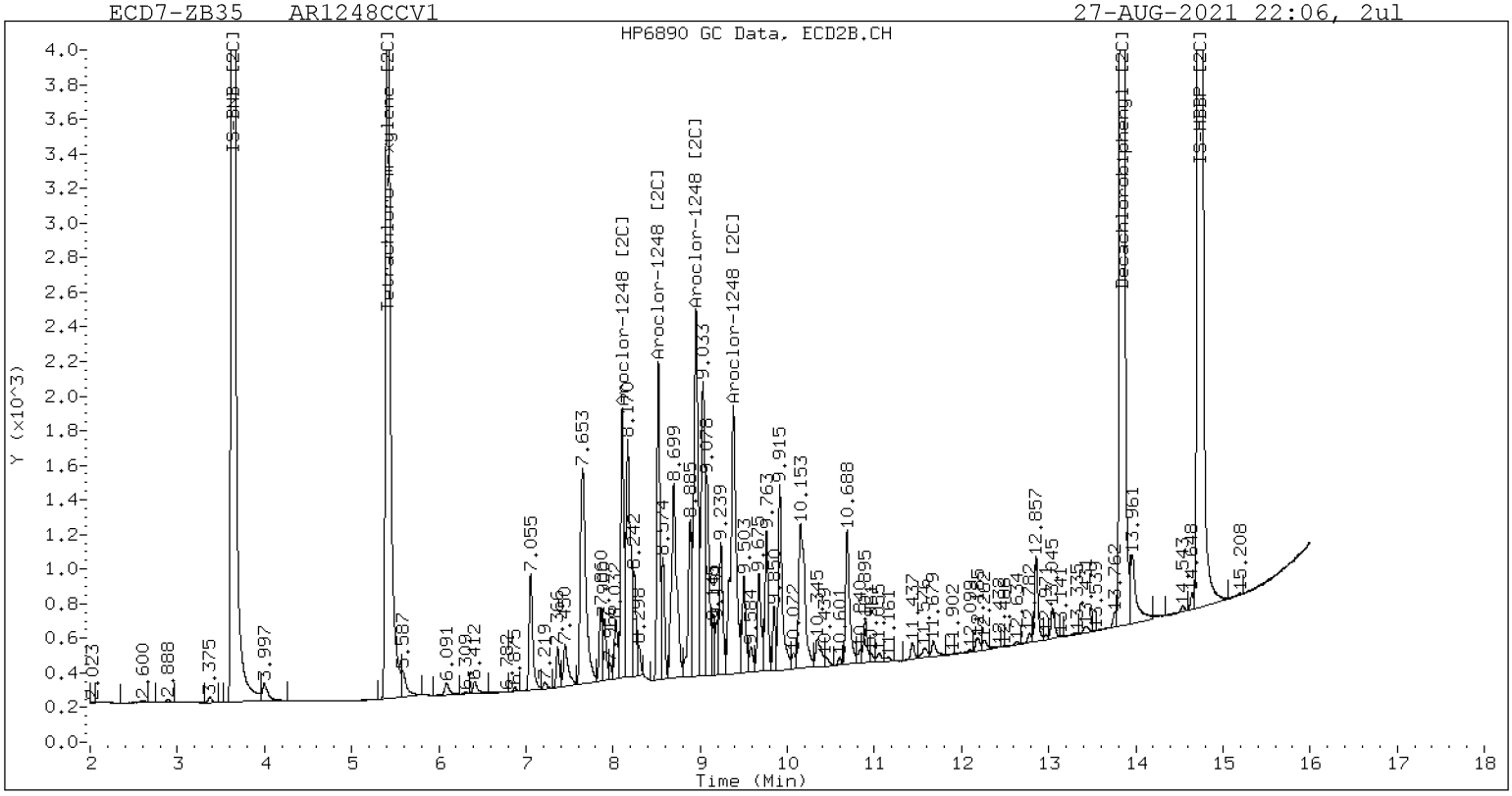
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1 27-AUG-2021 22:06, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248CCV1 27-AUG-2021 22:06, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08272120ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/27/21
Lab Sample ID:	SJH0396-CCV2	Injection Time:	22:27
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	267	0.0446218	0.0474344		6.7	+/-20
Aroclor-1016 (1)	A	250.00	268	0.0283733	0.0304328		7.2	
Aroclor-1016 (2)	A	250.00	263	0.0867650	0.0912573		5.2	
Aroclor-1016 (3)	A	250.00	268	0.0389383	0.0418239		7.2	
Aroclor-1016 (4)	A	250.00	268	0.0244108	0.0262235		7.2	
Aroclor 1016 [2C]	A	250.00	262	0.0529840	0.0551017		4.6	+/-20
Aroclor-1016 (1) [2C]	A	250.00	255	0.0456173	0.0465702		2.0	
Aroclor-1016 (2) [2C]	A	250.00	259	0.1020378	0.1057115		3.6	
Aroclor-1016 (3) [2C]	A	250.00	262	0.0400455	0.0419801		4.8	
Aroclor-1016 (4) [2C]	A	250.00	270	0.0242353	0.0261449		8.0	
Aroclor 1260	A	250.00	258	0.0461251	0.0476140		3.1	+/-20
Aroclor-1260 (1)	A	250.00	242	0.0359923	0.0349252		-3.2	
Aroclor-1260 (2)	A	250.00	262	0.0353250	0.0370277		4.8	
Aroclor-1260 (3)	A	250.00	259	0.0954741	0.0988273		3.6	
Aroclor-1260 (4)	A	250.00	264	0.0425365	0.0449541		5.6	
Aroclor-1260 (5)	A	250.00	262	0.0212978	0.0223355		4.8	
Aroclor 1260 [2C]	A	250.00	230	0.1108773	0.1008676		-8.0	+/-20
Aroclor-1260 (1) [2C]	A	250.00	220	0.0665032	0.0584442		-12.0	
Aroclor-1260 (2) [2C]	A	250.00	223	0.1932922	0.1726791		-10.8	
Aroclor-1260 (3) [2C]	A	250.00	227	0.1242917	0.1130050		-9.2	
Aroclor-1260 (4) [2C]	A	250.00	250	0.0594222	0.0593420		0.0	
Decachlorobiphenyl	A	40.000	41.8	0.7261970	0.7598340		4.5	+/-20
Tetrachlorometaxylene	A	40.000	42.3	0.9669678	1.0235390		5.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.5	1.7775950	1.7102120		-3.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.7	1.0280520	1.0460040		1.8	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /2108127.b/08272120ECD7.D
Data file 2: /2108127.b/2108127.b/08272120ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV2
Client ID:
Injection Date: 27-AUG-2021 22:27
Report Date: 08/30/2021 14:36
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.002	131776	5.414	0.000	363624	42.3	40.7	4.0	Tetrachloro-m-xylene
13.165	-0.001	160173	13.844	0.000	819892	41.9	38.5	8.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	257491	-0.5
Hexabromobiphenyl	425681	421600	-1.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	695263	-3.6
Hexabromobiphenyl	863111	958819	11.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.000	24488	268.1	1	7.056	0.001	101183	255.2
Aroclor-1016	2	7.037	-0.001	73431	262.9	2	7.653	-0.000	229679	259.0
Aroclor-1016	3	7.182	0.001	33654	268.5	3	7.859	0.001	91210	262.1
Aroclor-1016	4	7.292	0.001	21101	268.6	4	8.106	0.001	56805	269.7
Total Col1Ave (4 peaks):					267.0	Total Col2Ave (4 peaks):				261.5 RPD = 2
Corrected Ave (3 peaks):					266.5	Corrected Ave (3 peaks):				258.8 RPD = 3
CalAmt %D:					6.8	CalAmt %D:				4.6
Aroclor-1260	1	10.387	-0.000	46014	242.6	1	11.423	-0.001	175117	219.7
Aroclor-1260	2	10.704	0.000	48784	262.0	2	11.678	0.001	517400	223.3
Aroclor-1260	3	11.054	-0.001	130205	258.8	3	12.259	0.001	338598	227.3
Aroclor-1260	4	11.456	0.000	59227	264.2	4	12.971	0.001	177807	249.7
Aroclor-1260	5	11.556	-0.001	29427	262.2	NS	---			----
Total Col1Ave (5 peaks):					258.0	Total Col2Ave (4 peaks):				230.0 RPD = 11
Corrected Ave (4 peaks):					256.4	Corrected Ave (3 peaks):				223.4 RPD = 14
CalAmt %D:					3.2	CalAmt %D:				-8.0

Total PCB Area Col1 (5.170 - 13.066) = 1327546 Col1 Total PCB = 0.5 ppm*

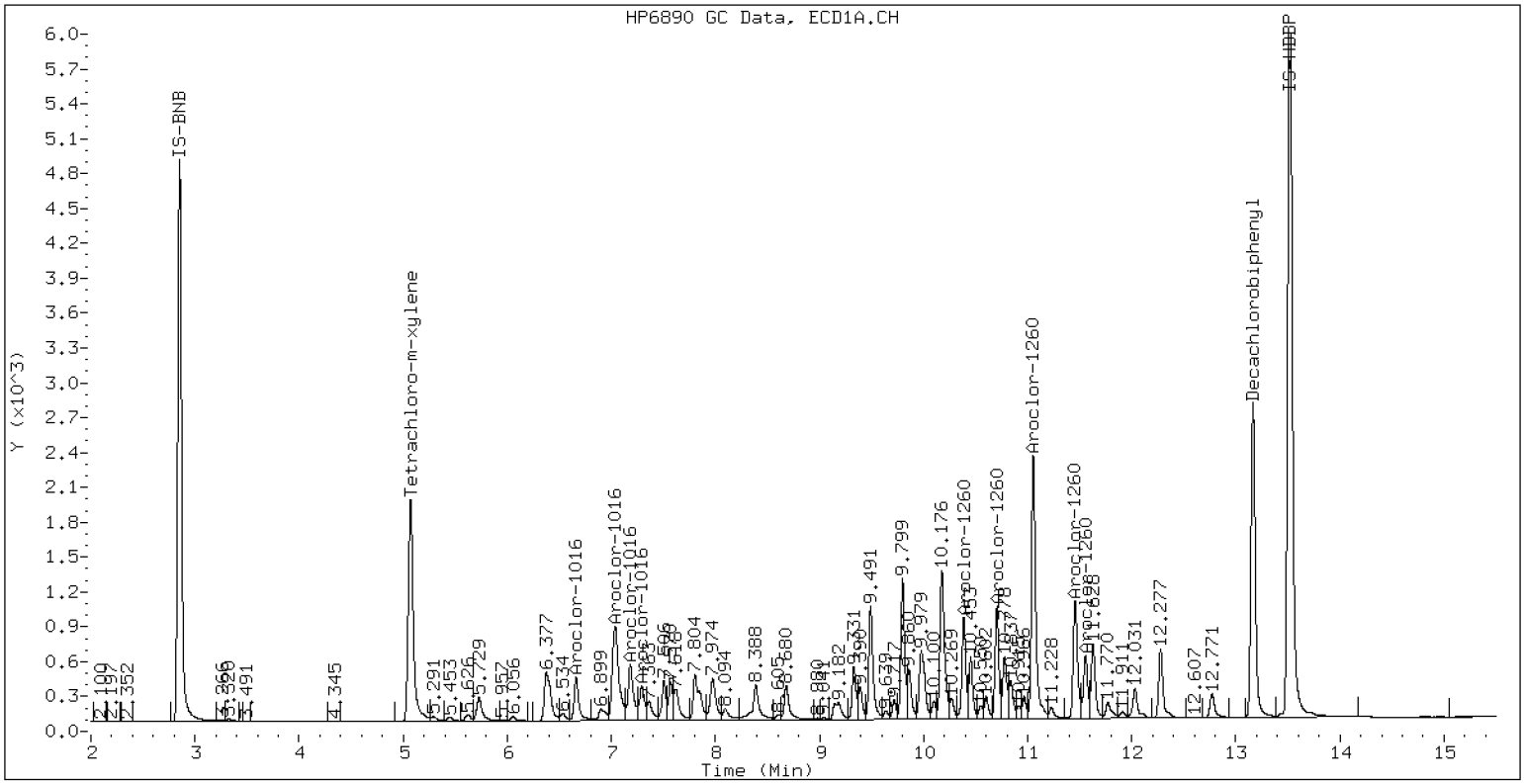
Total PCB Area Col2 (5.170 - 13.066) = 4722990 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

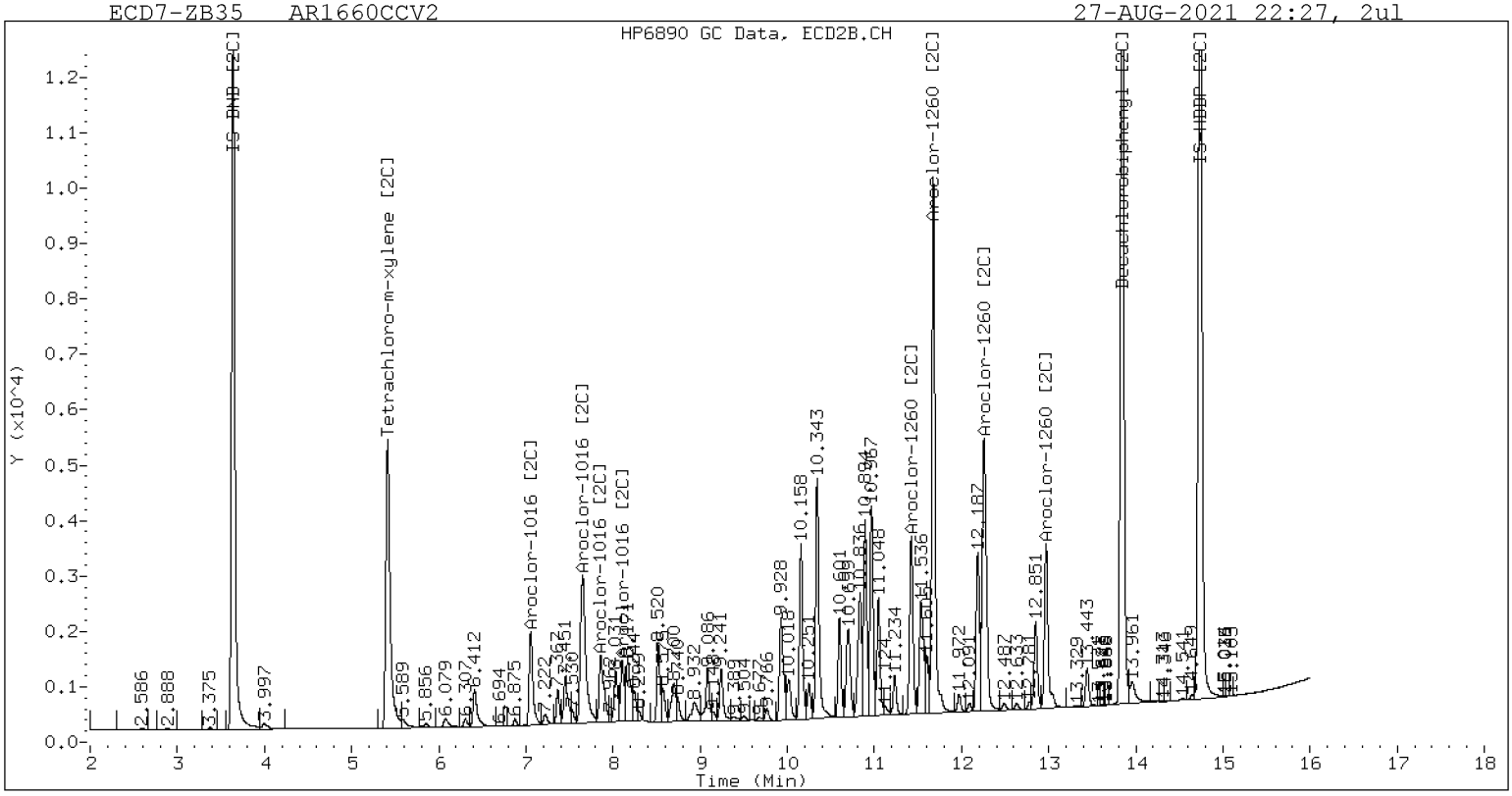
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2 27-AUG-2021 22:27, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2 27-AUG-2021 22:27, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08272133ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/28/21
Lab Sample ID:	SJH0396-CCV3	Injection Time:	02:53
Sequence Name:	AR1242CCV3		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	269	0.0350459	0.0380596		7.7	+/-20
Aroclor-1242 (1)	A	250.00	269	0.0220414	0.0237564		7.6	
Aroclor-1242 (2)	A	250.00	264	0.0657077	0.0694116		5.6	
Aroclor-1242 (3)	A	250.00	295	0.0372229	0.0439375		18.0	
Aroclor-1242 (4)	A	250.00	249	0.0152114	0.0151328		-0.4	
Aroclor 1242 [2C]	A	250.00	242	0.0490898	0.0477472		-3.3	+/-20
Aroclor-1242 (1) [2C]	A	250.00	245	0.0367813	0.0360444		-2.0	
Aroclor-1242 (2) [2C]	A	250.00	249	0.0798974	0.0794643		-0.4	
Aroclor-1242 (3) [2C]	A	250.00	235	0.0373257	0.0350715		-6.0	
Aroclor-1242 (4) [2C]	A	250.00	238	0.0423546	0.0404084		-4.8	
Decachlorobiphenyl	A	40.000	40.7	0.7261970	0.7384736		1.8	+/-20
Tetrachlorometaxylene	A	40.000	41.0	0.9669678	0.9908623		2.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.4	1.7775950	1.6605170		-6.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.0	1.0280520	1.0030530		-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: /2108127.b/08272133ECD7.D
Data file 2: /2108127.b/2108127.b/08272133ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242CCV3
Client ID:
Injection Date: 28-AUG-2021 02:53
Report Date: 08/30/2021 14:37
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.001	130233	5.414	-0.000	355142	41.0	39.0	4.9	Tetrachloro-m-xylene
13.165	-0.001	158592	13.844	0.001	820218	40.7	37.4	8.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	262868	1.5
Hexabromobiphenyl	425681	429513	0.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	708122	-1.8
Hexabromobiphenyl	863111	987907	14.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.000	19515	269.5	1	7.055	0.000	79762	245.0
Aroclor-1242	2	7.038	0.000	57019	264.1	2	7.653	0.000	175845	248.6
Aroclor-1242	3	8.385	0.000	36093	295.1	3	8.956	0.000	77609	234.9
Aroclor-1242	4	8.675	0.000	12431	248.7	4	9.038	0.000	89419	238.5

Total Col1Ave (4 peaks): 269.3 Total Col2Ave (4 peaks): 241.8 RPD = 11

Corrected Ave (3 peaks): 260.8 Corrected Ave (3 peaks): 239.5 RPD = 9

CalAmt %D: 7.7 CalAmt %D: -3.3

Total PCB Area Col1 (5.170 - 13.066) = 445406 Col1 Total PCB = 0.2 ppm*

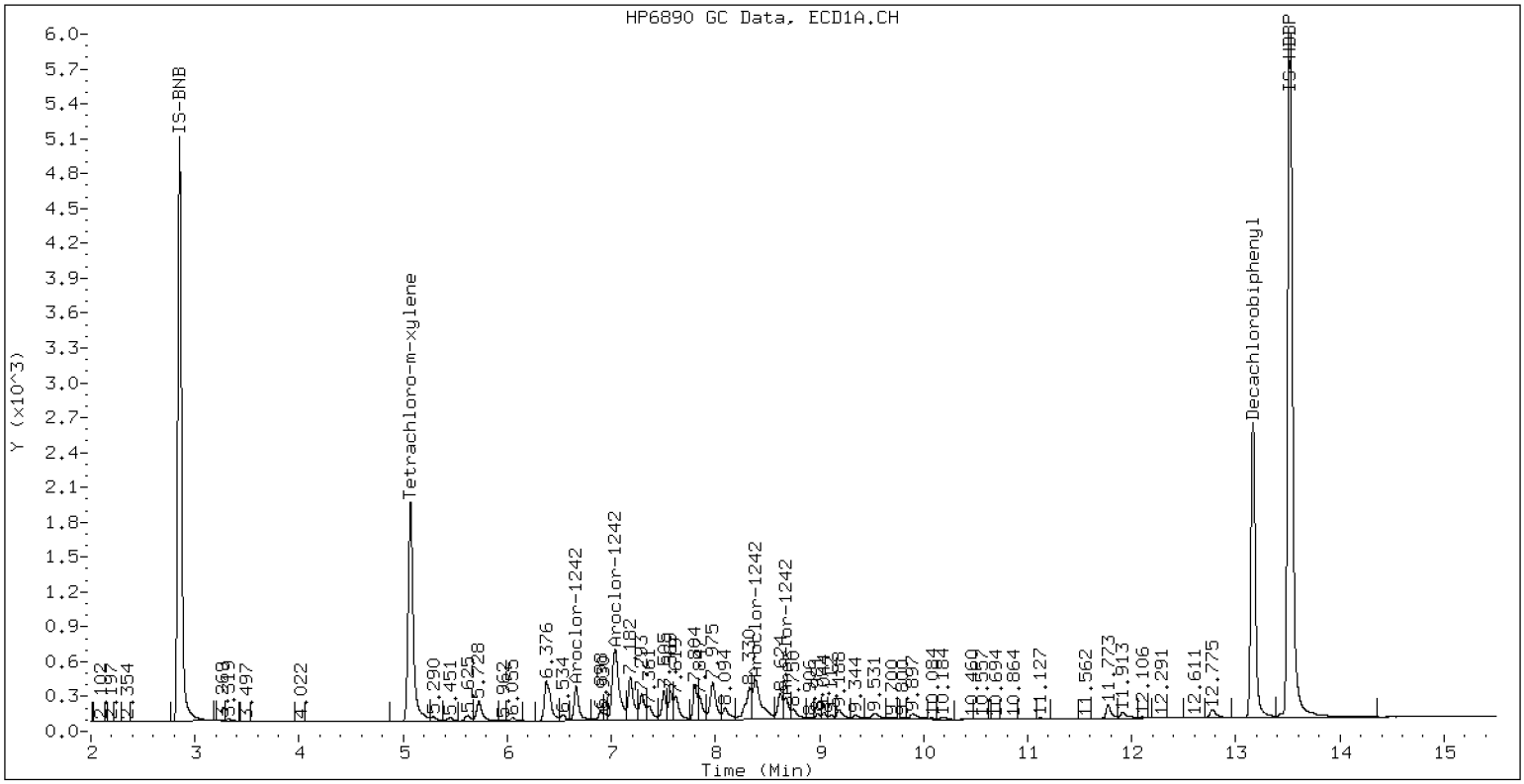
Total PCB Area Col2 (5.170 - 13.066) = 1613469 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

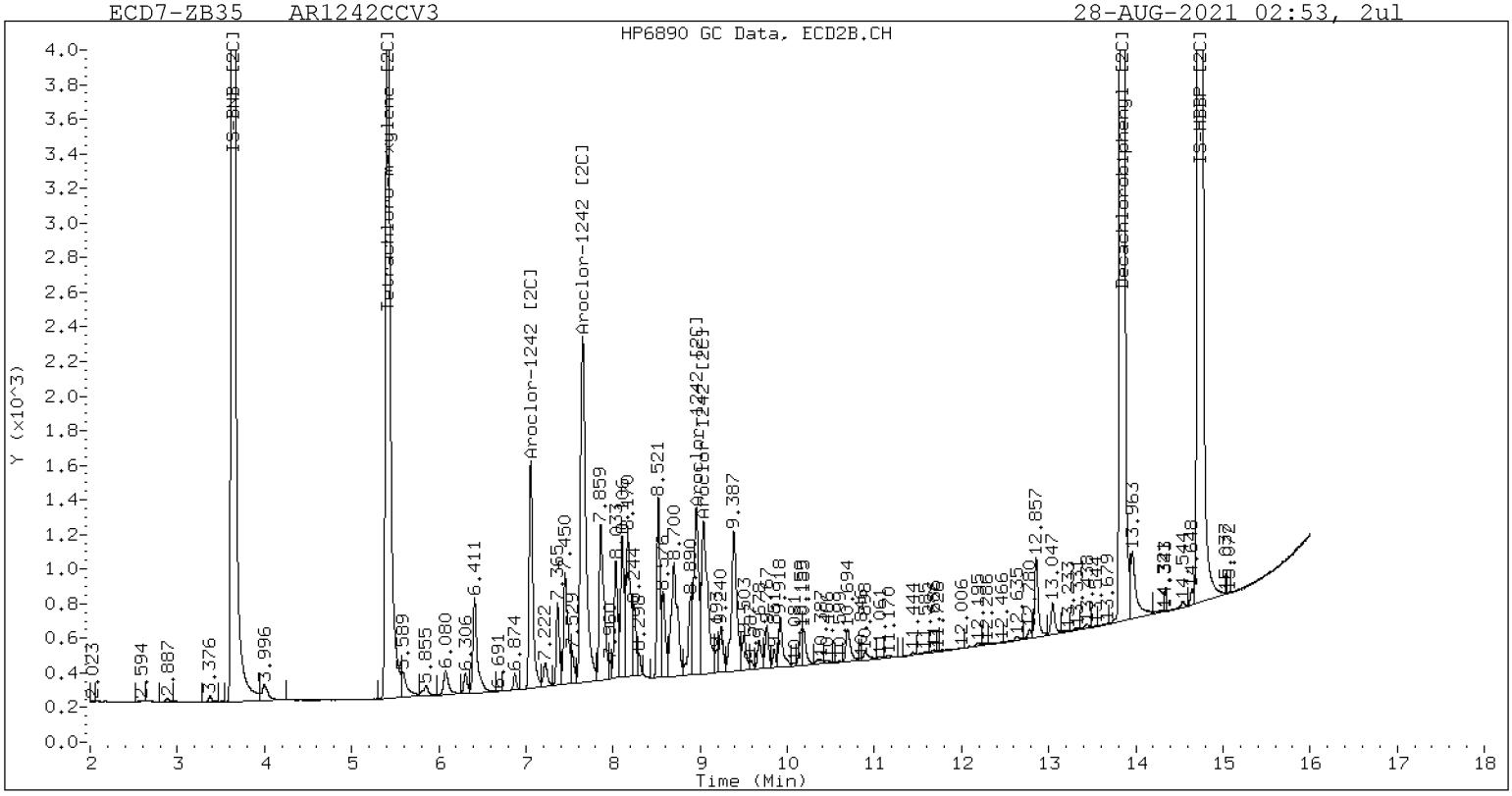
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242CCV3 28-AUG-2021 02:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242CCV3 28-AUG-2021 02:53, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08272134ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/28/21
Lab Sample ID:	SJH0396-CCV4	Injection Time:	03:13
Sequence Name:	AR1660CCV4		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	265	0.0446218	0.0470200		5.8	+/-20
Aroclor-1016 (1)	A	250.00	267	0.0283733	0.0303427		6.8	
Aroclor-1016 (2)	A	250.00	260	0.0867650	0.0903147		4.0	
Aroclor-1016 (3)	A	250.00	267	0.0389383	0.0416471		6.8	
Aroclor-1016 (4)	A	250.00	264	0.0244108	0.0257754		5.6	
Aroclor 1016 [2C]	A	250.00	255	0.0529840	0.0536268		1.9	+/-20
Aroclor-1016 (1) [2C]	A	250.00	248	0.0456173	0.0453016		-0.8	
Aroclor-1016 (2) [2C]	A	250.00	252	0.1020378	0.1028053		0.8	
Aroclor-1016 (3) [2C]	A	250.00	255	0.0400455	0.0408189		2.0	
Aroclor-1016 (4) [2C]	A	250.00	264	0.0242353	0.0255812		5.6	
Aroclor 1260	A	250.00	255	0.0461251	0.0470222		1.8	+/-20
Aroclor-1260 (1)	A	250.00	241	0.0359923	0.0346923		-3.6	
Aroclor-1260 (2)	A	250.00	259	0.0353250	0.0366352		3.6	
Aroclor-1260 (3)	A	250.00	255	0.0954741	0.0975415		2.0	
Aroclor-1260 (4)	A	250.00	259	0.0425365	0.0441385		3.6	
Aroclor-1260 (5)	A	250.00	259	0.0212978	0.0221033		3.6	
Aroclor 1260 [2C]	A	250.00	219	0.1108773	0.0969681		-12.4	+/-20
Aroclor-1260 (1) [2C]	A	250.00	213	0.0665032	0.0565636		-14.8	
Aroclor-1260 (2) [2C]	A	250.00	217	0.1932922	0.1678550		-13.2	
Aroclor-1260 (3) [2C]	A	250.00	221	0.1242917	0.1100383		-11.6	
Aroclor-1260 (4) [2C]	A	250.00	225	0.0594222	0.0534154		-10.0	
Decachlorobiphenyl	A	40.000	42.0	0.7261970	0.7619600		5.0	+/-20
Tetrachlorometaxylene	A	40.000	42.1	0.9669678	1.0177040		5.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.2	1.7775950	1.6980010		-4.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.8	1.0280520	1.0229840		-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: /2108127.b/08272134ECD7.D
Data file 2: /2108127.b/2108127.b/08272134ECD7.D
Method: \\target\share\chem4\ecd7.i\2108127.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV4
Client ID:
Injection Date: 28-AUG-2021 03:13
Report Date: 08/30/2021 14:37
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.070	0.000	129165	5.414	0.000	346695	42.1	39.8	5.6	Tetrachloro-m-xylene
13.166	0.000	155673	13.844	0.000	810853	42.0	38.2	9.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	253836	-1.9
Hexabromobiphenyl	425681	408612	-4.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	677811	-6.0
Hexabromobiphenyl	863111	955068	10.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.662	0.000	24069	267.4	1	7.056	0.000	95956	248.3
Aroclor-1016	2	7.038	0.000	71641	260.2	2	7.653	0.000	217758	251.9
Aroclor-1016	3	7.182	0.000	33036	267.4	3	7.858	0.000	86461	254.8
Aroclor-1016	4	7.292	0.000	20446	264.0	4	8.105	0.000	54185	263.9

Total Col1Ave (4 peaks): 264.7 Total Col2Ave (4 peaks): 254.7 RPD = 4
Corrected Ave (3 peaks): 263.9 Corrected Ave (3 peaks): 251.7 RPD = 5

CalAmt %D: 5.9 CalAmt %D: 1.9

Aroclor-1260	1	10.387	0.000	44299	241.0	1	11.424	0.000	168819	212.6
Aroclor-1260	2	10.704	0.000	46780	259.3	2	11.677	0.000	500978	217.1
Aroclor-1260	3	11.055	0.000	124552	255.4	3	12.259	0.000	328419	221.3
Aroclor-1260	4	11.456	0.000	56361	259.4	4	12.970	0.000	159423	224.7
Aroclor-1260	5	11.557	0.000	28224	259.5	NS	---			----

Total Col1Ave (5 peaks): 254.9 Total Col2Ave (4 peaks): 218.9 RPD = 15
Corrected Ave (4 peaks): 253.8 Corrected Ave (3 peaks): 217.0 RPD = 16

CalAmt %D: 2.0 CalAmt %D: -12.4

Total PCB Area Col1 (5.170 - 13.066) = 1278456 Col1 Total PCB = 0.5 ppm*

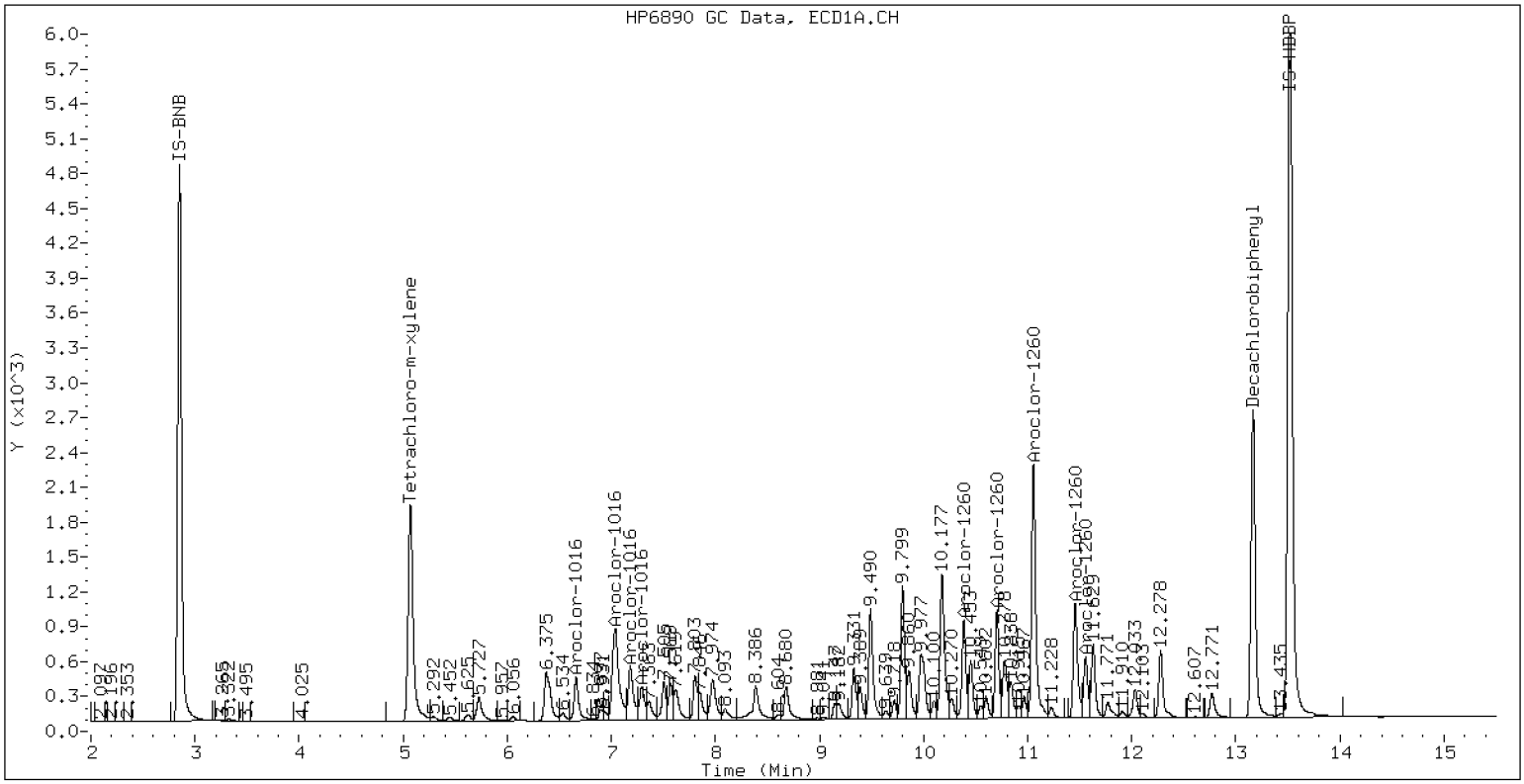
Total PCB Area Col2 (5.170 - 13.066) = 4529119 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

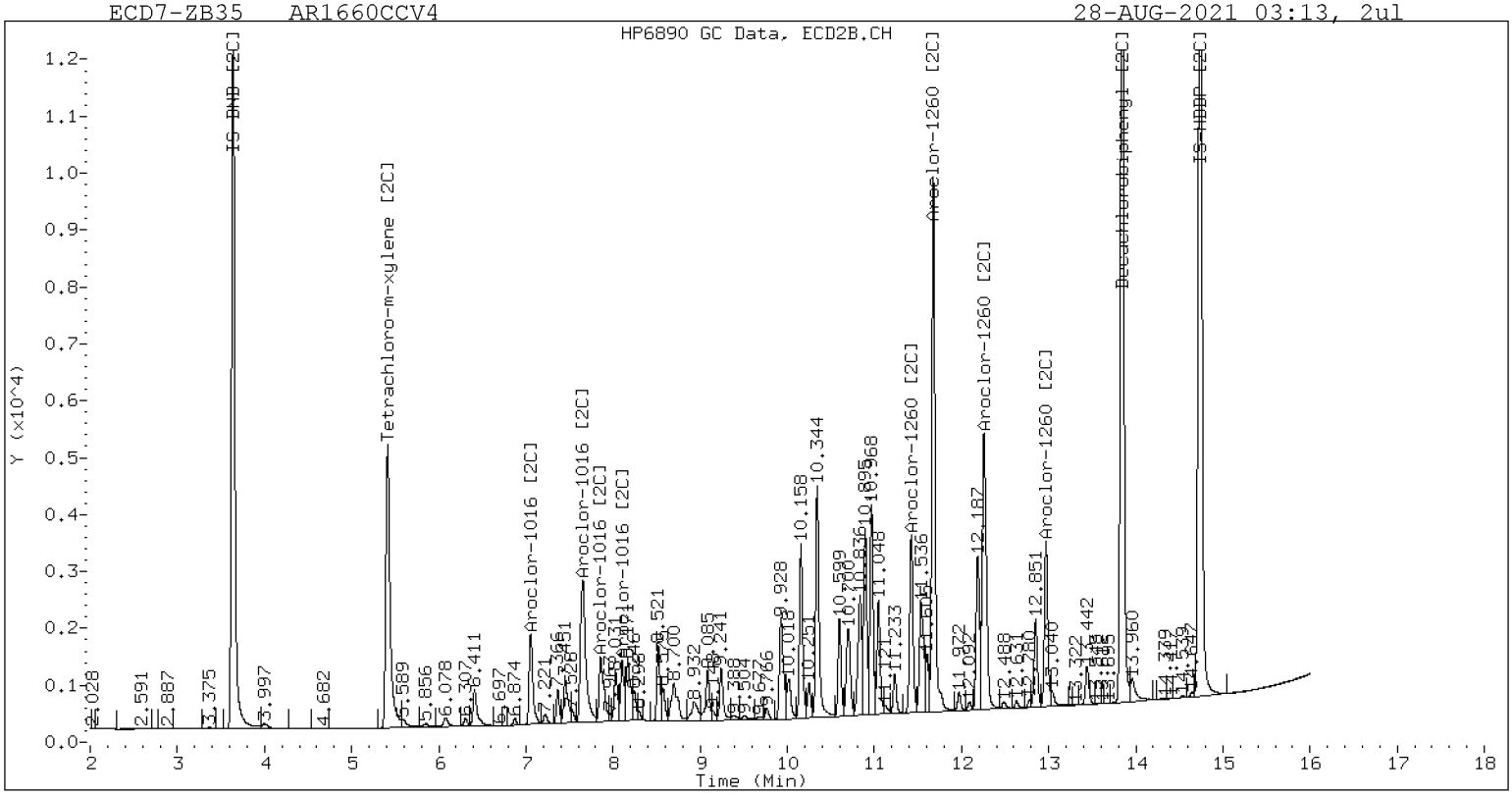
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV4 28-AUG-2021 03:13, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV4 28-AUG-2021 03:13, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08282109ECD7B.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/28/21
Lab Sample ID:	SJH0396-CCV5	Injection Time:	19:27
Sequence Name:	AR1248CCV5		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	265	0.0444871	0.0474165		6.0	+/-20
Aroclor-1248 (1)	A	250.00	268	0.0335259	0.0360179		7.2	
Aroclor-1248 (2)	A	250.00	277	0.0437624	0.0485281		10.8	
Aroclor-1248 (3)	A	250.00	270	0.0640809	0.0692183		8.0	
Aroclor-1248 (4)	A	250.00	245	0.0365791	0.0359016		-2.0	
Aroclor 1248 [2C]	A	250.00	235	0.0480909	0.0449411		-6.1	+/-20
Aroclor-1248 (1) [2C]	A	250.00	255	0.0331517	0.0338672		2.0	
Aroclor-1248 (2) [2C]	A	250.00	225	0.0403519	0.0362930		-10.0	
Aroclor-1248 (3) [2C]	A	250.00	243	0.0642727	0.0624926		-2.8	
Aroclor-1248 (4) [2C]	A	250.00	216	0.0545874	0.0471116		-13.6	
Decachlorobiphenyl	A	40.000	41.6	0.7261970	0.7557945		4.0	+/-20
Tetrachlorometaxylene	A	40.000	41.3	0.9669678	0.9993056		3.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.4	1.7775950	1.6610860		-6.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.7	1.0280520	1.0202440		-0.8	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210828.b/08282109ECD7.D
Data file 2: /210828.b/210828.b/08282109ECD7.D
Method: \\target\share\chem4\ecd7.i\210828.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV1
Client ID:
Injection Date: 28-AUG-2021 19:27
Report Date: 08/31/2021 08:40
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

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
5.069	0.001	123768	5.412	0.002	342801	41.3	39.7	4.1	Tetrachloro-m-xylene
13.165	0.001	153144	13.843	-0.000	752187	41.6	37.4	10.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	247708	-4.3
Hexabromobiphenyl	425681	405253	-4.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	671998	-6.8
Hexabromobiphenyl	863111	905657	4.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	7.803	0.000	27881	268.6	1	8.105	0.000	71121	255.4
Aroclor-1248	2	7.974	0.000	37565	277.2	2	8.520	0.000	76215	224.9
Aroclor-1248	3	8.384	0.000	53581	270.0	3	8.954	0.000	131234	243.1
Aroclor-1248	4	8.678	0.000	27791	245.4	4	9.382	0.000	98934	215.8

Total Col1Ave (4 peaks): 265.3 Total Col2Ave (4 peaks): 234.8 RPD = 12

Corrected Ave (3 peaks): 261.3 Corrected Ave (3 peaks): 227.9 RPD = 14

CalAmt %D: 6.1 CalAmt %D: -6.1

Total PCB Area Col1 (5.168 - 13.064) = 598835 Col1 Total PCB = 0.2 ppm*

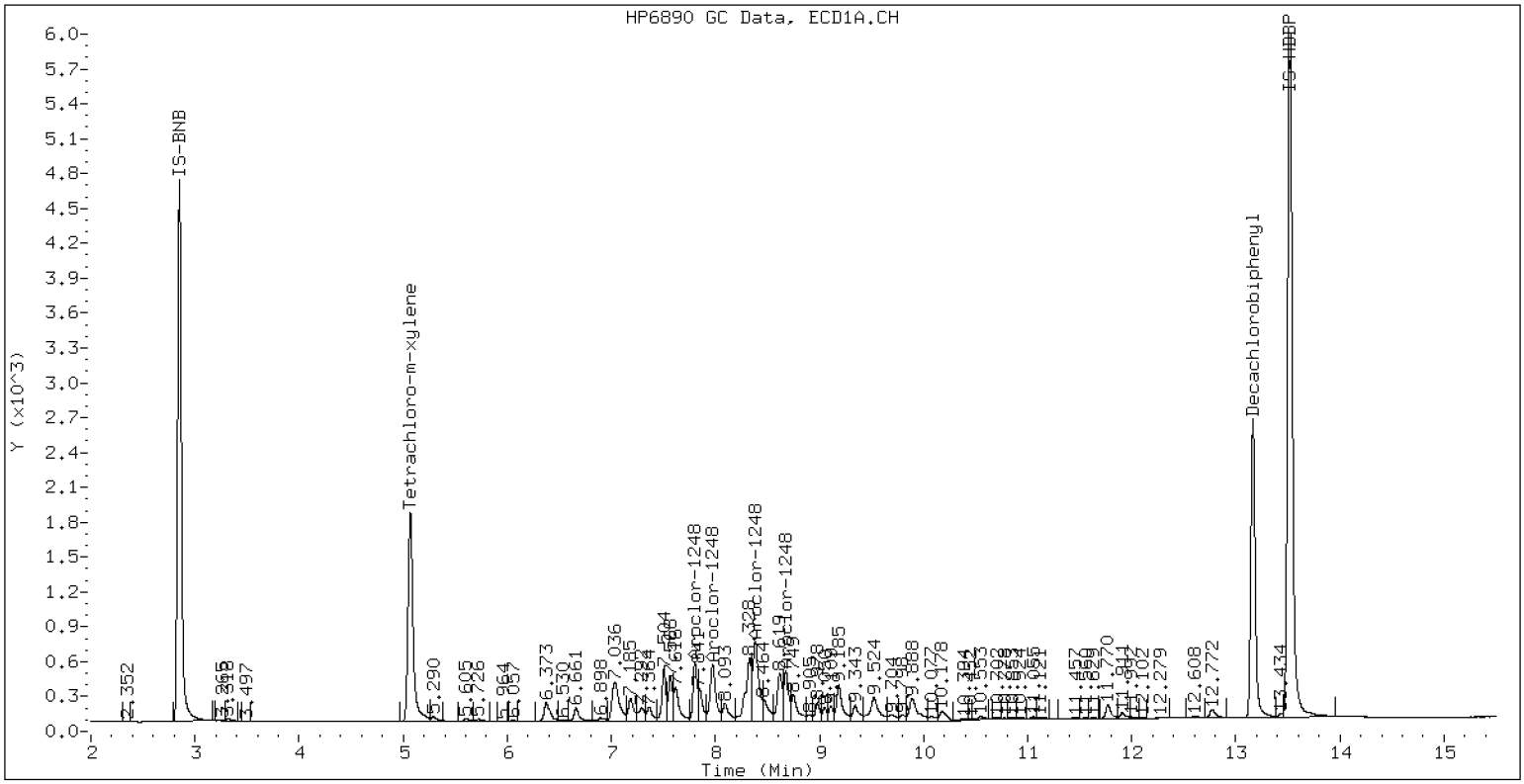
Total PCB Area Col2 (5.168 - 13.064) = 1871230 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

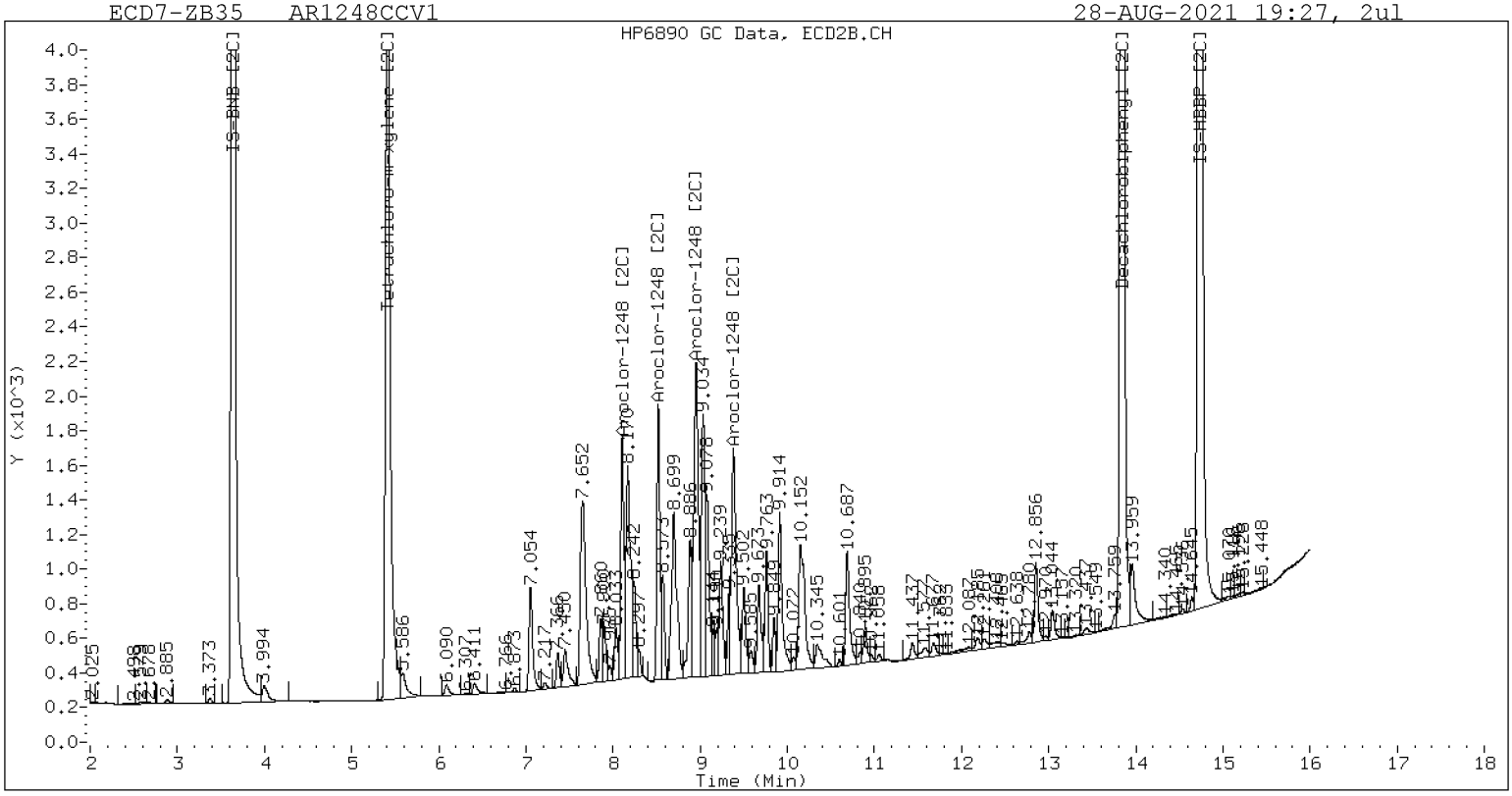
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1 28-AUG-2021 19:27, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1248CCV1 28-AUG-2021 19:27, 2ul

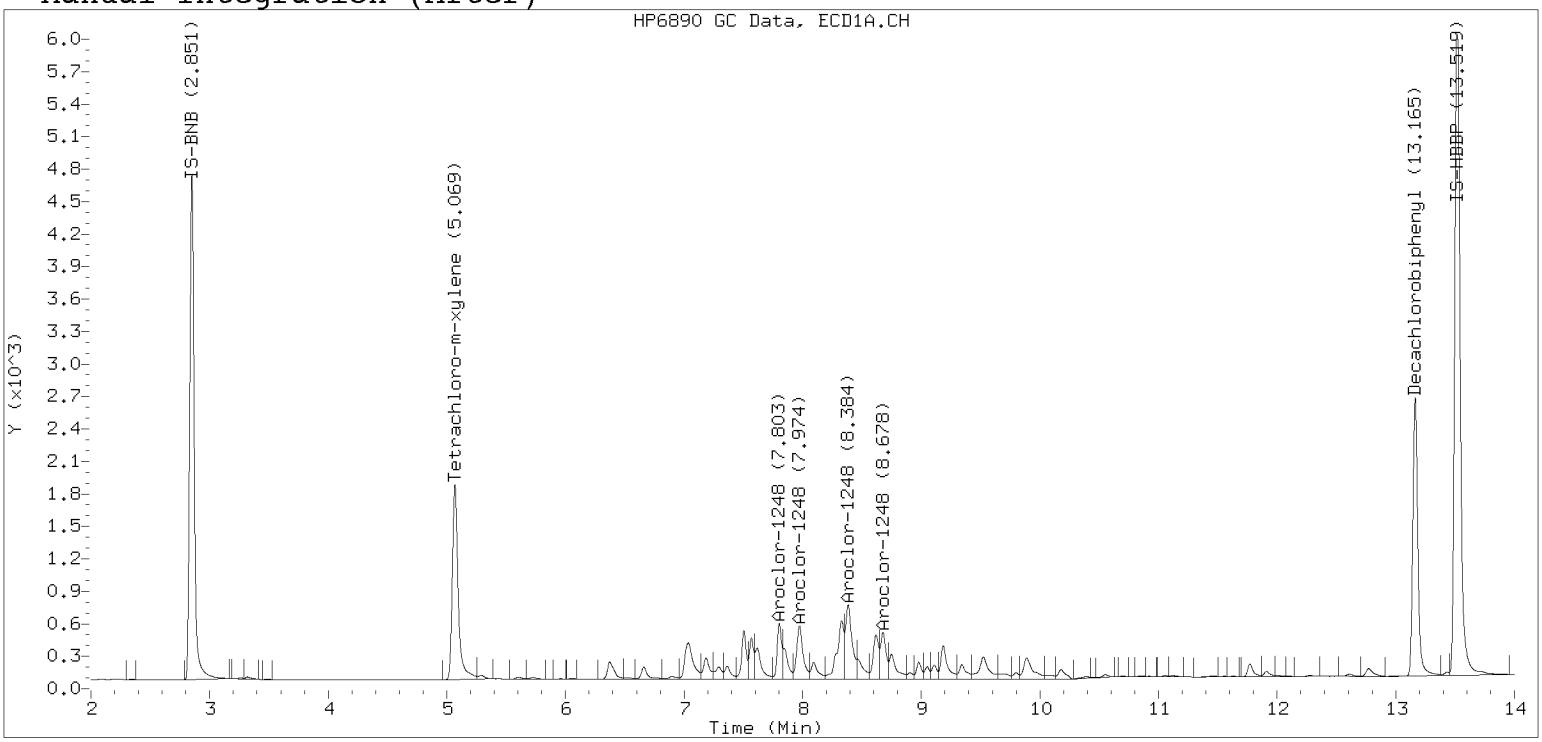


ZB-35 Manual Integration: NO

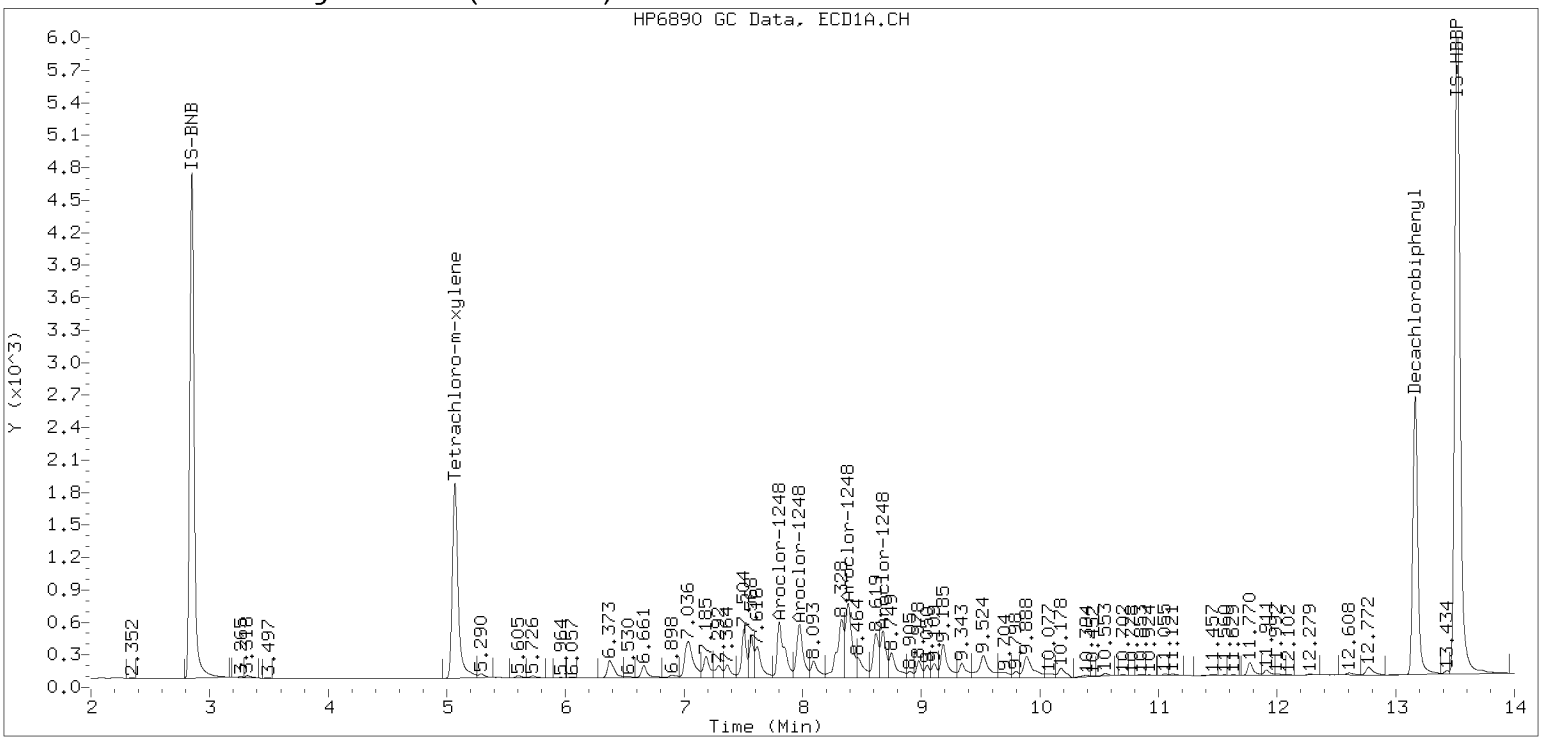
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210828.b/08282109ECD7.D Injection Date: 28-AUG-2021 19:27

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08282110ECD7B.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/28/21
Lab Sample ID:	SJH0396-CCV6	Injection Time:	19:47
Sequence Name:	AR1660CCV6		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	270	0.0446218	0.0480020		8.0	+/-20
Aroclor-1016 (1)	A	250.00	273	0.0283733	0.0309634		9.2	
Aroclor-1016 (2)	A	250.00	266	0.0867650	0.0921709		6.4	
Aroclor-1016 (3)	A	250.00	276	0.0389383	0.0429787		10.4	
Aroclor-1016 (4)	A	250.00	265	0.0244108	0.0258951		6.0	
Aroclor 1016 [2C]	A	250.00	268	0.0529840	0.0563373		7.2	+/-20
Aroclor-1016 (1) [2C]	A	250.00	261	0.0456173	0.0477059		4.4	
Aroclor-1016 (2) [2C]	A	250.00	264	0.1020378	0.1077794		5.6	
Aroclor-1016 (3) [2C]	A	250.00	267	0.0400455	0.0427589		6.8	
Aroclor-1016 (4) [2C]	A	250.00	280	0.0242353	0.0271048		12.0	
Aroclor 1260	A	250.00	258	0.0461251	0.0477733		3.4	+/-20
Aroclor-1260 (1)	A	250.00	241	0.0359923	0.0347203		-3.6	
Aroclor-1260 (2)	A	250.00	265	0.0353250	0.0373937		6.0	
Aroclor-1260 (3)	A	250.00	261	0.0954741	0.0996045		4.4	
Aroclor-1260 (4)	A	250.00	263	0.0425365	0.0447813		5.2	
Aroclor-1260 (5)	A	250.00	262	0.0212978	0.0223666		4.8	
Aroclor 1260 [2C]	A	250.00	224	0.1108773	0.0993502		-10.3	+/-20
Aroclor-1260 (1) [2C]	A	250.00	220	0.0665032	0.0585700		-12.0	
Aroclor-1260 (2) [2C]	A	250.00	222	0.1932922	0.1718292		-11.2	
Aroclor-1260 (3) [2C]	A	250.00	227	0.1242917	0.1128185		-9.2	
Aroclor-1260 (4) [2C]	A	250.00	228	0.0594222	0.0541832		-8.8	
Decachlorobiphenyl	A	40.000	42.4	0.7261970	0.7702160		6.0	+/-20
Tetrachlorometaxylene	A	40.000	42.8	0.9669678	1.0356860		7.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.7	1.7775950	1.7204870		-3.3	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.6	1.0280520	1.0690160		4.0	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210828.b/08282110ECD7.D
Data file 2: /210828.b/210828.b/08282110ECD7.D
Method: \\target\share\chem4\ecd7.i\210828.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV2
Client ID:
Injection Date: 28-AUG-2021 19:47
Report Date: 08/31/2021 08:40
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	0.000	117932	5.411	0.001	326425	42.8	41.6	3.0	Tetrachloro-m-xylene
13.165	0.002	143777	13.844	0.001	729489	42.4	38.7	9.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	227737	-12.0
Hexabromobiphenyl	425681	373342	-12.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	610702	-15.3
Hexabromobiphenyl	863111	848003	-1.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.661	0.001	22036	272.8	1	7.055	0.001	91044	261.4
Aroclor-1016	2	7.036	0.001	65596	265.6	2	7.652	-0.001	205691	264.1
Aroclor-1016	3	7.182	0.000	30587	275.9	3	7.857	-0.000	81603	266.9
Aroclor-1016	4	7.290	-0.000	18429	265.2	4	8.105	0.001	51728	279.6

Total Col1Ave (4 peaks): 269.9 Total Col2Ave (4 peaks): 268.0 RPD = 1
Corrected Ave (3 peaks): 267.9 Corrected Ave (3 peaks): 264.2 RPD = 1

CalAmt %D: 8.0 CalAmt %D: 7.2

Aroclor-1260	1	10.386	0.001	40508	241.2	1	11.424	0.001	155211	220.2
Aroclor-1260	2	10.704	-0.000	43627	264.6	2	11.677	0.000	455349	222.2
Aroclor-1260	3	11.054	0.001	116208	260.8	3	12.259	-0.000	298970	226.9
Aroclor-1260	4	11.456	0.001	52246	263.2	4	12.969	-0.001	143586	228.0
Aroclor-1260	5	11.556	0.000	26095	262.5	NS	---			----

Total Col1Ave (5 peaks): 258.5 Total Col2Ave (4 peaks): 224.3 RPD = 14
Corrected Ave (4 peaks): 256.9 Corrected Ave (3 peaks): 223.1 RPD = 14

CalAmt %D: 3.4 CalAmt %D: -10.3

Total PCB Area Col1 (5.168 - 13.064) = 1175873 Col1 Total PCB = 0.5 ppm*

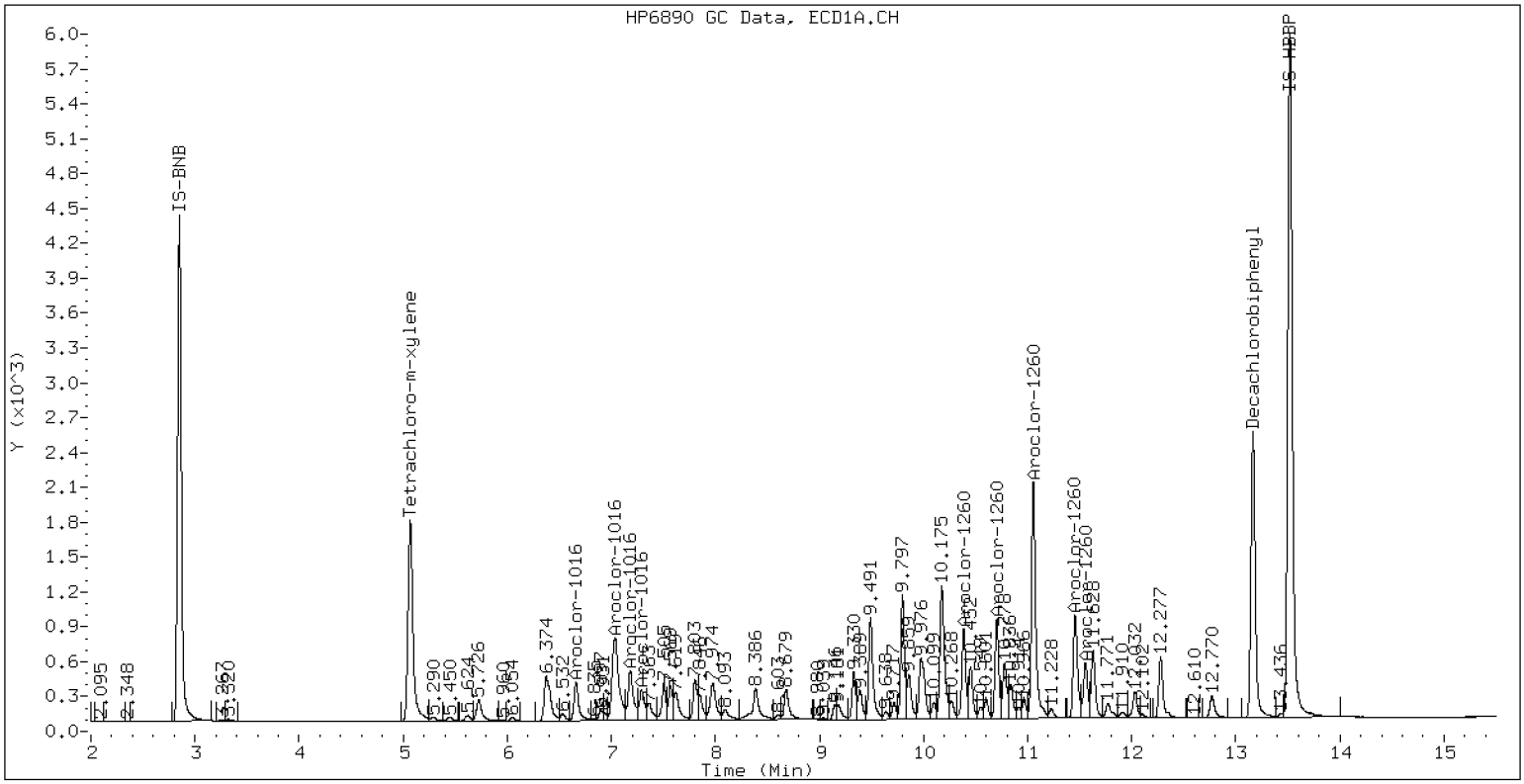
Total PCB Area Col2 (5.168 - 13.064) = 4169650 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

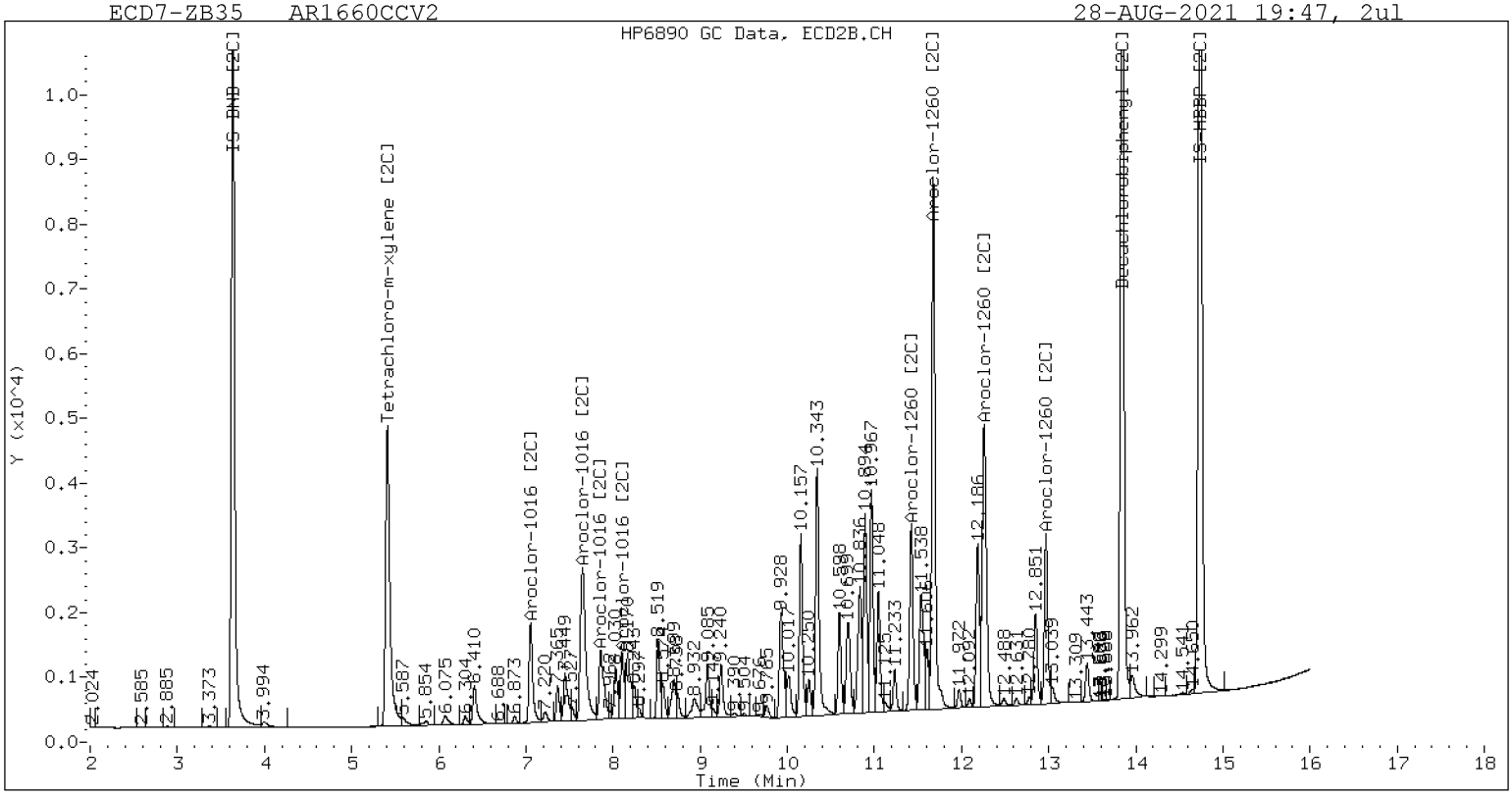
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2 28-AUG-2021 19:47, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2 28-AUG-2021 19:47, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08282112ECD7B.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/28/21
Lab Sample ID:	SJH0396-CCV7	Injection Time:	20:28
Sequence Name:	AR1242CCV7		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	266	0.0350459	0.0378220		6.3	+/-20
Aroclor-1242 (1)	A	250.00	268	0.0220414	0.0236681		7.2	
Aroclor-1242 (2)	A	250.00	263	0.0657077	0.0690962		5.2	
Aroclor-1242 (3)	A	250.00	298	0.0372229	0.0443112		19.2	
Aroclor-1242 (4)	A	250.00	234	0.0152114	0.0142126		-6.4	
Aroclor 1242 [2C]	A	250.00	250	0.0490898	0.0492416		-0.2	+/-20
Aroclor-1242 (1) [2C]	A	250.00	252	0.0367813	0.0370704		0.8	
Aroclor-1242 (2) [2C]	A	250.00	255	0.0798974	0.0815930		2.0	
Aroclor-1242 (3) [2C]	A	250.00	245	0.0373257	0.0365312		-2.0	
Aroclor-1242 (4) [2C]	A	250.00	246	0.0423546	0.0417719		-1.6	
Decachlorobiphenyl	A	40.000	40.7	0.7261970	0.7383494		1.8	+/-20
Tetrachlorometaxylene	A	40.000	41.0	0.9669678	0.9905934		2.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.1	1.7775950	1.6916210		-4.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.9	1.0280520	1.0253910		-0.3	+/-20

* Values outside of QC limits

* Values outside of QC limits

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

Data file 1: /210828.b/08282112ECD7.D
Data file 2: /210828.b/210828.b/08282112ECD7.D
Method: \\target\share\chem4\ecd7.i\210828.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242CCV3
Client ID:
Injection Date: 28-AUG-2021 20:28
Report Date: 08/31/2021 08:40
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	0.000	118208	5.412	0.001	329237	41.0	39.9	2.7	Tetrachloro-m-xylene
13.165	0.001	147163	13.843	0.000	754627	40.7	38.1	6.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	238661	-7.8
Hexabromobiphenyl	425681	398627	-6.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	642169	-10.9
Hexabromobiphenyl	863111	892194	3.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.000	17652	268.4	1	7.054	0.000	74392	252.0
Aroclor-1242	2	7.036	0.000	51533	262.9	2	7.652	0.000	163739	255.3
Aroclor-1242	3	8.385	0.000	33048	297.6	3	8.958	0.000	73310	244.7
Aroclor-1242	4	8.675	0.000	10600	233.6	4	9.038	0.000	83827	246.6

Total Col1Ave (4 peaks): 265.6 Total Col2Ave (4 peaks): 249.6 RPD = 6

Corrected Ave (3 peaks): 255.0 Corrected Ave (3 peaks): 247.7 RPD = 3

CalAmt %D: 6.3 CalAmt %D: -0.1

Total PCB Area Col1 (5.168 - 13.064) = 395583 Col1 Total PCB = 0.2 ppm*

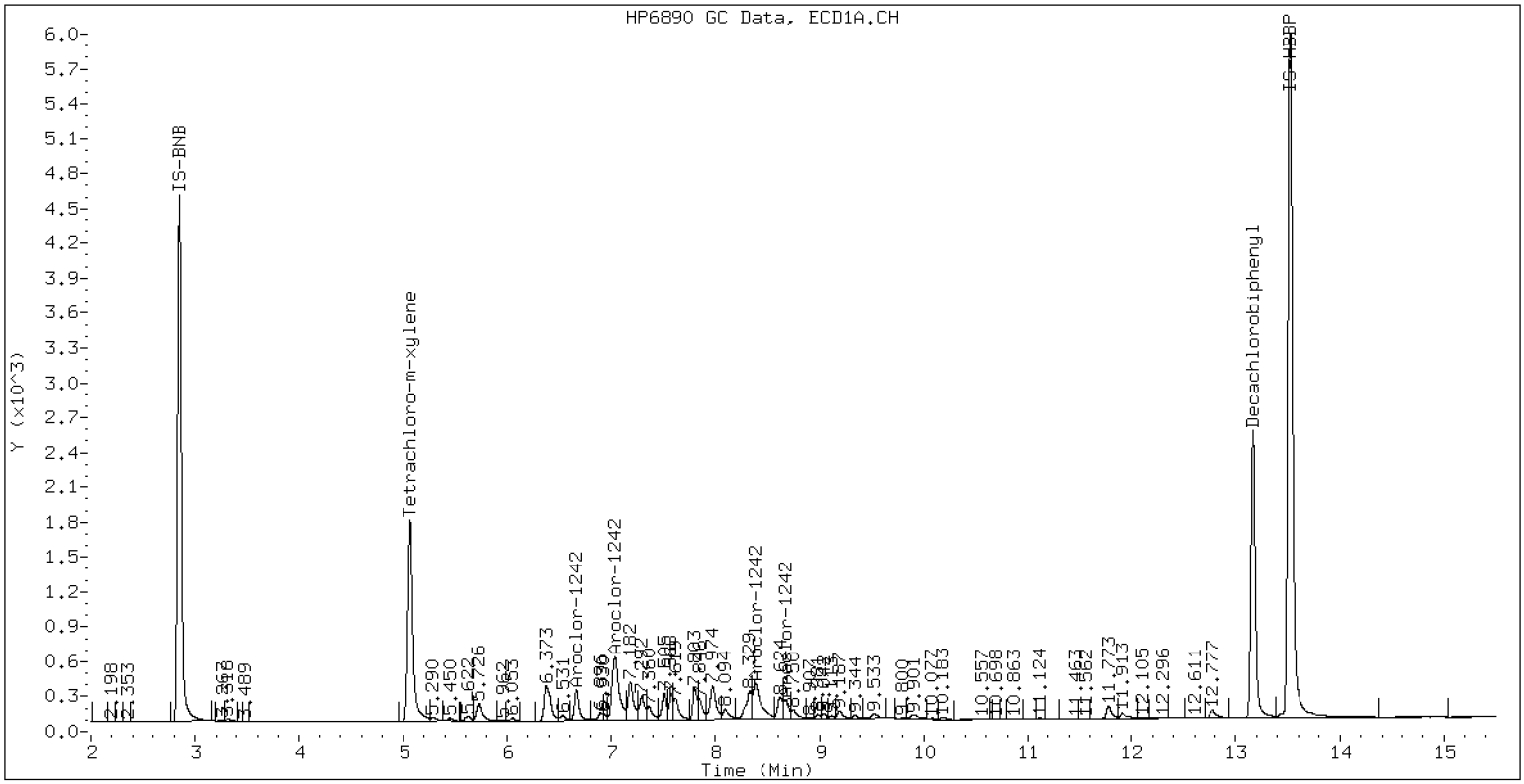
Total PCB Area Col2 (5.168 - 13.064) = 1499462 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

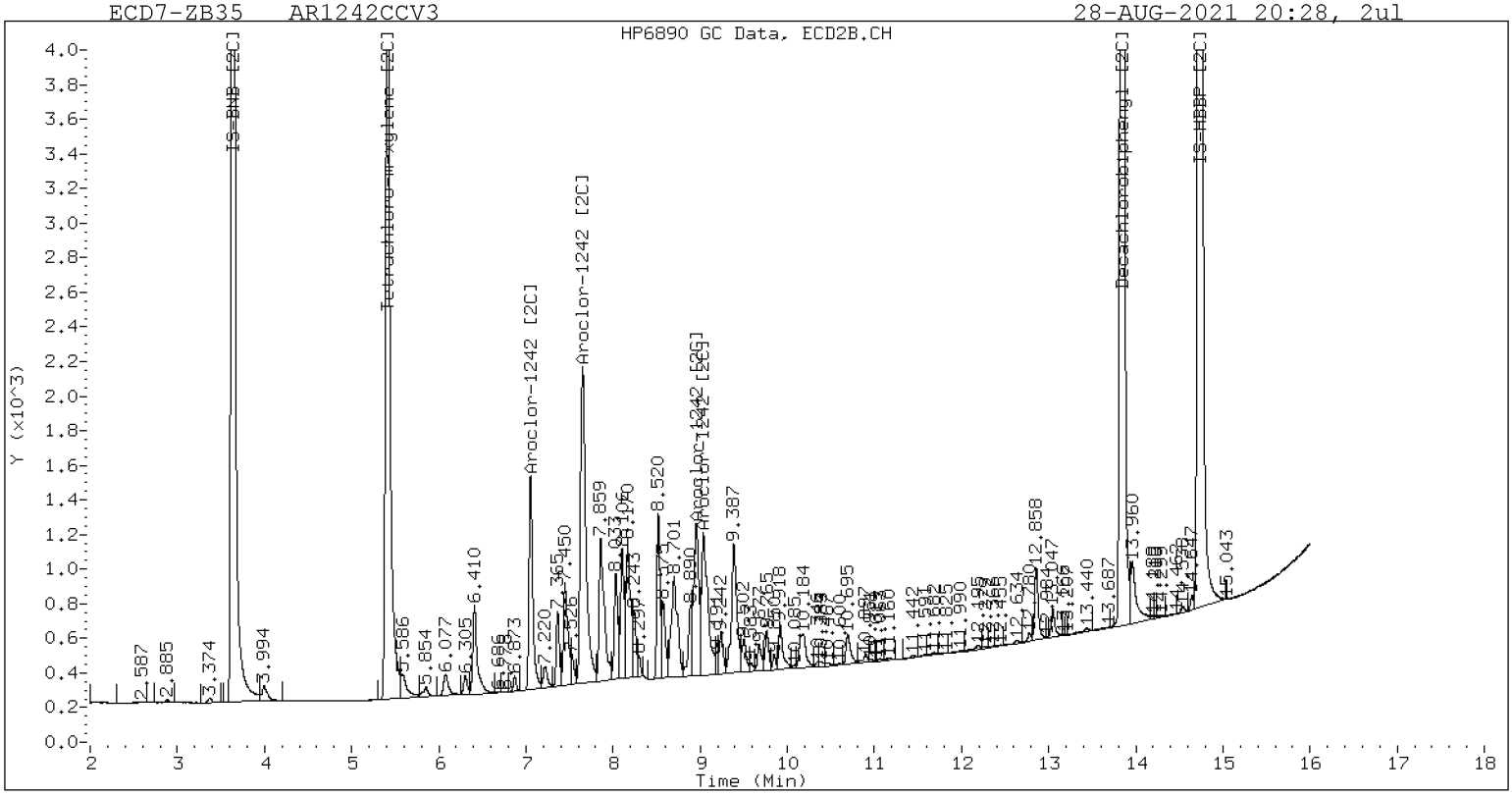
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242CCV3 28-AUG-2021 20:28, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242CCV3 28-AUG-2021 20:28, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08282113ECD7B.D	Calibration Date:	08/13/2021
Sequence:	SJH0396	Injection Date:	08/28/21
Lab Sample ID:	SJH0396-CCV8	Injection Time:	20:49
Sequence Name:	AR1660CCV8		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	267	0.0446218	0.0474126		6.7	+/-20
Aroclor-1016 (1)	A	250.00	268	0.0283733	0.0303970		7.2	
Aroclor-1016 (2)	A	250.00	262	0.0867650	0.0911258		4.8	
Aroclor-1016 (3)	A	250.00	271	0.0389383	0.0421656		8.4	
Aroclor-1016 (4)	A	250.00	266	0.0244108	0.0259619		6.4	
Aroclor 1016 [2C]	A	250.00	266	0.0529840	0.0559346		6.4	+/-20
Aroclor-1016 (1) [2C]	A	250.00	259	0.0456173	0.0472399		3.6	
Aroclor-1016 (2) [2C]	A	250.00	262	0.1020378	0.1070804		4.8	
Aroclor-1016 (3) [2C]	A	250.00	265	0.0400455	0.0424629		6.0	
Aroclor-1016 (4) [2C]	A	250.00	278	0.0242353	0.0269551		11.2	
Aroclor 1260	A	250.00	255	0.0461251	0.0471239		2.0	+/-20
Aroclor-1260 (1)	A	250.00	237	0.0359923	0.0341666		-5.2	
Aroclor-1260 (2)	A	250.00	261	0.0353250	0.0368290		4.4	
Aroclor-1260 (3)	A	250.00	258	0.0954741	0.0983576		3.2	
Aroclor-1260 (4)	A	250.00	260	0.0425365	0.0441871		4.0	
Aroclor-1260 (5)	A	250.00	259	0.0212978	0.0220791		3.6	
Aroclor 1260 [2C]	A	250.00	223	0.1108773	0.0989237		-10.7	+/-20
Aroclor-1260 (1) [2C]	A	250.00	218	0.0665032	0.0581339		-12.8	
Aroclor-1260 (2) [2C]	A	250.00	221	0.1932922	0.1707813		-11.6	
Aroclor-1260 (3) [2C]	A	250.00	227	0.1242917	0.1127203		-9.2	
Aroclor-1260 (4) [2C]	A	250.00	227	0.0594222	0.0540591		-9.2	
Decachlorobiphenyl	A	40.000	42.1	0.7261970	0.7651809		5.3	+/-20
Tetrachlorometaxylene	A	40.000	42.4	0.9669678	1.0262260		6.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.7	1.7775950	1.7203440		-3.3	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.2	1.0280520	1.0602270		3.0	+/-20

* Values outside of QC limits

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

Data file 1: /210828.b/08282113ECD7.D
Data file 2: /210828.b/210828.b/08282113ECD7.D
Method: \\target\share\chem4\ecd7.i\210828.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV4
Client ID:
Injection Date: 28-AUG-2021 20:49
Report Date: 08/31/2021 08:40
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	0.000	120950	5.410	0.000	336225	42.5	41.3	2.9	Tetrachloro-m-xylene
13.164	0.000	148900	13.843	0.000	762097	42.1	38.7	8.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	235718	-8.9
Hexabromobiphenyl	425681	389189	-8.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	634251	-12.0
Hexabromobiphenyl	863111	885982	2.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- 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	6.660	0.000	22391	267.8	1	7.054	0.000	93631	258.9
Aroclor-1016	2	7.035	0.000	67125	262.6	2	7.652	0.000	212237	262.4
Aroclor-1016	3	7.182	0.000	31060	270.7	3	7.858	0.000	84163	265.1
Aroclor-1016	4	7.290	0.000	19124	265.9	4	8.104	0.000	53426	278.1

Total Col1Ave (4 peaks): 266.8 Total Col2Ave (4 peaks): 266.1 RPD = 0
Corrected Ave (3 peaks): 265.4 Corrected Ave (3 peaks): 262.1 RPD = 1

CalAmt %D: 6.7 CalAmt %D: 6.4

Aroclor-1260	1	10.386	0.000	41554	237.3	1	11.423	0.000	160955	218.5
Aroclor-1260	2	10.704	0.000	44792	260.6	2	11.676	0.000	472841	220.9
Aroclor-1260	3	11.054	0.000	119624	257.6	3	12.259	0.000	312088	226.7
Aroclor-1260	4	11.455	0.000	53741	259.7	4	12.970	0.000	149673	227.4
Aroclor-1260	5	11.556	0.000	26853	259.2	NS	---			----

Total Col1Ave (5 peaks): 254.9 Total Col2Ave (4 peaks): 223.4 RPD = 13
Corrected Ave (4 peaks): 253.4 Corrected Ave (3 peaks): 222.0 RPD = 13

CalAmt %D: 2.0 CalAmt %D: -10.6

Total PCB Area Col1 (5.168 - 13.064) = 1204664 Col1 Total PCB = 0.5 ppm*

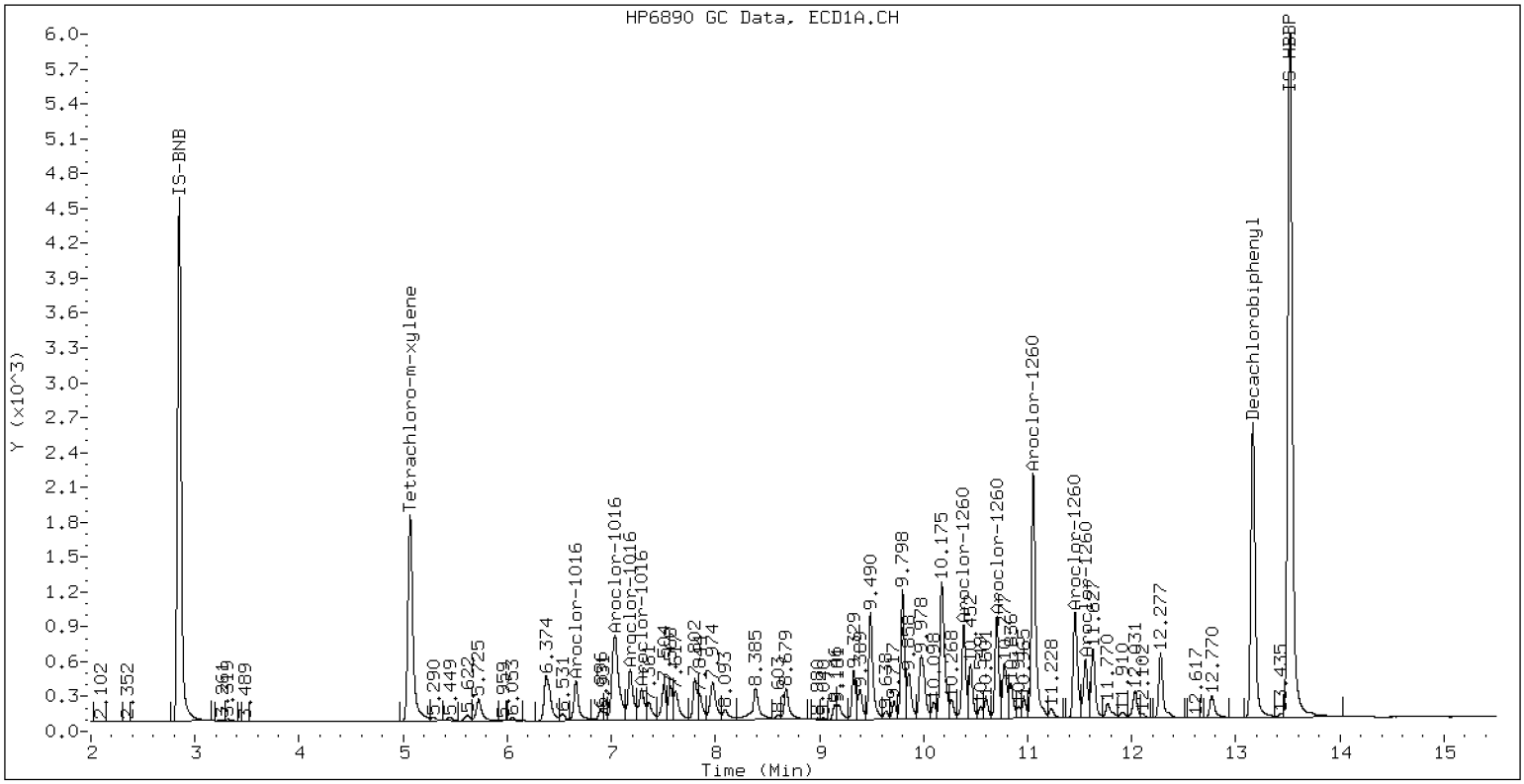
Total PCB Area Col2 (5.168 - 13.064) = 4314719 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

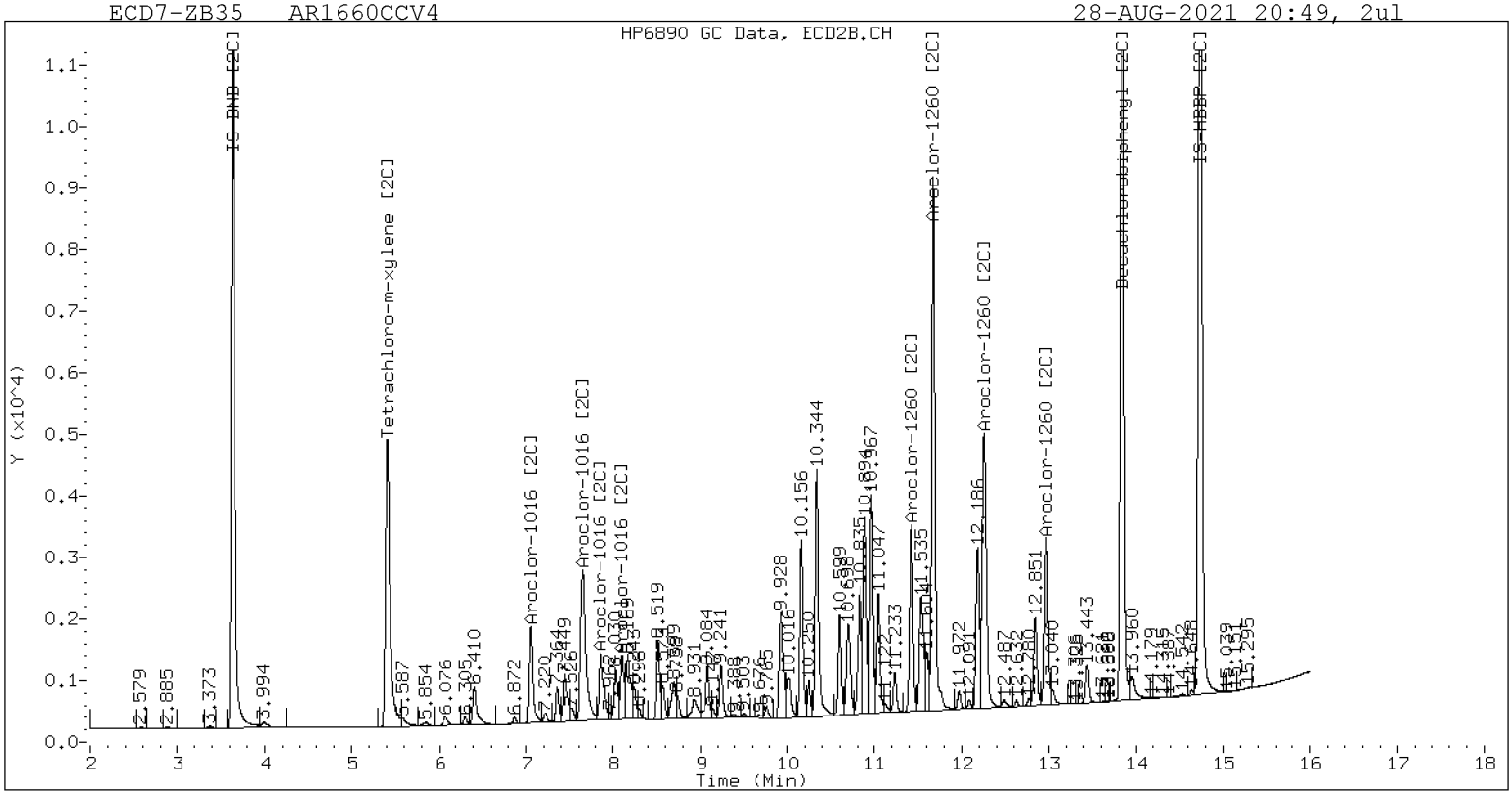
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV4 28-AUG-2021 20:49, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV4 28-AUG-2021 20:49, 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:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0176	Instrument:	ECD7
		Calibration:	EH00034

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SJH0176-CAL1	08132105ECD7.D	08132105ECD7.D	NA	08/13/21 20:03
Cal Standard	SJH0176-CAL2	08132106ECD7.D	08132106ECD7.D	NA	08/13/21 20:24
Cal Standard	SJH0176-CAL3	08132107ECD7.D	08132107ECD7.D	NA	08/13/21 20:44
Cal Standard	SJH0176-CAL4	08132108ECD7.D	08132108ECD7.D	NA	08/13/21 21:05
Cal Standard	SJH0176-CAL5	08132109ECD7.D	08132109ECD7.D	NA	08/13/21 21:25
Cal Standard	SJH0176-CAL6	08132110ECD7.D	08132110ECD7.D	NA	08/13/21 21:46
Cal Standard	SJH0176-CAL7	08132111ECD7.D	08132111ECD7.D	NA	08/13/21 22:06
Cal Standard	SJH0176-CAL8	08132112ECD7.D	08132112ECD7.D	NA	08/13/21 22:27
Cal Standard	SJH0176-CAL9	08132113ECD7.D	08132113ECD7.D	NA	08/13/21 22:47
Cal Standard	SJH0176-CALA	08132114ECD7.D	08132114ECD7.D	NA	08/13/21 23:08
Cal Standard	SJH0176-CALB	08132115ECD7.D	08132115ECD7.D	NA	08/13/21 23:28
Cal Standard	SJH0176-CALC	08132116ECD7.D	08132116ECD7.D	NA	08/13/21 23:49
Cal Standard	SJH0176-CALD	08132117ECD7.D	08132117ECD7.D	NA	08/14/21 00:09
Cal Standard	SJH0176-CALE	08132118ECD7.D	08132118ECD7.D	NA	08/14/21 00:30
Cal Standard	SJH0176-CALF	08132119ECD7.D	08132119ECD7.D	NA	08/14/21 00:50
Cal Standard	SJH0176-CALG	08132120ECD7.D	08132120ECD7.D	NA	08/14/21 01:11
Cal Standard	SJH0176-CALH	08132121ECD7.D	08132121ECD7.D	NA	08/14/21 01:31
Cal Standard	SJH0176-CALI	08132122ECD7.D	08132122ECD7.D	NA	08/14/21 01:52

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 8/16/2021 5:13:05PM

ANALYSIS SEQUENCE

SJH0176

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0176-CAL1	0.02PPM AR1660	QC		1	J008420	J008446	
SJH0176-CAL2	0.05PPM AR1660	QC		2	J008419	J008446	
SJH0176-CAL3	0.1PPM AR1660	QC		3	J008418	J008446	
SJH0176-CAL4	0.25PPM AR1660	QC		4	J008417	J008446	
SJH0176-CAL5	0.5PPM AR1660	QC		5	J008416	J008446	
SJH0176-CAL6	1PPM AR1660	QC		6	J008134	J008446	
SJH0176-CAL7	0.02PPM AR1242	QC		7	J008425	J008446	
SJH0176-CAL8	0.05PPM AR1242	QC		8	J008424	J008446	
SJH0176-CAL9	0.1PPM AR1242	QC		9	J008423	J008446	
SJH0176-CALA	0.25PPM AR1242	QC		10	J008422	J008446	
SJH0176-CALB	0.5PPM AR1242	QC		11	J008421	J008446	
SJH0176-CALC	1PPM AR1242	QC		12	J008397	J008446	
SJH0176-CALD	0.02PPM AR1248	QC		13	J008430	J008446	
SJH0176-CALE	0.05PPM AR1248	QC		14	J008429	J008446	
SJH0176-CALF	0.1PPM AR1248	QC		15	J008428	J008446	
SJH0176-CALG	0.25PPM AR1248	QC		16	J008427	J008446	
SJH0176-CALH	0.5PPM AR1248	QC		17	J008426	J008446	
SJH0176-CALI	1PPM AR1248	QC		18	J008398	J008446	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 13-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242,
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242,
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242,
2308	08132114.D	SEQ-CALA		1	Aroclor-1242,
2328	08132115.D	SEQ-CALB		1	Aroclor-1242,
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0030	08132118.D	SEQ-CALE		1	Aroclor-1248,
0050	08132119.D	SEQ-CALF		1	Aroclor-1248,
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	NO MANUAL INTEGRATION
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION
0841	08132142.D	SEQ-SCV2		1	NO MANUAL INTEGRATION
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242 [2C],
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242 [2C],
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242 [2C],
2308	08132114.D	SEQ-CALA		1	NO MANUAL INTEGRATION
2328	08132115.D	SEQ-CALB		1	NO MANUAL INTEGRATION
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248 [2C],
0030	08132118.D	SEQ-CALE		1	Aroclor-1248 [2C],
0050	08132119.D	SEQ-CALF		1	NO MANUAL INTEGRATION
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	Aroclor-1248 [2C],
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0841	08132142.D	SEQ-SCV2		1	Aroclor-1242 [2C], Aroclor-1248 [2C],
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	13-AUG-2021 18:41	08132101.D	1	RINSE	
2	13-AUG-2021 19:02	08132102.D	1	RINSE	
3	13-AUG-2021 19:22	08132103.D	1	RINSE	
4	13-AUG-2021 19:43	08132104.D	1	SEQ-IBL1	
5	13-AUG-2021 20:03	08132105.D	1	SEQ-CAL1	
6	13-AUG-2021 20:24	08132106.D	1	SEQ-CAL2	
7	13-AUG-2021 20:44	08132107.D	1	SEQ-CAL3	
8	13-AUG-2021 21:05	08132108.D	1	SEQ-CAL4	
9	13-AUG-2021 21:25	08132109.D	1	SEQ-CAL5	
10	13-AUG-2021 21:46	08132110.D	1	SEQ-CAL6	
11	13-AUG-2021 22:06	08132111.D	1	SEQ-CAL7	
12	13-AUG-2021 22:27	08132112.D	1	SEQ-CAL8	
13	13-AUG-2021 22:47	08132113.D	1	SEQ-CAL9	
14	13-AUG-2021 23:08	08132114.D	1	SEQ-CALA	
15	13-AUG-2021 23:28	08132115.D	1	SEQ-CALB	
16	13-AUG-2021 23:49	08132116.D	1	SEQ-CALC	
17	14-AUG-2021 00:09	08132117.D	1	SEQ-CALD	
18	14-AUG-2021 00:30	08132118.D	1	SEQ-CALE	
19	14-AUG-2021 00:50	08132119.D	1	SEQ-CALF	
20	14-AUG-2021 01:11	08132120.D	1	SEQ-CALG	
21	14-AUG-2021 01:31	08132121.D	1	SEQ-CALH	
22	14-AUG-2021 01:52	08132122.D	1	SEQ-CALI	
23	14-AUG-2021 02:12	08132123.D	1	SEQ-CALJ	
24	14-AUG-2021 02:33	08132124.D	1	SEQ-CALK	
25	14-AUG-2021 02:53	08132125.D	1	SEQ-CALL	
26	14-AUG-2021 03:13	08132126.D	1	SEQ-CALM	
27	14-AUG-2021 03:34	08132127.D	1	SEQ-CALN	
28	14-AUG-2021 03:54	08132128.D	1	SEQ-CALO	
29	14-AUG-2021 04:15	08132129.D	1	SEQ-CALP	
30	14-AUG-2021 04:35	08132130.D	1	SEQ-CALQ	
31	14-AUG-2021 04:56	08132131.D	1	SEQ-CALR	
32	14-AUG-2021 05:16	08132132.D	1	SEQ-CALS	
33	14-AUG-2021 05:37	08132133.D	1	SEQ-CALT	
34	14-AUG-2021 05:57	08132134.D	1	SEQ-CALU	
35	14-AUG-2021 06:18	08132135.D	1	SEQ-CALV	
36	14-AUG-2021 06:38	08132136.D	1	SEQ-CALW	
37	14-AUG-2021 06:59	08132137.D	1	SEQ-CALX	
38	14-AUG-2021 07:19	08132138.D	1	SEQ-CALY	
39	14-AUG-2021 07:40	08132139.D	1	SEQ-CALZ	
40	14-AUG-2021 08:00	08132140.D	1	SEQ-CALAA	
41	14-AUG-2021 08:21	08132141.D	1	SEQ-SCV1	
42	14-AUG-2021 08:41	08132142.D	1	SEQ-SCV2	
43	14-AUG-2021 09:02	08132143.D	1	SEQ-SCV3	
44	14-AUG-2021 09:22	08132144.D	1	SEQ-SCV4	
45	14-AUG-2021 09:43	08132145.D	1	SEQ-SCV5	
46	14-AUG-2021 10:03	08132146.D	1	SEQ-SCV6	
47	14-AUG-2021 10:24	08132147.D	1	0.1PPMDDTS	
48	14-AUG-2021 10:44	08132148.D	1	DS	

Security Status Report

Date: 16-Aug-2021 17:20

08132101ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132104ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132105ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132107ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132109ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132131ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132134ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132135ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132136ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132137ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132138ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132139ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132140ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132141ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132142ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132143ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132144ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

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08132147ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132148ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0177	Instrument:	ECD7
		Calibration:	EH00034

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SJH0177-CAL1	08132123ECD7.D	08132123ECD7.D	NA	08/14/21 02:12
Cal Standard	SJH0177-CAL2	08132124ECD7.D	08132124ECD7.D	NA	08/14/21 02:33
Cal Standard	SJH0177-CAL3	08132125ECD7.D	08132125ECD7.D	NA	08/14/21 02:53
Cal Standard	SJH0177-CAL4	08132126ECD7.D	08132126ECD7.D	NA	08/14/21 03:13
Cal Standard	SJH0177-CAL5	08132127ECD7.D	08132127ECD7.D	NA	08/14/21 03:34
Cal Standard	SJH0177-CAL6	08132128ECD7.D	08132128ECD7.D	NA	08/14/21 03:54
Cal Standard	SJH0177-CAL7	08132129ECD7.D	08132129ECD7.D	NA	08/14/21 04:15
Cal Standard	SJH0177-CAL8	08132130ECD7.D	08132130ECD7.D	NA	08/14/21 04:35
Cal Standard	SJH0177-CAL9	08132131ECD7.D	08132131ECD7.D	NA	08/14/21 04:56
Cal Standard	SJH0177-CALA	08132132ECD7.D	08132132ECD7.D	NA	08/14/21 05:16
Cal Standard	SJH0177-CALB	08132133ECD7.D	08132133ECD7.D	NA	08/14/21 05:37
Cal Standard	SJH0177-CALC	08132134ECD7.D	08132134ECD7.D	NA	08/14/21 05:57
Cal Standard	SJH0177-CALD	08132135ECD7.D	08132135ECD7.D	NA	08/14/21 06:18
Cal Standard	SJH0177-CALE	08132136ECD7.D	08132136ECD7.D	NA	08/14/21 06:38
Cal Standard	SJH0177-CALF	08132137ECD7.D	08132137ECD7.D	NA	08/14/21 06:59
Cal Standard	SJH0177-CALG	08132138ECD7.D	08132138ECD7.D	NA	08/14/21 07:19
Cal Standard	SJH0177-CALH	08132139ECD7.D	08132139ECD7.D	NA	08/14/21 07:40
Cal Standard	SJH0177-CALI	08132140ECD7.D	08132140ECD7.D	NA	08/14/21 08:00
Secondary Cal Check	SJH0177-SCV1	08132141ECD7.D	08132141ECD7.D	NA	08/14/21 08:21
Secondary Cal Check	SJH0177-SCV2	08132142ECD7.D	08132142ECD7.D	NA	08/14/21 08:41
Secondary Cal Check	SJH0177-SCV3	08132143ECD7.D	08132143ECD7.D	NA	08/14/21 09:02
Secondary Cal Check	SJH0177-SCV4	08132144ECD7.D	08132144ECD7.D	NA	08/14/21 09:22
Secondary Cal Check	SJH0177-SCV5	08132145ECD7.D	08132145ECD7.D	NA	08/14/21 09:43
Secondary Cal Check	SJH0177-SCV6	08132146ECD7.D	08132146ECD7.D	NA	08/14/21 10:03

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ANALYSIS SEQUENCE

SJH0177

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0177-CAL1	0.02PPM AR1254	QC		1	J008435	J008446	
SJH0177-CAL2	0.05PPM AR1254	QC		2	J008434	J008446	
SJH0177-CAL3	0.1PPM AR1254	QC		3	J008433	J008446	
SJH0177-CAL4	0.25PPM AR1254	QC		4	J008432	J008446	
SJH0177-CAL5	0.5PPM AR1254	QC		5	J008431	J008446	
SJH0177-CAL6	1PPM AR1254	QC		6	J008399	J008446	
SJH0177-CAL7	0.02PPM AR2162	QC		7	J008440	J008446	
SJH0177-CAL8	0.05PPM AR2162	QC		8	J008439	J008446	
SJH0177-CAL9	0.1PPM AR2162	QC		9	J008438	J008446	
SJH0177-CALA	0.25PPM AR2162	QC		10	J008437	J008446	
SJH0177-CALB	0.5PPM AR2162	QC		11	J008436	J008446	
SJH0177-CALC	1PPM AR2162	QC		12	J008400	J008446	
SJH0177-CALD	0.02PPM AR3268	QC		13	J008445	J008446	
SJH0177-CALE	0.05PPM AR3268	QC		14	J008444	J008446	
SJH0177-CALF	0.1PPM AR3268	QC		15	J008443	J008446	
SJH0177-CALG	0.25PPM AR3268	QC		16	J008442	J008446	
SJH0177-CALH	0.5PPM AR3268	QC		17	J008441	J008446	
SJH0177-CALI	1PPM AR3268	QC		18	J008401	J008446	
SJH0177-SCV1	AR1660SCV1	QC		19	J008139	J008446	
SJH0177-SCV2	AR1242SCV2	QC		20	J008140	J008446	
SJH0177-SCV3	AR1248SCV3	QC		21	J008141	J008446	
SJH0177-SCV4	AR1254SCV4	QC		22	J008142	J008446	

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ANALYSIS SEQUENCE

SJH0177

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0177-SCV5	AR2162SCV5	QC		23	J008143	J008446	
SJH0177-SCV6	AR3268SCV6	QC		24	J008144	J008446	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 13-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242,
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242,
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242,
2308	08132114.D	SEQ-CALA		1	Aroclor-1242,
2328	08132115.D	SEQ-CALB		1	Aroclor-1242,
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0030	08132118.D	SEQ-CALE		1	Aroclor-1248,
0050	08132119.D	SEQ-CALF		1	Aroclor-1248,
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	NO MANUAL INTEGRATION
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION
0841	08132142.D	SEQ-SCV2		1	NO MANUAL INTEGRATION
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242 [2C],
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242 [2C],
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242 [2C],
2308	08132114.D	SEQ-CALA		1	NO MANUAL INTEGRATION
2328	08132115.D	SEQ-CALB		1	NO MANUAL INTEGRATION
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248 [2C],
0030	08132118.D	SEQ-CALE		1	Aroclor-1248 [2C],
0050	08132119.D	SEQ-CALF		1	NO MANUAL INTEGRATION
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	Aroclor-1248 [2C],
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0841	08132142.D	SEQ-SCV2		1	Aroclor-1242 [2C], Aroclor-1248 [2C],
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	13-AUG-2021 18:41	08132101.D	1	RINSE	
2	13-AUG-2021 19:02	08132102.D	1	RINSE	
3	13-AUG-2021 19:22	08132103.D	1	RINSE	
4	13-AUG-2021 19:43	08132104.D	1	SEQ-IBL1	
5	13-AUG-2021 20:03	08132105.D	1	SEQ-CAL1	
6	13-AUG-2021 20:24	08132106.D	1	SEQ-CAL2	
7	13-AUG-2021 20:44	08132107.D	1	SEQ-CAL3	
8	13-AUG-2021 21:05	08132108.D	1	SEQ-CAL4	
9	13-AUG-2021 21:25	08132109.D	1	SEQ-CAL5	
10	13-AUG-2021 21:46	08132110.D	1	SEQ-CAL6	
11	13-AUG-2021 22:06	08132111.D	1	SEQ-CAL7	
12	13-AUG-2021 22:27	08132112.D	1	SEQ-CAL8	
13	13-AUG-2021 22:47	08132113.D	1	SEQ-CAL9	
14	13-AUG-2021 23:08	08132114.D	1	SEQ-CALA	
15	13-AUG-2021 23:28	08132115.D	1	SEQ-CALB	
16	13-AUG-2021 23:49	08132116.D	1	SEQ-CALC	
17	14-AUG-2021 00:09	08132117.D	1	SEQ-CALD	
18	14-AUG-2021 00:30	08132118.D	1	SEQ-CALE	
19	14-AUG-2021 00:50	08132119.D	1	SEQ-CALF	
20	14-AUG-2021 01:11	08132120.D	1	SEQ-CALG	
21	14-AUG-2021 01:31	08132121.D	1	SEQ-CALH	
22	14-AUG-2021 01:52	08132122.D	1	SEQ-CALI	
23	14-AUG-2021 02:12	08132123.D	1	SEQ-CALJ	
24	14-AUG-2021 02:33	08132124.D	1	SEQ-CALK	
25	14-AUG-2021 02:53	08132125.D	1	SEQ-CALL	
26	14-AUG-2021 03:13	08132126.D	1	SEQ-CALM	
27	14-AUG-2021 03:34	08132127.D	1	SEQ-CALN	
28	14-AUG-2021 03:54	08132128.D	1	SEQ-CALO	
29	14-AUG-2021 04:15	08132129.D	1	SEQ-CALP	
30	14-AUG-2021 04:35	08132130.D	1	SEQ-CALQ	
31	14-AUG-2021 04:56	08132131.D	1	SEQ-CALR	
32	14-AUG-2021 05:16	08132132.D	1	SEQ-CALS	
33	14-AUG-2021 05:37	08132133.D	1	SEQ-CALT	
34	14-AUG-2021 05:57	08132134.D	1	SEQ-CALU	
35	14-AUG-2021 06:18	08132135.D	1	SEQ-CALV	
36	14-AUG-2021 06:38	08132136.D	1	SEQ-CALW	
37	14-AUG-2021 06:59	08132137.D	1	SEQ-CALX	
38	14-AUG-2021 07:19	08132138.D	1	SEQ-CALY	
39	14-AUG-2021 07:40	08132139.D	1	SEQ-CALZ	
40	14-AUG-2021 08:00	08132140.D	1	SEQ-CALAA	
41	14-AUG-2021 08:21	08132141.D	1	SEQ-SCV1	
42	14-AUG-2021 08:41	08132142.D	1	SEQ-SCV2	
43	14-AUG-2021 09:02	08132143.D	1	SEQ-SCV3	
44	14-AUG-2021 09:22	08132144.D	1	SEQ-SCV4	
45	14-AUG-2021 09:43	08132145.D	1	SEQ-SCV5	
46	14-AUG-2021 10:03	08132146.D	1	SEQ-SCV6	
47	14-AUG-2021 10:24	08132147.D	1	0.1PPMDDTS	
48	14-AUG-2021 10:44	08132148.D	1	DS	

Security Status Report

Date: 16-Aug-2021 17:20

08132101ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132102ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132103ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132104ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132105ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132106ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132107ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132108ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132109ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132111ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132112ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132113ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132114ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132120ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132126ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132127ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132134ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132135ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132141ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132142ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132143ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132144ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

08132145ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132146ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132147ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132148ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0254	Instrument:	ECD7
		Calibration:	EH00034

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Initial Cal Check	SJH0254-ICV1	08192102ECD7.D	08192102ECD7.D	NA	08/19/21 10:39
Initial Cal Check	SJH0254-ICV2	08192103ECD7.D	08192103ECD7.D	NA	08/19/21 11:00
Calibration Check	SJH0254-CCV1	08192108ECD7.D	08192108ECD7.D	NA	08/19/21 12:42
Calibration Check	SJH0254-CCV2	08192109ECD7.D	08192109ECD7.D	NA	08/19/21 13:03
Calibration Check	SJH0254-CCV3	08192111ECD7.D	08192111ECD7.D	NA	08/19/21 15:57
Calibration Check	SJH0254-CCV4	08192112ECD7.D	08192112ECD7.D	NA	08/19/21 16:17
Calibration Check	SJH0254-CCV5	08192126ECD7.D	08192126ECD7.D	NA	08/19/21 21:04
Calibration Check	SJH0254-CCV6	08192127ECD7.D	08192127ECD7.D	NA	08/19/21 21:24
Blank	BJH0179-BLK1	08192128ECD7.D	08192128ECD7.D	Solid	08/19/21 21:45
LCS	BJH0179-BS1	08192129ECD7.D	08192129ECD7.D	Solid	08/19/21 22:05
Reference	BJH0179-SRM1	08192132ECD7.D	08192132ECD7.D	Solid	08/19/21 23:07
LDW21-IT615A	21G0321-01	08192133ECD7.D	08192133ECD7.D	Solid	08/19/21 23:27
LDW21-IT617A	21G0321-02	08192134ECD7.D	08192134ECD7.D	Solid	08/19/21 23:48
LDW21-IT618A	21G0321-03	08192135ECD7.D	08192135ECD7.D	Solid	08/20/21 00:08
Blank	BJH0193-BLK1	08192139ECD7.D	08192139ECD7.D	Solid	08/20/21 01:30
LCS	BJH0193-BS1	08192140ECD7.D	08192140ECD7.D	Solid	08/20/21 01:51
LDW21-IT624A	BJH0193-MS1	08192141ECD7.D	08192141ECD7.D	Solid	08/20/21 02:11
LDW21-IT624A	BJH0193-MSD1	08192142ECD7.D	08192142ECD7.D	Solid	08/20/21 02:32
Reference	BJH0193-SRM1	08192143ECD7.D	08192143ECD7.D	Solid	08/20/21 02:52
LDW21-IT624A	21G0321-04	08192144ECD7.D	08192144ECD7.D	Solid	08/20/21 03:13
LDW21-IT626A	21G0321-05	08192145ECD7.D	08192145ECD7.D	Solid	08/20/21 03:33
Calibration Check	SJH0254-CCV7	08192146ECD7.D	08192146ECD7.D	NA	08/20/21 03:54
Calibration Check	SJH0254-CCV8	08192147ECD7.D	08192147ECD7.D	NA	08/20/21 04:14

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ANALYSIS SEQUENCE

SJH0254

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0254-ICV1	AR1254ICV1	QC		1	J008432	J008446	
SJH0254-ICV2	AR1660ICV2	QC		2	J008417	J008446	
BJG0413-BLK1	Blank	QC		3		J008446	
BJG0413-BS1	LCS	QC		4		J008446	
21G0125-17	PE1033-2ML	8082A PCB	A 01	5		J008446	
SJH0254-CCV1	AR1248CCV1	QC		6	J008427	J008446	
SJH0254-CCV2	AR1660CCV2	QC		7	J008417	J008446	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	19-AUG-2021 10:19	08192101ECD7.D	1	DDTS	
2	19-AUG-2021 10:39	08192102ECD7.D	1	AR1254ICV1	
3	19-AUG-2021 11:00	08192103ECD7.D	1	AR1660ICV2	
4	19-AUG-2021 11:20	08192104ECD7.D	1	BJG0413-BLK1	
5	19-AUG-2021 11:41	08192105ECD7.D	1	BJG0413-BS1	
6	19-AUG-2021 12:01	08192106ECD7.D	1	21G0125-17	
7	19-AUG-2021 12:22	08192107ECD7.D	10	21G0125-17RE1	
8	19-AUG-2021 12:42	08192108ECD7.D	1	AR1248CCV1	
9	19-AUG-2021 13:03	08192109ECD7.D	1	AR1660CCV2	
10	19-AUG-2021 15:36	08192110ECD7.D	1	RINSE	
11	19-AUG-2021 15:57	08192111ECD7.D	1	AR1242CCV3	
12	19-AUG-2021 16:17	08192112ECD7.D	1	AR1660CCV4	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b

ARI Job No.: DDTS Method: PCB.m Instrument: ecd7.i Date: 19-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1019	08192101ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1039	08192102ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1100	08192103ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1120	08192104ECD7.D	BJG0413-BLK1		1	NO MANUAL INTEGRATION
1141	08192105ECD7.D	BJG0413-BS1		1	NO MANUAL INTEGRATION
1201	08192106ECD7.D	21G0125-17		1	NO MANUAL INTEGRATION
1222	08192107ECD7.D	21G0125-17RE1		10	NO MANUAL INTEGRATION
1242	08192108ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1303	08192109ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1536	08192110ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1557	08192111ECD7.D	AR1242CCV3		1	NO MANUAL INTEGRATION
1617	08192112ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION
1019	08192101ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1039	08192102ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1100	08192103ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1120	08192104ECD7.D	BJG0413-BLK1		1	NO MANUAL INTEGRATION
1141	08192105ECD7.D	BJG0413-BS1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b\210819.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1201	08192106ECD7.D	21G0125-17		1	NO MANUAL INTEGRATION
1222	08192107ECD7.D	21G0125-17RE1		10	NO MANUAL INTEGRATION
1242	08192108ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1303	08192109ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1536	08192110ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1557	08192111ECD7.D	AR1242CCV3		1	NO MANUAL INTEGRATION
1617	08192112ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION
1638	08192113.D			1	NO MANUAL INTEGRATION

Security Status Report

Date: 19-Aug-2021 17:02

08192101ECD7.D	Data Locked	jrains, 19-Aug-2021 17:02
08192102ECD7.D	Data Locked	jrains, 19-Aug-2021 17:02
08192103ECD7.D	Data Locked	jrains, 19-Aug-2021 17:02
08192104ECD7.D	Data Locked	jrains, 19-Aug-2021 17:02
08192105ECD7.D	Data Locked	jrains, 19-Aug-2021 17:02
08192106ECD7.D	Data Locked	jrains, 19-Aug-2021 17:02
08192107ECD7.D	Data Locked	jrains, 19-Aug-2021 17:02
08192108ECD7.D	Data Locked	jrains, 19-Aug-2021 17:02
08192109ECD7.D	Data Locked	jrains, 19-Aug-2021 17:02

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ANALYSIS SEQUENCE

SJH0254

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0254-ICV1	AR1254ICV1	QC		1	J008432	J008446	
SJH0254-ICV2	AR1660ICV2	QC		2	J008417	J008446	
BJG0413-BLK1	Blank	QC		3		J008446	
BJG0413-BS1	LCS	QC		4		J008446	
21G0125-17	PE1033-2ML	8082A PCB	A 01	5		J008446	
SJH0254-CCV1	AR1248CCV1	QC		6	J008427	J008446	
SJH0254-CCV2	AR1660CCV2	QC		7	J008417	J008446	
SJH0254-CCV3	AR1242CCV3	QC		8	J008422	J008446	
SJH0254-CCV4	AR1660CCV4	QC		9	J008417	J008446	
BJG0604-BLK1	Blank	QC		10		J008446	
BJG0604-BS1	LCS	QC		11		J008446	
BJG0604-BSD1	LCS Dup	QC		12		J008446	
21G0308-01	SW21-HSP27	8082A PCB Water 0.01	A 01	13		J008446	
21G0308-02	SW21-HST28	8082A PCB Water 0.01	A 01	14		J008446	
21G0308-03	SW21-HST29	8082A PCB Water 0.01	A 01	15		J008446	
21G0308-04	SW21-HSP30	8082A PCB Water 0.01	A 01	16		J008446	
21G0308-05	SW21-DU02	8082A PCB Water 0.01	A 01	17		J008446	
21G0308-06	SW21-HST31	8082A PCB Water 0.01	A 01	18		J008446	
21G0308-07	SW21-HST32	8082A PCB Water 0.01	A 01	19		J008446	
21G0308-08	SW21-HST33	8082A PCB Water 0.01	A 01	20		J008446	
21G0308-09	SW21-HST34	8082A PCB Water 0.01	A 01	21		J008446	
21G0308-10	SW21-HST35	8082A PCB Water 0.01	A 01	22		J008446	

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ANALYSIS SEQUENCE

SJH0254

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0254-CCV5	AR1254CCV5	QC		23	J008432	J008446	
SJH0254-CCV6	AR1660CCV6	QC		24	J008417	J008446	
BJH0193-BLK1	Blank	QC		25		J008446	
BJH0193-BS1	LCS	QC		26		J008446	
BJH0193-SRM1	Reference	QC		27		J008446	
BJH0193-MS1	Matrix Spike	QC		28		J008446	
BJH0193-MSD1	Matrix Spike Dup	QC		29		J008446	
21G0321-04	LDW21-IT624A	8082A PCB Solid 4	A 01	30		J008446	
21G0321-05	LDW21-IT626A	8082A PCB Solid 4	A 01	31		J008446	
SJH0254-CCV7	AR1248CCV7	QC		32	J008427	J008446	
SJH0254-CCV8	AR1660CCV8	QC		33	J008417	J008446	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	19-AUG-2021 10:19	08192101ECD7.D	1	DDTS	
2	19-AUG-2021 10:39	08192102ECD7.D	1	AR1254ICV1	
3	19-AUG-2021 11:00	08192103ECD7.D	1	AR1660ICV2	
4	19-AUG-2021 11:20	08192104ECD7.D	1	BJG0413-BLK1	
5	19-AUG-2021 11:41	08192105ECD7.D	1	BJG0413-BS1	
6	19-AUG-2021 12:01	08192106ECD7.D	1	21G0125-17	
7	19-AUG-2021 12:22	08192107ECD7.D	10	21G0125-17RE1	
8	19-AUG-2021 12:42	08192108ECD7.D	1	AR1248CCV1	
9	19-AUG-2021 13:03	08192109ECD7.D	1	AR1660CCV2	
10	19-AUG-2021 15:36	08192110ECD7.D	1	RINSE	
11	19-AUG-2021 15:57	08192111ECD7.D	1	AR1242CCV3	
12	19-AUG-2021 16:17	08192112ECD7.D	1	AR1660CCV4	
13	19-AUG-2021 16:38	08192113ECD7.D	1	BJG0604-BLK1	
14	19-AUG-2021 16:58	08192114ECD7.D	1	BJG0604-BS1	
15	19-AUG-2021 17:19	08192115ECD7.D	1	BJG0604-BSD1	
16	19-AUG-2021 17:39	08192116ECD7.D	1	21G0308-01	
17	19-AUG-2021 18:00	08192117ECD7.D	1	21G0308-02	
18	19-AUG-2021 18:20	08192118ECD7.D	1	21G0308-03	
19	19-AUG-2021 18:41	08192119ECD7.D	1	21G0308-04	
20	19-AUG-2021 19:01	08192120ECD7.D	1	21G0308-05	
21	19-AUG-2021 19:22	08192121ECD7.D	1	21G0308-06	
22	19-AUG-2021 19:42	08192122ECD7.D	1	21G0308-07	
23	19-AUG-2021 20:03	08192123ECD7.D	1	21G0308-08	
24	19-AUG-2021 20:23	08192124ECD7.D	1	21G0308-09	
25	19-AUG-2021 20:44	08192125ECD7.D	1	21G0308-10	
26	19-AUG-2021 21:04	08192126ECD7.D	1	AR1254CCV5	
27	19-AUG-2021 21:24	08192127ECD7.D	1	AR1660CCV6	
28	19-AUG-2021 21:45	08192128ECD7.D	1	BJH0179-BLK1	
29	19-AUG-2021 22:05	08192129ECD7.D	1	BJH0179-BS1	
30	19-AUG-2021 22:26	08192130ECD7.D	1	BJH0179-MS1	
31	19-AUG-2021 22:46	08192131ECD7.D	1	BJH0179-MSD1	
32	19-AUG-2021 23:07	08192132ECD7.D	1	BJH0179-SRM1	
33	19-AUG-2021 23:27	08192133ECD7.D	1	21G0321-01	
34	19-AUG-2021 23:48	08192134ECD7.D	1	21G0321-02	
35	20-AUG-2021 00:08	08192135ECD7.D	1	21G0321-03	
36	20-AUG-2021 00:29	08192136ECD7.D	1	21G0330-01	
37	20-AUG-2021 00:49	08192137ECD7.D	1	21G0330-02	
38	20-AUG-2021 01:10	08192138ECD7.D	1	21G0330-03	
39	20-AUG-2021 01:30	08192139ECD7.D	1	BJH0193-BLK1	
40	20-AUG-2021 01:51	08192140ECD7.D	1	BJH0193-BS1	
41	20-AUG-2021 02:11	08192141ECD7.D	1	BJH0193-MS1	
42	20-AUG-2021 02:32	08192142ECD7.D	1	BJH0193-MSD1	
43	20-AUG-2021 02:52	08192143ECD7.D	1	BJH0193-SRM1	
44	20-AUG-2021 03:13	08192144ECD7.D	1	21G0321-04	
45	20-AUG-2021 03:33	08192145ECD7.D	1	21G0321-05	
46	20-AUG-2021 03:54	08192146ECD7.D	1	AR1248CCV7	
47	20-AUG-2021 04:14	08192147ECD7.D	1	AR1660CCV8	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b

ARI Job No.: DDTS Method: PCB.m Instrument: ecd7.i Date: 19-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1019	08192101ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1039	08192102ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1100	08192103ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1120	08192104ECD7.D	BJG0413-BLK1		1	NO MANUAL INTEGRATION
1141	08192105ECD7.D	BJG0413-BS1		1	NO MANUAL INTEGRATION
1201	08192106ECD7.D	21G0125-17		1	NO MANUAL INTEGRATION
1222	08192107ECD7.D	21G0125-17RE1		10	NO MANUAL INTEGRATION
1242	08192108ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1303	08192109ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1536	08192110ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1557	08192111ECD7.D	AR1242CCV3		1	Aroclor-1242,
1617	08192112ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION
1638	08192113ECD7.D	BJG0604-BLK1		1	NO MANUAL INTEGRATION
1658	08192114ECD7.D	BJG0604-BS1		1	NO MANUAL INTEGRATION
1719	08192115ECD7.D	BJG0604-BSD1		1	NO MANUAL INTEGRATION
1739	08192116ECD7.D	21G0308-01		1	NO MANUAL INTEGRATION
1800	08192117ECD7.D	21G0308-02		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1820	08192118ECD7.D	21G0308-03		1	NO MANUAL INTEGRATION
1841	08192119ECD7.D	21G0308-04		1	NO MANUAL INTEGRATION
1901	08192120ECD7.D	21G0308-05		1	NO MANUAL INTEGRATION
1922	08192121ECD7.D	21G0308-06		1	NO MANUAL INTEGRATION
1942	08192122ECD7.D	21G0308-07		1	NO MANUAL INTEGRATION
2003	08192123ECD7.D	21G0308-08		1	NO MANUAL INTEGRATION
2023	08192124ECD7.D	21G0308-09		1	NO MANUAL INTEGRATION
2044	08192125ECD7.D	21G0308-10		1	NO MANUAL INTEGRATION
2104	08192126ECD7.D	AR1254CCV5		1	NO MANUAL INTEGRATION
2124	08192127ECD7.D	AR1660CCV6		1	NO MANUAL INTEGRATION
2145	08192128ECD7.D	BJH0179-BLK1		1	NO MANUAL INTEGRATION
2205	08192129ECD7.D	BJH0179-BS1		1	NO MANUAL INTEGRATION
2226	08192130ECD7.D	BJH0179-MS1		1	NO MANUAL INTEGRATION
2246	08192131ECD7.D	BJH0179-MSD1		1	NO MANUAL INTEGRATION
2307	08192132ECD7.D	BJH0179-SRM1		1	NO MANUAL INTEGRATION
2327	08192133ECD7.D	21G0321-01		1	NO MANUAL INTEGRATION
2348	08192134ECD7.D	21G0321-02		1	NO MANUAL INTEGRATION
0008	08192135ECD7.D	21G0321-03		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0029	08192136ECD7.D	21G0330-01		1	Aroclor-1242, Aroclor-1254, Aroclor-1260, Tetrachloro-m-xylene,
0049	08192137ECD7.D	21G0330-02		1	Aroclor-1242, Aroclor-1254, Aroclor-1260, Tetrachloro-m-xylene,
0110	08192138ECD7.D	21G0330-03		1	NO MANUAL INTEGRATION
0130	08192139ECD7.D	BJH0193-BLK1		1	NO MANUAL INTEGRATION
0151	08192140ECD7.D	BJH0193-BS1		1	NO MANUAL INTEGRATION
0211	08192141ECD7.D	BJH0193-MS1		1	NO MANUAL INTEGRATION
0232	08192142ECD7.D	BJH0193-MSD1		1	NO MANUAL INTEGRATION
0252	08192143ECD7.D	BJH0193-SRM1		1	NO MANUAL INTEGRATION
0313	08192144ECD7.D	21G0321-04		1	NO MANUAL INTEGRATION
0333	08192145ECD7.D	21G0321-05		1	NO MANUAL INTEGRATION
0354	08192146ECD7.D	AR1248CCV7		1	NO MANUAL INTEGRATION
0414	08192147ECD7.D	AR1660CCV8		1	NO MANUAL INTEGRATION
1019	08192101ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1039	08192102ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1100	08192103ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1120	08192104ECD7.D	BJG0413-BLK1		1	NO MANUAL INTEGRATION
1141	08192105ECD7.D	BJG0413-BS1		1	NO MANUAL INTEGRATION
1201	08192106ECD7.D	21G0125-17		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b\210819.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1222	08192107ECD7.D	21G0125-17RE1		10	NO MANUAL INTEGRATION
1242	08192108ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1303	08192109ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1536	08192110ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1557	08192111ECD7.D	AR1242CCV3		1	NO MANUAL INTEGRATION
1617	08192112ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION
1638	08192113ECD7.D	BJG0604-BLK1		1	NO MANUAL INTEGRATION
1658	08192114ECD7.D	BJG0604-BS1		1	NO MANUAL INTEGRATION
1719	08192115ECD7.D	BJG0604-BSD1		1	NO MANUAL INTEGRATION
1739	08192116ECD7.D	21G0308-01		1	NO MANUAL INTEGRATION
1800	08192117ECD7.D	21G0308-02		1	NO MANUAL INTEGRATION
1820	08192118ECD7.D	21G0308-03		1	NO MANUAL INTEGRATION
1841	08192119ECD7.D	21G0308-04		1	NO MANUAL INTEGRATION
1901	08192120ECD7.D	21G0308-05		1	NO MANUAL INTEGRATION
1922	08192121ECD7.D	21G0308-06		1	NO MANUAL INTEGRATION
1942	08192122ECD7.D	21G0308-07		1	NO MANUAL INTEGRATION
2003	08192123ECD7.D	21G0308-08		1	NO MANUAL INTEGRATION
2023	08192124ECD7.D	21G0308-09		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b\210819.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2044	08192125ECD7.D	21G0308-10		1	NO MANUAL INTEGRATION
2104	08192126ECD7.D	AR1254CCV5		1	NO MANUAL INTEGRATION
2124	08192127ECD7.D	AR1660CCV6		1	NO MANUAL INTEGRATION
2145	08192128ECD7.D	BJH0179-BLK1		1	NO MANUAL INTEGRATION
2205	08192129ECD7.D	BJH0179-BS1		1	NO MANUAL INTEGRATION
2226	08192130ECD7.D	BJH0179-MS1		1	NO MANUAL INTEGRATION
2246	08192131ECD7.D	BJH0179-MSD1		1	NO MANUAL INTEGRATION
2307	08192132ECD7.D	BJH0179-SRM1		1	NO MANUAL INTEGRATION
2327	08192133ECD7.D	21G0321-01		1	NO MANUAL INTEGRATION
2348	08192134ECD7.D	21G0321-02		1	NO MANUAL INTEGRATION
0008	08192135ECD7.D	21G0321-03		1	NO MANUAL INTEGRATION
0029	08192136ECD7.D	21G0330-01		1	NO MANUAL INTEGRATION
0049	08192137ECD7.D	21G0330-02		1	NO MANUAL INTEGRATION
0110	08192138ECD7.D	21G0330-03		1	NO MANUAL INTEGRATION
0130	08192139ECD7.D	BJH0193-BLK1		1	NO MANUAL INTEGRATION
0151	08192140ECD7.D	BJH0193-BS1		1	NO MANUAL INTEGRATION
0211	08192141ECD7.D	BJH0193-MS1		1	NO MANUAL INTEGRATION
0232	08192142ECD7.D	BJH0193-MSD1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210819.b\210819.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0252	08192143ECD7.D	BJH0193-SRM1		1	NO MANUAL INTEGRATION
0313	08192144ECD7.D	21G0321-04		1	NO MANUAL INTEGRATION
0333	08192145ECD7.D	21G0321-05		1	NO MANUAL INTEGRATION
0354	08192146ECD7.D	AR1248CCV7		1	NO MANUAL INTEGRATION
0414	08192147ECD7.D	AR1660CCV8		1	NO MANUAL INTEGRATION

Security Status Report

Date: 24-Aug-2021 15:30

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08192147ECD7.D	Data Locked	jrains, 24-Aug-2021 15:30

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0396	Instrument:	ECD7
		Calibration:	EH00034

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Initial Cal Check	SJH0396-ICV1	08272103ECD7.D	08272103ECD7.D	NA	08/27/21 16:39
Initial Cal Check	SJH0396-ICV2	08272104ECD7.D	08272104ECD7.D	NA	08/27/21 17:00
Calibration Check	SJH0396-CCV1	08272119ECD7.D	08272119ECD7.D	NA	08/27/21 22:06
Calibration Check	SJH0396-CCV2	08272120ECD7.D	08272120ECD7.D	NA	08/27/21 22:27
Blank	BJH0604-BLK1	08272121ECD7.D	08272121ECD7.D	Solid	08/27/21 22:47
LCS	BJH0604-BS1	08272122ECD7.D	08272122ECD7.D	Solid	08/27/21 23:08
LCS Dup	BJH0604-BSD1	08272123ECD7.D	08272123ECD7.D	Solid	08/27/21 23:28
Reference	BJH0604-SRM1	08272124ECD7.D	08272124ECD7.D	Solid	08/27/21 23:49
LDW21-IT615A	21G0321-01RE1	08272125ECD7.D	08272125ECD7.D	Solid	08/28/21 00:09
LDW21-IT617A	21G0321-02RE1	08272126ECD7.D	08272126ECD7.D	Solid	08/28/21 00:30
LDW21-IT618A	21G0321-03RE1	08272127ECD7.D	08272127ECD7.D	Solid	08/28/21 00:50
Calibration Check	SJH0396-CCV3	08272133ECD7.D	08272133ECD7.D	NA	08/28/21 02:53
Calibration Check	SJH0396-CCV4	08272134ECD7.D	08272134ECD7.D	NA	08/28/21 03:13
Initial Cal Check	SJH0396-ICV3	08282102ECD7B.D	08282102ECD7B.D	NA	08/28/21 17:04
Initial Cal Check	SJH0396-ICV4	08282103ECD7B.D	08282103ECD7B.D	NA	08/28/21 17:24
Calibration Check	SJH0396-CCV5	08282109ECD7B.D	08282109ECD7B.D	NA	08/28/21 19:27
Calibration Check	SJH0396-CCV6	08282110ECD7B.D	08282110ECD7B.D	NA	08/28/21 19:47
Calibration Check	SJH0396-CCV7	08282112ECD7B.D	08282112ECD7B.D	NA	08/28/21 20:28
Calibration Check	SJH0396-CCV8	08282113ECD7B.D	08282113ECD7B.D	NA	08/28/21 20:49

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Printed: 8/30/2021 3:40:30PM

ANALYSIS SEQUENCE

SJH0396

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0396-ICV1	AR1254ICV1	QC		1	J008432	J008446	
SJH0396-ICV2	AR1660ICV2	QC		2	J008417	J008446	
BJH0448-BLK1	Blank	QC		3		J008446	
BJH0448-BS1	LCS	QC		4		J008446	
BJH0448-BSD1	LCS Dup	QC		5		J008446	
21H0176-01	DMM-SED-01	8082A PCB Solid 4	B 02	6		J008446	
BJH0448-MS1	Matrix Spike	QC		7		J008446	
BJH0448-MSD1	Matrix Spike Dup	QC		8		J008446	
21H0176-02	DMM-SED-02	8082A PCB Solid 4	B 02	9		J008446	
21H0176-03	DMM-SED-03	8082A PCB Solid 4	B 02	10		J008446	
BJH0407-BLK1	Blank	QC		11		J008446	
BJH0407-BS1	LCS	QC		12		J008446	
BJH0407-BSD1	LCS Dup	QC		13		J008446	
21H0116-01	SS-08-10-2021	608.3 PCBs 0.01 ug/L or 20 ug/kg	D 01	14		J008446	
SJH0396-CCV1	AR1248CCV1	QC		15	J008427	J008446	
SJH0396-CCV2	AR1660CCV2	QC		16	J008417	J008446	
BJH0604-BLK1	Blank	QC		17		J008446	
BJH0604-BS1	LCS	QC		18		J008446	
BJH0604-BSD1	LCS Dup	QC		19		J008446	
BJH0604-SRM1	Reference	QC		20		J008446	
21G0321-01RE1	LDW21-IT615A	8082A PCB Solid 4	A 02	21		J008446	From BJH0179 by JGR on 24-Aug-2021
21G0321-02RE1	LDW21-IT617A	8082A PCB Solid 4	A 02	22		J008446	From BJH0179 by JGR on 24-Aug-2021

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Printed: 8/30/2021 3:40:30PM

ANALYSIS SEQUENCE

SJH0396

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
21G0321-03RE1	LDW21-IT618A	8082A PCB Solid 4	A 02	23		J008446	From BJH0179 by JGR on 24-Aug-2021
21G0330-01RE1	LDW21-IT701B	8082A PCB Solid 4	B 02	24		J008446	From BJH0179 by JGR on 24-Aug-2021
BJH0604-MS1	Matrix Spike	QC		25		J008446	
BJH0604-MSD1	Matrix Spike Dup	QC		26		J008446	
21G0330-02RE1	LDW21-IT701C	8082A PCB Solid 4	B 02	27		J008446	From BJH0179 by JGR on 24-Aug-2021
21G0330-03RE1	LDW21-IT701E	8082A PCB Solid 4	B 02	28		J008446	From BJH0179 by JGR on 24-Aug-2021
SJH0396-CCV3	AR1242CCV3	QC		29	J008422	J008446	
SJH0396-CCV4	AR1660CCV4	QC		30	J008417	J008446	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\2108127.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	27-AUG-2021 15:58	08272101ECD7.D	1	RINSE	
2	27-AUG-2021 16:19	08272102ECD7.D	1	DDT	
3	27-AUG-2021 16:39	08272103ECD7.D	1	AR1254ICV1	
4	27-AUG-2021 17:00	08272104ECD7.D	1	AR1660ICV2	
5	27-AUG-2021 17:20	08272105ECD7.D	1	AR1660SCV20PPB	
6	27-AUG-2021 17:40	08272106ECD7.D	1	BJH0448-BLK1	
7	27-AUG-2021 18:01	08272107ECD7.D	1	BJH0448-BS1	
8	27-AUG-2021 18:21	08272108ECD7.D	1	BJH0448-BSD1	
9	27-AUG-2021 18:42	08272109ECD7.D	1	BJH0448-SRM1	
10	27-AUG-2021 19:02	08272110ECD7.D	1	21H0176-01	
11	27-AUG-2021 19:23	08272111ECD7.D	1	BJH0448-MS1	
12	27-AUG-2021 19:43	08272112ECD7.D	1	BJH0448-MSD1	
13	27-AUG-2021 20:04	08272113ECD7.D	1	21H0176-02	
14	27-AUG-2021 20:24	08272114ECD7.D	1	21H0176-03	
15	27-AUG-2021 20:45	08272115ECD7.D	1	BJH0407-BLK1	
16	27-AUG-2021 21:05	08272116ECD7.D	1	BJH0407-BS1	
17	27-AUG-2021 21:26	08272117ECD7.D	1	BJH0407-BSD1	
18	27-AUG-2021 21:46	08272118ECD7.D	1	21H0116-01	
19	27-AUG-2021 22:06	08272119ECD7.D	1	AR1248CCV1	
20	27-AUG-2021 22:27	08272120ECD7.D	1	AR1660CCV2	
21	27-AUG-2021 22:47	08272121ECD7.D	1	BJH0604-BLK1	
22	27-AUG-2021 23:08	08272122ECD7.D	1	BJH0604-BS1	
23	27-AUG-2021 23:28	08272123ECD7.D	1	BJH0604-BSD1	
24	27-AUG-2021 23:49	08272124ECD7.D	1	BJH0604-SRM1	
25	28-AUG-2021 00:09	08272125ECD7.D	1	21G0321-01RE1	
26	28-AUG-2021 00:30	08272126ECD7.D	1	21G0321-02RE1	
27	28-AUG-2021 00:50	08272127ECD7.D	1	21G0321-03RE1	
28	28-AUG-2021 01:11	08272128ECD7.D	1	21G0330-01RE1	
29	28-AUG-2021 01:31	08272129ECD7.D	1	BJH0604-MS1	
30	28-AUG-2021 01:51	08272130ECD7.D	1	BJH0604-MSD1	
31	28-AUG-2021 02:12	08272131ECD7.D	1	21G0330-02RE1	
32	28-AUG-2021 02:32	08272132ECD7.D	1	21G0330-03RE1	
33	28-AUG-2021 02:53	08272133ECD7.D	1	AR1242CCV3	
34	28-AUG-2021 03:13	08272134ECD7.D	1	AR1660CCV4	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\2108127.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 27-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1558	08272101ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1619	08272102ECD7.D	DDT		1	NO MANUAL INTEGRATION
1639	08272103ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1700	08272104ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1720	08272105ECD7.D	AR1660SCV20PPB		1	NO MANUAL INTEGRATION
1740	08272106ECD7.D	BJH0448-BLK1		1	NO MANUAL INTEGRATION
1801	08272107ECD7.D	BJH0448-BS1		1	NO MANUAL INTEGRATION
1821	08272108ECD7.D	BJH0448-BSD1		1	NO MANUAL INTEGRATION
1842	08272109ECD7.D	BJH0448-SRM1		1	NO MANUAL INTEGRATION
1902	08272110ECD7.D	21H0176-01		1	NO MANUAL INTEGRATION
1923	08272111ECD7.D	BJH0448-MS1		1	NO MANUAL INTEGRATION
1943	08272112ECD7.D	BJH0448-MSD1		1	NO MANUAL INTEGRATION
2004	08272113ECD7.D	21H0176-02		1	NO MANUAL INTEGRATION
2024	08272114ECD7.D	21H0176-03		1	NO MANUAL INTEGRATION
2045	08272115ECD7.D	BJH0407-BLK1		1	NO MANUAL INTEGRATION
2105	08272116ECD7.D	BJH0407-BS1		1	NO MANUAL INTEGRATION
2126	08272117ECD7.D	BJH0407-BSD1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\2108127.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2146	08272118ECD7.D	21H0116-01		1	NO MANUAL INTEGRATION
2206	08272119ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
2227	08272120ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
2247	08272121ECD7.D	BJH0604-BLK1		1	NO MANUAL INTEGRATION
2308	08272122ECD7.D	BJH0604-BS1		1	NO MANUAL INTEGRATION
2328	08272123ECD7.D	BJH0604-BSD1		1	NO MANUAL INTEGRATION
2349	08272124ECD7.D	BJH0604-SRM1		1	Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Tetrachloro-m-xylene,
0009	08272125ECD7.D	21G0321-01RE1		1	NO MANUAL INTEGRATION
0030	08272126ECD7.D	21G0321-02RE1		1	NO MANUAL INTEGRATION
0050	08272127ECD7.D	21G0321-03RE1		1	NO MANUAL INTEGRATION
0111	08272128ECD7.D	21G0330-01RE1		1	Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268,
0131	08272129ECD7.D	BJH0604-MS1		1	NO MANUAL INTEGRATION
0151	08272130ECD7.D	BJH0604-MSD1		1	NO MANUAL INTEGRATION
0212	08272131ECD7.D	21G0330-02RE1		1	Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268, Tetrachloro-m-xylene,
0232	08272132ECD7.D	21G0330-03RE1		1	NO MANUAL INTEGRATION
0253	08272133ECD7.D	AR1242CCV3		1	NO MANUAL INTEGRATION
0313	08272134ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION
1558	08272101ECD7.D	RINSE		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\2108127.b\2108127.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1619	08272102ECD7.D	DDT		1	NO MANUAL INTEGRATION
1639	08272103ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1700	08272104ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1720	08272105ECD7.D	AR1660SCV20PPB		1	NO MANUAL INTEGRATION
1740	08272106ECD7.D	BJH0448-BLK1		1	NO MANUAL INTEGRATION
1801	08272107ECD7.D	BJH0448-BS1		1	NO MANUAL INTEGRATION
1821	08272108ECD7.D	BJH0448-BSD1		1	NO MANUAL INTEGRATION
1842	08272109ECD7.D	BJH0448-SRM1		1	NO MANUAL INTEGRATION
1902	08272110ECD7.D	21H0176-01		1	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],
1923	08272111ECD7.D	BJH0448-MS1		1	NO MANUAL INTEGRATION
1943	08272112ECD7.D	BJH0448-MSD1		1	NO MANUAL INTEGRATION
2004	08272113ECD7.D	21H0176-02		1	Aroclor-1232 [2C], Aroclor-1242 [2C], Aroclor-1248 [2C], Aroclor-1254 [2C], Aroclor-1260 [2C], Aroclor-1262 [2C], Aroclor-1268 [2C], Decachlorobiphenyl [2C],
2024	08272114ECD7.D	21H0176-03		1	NO MANUAL INTEGRATION
2045	08272115ECD7.D	BJH0407-BLK1		1	NO MANUAL INTEGRATION
2105	08272116ECD7.D	BJH0407-BS1		1	NO MANUAL INTEGRATION
2126	08272117ECD7.D	BJH0407-BSD1		1	NO MANUAL INTEGRATION
2146	08272118ECD7.D	21H0116-01		1	NO MANUAL INTEGRATION
2206	08272119ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\2108127.b\2108127.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2227	08272120ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
2247	08272121ECD7.D	BJH0604-BLK1		1	NO MANUAL INTEGRATION
2308	08272122ECD7.D	BJH0604-BS1		1	NO MANUAL INTEGRATION
2328	08272123ECD7.D	BJH0604-BSD1		1	NO MANUAL INTEGRATION
2349	08272124ECD7.D	BJH0604-SRM1		1	Aroclor-1242 [2C], Aroclor-1248 [2C], Aroclor-1254 [2C], Aroclor-1262 [2C],
0009	08272125ECD7.D	21G0321-01RE1		1	NO MANUAL INTEGRATION
0030	08272126ECD7.D	21G0321-02RE1		1	NO MANUAL INTEGRATION
0050	08272127ECD7.D	21G0321-03RE1		1	NO MANUAL INTEGRATION
0111	08272128ECD7.D	21G0330-01RE1		1	NO MANUAL INTEGRATION
0131	08272129ECD7.D	BJH0604-MS1		1	NO MANUAL INTEGRATION
0151	08272130ECD7.D	BJH0604-MSD1		1	NO MANUAL INTEGRATION
0212	08272131ECD7.D	21G0330-02RE1		1	NO MANUAL INTEGRATION
0232	08272132ECD7.D	21G0330-03RE1		1	NO MANUAL INTEGRATION
0253	08272133ECD7.D	AR1242CCV3		1	NO MANUAL INTEGRATION
0313	08272134ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION

Security Status Report

Date: 30-Aug-2021 15:32

08272101ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
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08272125ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
08272126ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
08272127ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
08272128ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
08272129ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
08272130ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
08272131ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
08272132ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
08272133ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32
08272134ECD7.D	Data Locked	jrains, 30-Aug-2021 15:32

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0177	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJH0177-SCV1 (Solid)			Lab File ID: 08132141ECD7.D				Analyzed: 08/14/21 08:21	
Decachlorobiphenyl	40.000	105	80 - 120	13.166	13.16367	0.0023	N/A	
Tetrachlorometaxylene	40.000	109	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	103	80 - 120	13.847	13.846	0.0010	N/A	
Tetrachlorometaxylene [2C]	40.000	105	80 - 120	5.416	5.412667	0.0033	N/A	
SJH0177-SCV2 (Solid)			Lab File ID: 08132142ECD7.D				Analyzed: 08/14/21 08:41	
Decachlorobiphenyl	40.000	101	80 - 120	13.166	13.16367	0.0023	N/A	
Tetrachlorometaxylene	40.000	106	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	100	80 - 120	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	103	80 - 120	5.415	5.412667	0.0023	N/A	
SJH0177-SCV3 (Solid)			Lab File ID: 08132143ECD7.D				Analyzed: 08/14/21 09:02	
Decachlorobiphenyl	40.000	98.7	80 - 120	13.164	13.16367	0.0003	N/A	
Tetrachlorometaxylene	40.000	104	80 - 120	5.07	5.0675	0.0025	N/A	
Decachlorobiphenyl [2C]	40.000	96.1	80 - 120	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	101	80 - 120	5.415	5.412667	0.0023	N/A	
SJH0177-SCV4 (Solid)			Lab File ID: 08132144ECD7.D				Analyzed: 08/14/21 09:22	
Decachlorobiphenyl	40.000	100	80 - 120	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	107	80 - 120	5.07	5.0675	0.0025	N/A	
Decachlorobiphenyl [2C]	40.000	96.6	80 - 120	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	104	80 - 120	5.415	5.412667	0.0023	N/A	
SJH0177-SCV5 (Solid)			Lab File ID: 08132145ECD7.D				Analyzed: 08/14/21 09:43	
Decachlorobiphenyl	40.000	97.1	80 - 120	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	101	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	94.1	80 - 120	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	97.9	80 - 120	5.416	5.412667	0.0033	N/A	
SJH0177-SCV6 (Solid)			Lab File ID: 08132146ECD7.D				Analyzed: 08/14/21 10:03	
Decachlorobiphenyl	40.000	149	80 - 200	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	148	80 - 200	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	99.2	80 - 120	5.416	5.412667	0.0033	N/A	

Analytical Resources, Incorporated
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SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0254	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJH0254-ICV1 (Water)			Lab File ID: 08192102ECD7.D				Analyzed: 08/19/21 10:39	
Decachlorobiphenyl	40.000	102	0 - 200	13.166	13.16367	0.0023	N/A	
Tetrachlorometaxylene	40.000	104	0 - 200	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	91.3	0 - 200	13.845	13.846	-0.0010	N/A	
Tetrachlorometaxylene [2C]	40.000	102	0 - 200	5.41	5.412667	-0.0027	N/A	
SJH0254-ICV2 (Water)			Lab File ID: 08192103ECD7.D				Analyzed: 08/19/21 11:00	
Decachlorobiphenyl	40.000	106	0 - 200	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	109	0 - 200	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	95.0	0 - 200	13.846	13.846	0.0000	N/A	
Tetrachlorometaxylene [2C]	40.000	105	0 - 200	5.411	5.412667	-0.0017	N/A	
SJH0254-CCV1 (Water)			Lab File ID: 08192108ECD7.D				Analyzed: 08/19/21 12:42	
Decachlorobiphenyl	40.000	103	0 - 200	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	40.000	104	0 - 200	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	90.8	0 - 200	13.844	13.846	-0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	100	0 - 200	5.41	5.412667	-0.0027	N/A	
SJH0254-CCV2 (Water)			Lab File ID: 08192109ECD7.D				Analyzed: 08/19/21 13:03	
Decachlorobiphenyl	40.000	106	0 - 200	13.164	13.16367	0.0003	N/A	
Tetrachlorometaxylene	40.000	108	0 - 200	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	95.3	0 - 200	13.845	13.846	-0.0010	N/A	
Tetrachlorometaxylene [2C]	40.000	105	0 - 200	5.411	5.412667	-0.0017	N/A	
SJH0254-CCV3 (Water)			Lab File ID: 08192111ECD7.D				Analyzed: 08/19/21 15:57	
Decachlorobiphenyl	40.000	100	0 - 200	13.167	13.16367	0.0033	N/A	
Tetrachlorometaxylene	40.000	106	0 - 200	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	91.3	0 - 200	13.846	13.846	0.0000	N/A	
Tetrachlorometaxylene [2C]	40.000	103	0 - 200	5.41	5.412667	-0.0027	N/A	
SJH0254-CCV4 (Water)			Lab File ID: 08192112ECD7.D				Analyzed: 08/19/21 16:17	
Decachlorobiphenyl	40.000	105	0 - 200	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	108	0 - 200	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	93.0	0 - 200	13.844	13.846	-0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	105	0 - 200	5.412	5.412667	-0.0007	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0254	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJH0254-CCV5 (Water)			Lab File ID: 08192126ECD7.D				Analyzed: 08/19/21 21:04	
Decachlorobiphenyl	40.000	100	0 - 200	13.164	13.16367	0.0003	N/A	
Tetrachlorometaxylene	40.000	106	0 - 200	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	95.3	0 - 200	13.845	13.846	-0.0010	N/A	
Tetrachlorometaxylene [2C]	40.000	103	0 - 200	5.411	5.412667	-0.0017	N/A	
SJH0254-CCV6 (Water)			Lab File ID: 08192127ECD7.D				Analyzed: 08/19/21 21:24	
Decachlorobiphenyl	40.000	104	0 - 200	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	40.000	109	0 - 200	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	94.5	0 - 200	13.845	13.846	-0.0010	N/A	
Tetrachlorometaxylene [2C]	40.000	106	0 - 200	5.412	5.412667	-0.0007	N/A	
BJH0179-BLK1 (Solid)			Lab File ID: 08192128ECD7.D				Analyzed: 08/19/21 21:45	
Decachlorobiphenyl	8.0000	105	40 - 126	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	8.0000	100	44 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	8.0000	101	40 - 126	13.845	13.846	-0.0010	N/A	
Tetrachlorometaxylene [2C]	8.0000	96.2	44 - 120	5.411	5.412667	-0.0017	N/A	
BJH0179-BS1 (Solid)			Lab File ID: 08192129ECD7.D				Analyzed: 08/19/21 22:05	
Decachlorobiphenyl	8.0000	164	40 - 126	13.16	13.16367	-0.0037	N/A	*
Tetrachlorometaxylene	8.0000	152	44 - 120	5.066	5.0675	-0.0015	N/A	*
Decachlorobiphenyl [2C]	8.0000	142	40 - 126	13.842	13.846	-0.0040	N/A	*
Tetrachlorometaxylene [2C]	8.0000	134	44 - 120	5.41	5.412667	-0.0027	N/A	*
BJH0179-SRM1 (Solid)			Lab File ID: 08192132ECD7.D				Analyzed: 08/19/21 23:07	
Decachlorobiphenyl	40.000	83.6	40 - 126	13.159	13.16367	-0.0047	N/A	
Tetrachlorometaxylene	40.000	80.0	44 - 120	5.066	5.0675	-0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	69.9	40 - 126	13.84	13.846	-0.0060	N/A	
Tetrachlorometaxylene [2C]	40.000	74.8	44 - 120	5.409	5.412667	-0.0037	N/A	
21G0321-01 (Solid)			Lab File ID: 08192133ECD7.D				Analyzed: 08/19/21 23:27	
Decachlorobiphenyl	8.0023	95.9	40 - 126	13.161	13.16367	-0.0027	N/A	
Tetrachlorometaxylene	8.0023	48.2	44 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	8.0023	93.1	40 - 126	13.845	13.846	-0.0010	N/A	
Tetrachlorometaxylene [2C]	8.0023	44.7	44 - 120	5.41	5.412667	-0.0027	N/A	

Analytical Resources, Incorporated
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SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0254	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
21G0321-02 (Solid)			Lab File ID: 08192134ECD7.D				Analyzed: 08/19/21 23:48	
Decachlorobiphenyl	7.9844	97.2	40 - 126	13.161	13.16367	-0.0027	N/A	
Tetrachlorometaxylene	7.9844	68.8	44 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	7.9844	92.7	40 - 126	13.845	13.846	-0.0010	N/A	
Tetrachlorometaxylene [2C]	7.9844	65.8	44 - 120	5.41	5.412667	-0.0027	N/A	
21G0321-03 (Solid)			Lab File ID: 08192135ECD7.D				Analyzed: 08/20/21 00:08	
Decachlorobiphenyl	8.0010	92.5	40 - 126	13.158	13.16367	-0.0057	N/A	
Tetrachlorometaxylene	8.0010	74.5	44 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	8.0010	82.3	40 - 126	13.841	13.846	-0.0050	N/A	
Tetrachlorometaxylene [2C]	8.0010	68.6	44 - 120	5.409	5.412667	-0.0037	N/A	
BJH0193-BLK1 (Solid)			Lab File ID: 08192139ECD7.D				Analyzed: 08/20/21 01:30	
Decachlorobiphenyl	8.0000	92.5	40 - 126	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	8.0000	83.8	44 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	8.0000	90.2	40 - 126	13.847	13.846	0.0010	N/A	
Tetrachlorometaxylene [2C]	8.0000	79.2	44 - 120	5.412	5.412667	-0.0007	N/A	
BJH0193-BS1 (Solid)			Lab File ID: 08192140ECD7.D				Analyzed: 08/20/21 01:51	
Decachlorobiphenyl	8.0000	92.2	40 - 126	13.162	13.16367	-0.0017	N/A	
Tetrachlorometaxylene	8.0000	81.9	44 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	8.0000	89.9	40 - 126	13.847	13.846	0.0010	N/A	
Tetrachlorometaxylene [2C]	8.0000	77.2	44 - 120	5.411	5.412667	-0.0017	N/A	
BJH0193-MS1 (Solid)			Lab File ID: 08192141ECD7.D				Analyzed: 08/20/21 02:11	
Decachlorobiphenyl	8.0022	83.8	40 - 126	13.16	13.16367	-0.0037	N/A	
Tetrachlorometaxylene	8.0022	77.4	44 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	8.0022	77.4	40 - 126	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	8.0022	72.5	44 - 120	5.411	5.412667	-0.0017	N/A	
BJH0193-MSD1 (Solid)			Lab File ID: 08192142ECD7.D				Analyzed: 08/20/21 02:32	
Decachlorobiphenyl	8.0022	95.5	40 - 126	13.161	13.16367	-0.0027	N/A	
Tetrachlorometaxylene	8.0022	86.7	44 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	8.0022	86.1	40 - 126	13.841	13.846	-0.0050	N/A	
Tetrachlorometaxylene [2C]	8.0022	80.8	44 - 120	5.41	5.412667	-0.0027	N/A	

Analytical Resources, Incorporated
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SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0254	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
BJH0193-SRM1 (Solid)			Lab File ID: 08192143ECD7.D			Analyzed: 08/20/21 02:52		
Decachlorobiphenyl	40.000	93.4	40 - 126	13.159	13.16367	-0.0047	N/A	
Tetrachlorometaxylene	40.000	86.9	44 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	79.8	40 - 126	13.84	13.846	-0.0060	N/A	
Tetrachlorometaxylene [2C]	40.000	81.6	44 - 120	5.409	5.412667	-0.0037	N/A	
21G0321-04 (Solid)			Lab File ID: 08192144ECD7.D			Analyzed: 08/20/21 03:13		
Decachlorobiphenyl	7.9896	99.8	40 - 126	13.16	13.16367	-0.0037	N/A	
Tetrachlorometaxylene	7.9896	90.9	44 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	7.9896	91.1	40 - 126	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	7.9896	83.3	44 - 120	5.409	5.412667	-0.0037	N/A	
21G0321-05 (Solid)			Lab File ID: 08192145ECD7.D			Analyzed: 08/20/21 03:33		
Decachlorobiphenyl	8.0010	87.4	40 - 126	13.161	13.16367	-0.0027	N/A	
Tetrachlorometaxylene	8.0010	76.9	44 - 120	5.066	5.0675	-0.0015	N/A	
Decachlorobiphenyl [2C]	8.0010	80.4	40 - 126	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	8.0010	72.6	44 - 120	5.41	5.412667	-0.0027	N/A	
SJH0254-CCV7 (Water)			Lab File ID: 08192146ECD7.D			Analyzed: 08/20/21 03:54		
Decachlorobiphenyl	40.000	101	0 - 200	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	40.000	104	0 - 200	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	95.5	0 - 200	13.846	13.846	0.0000	N/A	
Tetrachlorometaxylene [2C]	40.000	100	0 - 200	5.411	5.412667	-0.0017	N/A	
SJH0254-CCV8 (Water)			Lab File ID: 08192147ECD7.D			Analyzed: 08/20/21 04:14		
Decachlorobiphenyl	40.000	104	0 - 200	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	106	0 - 200	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	97.5	0 - 200	13.849	13.846	0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	103	0 - 200	5.411	5.412667	-0.0017	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0396	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJH0396-ICV1 (Solid)			Lab File ID: 08272103ECD7.D				Analyzed: 08/27/21 16:39	
Decachlorobiphenyl	40.000	105	80 - 120	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	105	80 - 120	5.07	5.0675	0.0025	N/A	
Decachlorobiphenyl [2C]	40.000	94.3	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	102	80 - 120	5.412	5.412667	-0.0007	N/A	
SJH0396-ICV2 (Solid)			Lab File ID: 08272104ECD7.D				Analyzed: 08/27/21 17:00	
Decachlorobiphenyl	40.000	108	80 - 120	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	109	80 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	97.5	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	105	80 - 120	5.412	5.412667	-0.0007	N/A	
SJH0396-CCV1 (Solid)			Lab File ID: 08272119ECD7.D				Analyzed: 08/27/21 22:06	
Decachlorobiphenyl	40.000	104	80 - 120	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.07	5.0675	0.0025	N/A	
Decachlorobiphenyl [2C]	40.000	89.5	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	98.8	80 - 120	5.413	5.412667	0.0003	N/A	
SJH0396-CCV2 (Solid)			Lab File ID: 08272120ECD7.D				Analyzed: 08/27/21 22:27	
Decachlorobiphenyl	40.000	105	80 - 120	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	106	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	96.3	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	102	80 - 120	5.414	5.412667	0.0013	N/A	
BJH0604-BLK1 (Solid)			Lab File ID: 08272121ECD7.D				Analyzed: 08/27/21 22:47	
Decachlorobiphenyl	8.0000	80.7	40 - 126	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	8.0000	77.4	44 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	8.0000	74.6	40 - 126	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	8.0000	72.7	44 - 120	5.412	5.412667	-0.0007	N/A	
BJH0604-BS1 (Solid)			Lab File ID: 08272122ECD7.D				Analyzed: 08/27/21 23:08	
Decachlorobiphenyl	8.0000	77.2	40 - 126	13.164	13.16367	0.0003	N/A	
Tetrachlorometaxylene	8.0000	72.9	44 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	8.0000	71.7	40 - 126	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	8.0000	69.1	44 - 120	5.412	5.412667	-0.0007	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0396	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
BJH0604-BSD1 (Solid)			Lab File ID: 08272123ECD7.D				Analyzed: 08/27/21 23:28	
Decachlorobiphenyl	8.0000	82.7	40 - 126	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	8.0000	76.7	44 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	8.0000	76.4	40 - 126	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	8.0000	72.5	44 - 120	5.412	5.412667	-0.0007	N/A	
BJH0604-SRM1 (Solid)			Lab File ID: 08272124ECD7.D				Analyzed: 08/27/21 23:49	
Decachlorobiphenyl	40.000	72.6	40 - 126	13.157	13.16367	-0.0067	N/A	
Tetrachlorometaxylene	40.000	72.3	44 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	60.2	40 - 126	13.837	13.846	-0.0090	N/A	
Tetrachlorometaxylene [2C]	40.000	64.3	44 - 120	5.41	5.412667	-0.0027	N/A	
21G0321-01RE1 (Solid)			Lab File ID: 08272125ECD7.D				Analyzed: 08/28/21 00:09	
Decachlorobiphenyl	8.0023	77.0	40 - 126	13.161	13.16367	-0.0027	N/A	
Tetrachlorometaxylene	8.0023	52.0	44 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	8.0023	70.4	40 - 126	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	8.0023	49.1	44 - 120	5.411	5.412667	-0.0017	N/A	
21G0321-02RE1 (Solid)			Lab File ID: 08272126ECD7.D				Analyzed: 08/28/21 00:30	
Decachlorobiphenyl	7.9969	75.9	40 - 126	13.162	13.16367	-0.0017	N/A	
Tetrachlorometaxylene	7.9969	60.4	44 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	7.9969	69.4	40 - 126	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	7.9969	57.9	44 - 120	5.411	5.412667	-0.0017	N/A	
21G0321-03RE1 (Solid)			Lab File ID: 08272127ECD7.D				Analyzed: 08/28/21 00:50	
Decachlorobiphenyl	7.9948	79.5	40 - 126	13.159	13.16367	-0.0047	N/A	
Tetrachlorometaxylene	7.9948	65.0	44 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	7.9948	68.7	40 - 126	13.839	13.846	-0.0070	N/A	
Tetrachlorometaxylene [2C]	7.9948	60.2	44 - 120	5.411	5.412667	-0.0017	N/A	
SJH0396-CCV3 (Solid)			Lab File ID: 08272133ECD7.D				Analyzed: 08/28/21 02:53	
Decachlorobiphenyl	40.000	102	80 - 120	13.164	13.16367	0.0003	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.07	5.0675	0.0025	N/A	
Decachlorobiphenyl [2C]	40.000	93.5	80 - 120	13.844	13.846	-0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	97.5	80 - 120	5.413	5.412667	0.0003	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0396	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/13/2021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJH0396-CCV4 (Solid)			Lab File ID: 08272134ECD7.D				Analyzed: 08/28/21 03:13	
Decachlorobiphenyl	40.000	105	80 - 120	13.166	13.16367	0.0023	N/A	
Tetrachlorometaxylene	40.000	105	80 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	95.5	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	99.5	80 - 120	5.413	5.412667	0.0003	N/A	
SJH0396-ICV3 (Solid)			Lab File ID: 08282102ECD7B.D				Analyzed: 08/28/21 17:04	
Decachlorobiphenyl	40.000	115	80 - 120	13.167	13.16367	0.0033	N/A	
Tetrachlorometaxylene	40.000	101	80 - 120	5.07	5.0675	0.0025	N/A	
Decachlorobiphenyl [2C]	40.000	106	80 - 120	13.847	13.846	0.0010	N/A	
Tetrachlorometaxylene [2C]	40.000	97.5	80 - 120	5.41	5.412667	-0.0027	N/A	
SJH0396-ICV4 (Solid)			Lab File ID: 08282103ECD7B.D				Analyzed: 08/28/21 17:24	
Decachlorobiphenyl	40.000	108	80 - 120	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	40.000	109	80 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	96.5	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	105	80 - 120	5.41	5.412667	-0.0027	N/A	
SJH0396-CCV5 (Solid)			Lab File ID: 08282109ECD7B.D				Analyzed: 08/28/21 19:27	
Decachlorobiphenyl	40.000	104	80 - 120	13.164	13.16367	0.0003	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	93.5	80 - 120	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	40.000	99.3	80 - 120	5.412	5.412667	-0.0007	N/A	
SJH0396-CCV6 (Solid)			Lab File ID: 08282110ECD7B.D				Analyzed: 08/28/21 19:47	
Decachlorobiphenyl	40.000	106	80 - 120	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	107	80 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	96.8	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	104	80 - 120	5.411	5.412667	-0.0017	N/A	
SJH0396-CCV7 (Solid)			Lab File ID: 08282112ECD7B.D				Analyzed: 08/28/21 20:28	
Decachlorobiphenyl	40.000	102	80 - 120	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	95.3	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	99.8	80 - 120	5.411	5.412667	-0.0017	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0396	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/13/2021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJH0396-CCV8 (Solid)			Lab File ID: 08282113ECD7B.D				Analyzed: 08/28/21 20:49	
Decachlorobiphenyl	40.000	105	80 - 120	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	40.000	106	80 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	96.8	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	103	80 - 120	5.41	5.412667	-0.0027	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0177	Instrument:	ECD7
		Calibration:	EH00034

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (SJH0177-SCV1)		(Solid)		Lab File ID: 08132141ECD7.D				Analyzed: 08/14/21 08:21	
1-Bromo-2-Nitrobenzene	247644	2.856				50 - 200		+/-0.50	
Hexabromobiphenyl	438534	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	705551	3.645				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	973863	14.744				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV2)		(Solid)		Lab File ID: 08132142ECD7.D				Analyzed: 08/14/21 08:41	
1-Bromo-2-Nitrobenzene	258029	2.855				50 - 200		+/-0.50	
Hexabromobiphenyl	455205	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	724238	3.645				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1002202	14.745				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV3)		(Solid)		Lab File ID: 08132143ECD7.D				Analyzed: 08/14/21 09:02	
1-Bromo-2-Nitrobenzene	264526	2.854				50 - 200		+/-0.50	
Hexabromobiphenyl	465895	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	740726	3.644				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1045189	14.744				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV4)		(Solid)		Lab File ID: 08132144ECD7.D				Analyzed: 08/14/21 09:22	
1-Bromo-2-Nitrobenzene	260417	2.853				50 - 200		+/-0.50	
Hexabromobiphenyl	458139	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	730797	3.644				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1034233	14.745				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV5)		(Solid)		Lab File ID: 08132145ECD7.D				Analyzed: 08/14/21 09:43	
1-Bromo-2-Nitrobenzene	269058	2.856				50 - 200		+/-0.50	
Hexabromobiphenyl	467004	13.521				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	745766	3.646				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1054321	14.744				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV6)		(Solid)		Lab File ID: 08132146ECD7.D				Analyzed: 08/14/21 10:03	
1-Bromo-2-Nitrobenzene	263445	2.855				50 - 200		+/-0.50	
Hexabromobiphenyl	458283	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	736133	3.645				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1049914	14.745				50 - 200		+/-0.50	

Analytical Resources, Incorporated
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INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0254	Instrument:	ECD7
		Calibration:	EH00034

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SJH0254-ICV1)		(Water)		Lab File ID: 08192102ECD7.D				Analyzed: 08/19/21 10:39	
1-Bromo-2-Nitrobenzene	260575	2.854	260575	2.854	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	434954	13.521	434954	13.521	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	728411	3.641	728411	3.641	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	924965	14.74	924965	14.74	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SJH0254-ICV2)		(Water)		Lab File ID: 08192103ECD7.D				Analyzed: 08/19/21 11:00	
1-Bromo-2-Nitrobenzene	251059	2.855	260575	2.854	96	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	417994	13.518	434954	13.521	96	50 - 200	-0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	716282	3.642	728411	3.641	98	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	927894	14.74	924965	14.74	100	50 - 200	0.000	+/-0.50	
Blank (BJH0179-BLK1)		(Solid)		Lab File ID: 08192128ECD7.D				Analyzed: 08/19/21 21:45	
1-Bromo-2-Nitrobenzene	276713	2.855	260575	2.854	106	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	513549	13.516	434954	13.521	118	50 - 200	-0.005	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	779279	3.643	728411	3.641	107	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	1225775	14.738	924965	14.74	133	50 - 200	-0.002	+/-0.50	
LCS (BJH0179-BS1)		(Solid)		Lab File ID: 08192129ECD7.D				Analyzed: 08/19/21 22:05	
1-Bromo-2-Nitrobenzene	279255	2.855	260575	2.854	107	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	419772	13.512	434954	13.521	97	50 - 200	-0.009	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	774764	3.641	728411	3.641	106	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	1129011	14.735	924965	14.74	122	50 - 200	-0.005	+/-0.50	
Reference (BJH0179-SRM1)		(Solid)		Lab File ID: 08192132ECD7.D				Analyzed: 08/19/21 23:07	
1-Bromo-2-Nitrobenzene	273215	2.854	260575	2.854	105	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	405308	13.51	434954	13.521	93	50 - 200	-0.011	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	768530	3.641	728411	3.641	106	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	1108607	14.734	924965	14.74	120	50 - 200	-0.006	+/-0.50	
LDW21-IT615A (21G0321-01)		(Solid)		Lab File ID: 08192133ECD7.D				Analyzed: 08/19/21 23:27	
1-Bromo-2-Nitrobenzene	270601	2.856	251059	2.855	108	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	468913	13.515	417994	13.518	112	50 - 200	-0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	756509	3.643	716282	3.642	106	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	1117084	14.761	927894	14.74	120	50 - 200	0.021	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0254	Instrument:	ECD7
		Calibration:	EH00034

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LDW21-IT617A (21G0321-02)		(Solid)		Lab File ID: 08192134ECD7.D				Analyzed: 08/19/21 23:48	
1-Bromo-2-Nitrobenzene	282076	2.857	251059	2.855	112	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl	483408	13.514	417994	13.518	116	50 - 200	-0.004	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	778724	3.643	716282	3.642	109	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	1214449	14.737	927894	14.74	131	50 - 200	-0.003	+/-0.50	
LDW21-IT618A (21G0321-03)		(Solid)		Lab File ID: 08192135ECD7.D				Analyzed: 08/20/21 00:08	
1-Bromo-2-Nitrobenzene	278235	2.853	251059	2.855	111	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	435394	13.511	417994	13.518	104	50 - 200	-0.007	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	783885	3.641	716282	3.642	109	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	1160071	14.734	927894	14.74	125	50 - 200	-0.006	+/-0.50	
Blank (BJH0193-BLK1)		(Solid)		Lab File ID: 08192139ECD7.D				Analyzed: 08/20/21 01:30	
1-Bromo-2-Nitrobenzene	282356	2.856	260575	2.854	108	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl	510219	13.517	434954	13.521	117	50 - 200	-0.004	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	808740	3.643	728411	3.641	111	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	1259900	14.739	924965	14.74	136	50 - 200	-0.001	+/-0.50	
LCS (BJH0193-BS1)		(Solid)		Lab File ID: 08192140ECD7.D				Analyzed: 08/20/21 01:51	
1-Bromo-2-Nitrobenzene	285774	2.856	260575	2.854	110	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl	507556	13.517	434954	13.521	117	50 - 200	-0.004	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	815516	3.643	728411	3.641	112	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	1262918	14.738	924965	14.74	137	50 - 200	-0.002	+/-0.50	
Matrix Spike (BJH0193-MS1)		(Solid)		Lab File ID: 08192141ECD7.D				Analyzed: 08/20/21 02:11	
1-Bromo-2-Nitrobenzene	290218	2.854	260575	2.854	111	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	483631	13.513	434954	13.521	111	50 - 200	-0.008	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	824658	3.642	728411	3.641	113	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	1235046	14.737	924965	14.74	134	50 - 200	-0.003	+/-0.50	
Matrix Spike Dup (BJH0193-MSD1)		(Solid)		Lab File ID: 08192142ECD7.D				Analyzed: 08/20/21 02:32	
1-Bromo-2-Nitrobenzene	287928	2.854	260575	2.854	110	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	459362	13.512	434954	13.521	106	50 - 200	-0.009	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	814852	3.642	728411	3.641	112	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	1199741	14.736	924965	14.74	130	50 - 200	-0.004	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0254	Instrument:	ECD7
		Calibration:	EH00034

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Reference (BJH0193-SRM1)		(Solid)		Lab File ID: 08192143ECD7.D				Analyzed: 08/20/21 02:52	
1-Bromo-2-Nitrobenzene	277381	2.855	260575	2.854	106	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	429245	13.512	434954	13.521	99	50 - 200	-0.009	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	779698	3.642	728411	3.641	107	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	1151014	14.735	924965	14.74	124	50 - 200	-0.005	+/-0.50	
LDW21-IT624A (21G0321-04)		(Solid)		Lab File ID: 08192144ECD7.D				Analyzed: 08/20/21 03:13	
1-Bromo-2-Nitrobenzene	274875	2.854	251059	2.855	109	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	448397	13.511	417994	13.518	107	50 - 200	-0.007	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	785660	3.641	716282	3.642	110	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	1159889	14.735	927894	14.74	125	50 - 200	-0.005	+/-0.50	
LDW21-IT626A (21G0321-05)		(Solid)		Lab File ID: 08192145ECD7.D				Analyzed: 08/20/21 03:33	
1-Bromo-2-Nitrobenzene	286896	2.851	251059	2.855	114	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl	491485	13.514	417994	13.518	118	50 - 200	-0.004	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	811257	3.64	716282	3.642	113	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	1242961	14.737	927894	14.74	134	50 - 200	-0.003	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0396	Instrument:	ECD7
		Calibration:	EH00034

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SJH0396-ICV1)		(Solid)		Lab File ID: 08272103ECD7.D				Analyzed: 08/27/21 16:39	
1-Bromo-2-Nitrobenzene	257382	2.853	257382	2.853	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	413416	13.519	413416	13.519	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	692364	3.642	692364	3.642	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	898806	14.738	898806	14.738	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SJH0396-ICV2)		(Solid)		Lab File ID: 08272104ECD7.D				Analyzed: 08/27/21 17:00	
1-Bromo-2-Nitrobenzene	244971	2.851	257382	2.853	95	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	394390	13.519	413416	13.519	95	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	670867	3.641	692364	3.642	97	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	880368	14.738	898806	14.738	98	50 - 200	0.000	+/-0.50	
Blank (BJH0604-BLK1)		(Solid)		Lab File ID: 08272121ECD7.D				Analyzed: 08/27/21 22:47	
1-Bromo-2-Nitrobenzene	257413	2.852	257382	2.853	100	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	458995	13.517	413416	13.519	111	50 - 200	-0.002	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	696987	3.641	692364	3.642	101	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	1087353	14.739	898806	14.738	121	50 - 200	0.001	+/-0.50	
LCS (BJH0604-BS1)		(Solid)		Lab File ID: 08272122ECD7.D				Analyzed: 08/27/21 23:08	
1-Bromo-2-Nitrobenzene	276037	2.851	257382	2.853	107	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	494947	13.518	413416	13.519	120	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	741441	3.639	692364	3.642	107	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl [2C]	1177166	14.737	898806	14.738	131	50 - 200	-0.001	+/-0.50	
LCS Dup (BJH0604-BSD1)		(Solid)		Lab File ID: 08272123ECD7.D				Analyzed: 08/27/21 23:28	
1-Bromo-2-Nitrobenzene	276178	2.85	257382	2.853	107	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl	492904	13.516	413416	13.519	119	50 - 200	-0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	739762	3.639	692364	3.642	107	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl [2C]	1170091	14.737	898806	14.738	130	50 - 200	-0.001	+/-0.50	
Reference (BJH0604-SRM1)		(Solid)		Lab File ID: 08272124ECD7.D				Analyzed: 08/27/21 23:49	
1-Bromo-2-Nitrobenzene	294169	2.851	257382	2.853	114	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	427483	13.509	413416	13.519	103	50 - 200	-0.010	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	767860	3.639	692364	3.642	111	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl [2C]	1135755	14.732	898806	14.738	126	50 - 200	-0.006	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0396	Instrument:	ECD7
		Calibration:	EH00034

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LDW21-IT615A (21G0321-01RE1)		(Solid)		Lab File ID: 08272125ECD7.D				Analyzed: 08/28/21 00:09	
1-Bromo-2-Nitrobenzene	278945	2.851	282704	2.852	99	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	482481	13.515	372012	13.52	130	50 - 200	-0.005	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	736720	3.639	612899	3.638	120	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	1171289	14.735	832803	14.737	141	50 - 200	-0.002	+/-0.50	
LDW21-IT617A (21G0321-02RE1)		(Solid)		Lab File ID: 08272126ECD7.D				Analyzed: 08/28/21 00:30	
1-Bromo-2-Nitrobenzene	272055	2.851	282704	2.852	96	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	473125	13.515	372012	13.52	127	50 - 200	-0.005	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	723128	3.639	612899	3.638	118	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	1153218	14.736	832803	14.737	138	50 - 200	-0.001	+/-0.50	
LDW21-IT618A (21G0321-03RE1)		(Solid)		Lab File ID: 08272127ECD7.D				Analyzed: 08/28/21 00:50	
1-Bromo-2-Nitrobenzene	283126	2.851	282704	2.852	100	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	454709	13.511	372012	13.52	122	50 - 200	-0.009	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	770678	3.639	612899	3.638	126	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	1173753	14.733	832803	14.737	141	50 - 200	-0.004	+/-0.50	
Initial Cal Check (SJH0396-ICV3)		(Solid)		Lab File ID: 08282102ECD7B.D				Analyzed: 08/28/21 17:04	
1-Bromo-2-Nitrobenzene	282704	2.852	257382	2.853	110	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	485479	13.52	413416	13.519	117	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	752712	3.638	692364	3.642	109	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl [2C]	1073483	14.74	898806	14.738	119	50 - 200	0.002	+/-0.50	
Initial Cal Check (SJH0396-ICV4)		(Solid)		Lab File ID: 08282103ECD7B.D				Analyzed: 08/28/21 17:24	
1-Bromo-2-Nitrobenzene	230995	2.85	257382	2.853	90	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl	372012	13.52	413416	13.519	90	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	612899	3.638	692364	3.642	89	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl [2C]	832803	14.737	898806	14.738	93	50 - 200	-0.001	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0321-01	File ID:	08192133ECD7.D
Sampled:	07/07/21 14:51	Prepared:	08/06/21 11:30	Analyzed:	08/19/21 23:27
Solids:	97.40	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BJH0179	Sequence:	SJH0254		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1254	* 1	9.858	9.868333	0.0103	2475.4	2.6	.
	2	10.15	10.155	0.005	9111.4	2.6	
Aroclor 1260	1	11.552	11.55517	0.00317	904.8	0.7	.
	* 2	12.964	12.9715	0.0075	5175.5	0.7	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0321-02	File ID:	08192134ECD7.D
Sampled:	07/07/21 15:40	Prepared:	08/06/21 11:30	Analyzed:	08/19/21 23:48
Solids:	98.00	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BJH0179	Sequence:	SJH0254		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1254	* 1	9.86	9.868333	0.00833	5739.8	5.7	3.6
	2	10.146	10.155	0.009	20739.6	5.5	
Aroclor 1260	1	11.551	11.55517	0.00417	1495.4	1.0	9.5
	* 2	12.966	12.9715	0.0055	8534	1.1	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0321-03	File ID:	08192135ECD7.D
Sampled:	07/07/21 16:20	Prepared:	08/06/21 11:30	Analyzed:	08/20/21 00:08
Solids:	97.72	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BJH0179	Sequence:	SJH0254		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	8.669	8.6755	0.0065	9142.25	12.0	60.9
	2	9.364	9.385333	0.0213	14366.5	6.4	
Aroclor 1254	* 1	9.857	9.868333	0.0113	14002.8	13.9	9.
	2	10.142	10.155	0.013	51237.8	12.7	
Aroclor 1260	* 1	11.549	11.55517	0.00617	6465.6	5.1	6.1
	2	12.962	12.9715	0.0095	34839	4.8	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0321-04	File ID:	08192144ECD7.D
Sampled:	07/07/21 17:02	Prepared:	08/06/21 13:00	Analyzed:	08/20/21 03:13
Solids:	99.10	Preparation:	EPA 3550C (Ultrasonic)	Instrument:	ECD7
Batch:	BJH0193	Sequence:	SJH0254		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1254	1	9.86	9.868333	0.00833	5091.2	5.1	7.5
	* 2	10.142	10.155	0.013	21369.4	5.5	
Aroclor 1260	1	11.55	11.55517	0.00517	2075.6	1.6	6.1
	* 2	12.965	12.9715	0.0065	12503.25	1.7	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0321-05	File ID:	08192145ECD7.D
Sampled:	07/07/21 18:32	Prepared:	08/06/21 13:00	Analyzed:	08/20/21 03:33
Solids:	98.88	Preparation:	EPA 3550C (Ultrasonic)	Instrument:	ECD7
Batch:	BJH0193	Sequence:	SJH0254		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1254	1	9.859	9.868333	0.00933	12917	12.2	3.2
	* 2	10.146	10.155	0.009	52184.2	12.6	
Aroclor 1260	* 1	11.551	11.55517	0.00417	3131.2	2.2	20.
	2	12.965	12.9715	0.0065	19543	1.8	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0321-01RE1	File ID:	08272125ECD7.D
Sampled:	07/07/21 14:51	Prepared:	08/25/21 13:40	Analyzed:	08/28/21 00:09
Solids:	97.40	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BJH0604	Sequence:	SJH0396		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1254	* 1	9.861	9.868333	0.00733	2496.8	2.6	12.2
	2	10.149	10.155	0.006	8159.6	2.3	
Aroclor 1260	1	11.553	11.55517	0.00217	853.8	0.6	15.4
	* 2	12.965	12.9715	0.0065	4915	0.7	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0321-02RE1	File ID:	08272126ECD7.D
Sampled:	07/07/21 15:40	Prepared:	08/25/21 13:40	Analyzed:	08/28/21 00:30
Solids:	98.00	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BJH0604	Sequence:	SJH0396		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1254	* 1	9.861	9.868333	0.00733	2491.8	2.6	12.2
	2	10.15	10.155	0.005	8138.4	2.3	
Aroclor 1260	* 1	11.553	11.55517	0.00217	923.4	0.7	.
	2	12.964	12.9715	0.0075	5199.75	0.7	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0321-03RE1	File ID:	08272127ECD7.D
Sampled:	07/07/21 16:20	Prepared:	08/25/21 13:40	Analyzed:	08/28/21 00:50
Solids:	97.72	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BJH0604	Sequence:	SJH0396		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	8.671	8.6755	0.0045	10056.5	8.6	20.5
	2	9.368	9.385333	0.0173	15668.25	7.0	
Aroclor 1254	* 1	9.859	9.868333	0.00933	14647.8	14.3	14.2
	2	10.144	10.155	0.011	49915.4	12.4	
Aroclor 1260	* 1	11.549	11.55517	0.00617	7400.2	5.7	9.2
	2	12.962	12.9715	0.0095	38606.25	5.2	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HOLDING TIME SUMMARY

Analysis: EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 21G0321

Client: Anchor QEA, LLC Project: Lower Duwamish AOC4

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
LDW21-IT615A 21G0321-01	07/07/21 14:51	07/27/21 12:20	08/06/21 11:30	29	14	08/19/21 23:27	13	40	*
LDW21-IT615A 21G0321-01RE1	07/07/21 14:51	07/27/21 12:20	08/25/21 13:40	48	14	08/28/21 00:09	2	40	*
LDW21-IT617A 21G0321-02	07/07/21 15:40	07/27/21 12:20	08/06/21 11:30	29	14	08/19/21 23:48	14	40	*
LDW21-IT617A 21G0321-02RE1	07/07/21 15:40	07/27/21 12:20	08/25/21 13:40	48	14	08/28/21 00:30	2	40	*
LDW21-IT618A 21G0321-03	07/07/21 16:20	07/27/21 12:20	08/06/21 11:30	29	14	08/20/21 00:08	14	40	*
LDW21-IT618A 21G0321-03RE1	07/07/21 16:20	07/27/21 12:20	08/25/21 13:40	48	14	08/28/21 00:50	2	40	*
LDW21-IT624A 21G0321-04	07/07/21 17:02	07/27/21 12:20	08/06/21 13:00	29	14	08/20/21 03:13	14	40	*
LDW21-IT626A 21G0321-05	07/07/21 18:32	07/27/21 12:20	08/06/21 13:00	29	14	08/20/21 03:33	14	40	*
Matrix Spike BJH0193-MS1	07/07/21 17:02	07/27/21 12:20	08/06/21 13:00	29	14	08/20/21 02:11	14	40	*
Matrix Spike Dup BJH0193-MSD1	07/07/21 17:02	07/27/21 12:20	08/06/21 13:00	29	14	08/20/21 02:32	14	40	*

* Indicates hold time exceedance.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
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 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

AccuStandard
125 Market Street
New Haven, CT 06513
(203) 786-5290

CERTIFICATE OF PRODUCT DATA

PRODUCT: S-279N
DESCRIPTION: Volatile Organic Compound (TCMx)
LOT #: 0052481B-1
SOLVENT: N/A

EXPIRATION: July 28, 2015

This product is guaranteed accurate to ±0.5% of the Certified Analyte concentration through the Expiration Date on the Label.

Component	CAS #	Purity % (GC/FID)	Prepared Concentration[1]	Certified Analyte Concentration[2]
Tetrachloro-meta-xylene (TCMX)	877-09-8	96.0	N/A	N/A

Te

* I1769A

Certified by: R. Cooper

1. All weights are traceable through National Institute of Standards & Technology, Test No. 822/254480
2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty calculated for this product is ±4% which is the Combined Uncertainty uc(y). It represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The Expanded Uncertainty is U which is Uc(y) *K where K is the coverage factor at the 95% confidence level (K=2).
3. A product with a suffix (-1A, -2B, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

Please note: AccuStandard follows the U.S. conventions in reporting numerical values, on both certificates and labels.

A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

This product was manufactured in accordance to quality system requirements of ISO 9001:2000 and ISO 17025

* Recertified ~ 4-6-09 (8)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Standard Record
Standard ID: C000147

Printed: 4/23/2015 11:52:09AM

Description:	tetrachlormetaxylene	Expires:	15-Jan-2020
Standard Type:	Other	Prepared:	15-Jan-2014
Solvent:	n/a	Prepared By:	Joshua Rains
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	27-Feb-2015 13:01 by JGR
Vendor:	Accustandard	Lot #:	0052481b-1
Vendor Catalog #:			

Comments

see I1769a
updated for calibration TCX DCBP 06/12/14 sdrd

Analyte	CAS Number	Concentration	Units
Tetrachlorometaxylene [2C]	877-09-8	1000000	ug/mL
Tetrachlorometaxylene	877-09-8	1000000	ug/mL
TCX 1660 [2C]	877-09-8	1000000	ug/mL
TCX 1660	877-09-8	1000000	ug/mL
TCX [2C]	877-09-8	1000000	ug/mL
TCX (A) [2C]	877-09-8	1000000	ug/mL
TCX (A)	877-09-8	1000000	ug/mL
TCX	877-09-8	1000000	ug/mL

Reviewed By Date

AccuStandard
125 Market Street
New Haven, CT 06513
(203) 786-5290

CERTIFICATE OF PRODUCT DATA

PRODUCT: C-209N
EXPIRATION: Jul 28, 2015
DESCRIPTION: 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl
LOT #: 990521LB-AC
SOLVENT: N/A

This product is guaranteed accurate to ±0.5% of the Certified Analyte concentration through the Expiration Date on the Label.

Component	CAS #	Purity % (GC/MS)	Prepared Concentration[1]	Certified Analyte Concentration[2]
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2051-24-3	100	N/A	N/A

2,

* I1768A

Certified by: R. Cooper

1. All weights are traceable through National Institute of Standards & Technology, Test No. 822/254480
2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty calculated for this product is ±4% which is the Combined Uncertainty uc(y). It represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The Expanded Uncertainty is U which is Uc(y) *K where K is the coverage factor at the 95% confidence level (K=2).
3. A product with a suffix (-1A, -2B, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

Please note: AccuStandard follows the U.S. conventions in reporting numerical values, on both certificates and labels.

A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

This product was manufactured in accordance to quality system requirements of ISO 9001:2000 and ISO 17025

* Recertified 2 4-6-09 (JS)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Standard Record
Standard ID: C000148

Printed: 4/23/2015 11:54:44AM

Description:	decachlorbiphenyl	Expires:	15-Jan-2020
Standard Type:	Other	Prepared:	15-Jan-2014
Solvent:	na/a	Prepared By:	Joshua Rains
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	27-Feb-2015 13:03 by JGR
Vendor:	Accustandard	Lot #:	990521lb-ac
Vendor Catalog #:			

Comments

see i1768a
SOM calibrations added 06/12/14 sdrd

Analyte	CAS Number	Concentration	Units
Decachlorobiphenyl [2C]	2051-24-3	1000000	ug/mL
Decachlorobiphenyl	2051-24-3	1000000	ug/mL
DCB 1660 [2C]	2051-24-3	1000000	ug/mL
DCB 1660	2051-24-3	1000000	ug/mL
DCB [2C]	2051-24-3	1000000	ug/mL
DCB (A) [2C]	2051-24-3	1000000	ug/mL
DCB (A)	2051-24-3	1000000	ug/mL
DCB	2051-24-3	1000000	ug/mL

Reviewed By Date

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Certificate of Analysis

Phenova Certified Reference Materials are sold by Phenomenex.
411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at **www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards**

Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101467
Description: Aroclor 1016
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Isooctane

Lot Number: CL12908
Certification Date: November 19, 2018
Expiration Date: October 31, 2026

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1016	12674-11-2	1000	± 0.553%

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09/22/20

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ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova
Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA
ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

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Certificate of Analysis

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Access your MSDS and digital C of A at **www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards**

Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101462
Description: Aroclor 1260
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Hexane

Lot Number: CL13054
Certification Date: November 29, 2018
Expiration Date: November 30, 2026

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1260	11096-82-5	1000	± 0.520%

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Recd. JR
09/22/20

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Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Reference Material Producer
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Certificate of Analysis

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Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

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Certificate of Analysis

Aroclor 1016 Solution

Product Number: PP-282 **Page:** 1 of 1

Lot Number: CR-0761 **Lot Issue Date:** 28-Feb-2017 **Expiration Date:** 31-Mar-2025

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1016	012674-11-2	NT01016	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

J000580

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered TUV USA, Inc.

John Russo
President

Monica Bourgeois
Director of QA/RA

250 Smith Street North Kingstown, Rhode Island 02852 www.agilent.com/quality

Agilent

Certificate of Analysis

Product Name: Aroclor 1221 Standard

Product Number: PP-292-1 **Lot Issue Date:** 28-Apr-2020

Lot Number: 0006535333 **Expiration Date:** 31-May-2024

Description:

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system, and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1221	011104-28-2	RM04278	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage Conditions: Store at Room Temperature (15° to 30°C).

J000581

Traceability:

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:

Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

ISO 17034 Cert No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

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CSD-QA-015.1

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ISO 17025 Cert No. AT-1937

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Certificate of Analysis
ISO 17034

Aroclor 1232 Standard

Product Number: PP-302-1 **Page:** 1 of 1

Lot Number: CF-2197A **Lot Issue Date:** 05-Jul-2016 **Expiration Date:** 31-Aug-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1232	011141-16-5	NT01717	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

2021/15/21
J000582

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO17025 Cert No. AT-1937

Agilent

Certificate of Analysis
ISO Guide 34

Aroclor 1242 Solution

Product Number: PP-312 **Page:** 1 of 1

Lot Number: CS-6293 **Lot Issue Date:** 04-Jan-2019 **Expiration Date:** 31-Jan-2023

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1242	053469-21-9	NT01020	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

M Bourgeois

Monica Bourgeois
QMS Representative

J 000583

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ISO Guide 34 Cert No.
AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026
registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO17025 Cert No.
AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 **www.agilent.com/quality**

Agilent

Certificate of Analysis
ISO Guide 34

Aroclor 1248 Standard

Product Number: PP-342 **Page:** 1 of 1

Lot Number: CT-0774 **Lot Issue Date:** 08-Mar-2019 **Expiration Date:** 31-Mar-2023

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1248	012672-29-6	NT01718	100.3 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

M Bourgeois

Monica Bourgeois
QMS Representative

J000584
01/15/21

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ISO Guide 34 Cert No.
AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026
registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO17025 Cert No.
AT-1937

Certificate of Analysis

Aroclor 1254 Solution

Product Number:	PP-352			**Page:**	1 of 1
Lot Number:	CK-4250	**Lot Issue Date:**	31-Dec-2013	**Expiration Date:**	31-Jan-2022

This certified Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1254	011097-69-1	RM00922	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15-30°C).

J000585

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

ACCREDITED

ISO 17025:2005 Accredited A2LA Cert. No. 0851-01

ISO 9001:2008 Registered TUV USA, Inc. Cert. No. 09-1009

250 Smith Street, North Kingstown, RI 02852 USA
401-294-9400 Fax: 295-2330
wwww.ultrasci.com

William J. Leary
Quality Assurance Manager

Agilent

Certificate of Analysis
ISO 17034

Aroclor 1262 Standard

Product Number: PP-372-1 **Page:** 1 of 1

Lot Number: 0006499800 **Lot Issue Date:** 04-Nov-2019 **Expiration Date:** 30-Nov-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent Technologies ISO 9001 registered quality system. A review of the gravimetric preparation data by our ISO 17025 accredited laboratory serves to verify the concentration of each analyte. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1262	037324-23-5	RM14263	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

J000 587

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert No. AT-1937

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Agilent

Certificate of Analysis
ISO 17034

Aroclor 1268 Standard

Product Number: PP-382-1 **Page:** 1 of 1

Lot Number: 0006478417 **Lot Issue Date:** 24-Jul-2019 **Expiration Date:** 31-Aug-2027

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1268	011100-14-4	RM00937	100.3 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

M Bourgeois

Monica Bourgeois
QMS Representative

J000588

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert No. AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 www.agilent.com/quality

Recipient Copy

CHAIN-OF-CUSTODY RECORD

COC No. 15130

Order Number: CB014550

Date Shipped: 6/30/2021

AirBill No(s): 460843969796

From: QATS LABORATORY
2700 CHANDLER AVENUE, BLDG. C
LAS VEGAS, NV 89120
PHONE: 1-702-895-8712
FAX: 1-702-795-8210

To: SUE DUNNIHOO
ANALYTICAL RESOURCES INC.
4611 S. 134TH PLACE SUITE 100
TUKWILA WA 98168
250-695-6207

Sample ID	Qty	Description/Remarks	→ Catalogue Number
PSRM0134 - J006840	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0135 - J006841	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0136 - J006842	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0137 - J006843	1	PUGET SOUND SEDIMENT RM	PS-SRM
		6/30/2021	
		DUWAMISH AOC4	

Please use the enclosed Sample Preparation Instructions. If catalogue number(s) are listed at the top of the Sample Preparation Instructions use the Sample Preparation Instructions with catalogue number(s) matching the catalogue number(s) of each of the samples listed above.

Relinquished by: (Signature)	Date/Time 1400 6/30/2021	Received by: (Signature)	Date/Time 07/01/2021 1042
Custody Seal(s): Present/Absent	Remarks:		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

Report No. 00, 9/11/2014

SMP Version 3.3

Recipient Copy

CHAIN-OF-CUSTODY RECORD

COC No. 15155

Order Number: CB014575

Date Shipped: 8/2/2021

AirBill No(s): 460843970024

From: QATS LABORATORY
2700 CHANDLER AVENUE, BLDG. B
LAS VEGAS, NV 89120
PHONE: 1-702-895-8712
FAX: 1-702-795-8210

To: SUE DUNNIHOO
ANALYTICAL RESOURCES INC.
4611 S. 134TH PLACE SUITE 100
TUKWILA WA 98168
250-695-6207

Sample ID	Qty	Description/Remarks	→ Catalogue Number
PSRM0140 J007935	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0141 J007936	1	PUGET SOUND SEDIMENT RM	PS-SRM
		DUWAMISH AOC4	

8/2/2021

Please use the enclosed Sample Preparation Instructions. If catalogue number(s) are listed at the top of the Sample Preparation Instructions use the Sample Preparation Instructions with catalogue number(s) matching the catalogue number(s) of each of the samples listed above.

Relinquished by: (Signature)	Date/Time 1400 8/2/2021	Received by: Jacob Walter (Signature)	Date/Time 08/03/2021 1138
Custody Seal(s): Present/Absent	Remarks:		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

Report No. 00, 9/11/2014

SMP Version 3.3

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW21-IT615A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-01 A	SDG:	21G0321
Sampled:	07/07/21 14:51	Prepared:	08/04/21 09:56	File ID:	
% Solids:	97.78	Preparation:	No Prep Wet Chem	Analyzed:	08/04/21 09:57
Batch:	BJH0099	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	97.78	1	0.04	0.04	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW21-IT617A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-02 A	SDG:	21G0321
Sampled:	07/07/21 15:40	Prepared:	08/04/21 09:56	File ID:	
% Solids:	97.78	Preparation:	No Prep Wet Chem	Analyzed:	08/04/21 09:57
Batch:	BJH0099	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	97.78	1	0.04	0.04	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW21-IT618A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-03 A	SDG:	21G0321
Sampled:	07/07/21 16:20	Prepared:	08/04/21 09:56	File ID:	
% Solids:	97.86	Preparation:	No Prep Wet Chem	Analyzed:	08/04/21 09:57
Batch:	BJH0099	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	97.86	1	0.04	0.04	

Analytical Resources, Incorporated
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Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW21-IT624A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-04 A	SDG:	21G0321
Sampled:	07/07/21 17:02	Prepared:	08/04/21 09:56	File ID:	
% Solids:	99.22	Preparation:	No Prep Wet Chem	Analyzed:	08/04/21 09:57
Batch:	BJH0099	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	99.22	1	0.04	0.04	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW21-IT626A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-05 A	SDG:	21G0321
Sampled:	07/07/21 18:32	Prepared:	08/04/21 09:56	File ID:	
% Solids:	98.99	Preparation:	No Prep Wet Chem	Analyzed:	08/04/21 09:57
Batch:	BJH0099	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	98.99	1	0.04	0.04	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

SM 2540 G-97

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Batch:	BJH0099 Batch Matrix: Solid	Preparation:	No Prep Wet Chem

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT615A	21G0321-01		08/04/21 09:56	
LDW21-IT617A	21G0321-02		08/04/21 09:56	
LDW21-IT618A	21G0321-03		08/04/21 09:56	
LDW21-IT624A	21G0321-04		08/04/21 09:56	
LDW21-IT626A	21G0321-05		08/04/21 09:56	
Blank	BJH0099-BLK1		08/04/21 09:56	

TOTAL SOLIDS/VOLATILE SOLIDS (TS / TVS) BENCHSHEET for Solid samples

Method: PSEP 1986, SM2540, EPA 160.1

(dry at 104 (12-24 hr) then combust at 550 (30 min))

Batch:	BJH0099
Date:	8/4/2021 9:57
Analyst:	DOE

Instrumentation

Drying Ovens:	12	**Analytical Balance:**	BAL2
Muffle Furnace:	2		

Batch drying time				**Oven Temps, °C**	
record times as mm/dd/yy hh:mm			TS (%) calculated as:	Start Temp	103
date/time in oven:	8/4/2021 10:28		Final dry wt (g) = (Dry Wt - Tare Wt)	Dry Cycle 1	105
date/time out:	8/5/2021 9:05		TS = (Final Dry Wt)/ (grams Sample-Tare)	Dry Cycle 2	
elapsed hrs =	22.6	OK		Dry Cycle 3	

TVS (mg/kg dry wt) calculated as:
Final ash wt (g) = (min ash wt - tare wt)
TVS (mg/kg) = [(Dry wt-Ash wt)/ (dry weight)] *1,000,000
if ash wt > dry wt, "Chk for Err"
if dry wt-ash wt < 0.001 g, "< (1/dry wt)*1,000,000

Balance Calibration Check

Record weights to 4 places											
	Cal Weight ID:	CV-02	CV-02	CV-02	CV-02	CV-02		CV-02	CV-02	CV-02	
	Date & Time:	8/4/21 10:00	8/4/21 10:05	8/5/21 9:25							
Cal Wt (g):	10.0000	9.9999	9.9999	9.9999							
		Cal OK!	Cal OK!	Cal OK!							

Sample ID	**Dish #**	**Tare Wt. (g)**	**Dish & Sample (g)**	**Dry Wt 104C (grams) 1**	**2**	**3**	**dry Wt (g)**	**TS (%)**	**Notes**	**ASH WT 550C (grams) 1**	**2**	**3**	**Ash Wt (g)**	**TVS (mg/kg)**	**(%)**	**Notes**	**Fixed (%)**
BJH0099-BLK1	1	0.7849	0.0000	0.7848			-0.0001	0.02%									
21G0321-01	2	0.7901	3.6371	3.5738			2.7837	97.78%									
21G0321-02	3	0.7981	4.5993	4.5150			3.7169	97.78%									
21G0321-03	4	0.7961	4.7473	4.6628			3.8667	97.86%									
21G0321-04	5	0.7916	4.1416	4.1156			3.3240	99.22%									
21G0321-05	6	0.8166	4.4657	4.4289			3.6123	98.99%									
21G0322-05	7	0.7970	6.0661	3.5562			2.7592	52.37%									
BJH0099-DUP1	8	0.7776	6.4295	3.4134			2.6358	46.64%	RPD=11.6								
21G0322-06	9	0.7840	6.8218	4.0164			3.2324	53.54%									
21G0322-07	10	0.8122	5.9710	4.3560			3.5438	68.69%									
21G0322-08	11	0.8156	6.1676	4.3303			3.5147	65.67%									
21G0322-09	12	0.8256	7.2429	5.3922			4.5666	71.16%									
21H0004-05	13	0.8117	5.7172	3.2111			2.3994	48.91%									
BJH0099-DUP2	14	0.8017	5.9005	3.2943			2.4926	48.89%	RSD=0								
21H0023-01	15	0.7976	4.2079	1.6465			0.8489	24.89%									

TOTAL SOLIDS (TS) BENCHSHEET for Solid samples

Method: Total Solids, Metals Correction

dry at 104°C (12-24 hr)

Batch:	BJH0269
Date:	8/10/2021 13:33
Analyst:	mm

Instrumentation **Drying Oven:** 7 **Analytical Balance:** 11

Batch drying time

record times as mm/dd/yy hh:mm

date/time in oven:	8/10/2021 13:45	Temp in:	103	°C
date/time out:	8/11/2021 10:35	Temp out:	102	°C
elapsed hrs =	20.8 OK			

TS (%) calculated as:
Final dry wt (g) = (Dry Wt - Tare Wt)
TS = (Final Dry Wt)/ (grams Sample-Tare)

Sample ID	Tare Weight (g)	Tare + Sample Weight (g)	Tare + Sample Dry Weight @ 104°C (g) 1	2	3	dry Wt (g)	TS (%)	Notes
21G0321-01	0.9670	10.7710	10.5620			9.5950	97.87%	
21G0321-02	1.0110	10.7330	10.4960			9.4850	97.56%	
21G0321-03	1.0230	10.2600	10.1150			9.0920	98.43%	
21G0321-04	1.0060	10.8070	10.7210			9.7150	99.12%	
21G0321-05	0.9930	10.5390	10.4736			9.4806	99.31%	
21G0322-05	0.9860	10.7550	5.9080			4.9220	50.38%	
21G0328-01	0.9760	10.7200	10.6150			9.6390	98.92%	

TOTAL SOLIDS (TS) BENCHSHEET for Solid samples

Method: Total Solids, Metals Correction

dry at 104°C (12-24 hr)

Batch:	BJH0269
Date:	8/10/2021 13:33
Analyst:	mm

Instrumentation **Drying Oven:** 7 **Analytical Balance:** 11

Batch drying time

record times as mm/dd/yy hh:mm

date/time in oven:	8/10/2021 13:45	Temp in:	103	°C
date/time out:	8/11/2021 10:35	Temp out:	102	°C
elapsed hrs =	20.8	OK		

TS (%) calculated as:
Final dry wt (g) = (Dry Wt - Tare Wt)
TS = (Final Dry Wt)/ (grams Sample-Tare)

Sample ID	Tare Weight (g)	Tare + Sample Weight (g)	Tare + Sample Dry Weight @ 104°C (g) 1	2	3	dry Wt (g)	TS (%)	Notes
21G0321-01	0.9670	10.7710	10.5620			9.5950	97.87%	
21G0321-02	1.0110	10.7330	10.4960			9.4850	97.56%	
21G0321-03	1.0230	10.2600	10.1150			9.0920	98.43%	
21G0321-04	1.0060	10.8070	10.7210			9.7150	99.12%	
21G0321-05	0.9930	10.5390	10.4736			9.4806	99.31%	
21G0322-05	0.9860	10.7550	5.9080			4.9220	50.38%	
21G0328-01	0.9760	10.7200	10.6150			9.6390	98.92%	

NOTE: Do not enter data in blue shaded cells as they are calculated fields. Green shaded cells MAY be altered if a rewigh is called for.

TOTAL SOLIDS (TS) BENCHSHEET for Solid samples

Method: Total Solids, Metals Correction

dry at 104°C (12-24 hr)

Batch:	BJH0269
Date:	8/10/2021 13:33
Analyst:	MM

Instrumentation **Drying Oven:** 07 **Analytical Balance:** 11

Batch drying time

record times as mm/dd/yy hh:mm

date/time in oven:	8/10/21	13:45
date/time out:	8/11/21	10:35
elapsed hrs =	0.0	

Temp in: 103 °C

Temp out: 102 °C

TS (%) calculated as:

Final dry wt (g) = (Dry Wt - Tare Wt)

TS = (Final Dry Wt)/ (grams Sample-Tare)

Sample ID	Tare Weight (g)	Tare + Sample Weight (g)	Tare + Sample Dry Weight @ 104°C (g) 1	2	3	dry Wt (g)	TS (%)	Notes
21G0321-01	0.462	10.871	10.562					
21G0321-02	1.011	10.733	10.496					
21G0321-03	1.023	10.260	10.115					
21G0321-04	1.006	10.807	10.721					
21G0321-05	0.993	10.539	10.473					
21G0322-05	0.986	10.755	5.908					
21G0328-01	0.976	10.720	10.615					

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Analytical Chemists and Consultants

Form I

METHOD BLANK DATA SHEET

SM 2540 G-97

TotalAnalytes

Blank

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BJH0099
Laboratory ID: BJH0099-BLK1
Prepared: 08/04/21 09:56
Matrix: Solid
Preparation: No Prep Wet Chem
Analyzed: 08/04/21 09:57
Sequence:
Calibration:
Instrument: BAL2

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	ND	1	0.04	0.04	U

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HOLDING TIME SUMMARY

Analysis: SM 2540 G-97

Laboratory: Analytical Resources, Inc. SDG: 21G0321

Client: Anchor QEA, LLC Project: Lower Duwamish AOC4

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
LDW21-IT615A 21G0321-01	07/07/21 14:51	07/27/21 12:20	08/04/21 09:56	27	28	08/04/21 09:57	28	28	
LDW21-IT617A 21G0321-02	07/07/21 15:40	07/27/21 12:20	08/04/21 09:56	27	28	08/04/21 09:57	28	28	
LDW21-IT618A 21G0321-03	07/07/21 16:20	07/27/21 12:20	08/04/21 09:56	27	28	08/04/21 09:57	28	28	
LDW21-IT624A 21G0321-04	07/07/21 17:02	07/27/21 12:20	08/04/21 09:56	27	28	08/04/21 09:57	28	28	
LDW21-IT626A 21G0321-05	07/07/21 18:32	07/27/21 12:20	08/04/21 09:56	27	28	08/04/21 09:57	28	28	

* Indicates hold time exceedance.

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METHOD DETECTION AND REPORTING LIMITS

SM 2540 G-97

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument:

Analyte	MDL	RL	Units
Total Solids	0.04	0.04	%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6020B UCT-KED
Total Metals

LDW21-IT615A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-01 B	SDG:	21G0321
Sampled:	07/07/21 14:51	Prepared:	08/10/21 11:55	File ID:	XDT_m1210812-074
% Solids:	97.78	Preparation:	SWN EPA 3050B	Analyzed:	08/12/21 19:44
Batch:	BJH0241	Sequence:	SJH0167	Initial/Final:	1.057 g Wet / 50 mL
Instrument:	ICPMS1			Calibration:	EH00031

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	2.65	20	0.04	0.19	

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Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6020B UCT-KED
Total Metals

LDW21-IT617A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-02 B	SDG:	21G0321
Sampled:	07/07/21 15:40	Prepared:	08/10/21 11:55	File ID:	XDT_m1210812-080
% Solids:	97.78	Preparation:	SWN EPA 3050B	Analyzed:	08/12/21 20:17
Batch:	BJH0241	Sequence:	SJH0167	Initial/Final:	1.034 g Wet / 50 mL
Instrument:	ICPMS1			Calibration:	EH00031

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	2.56	20	0.04	0.20	

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Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6020B UCT-KED
Total Metals

LDW21-IT618A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-03 B	SDG:	21G0321
Sampled:	07/07/21 16:20	Prepared:	08/10/21 11:55	File ID:	XDT_m1210812-081
% Solids:	97.86	Preparation:	SWN EPA 3050B	Analyzed:	08/12/21 20:21
Batch:	BJH0241	Sequence:	SJH0167	Initial/Final:	1.046 g Wet / 50 mL
Instrument:	ICPMS1			Calibration:	EH00031

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	3.80	20	0.04	0.20	

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Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6020B UCT-KED
Total Metals

LDW21-IT624A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-04 B	SDG:	21G0321
Sampled:	07/07/21 17:02	Prepared:	08/10/21 11:55	File ID:	XDT_m1210812-082
% Solids:	99.22	Preparation:	SWN EPA 3050B	Analyzed:	08/12/21 20:25
Batch:	BJH0241	Sequence:	SJH0167	Initial/Final:	1.055 g Wet / 50 mL
Instrument:	ICPMS1			Calibration:	EH00031

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	2.57	20	0.04	0.19	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6020B UCT-KED
Total Metals

LDW21-IT626A

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0321-05 B	SDG:	21G0321
Sampled:	07/07/21 18:32	Prepared:	08/10/21 11:55	File ID:	XDT_m1210812-083
% Solids:	98.99	Preparation:	SWN EPA 3050B	Analyzed:	08/12/21 20:29
Batch:	BJH0241	Sequence:	SJH0167	Initial/Final:	1.075 g Wet / 50 mL
Instrument:	ICPMS1			Calibration:	EH00031

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	2.73	20	0.04	0.19	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.			SDG:	21G0321
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Batch:	BJH0241	Batch Matrix:	Solid	Preparation:	SWN EPA 3050B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT615A	21G0321-01	XDT_m1210812-074	08/10/21 11:55	
LDW21-IT617A	21G0321-02	XDT_m1210812-080	08/10/21 11:55	
LDW21-IT618A	21G0321-03	XDT_m1210812-081	08/10/21 11:55	
LDW21-IT624A	21G0321-04	XDT_m1210812-082	08/10/21 11:55	
LDW21-IT626A	21G0321-05	XDT_m1210812-083	08/10/21 11:55	
Blank	BJH0241-BLK1	XDT_m1210812-070	08/10/21 11:55	
LCS	BJH0241-BS1	XDT_m1210812-071	08/10/21 11:55	
LDW21-IT615A	BJH0241-DUP1	XDT_m1210812-075	08/10/21 11:55	
LDW21-IT615A	BJH0241-MS1	XDT_m1210812-076	08/10/21 11:55	
LDW21-IT615A	BJH0241-MSD1	XDT_m1210812-077	08/10/21 11:55	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Digestion Log

Analyst: MM Date: 8/10/21 Time: 1155-1650

Matrix: Soil Block ID: 5 Block Temp: 95°C Thermometer: 20-3

ARI Sample ID	Btl #	pH<2	Prep Code: SWN Initial Wt (g) Vol (mL)	Prep Code: SWN Final Vol (mL)	Prep Code: Initial Wt (g) Vol (mL)	Prep Code: Final Vol (mL)	Comments
216321-1	B		1.057	50mL			
-2			1.034				
-3			1.046				
-4			1.055				
-5			1.075				
BSH241-BLK	—		—				
-BS1	—		—				
-MS1	—		1.060				216321-1
-MSD1	—		1.057				
-DU14	✓		1.058				

MM 8/10/21

Chemical/Reagent ID:

HNO_3: J7647 1:1 HNO_3: J8216 HCl: — H_2O_2: I9826

Tube Lot#: 2104009 Boiling Chip Lot#: — (DoD Only)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I

METHOD BLANK DATA SHEET

EPA 6020B UCT-KED

Total Metals

Blank

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BJH0241
Laboratory ID: BJH0241-BLK1
Prepared: 08/10/21 11:55
Matrix: Solid
Preparation: SWN EPA 3050B
Analyzed: 08/12/21 19:22
Sequence: SJH0167
Calibration: EH00031
Instrument: ICPMS1

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic-75a	ND	20	0.04	0.20	U

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LCS / LCS DUPLICATE RECOVERY

EPA 6020B UCT-KED

Total Metals

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/12/21 19:27
Batch:	BJH0241	Laboratory ID:	BJH0241-BS1
Preparation:	SWN EPA 3050B	Sequence Name:	LCS
Initial/Final:	1 g / 50 mL		

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Arsenic-75a	25.0	22.9		91.8	80 - 120

* Indicates values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT615A

DUPLICATES

EPA 6020B UCT-KED

Total Metals

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0241-DUP1
Batch: BJH0241
Lab Source ID: 21G0321-01
Preparation: SWN EPA 3050B
Initial/Final: 1.058 g / 50 mL
Source Sample Name: LDW21-IT615A
% Solids: 97.78

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
Arsenic-75a	20	2.65	2.41	9.35	

*: Values outside of QC limits
L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT615A

MS / MS DUPLICATE RECOVERY
EPA 6020B UCT-KED
Total Metals

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/12/21 19:53
Batch:	BJH0241	Laboratory ID:	BJH0241-MS1
Preparation:	SWN EPA 3050B	Sequence Name:	Matrix Spike
Initial/Final:	1.06 g / 50 mL	Source Sample:	LDW21-IT615A

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	Q	MS CONCENTRATION (mg/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Arsenic-75a	24.1	2.65		24.8		91.8	75 - 125

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT615A

MS / MS DUPLICATE RECOVERY
EPA 6020B UCT-KED
Total Metals

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/12/21 19:57
Batch:	BJH0241	Laboratory ID:	BJH0241-MSD1
Preparation:	SWN EPA 3050B	Sequence Name:	Matrix Spike Dup
Initial/Final:	1.057 g / 50 mL	Source Sample:	LDW21-IT615A

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Arsenic-75a	24.2	25.7		95.5	3.75	20	75 - 125

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00031	Instrument:	ICPMS1
Calibration Date:	08/12/2021 13:28		

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Arsenic-75a	0	0	0.2	345	10	340	20	329.45	50	326.58	100	327

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00031	Instrument:	ICPMS1
Calibration Date:	08/12/2021 13:28		

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Arsenic-75a	278.005	49.1	1.0000		0.998	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 8/12/21 **Analyst:** MB **Sequence:** SJHØ167 **Cal:** EHØØØ31

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CAL1	J8387		
		-CAL2	J8254		
		-CAL3	J8255		
		-CAL4	J8256		
		-CAL5	J8257		
		-CAL6	J8258		
		-IBL1	—		
	✓	-ICV1	—		Zn^{67} ↓
		-ICV1	J6292		(Re-poured sol'n)
		-ICB1	J8387		
		-CCV1	J8257		
		-CCB1	J8387		
		-CRL1	J8254		
		-IFA1	J8Ø98		V-1, Cr^{53} ↑
		-IFB1	J8Ø99		V-1 ↑
	✓	-HCV1	—		V^{51} ↓
		-HCV2	J7893		Al, Zn ↓ - Al, Zn < 200
		-HCV1	J7549		
		-IBL2+3	—		
		-CCV2			
		-CCB2			
		21GØ284-Ø9	REN		Ca, Cr, K, Mg, Na only
		BJGØ739-DUP2	↓		↓
		↓ -MS2	↓		↓

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 8/12/21 **Analyst:** MB **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		21GØ125-16	REN	10	(PT)
		21GØ2Ø5-25			Ca↑ Mg only
		↓ -Ø1		5	Ca, Mg only
		BJHØØ24-DUP4			
		BJHØØ24-MS4			
		↓ -MSD4			
		SEQ-IBL4			
		-CCV3			Fe↓
		↓ -CCB3			
	✓	21GØ2Ø5-25RE1	REN	10	Ca only
		21GØ291-Ø2		5	Al, K, Mg, Mn, Na, Zn only
		BJHØ157-DUP2			
		-MS2			Mn STL
		↓ -MSD2			
		21GØ291-Ø1			+ Cd
		BJHØ156-DUP2			
		-MS2			Mn STL
		↓ -MSD2			
		SEQ-IBL5			
		-CCV4			Ca, Fe↓
		↓ -CCB4			
		21GØ291-Ø5	REN		Al, K, Mg, Na only
		-Ø6			
		↓ -Ø7			

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 8/12/21 **Analyst:** MS **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted. MS 8/12/21

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		21GΦ291-Φ8	REN		Al, K, Mg, Na only
		-Φ3		5	Al, K, Mg, Na, Mn, Zn only
		-Φ4			
		21HΦΦ98-Φ1			As only
		-Φ4		10	Mn only
		21GΦ363-Φ1			Ag only
		SEQ-IBL6			
		-CCV5			
		-CCB5			
	✓	-CAL1			Minerals removed from method
		-CCV6			
		-CCB6			
		BJHΦ242-BLK1	SWN	20	
	✓	-BS1			Zn 67% R↓
		BJHΦ241-BLK1			
		-BS1			
		BJHΦ242-~~BLK1~~BS1			
	✓	21GΦ321-Φ1		100	
		-Φ1		20	
		BJHΦ241-DUP1			
		-MS1			
		-MSD1			
		SEQ-CCV7			
		-CCB7			

Analytical Resources, Incorporated
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ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 8/12/21 **Analyst:** MB **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
5x → 20x		21G0321-02	SWN	20	
↓		-03			
		-04			
		-05			
		21G0322-07			
		-06			
		-05			
		BJH0242-DUP1			
		-MS1			
		SEQ-IBL7			
		-CCV8			
		-CCB8			
		BJH0290-BLK1	REN		
		-BS1			
		21G0359-04		2	
		-01			
		-03			
		-02			
		BJH0290-DUP1			
		-MS1			
		-MSD1			
		SEQ-IBL8			
		-CCV9			
		-CCB9			

Analytical Resources, Incorporated
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ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 8/12/21 **Analyst:** MB **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted. MB 8/12/21

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		BJH0282-BLK1	REN		
		↓ -BS1			
		BJH0316-BLK1			Cu > 1/2 RL (0.317) (0.310)
		↓ -BS1			
		21H0122-01		2	
		21G0373-04			
		↓ -02			
		BJH0282-DUP1			
		↓ -MS1	↓		
		SEQ-IBL9			
		-CCVA			
		-CCBA			
	✓	~~-CCICAL1~~			
		-CCVB			
		↓ -CCBB			
		21H0131-07	REN	5	
		-01		2	
		-09		↓	
		-15			
		-19			
		-03			
		-11			
		-13			
		↓ -17	↓		Sc↑ No Cr

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ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 8/12/21 **Analyst:** MB **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted. MB 8/12/21

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-IBLA			
		-CCVC			
		-CCBC			
		BJH0255-BLK2	REN		Ag only
		-BS2			
		21G0362-01			
		-01			
		BJH0255-DUP2			
		-MS2			
		21H0074-01			
		-02			
		-03			
		SEQ-IBLB			
		-CCVD			
		-CCBD			
		21G0376-01	REN		Reprep for Cu — Cu NR
		-02			~~Reprep for Cu~~ Cu >10x cont. — ~~Cu NR~~
		-05			
		-06			Cu ND
		21G0375-04			Reprep for Cu — Cu NR
		-01			Cu ND
		BJH0316-DUP1			
		-MS1			
		-MSD1			

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ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 8/12/21 **Analyst:** MB **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments	
		SEQ-IBLC				
		-CCVE				
		-CCBE				
		BJH0317-BLK1	REN			
		-BS1				
		21H0123-01				
		21G0374-01			Cu >10x cont.	
		21G0397-02				
		-01				
		BJH0317-DUP1			Cu Diff >1RL	
		-MS1				
		-MSD1				
		SEQ-IBLD				
		-CCVF				
		-CCBF				
		21G0402-01	REN	5	Cr, Zn↑	No Cr, Zn
		21G0398-01				No Cr
		-02				
		-03			Se, Tb sl. noisy - %R + Analytes OK	
		-04				
		21G0400-01				
		-02				
		21H0017-01			Ge, In-1↓	Ag, Pb only
		21G0381-01		50		No Cr, V

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ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 8/12/21 **Analyst:** MS **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-IBLE			
		-CCVG			V, Cr52
		-CCBG			
		Rinse/DI			
			MB 8/12/21		

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Thursday, August 12, 2021 12:35:38
Sample Description:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\STD Performance Check.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\STD Performance Check.11575
MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	10049.9	10049.882	728.991	7.3	Standard
	In	114.9	110608.0	-1270039.877	7041.120	0.6	Standard
	U	238.1	189818.4	189818.419	16840.143	8.9	Standard
⌈	CeO	155.9	2834.8	0.018	0.000	2.7	Standard
| >	Ce	139.9	154156.7	154156.727	11802.425	7.7	Standard
⌊	Ce++	70.0	2037.8	0.013	0.002	14.2	Standard
	Bkgd	220.0	2.6	2.633	0.803	30.5	Standard

Current Conditions File Data

Current Value	Description
0.97	Nebulizer Gas Flow STD/KED [NEB]
1.25	Auxiliary Gas Flow
17.50	Plasma Gas Flow
-10.75	Deflector Voltage
1600.00	ICP RF Power
-1862.00	Analog Stage Voltage
1550.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-17.00	Cell Rod Offset STD [CRO]
14.00	Discriminator Threshold
-2.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.97	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
1.00	Cell Gas A
0.00	Cell Gas B
200.00	Axial Field Voltage
-11.00	KED Mode CRO
-12.00	KED Mode QRO
-11.00	KED Mode Cell Entrance Voltage
-33.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
125.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 8/12/2021 12:35:29 PM
End Time: 8/12/2021 12:44:31 PM

STD Performance Check - [Failed]
Obtained Intensity (Be 9): 10049.88
Obtained Intensity (In 115): 110607.98
Obtained Intensity (U 238): 189818.42
Obtained Intensity (Bkgd 220): 2.63
Obtained Formula (Ce++ 70 / Ce 140): 0.013 (=2037.81 / 154156.73)
Obtained Formula (CeO 156 / Ce 140): 0.018 (=2834.82 / 154156.73)
Obtained RSD (Be 9): 0.0725 - <Target not achieved>
Obtained RSD (In 115): 0.0055
Obtained RSD (U 238): 0.0887 - <Target not achieved>

Torch Alignment - [Passed]

Vertical	Horizontal	Intensity
1.79 mm	-0.28 mm	117321.78

Nebulizer Gas Flow STD/KED [NEB] - [Passed] Optimum value(s): 0.97
Obtained Intensity (In 115): 103264.88
Obtained Formula (CeO 156 / Ce 140): 0.0198 (=2876.29 / 145414.34)

Mass Calibration and Resolution - [Passed] Optimum value(s): N/A
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.699)
Target/Obtained mass (23.985/23.975), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (114.904/114.875), Target/Obtained resolution (0.7/0.709)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.707)

QID STD/DRC - Optimum value(s): Correlation Coefficient = 0.996; Intercept = -16.15

KED Mode QID - Optimum value(s): Correlation Coefficient = 0.999; Intercept = -14.35

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 8/12/2021 12:35:29 PM

STD Performance Check
        Optimization Settings:
                Method: STD Performance Check.mth.
                Intensity Criterion: Be 9 > 2000
                Intensity Criterion: In 115 > 40000
                Intensity Criterion: U 238 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
                Formula Criterion: CeO 156 / Ce 140 <= 0.025
                RSD Criterion: Be 9.0122 < 0.05
                RSD Criterion: In 114.904 < 0.05
                RSD Criterion: U 238.05 < 0.05

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9): 10049.88
                Obtained Intensity (In 115): 110607.98
                Obtained Intensity (U 238): 189818.42
                Obtained Intensity (Bkgd 220): 2.63
                Obtained Formula (Ce++ 70 / Ce 140): 0.013 (=2037.81 / 154156.73)
                Obtained Formula (CeO 156 / Ce 140): 0.018 (=2834.82 / 154156.73)
                Obtained RSD (Be 9): 0.0725 - <Target not achieved>
                Obtained RSD (In 115): 0.0055
                Obtained RSD (U 238): 0.0887 - <Target not achieved>

                [Failed]
[Failed]

Torch Alignment
        Optimization Settings:
                Method: Torch Alignment.mth.
                Intensity Criterion: In 115 Maximum

        Optimization Results:
                Vertical      Horizontal      Intensity
[Passed]        1.79 mm     -0.28 mm       117321.78

Nebulizer Gas Flow STD/KED [NEB]
        Optimization Settings:
                Method: Optimize.mth.
                        Initial Try - Start/End/Step: 0.95/1/0.01.
                Intensity Criterion: In 115 Maximum
                Formula Criterion: CeO 156 / Ce 140 <= 0.023

        Optimization Results:
        Initial Try

                Obtained Intensity (In 115): 103264.88
                Obtained Formula (CeO 156 / Ce 140): 0.0198 (=2876.29 / 145414.34)
[Passed]  Optimum value(s): 0.97
```

Mass Calibration and Resolution

Optimization Settings:

Method: Tuning.mth.

MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun

Iterations: 6

Target accuracy (+/- amu): 0.05 for Mass Cal. and 0.03 for Resolution

Peak height (%) for Res. Opt.: 10

Optimization Results:

Initial Try

Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.709)

Target/Obtained mass (23.985/23.975), Target/Obtained resolution (0.7/0.714)

Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.706)

Target/Obtained mass (238.05/237.975), Target/Obtained resolution (0.7/0.704) - <Target not achieved> [Failed]

Retry 1

Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.699)

Target/Obtained mass (23.985/23.975), Target/Obtained resolution (0.7/0.705)

Target/Obtained mass (114.904/114.875), Target/Obtained resolution (0.7/0.709)

Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.707)

[Passed] Optimum value(s): N/A

QID STD/DRC

Optimization Settings:

Method: QID Calibration.mth.

Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:

Initial Try

Optimum value(s): Correlation Coefficient = 0.996; Intercept = -16.15

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-15.5	35937.1
Mg	24	41	-14.5	59632.2
In	115	41	-12.5	101459
Ce	140	41	-12.5	140580
Pb	208	41	-11	94632.4
U	238	41	-11	182766

KED Mode QID

Optimization Settings:

Method: QID Calibration.mth.

Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:

Initial Try

Optimum value(s): Correlation Coefficient = 0.999; Intercept = -14.35

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-14.5	29069.5
Mg	24	41	-14.5	58379
In	115	41	-12	127313
Ce	140	41	-11	108640
Pb	208	41	-10	63247.7

U	238	41	-10	132584

End Time: 8/12/2021 12:44:31 PM

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Thursday, August 12, 2021 12:44:36
Sample Description:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\STD Performance Check.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\STD Performance Check.11582
MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	9173.0	9173.011	147.292	1.6	Standard
	In	114.9	93768.0	93767.953	941.313	1.0	Standard
	U	238.1	183116.3	183116.309	1268.892	0.7	Standard
⌈	CeO	155.9	2584.0	0.019	0.000	1.0	Standard
| >	Ce	139.9	135217.7	135217.728	532.953	0.4	Standard
⌊	Ce++	70.0	1325.0	0.010	0.000	0.9	Standard
	Bkgd	220.0	1.3	1.300	0.477	36.7	Standard

Current Conditions File Data

Current Value	Description
0.97	Nebulizer Gas Flow STD/KED [NEB]
1.25	Auxiliary Gas Flow
17.50	Plasma Gas Flow
-10.75	Deflector Voltage
1600.00	ICP RF Power
-1862.00	Analog Stage Voltage
1550.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-17.00	Cell Rod Offset STD [CRO]
14.00	Discriminator Threshold
-2.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.97	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
1.00	Cell Gas A
0.00	Cell Gas B
200.00	Axial Field Voltage
-11.00	KED Mode CRO
-12.00	KED Mode QRO
-11.00	KED Mode Cell Entrance Voltage
-33.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
125.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 8/12/2021 12:44:35 PM
End Time: 8/12/2021 12:46:41 PM

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 9173.01
Obtained Intensity (In 115): 93767.95
Obtained Intensity (U 238): 183116.31
Obtained Intensity (Bkgd 220): 1.30
Obtained Formula (Ce++ 70 / Ce 140): 0.010 (=1324.99 / 135217.73)
Obtained Formula (CeO 156 / Ce 140): 0.019 (=2584.03 / 135217.73)
Obtained RSD (Be 9): 0.0161
Obtained RSD (In 115): 0.0100
Obtained RSD (U 238): 0.0069

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 8/12/2021 12:44:35 PM

STD Performance Check
        Optimization Settings:
                Method: STD Performance Check.mth.
                Intensity Criterion: Be 9 > 2000
                Intensity Criterion: In 115 > 40000
                Intensity Criterion: U 238 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
                Formula Criterion: CeO 156 / Ce 140 <= 0.025
                RSD Criterion: Be 9.0122 < 0.05
                RSD Criterion: In 114.904 < 0.05
                RSD Criterion: U 238.05 < 0.05

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9): 9173.01
                Obtained Intensity (In 115): 93767.95
                Obtained Intensity (U 238): 183116.31
                Obtained Intensity (Bkgd 220): 1.30
                Obtained Formula (Ce++ 70 / Ce 140): 0.010 (=1324.99 / 135217.73)
                Obtained Formula (CeO 156 / Ce 140): 0.019 (=2584.03 / 135217.73)
                Obtained RSD (Be 9): 0.0161
                Obtained RSD (In 115): 0.0100
                Obtained RSD (U 238): 0.0069

[Passed]  Optimum value(s): N/A

End Time: 8/12/2021 12:46:41 PM
```

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 13:28:35
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				27065	1	Standard
	Cl	**37**		ug/L				4867239	2	Standard
>	**Sc**	**45**		ug/L				946449	1	Standard
	Na	**23**		ug/L				78227	1	Standard
	Mg	**24**		ug/L				3266	3	Standard
	Al	**27**		ug/L				9407	2	Standard
	K	**39**		ug/L				713188	2	Standard
	Ca	**44**		ug/L				7516	2	Standard
	V	**51**		ug/L				3877	3	Standard
	V-1	**51**		ug/L				189	10	Standard
	Cr	**52**		ug/L				11464	3	Standard
	Cr	**53**		ug/L				116	1	Standard
	Fe	**54**		ug/L				74585	2	Standard
	Fe	**57**		ug/L				16592	1	Standard
	Mn	**55**		ug/L				737	3	Standard
>	**Ge**	**72**		ug/L				72878	1	KED
	Ni	**60**		ug/L				317	14	KED
	Ni	**62**		ug/L				46	12	KED
	Cu	**63**		ug/L				97	11	KED
	Cu	**65**		ug/L				38	18	KED
	Zn	**66**		ug/L				130	18	KED
	Zn	**67**		ug/L				20	32	KED
	As	**75**		ug/L				3	24	KED
	Y	**89**		ug/L				504241	1	Standard
	Kr	**83**		ug/L				137	7	Standard
>	**In-1**	**115**		ug/L				17133	1	KED
	Cd	**111**		ug/L				4	35	KED
	Cd	**114**		ug/L				2	38	KED
>	**In**	**115**		ug/L				1070161	2	Standard
	Ag	**107**		ug/L				52	21	Standard
>	**Tb**	**159**		ug/L				2448219	1	Standard
	Pb	**208**		ug/L				434	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 13:32:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	31537	3	Standard
	Cl	**37**		ug/L			4867239	4864625	0	Standard
>	**Sc**	**45**		ug/L			946449	959904	0	Standard
	Na	**23**	**100.000**	ug/L	0.331	0	78227	2867784	0	Standard
	Mg	**24**	**20.000**	ug/L	0.490	2	3266	721507	2	Standard
	Al	**27**	**20.000**	ug/L	0.502	2	9407	749250	2	Standard
	K	**39**	**20.000**	ug/L	1.905	9	713188	1190596	3	Standard
	Ca	**44**	**50.000**	ug/L	1.655	3	7516	55553	2	Standard
	V	**51**	**0.200**	ug/L	0.004	2	3877	8687	0	Standard
	V-1	**51**	**0.200**	ug/L	0.001	0	189	5101	0	Standard
	Cr	**52**	**0.500**	ug/L	0.022	4	11464	22305	1	Standard
	Cr	**53**	**0.500**	ug/L	0.015	2	116	1373	2	Standard
	Fe	**54**	**36.000**	ug/L	0.295	0	74585	192069	0	Standard
	Fe	**57**	**36.000**	ug/L	1.174	3	16592	55008	2	Standard
	Mn	**55**	**0.500**	ug/L	0.009	1	737	16658	1	Standard
>	**Ge**	**72**		ug/L			72878	74601	1	KED
	Ni	**60**	**0.500**	ug/L	0.027	5	317	1146	3	KED
	Ni	**62**	**0.500**	ug/L	0.086	17	46	189	11	KED
	Cu	**63**	**0.500**	ug/L	0.023	4	97	2753	4	KED
	Cu	**65**	**0.500**	ug/L	0.010	2	38	1326	2	KED
	Zn	**66**	**6.000**	ug/L	0.064	1	130	4284	1	KED
	Zn	**67**	**6.000**	ug/L	0.523	8	20	654	9	KED
	As	**75**	**0.200**	ug/L	0.004	2	3	69	2	KED
	Y	**89**		ug/L			504241	498363	0	Standard
	Kr	**83**		ug/L			137	126	6	Standard
>	**In-1**	**115**		ug/L			17133	17171	1	KED
	Cd	**111**	**0.100**	ug/L	0.016	15	4	35	13	KED
	Cd	**114**	**0.100**	ug/L	0.004	4	2	80	5	KED
>	**In**	**115**		ug/L			1070161	1053972	2	Standard
	Ag	**107**	**0.200**	ug/L	0.015	7	52	3192	5	Standard
>	**Tb**	**159**		ug/L			2448219	2461380	1	Standard
	Pb	**208**	**0.100**	ug/L	0.002	2	434	14566	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 13:37:15
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	35361	2	Standard
	Cl	**37**		ug/L			4867239	5007299	0	Standard
>	**Sc**	**45**		ug/L			946449	951633	0	Standard
	Na	**23**	**1000.311**	ug/L	29.764	2	78227	28615380	2	Standard
	Mg	**24**	**1000.015**	ug/L	22.602	2	3266	37010037	2	Standard
	Al	**27**	**1000.019**	ug/L	9.141	0	9407	38512393	1	Standard
	K	**39**	**1000.010**	ug/L	27.180	2	713188	24444530	2	Standard
	Ca	**44**	**1000.059**	ug/L	34.983	3	7516	980979	2	Standard
	V	**51**	**10.000**	ug/L	0.066	0	3877	253268	0	Standard
	V-1	**51**	**10.000**	ug/L	0.060	0	189	252457	0	Standard
	Cr	**52**	**10.001**	ug/L	0.019	0	11464	229207	0	Standard
	Cr	**53**	**10.001**	ug/L	0.047	0	116	25641	0	Standard
	Fe	**54**	**999.621**	ug/L	5.254	0	74585	2554162	1	Standard
	Fe	**57**	**1000.022**	ug/L	23.874	2	16592	1086096	2	Standard
	Mn	**55**	**10.001**	ug/L	0.164	1	737	331427	1	Standard
>	**Ge**	**72**		ug/L			72878	74591	2	KED
	Ni	**60**	**10.002**	ug/L	0.257	2	317	18180	1	KED
	Ni	**62**	**10.001**	ug/L	0.431	4	46	2988	2	KED
	Cu	**63**	**10.001**	ug/L	0.290	2	97	54877	1	KED
	Cu	**65**	**10.001**	ug/L	0.259	2	38	27136	0	KED
	Zn	**66**	**10.036**	ug/L	0.214	2	130	7144	0	KED
	Zn	**67**	**10.193**	ug/L	0.144	1	20	1156	2	KED
	As	**75**	**10.000**	ug/L	0.078	0	3	3400	1	KED
	Y	**89**		ug/L			504241	508606	0	Standard
	Kr	**83**		ug/L			137	141	7	Standard
>	**In-1**	**115**		ug/L			17133	16686	2	KED
	Cd	**111**	**10.000**	ug/L	0.349	3	4	3233	0	KED
	Cd	**114**	**10.000**	ug/L	0.678	6	2	8349	3	KED
>	**In**	**115**		ug/L			1070161	1022452	2	Standard
	Ag	**107**	**10.000**	ug/L	0.233	2	52	155620	0	Standard
>	**Tb**	**159**		ug/L			2448219	2500286	2	Standard
	Pb	**208**	**10.000**	ug/L	0.211	2	434	1370604	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 13:41:49
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	35731	0	Standard
	Cl	**37**		ug/L			4867239	5037149	1	Standard
>	**Sc**	**45**		ug/L			946449	945392	0	Standard
	Na	**23**	**1995.538**	ug/L	47.747	2	78227	56137991	1	Standard
	Mg	**24**	**2000.124**	ug/L	38.163	1	3266	73561198	2	Standard
	Al	**27**	**1994.944**	ug/L	23.842	1	9407	75550802	1	Standard
	K	**39**	**1996.468**	ug/L	20.625	1	713188	47442578	0	Standard
	Ca	**44**	**1999.794**	ug/L	26.319	1	7516	1940863	2	Standard
	V	**51**	**19.905**	ug/L	0.185	0	3877	487795	1	Standard
	V-1	**51**	**19.912**	ug/L	0.106	0	189	490610	0	Standard
	Cr	**52**	**20.007**	ug/L	0.288	1	11464	444658	1	Standard
	Cr	**53**	**20.025**	ug/L	0.263	1	116	51146	0	Standard
	Fe	**54**	**1996.477**	ug/L	6.990	0	74585	4959003	0	Standard
	Fe	**57**	**2020.918**	ug/L	24.827	1	16592	2256891	1	Standard
	Mn	**55**	**19.958**	ug/L	0.328	1	737	650837	2	Standard
>	**Ge**	**72**		ug/L			72878	74297	1	KED
	Ni	**60**	**19.952**	ug/L	0.500	2	317	35464	0	KED
	Ni	**62**	**20.007**	ug/L	1.092	5	46	5916	3	KED
	Cu	**63**	**19.884**	ug/L	0.465	2	97	106135	0	KED
	Cu	**65**	**19.969**	ug/L	0.493	2	38	53603	0	KED
	Zn	**66**	**19.849**	ug/L	0.342	1	130	13645	0	KED
	Zn	**67**	**20.132**	ug/L	0.713	3	20	2298	2	KED
	As	**75**	**19.892**	ug/L	0.399	2	3	6589	0	KED
	Y	**89**		ug/L			504241	506503	1	Standard
	Kr	**83**		ug/L			137	134	18	Standard
>	**In-1**	**115**		ug/L			17133	16683	1	KED
	Cd	**111**	**19.901**	ug/L	0.237	1	4	6307	0	KED
	Cd	**114**	**19.998**	ug/L	0.045	0	2	16707	1	KED
>	**In**	**115**		ug/L			1070161	1018613	4	Standard
	Ag	**107**	**19.969**	ug/L	0.722	3	52	307459	1	Standard
>	**Tb**	**159**		ug/L			2448219	2455543	0	Standard
	Pb	**208**	**20.057**	ug/L	0.155	0	434	2731391	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 13:46:33
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	29148	0	Standard
	Cl	**37**		ug/L			4867239	5027820	0	Standard
>	**Sc**	**45**		ug/L			946449	915199	0	Standard
	Na	**23**	**5016.218**	ug/L	228.268	4	78227	138721403	3	Standard
	Mg	**24**	**4994.923**	ug/L	24.719	0	3266	176922330	0	Standard
	Al	**27**	**5019.067**	ug/L	113.108	2	9407	187550326	1	Standard
	K	**39**	**4988.353**	ug/L	171.794	3	713188	112403735	2	Standard
	Ca	**44**	**5020.877**	ug/L	148.000	2	7516	4805894	2	Standard
	V	**51**	**50.163**	ug/L	0.382	0	3877	1203781	0	Standard
	V-1	**51**	**50.130**	ug/L	0.388	0	189	1211155	0	Standard
	Cr	**52**	**50.113**	ug/L	0.635	1	11464	1073435	0	Standard
	Cr	**53**	**50.013**	ug/L	0.956	1	116	123656	1	Standard
	Fe	**54**	**4996.080**	ug/L	73.335	1	74585	11858337	1	Standard
	Fe	**57**	**5005.629**	ug/L	123.375	2	16592	5418919	3	Standard
	Mn	**55**	**50.037**	ug/L	0.554	1	737	1584236	0	Standard
>	**Ge**	**72**		ug/L			72878	71203	1	KED
	Ni	**60**	**50.387**	ug/L	0.257	0	317	88813	1	KED
	Ni	**62**	**50.044**	ug/L	0.781	1	46	14182	1	KED
	Cu	**63**	**50.031**	ug/L	0.486	0	97	256646	0	KED
	Cu	**65**	**50.063**	ug/L	1.108	2	38	129559	1	KED
	Zn	**66**	**50.135**	ug/L	1.196	2	130	33253	1	KED
	Zn	**67**	**50.203**	ug/L	0.981	1	20	5568	1	KED
	As	**75**	**50.235**	ug/L	0.632	1	3	16329	0	KED
	Y	**89**		ug/L			504241	494635	1	Standard
	Kr	**83**		ug/L			137	154	13	Standard
>	**In-1**	**115**		ug/L			17133	16437	0	KED
	Cd	**111**	**49.846**	ug/L	0.586	1	4	15324	1	KED
	Cd	**114**	**49.923**	ug/L	0.106	0	2	40772	0	KED
>	**In**	**115**		ug/L			1070161	994467	0	Standard
	Ag	**107**	**49.953**	ug/L	0.932	1	52	747933	1	Standard
>	**Tb**	**159**		ug/L			2448219	2434700	1	Standard
	Pb	**208**	**50.047**	ug/L	0.624	1	434	6788205	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 13:52:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	42975	4	Standard
	Cl	**37**		ug/L			4867239	5185997	1	Standard
>	**Sc**	**45**		ug/L			946449	904468	0	Standard
	Na	**23**	**10078.614**	ug/L	326.860	3	78227	282817593	2	Standard
	Mg	**24**	**9989.828**	ug/L	157.832	1	3266	348501254	1	Standard
	Al	**27**	**10040.777**	ug/L	194.522	1	9407	375922382	1	Standard
	K	**39**	**10058.614**	ug/L	85.247	0	713188	227769696	0	Standard
	Ca	**44**	**10020.820**	ug/L	176.421	1	7516	9538627	1	Standard
	V	**51**	**101.300**	ug/L	1.454	1	3877	2507303	1	Standard
	V-1	**51**	**101.268**	ug/L	0.872	0	189	2524560	1	Standard
	Cr	**52**	**100.927**	ug/L	0.817	0	11464	2193007	0	Standard
	Cr	**53**	**100.835**	ug/L	1.418	1	116	253328	1	Standard
	Fe	**54**	**10032.196**	ug/L	60.784	0	74585	23715191	0	Standard
	Fe	**57**	**10105.157**	ug/L	133.618	1	16592	11185439	1	Standard
	Mn	**55**	**100.399**	ug/L	0.909	0	737	3183246	0	Standard
>	**Ge**	**72**		ug/L			72878	69693	0	KED
	Ni	**60**	**100.328**	ug/L	2.580	2	317	174677	2	KED
	Ni	**62**	**100.027**	ug/L	2.624	2	46	27727	2	KED
	Cu	**63**	**100.237**	ug/L	0.902	0	97	507224	0	KED
	Cu	**65**	**100.759**	ug/L	1.826	1	38	261873	2	KED
	Zn	**66**	**100.670**	ug/L	0.500	0	130	66712	0	KED
	Zn	**67**	**100.571**	ug/L	2.556	2	20	11108	2	KED
	As	**75**	**100.628**	ug/L	0.835	0	3	32700	1	KED
	Y	**89**		ug/L			504241	484325	1	Standard
	Kr	**83**		ug/L			137	156	11	Standard
>	**In-1**	**115**		ug/L			17133	15981	0	KED
	Cd	**111**	**100.717**	ug/L	1.410	1	4	30835	0	KED
	Cd	**114**	**100.414**	ug/L	1.142	1	2	80845	0	KED
>	**In**	**115**		ug/L			1070161	974927	0	Standard
	Ag	**107**	**100.172**	ug/L	1.031	1	52	1478915	0	Standard
>	**Tb**	**159**		ug/L			2448219	2414971	0	Standard
	Pb	**208**	**100.077**	ug/L	1.313	1	434	13499581	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:00:01
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	26604	2	Standard
	Cl	**37**		ug/L			4867239	4883005	1	Standard
>	**Sc**	**45**		ug/L			946449	953239	0	Standard
	Na	**23**	**0.347**	ug/L	0.062	17	78227	89034	1	Standard
	Mg	**24**	**0.061**	ug/L	0.002	3	3266	5516	0	Standard
	Al	**27**	**-0.054**	ug/L	0.002	3	9407	7343	1	Standard
	K	**39**	**0.713**	ug/L	0.279	39	713188	735299	1	Standard
	Ca	**44**	**-0.869**	ug/L	0.057	6	7516	6699	0	Standard
	V	**51**	**-0.009**	ug/L	0.004	42	3877	3663	2	Standard
	V-1	**51**	**-0.001**	ug/L	0.000	22	189	152	5	Standard
	Cr	**52**	**-0.036**	ug/L	0.010	28	11464	10721	1	Standard
	Cr	**53**	**-0.011**	ug/L	0.002	16	116	88	5	Standard
	Fe	**54**	**0.472**	ug/L	0.554	117	74585	76286	1	Standard
	Fe	**57**	**0.662**	ug/L	0.342	51	16592	17481	1	Standard
	Mn	**55**	**-0.002**	ug/L	0.000	17	737	690	2	Standard
>	**Ge**	**72**		ug/L			72878	72800	1	KED
	Ni	**60**	**-0.072**	ug/L	0.015	20	317	186	14	KED
	Ni	**62**	**-0.039**	ug/L	0.020	50	46	35	17	KED
	Cu	**63**	**0.002**	ug/L	0.002	99	97	105	6	KED
	Cu	**65**	**0.005**	ug/L	0.001	11	38	51	3	KED
	Zn	**66**	**-0.019**	ug/L	0.021	108	130	117	11	KED
	Zn	**67**	**0.044**	ug/L	0.043	96	20	26	18	KED
	As	**75**	**0.003**	ug/L	0.002	76	3	4	14	KED
	Y	**89**		ug/L			504241	494837	1	Standard
	Kr	**83**		ug/L			137	111	7	Standard
>	**In-1**	**115**		ug/L			17133	16859	0	KED
	Cd	**111**	**0.008**	ug/L	0.003	36	4	6	14	KED
	Cd	**114**	**0.002**	ug/L	0.004	197	2	4	68	KED
>	**In**	**115**		ug/L			1070161	998136	3	Standard
	Ag	**107**	**0.004**	ug/L	0.001	11	52	113	8	Standard
>	**Tb**	**159**		ug/L			2448219	2376512	1	Standard
	Pb	**208**	**0.002**	ug/L	0.001	41	434	754	20	Standard

Sample Information

Sample Date/Time: Thursday, August 12, 2021 13:52:56
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.m
Mass Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

Calibration

Analyte	Mass	**r Corr Coef**	Slope	Std 1 Conc	Std 2 Conc	Std 3 Conc	Std 4 Conc	Std 5 Conc
C	13							
Cl	37							
Sc	45							
Na	23	**0.9999**	0.031	100.00	1000	2000	5000	10000
Mg	24	**1.0000**	0.039	20.00	1000	2000	5000	10000
Al	27	**1.0000**	0.041	20.00	1000	2000	5000	10000
K	39	**0.9999**	0.025	20.00	1000	2000	5000	10000
Ca	44	**1.0000**	0.001	50.00	1000	2000	5000	10000
V	51	**0.9997**	0.027	0.20	10	20	50	100
V-1	51	**0.9997**	0.028	0.20	10	20	50	100
Cr	52	**0.9999**	0.024	0.50	10	20	50	100
Cr	53	**0.9999**	0.003	0.50	10	20	50	100
Fe	54	**1.0000**	0.003	36.00	1000	2000	5000	10000
Fe	57	**0.9998**	0.001	36.00	1000	2000	5000	10000
Mn	55	**1.0000**	0.035	0.50	10	20	50	100
Ge	72							
Ni	60	**0.9999**	0.025	0.50	10	20	50	100
Ni	62	**1.0000**	0.004	0.50	10	20	50	100
Cu	63	**1.0000**	0.073	0.50	10	20	50	100
Cu	65	**0.9999**	0.037	0.50	10	20	50	100
Zn	66	**0.9999**	0.009	6.00	10	20	50	100
Zn	67	**0.9999**	0.002	6.00	10	20	50	100
As	75	**0.9999**	0.005	0.20	10	20	50	100
Y	89							
Kr	83							
In-1	115							
Cd	111	**0.9999**	0.019	0.10	10	20	50	100
Cd	114	**1.0000**	0.050	0.10	10	20	50	100
In	115							
Ag	107	**1.0000**	0.015	0.20	10	20	50	100
Tb	159							
Pb	208	**1.0000**	0.056	0.10	10	20	50	100

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICV1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:07:53

DEL

Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	34404	3	Standard
	Cl	**37**		ug/L			4867239	5129536	0	Standard
>	**Sc**	**45**		ug/L			946449	946107	1	Standard
	Na	**23**	**4594.056**	ug/L	79.677	1	78227	134899796	1	Standard
	Mg	**24**	**4757.727**	ug/L	171.605	3	3266	173595920	3	Standard
	Al	**27**	**4598.319**	ug/L	130.290	2	9407	180076198	2	Standard
	K	**39**	**4765.054**	ug/L	129.475	2	713188	113224152	1	Standard
	Ca	**44**	**4566.208**	ug/L	17.596	0	7516	4550756	1	Standard
	V	**51**	**46.262**	ug/L	1.174	2	3877	1199645	1	Standard
	V-1	**51**	**46.363**	ug/L	0.874	1	189	1208948	0	Standard
	Cr	**52**	**46.486**	ug/L	0.979	2	11464	1062621	1	Standard
	Cr	**53**	**46.802**	ug/L	0.506	1	116	123051	1	Standard
	Fe	**54**	**4643.037**	ug/L	111.930	2	74585	11519435	1	Standard
	Fe	**57**	**4511.787**	ug/L	93.014	2	16592	5232494	0	Standard
	Mn	**55**	**47.796**	ug/L	0.707	1	737	1585489	1	Standard
>	**Ge**	**72**		ug/L			72878	72446	1	KED
	Ni	**60**	**47.705**	ug/L	0.599	1	317	86496	0	KED
	Ni	**62**	**48.540**	ug/L	1.482	3	46	14006	1	KED
	Cu	**63**	**48.005**	ug/L	1.695	3	97	252506	2	KED
	Cu	**65**	**47.288**	ug/L	1.012	2	38	127749	1	KED
	Zn	**66**	**45.540**	ug/L	1.511	3	130	31430	1	KED
	Zn	**67**	**44.955**	ug/L	1.545	3	20	5171	1	KED
	As	**75**	**46.787**	ug/L	0.642	1	3	15804	1	KED
	Y	**89**		ug/L			504241	487665	0	Standard
	Kr	**83**		ug/L			137	143	8	Standard
>	**In-1**	**115**		ug/L			17133	16340	1	KED
	Cd	**111**	**48.610**	ug/L	0.847	1	4	15217	0	KED
	Cd	**114**	**48.247**	ug/L	1.093	2	2	39713	1	KED
>	**In**	**115**		ug/L			1070161	1009408	1	Standard
	Ag	**107**	**47.494**	ug/L	1.620	3	52	725721	1	Standard
>	**Tb**	**159**		ug/L			2448219	2425498	0	Standard
	Pb	**208**	**48.611**	ug/L	0.762	1	434	6586003	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICV1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:14:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	34683	2	Standard
	Cl	**37**		ug/L			4867239	5079985	2	Standard
>	**Sc**	**45**		ug/L			946449	948960	0	Standard
	Na	**23**	**4526.944**	ug/L	133.115	2	78227	133342380	3	Standard
	Mg	**24**	**4673.981**	ug/L	46.559	0	3266	171087762	1	Standard
	Al	**27**	**4567.025**	ug/L	59.794	1	9407	179418197	1	Standard
	K	**39**	**4891.735**	ug/L	50.337	1	713188	116585026	0	Standard
	Ca	**44**	**4628.880**	ug/L	69.698	1	7516	4626873	1	Standard
	V	**51**	**46.490**	ug/L	0.348	0	3877	1209343	0	Standard
	V-1	**51**	**46.886**	ug/L	0.227	0	189	1226399	0	Standard
	Cr	**52**	**46.406**	ug/L	0.708	1	11464	1064123	1	Standard
	Cr	**53**	**47.667**	ug/L	0.916	1	116	125700	1	Standard
	Fe	**54**	**4715.731**	ug/L	19.580	0	74585	11735620	0	Standard
	Fe	**57**	**4529.617**	ug/L	106.724	2	16592	5269489	2	Standard
	Mn	**55**	**48.014**	ug/L	0.446	0	737	1597598	0	Standard
>	**Ge**	**72**		ug/L			72878	71681	0	KED
	Ni	**60**	**48.015**	ug/L	0.127	0	317	86149	0	KED
	Ni	**62**	**49.489**	ug/L	0.584	1	46	14133	0	KED
	Cu	**63**	**48.248**	ug/L	0.816	1	97	251156	1	KED
	Cu	**65**	**47.765**	ug/L	0.208	0	38	127699	1	KED
	Zn	**66**	**46.025**	ug/L	0.715	1	130	31439	1	KED
	Zn	**67**	**47.349**	ug/L	0.663	1	20	5389	0	KED
	As	**75**	**46.820**	ug/L	0.160	0	3	15650	1	KED
	Y	**89**		ug/L			504241	498174	1	Standard
	Kr	**83**		ug/L			137	130	14	Standard
>	**In-1**	**115**		ug/L			17133	16406	1	KED
	Cd	**111**	**48.182**	ug/L	0.152	0	4	15146	1	KED
	Cd	**114**	**48.077**	ug/L	0.421	0	2	39744	2	KED
>	**In**	**115**		ug/L			1070161	1012497	2	Standard
	Ag	**107**	**46.831**	ug/L	0.550	1	52	718136	3	Standard
>	**Tb**	**159**		ug/L			2448219	2412500	1	Standard
	Pb	**208**	**48.347**	ug/L	0.984	2	434	6514487	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICB1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:22:03
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	26515	0	Standard
	Cl	**37**		ug/L			4867239	5002086	2	Standard
>	**Sc**	**45**		ug/L			946449	957291	1	Standard
	Na	**23**	**0.124**	ug/L	0.064	51	78227	82821	4	Standard
	Mg	**24**	**0.242**	ug/L	0.036	15	3266	12262	12	Standard
	Al	**27**	**0.121**	ug/L	0.033	26	9407	14337	10	Standard
	K	**39**	**0.765**	ug/L	0.591	77	713188	739544	1	Standard
	Ca	**44**	**-1.172**	ug/L	0.078	6	7516	6422	1	Standard
	V	**51**	**-0.009**	ug/L	0.006	63	3877	3688	2	Standard
	V-1	**51**	**0.000**	ug/L	0.001	1908	189	192	10	Standard
	Cr	**52**	**-0.033**	ug/L	0.019	56	11464	10832	2	Standard
	Cr	**53**	**-0.004**	ug/L	0.002	51	116	106	5	Standard
	Fe	**54**	**-0.311**	ug/L	0.501	161	74585	74652	1	Standard
	Fe	**57**	**-0.166**	ug/L	0.309	186	16592	16583	0	Standard
	Mn	**55**	**0.002**	ug/L	0.000	20	737	801	3	Standard
>	**Ge**	**72**		ug/L			72878	73860	0	KED
	Ni	**60**	**-0.094**	ug/L	0.011	12	317	148	14	KED
	Ni	**62**	**-0.069**	ug/L	0.041	59	46	27	44	KED
	Cu	**63**	**0.006**	ug/L	0.003	51	97	128	11	KED
	Cu	**65**	**0.012**	ug/L	0.005	37	38	71	17	KED
	Zn	**66**	**0.045**	ug/L	0.025	55	130	163	10	KED
	Zn	**67**	**-0.008**	ug/L	0.098	1229	20	20	56	KED
	As	**75**	**0.002**	ug/L	0.006	378	3	4	47	KED
	Y	**89**		ug/L			504241	492891	3	Standard
	Kr	**83**		ug/L			137	132	13	Standard
>	**In-1**	**115**		ug/L			17133	17074	0	KED
	Cd	**111**	**0.000**	ug/L	0.002	3544	4	4	13	KED
	Cd	**114**	**0.004**	ug/L	0.006	123	2	6	69	KED
>	**In**	**115**		ug/L			1070161	1008712	0	Standard
	Ag	**107**	**0.004**	ug/L	0.002	52	52	112	28	Standard
>	**Tb**	**159**		ug/L			2448219	2385787	1	Standard
	Pb	**208**	**0.004**	ug/L	0.001	18	434	995	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:26:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	29594	4	Standard
	Cl	**37**		ug/L			4867239	5114187	0	Standard
>	**Sc**	**45**		ug/L			946449	927916	1	Standard
	Na	**23**	**4781.419**	ug/L	123.682	2	78227	137666115	1	Standard
	Mg	**24**	**4936.496**	ug/L	113.846	2	3266	176640890	1	Standard
	Al	**27**	**4804.941**	ug/L	90.566	1	9407	184589563	3	Standard
	K	**39**	**4946.766**	ug/L	292.195	5	713188	115195933	4	Standard
	Ca	**44**	**4780.014**	ug/L	71.276	1	7516	4671177	0	Standard
	V	**51**	**47.820**	ug/L	0.717	1	3877	1216152	1	Standard
	V-1	**51**	**48.084**	ug/L	0.749	1	189	1229700	1	Standard
	Cr	**52**	**48.076**	ug/L	0.457	0	11464	1077480	0	Standard
	Cr	**53**	**48.908**	ug/L	0.986	2	116	126087	0	Standard
	Fe	**54**	**4830.349**	ug/L	72.805	1	74585	11750763	0	Standard
	Fe	**57**	**4778.277**	ug/L	65.515	1	16592	5434238	1	Standard
	Mn	**55**	**48.853**	ug/L	1.199	2	737	1589018	0	Standard
>	**Ge**	**72**		ug/L			72878	72684	1	KED
	Ni	**60**	**48.151**	ug/L	1.228	2	317	87585	1	KED
	Ni	**62**	**49.551**	ug/L	0.645	1	46	14348	0	KED
	Cu	**63**	**49.195**	ug/L	0.816	1	97	259636	0	KED
	Cu	**65**	**48.032**	ug/L	0.297	0	38	130212	1	KED
	Zn	**66**	**47.902**	ug/L	0.504	1	130	33174	1	KED
	Zn	**67**	**47.343**	ug/L	0.818	1	20	5463	0	KED
	As	**75**	**48.310**	ug/L	0.222	0	3	16374	1	KED
	Y	**89**		ug/L			504241	498986	0	Standard
	Kr	**83**		ug/L			137	146	3	Standard
>	**In-1**	**115**		ug/L			17133	16286	0	KED
	Cd	**111**	**48.899**	ug/L	0.728	1	4	15259	1	KED
	Cd	**114**	**48.978**	ug/L	0.733	1	2	40188	1	KED
>	**In**	**115**		ug/L			1070161	1009929	3	Standard
	Ag	**107**	**50.187**	ug/L	2.969	5	52	766616	3	Standard
>	**Tb**	**159**		ug/L			2448219	2384779	0	Standard
	Pb	**208**	**48.937**	ug/L	0.140	0	434	6518962	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:33:27
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	26876	1	Standard
	Cl	**37**		ug/L			4867239	4814587	2	Standard
>	**Sc**	**45**		ug/L			946449	938422	2	Standard
	Na	**23**	**-0.052**	ug/L	0.091	172	78227	75994	1	Standard
	Mg	**24**	**0.129**	ug/L	0.008	5	3266	7910	4	Standard
	Al	**27**	**0.013**	ug/L	0.009	70	9407	9838	1	Standard
	K	**39**	**1.681**	ug/L	0.442	26	713188	746361	1	Standard
	Ca	**44**	**-1.230**	ug/L	0.224	18	7516	6236	2	Standard
	V	**51**	**-0.009**	ug/L	0.005	54	3877	3612	1	Standard
	V-1	**51**	**-0.002**	ug/L	0.001	34	189	143	8	Standard
	Cr	**52**	**-0.030**	ug/L	0.020	67	11464	10696	2	Standard
	Cr	**53**	**-0.006**	ug/L	0.006	101	116	99	13	Standard
	Fe	**54**	**0.420**	ug/L	1.156	275	74585	74959	3	Standard
	Fe	**57**	**0.091**	ug/L	0.287	316	16592	16550	1	Standard
	Mn	**55**	**-0.000**	ug/L	0.000	575	737	728	1	Standard
>	**Ge**	**72**		ug/L			72878	73795	1	KED
	Ni	**60**	**-0.101**	ug/L	0.009	9	317	135	13	KED
	Ni	**62**	**-0.065**	ug/L	0.038	58	46	28	40	KED
	Cu	**63**	**0.001**	ug/L	0.002	126	97	105	7	KED
	Cu	**65**	**0.004**	ug/L	0.004	106	38	49	23	KED
	Zn	**66**	**0.034**	ug/L	0.027	79	130	156	12	KED
	Zn	**67**	**-0.019**	ug/L	0.041	218	20	19	26	KED
	As	**75**	**0.008**	ug/L	0.005	58	3	6	24	KED
	Y	**89**		ug/L			504241	492641	0	Standard
	Kr	**83**		ug/L			137	119	9	Standard
>	**In-1**	**115**		ug/L			17133	17243	2	KED
	Cd	**111**	**0.002**	ug/L	0.005	269	4	4	34	KED
	Cd	**114**	**0.005**	ug/L	0.000	4	2	7	1	KED
>	**In**	**115**		ug/L			1070161	1011738	3	Standard
	Ag	**107**	**0.003**	ug/L	0.001	52	52	88	20	Standard
>	**Tb**	**159**		ug/L			2448219	2352482	0	Standard
	Pb	**208**	**0.003**	ug/L	0.000	9	434	784	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CRL1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:37:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	29172	2	Standard
	Cl	**37**		ug/L			4867239	4849540	3	Standard
>	**Sc**	**45**		ug/L			946449	964611	1	Standard
	Na	**23**	**90.747**	ug/L	2.749	3	78227	2794351	1	Standard
	Mg	**24**	**19.832**	ug/L	0.424	2	3266	741050	0	Standard
	Al	**27**	**19.184**	ug/L	0.079	0	9407	775627	1	Standard
	K	**39**	**19.806**	ug/L	1.844	9	713188	1203355	2	Standard
	Ca	**44**	**47.039**	ug/L	1.089	2	7516	55370	1	Standard
	V	**51**	**0.173**	ug/L	0.009	4	3877	8513	2	Standard
	V-1	**51**	**0.186**	ug/L	0.002	0	189	5144	0	Standard
	Cr	**52**	**0.428**	ug/L	0.024	5	11464	21559	1	Standard
	Cr	**53**	**0.463**	ug/L	0.022	4	116	1358	3	Standard
	Fe	**54**	**44.843**	ug/L	4.145	9	74585	188633	4	Standard
	Fe	**57**	**32.280**	ug/L	0.804	2	16592	54955	0	Standard
	Mn	**55**	**0.470**	ug/L	0.012	2	737	16631	2	Standard
>	**Ge**	**72**		ug/L			72878	74246	1	KED
	Ni	**60**	**0.368**	ug/L	0.018	4	317	1005	3	KED
	Ni	**62**	**0.314**	ug/L	0.038	11	46	140	7	KED
	Cu	**63**	**0.478**	ug/L	0.012	2	97	2676	2	KED
	Cu	**65**	**0.490**	ug/L	0.015	3	38	1394	3	KED
	Zn	**66**	**5.621**	ug/L	0.070	1	130	4094	1	KED
	Zn	**67**	**5.155**	ug/L	0.239	4	20	626	3	KED
	As	**75**	**0.206**	ug/L	0.023	11	3	75	11	KED
	Y	**89**		ug/L			504241	498183	0	Standard
	Kr	**83**		ug/L			137	133	2	Standard
>	**In-1**	**115**		ug/L			17133	16596	0	KED
	Cd	**111**	**0.109**	ug/L	0.023	21	4	38	18	KED
	Cd	**114**	**0.100**	ug/L	0.020	19	2	86	18	KED
>	**In**	**115**		ug/L			1070161	1036291	2	Standard
	Ag	**107**	**0.191**	ug/L	0.008	4	52	3042	3	Standard
>	**Tb**	**159**		ug/L			2448219	2381682	1	Standard
	Pb	**208**	**0.104**	ug/L	0.004	3	434	14194	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFA1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:44:26
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	146095	1	Standard
	Cl	**37**		ug/L			4867239	11447169	4	Standard
>	**Sc**	**45**		ug/L			946449	869415	0	Standard
	Na	**23**	**19412.857**	ug/L	256.483	1	78227	523608475	0	Standard
	Mg	**24**	**19835.821**	ug/L	736.856	3	3266	665105934	3	Standard
	Al	**27**	**19463.127**	ug/L	314.664	1	9407	700445257	1	Standard
	K	**39**	**19386.704**	ug/L	408.179	2	713188	421374776	1	Standard
	Ca	**44**	**19193.792**	ug/L	287.050	1	7516	17555923	1	Standard
	V	**51**	**0.029**	ug/L	0.007	23	3877	4255	3	Standard
	V-1	**51**	**0.439**	ug/L	0.010	2	189	10690	2	Standard
	Cr	**52**	**0.393**	ug/L	0.012	3	11464	18690	1	Standard
	Cr	**53**	**1.683**	ug/L	0.021	1	116	4170	1	Standard
	Fe	**54**	**19445.750**	ug/L	460.854	2	74585	44119711	1	Standard
	Fe	**57**	**19558.201**	ug/L	554.625	2	16592	20794501	2	Standard
	Mn	**55**	**0.138**	ug/L	0.002	1	737	4875	0	Standard
>	**Ge**	**72**		ug/L			72878	70033	1	KED
	Ni	**60**	**-0.086**	ug/L	0.014	15	317	154	16	KED
	Ni	**62**	**-0.048**	ug/L	0.022	45	46	31	19	KED
	Cu	**63**	**0.042**	ug/L	0.010	24	97	308	16	KED
	Cu	**65**	**0.042**	ug/L	0.011	27	38	146	19	KED
	Zn	**66**	**0.113**	ug/L	0.036	31	130	200	12	KED
	Zn	**67**	**0.030**	ug/L	0.022	73	20	23	9	KED
	As	**75**	**0.022**	ug/L	0.007	32	3	11	20	KED
	Y	**89**		ug/L			504241	474181	0	Standard
	Kr	**83**		ug/L			137	256	7	Standard
>	**In-1**	**115**		ug/L			17133	15737	1	KED
	Cd	**111**	**0.051**	ug/L	0.003	5	4	19	5	KED
	Cd	**114**	**0.039**	ug/L	0.013	34	2	33	32	KED
>	**In**	**115**		ug/L			1070161	1010878	2	Standard
	Ag	**107**	**0.006**	ug/L	0.001	12	52	134	8	Standard
>	**Tb**	**159**		ug/L			2448219	2373333	1	Standard
	Pb	**208**	**0.014**	ug/L	0.001	4	434	2330	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFB1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:48:46
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	150371	3	Standard
	Cl	**37**		ug/L			4867239	11113409	4	Standard
>	**Sc**	**45**		ug/L			946449	871382	0	Standard
	Na	**23**	**18533.666**	ug/L	256.092	1	78227	501069068	2	Standard
	Mg	**24**	**18750.517**	ug/L	359.204	1	3266	630161501	1	Standard
	Al	**27**	**17947.084**	ug/L	216.903	1	9407	647429005	2	Standard
	K	**39**	**18617.172**	ug/L	227.825	1	713188	405595902	1	Standard
	Ca	**44**	**18535.722**	ug/L	431.532	2	7516	16990477	1	Standard
	V	**51**	**-0.059**	ug/L	0.159	266	3877	2176	174	Standard
	V-1	**51**	**0.447**	ug/L	0.012	2	189	10910	2	Standard
	Cr	**52**	**19.600**	ug/L	0.158	0	11464	418815	1	Standard
	Cr	**53**	**20.674**	ug/L	0.378	1	116	50119	0	Standard
	Fe	**54**	**18217.061**	ug/L	431.796	2	74585	41427723	1	Standard
	Fe	**57**	**18690.281**	ug/L	270.386	1	16592	19917036	0	Standard
	Mn	**55**	**19.759**	ug/L	0.353	1	737	604123	2	Standard
>	**Ge**	**72**		ug/L			72878	69825	0	KED
	Ni	**60**	**19.492**	ug/L	0.304	1	317	34247	1	KED
	Ni	**62**	**20.086**	ug/L	0.267	1	46	5615	1	KED
	Cu	**63**	**19.127**	ug/L	0.230	1	97	97044	1	KED
	Cu	**65**	**18.928**	ug/L	0.211	1	38	49312	0	KED
	Zn	**66**	**18.266**	ug/L	0.207	1	130	12229	0	KED
	Zn	**67**	**16.604**	ug/L	0.574	3	20	1854	3	KED
	As	**75**	**18.759**	ug/L	0.084	0	3	6110	0	KED
	Y	**89**		ug/L			504241	464696	1	Standard
	Kr	**83**		ug/L			137	226	17	Standard
>	**In-1**	**115**		ug/L			17133	15335	1	KED
	Cd	**111**	**19.579**	ug/L	0.475	2	4	5754	1	KED
	Cd	**114**	**19.220**	ug/L	0.304	1	2	14850	1	KED
>	**In**	**115**		ug/L			1070161	967631	2	Standard
	Ag	**107**	**20.063**	ug/L	0.642	3	52	293870	0	Standard
>	**Tb**	**159**		ug/L			2448219	2346174	0	Standard
	Pb	**208**	**0.018**	ug/L	0.000	0	434	2783	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:53:05

DEL

Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	42014	2	Standard
	Cl	**37**		ug/L			4867239	4929608	0	Standard
>	**Sc**	**45**		ug/L			946449	828586	1	Standard
	Na	**23**	**18838.946**	ug/L	604.734	3	78227	484182541	2	Standard
	Mg	**24**	**18921.503**	ug/L	320.265	1	3266	604682505	1	Standard
	Al	**27**	**18384.222**	ug/L	391.640	2	9407	630490067	1	Standard
	K	**39**	**18731.677**	ug/L	1062.006	5	713188	387891207	4	Standard
	Ca	**44**	**18524.454**	ug/L	169.121	0	7516	16147424	0	Standard
	V	**51**	**179.344**	ug/L	2.806	1	3877	4063446	0	Standard
	V-1	**51**	**182.233**	ug/L	2.143	1	189	4161287	0	Standard
	Cr	**52**	**184.153**	ug/L	2.772	1	11464	3657034	0	Standard
	Cr	**53**	**193.194**	ug/L	1.700	0	116	444533	0	Standard
	Fe	**54**	**18528.084**	ug/L	351.998	1	74585	40065362	1	Standard
	Fe	**57**	**18795.399**	ug/L	634.484	3	16592	19048218	3	Standard
	Mn	**55**	**186.424**	ug/L	2.612	1	737	5413897	0	Standard
>	**Ge**	**72**		ug/L			72878	66813	0	KED
	Ni	**60**	**193.878**	ug/L	0.625	0	317	323354	0	KED
	Ni	**62**	**196.142**	ug/L	2.649	1	46	52089	1	KED
	Cu	**63**	**193.621**	ug/L	2.585	1	97	939174	0	KED
	Cu	**65**	**190.095**	ug/L	3.027	1	38	473562	1	KED
	Zn	**66**	**187.437**	ug/L	3.962	2	130	118966	1	KED
	Zn	**67**	**184.376**	ug/L	3.627	1	20	19507	1	KED
	As	**75**	**191.793**	ug/L	1.158	0	3	59745	0	KED
	Y	**89**		ug/L			504241	446808	2	Standard
	Kr	**83**		ug/L			137	210	4	Standard
>	**In-1**	**115**		ug/L			17133	14566	0	KED
	Cd	**111**	**194.460**	ug/L	2.406	1	4	54262	0	KED
	Cd	**114**	**192.629**	ug/L	3.877	2	2	141357	1	KED
>	**In**	**115**		ug/L			1070161	916581	1	Standard
	Ag	**107**	**198.766**	ug/L	5.448	2	52	2758538	2	Standard
>	**Tb**	**159**		ug/L			2448219	2245974	1	Standard
	Pb	**208**	**188.567**	ug/L	2.455	1	434	23653557	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 14:57:24
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	35948	0	Standard
	Cl	**37**		ug/L			4867239	4867600	1	Standard
>	**Sc**	**45**		ug/L			946449	797923	2	Standard
	Na	**23**	**27950.022**	ug/L	150.192	0	78227	691852851	1	Standard
	Mg	**24**	**27691.938**	ug/L	1064.558	3	3266	851834231	1	Standard
	Al	**27**	**26903.902**	ug/L	424.586	1	9407	888477309	0	Standard
	K	**39**	**27459.271**	ug/L	1089.151	3	713188	547302757	2	Standard
	Ca	**44**	**27447.456**	ug/L	672.128	2	7516	23031133	0	Standard
	V	**51**	**270.340**	ug/L	6.928	2	3877	5895505	0	Standard
	V-1	**51**	**275.700**	ug/L	6.543	2	189	6061182	0	Standard
	Cr	**52**	**270.920**	ug/L	4.067	1	11464	5176007	0	Standard
	Cr	**53**	**287.919**	ug/L	2.929	1	116	637871	1	Standard
	Fe	**54**	**27859.713**	ug/L	307.534	1	74585	57980881	1	Standard
	Fe	**57**	**27555.629**	ug/L	308.916	1	16592	26880724	1	Standard
	Mn	**55**	**274.339**	ug/L	3.444	1	737	7671331	0	Standard
>	**Ge**	**72**		ug/L			72878	63731	1	KED
	Ni	**60**	**282.912**	ug/L	2.676	0	317	449913	1	KED
	Ni	**62**	**283.520**	ug/L	4.560	1	46	71786	0	KED
	Cu	**63**	**278.970**	ug/L	2.363	0	97	1290667	1	KED
	Cu	**65**	**272.504**	ug/L	3.614	1	38	647466	0	KED
	Zn	**66**	**267.993**	ug/L	10.063	3	130	162142	1	KED
	Zn	**67**	**265.492**	ug/L	5.699	2	20	26783	2	KED
	As	**75**	**282.442**	ug/L	6.260	2	3	83903	0	KED
	Y	**89**		ug/L			504241	428042	0	Standard
	Kr	**83**		ug/L			137	311	12	Standard
>	**In-1**	**115**		ug/L			17133	13996	1	KED
	Cd	**111**	**283.828**	ug/L	10.079	3	4	76068	1	KED
	Cd	**114**	**282.484**	ug/L	2.202	0	2	199178	1	KED
>	**In**	**115**		ug/L			1070161	841571	1	Standard
	Ag	**107**	**290.606**	ug/L	11.767	4	52	3701846	2	Standard
>	**Tb**	**159**		ug/L			2448219	2155432	1	Standard
	Pb	**208**	**274.537**	ug/L	4.451	1	434	33052666	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 15:09:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	41517	0	Standard
	Cl	**37**		ug/L			4867239	4831202	2	Standard
>	**Sc**	**45**		ug/L			946449	833190	1	Standard
	Na	**23**	**18618.215**	ug/L	362.540	1	78227	481210523	1	Standard
	Mg	**24**	**18606.104**	ug/L	517.925	2	3266	597813528	1	Standard
	Al	**27**	**18218.958**	ug/L	409.858	2	9407	628270789	1	Standard
	K	**39**	**18334.939**	ug/L	557.884	3	713188	381854783	1	Standard
	Ca	**44**	**18386.980**	ug/L	659.937	3	7516	16112727	2	Standard
	V	**51**	**181.081**	ug/L	3.747	2	3877	4125268	0	Standard
	V-1	**51**	**184.107**	ug/L	1.979	1	189	4227398	0	Standard
	Cr	**52**	**184.521**	ug/L	5.903	3	11464	3684058	1	Standard
	Cr	**53**	**194.033**	ug/L	0.282	0	116	448959	1	Standard
	Fe	**54**	**18491.930**	ug/L	554.014	2	74585	40203883	1	Standard
	Fe	**57**	**18364.125**	ug/L	378.218	2	16592	18710875	1	Standard
	Mn	**55**	**186.554**	ug/L	4.337	2	737	5447202	1	Standard
>	**Ge**	**72**		ug/L			72878	67104	0	KED
	Ni	**60**	**187.237**	ug/L	1.821	0	317	313647	1	KED
	Ni	**62**	**192.802**	ug/L	0.568	0	46	51423	0	KED
	Cu	**63**	**187.122**	ug/L	1.881	1	97	911627	0	KED
	Cu	**65**	**182.348**	ug/L	1.575	0	38	456249	0	KED
	Zn	**66**	**183.091**	ug/L	2.914	1	130	116733	2	KED
	Zn	**67**	**181.867**	ug/L	2.336	1	20	19326	1	KED
	As	**75**	**190.456**	ug/L	1.866	0	3	59585	0	KED
	Y	**89**		ug/L			504241	441415	1	Standard
	Kr	**83**		ug/L			137	225	20	Standard
>	**In-1**	**115**		ug/L			17133	14649	0	KED
	Cd	**111**	**192.152**	ug/L	3.045	1	4	53921	1	KED
	Cd	**114**	**190.026**	ug/L	1.918	1	2	140248	1	KED
>	**In**	**115**		ug/L			1070161	880103	1	Standard
	Ag	**107**	**194.382**	ug/L	3.924	2	52	2590419	1	Standard
>	**Tb**	**159**		ug/L			2448219	2179031	1	Standard
	Pb	**208**	**186.947**	ug/L	3.375	1	434	22751863	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 15:13:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	30297	2	Standard
	Cl	**37**		ug/L			4867239	4882741	1	Standard
>	**Sc**	**45**		ug/L			946449	881686	1	Standard
	Na	**23**	**4.141**	ug/L	0.353	8	78227	186017	3	Standard
	Mg	**24**	**1.039**	ug/L	0.038	3	3266	38353	1	Standard
	Al	**27**	**0.914**	ug/L	0.037	4	9407	42107	2	Standard
	K	**39**	**8.749**	ug/L	1.315	15	713188	856578	1	Standard
	Ca	**44**	**2.032**	ug/L	0.441	21	7516	8882	3	Standard
	V	**51**	**0.006**	ug/L	0.005	73	3877	3764	1	Standard
	V-1	**51**	**0.013**	ug/L	0.001	10	189	485	4	Standard
	Cr	**52**	**-0.004**	ug/L	0.005	116	11464	10589	1	Standard
	Cr	**53**	**0.016**	ug/L	0.007	40	116	147	12	Standard
	Fe	**54**	**4.029**	ug/L	0.460	11	74585	78725	0	Standard
	Fe	**57**	**-1.830**	ug/L	0.192	10	16592	13483	0	Standard
	Mn	**55**	**0.017**	ug/L	0.002	10	737	1217	3	Standard
>	**Ge**	**72**		ug/L			72878	69983	1	KED
	Ni	**60**	**-0.100**	ug/L	0.012	12	317	130	16	KED
	Ni	**62**	**-0.060**	ug/L	0.011	18	46	28	11	KED
	Cu	**63**	**0.040**	ug/L	0.004	9	97	294	6	KED
	Cu	**65**	**0.041**	ug/L	0.006	15	38	142	10	KED
	Zn	**66**	**0.100**	ug/L	0.016	16	130	191	6	KED
	Zn	**67**	**0.122**	ug/L	0.023	18	20	33	6	KED
	As	**75**	**0.041**	ug/L	0.012	30	3	17	22	KED
	Y	**89**		ug/L			504241	455616	1	Standard
	Kr	**83**		ug/L			137	135	1	Standard
>	**In-1**	**115**		ug/L			17133	15441	2	KED
	Cd	**111**	**0.056**	ug/L	0.005	8	4	20	7	KED
	Cd	**114**	**0.038**	ug/L	0.010	25	2	32	21	KED
>	**In**	**115**		ug/L			1070161	996019	5	Standard
	Ag	**107**	**0.019**	ug/L	0.001	6	52	339	10	Standard
>	**Tb**	**159**		ug/L			2448219	2149538	1	Standard
	Pb	**208**	**0.017**	ug/L	0.001	6	434	2384	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 15:19:57
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	30324	4	Standard
	Cl	**37**		ug/L			4867239	4767303	1	Standard
>	**Sc**	**45**		ug/L			946449	907406	1	Standard
	Na	**23**	**1.802**	ug/L	0.081	4	78227	125712	1	Standard
	Mg	**24**	**0.414**	ug/L	0.018	4	3266	17605	2	Standard
	Al	**27**	**0.308**	ug/L	0.016	5	9407	20580	2	Standard
	K	**39**	**4.482**	ug/L	0.777	17	713188	785173	1	Standard
	Ca	**44**	**1.202**	ug/L	0.026	2	7516	8353	1	Standard
	V	**51**	**-0.007**	ug/L	0.005	63	3877	3535	2	Standard
	V-1	**51**	**0.005**	ug/L	0.000	6	189	304	2	Standard
	Cr	**52**	**-0.026**	ug/L	0.013	51	11464	10427	2	Standard
	Cr	**53**	**0.013**	ug/L	0.003	25	116	145	6	Standard
	Fe	**54**	**3.058**	ug/L	0.277	9	74585	78739	1	Standard
	Fe	**57**	**-1.638**	ug/L	0.248	15	16592	14092	2	Standard
	Mn	**55**	**0.007**	ug/L	0.001	7	737	938	1	Standard
>	**Ge**	**72**		ug/L			72878	70415	2	KED
	Ni	**60**	**-0.127**	ug/L	0.010	8	317	83	20	KED
	Ni	**62**	**-0.102**	ug/L	0.028	27	46	17	48	KED
	Cu	**63**	**0.010**	ug/L	0.003	26	97	145	7	KED
	Cu	**65**	**0.014**	ug/L	0.004	31	38	72	16	KED
	Zn	**66**	**0.053**	ug/L	0.013	23	130	161	3	KED
	Zn	**67**	**-0.010**	ug/L	0.065	659	20	19	36	KED
	As	**75**	**0.007**	ug/L	0.007	96	3	6	35	KED
	Y	**89**		ug/L			504241	475207	0	Standard
	Kr	**83**		ug/L			137	116	4	Standard
>	**In-1**	**115**		ug/L			17133	16024	3	KED
	Cd	**111**	**0.015**	ug/L	0.008	50	4	8	29	KED
	Cd	**114**	**0.007**	ug/L	0.001	19	2	8	12	KED
>	**In**	**115**		ug/L			1070161	974925	1	Standard
	Ag	**107**	**0.006**	ug/L	0.001	23	52	133	16	Standard
>	**Tb**	**159**		ug/L			2448219	2177714	1	Standard
	Pb	**208**	**0.008**	ug/L	0.001	6	434	1391	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 15:26:11
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	28388	1	Standard
	Cl	**37**		ug/L			4867239	4907016	1	Standard
>	**Sc**	**45**		ug/L			946449	913132	1	Standard
	Na	**23**	**4637.361**	ug/L	36.968	0	78227	131424222	0	Standard
	Mg	**24**	**4744.242**	ug/L	79.427	1	3266	167119583	2	Standard
	Al	**27**	**4547.151**	ug/L	9.734	0	9407	171887334	1	Standard
	K	**39**	**4811.514**	ug/L	178.159	3	713188	110337097	2	Standard
	Ca	**44**	**4680.886**	ug/L	124.505	2	7516	4501792	2	Standard
	V	**51**	**47.506**	ug/L	0.909	1	3877	1188896	0	Standard
	V-1	**51**	**47.625**	ug/L	0.827	1	189	1198554	0	Standard
	Cr	**52**	**47.928**	ug/L	0.838	1	11464	1057095	1	Standard
	Cr	**53**	**48.293**	ug/L	0.431	0	116	122540	0	Standard
	Fe	**54**	**4572.104**	ug/L	23.744	0	74585	10950563	0	Standard
	Fe	**57**	**4528.070**	ug/L	86.160	1	16592	5069563	2	Standard
	Mn	**55**	**48.237**	ug/L	0.868	1	737	1544316	1	Standard
>	**Ge**	**72**		ug/L			72878	70369	1	KED
	Ni	**60**	**48.392**	ug/L	0.967	1	317	85221	0	KED
	Ni	**62**	**49.455**	ug/L	1.336	2	46	13863	1	KED
	Cu	**63**	**49.303**	ug/L	0.860	1	97	251975	2	KED
	Cu	**65**	**47.954**	ug/L	0.717	1	38	125847	1	KED
	Zn	**66**	**48.093**	ug/L	1.246	2	130	32239	1	KED
	Zn	**67**	**47.496**	ug/L	1.182	2	20	5307	2	KED
	As	**75**	**48.143**	ug/L	0.252	0	3	15797	0	KED
	Y	**89**		ug/L			504241	469757	3	Standard
	Kr	**83**		ug/L			137	126	6	Standard
>	**In-1**	**115**		ug/L			17133	15900	1	KED
	Cd	**111**	**49.754**	ug/L	1.244	2	4	15154	1	KED
	Cd	**114**	**48.503**	ug/L	0.204	0	2	38855	1	KED
>	**In**	**115**		ug/L			1070161	932706	2	Standard
	Ag	**107**	**51.763**	ug/L	1.479	2	52	730790	0	Standard
>	**Tb**	**159**		ug/L			2448219	2242300	0	Standard
	Pb	**208**	**50.521**	ug/L	0.198	0	434	6327957	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 15:33:15
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	26616	3	Standard
	Cl	**37**		ug/L			4867239	4771446	2	Standard
>	**Sc**	**45**		ug/L			946449	918579	0	Standard
	Na	**23**	**0.553**	ug/L	0.067	12	78227	91676	1	Standard
	Mg	**24**	**0.076**	ug/L	0.012	15	3266	5863	7	Standard
	Al	**27**	**-0.026**	ug/L	0.007	26	9407	8139	3	Standard
	K	**39**	**2.724**	ug/L	0.401	14	713188	754637	1	Standard
	Ca	**44**	**-1.903**	ug/L	0.118	6	7516	5457	1	Standard
	V	**51**	**-0.013**	ug/L	0.005	41	3877	3433	3	Standard
	V-1	**51**	**0.002**	ug/L	0.001	54	189	224	10	Standard
	Cr	**52**	**-0.040**	ug/L	0.012	30	11464	10247	1	Standard
	Cr	**53**	**0.007**	ug/L	0.005	67	116	131	10	Standard
	Fe	**54**	**-0.705**	ug/L	0.954	135	74585	70693	2	Standard
	Fe	**57**	**-1.604**	ug/L	0.188	11	16592	14303	2	Standard
	Mn	**55**	**0.001**	ug/L	0.001	72	737	752	4	Standard
>	**Ge**	**72**		ug/L			72878	72623	2	KED
	Ni	**60**	**-0.131**	ug/L	0.007	5	317	80	16	KED
	Ni	**62**	**-0.118**	ug/L	0.005	4	46	12	8	KED
	Cu	**63**	**0.005**	ug/L	0.005	109	97	121	21	KED
	Cu	**65**	**0.013**	ug/L	0.007	55	38	73	28	KED
	Zn	**66**	**0.121**	ug/L	0.010	7	130	213	2	KED
	Zn	**67**	**0.156**	ug/L	0.058	37	20	38	15	KED
	As	**75**	**0.001**	ug/L	0.006	603	3	4	48	KED
	Y	**89**		ug/L			504241	479287	0	Standard
	Kr	**83**		ug/L			137	127	18	Standard
>	**In-1**	**115**		ug/L			17133	16650	1	KED
	Cd	**111**	**0.002**	ug/L	0.003	134	4	4	20	KED
	Cd	**114**	**0.005**	ug/L	0.008	147	2	7	91	KED
>	**In**	**115**		ug/L			1070161	987342	3	Standard
	Ag	**107**	**0.003**	ug/L	0.001	41	52	91	17	Standard
>	**Tb**	**159**		ug/L			2448219	2223489	1	Standard
	Pb	**208**	**0.004**	ug/L	0.000	2	434	916	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 15:37:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	87573	1	Standard
	Cl	**37**		ug/L			4867239	4495106	0	Standard
>	**Sc**	**45**		ug/L			946449	943272	1	Standard
	[redacted]	**23**	[redacted]	ug/L	14.669	3	78227	12019400	1	Standard
	[redacted]	**24**	[redacted]	ug/L	0.458	3	3266	524463	1	Standard
	Al	**27**	**8.341**	ug/L	0.152	1	9407	335114	3	Standard
	[redacted]	**39**	[redacted]	ug/L	2.528	12	713188	1191516	3	Standard
	[redacted]	**44**	[redacted]	ug/L	3.584	2	7516	127389	0	Standard
	V	**51**	**0.043**	ug/L	0.007	15	3877	4961	2	Standard
	V-1	**51**	**0.038**	ug/L	0.003	6	189	1178	5	Standard
	[redacted]	**52**	[redacted]	ug/L	0.027	12	11464	16099	2	Standard
	Cr	**53**	**0.189**	ug/L	0.011	5	116	609	3	Standard
	Fe	**54**	**11.928**	ug/L	0.715	5	74585	103631	0	Standard
	Fe	**57**	**2.016**	ug/L	0.638	31	16592	18851	2	Standard
	Mn	**55**	**0.263**	ug/L	0.007	2	737	9437	1	Standard
>	**Ge**	**72**		ug/L			72878	74488	0	KED
	Ni	**60**	**-0.115**	ug/L	0.005	4	317	111	8	KED
	Ni	**62**	**-0.109**	ug/L	0.019	17	46	15	36	KED
	Cu	**63**	**0.106**	ug/L	0.008	7	97	671	5	KED
	Cu	**65**	**0.112**	ug/L	0.006	5	38	348	4	KED
	Zn	**66**	**0.633**	ug/L	0.068	10	130	581	8	KED
	Zn	**67**	**0.573**	ug/L	0.008	1	20	88	1	KED
	As	**75**	**0.018**	ug/L	0.002	12	3	10	7	KED
	Y	**89**		ug/L			504241	490542	0	Standard
	Kr	**83**		ug/L			137	125	11	Standard
>	**In-1**	**115**		ug/L			17133	16412	2	KED
	Cd	**111**	**0.010**	ug/L	0.012	126	4	6	55	KED
	Cd	**114**	**0.004**	ug/L	0.006	131	2	6	74	KED
>	**In**	**115**		ug/L			1070161	1029237	3	Standard
	Ag	**107**	**0.001**	ug/L	0.001	116	52	64	23	Standard
>	**Tb**	**159**		ug/L			2448219	2294204	1	Standard
	Pb	**208**	**0.015**	ug/L	0.001	5	434	2287	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 15:44:49
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	89979	0	Standard
	Cl	**37**		ug/L			4867239	4402984	1	Standard
>	**Sc**	**45**		ug/L			946449	945460	1	Standard
	[redacted]	**23**	[redacted]	ug/L	10.666	2	78227	12790802	0	Standard
	[redacted]	**24**	[redacted]	ug/L	0.331	2	3266	556205	1	Standard
	Al	**27**	**9.334**	ug/L	0.073	0	9407	374709	1	Standard
	[redacted]	**39**	[redacted]	ug/L	1.023	5	713188	1129220	2	Standard
	[redacted]	**44**	[redacted]	ug/L	5.173	3	7516	145188	2	Standard
	V	**51**	**0.058**	ug/L	0.007	12	3877	5365	2	Standard
	V-1	**51**	**0.045**	ug/L	0.001	3	189	1368	0	Standard
	[redacted]	**52**	[redacted]	ug/L	0.020	6	11464	18710	1	Standard
	Cr	**53**	**0.274**	ug/L	0.001	0	116	835	2	Standard
	Fe	**54**	**14.736**	ug/L	0.613	4	74585	110793	0	Standard
	Fe	**57**	**4.068**	ug/L	0.373	9	16592	21270	0	Standard
	Mn	**55**	**1.422**	ug/L	0.033	2	737	47830	1	Standard
>	**Ge**	**72**		ug/L			72878	73510	1	KED
	Ni	**60**	**-0.060**	ug/L	0.007	12	317	210	7	KED
	Ni	**62**	**-0.025**	ug/L	0.040	158	46	40	28	KED
	Cu	**63**	**0.094**	ug/L	0.006	6	97	602	6	KED
	Cu	**65**	**0.094**	ug/L	0.005	5	38	295	3	KED
	Zn	**66**	**1.212**	ug/L	0.100	8	130	976	5	KED
	Zn	**67**	**1.222**	ug/L	0.185	15	20	163	12	KED
	As	**75**	**0.019**	ug/L	0.005	27	3	10	15	KED
	Y	**89**		ug/L			504241	493254	0	Standard
	Kr	**83**		ug/L			137	132	9	Standard
>	**In-1**	**115**		ug/L			17133	16916	0	KED
	Cd	**111**	**0.003**	ug/L	0.007	239	4	5	47	KED
	Cd	**114**	**0.000**	ug/L	0.010	2973	2	3	262	KED
>	**In**	**115**		ug/L			1070161	1040022	1	Standard
	Ag	**107**	**0.002**	ug/L	0.001	23	52	86	9	Standard
>	**Tb**	**159**		ug/L			2448219	2290416	0	Standard
	Pb	**208**	**0.027**	ug/L	0.001	4	434	3915	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 15:49:09
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	103385	2	Standard
	Cl	**37**		ug/L			4867239	4949504	3	Standard
>	**Sc**	**45**		ug/L			946449	926612	1	Standard
	[redacted]	**23**	[redacted]	ug/L	112.064	2	78227	142437116	1	Standard
	[redacted]	**24**	[redacted]	ug/L	197.031	4	3266	172566000	2	Standard
	Al	**27**	**4579.725**	ug/L	86.163	1	9407	175637615	0	Standard
	[redacted]	**39**	[redacted]	ug/L	180.245	3	713188	114011324	2	Standard
	[redacted]	**44**	[redacted]	ug/L	139.087	2	7516	4585637	1	Standard
	V	**51**	**23.492**	ug/L	0.510	2	3877	598525	2	Standard
	V-1	**51**	**23.600**	ug/L	0.342	1	189	602797	1	Standard
	[redacted]	**52**	[redacted]	ug/L	0.609	2	11464	537327	2	Standard
	Cr	**53**	**24.092**	ug/L	0.385	1	116	62084	0	Standard
	Fe	**54**	**4542.886**	ug/L	166.094	3	74585	11037258	1	Standard
	Fe	**57**	**4517.024**	ug/L	90.725	2	16592	5130182	0	Standard
	Mn	**55**	**24.386**	ug/L	0.708	2	737	792435	1	Standard
>	**Ge**	**72**		ug/L			72878	72756	1	KED
	Ni	**60**	**23.835**	ug/L	0.955	4	317	43547	2	KED
	Ni	**62**	**24.605**	ug/L	0.753	3	46	7155	3	KED
	Cu	**63**	**24.525**	ug/L	0.247	1	97	129617	0	KED
	Cu	**65**	**23.743**	ug/L	0.562	2	38	64428	0	KED
	Zn	**66**	**70.161**	ug/L	2.496	3	130	48557	1	KED
	Zn	**67**	**66.823**	ug/L	0.323	0	20	7711	1	KED
	As	**75**	**23.635**	ug/L	0.384	1	3	8019	0	KED
	Y	**89**		ug/L			504241	480237	1	Standard
	Kr	**83**		ug/L			137	146	13	Standard
>	**In-1**	**115**		ug/L			17133	16593	1	KED
	Cd	**111**	**23.532**	ug/L	0.404	1	4	7482	1	KED
	Cd	**114**	**23.679**	ug/L	0.296	1	2	19800	2	KED
>	**In**	**115**		ug/L			1070161	1005263	2	Standard
	Ag	**107**	**24.765**	ug/L	0.416	1	52	377006	2	Standard
>	**Tb**	**159**		ug/L			2448219	2276954	0	Standard
	Pb	**208**	**25.242**	ug/L	0.011	0	434	3210702	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 15:53:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	109270	3	Standard
	Cl	**37**		ug/L			4867239	5636321	2	Standard
>	**Sc**	**45**		ug/L			946449	950467	1	Standard
	[redacted]	**23**	[redacted]	ug/L	56.504	1	78227	87326467	0	Standard
	[redacted]	**24**	[redacted]	ug/L	21.712	1	3266	76446991	1	Standard
	Al	**27**	**1.274**	ug/L	0.065	5	9407	59553	4	Standard
	[redacted]	**39**	[redacted]	ug/L	123.903	4	713188	65286927	5	Standard
	[redacted]	**44**	[redacted]	ug/L	63.123	1	7516	3302408	0	Standard
	V	**51**	**0.084**	ug/L	0.001	1	3877	6064	1	Standard
	V-1	**51**	**0.059**	ug/L	0.003	4	189	1727	5	Standard
	Cr	**52**	**0.325**	ug/L	0.006	1	11464	18899	1	Standard
	Cr	**53**	**0.239**	ug/L	0.005	2	116	748	3	Standard
	Fe	**54**	**11.046**	ug/L	1.232	11	74585	102247	2	Standard
	Fe	**57**	**10.447**	ug/L	0.923	8	16592	28789	2	Standard
	Mn	**55**	**0.121**	ug/L	0.002	2	737	4772	1	Standard
>	**Ge**	**72**		ug/L			72878	74371	1	KED
	Ni	**60**	**-0.105**	ug/L	0.013	12	317	129	18	KED
	Ni	**62**	**-0.087**	ug/L	0.009	10	46	22	13	KED
	Cu	**63**	**0.051**	ug/L	0.003	5	97	376	3	KED
	Cu	**65**	**0.050**	ug/L	0.004	8	38	177	5	KED
	Zn	**66**	**1.060**	ug/L	0.020	1	130	881	2	KED
	Zn	**67**	**1.120**	ug/L	0.109	9	20	153	7	KED
	As	**75**	**0.003**	ug/L	0.005	184	3	5	37	KED
	Y	**89**		ug/L			504241	489958	1	Standard
	Kr	**83**		ug/L			137	126	8	Standard
>	**In-1**	**115**		ug/L			17133	16482	2	KED
	Cd	**111**	**0.012**	ug/L	0.011	88	4	7	45	KED
	Cd	**114**	**0.010**	ug/L	0.008	82	2	11	61	KED
>	**In**	**115**		ug/L			1070161	969669	4	Standard
	Ag	**107**	**0.004**	ug/L	0.001	17	52	100	8	Standard
>	**Tb**	**159**		ug/L			2448219	2286026	1	Standard
	Pb	**208**	**0.016**	ug/L	0.001	3	434	2398	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:00:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	50403	2	Standard
	Cl	**37**		ug/L			4867239	4265120	3	Standard
>	**Sc**	**45**		ug/L			946449	921349	1	Standard
	Na	**23**	**3899.238**	ug/L	132.879	3	78227	111494815	2	Standard
		24		ug/L	342.016	3	3266	340744298	2	Standard
	Al	**27**	**452.721**	ug/L	9.512	2	9407	17272887	0	Standard
	K	**39**	**6330.468**	ug/L	184.494	2	713188	146293406	3	Standard
	Ca	**44**	**81705.345**	ug/L	1883.153	2	7516	79160032	1	Standard
	V	**51**	**0.103**	ug/L	0.006	5	3877	6369	1	Standard
	V-1	**51**	**0.118**	ug/L	0.002	1	189	3169	0	Standard
	Cr	**52**	**0.240**	ug/L	0.020	8	11464	16437	2	Standard
	Cr	**53**	**0.282**	ug/L	0.000	0	116	833	1	Standard
	Fe	**54**	**14.258**	ug/L	1.350	9	74585	106816	2	Standard
	Fe	**57**	**174.301**	ug/L	4.389	2	16592	212402	2	Standard
	Mn	**55**	**3323.916**	ug/L	73.028	2	737	107319618	1	Standard
>	**Ge**	**72**		ug/L			72878	69247	0	KED
	Ni	**60**	**13.984**	ug/L	0.162	1	317	24452	1	KED
	Ni	**62**	**14.343**	ug/L	0.378	2	46	3989	2	KED
	Cu	**63**	**0.300**	ug/L	0.017	5	97	1601	4	KED
	Cu	**65**	**0.292**	ug/L	0.015	5	38	791	5	KED
	Zn	**66**	**18.811**	ug/L	0.292	1	130	12486	1	KED
	Zn	**67**	**19.764**	ug/L	0.619	3	20	2184	2	KED
	As	**75**	**0.080**	ug/L	0.013	15	3	29	13	KED
	Y	**89**		ug/L			504241	609774	2	Standard
	Kr	**83**		ug/L			137	163	17	Standard
>	**In-1**	**115**		ug/L			17133	15735	1	KED
	Cd	**111**	**6.055**	ug/L	0.145	2	4	1829	2	KED
	Cd	**114**	**6.164**	ug/L	0.130	2	2	4888	0	KED
>	**In**	**115**		ug/L			1070161	1014705	0	Standard
	Ag	**107**	**0.003**	ug/L	0.001	22	52	97	10	Standard
>	**Tb**	**159**		ug/L			2448219	2279052	1	Standard
	Pb	**208**	**0.015**	ug/L	0.001	5	434	2368	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:05:14
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	31813	3	Standard
	Cl	**37**		ug/L			4867239	4550288	1	Standard
>	**Sc**	**45**		ug/L			946449	870299	1	Standard
	Na	**23**	**712.921**	ug/L	19.417	2	78227	19316930	2	Standard
		24		ug/L	15.513	1	3266	46754039	1	Standard
	Al	**27**	**324.404**	ug/L	7.623	2	9407	11693260	1	Standard
	K	**39**	**1237.989**	ug/L	51.999	4	713188	27540509	2	Standard
		44		ug/L	98.432	0	7516	10478424	0	Standard
	V	**51**	**0.070**	ug/L	0.006	8	3877	5240	1	Standard
	V-1	**51**	**0.085**	ug/L	0.003	3	189	2206	2	Standard
	Cr	**52**	**0.105**	ug/L	0.014	13	11464	12718	1	Standard
	Cr	**53**	**0.149**	ug/L	0.002	1	116	466	0	Standard
	Fe	**54**	**31.237**	ug/L	2.029	6	74585	139378	1	Standard
	Fe	**57**	**45.985**	ug/L	0.821	1	16592	64162	1	Standard
	Mn	**55**	**557.391**	ug/L	12.756	2	737	16998451	0	Standard
>	**Ge**	**72**		ug/L			72878	71785	0	KED
	Ni	**60**	**5.259**	ug/L	0.099	1	317	9727	1	KED
	Ni	**62**	**5.381**	ug/L	0.146	2	46	1580	2	KED
	Cu	**63**	**5.665**	ug/L	0.125	2	97	29617	1	KED
	Cu	**65**	**5.582**	ug/L	0.064	1	38	14978	0	KED
	Zn	**66**	**82.439**	ug/L	1.565	1	130	56291	1	KED
	Zn	**67**	**77.204**	ug/L	2.648	3	20	8788	3	KED
	As	**75**	**0.028**	ug/L	0.012	44	3	13	31	KED
	Y	**89**		ug/L			504241	496266	0	Standard
	Kr	**83**		ug/L			137	120	11	Standard
>	**In-1**	**115**		ug/L			17133	15640	1	KED
	Cd	**111**	**1.117**	ug/L	0.117	10	4	338	9	KED
	Cd	**114**	**0.981**	ug/L	0.018	1	2	775	2	KED
>	**In**	**115**		ug/L			1070161	1024420	0	Standard
	Ag	**107**	**0.042**	ug/L	0.002	5	52	700	5	Standard
>	**Tb**	**159**		ug/L			2448219	2226066	1	Standard
	Pb	**208**	**0.047**	ug/L	0.001	1	434	6257	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:09:34
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	31334	3	Standard
	Cl	**37**		ug/L			4867239	4647958	3	Standard
>	**Sc**	**45**		ug/L			946449	863006	0	Standard
	Na	**23**	**662.297**	ug/L	18.135	2	78227	17799314	2	Standard
		24		ug/L	16.741	1	3266	45712779	0	Standard
	Al	**27**	**300.907**	ug/L	3.198	1	9407	10757745	0	Standard
	K	**39**	**1187.060**	ug/L	23.572	1	713188	26219287	1	Standard
		44		ug/L	549.815	4	7516	10031960	4	Standard
	V	**51**	**-0.005**	ug/L	0.004	96	3877	3428	2	Standard
	V-1	**51**	**0.005**	ug/L	0.000	5	189	297	1	Standard
	Cr	**52**	**0.006**	ug/L	0.012	202	11464	10570	1	Standard
	Cr	**53**	**0.036**	ug/L	0.005	14	116	193	7	Standard
	Fe	**54**	**3.163**	ug/L	1.642	51	74585	75103	4	Standard
	Fe	**57**	**23.236**	ug/L	1.023	4	16592	39634	2	Standard
	Mn	**55**	**540.817**	ug/L	18.261	3	737	16355691	2	Standard
>	**Ge**	**72**		ug/L			72878	71792	1	KED
	Ni	**60**	**5.187**	ug/L	0.016	0	317	9599	1	KED
	Ni	**62**	**5.347**	ug/L	0.240	4	46	1570	3	KED
	Cu	**63**	**5.420**	ug/L	0.065	1	97	28344	1	KED
	Cu	**65**	**5.356**	ug/L	0.109	2	38	14372	0	KED
	Zn	**66**	**79.463**	ug/L	0.792	0	130	54274	1	KED
	Zn	**67**	**72.115**	ug/L	0.847	1	20	8210	0	KED
	As	**75**	**0.004**	ug/L	0.003	75	3	5	18	KED
	Y	**89**		ug/L			504241	491980	2	Standard
	Kr	**83**		ug/L			137	135	12	Standard
>	**In-1**	**115**		ug/L			17133	15437	1	KED
	Cd	**111**	**1.115**	ug/L	0.047	4	4	333	4	KED
	Cd	**114**	**1.103**	ug/L	0.068	6	2	860	5	KED
>	**In**	**115**		ug/L			1070161	1011044	0	Standard
	Ag	**107**	**0.000**	ug/L	0.001	186	52	55	20	Standard
>	**Tb**	**159**		ug/L			2448219	2208166	1	Standard
	Pb	**208**	**0.013**	ug/L	0.000	3	434	1940	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:13:53
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	31211	3	Standard
	Cl	**37**		ug/L			4867239	4574076	1	Standard
>	**Sc**	**45**		ug/L			946449	861172	1	Standard
	Na	**23**	**1633.726**	ug/L	50.069	3	78227	43718285	3	Standard
		24		ug/L	51.830	2	3266	80911236	0	Standard
	Al	**27**	**1220.363**	ug/L	20.658	1	9407	43511013	1	Standard
	K	**39**	**2311.320**	ug/L	3.837	0	713188	50333849	1	Standard
		44		ug/L	318.363	2	7516	11194193	3	Standard
	V	**51**	**4.762**	ug/L	0.087	1	3877	115575	0	Standard
	V-1	**51**	**4.821**	ug/L	0.057	1	189	114576	0	Standard
	Cr	**52**	**4.714**	ug/L	0.067	1	11464	107455	0	Standard
	Cr	**53**	**4.900**	ug/L	0.050	1	116	11822	2	Standard
	Fe	**54**	**892.339**	ug/L	10.043	1	74585	2070123	0	Standard
	Fe	**57**	**974.927**	ug/L	24.500	2	16592	1040906	1	Standard
	Mn	**55**	**565.043**	ug/L	7.952	1	737	17053358	1	Standard
>	**Ge**	**72**		ug/L			72878	70815	0	KED
	Ni	**60**	**10.550**	ug/L	0.078	0	317	18940	0	KED
	Ni	**62**	**10.670**	ug/L	0.161	1	46	3046	2	KED
	Cu	**63**	**10.871**	ug/L	0.129	1	97	55976	0	KED
	Cu	**65**	**10.537**	ug/L	0.120	1	38	27858	1	KED
	Zn	**66**	**98.812**	ug/L	2.417	2	130	66529	1	KED
	Zn	**67**	**89.849**	ug/L	1.959	2	20	10087	2	KED
	As	**75**	**5.070**	ug/L	0.191	3	3	1677	2	KED
	Y	**89**		ug/L			504241	485676	0	Standard
	Kr	**83**		ug/L			137	142	12	Standard
>	**In-1**	**115**		ug/L			17133	15450	0	KED
	Cd	**111**	**6.192**	ug/L	0.071	1	4	1836	0	KED
	Cd	**114**	**6.234**	ug/L	0.108	1	2	4855	1	KED
>	**In**	**115**		ug/L			1070161	1013931	2	Standard
	Ag	**107**	**5.416**	ug/L	0.142	2	52	83177	1	Standard
>	**Tb**	**159**		ug/L			2448219	2208840	1	Standard
	Pb	**208**	**5.392**	ug/L	0.078	1	434	665616	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:18:37
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	31773	4	Standard
	Cl	**37**		ug/L			4867239	4583433	1	Standard
>	**Sc**	**45**		ug/L			946449	875668	2	Standard
	Na	**23**	**1601.475**	ug/L	13.329	0	78227	43570824	1	Standard
		24		ug/L	142.846	6	3266	80284128	4	Standard
	Al	**27**	**1219.993**	ug/L	36.640	3	9407	44212991	1	Standard
	K	**39**	**2282.577**	ug/L	113.007	4	713188	50530496	3	Standard
		44		ug/L	287.731	2	7516	11547877	0	Standard
	V	**51**	**4.701**	ug/L	0.083	1	3877	116041	1	Standard
	V-1	**51**	**4.731**	ug/L	0.116	2	189	114323	0	Standard
	Cr	**52**	**4.748**	ug/L	0.071	1	11464	109961	0	Standard
	Cr	**53**	**4.843**	ug/L	0.186	3	116	11876	1	Standard
	Fe	**54**	**912.039**	ug/L	10.064	1	74585	2149768	1	Standard
	Fe	**57**	**977.746**	ug/L	40.121	4	16592	1061090	2	Standard
	Mn	**55**	**561.228**	ug/L	9.263	1	737	17220777	0	Standard
>	**Ge**	**72**		ug/L			72878	72389	1	KED
	Ni	**60**	**10.290**	ug/L	0.094	0	317	18891	1	KED
	Ni	**62**	**10.602**	ug/L	0.525	4	46	3093	4	KED
	Cu	**63**	**10.628**	ug/L	0.294	2	97	55941	2	KED
	Cu	**65**	**10.680**	ug/L	0.080	0	38	28862	1	KED
	Zn	**66**	**98.219**	ug/L	1.544	1	130	67599	0	KED
	Zn	**67**	**87.338**	ug/L	0.777	0	20	10021	1	KED
	As	**75**	**4.934**	ug/L	0.116	2	3	1668	0	KED
	Y	**89**		ug/L			504241	495604	0	Standard
	Kr	**83**		ug/L			137	148	22	Standard
>	**In-1**	**115**		ug/L			17133	15572	1	KED
	Cd	**111**	**6.258**	ug/L	0.191	3	4	1870	2	KED
	Cd	**114**	**6.366**	ug/L	0.110	1	2	4996	1	KED
>	**In**	**115**		ug/L			1070161	1019430	0	Standard
	Ag	**107**	**5.488**	ug/L	0.062	1	52	84782	1	Standard
>	**Tb**	**159**		ug/L			2448219	2244048	1	Standard
	Pb	**208**	**5.333**	ug/L	0.079	1	434	668822	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:25:41
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	29606	0	Standard
	Cl	**37**		ug/L			4867239	5082766	2	Standard
>	**Sc**	**45**		ug/L			946449	880486	0	Standard
	Na	**23**	**-0.585**	ug/L	0.006	1	78227	56799	0	Standard
	Mg	**24**	**0.264**	ug/L	0.010	3	3266	12007	2	Standard
	Al	**27**	**0.035**	ug/L	0.006	17	9407	10026	2	Standard
	K	**39**	**4.643**	ug/L	0.923	19	713188	765548	2	Standard
	Ca	**44**	**-1.215**	ug/L	0.105	8	7516	5867	1	Standard
	V	**51**	**-0.006**	ug/L	0.003	51	3877	3473	1	Standard
	V-1	**51**	**-0.000**	ug/L	0.000	80	189	168	3	Standard
	Cr	**52**	**-0.019**	ug/L	0.007	33	11464	10262	1	Standard
	Cr	**53**	**-0.002**	ug/L	0.004	204	116	102	10	Standard
	Fe	**54**	**1.564**	ug/L	0.434	27	74585	72974	1	Standard
	Fe	**57**	**-4.683**	ug/L	0.083	1	16592	10396	1	Standard
	Mn	**55**	**0.078**	ug/L	0.003	3	737	3091	2	Standard
>	**Ge**	**72**		ug/L			72878	73768	1	KED
	Ni	**60**	**-0.139**	ug/L	0.004	2	317	64	12	KED
	Ni	**62**	**-0.130**	ug/L	0.014	10	46	9	40	KED
	Cu	**63**	**0.005**	ug/L	0.001	16	97	123	4	KED
	Cu	**65**	**0.007**	ug/L	0.004	63	38	57	22	KED
	Zn	**66**	**0.001**	ug/L	0.007	497	130	133	4	KED
	Zn	**67**	**0.003**	ug/L	0.068	2050	20	21	36	KED
	As	**75**	**-0.005**	ug/L	0.004	74	3	2	52	KED
	Y	**89**		ug/L			504241	472967	1	Standard
	Kr	**83**		ug/L			137	115	5	Standard
>	**In-1**	**115**		ug/L			17133	16442	2	KED
	Cd	**111**	**-0.004**	ug/L	0.002	41	4	2	21	KED
	Cd	**114**	**0.005**	ug/L	0.001	25	2	6	16	KED
>	**In**	**115**		ug/L			1070161	1032484	2	Standard
	Ag	**107**	**-0.000**	ug/L	0.000	140	52	46	13	Standard
>	**Tb**	**159**		ug/L			2448219	2233155	1	Standard
	Pb	**208**	**0.004**	ug/L	0.000	4	434	850	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:30:01
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	27386	0	Standard
	Cl	**37**		ug/L			4867239	4917944	0	Standard
>	**Sc**	**45**		ug/L			946449	885799	2	Standard
	Na	**23**	**4595.515**	ug/L	119.199	2	78227	126305232	1	Standard
	Mg	**24**	**4813.588**	ug/L	180.170	3	3266	164388778	2	Standard
	Al	**27**	**4551.732**	ug/L	93.321	2	9407	166859008	0	Standard
	K	**39**	**4738.690**	ug/L	176.226	3	713188	105384262	1	Standard
	Ca	**44**	**4586.376**	ug/L	112.930	2	7516	4278130	1	Standard
	V	**51**	**46.113**	ug/L	1.524	3	3877	1119177	1	Standard
	V-1	**51**	**46.219**	ug/L	1.438	3	189	1127959	0	Standard
	Cr	**52**	**46.518**	ug/L	1.247	2	11464	995305	0	Standard
	Cr	**53**	**46.843**	ug/L	1.062	2	116	115277	1	Standard
	Fe	**54**	**4455.939**	ug/L	91.504	2	74585	10351747	0	Standard
	Fe	**57**	**4384.991**	ug/L	71.461	1	16592	4761235	0	Standard
	Mn	**55**	**47.967**	ug/L	1.642	3	737	1489181	2	Standard
>	**Ge**	**72**		ug/L			72878	72320	0	KED
	Ni	**60**	**48.109**	ug/L	0.246	0	317	87086	0	KED
	Ni	**62**	**48.340**	ug/L	1.467	3	46	13931	3	KED
	Cu	**63**	**48.219**	ug/L	1.235	2	97	253210	1	KED
	Cu	**65**	**47.264**	ug/L	1.201	2	38	127470	2	KED
	Zn	**66**	**47.462**	ug/L	1.662	3	130	32699	2	KED
	Zn	**67**	**48.030**	ug/L	2.023	4	20	5514	3	KED
	As	**75**	**47.817**	ug/L	0.256	0	3	16126	0	KED
	Y	**89**		ug/L			504241	470902	2	Standard
	Kr	**83**		ug/L			137	121	30	Standard
>	**In-1**	**115**		ug/L			17133	16037	3	KED
	Cd	**111**	**48.472**	ug/L	1.356	2	4	14886	0	KED
	Cd	**114**	**47.260**	ug/L	1.322	2	2	38165	1	KED
>	**In**	**115**		ug/L			1070161	980813	0	Standard
	Ag	**107**	**50.958**	ug/L	0.533	1	52	756906	0	Standard
>	**Tb**	**159**		ug/L			2448219	2253437	0	Standard
	Pb	**208**	**49.391**	ug/L	0.319	0	434	6217281	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:37:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	25859	3	Standard
	Cl	**37**		ug/L			4867239	4989503	0	Standard
>	**Sc**	**45**		ug/L			946449	875118	1	Standard
	Na	**23**	**-0.222**	ug/L	0.043	19	78227	66285	1	Standard
	Mg	**24**	**0.284**	ug/L	0.017	5	3266	12602	3	Standard
	Al	**27**	**0.072**	ug/L	0.019	26	9407	11304	4	Standard
	K	**39**	**4.471**	ug/L	0.473	10	713188	757047	1	Standard
	Ca	**44**	**-1.190**	ug/L	0.109	9	7516	5854	1	Standard
	V	**51**	**-0.008**	ug/L	0.003	39	3877	3389	1	Standard
	V-1	**51**	**0.001**	ug/L	0.000	36	189	193	3	Standard
	Cr	**52**	**-0.032**	ug/L	0.008	26	11464	9924	0	Standard
	Cr	**53**	**-0.003**	ug/L	0.008	236	116	99	19	Standard
	Fe	**54**	**-0.804**	ug/L	1.266	157	74585	67116	3	Standard
	Fe	**57**	**-4.021**	ug/L	0.179	4	16592	11039	0	Standard
	Mn	**55**	**0.038**	ug/L	0.002	6	737	1831	3	Standard
>	**Ge**	**72**		ug/L			72878	72425	2	KED
	Ni	**60**	**-0.131**	ug/L	0.004	3	317	78	11	KED
	Ni	**62**	**-0.123**	ug/L	0.018	14	46	11	44	KED
	Cu	**63**	**0.007**	ug/L	0.003	45	97	133	14	KED
	Cu	**65**	**0.008**	ug/L	0.004	54	38	59	18	KED
	Zn	**66**	**0.089**	ug/L	0.012	13	130	191	2	KED
	Zn	**67**	**0.147**	ug/L	0.092	62	20	37	26	KED
	As	**75**	**0.002**	ug/L	0.002	98	3	4	15	KED
	Y	**89**		ug/L			504241	469385	2	Standard
	Kr	**83**		ug/L			137	114	5	Standard
>	**In-1**	**115**		ug/L			17133	16287	1	KED
	Cd	**111**	**-0.001**	ug/L	0.005	323	4	3	41	KED
	Cd	**114**	**0.005**	ug/L	0.001	31	2	6	17	KED
>	**In**	**115**		ug/L			1070161	987932	3	Standard
	Ag	**107**	**0.003**	ug/L	0.001	20	52	85	9	Standard
>	**Tb**	**159**		ug/L			2448219	2206361	1	Standard
	Pb	**208**	**0.004**	ug/L	0.000	10	434	930	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21G0205-25RE1
Sample Dil Factor: 10
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:47:28

DEL

Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	29279	0	Standard
	Cl	**37**		ug/L			4867239	4872133	1	Standard
>	**Sc**	**45**		ug/L			946449	877515	1	Standard
	Na	**23**	**431.501**	ug/L	4.878	1	78227	11817526	1	Standard
	Mg	**24**	**1125.240**	ug/L	24.175	2	3266	38081859	1	Standard
	Al	**27**	**56.259**	ug/L	0.403	0	9407	2052496	2	Standard
	K	**39**	**708.755**	ug/L	24.618	3	713188	16184797	3	Standard
	Ca	**44**	**9412.085**	ug/L	289.637	3	7516	8690494	1	Standard
	V	**51**	**0.018**	ug/L	0.002	12	3877	4035	0	Standard
	V-1	**51**	**0.020**	ug/L	0.001	6	189	650	3	Standard
	Cr	**52**	**0.037**	ug/L	0.011	28	11464	11407	0	Standard
	Cr	**53**	**0.041**	ug/L	0.007	18	116	206	7	Standard
	Fe	**54**	**3.296**	ug/L	1.057	32	74585	76668	2	Standard
	Fe	**57**	**21.621**	ug/L	1.242	5	16592	38557	1	Standard
	Mn	**55**	**379.704**	ug/L	10.190	2	737	11675399	1	Standard
>	**Ge**	**72**		ug/L			72878	71686	1	KED
	Ni	**60**	**1.329**	ug/L	0.009	0	317	2687	2	KED
	Ni	**62**	**1.319**	ug/L	0.041	3	46	421	1	KED
	Cu	**63**	**0.058**	ug/L	0.005	9	97	396	6	KED
	Cu	**65**	**0.063**	ug/L	0.009	14	38	205	10	KED
	Zn	**66**	**3.125**	ug/L	0.002	0	130	2254	1	KED
	Zn	**67**	**3.120**	ug/L	0.306	9	20	374	9	KED
	As	**75**	**0.007**	ug/L	0.002	24	3	6	7	KED
	Y	**89**		ug/L			504241	484777	0	Standard
	Kr	**83**		ug/L			137	133	15	Standard
>	**In-1**	**115**		ug/L			17133	16324	1	KED
	Cd	**111**	**0.669**	ug/L	0.066	9	4	213	9	KED
	Cd	**114**	**0.641**	ug/L	0.019	2	2	529	1	KED
>	**In**	**115**		ug/L			1070161	1018010	1	Standard
	Ag	**107**	**0.001**	ug/L	0.000	45	52	62	9	Standard
>	**Tb**	**159**		ug/L			2448219	2229301	1	Standard
	Pb	**208**	**0.012**	ug/L	0.001	4	434	1852	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:51:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	73912	0	Standard
	Cl	**37**		ug/L			4867239	4679240	1	Standard
>	**Sc**	**45**		ug/L			946449	883375	1	Standard
	[redacted]	**23**	[redacted]	ug/L	19.766	2	78227	22801893	2	Standard
	[redacted]	**24**	[redacted]	ug/L	42.694	2	3266	53188920	1	Standard
	[redacted]	**27**	[redacted]	ug/L	12.697	1	9407	37596867	0	Standard
	[redacted]	**39**	[redacted]	ug/L	24.365	4	713188	13759448	2	Standard
	Ca	**44**	**8918.574**	ug/L	157.372	1	7516	8292515	2	Standard
	V	**51**	**0.006**	ug/L	0.006	100	3877	3766	2	Standard
	V-1	**51**	**0.006**	ug/L	0.000	6	189	332	4	Standard
	Cr	**52**	**0.107**	ug/L	0.017	15	11464	12955	1	Standard
	Cr	**53**	**0.105**	ug/L	0.006	5	116	365	4	Standard
	Fe	**54**	**791.219**	ug/L	11.021	1	74585	1890959	1	Standard
	Fe	**57**	**840.010**	ug/L	18.873	2	16592	922186	1	Standard
	[redacted]	**55**	[redacted]	ug/L	0.842	0	737	4648575	1	Standard
>	**Ge**	**72**		ug/L			72878	72349	0	KED
	Ni	**60**	**2.060**	ug/L	0.068	3	317	4032	2	KED
	Ni	**62**	**2.313**	ug/L	0.028	1	46	711	0	KED
	Cu	**63**	**5.892**	ug/L	0.077	1	97	31039	0	KED
	Cu	**65**	**5.647**	ug/L	0.081	1	38	15269	0	KED
	[redacted]	**66**	[redacted]	ug/L	0.416	0	130	33686	0	KED
	Zn	**67**	**44.864**	ug/L	0.540	1	20	5155	1	KED
	As	**75**	**0.025**	ug/L	0.011	42	3	12	29	KED
	Y	**89**		ug/L			504241	500293	2	Standard
	Kr	**83**		ug/L			137	125	4	Standard
>	**In-1**	**115**		ug/L			17133	15856	1	KED
	Cd	**111**	**0.355**	ug/L	0.039	10	4	111	9	KED
	Cd	**114**	**0.303**	ug/L	0.007	2	2	244	0	KED
>	**In**	**115**		ug/L			1070161	1030135	0	Standard
	Ag	**107**	**0.000**	ug/L	0.000	281	52	52	11	Standard
>	**Tb**	**159**		ug/L			2448219	2221636	0	Standard
	Pb	**208**	**0.012**	ug/L	0.000	3	434	1864	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 16:56:30
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	66742	1	Standard
	Cl	**37**		ug/L			4867239	4655299	0	Standard
>	**Sc**	**45**		ug/L			946449	858717	0	Standard
	[redacted]	**23**	[redacted]	ug/L	21.046	2	78227	23450209	2	Standard
	[redacted]	**24**	[redacted]	ug/L	6.980	0	3266	54041245	1	Standard
	[redacted]	**27**	[redacted]	ug/L	15.905	1	9407	38136845	2	Standard
	[redacted]	**39**	[redacted]	ug/L	19.983	3	713188	14110244	2	Standard
	Ca	**44**	**9417.968**	ug/L	52.492	0	7516	8512130	1	Standard
	V	**51**	**0.008**	ug/L	0.004	52	3877	3694	1	Standard
	V-1	**51**	**0.008**	ug/L	0.000	5	189	353	3	Standard
	Cr	**52**	**0.108**	ug/L	0.010	9	11464	12612	0	Standard
	Cr	**53**	**0.105**	ug/L	0.004	3	116	356	3	Standard
	Fe	**54**	**832.148**	ug/L	15.619	1	74585	1929521	1	Standard
	Fe	**57**	**849.461**	ug/L	9.497	1	16592	906564	1	Standard
	[redacted]	**55**	[redacted]	ug/L	1.334	0	737	4707568	0	Standard
>	**Ge**	**72**		ug/L			72878	71892	0	KED
	Ni	**60**	**2.165**	ug/L	0.051	2	317	4195	2	KED
	Ni	**62**	**2.242**	ug/L	0.145	6	46	686	5	KED
	Cu	**63**	**5.964**	ug/L	0.119	1	97	31223	2	KED
	Cu	**65**	**5.850**	ug/L	0.039	0	38	15719	0	KED
	[redacted]	**66**	[redacted]	ug/L	0.345	0	130	33916	0	KED
	Zn	**67**	**47.608**	ug/L	0.497	1	20	5435	1	KED
	As	**75**	**0.020**	ug/L	0.014	69	3	10	43	KED
	Y	**89**		ug/L			504241	502745	1	Standard
	Kr	**83**		ug/L			137	128	17	Standard
>	**In-1**	**115**		ug/L			17133	15991	1	KED
	Cd	**111**	**0.332**	ug/L	0.024	7	4	105	6	KED
	Cd	**114**	**0.376**	ug/L	0.008	2	2	305	1	KED
>	**In**	**115**		ug/L			1070161	1012860	3	Standard
	Ag	**107**	**0.000**	ug/L	0.001	425	52	52	26	Standard
>	**Tb**	**159**		ug/L			2448219	2219855	0	Standard
	Pb	**208**	**0.014**	ug/L	0.001	4	434	2094	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:01:14
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	70647	1	Standard
	Cl	**37**		ug/L			4867239	4635737	2	Standard
>	**Sc**	**45**		ug/L			946449	838614	1	Standard
	[redacted]	**23**	[redacted]	ug/L	50.213	2	78227	46295808	1	Standard
	[redacted]	**24**	[redacted]	ug/L	32.522	1	3266	85014441	1	Standard
	[redacted]	**27**	[redacted]	ug/L	40.498	2	9407	68656177	1	Standard
	[redacted]	**39**	[redacted]	ug/L	60.210	3	713188	35520208	2	Standard
	Ca	**44**	**10012.897**	ug/L	129.217	1	7516	8836445	0	Standard
	V	**51**	**4.664**	ug/L	0.104	2	3877	110302	1	Standard
	V-1	**51**	**4.697**	ug/L	0.085	1	189	108717	0	Standard
	Cr	**52**	**4.796**	ug/L	0.223	4	11464	106268	3	Standard
	Cr	**53**	**4.897**	ug/L	0.156	3	116	11501	2	Standard
	Fe	**54**	**1738.711**	ug/L	27.104	1	74585	3865164	0	Standard
	Fe	**57**	**1781.684**	ug/L	66.383	3	16592	1840486	3	Standard
	[redacted]	**55**	STL [redacted]	ug/L	2.010	1	737	4606019	0	Standard
>	**Ge**	**72**		ug/L			72878	69468	1	KED
	Ni	**60**	**7.062**	ug/L	0.194	2	317	12535	1	KED
	Ni	**62**	**7.235**	ug/L	0.334	4	46	2040	3	KED
	Cu	**63**	**10.809**	ug/L	0.248	2	97	54600	1	KED
	Cu	**65**	**10.744**	ug/L	0.161	1	38	27862	0	KED
	[redacted]	**66**	[redacted]	ug/L	0.523	0	130	41994	1	KED
	Zn	**67**	**58.572**	ug/L	0.292	0	20	6457	1	KED
	As	**75**	**4.831**	ug/L	0.128	2	3	1568	2	KED
	Y	**89**		ug/L			504241	489905	1	Standard
	Kr	**83**		ug/L			137	120	14	Standard
>	**In-1**	**115**		ug/L			17133	15539	0	KED
	Cd	**111**	**5.364**	ug/L	0.136	2	4	1600	2	KED
	Cd	**114**	**5.296**	ug/L	0.187	3	2	4148	3	KED
>	**In**	**115**		ug/L			1070161	985171	0	Standard
	Ag	**107**	**5.529**	ug/L	0.102	1	52	82525	1	Standard
>	**Tb**	**159**		ug/L			2448219	2174495	0	Standard
	Pb	**208**	**5.259**	ug/L	0.071	1	434	639195	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:06:57
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	71578	1	Standard
	Cl	**37**		ug/L			4867239	4647388	2	Standard
>	**Sc**	**45**		ug/L			946449	836907	1	Standard
	[redacted]	**23**	[redacted]	ug/L	29.676	1	78227	45211689	1	Standard
	[redacted]	**24**	[redacted]	ug/L	97.118	3	3266	83533532	2	Standard
	[redacted]	**27**	[redacted]	ug/L	17.668	0	9407	67587303	0	Standard
	[redacted]	**39**	[redacted]	ug/L	115.548	6	713188	35269169	5	Standard
	Ca	**44**	**10015.908**	ug/L	94.652	0	7516	8821902	1	Standard
	V	**51**	**4.656**	ug/L	0.089	1	3877	109891	1	Standard
	V-1	**51**	**4.669**	ug/L	0.074	1	189	107859	1	Standard
	Cr	**52**	**4.778**	ug/L	0.060	1	11464	105716	0	Standard
	Cr	**53**	**4.818**	ug/L	0.053	1	116	11296	1	Standard
	Fe	**54**	**1676.580**	ug/L	8.640	0	74585	3722100	1	Standard
	Fe	**57**	**1813.195**	ug/L	46.810	2	16592	1868819	1	Standard
	[redacted]	**55**	STL [redacted]	ug/L	3.499	2	737	4586325	0	Standard
>	**Ge**	**72**		ug/L			72878	70340	0	KED
	Ni	**60**	**7.096**	ug/L	0.174	2	317	12754	2	KED
	Ni	**62**	**7.345**	ug/L	0.207	2	46	2097	2	KED
	Cu	**63**	**10.886**	ug/L	0.080	0	97	55679	0	KED
	Cu	**65**	**10.722**	ug/L	0.114	1	38	28156	1	KED
	[redacted]	**66**	[redacted]	ug/L	1.039	1	130	42531	1	KED
	Zn	**67**	**59.205**	ug/L	0.347	0	20	6608	0	KED
	As	**75**	**4.908**	ug/L	0.147	3	3	1613	3	KED
	Y	**89**		ug/L			504241	489298	2	Standard
	Kr	**83**		ug/L			137	133	19	Standard
>	**In-1**	**115**		ug/L			17133	15645	1	KED
	Cd	**111**	**5.253**	ug/L	0.183	3	4	1577	1	KED
	Cd	**114**	**5.254**	ug/L	0.267	5	2	4141	3	KED
>	**In**	**115**		ug/L			1070161	987018	2	Standard
	Ag	**107**	**5.360**	ug/L	0.172	3	52	80135	2	Standard
>	**Tb**	**159**		ug/L			2448219	2159399	1	Standard
	Pb	**208**	**5.226**	ug/L	0.098	1	434	630645	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:14:41
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	68868	1	Standard
	Cl	**37**		ug/L			4867239	4671162	1	Standard
>	**Sc**	**45**		ug/L			946449	846584	1	Standard
	[redacted]	**23**	[redacted]	ug/L	26.220	3	78227	21811059	2	Standard
	[redacted]	**24**	[redacted]	ug/L	39.700	2	3266	52648948	2	Standard
	[redacted]	**27**	[redacted]	ug/L	9.825	0	9407	36965834	2	Standard
	[redacted]	**39**	[redacted]	ug/L	23.784	3	713188	14013838	2	Standard
	Ca	**44**	**9304.514**	ug/L	191.009	2	7516	8288623	0	Standard
	V	**51**	**0.008**	ug/L	0.003	36	3877	3650	0	Standard
	V-1	**51**	**0.011**	ug/L	0.000	0	189	417	1	Standard
	Cr	**52**	**0.119**	ug/L	0.015	12	11464	12653	0	Standard
	Cr	**53**	**0.124**	ug/L	0.006	5	116	395	2	Standard
	Fe	**54**	**929.034**	ug/L	18.941	2	74585	2115777	1	Standard
	Fe	**57**	**954.707**	ug/L	17.459	1	16592	1002506	1	Standard
	[redacted]	**55**	[redacted]	ug/L	3.855	2	737	4480144	0	Standard
>	**Ge**	**72**		ug/L			72878	69708	1	KED
	Ni	**60**	**2.196**	ug/L	0.059	2	317	4122	3	KED
	Ni	**62**	**2.328**	ug/L	0.042	1	46	689	2	KED
	Cu	**63**	**6.206**	ug/L	0.124	1	97	31493	1	KED
	Cu	**65**	**5.958**	ug/L	0.149	2	38	15524	3	KED
	[redacted]	**66**	[redacted]	ug/L	0.984	1	130	33546	2	KED
	Zn	**67**	**46.117**	ug/L	1.318	2	20	5106	3	KED
	As	**75**	**0.030**	ug/L	0.005	17	3	13	11	KED
	Y	**89**		ug/L			504241	496919	1	Standard
	Kr	**83**		ug/L			137	118	3	Standard
>	**In-1**	**115**		ug/L			17133	15685	0	KED
	[redacted]	**111**	[redacted]	ug/L	0.044	12	4	112	11	KED
	Cd	**114**	**0.319**	ug/L	0.035	10	2	254	10	KED
>	**In**	**115**		ug/L			1070161	989578	3	Standard
	Ag	**107**	**-0.000**	ug/L	0.000	231	52	46	11	Standard
>	**Tb**	**159**		ug/L			2448219	2198191	1	Standard
	Pb	**208**	**0.077**	ug/L	0.001	1	434	9867	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:19:24
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	66202	3	Standard
	Cl	**37**		ug/L			4867239	4614437	3	Standard
>	**Sc**	**45**		ug/L			946449	853505	1	Standard
		23		ug/L	9.194	1	78227	20886757	0	Standard
		24		ug/L	45.900	2	3266	51832119	1	Standard
		27		ug/L	19.053	1	9407	36135496	0	Standard
		39		ug/L	20.552	3	713188	13663769	3	Standard
	Ca	**44**	**8782.820**	ug/L	232.453	2	7516	7888311	1	Standard
	V	**51**	**0.009**	ug/L	0.001	8	3877	3710	0	Standard
	V-1	**51**	**0.011**	ug/L	0.001	7	189	422	5	Standard
	Cr	**52**	**0.098**	ug/L	0.012	12	11464	12333	1	Standard
	Cr	**53**	**0.100**	ug/L	0.009	8	116	342	5	Standard
	Fe	**54**	**889.852**	ug/L	12.371	1	74585	2046105	0	Standard
	Fe	**57**	**930.904**	ug/L	24.798	2	16592	985814	2	Standard
		55		ug/L	0.505	0	737	4387375	1	Standard
>	**Ge**	**72**		ug/L			72878	71912	1	KED
	Ni	**60**	**2.003**	ug/L	0.088	4	317	3903	2	KED
	Ni	**62**	**2.202**	ug/L	0.077	3	46	674	2	KED
	Cu	**63**	**5.890**	ug/L	0.076	1	97	30842	1	KED
	Cu	**65**	**5.754**	ug/L	0.107	1	38	15465	2	KED
		66		ug/L	0.991	2	130	32466	0	KED
	Zn	**67**	**44.018**	ug/L	0.902	2	20	5029	3	KED
	As	**75**	**0.020**	ug/L	0.004	22	3	10	14	KED
	Y	**89**		ug/L			504241	488380	0	Standard
	Kr	**83**		ug/L			137	121	1	Standard
>	**In-1**	**115**		ug/L			17133	15766	0	KED
		111		ug/L	0.029	9	4	94	9	KED
	Cd	**114**	**0.330**	ug/L	0.027	8	2	264	8	KED
>	**In**	**115**		ug/L			1070161	1024021	1	Standard
	Ag	**107**	**-0.000**	ug/L	0.000	101	52	46	6	Standard
>	**Tb**	**159**		ug/L			2448219	2210076	1	Standard
	Pb	**208**	**0.013**	ug/L	0.000	3	434	1950	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:24:08
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	66109	3	Standard
	Cl	**37**		ug/L			4867239	4556280	4	Standard
>	**Sc**	**45**		ug/L			946449	845896	0	Standard
	[redacted]	**23**	[redacted]	ug/L	16.843	0	78227	45917271	0	Standard
	[redacted]	**24**	[redacted]	ug/L	36.413	1	3266	85491247	2	Standard
	[redacted]	**27**	[redacted]	ug/L	49.167	2	9407	69779487	2	Standard
	[redacted]	**39**	[redacted]	ug/L	25.679	1	713188	35957316	0	Standard
	Ca	**44**	**10145.887**	ug/L	196.041	1	7516	9031553	1	Standard
	V	**51**	**4.651**	ug/L	0.035	0	3877	110978	1	Standard
	V-1	**51**	**4.686**	ug/L	0.053	1	189	109403	0	Standard
	Cr	**52**	**4.777**	ug/L	0.050	1	11464	106838	1	Standard
	Cr	**53**	**4.882**	ug/L	0.088	1	116	11569	1	Standard
	Fe	**54**	**1816.338**	ug/L	12.407	0	74585	4070361	1	Standard
	Fe	**57**	**1910.620**	ug/L	20.163	1	16592	1989847	0	Standard
	[redacted]	**55**	STL [redacted]	ug/L	1.126	0	737	4640283	0	Standard
>	**Ge**	**72**		ug/L			72878	70340	0	KED
	Ni	**60**	**7.290**	ug/L	0.111	1	317	13094	0	KED
	Ni	**62**	**7.560**	ug/L	0.312	4	46	2157	4	KED
	Cu	**63**	**11.192**	ug/L	0.238	2	97	57237	1	KED
	Cu	**65**	**11.107**	ug/L	0.154	1	38	29164	1	KED
	[redacted]	**66**	[redacted]	ug/L	1.271	1	130	43841	1	KED
	Zn	**67**	**61.129**	ug/L	1.089	1	20	6821	1	KED
	As	**75**	**4.961**	ug/L	0.082	1	3	1630	2	KED
	Y	**89**		ug/L			504241	497181	3	Standard
	Kr	**83**		ug/L			137	128	9	Standard
>	**In-1**	**115**		ug/L			17133	15455	2	KED
	[redacted]	**111**	[redacted]	ug/L	0.188	3	4	1580	2	KED
	Cd	**114**	**5.382**	ug/L	0.071	1	2	4193	3	KED
>	**In**	**115**		ug/L			1070161	1007698	3	Standard
	Ag	**107**	**5.275**	ug/L	0.176	3	52	80506	3	Standard
>	**Tb**	**159**		ug/L			2448219	2195809	0	Standard
	Pb	**208**	**5.217**	ug/L	0.064	1	434	640207	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:29:51
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	65827	1	Standard
	Cl	**37**		ug/L			4867239	4656689	2	Standard
>	**Sc**	**45**		ug/L			946449	845282	0	Standard
	[redacted]	**23**	[redacted]	ug/L	18.406	1	78227	46240154	0	Standard
	[redacted]	**24**	[redacted]	ug/L	46.612	1	3266	86680218	1	Standard
	[redacted]	**27**	[redacted]	ug/L	18.775	0	9407	67726706	1	Standard
	[redacted]	**39**	[redacted]	ug/L	65.044	3	713188	36100843	3	Standard
	Ca	**44**	**10077.391**	ug/L	123.776	1	7516	8965134	1	Standard
	V	**51**	**4.573**	ug/L	0.083	1	3877	109073	1	Standard
	V-1	**51**	**4.637**	ug/L	0.078	1	189	108188	1	Standard
	Cr	**52**	**4.727**	ug/L	0.039	0	11464	105750	1	Standard
	Cr	**53**	**4.927**	ug/L	0.044	0	116	11666	1	Standard
	Fe	**54**	**1823.939**	ug/L	15.644	0	74585	4084014	0	Standard
	Fe	**57**	**1901.974**	ug/L	43.436	2	16592	1979472	1	Standard
	[redacted]	**55**	STL [redacted]	ug/L	2.031	1	737	4737860	1	Standard
>	**Ge**	**72**		ug/L			72878	70289	1	KED
	Ni	**60**	**7.161**	ug/L	0.058	0	317	12859	1	KED
	Ni	**62**	**7.424**	ug/L	0.077	1	46	2117	2	KED
	Cu	**63**	**11.288**	ug/L	0.193	1	97	57693	2	KED
	Cu	**65**	**11.026**	ug/L	0.247	2	38	28929	1	KED
	[redacted]	**66**	[redacted]	ug/L	1.310	1	130	44211	0	KED
	Zn	**67**	**61.671**	ug/L	2.230	3	20	6875	2	KED
	As	**75**	**4.862**	ug/L	0.086	1	3	1597	2	KED
	Y	**89**		ug/L			504241	496968	0	Standard
	Kr	**83**		ug/L			137	132	4	Standard
>	**In-1**	**115**		ug/L			17133	15342	1	KED
	[redacted]	**111**	[redacted]	ug/L	0.164	3	4	1607	1	KED
	Cd	**114**	**5.444**	ug/L	0.051	0	2	4210	2	KED
>	**In**	**115**		ug/L			1070161	1000917	1	Standard
	Ag	**107**	**5.347**	ug/L	0.196	3	52	81064	2	Standard
>	**Tb**	**159**		ug/L			2448219	2201597	1	Standard
	Pb	**208**	**5.181**	ug/L	0.070	1	434	637514	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:37:35
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	29186	1	Standard
	Cl	**37**		ug/L			4867239	4982371	2	Standard
>	**Sc**	**45**		ug/L			946449	846770	1	Standard
	Na	**23**	**-1.099**	ug/L	0.026	2	78227	41115	1	Standard
	Mg	**24**	**0.171**	ug/L	0.012	6	3266	8494	3	Standard
	Al	**27**	**0.049**	ug/L	0.003	6	9407	10131	0	Standard
	K	**39**	**4.949**	ug/L	0.675	13	713188	742692	2	Standard
	Ca	**44**	**-2.275**	ug/L	0.045	1	7516	4699	1	Standard
	V	**51**	**-0.007**	ug/L	0.007	100	3877	3314	3	Standard
	V-1	**51**	**-0.002**	ug/L	0.001	23	189	118	10	Standard
	Cr	**52**	**-0.026**	ug/L	0.018	70	11464	9736	2	Standard
	Cr	**53**	**-0.011**	ug/L	0.002	21	116	78	8	Standard
	Fe	**54**	**2.442**	ug/L	0.919	37	74585	72095	1	Standard
	Fe	**57**	**-5.017**	ug/L	0.175	3	16592	9652	2	Standard
	Mn	**55**	**0.027**	ug/L	0.002	8	737	1466	3	Standard
>	**Ge**	**72**		ug/L			72878	70737	1	KED
	Ni	**60**	**-0.145**	ug/L	0.003	2	317	52	10	KED
	Ni	**62**	**-0.117**	ug/L	0.010	8	46	12	22	KED
	Cu	**63**	**0.002**	ug/L	0.004	250	97	102	21	KED
	Cu	**65**	**0.006**	ug/L	0.003	56	38	52	18	KED
	Zn	**66**	**0.026**	ug/L	0.016	62	130	144	5	KED
	Zn	**67**	**0.022**	ug/L	0.042	189	20	22	22	KED
	As	**75**	**-0.001**	ug/L	0.002	184	3	3	20	KED
	Y	**89**		ug/L			504241	458697	1	Standard
	Kr	**83**		ug/L			137	116	14	Standard
>	**In-1**	**115**		ug/L			17133	16298	1	KED
	Cd	**111**	**0.001**	ug/L	0.003	548	4	4	26	KED
	Cd	**114**	**0.004**	ug/L	0.002	38	2	5	19	KED
>	**In**	**115**		ug/L			1070161	993252	1	Standard
	Ag	**107**	**-0.000**	ug/L	0.001	158	52	43	19	Standard
>	**Tb**	**159**		ug/L			2448219	2188526	1	Standard
	Pb	**208**	**0.003**	ug/L	0.001	23	434	795	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:41:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	27431	3	Standard
	Cl	**37**		ug/L			4867239	4955691	0	Standard
>	**Sc**	**45**		ug/L			946449	869152	1	Standard
	Na	**23**	**4641.486**	ug/L	96.070	2	78227	125190582	0	Standard
	Mg	**24**	**4793.249**	ug/L	174.221	3	3266	160653596	2	Standard
	Al	**27**	**4679.999**	ug/L	97.581	2	9407	168359467	0	Standard
	K	**39**	**4905.149**	ug/L	194.293	3	713188	107046810	3	Standard
	Ca	**44**	**4484.821**	ug/L	51.743	1	7516	4106035	1	Standard
	V	**51**	**45.994**	ug/L	0.187	0	3877	1095837	0	Standard
	V-1	**51**	**46.393**	ug/L	0.303	0	189	1111409	0	Standard
	Cr	**52**	**46.072**	ug/L	0.819	1	11464	967632	1	Standard
	Cr	**53**	**47.337**	ug/L	0.830	1	116	114322	0	Standard
	Fe	**54**	**4456.750**	ug/L	41.904	0	74585	10161509	0	Standard
	Fe	**57**	**4463.691**	ug/L	56.134	1	16592	4756324	1	Standard
	Mn	**55**	**47.792**	ug/L	0.735	1	737	1456310	0	Standard
>	**Ge**	**72**		ug/L			72878	71235	0	KED
	Ni	**60**	**48.884**	ug/L	0.810	1	317	87152	1	KED
	Ni	**62**	**48.903**	ug/L	0.437	0	46	13880	1	KED
	Cu	**63**	**48.463**	ug/L	0.408	0	97	250711	0	KED
	Cu	**65**	**47.814**	ug/L	0.242	0	38	127032	0	KED
	Zn	**66**	**48.100**	ug/L	0.550	1	130	32646	0	KED
	Zn	**67**	**47.154**	ug/L	1.458	3	20	5334	3	KED
	As	**75**	**48.041**	ug/L	0.220	0	3	15958	0	KED
	Y	**89**		ug/L			504241	464207	0	Standard
	Kr	**83**		ug/L			137	116	13	Standard
>	**In-1**	**115**		ug/L			17133	15903	1	KED
	Cd	**111**	**48.898**	ug/L	0.517	1	4	14899	0	KED
	Cd	**114**	**47.832**	ug/L	0.728	1	2	38322	1	KED
>	**In**	**115**		ug/L			1070161	955541	3	Standard
	Ag	**107**	**51.777**	ug/L	1.128	2	52	748931	1	Standard
>	**Tb**	**159**		ug/L			2448219	2206808	1	Standard
	Pb	**208**	**49.848**	ug/L	1.328	2	434	6143517	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:48:58
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	25099	2	Standard
	Cl	**37**		ug/L			4867239	4806523	0	Standard
>	**Sc**	**45**		ug/L			946449	868870	0	Standard
	Na	**23**	**-0.713**	ug/L	0.052	7	78227	52580	1	Standard
	Mg	**24**	**0.122**	ug/L	0.005	4	3266	7089	1	Standard
	Al	**27**	**0.023**	ug/L	0.008	32	9407	9476	2	Standard
	K	**39**	**3.158**	ug/L	0.337	10	713188	723237	1	Standard
	Ca	**44**	**-2.376**	ug/L	0.085	3	7516	4729	2	Standard
	V	**51**	**-0.011**	ug/L	0.003	24	3877	3293	1	Standard
	V-1	**51**	**-0.002**	ug/L	0.000	30	189	136	7	Standard
	Cr	**52**	**-0.043**	ug/L	0.009	21	11464	9639	1	Standard
	Cr	**53**	**-0.011**	ug/L	0.002	20	116	79	7	Standard
	Fe	**54**	**-1.262**	ug/L	0.115	9	74585	65614	1	Standard
	Fe	**57**	**-3.728**	ug/L	0.131	3	16592	11273	1	Standard
	Mn	**55**	**0.003**	ug/L	0.002	44	737	783	6	Standard
>	**Ge**	**72**		ug/L			72878	72700	2	KED
	Ni	**60**	**-0.137**	ug/L	0.002	1	317	67	8	KED
	Ni	**62**	**-0.108**	ug/L	0.019	17	46	15	36	KED
	Cu	**63**	**0.004**	ug/L	0.002	45	97	118	9	KED
	Cu	**65**	**0.007**	ug/L	0.003	44	38	56	14	KED
	Zn	**66**	**0.318**	ug/L	0.082	25	130	349	16	KED
	Zn	**67**	**0.282**	ug/L	0.031	11	20	53	7	KED
	As	**75**	**0.003**	ug/L	0.006	201	3	4	39	KED
	Y	**89**		ug/L			504241	454254	1	Standard
	Kr	**83**		ug/L			137	132	6	Standard
>	**In-1**	**115**		ug/L			17133	15909	1	KED
	Cd	**111**	**0.014**	ug/L	0.007	50	4	7	24	KED
	Cd	**114**	**0.008**	ug/L	0.008	99	2	9	68	KED
>	**In**	**115**		ug/L			1070161	995359	0	Standard
	Ag	**107**	**0.001**	ug/L	0.000	57	52	59	11	Standard
>	**Tb**	**159**		ug/L			2448219	2198175	0	Standard
	Pb	**208**	**0.004**	ug/L	0.000	9	434	833	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:54:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	90463	0	Standard
	Cl	**37**		ug/L			4867239	4638295	1	Standard
>	**Sc**	**45**		ug/L			946449	893269	0	Standard
	[redacted]	**23**	[redacted]	ug/L	52.932	2	78227	69969243	2	Standard
	[redacted]	**24**	[redacted]	ug/L	49.215	1	3266	93920962	1	Standard
	[redacted]	**27**	[redacted]	ug/L	0.297	0	9407	1962309	0	Standard
	[redacted]	**39**	[redacted]	ug/L	6.617	0	713188	39781658	0	Standard
	Ca	**44**	**14637.189**	ug/L	154.041	1	7516	13757457	1	Standard
	V	**51**	**0.505**	ug/L	0.007	1	3877	15973	1	Standard
	V-1	**51**	**0.500**	ug/L	0.004	0	189	12496	0	Standard
	Cr	**52**	**0.429**	ug/L	0.023	5	11464	19979	2	Standard
	Cr	**53**	**0.418**	ug/L	0.019	4	116	1145	4	Standard
	Fe	**54**	**65.070**	ug/L	2.816	4	74585	221854	2	Standard
	Fe	**57**	**73.050**	ug/L	0.722	0	16592	95406	0	Standard
	Mn	**55**	**22.820**	ug/L	0.090	0	737	715136	0	Standard
>	**Ge**	**72**		ug/L			72878	70862	0	KED
	Ni	**60**	**0.315**	ug/L	0.043	13	317	865	8	KED
	Ni	**62**	**0.361**	ug/L	0.015	4	46	147	1	KED
	Cu	**63**	**1.044**	ug/L	0.023	2	97	5467	2	KED
	Cu	**65**	**1.022**	ug/L	0.010	1	38	2737	1	KED
	Zn	**66**	**2.026**	ug/L	0.051	2	130	1489	2	KED
	Zn	**67**	**2.005**	ug/L	0.092	4	20	245	3	KED
	As	**75**	**0.084**	ug/L	0.016	19	3	31	15	KED
	Y	**89**		ug/L			504241	461560	1	Standard
	Kr	**83**		ug/L			137	137	11	Standard
>	**In-1**	**115**		ug/L			17133	16024	0	KED
	Cd	**111**	**0.089**	ug/L	0.013	14	4	31	12	KED
	Cd	**114**	**0.085**	ug/L	0.010	12	2	71	11	KED
>	**In**	**115**		ug/L			1070161	1028438	0	Standard
	Ag	**107**	**0.001**	ug/L	0.000	47	52	60	7	Standard
>	**Tb**	**159**		ug/L			2448219	2217384	0	Standard
	Pb	**208**	**0.066**	ug/L	0.001	1	434	8601	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 17:59:11
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	83679	1	Standard
	Cl	**37**		ug/L			4867239	4812321	0	Standard
>	**Sc**	**45**		ug/L			946449	916190	1	Standard
	[redacted]	**23**	[redacted]	ug/L	46.870	1	78227	69763592	0	Standard
	[redacted]	**24**	[redacted]	ug/L	29.239	1	3266	91624782	1	Standard
	[redacted]	**27**	[redacted]	ug/L	0.022	0	9407	103886	0	Standard
	[redacted]	**39**	[redacted]	ug/L	64.099	3	713188	40059785	3	Standard
	Ca	**44**	**13637.167**	ug/L	271.151	1	7516	13144959	1	Standard
	V	**51**	**0.339**	ug/L	0.004	1	3877	12232	1	Standard
	V-1	**51**	**0.352**	ug/L	0.005	1	189	9080	1	Standard
	Cr	**52**	**0.304**	ug/L	0.008	2	11464	17747	2	Standard
	Cr	**53**	**0.348**	ug/L	0.008	2	116	997	2	Standard
	Fe	**54**	**7.680**	ug/L	1.681	21	74585	90524	4	Standard
	Fe	**57**	**27.228**	ug/L	1.362	5	16592	46536	2	Standard
	Mn	**55**	**21.628**	ug/L	0.442	2	737	695087	1	Standard
>	**Ge**	**72**		ug/L			72878	74278	1	KED
	Ni	**60**	**0.203**	ug/L	0.012	5	317	699	2	KED
	Ni	**62**	**0.193**	ug/L	0.065	33	46	104	17	KED
	Cu	**63**	**0.295**	ug/L	0.006	2	97	1690	1	KED
	Cu	**65**	**0.304**	ug/L	0.016	5	38	880	5	KED
	Zn	**66**	**0.505**	ug/L	0.045	8	130	488	5	KED
	Zn	**67**	**0.660**	ug/L	0.230	34	20	99	28	KED
	As	**75**	**0.067**	ug/L	0.009	13	3	27	11	KED
	Y	**89**		ug/L			504241	470365	1	Standard
	Kr	**83**		ug/L			137	123	11	Standard
>	**In-1**	**115**		ug/L			17133	16026	2	KED
	Cd	**111**	**0.071**	ug/L	0.006	7	4	25	6	KED
	Cd	**114**	**0.079**	ug/L	0.015	18	2	66	18	KED
>	**In**	**115**		ug/L			1070161	1041544	1	Standard
	Ag	**107**	**-0.001**	ug/L	0.001	143	52	41	29	Standard
>	**Tb**	**159**		ug/L			2448219	2248982	1	Standard
	Pb	**208**	**0.007**	ug/L	0.000	2	434	1334	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:03:31
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	94113	1	Standard
	Cl	**37**		ug/L			4867239	4828338	1	Standard
>	**Sc**	**45**		ug/L			946449	942393	2	Standard
	[redacted]	**23**	[redacted]	ug/L	71.731	2	78227	77584934	1	Standard
	[redacted]	**24**	[redacted]	ug/L	29.346	1	3266	92726934	1	Standard
	[redacted]	**27**	[redacted]	ug/L	16.230	2	9407	30726338	0	Standard
	[redacted]	**39**	[redacted]	ug/L	23.557	1	713188	35435954	1	Standard
	Ca	**44**	**14201.648**	ug/L	362.182	2	7516	14077778	0	Standard
	V	**51**	**2.443**	ug/L	0.039	1	3877	66749	1	Standard
	V-1	**51**	**2.453**	ug/L	0.041	1	189	63882	1	Standard
	Cr	**52**	**1.503**	ug/L	0.031	2	11464	45262	1	Standard
	Cr	**53**	**1.560**	ug/L	0.016	1	116	4197	1	Standard
	Fe	**54**	**688.888**	ug/L	12.848	1	74585	1765579	0	Standard
	Fe	**57**	**744.189**	ug/L	17.363	2	16592	873346	0	Standard
	Mn	**55**	**29.495**	ug/L	0.517	1	737	974688	0	Standard
>	**Ge**	**72**		ug/L			72878	74110	0	KED
	Ni	**60**	**2.191**	ug/L	0.050	2	317	4371	1	KED
	Ni	**62**	**2.121**	ug/L	0.128	6	46	672	6	KED
	Cu	**63**	**4.374**	ug/L	0.050	1	97	23630	0	KED
	Cu	**65**	**4.243**	ug/L	0.067	1	38	11763	2	KED
	Zn	**66**	**6.404**	ug/L	0.118	1	130	4637	2	KED
	Zn	**67**	**7.054**	ug/L	0.221	3	20	848	2	KED
	As	**75**	**0.179**	ug/L	0.014	8	3	66	6	KED
	Y	**89**		ug/L			504241	482996	2	Standard
	Kr	**83**		ug/L			137	135	8	Standard
>	**In-1**	**115**		ug/L			17133	16088	0	KED
	Cd	**111**	**0.113**	ug/L	0.049	43	4	38	39	KED
	Cd	**114**	**0.119**	ug/L	0.017	14	2	99	13	KED
>	**In**	**115**		ug/L			1070161	1044914	3	Standard
	Ag	**107**	**0.001**	ug/L	0.001	54	52	68	11	Standard
>	**Tb**	**159**		ug/L			2448219	2268240	1	Standard
	Pb	**208**	**0.591**	ug/L	0.008	1	434	75273	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:08:15
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	88468	3	Standard
	Cl	**37**		ug/L			4867239	4908837	1	Standard
>	**Sc**	**45**		ug/L			946449	928024	2	Standard
	[redacted]	**23**	[redacted]	ug/L	48.365	1	78227	78747493	1	Standard
	[redacted]	**24**	[redacted]	ug/L	36.144	1	3266	84289051	0	Standard
	[redacted]	**27**	[redacted]	ug/L	0.034	1	9407	87550	0	Standard
	[redacted]	**39**	[redacted]	ug/L	25.682	1	713188	36157249	1	Standard
	Ca	**44**	**14693.450**	ug/L	422.966	2	7516	14341967	0	Standard
	V	**51**	**0.428**	ug/L	0.009	2	3877	14653	0	Standard
	V-1	**51**	**0.434**	ug/L	0.006	1	189	11296	1	Standard
	Cr	**52**	**0.400**	ug/L	0.013	3	11464	20102	1	Standard
	Cr	**53**	**0.421**	ug/L	0.005	1	116	1197	2	Standard
	Fe	**54**	**10.443**	ug/L	0.646	6	74585	98369	1	Standard
	Fe	**57**	**30.618**	ug/L	0.454	1	16592	50995	2	Standard
	Mn	**55**	**14.146**	ug/L	0.174	1	737	460759	0	Standard
>	**Ge**	**72**		ug/L			72878	72576	2	KED
	Ni	**60**	**0.126**	ug/L	0.019	15	317	543	4	KED
	Ni	**62**	**0.208**	ug/L	0.035	16	46	106	7	KED
	Cu	**63**	**0.347**	ug/L	0.021	5	97	1923	3	KED
	Cu	**65**	**0.337**	ug/L	0.036	10	38	948	8	KED
	Zn	**66**	**0.776**	ug/L	0.034	4	130	664	1	KED
	Zn	**67**	**0.881**	ug/L	0.091	10	20	121	6	KED
	As	**75**	**0.060**	ug/L	0.016	26	3	24	23	KED
	Y	**89**		ug/L			504241	480538	2	Standard
	Kr	**83**		ug/L			137	106	6	Standard
>	**In-1**	**115**		ug/L			17133	16243	2	KED
	Cd	**111**	**0.080**	ug/L	0.011	14	4	28	10	KED
	Cd	**114**	**0.077**	ug/L	0.001	1	2	65	1	KED
>	**In**	**115**		ug/L			1070161	1063793	0	Standard
	Ag	**107**	**-0.001**	ug/L	0.001	94	52	38	35	Standard
>	**Tb**	**159**		ug/L			2448219	2254656	1	Standard
	Pb	**208**	**0.011**	ug/L	0.000	4	434	1740	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:13:58
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	51930	0	Standard
	Cl	**37**		ug/L			4867239	4908948	0	Standard
>	**Sc**	**45**		ug/L			946449	863088	1	Standard
	[redacted]	**23**	[redacted]	ug/L	32.761	3	78227	25861592	2	Standard
	[redacted]	**24**	[redacted]	ug/L	24.859	1	3266	81453743	1	Standard
	[redacted]	**27**	[redacted]	ug/L	24.924	1	9407	59900632	0	Standard
	[redacted]	**39**	[redacted]	ug/L	71.795	3	713188	41034322	3	Standard
	Ca	**44**	**15100.013**	ug/L	287.663	1	7516	13710855	0	Standard
	V	**51**	**-0.003**	ug/L	0.004	145	3877	3463	1	Standard
	V-1	**51**	**0.009**	ug/L	0.000	2	189	381	1	Standard
	Cr	**52**	**0.015**	ug/L	0.014	93	11464	10766	1	Standard
	Cr	**53**	**0.052**	ug/L	0.003	5	116	231	3	Standard
	Fe	**54**	**8408.965**	ug/L	164.820	1	74585	18977938	1	Standard
	Fe	**57**	**8660.281**	ug/L	185.766	2	16592	9149099	1	Standard
	[redacted]	**55**	[redacted]	ug/L	1.818	0	737	6557648	0	Standard
>	**Ge**	**72**		ug/L			72878	71878	0	KED
	Ni	**60**	**3.531**	ug/L	0.002	0	317	6642	0	KED
	Ni	**62**	**3.611**	ug/L	0.214	5	46	1076	5	KED
	Cu	**63**	**16.817**	ug/L	0.192	1	97	87842	0	KED
	Cu	**65**	**16.640**	ug/L	0.339	2	38	44627	1	KED
	Zn	**66**	**90.891**	ug/L	0.798	0	130	62131	0	KED
	[redacted]	[redacted]	[redacted]	ug/L	0.715	0	20	9452	0	KED
	As	**75**	**0.028**	ug/L	0.002	5	3	13	3	KED
	Y	**89**		ug/L			504241	499063	1	Standard
	Kr	**83**		ug/L			137	135	11	Standard
>	**In-1**	**115**		ug/L			17133	15846	0	KED
	Cd	**111**	**0.598**	ug/L	0.050	8	4	185	7	KED
	Cd	**114**	**0.577**	ug/L	0.031	5	2	463	5	KED
>	**In**	**115**		ug/L			1070161	1054404	1	Standard
	Ag	**107**	**0.001**	ug/L	0.000	29	52	74	7	Standard
>	**Tb**	**159**		ug/L			2448219	2297277	0	Standard
	Pb	**208**	**0.028**	ug/L	0.001	3	434	4017	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: [redacted]
Sample Dil Factor: [redacted]
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:18:42
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	66709	2	Standard
	Cl	**37**		ug/L			4867239	4750897	1	Standard
>	**Sc**	**45**		ug/L			946449	846051	0	Standard
	[redacted]	**23**	[redacted]	ug/L	4.963	0	78227	26280922	0	Standard
	[redacted]	**24**	[redacted]	ug/L	15.405	0	3266	79109487	0	Standard
	[redacted]	**27**	[redacted]	ug/L	14.099	0	9407	59027068	0	Standard
	[redacted]	**39**	[redacted]	ug/L	29.527	1	713188	39760966	1	Standard
	Ca	**44**	**15508.319**	ug/L	204.030	1	7516	13805248	1	Standard
	V	**51**	**0.003**	ug/L	0.002	68	3877	3524	0	Standard
	V-1	**51**	**0.011**	ug/L	0.000	0	189	423	0	Standard
	Cr	**52**	**0.052**	ug/L	0.005	10	11464	11307	0	Standard
	Cr	**53**	**0.078**	ug/L	0.000	0	116	286	0	Standard
	Fe	**54**	**8587.494**	ug/L	203.255	2	74585	18997879	2	Standard
	Fe	**57**	**8837.421**	ug/L	181.440	2	16592	9151918	1	Standard
	[redacted]	**55**	[redacted]	ug/L	0.895	0	737	6634994	0	Standard
>	**Ge**	**72**		ug/L			72878	72265	2	KED
	Ni	**60**	**3.688**	ug/L	0.091	2	317	6959	1	KED
	Ni	**62**	**3.863**	ug/L	0.034	0	46	1154	2	KED
	Cu	**63**	**17.017**	ug/L	0.545	3	97	89346	3	KED
	Cu	**65**	**16.386**	ug/L	0.586	3	38	44160	1	KED
	[redacted]	**66**	[redacted]	ug/L	3.679	4	130	62463	1	KED
	Zn	**67**	**85.456**	ug/L	2.883	3	20	9784	1	KED
	As	**75**	**0.027**	ug/L	0.008	28	3	13	20	KED
	Y	**89**		ug/L			504241	495477	0	Standard
	Kr	**83**		ug/L			137	166	16	Standard
>	**In-1**	**115**		ug/L			17133	15621	1	KED
	Cd	**111**	**0.505**	ug/L	0.016	3	4	154	1	KED
	Cd	**114**	**0.561**	ug/L	0.019	3	2	444	4	KED
>	**In**	**115**		ug/L			1070161	1032928	1	Standard
	Ag	**107**	**-0.000**	ug/L	0.000	128	52	46	10	Standard
>	**Tb**	**159**		ug/L			2448219	2241389	1	Standard
	Pb	**208**	**0.029**	ug/L	0.001	2	434	4089	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:26:26
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	42491	1	Standard
	Cl	**37**		ug/L			4867239	4800364	0	Standard
>	**Sc**	**45**		ug/L			946449	892581	1	Standard
	Na	**23**	**6332.952**	ug/L	139.938	2	78227	175407165	2	Standard
	Mg	**24**	**5457.113**	ug/L	116.408	2	3266	187852060	1	Standard
	Al	**27**	**650.693**	ug/L	22.106	3	9407	24049764	3	Standard
	K	**39**	**2692.581**	ug/L	72.044	2	713188	60646872	1	Standard
	Ca	**44**	**5447.867**	ug/L	167.296	3	7516	5119603	2	Standard
	V	**51**	**5.641**	ug/L	0.033	0	3877	141243	1	Standard
	V-1	**51**	**5.689**	ug/L	0.034	0	189	140120	1	Standard
	Cr	**52**	**0.487**	ug/L	0.017	3	11464	21191	0	Standard
	Cr	**53**	**0.777**	ug/L	0.010	1	116	2035	0	Standard
	Fe	**54**	**2292.560**	ug/L	25.884	1	74585	5402346	1	Standard
	Fe	**57**	**2328.166**	ug/L	65.989	2	16592	2554912	2	Standard
	Mn	**55**	**27.374**	ug/L	0.436	1	737	856908	0	Standard
>	**Ge**	**72**		ug/L			72878	70009	1	KED
	Ni	**60**	**0.839**	ug/L	0.079	9	317	1768	6	KED
	Ni	**62**	**0.845**	ug/L	0.061	7	46	280	4	KED
	Cu	**63**	**1.405**	ug/L	0.023	1	97	7234	1	KED
	Cu	**65**	**1.414**	ug/L	0.054	3	38	3726	2	KED
	Zn	**66**	**1.341**	ug/L	0.098	7	130	1015	4	KED
	Zn	**67**	**1.366**	ug/L	0.021	1	20	171	2	KED
		75		ug/L	0.026	1	3	764	2	KED
	Y	**89**		ug/L			504241	496723	0	Standard
	Kr	**83**		ug/L			137	128	9	Standard
>	**In-1**	**115**		ug/L			17133	15896	1	KED
	Cd	**111**	**0.006**	ug/L	0.014	220	4	5	72	KED
	Cd	**114**	**0.009**	ug/L	0.004	41	2	9	30	KED
>	**In**	**115**		ug/L			1070161	1027768	1	Standard
	Ag	**107**	**0.011**	ug/L	0.001	9	52	219	7	Standard
>	**Tb**	**159**		ug/L			2448219	2219018	0	Standard
	Pb	**208**	**0.320**	ug/L	0.002	0	434	40011	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:30:45
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	39137	1	Standard
	Cl	**37**		ug/L			4867239	4776062	0	Standard
>	**Sc**	**45**		ug/L			946449	882511	2	Standard
	Na	**23**	**2185.524**	ug/L	42.295	1	78227	59886245	1	Standard
	Mg	**24**	**2353.027**	ug/L	118.976	5	3266	80030165	2	Standard
	Al	**27**	**2.462**	ug/L	0.050	2	9407	98704	1	Standard
	K	**39**	**1192.646**	ug/L	17.228	1	713188	26932298	1	Standard
	Ca	**44**	**2853.043**	ug/L	108.684	3	7516	2653175	1	Standard
	V	**51**	**0.337**	ug/L	0.016	4	3877	11731	2	Standard
	V-1	**51**	**0.391**	ug/L	0.016	4	189	9670	2	Standard
	Cr	**52**	**0.053**	ug/L	0.029	54	11464	11807	3	Standard
	Cr	**53**	**0.232**	ug/L	0.021	9	116	675	5	Standard
	Fe	**54**	**816.156**	ug/L	10.066	1	74585	1946024	1	Standard
	Fe	**57**	**836.199**	ug/L	38.886	4	16592	916611	2	Standard
		55		ug/L	2.555	2	737	2800212	1	Standard
>	**Ge**	**72**		ug/L			72878	72786	0	KED
	Ni	**60**	**0.196**	ug/L	0.008	3	317	673	1	KED
	Ni	**62**	**0.218**	ug/L	0.019	8	46	109	5	KED
	Cu	**63**	**0.106**	ug/L	0.003	2	97	657	2	KED
	Cu	**65**	**0.112**	ug/L	0.010	8	38	342	8	KED
	Zn	**66**	**0.418**	ug/L	0.013	3	130	419	1	KED
	Zn	**67**	**0.414**	ug/L	0.102	24	20	68	17	KED
	As	**75**	**1.085**	ug/L	0.051	4	3	372	4	KED
	Y	**89**		ug/L			504241	473122	2	Standard
	Kr	**83**		ug/L			137	109	5	Standard
>	**In-1**	**115**		ug/L			17133	16234	3	KED
	Cd	**111**	**0.006**	ug/L	0.007	111	4	5	33	KED
	Cd	**114**	**0.008**	ug/L	0.002	26	2	9	21	KED
>	**In**	**115**		ug/L			1070161	1031444	1	Standard
	Ag	**107**	**-0.000**	ug/L	0.001	155	52	42	27	Standard
>	**Tb**	**159**		ug/L			2448219	2225212	0	Standard
	Pb	**208**	**0.010**	ug/L	0.001	5	434	1643	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:36:25
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	55432	0	Standard
	Cl	**37**		ug/L			4867239	4996191	1	Standard
>	**Sc**	**45**		ug/L			946449	924023	0	Standard
	Na	**23**	**2896.997**	ug/L	70.390	2	78227	83112037	2	Standard
	Mg	**24**	**10454.640**	ug/L	177.620	1	3266	372595498	1	Standard
	Al	**27**	**20.790**	ug/L	0.209	1	9407	804411	1	Standard
	K	**39**	**580.085**	ug/L	9.999	1	713188	14076519	2	Standard
	Ca	**44**	**21580.515**	ug/L	390.597	1	7516	20976536	1	Standard
	V	**51**	**1.025**	ug/L	0.025	2	3877	29673	1	Standard
	V-1	**51**	**1.073**	ug/L	0.015	1	189	27500	0	Standard
	Cr	**52**	**1.178**	ug/L	0.007	0	11464	37214	0	Standard
	Cr	**53**	**1.324**	ug/L	0.025	1	116	3510	2	Standard
	Fe	**54**	**679.303**	ug/L	14.440	2	74585	1708457	2	Standard
	Fe	**57**	**583.479**	ug/L	11.625	1	16592	675120	2	Standard
	Mn	**55**	**9.235**	ug/L	0.109	1	737	299793	1	Standard
>	**Ge**	**72**		ug/L			72878	70717	0	KED
	Ni	**60**	**0.207**	ug/L	0.002	0	317	673	0	KED
	Ni	**62**	**0.274**	ug/L	0.017	6	46	122	3	KED
	Cu	**63**	**3.545**	ug/L	0.038	1	97	18295	1	KED
	Cu	**65**	**3.466**	ug/L	0.097	2	38	9175	2	KED
	Zn	**66**	**15.671**	ug/L	0.444	2	130	10643	2	KED
	Zn	**67**	**14.667**	ug/L	0.493	3	20	1661	2	KED
	As	**75**	**0.307**	ug/L	0.024	7	3	105	7	KED
	Y	**89**		ug/L			504241	453469	0	Standard
	Kr	**83**		ug/L			137	115	16	Standard
>	**In-1**	**115**		ug/L			17133	15566	0	KED
	Cd	**111**	**0.019**	ug/L	0.003	17	4	9	10	KED
	Cd	**114**	**0.007**	ug/L	0.005	76	2	8	52	KED
>	**In**	**115**		ug/L			1070161	1013006	2	Standard
		107	-	ug/L	0.000	166	52	46	13	Standard
>	**Tb**	**159**		ug/L			2448219	2152229	1	Standard
	Pb	**208**	**0.106**	ug/L	0.001	0	434	13070	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:40:45
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	29837	2	Standard
	Cl	**37**		ug/L			4867239	5221603	1	Standard
>	**Sc**	**45**		ug/L			946449	839619	1	Standard
	Na	**23**	**-1.193**	ug/L	0.018	1	78227	38330	0	Standard
	Mg	**24**	**0.555**	ug/L	0.021	3	3266	20886	4	Standard
	Al	**27**	**-0.004**	ug/L	0.002	52	9407	8200	0	Standard
	K	**39**	**7.836**	ug/L	1.005	12	713188	796863	2	Standard
	Ca	**44**	**-1.275**	ug/L	0.148	11	7516	5542	2	Standard
	V	**51**	**-0.003**	ug/L	0.005	187	3877	3380	4	Standard
	V-1	**51**	**-0.001**	ug/L	0.000	13	189	138	2	Standard
	Cr	**52**	**-0.001**	ug/L	0.005	603	11464	10153	0	Standard
	Cr	**53**	**0.003**	ug/L	0.015	467	116	110	31	Standard
	Fe	**54**	**2.745**	ug/L	0.455	16	74585	72165	0	Standard
	Fe	**57**	**-3.895**	ug/L	0.269	6	16592	10720	1	Standard
	Mn	**55**	**0.021**	ug/L	0.001	2	737	1258	2	Standard
>	**Ge**	**72**		ug/L			72878	73231	1	KED
	Ni	**60**	**-0.145**	ug/L	0.002	1	317	53	7	KED
	Ni	**62**	**-0.121**	ug/L	0.013	11	46	12	32	KED
	Cu	**63**	**0.004**	ug/L	0.003	67	97	120	12	KED
	Cu	**65**	**0.012**	ug/L	0.004	31	38	69	13	KED
	Zn	**66**	**0.000**	ug/L	0.017	134058	130	131	9	KED
	Zn	**67**	**-0.001**	ug/L	0.015	1620	20	20	9	KED
	As	**75**	**-0.005**	ug/L	0.003	57	3	2	40	KED
	Y	**89**		ug/L			504241	449053	1	Standard
	Kr	**83**		ug/L			137	107	8	Standard
>	**In-1**	**115**		ug/L			17133	16173	0	KED
	Cd	**111**	**0.004**	ug/L	0.003	90	4	5	21	KED
	Cd	**114**	**0.005**	ug/L	0.004	76	2	6	44	KED
>	**In**	**115**		ug/L			1070161	978014	1	Standard
	Ag	**107**	**-0.001**	ug/L	0.000	43	52	33	17	Standard
>	**Tb**	**159**		ug/L			2448219	2144279	0	Standard
	Pb	**208**	**0.003**	ug/L	0.000	5	434	705	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:45:06
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	26330	1	Standard
	Cl	**37**		ug/L			4867239	5142369	1	Standard
>	**Sc**	**45**		ug/L			946449	837693	1	Standard
	Na	**23**	**4800.738**	ug/L	70.784	1	78227	124811756	1	Standard
	Mg	**24**	**4901.157**	ug/L	84.721	1	3266	158349436	1	Standard
	Al	**27**	**4574.779**	ug/L	39.300	0	9407	158656301	2	Standard
	K	**39**	**5010.795**	ug/L	266.651	5	713188	105361256	4	Standard
	Ca	**44**	**4569.546**	ug/L	126.784	2	7516	4031299	1	Standard
	V	**51**	**46.979**	ug/L	0.885	1	3877	1078570	0	Standard
	V-1	**51**	**47.155**	ug/L	0.919	1	189	1088624	0	Standard
	Cr	**52**	**46.863**	ug/L	0.643	1	11464	948461	1	Standard
	Cr	**53**	**47.424**	ug/L	0.583	1	116	110391	0	Standard
	Fe	**54**	**4582.435**	ug/L	84.793	1	74585	10067215	0	Standard
	Fe	**57**	**4578.231**	ug/L	25.544	0	16592	4701858	1	Standard
	Mn	**55**	**48.667**	ug/L	0.851	1	737	1429236	0	Standard
>	**Ge**	**72**		ug/L			72878	72557	1	KED
	Ni	**60**	**47.031**	ug/L	0.679	1	317	85422	2	KED
	Ni	**62**	**46.895**	ug/L	1.218	2	46	13554	0	KED
	Cu	**63**	**47.255**	ug/L	1.331	2	97	248920	1	KED
	Cu	**65**	**46.839**	ug/L	1.486	3	38	126706	1	KED
	Zn	**66**	**47.005**	ug/L	0.896	1	130	32491	0	KED
	Zn	**67**	**46.550**	ug/L	1.406	3	20	5362	1	KED
	As	**75**	**46.586**	ug/L	0.558	1	3	15760	1	KED
	Y	**89**		ug/L			504241	451121	2	Standard
	Kr	**83**		ug/L			137	106	17	Standard
>	**In-1**	**115**		ug/L			17133	15809	1	KED
	Cd	**111**	**48.800**	ug/L	0.920	1	4	14780	0	KED
	Cd	**114**	**48.086**	ug/L	1.024	2	2	38294	0	KED
>	**In**	**115**		ug/L			1070161	954315	1	Standard
	Ag	**107**	**51.212**	ug/L	1.606	3	52	739968	2	Standard
>	**Tb**	**159**		ug/L			2448219	2210263	1	Standard
	Pb	**208**	**49.088**	ug/L	1.317	2	434	6058808	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:52:09
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27065	25298	1	Standard
	Cl	**37**		ug/L			4867239	5128827	0	Standard
>	**Sc**	**45**		ug/L			946449	836813	1	Standard
	Na	**23**	**-1.206**	ug/L	0.026	2	78227	37863	0	Standard
	Mg	**24**	**0.328**	ug/L	0.014	4	3266	13463	2	Standard
	Al	**27**	**0.115**	ug/L	0.007	5	9407	12285	1	Standard
	K	**39**	**6.464**	ug/L	1.000	15	713188	765430	1	Standard
	Ca	**44**	**-1.726**	ug/L	0.203	11	7516	5126	3	Standard
	V	**51**	**-0.011**	ug/L	0.003	27	3877	3182	2	Standard
	V-1	**51**	**-0.001**	ug/L	0.000	10	189	140	2	Standard
	Cr	**52**	**-0.040**	ug/L	0.007	17	11464	9330	2	Standard
	Cr	**53**	**-0.009**	ug/L	0.003	29	116	81	8	Standard
	Fe	**54**	**-0.521**	ug/L	0.619	118	74585	64797	0	Standard
	Fe	**57**	**-3.525**	ug/L	0.261	7	16592	11063	1	Standard
	Mn	**55**	**0.009**	ug/L	0.002	17	737	906	5	Standard
>	**Ge**	**72**		ug/L			72878	71494	1	KED
	Ni	**60**	**-0.136**	ug/L	0.003	2	317	68	10	KED
	Ni	**62**	**-0.138**	ug/L	0.014	10	46	6	56	KED
	Cu	**63**	**0.002**	ug/L	0.001	54	97	104	3	KED
	Cu	**65**	**0.010**	ug/L	0.003	26	38	64	12	KED
	Zn	**66**	**0.348**	ug/L	0.067	19	130	364	11	KED
	Zn	**67**	**0.368**	ug/L	0.081	21	20	62	15	KED
	As	**75**	**-0.000**	ug/L	0.000	50	3	3	0	KED
	Y	**89**		ug/L			504241	447661	1	Standard
	Kr	**83**		ug/L			137	90	7	Standard
>	**In-1**	**115**		ug/L			17133	16186	2	KED
	Cd	**111**	**0.003**	ug/L	0.009	294	4	4	52	KED
	Cd	**114**	**0.001**	ug/L	0.002	210	2	3	52	KED
>	**In**	**115**		ug/L			1070161	978338	1	Standard
	Ag	**107**	**0.003**	ug/L	0.001	33	52	86	16	Standard
>	**Tb**	**159**		ug/L			2448219	2141531	0	Standard
	Pb	**208**	**0.008**	ug/L	0.001	6	434	1353	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 18:57:49
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				21994	3	Standard
	Cl	**37**		ug/L				5204433	0	Standard
>	**Sc**	**45**		ug/L				828611	1	Standard
	V	**51**		ug/L				3117	1	Standard
	V-1	**51**		ug/L				134	6	Standard
	Cr	**52**		ug/L				9220	1	Standard
	Cr	**53**		ug/L				87	10	Standard
	Mn	**55**		ug/L				670	2	Standard
>	**Ge**	**72**		ug/L				72813	0	KED
	Ni	**60**		ug/L				53	35	KED
	Ni	**62**		ug/L				12	9	KED
	Cu	**63**		ug/L				82	21	KED
	Cu	**65**		ug/L				41	19	KED
	Zn	**66**		ug/L				140	6	KED
	Zn	**67**		ug/L				26	29	KED
	As	**75**		ug/L				3	24	KED
	Y	**89**		ug/L				442615	0	Standard
	Kr	**83**		ug/L				113	14	Standard
>	**In-1**	**115**		ug/L				16120	1	KED
	Cd	**111**		ug/L				4	69	KED
	Cd	**114**		ug/L				2	94	KED
>	**In**	**115**		ug/L				952267	1	Standard
	Ag	**107**		ug/L				34	8	Standard
>	**Tb**	**159**		ug/L				2081530	1	Standard
	Pb	**208**		ug/L				552	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:02:01
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	24505	3	Standard
	Cl	**37**		ug/L			5204433	5284278	0	Standard
>	**Sc**	**45**		ug/L			828611	852802	1	Standard
	V	**51**	**45.665**	ug/L	0.313	0	3117	1067250	0	Standard
	V-1	**51**	**45.854**	ug/L	0.425	0	134	1077777	0	Standard
	Cr	**52**	**46.155**	ug/L	0.169	0	9220	950395	1	Standard
	Cr	**53**	**46.743**	ug/L	0.308	0	87	110761	0	Standard
	Mn	**55**	**47.265**	ug/L	0.525	1	670	1413293	0	Standard
>	**Ge**	**72**		ug/L			72813	72070	2	KED
	Ni	**60**	**47.083**	ug/L	0.748	1	53	84664	1	KED
	Ni	**62**	**48.107**	ug/L	0.830	1	12	13779	2	KED
	Cu	**63**	**47.652**	ug/L	1.203	2	82	249317	1	KED
	Cu	**65**	**47.629**	ug/L	0.989	2	41	127987	0	KED
	Zn	**66**	**48.068**	ug/L	1.838	3	140	32999	1	KED
	Zn	**67**	**46.205**	ug/L	0.213	0	26	5293	2	KED
	As	**75**	**47.282**	ug/L	0.806	1	3	15886	0	KED
	Y	**89**		ug/L			442615	454679	2	Standard
	Kr	**83**		ug/L			113	150	2	Standard
>	**In-1**	**115**		ug/L			16120	15843	2	KED
	Cd	**111**	**49.242**	ug/L	1.814	3	4	14940	1	KED
	Cd	**114**	**47.277**	ug/L	1.209	2	2	37726	1	KED
>	**In**	**115**		ug/L			952267	958434	2	Standard
	Ag	**107**	**51.043**	ug/L	0.510	0	34	740786	1	Standard
>	**Tb**	**159**		ug/L			2081530	2202703	1	Standard
	Pb	**208**	**48.677**	ug/L	0.514	1	552	5989296	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:08:48
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	22425	2	Standard
	Cl	**37**		ug/L			5204433	5219253	3	Standard
>	**Sc**	**45**		ug/L			828611	871340	1	Standard
	V	**51**	**0.003**	ug/L	0.004	115	3117	3352	3	Standard
	V-1	**51**	**0.000**	ug/L	0.001	138	134	151	9	Standard
	Cr	**52**	**0.002**	ug/L	0.008	465	9220	9733	2	Standard
	Cr	**53**	**-0.007**	ug/L	0.007	106	87	76	20	Standard
	Mn	**55**	**-0.004**	ug/L	0.001	15	670	584	3	Standard
>	**Ge**	**72**		ug/L			72813	73082	1	KED
	Ni	**60**	**-0.002**	ug/L	0.005	289	53	50	20	KED
	Ni	**62**	**0.004**	ug/L	0.013	310	12	13	28	KED
	Cu	**63**	**0.003**	ug/L	0.001	20	82	99	2	KED
	Cu	**65**	**0.006**	ug/L	0.002	40	41	57	10	KED
	Zn	**66**	**0.005**	ug/L	0.012	254	140	144	5	KED
	Zn	**67**	**0.071**	ug/L	0.090	126	26	34	29	KED
	As	**75**	**0.004**	ug/L	0.007	166	3	4	50	KED
	Y	**89**		ug/L			442615	462563	1	Standard
	Kr	**83**		ug/L			113	128	10	Standard
>	**In-1**	**115**		ug/L			16120	16540	0	KED
	Cd	**111**	**-0.006**	ug/L	0.009	141	4	2	100	KED
	Cd	**114**	**0.004**	ug/L	0.003	61	2	6	33	KED
>	**In**	**115**		ug/L			952267	980944	0	Standard
	Ag	**107**	**0.002**	ug/L	0.001	34	34	73	16	Standard
>	**Tb**	**159**		ug/L			2081530	2149400	1	Standard
	Pb	**208**	**0.002**	ug/L	0.000	21	552	793	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:14:19
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	40282	2	Standard
	Cl	**37**		ug/L			5204433	5139115	1	Standard
>	**Sc**	**45**		ug/L			828611	880932	0	Standard
	V	**51**	**0.011**	ug/L	0.001	12	3117	3588	1	Standard
	V-1	**51**	**0.000**	ug/L	0.001	271	134	147	7	Standard
	Cr	**52**	**0.047**	ug/L	0.004	9	9220	10787	1	Standard
	Cr	**53**	**0.010**	ug/L	0.002	24	87	118	4	Standard
	Mn	**55**	**0.009**	ug/L	0.001	5	670	999	2	Standard
>	**Ge**	**72**		ug/L			72813	74977	1	KED
	Ni	**60**	**0.013**	ug/L	0.007	58	53	79	17	KED
	Ni	**62**	**0.031**	ug/L	0.016	51	12	21	22	KED
		63		ug/L	0.010	11	82	551	10	KED
	Cu	**65**	**0.089**	ug/L	0.012	13	41	292	10	KED
		66		ug/L	0.066	12	140	522	8	KED
	Zn	**67**	**0.421**	ug/L	0.099	23	26	76	16	KED
	As	**75**	**0.005**	ug/L	0.007	145	3	5	47	KED
	Y	**89**		ug/L			442615	477453	2	Standard
	Kr	**83**		ug/L			113	123	2	Standard
>	**In-1**	**115**		ug/L			16120	16925	0	KED
	Cd	**111**	**-0.006**	ug/L	0.007	122	4	3	69	KED
	Cd	**114**	**-0.000**	ug/L	0.003	1036	2	2	76	KED
>	**In**	**115**		ug/L			952267	1024165	2	Standard
	Ag	**107**	**0.002**	ug/L	0.001	33	34	71	17	Standard
>	**Tb**	**159**		ug/L			2081530	2191989	0	Standard
	Pb	**208**	**0.016**	ug/L	0.000	1	552	2490	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJH0242-BS1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:18:21

DEL

Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	39370	1	Standard
	Cl	**37**		ug/L			5204433	5443887	0	Standard
>	**Sc**	**45**		ug/L			828611	864501	2	Standard
	V	**51**	**21.687**	ug/L	0.420	1	3117	515419	1	Standard
	V-1	**51**	**21.773**	ug/L	0.319	1	134	518806	1	Standard
	Cr	**52**	**22.084**	ug/L	0.561	2	9220	465792	0	Standard
	Cr	**53**	**22.346**	ug/L	0.277	1	87	53717	1	Standard
	Mn	**55**	**22.899**	ug/L	0.649	2	670	694310	2	Standard
>	**Ge**	**72**		ug/L			72813	74536	1	KED
	Ni	**60**	**22.316**	ug/L	0.374	1	53	41535	1	KED
	Ni	**62**	**22.631**	ug/L	0.316	1	12	6710	1	KED
	Cu	**63**	**23.382**	ug/L	0.337	1	82	126592	1	KED
	Cu	**65**	**22.937**	ug/L	0.500	2	41	63775	1	KED
	Zn	**66**	**65.658**	ug/L	0.292	0	140	46590	1	KED
	Zn	**67**	**62.141**	ug/L	1.363	2	26	7354	3	KED
	As	**75**	**20.914**	ug/L	0.167	0	3	7270	0	KED
	Y	**89**		ug/L			442615	467748	2	Standard
	Kr	**83**		ug/L			113	117	6	Standard
>	**In-1**	**115**		ug/L			16120	16641	2	KED
	Cd	**111**	**21.960**	ug/L	1.149	5	4	6998	2	KED
	Cd	**114**	**21.752**	ug/L	0.771	3	2	18230	1	KED
>	**In**	**115**		ug/L			952267	1022834	3	Standard
	Ag	**107**	**24.255**	ug/L	0.324	1	34	375650	2	Standard
>	**Tb**	**159**		ug/L			2081530	2198606	1	Standard
	Pb	**208**	**24.355**	ug/L	0.406	1	552	2991170	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:22:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	41009	1	Standard
	Cl	**37**		ug/L			5204433	5314977	0	Standard
>	**Sc**	**45**		ug/L			828611	860051	2	Standard
	V	**51**	**0.015**	ug/L	0.007	47	3117	3580	3	Standard
	V-1	**51**	**0.001**	ug/L	0.001	67	134	174	14	Standard
	Cr	**52**	**0.055**	ug/L	0.022	41	9220	10687	2	Standard
	Cr	**53**	**0.012**	ug/L	0.002	13	87	118	0	Standard
	Mn	**55**	**0.013**	ug/L	0.001	5	670	1099	1	Standard
>	**Ge**	**72**		ug/L			72813	74450	1	KED
	Ni	**60**	**0.017**	ug/L	0.010	62	53	86	23	KED
	Ni	**62**	**0.004**	ug/L	0.023	668	12	13	51	KED
	Cu	**63**	**0.088**	ug/L	0.008	8	82	558	7	KED
	Cu	**65**	**0.081**	ug/L	0.010	12	41	266	9	KED
	Zn	**66**	**0.428**	ug/L	0.042	9	140	445	5	KED
	Zn	**67**	**0.459**	ug/L	0.135	29	26	80	19	KED
		75		ug/L	0.000	9	3	3	0	KED
	Y	**89**		ug/L			442615	471026	2	Standard
	Kr	**83**		ug/L			113	135	2	Standard
>	**In-1**	**115**		ug/L			16120	16499	1	KED
	Cd	**111**	**-0.002**	ug/L	0.002	67	4	4	13	KED
	Cd	**114**	**0.004**	ug/L	0.001	26	2	6	15	KED
>	**In**	**115**		ug/L			952267	1012312	1	Standard
	Ag	**107**	**0.005**	ug/L	0.001	26	34	113	16	Standard
>	**Tb**	**159**		ug/L			2081530	2210482	0	Standard
	Pb	**208**	**0.014**	ug/L	0.001	3	552	2351	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:27:39
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	29482	1	Standard
	Cl	**37**		ug/L			5204433	5324931	0	Standard
>	**Sc**	**45**		ug/L			828611	869023	1	Standard
	V	**51**	**22.844**	ug/L	0.257	1	3117	545634	0	Standard
	V-1	**51**	**22.957**	ug/L	0.333	1	134	549861	0	Standard
	Cr	**52**	**23.289**	ug/L	0.123	0	9220	493410	1	Standard
	Cr	**53**	**23.635**	ug/L	0.374	1	87	57107	0	Standard
	Mn	**55**	**24.299**	ug/L	0.402	1	670	740656	1	Standard
>	**Ge**	**72**		ug/L			72813	74799	3	KED
	Ni	**60**	**23.841**	ug/L	0.867	3	53	44504	2	KED
	Ni	**62**	**23.997**	ug/L	1.618	6	12	7129	3	KED
	Cu	**63**	**24.416**	ug/L	0.920	3	82	132551	1	KED
	Cu	**65**	**24.229**	ug/L	0.919	3	41	67553	0	KED
	Zn	**66**	**71.992**	ug/L	2.124	2	140	51219	1	KED
	Zn	**67**	**70.339**	ug/L	0.846	1	26	8347	2	KED
		75		ug/L	0.755	3	3	7996	0	KED
	Y	**89**		ug/L			442615	464307	0	Standard
	Kr	**83**		ug/L			113	139	3	Standard
>	**In-1**	**115**		ug/L			16120	16423	0	KED
	Cd	**111**	**24.350**	ug/L	0.753	3	4	7666	3	KED
	Cd	**114**	**24.300**	ug/L	0.642	2	2	20108	2	KED
>	**In**	**115**		ug/L			952267	976837	0	Standard
	Ag	**107**	**27.910**	ug/L	0.534	1	34	412921	2	Standard
>	**Tb**	**159**		ug/L			2081530	2165301	0	Standard
	Pb	**208**	**26.271**	ug/L	0.130	0	552	3177988	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:31:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	27982	2	Standard
	Cl	**37**		ug/L			5204433	5298348	0	Standard
>	**Sc**	**45**		ug/L			828611	863597	0	Standard
	V	**51**	**23.063**	ug/L	0.248	1	3117	547452	0	Standard
	V-1	**51**	**23.234**	ug/L	0.286	1	134	553090	0	Standard
	Cr	**52**	**23.215**	ug/L	0.292	1	9220	488817	0	Standard
	Cr	**53**	**23.752**	ug/L	0.337	1	87	57039	0	Standard
	Mn	**55**	**24.462**	ug/L	0.062	0	670	741103	0	Standard
>	**Ge**	**72**		ug/L			72813	74319	1	KED
	Ni	**60**	**24.382**	ug/L	0.352	1	53	45242	0	KED
	Ni	**62**	**24.381**	ug/L	0.618	2	12	7208	3	KED
		63		ug/L	0.352	1	82	134572	0	KED
	Cu	**65**	**24.358**	ug/L	0.494	2	41	67529	1	KED
		66		ug/L	0.427	0	140	51153	0	KED
	Zn	**67**	**68.607**	ug/L	0.903	1	26	8092	1	KED
	As	**75**	**23.008**	ug/L	0.447	1	3	7974	0	KED
	Y	**89**		ug/L			442615	469561	1	Standard
	Kr	**83**		ug/L			113	128	16	Standard
>	**In-1**	**115**		ug/L			16120	16797	0	KED
	Cd	**111**	**23.621**	ug/L	0.333	1	4	7605	0	KED
	Cd	**114**	**23.727**	ug/L	0.249	1	2	20081	1	KED
>	**In**	**115**		ug/L			952267	994241	1	Standard
	Ag	**107**	**26.545**	ug/L	0.053	0	34	399709	1	Standard
>	**Tb**	**159**		ug/L			2081530	2177551	1	Standard
	Pb	**208**	**25.722**	ug/L	0.545	2	552	3128525	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21G0321-01
Sample Dil Factor: 100
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:35:42

DEL

Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	39713	2	Standard
	Cl	**37**		ug/L			5204433	5189626	0	Standard
>	**Sc**	**45**		ug/L			828611	887966	2	Standard
	V	**51**	**4.007**	ug/L	0.136	3	3117	100519	1	Standard
	V-1	**51**	**4.004**	ug/L	0.117	2	134	98089	1	Standard
	Cr	**52**	**2.159**	ug/L	0.040	1	9220	55698	0	Standard
	Cr	**53**	**2.199**	ug/L	0.038	1	87	5516	2	Standard
	Mn	**55**	**36.369**	ug/L	0.583	1	670	1132334	1	Standard
>	**Ge**	**72**		ug/L			72813	75041	0	KED
	Ni	**60**	**2.700**	ug/L	0.136	5	53	5110	5	KED
	Ni	**62**	**2.850**	ug/L	0.013	0	12	861	0	KED
	Cu	**63**	**2.295**	ug/L	0.023	0	82	12584	0	KED
	Cu	**65**	**2.229**	ug/L	0.011	0	41	6278	0	KED
	Zn	**66**	**5.471**	ug/L	0.123	2	140	4041	3	KED
	Zn	**67**	**5.464**	ug/L	0.061	1	26	675	1	KED
	As	**75**	**0.519**	ug/L	0.024	4	3	185	3	KED
	Y	**89**		ug/L			442615	502105	0	Standard
	Kr	**83**		ug/L			113	120	9	Standard
>	**In-1**	**115**		ug/L			16120	16936	1	KED
	Cd	**111**	**0.015**	ug/L	0.012	81	4	9	39	KED
	Cd	**114**	**0.011**	ug/L	0.002	19	2	12	14	KED
>	**In**	**115**		ug/L			952267	1011966	1	Standard
	Ag	**107**	**0.012**	ug/L	0.001	10	34	217	8	Standard
>	**Tb**	**159**		ug/L			2081530	2252274	1	Standard
	Pb	**208**	**0.523**	ug/L	0.004	0	552	66446	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:44:33
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	42353	0	Standard
	Cl	**37**		ug/L			5204433	5128215	0	Standard
>	**Sc**	**45**		ug/L			828611	930034	0	Standard
	V	**51**	**20.963**	ug/L	0.283	1	3117	536237	1	Standard
	V-1	**51**	**20.869**	ug/L	0.315	1	134	535067	1	Standard
	Cr	**52**	**10.985**	ug/L	0.187	1	9220	254555	1	Standard
	Cr	**53**	**10.957**	ug/L	0.204	1	87	28390	1	Standard
	Mn	**55**	**177.641**	ug/L	2.519	1	670	5791112	1	Standard
>	**Ge**	**72**		ug/L			72813	72219	1	KED
	Ni	**60**	**14.441**	ug/L	0.415	2	53	26055	1	KED
	Ni	**62**	**15.015**	ug/L	0.161	1	12	4318	2	KED
	Cu	**63**	**12.143**	ug/L	0.404	3	82	63727	2	KED
	Cu	**65**	**11.926**	ug/L	0.412	3	41	32142	2	KED
	Zn	**66**	**29.041**	ug/L	0.933	3	140	20041	3	KED
	Zn	**67**	**29.062**	ug/L	0.424	1	26	3346	2	KED
		75		ug/L	0.030	1	3	924	2	KED
	Y	**89**		ug/L			442615	603756	2	Standard
	Kr	**83**		ug/L			113	154	14	Standard
>	**In-1**	**115**		ug/L			16120	16632	0	KED
	Cd	**111**	**0.039**	ug/L	0.014	36	4	17	25	KED
	Cd	**114**	**0.035**	ug/L	0.007	19	2	32	16	KED
>	**In**	**115**		ug/L			952267	971073	2	Standard
	Ag	**107**	**0.044**	ug/L	0.003	5	34	675	4	Standard
>	**Tb**	**159**		ug/L			2081530	2259160	0	Standard
	Pb	**208**	**2.716**	ug/L	0.015	0	552	343288	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:48:35
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	40334	1	Standard
	Cl	**37**		ug/L			5204433	5106596	1	Standard
>	**Sc**	**45**		ug/L			828611	948295	1	Standard
	V	**51**	**20.271**	ug/L	0.456	2	3117	528725	1	Standard
	V-1	**51**	**20.345**	ug/L	0.472	2	134	531791	1	Standard
	Cr	**52**	**17.687**	ug/L	0.426	2	9220	411386	1	Standard
	Cr	**53**	**17.993**	ug/L	0.296	1	87	47467	0	Standard
	Mn	**55**	**157.503**	ug/L	1.082	0	670	5235126	0	Standard
>	**Ge**	**72**		ug/L			72813	74637	1	KED
	Ni	**60**	**15.734**	ug/L	0.155	0	53	29340	0	KED
	Ni	**62**	**16.116**	ug/L	0.154	0	12	4789	1	KED
	Cu	**63**	**11.730**	ug/L	0.366	3	82	63630	2	KED
	Cu	**65**	**11.313**	ug/L	0.251	2	41	31521	1	KED
	Zn	**66**	**26.874**	ug/L	0.508	1	140	19177	0	KED
	Zn	**67**	**26.303**	ug/L	0.056	0	26	3132	1	KED
		75		ug/L	0.046	1	3	871	0	KED
	Y	**89**		ug/L			442615	628402	1	Standard
	Kr	**83**		ug/L			113	161	12	Standard
>	**In-1**	**115**		ug/L			16120	16268	1	KED
	Cd	**111**	**0.037**	ug/L	0.014	38	4	16	25	KED
	Cd	**114**	**0.048**	ug/L	0.007	15	2	42	13	KED
>	**In**	**115**		ug/L			952267	937515	2	Standard
	Ag	**107**	**0.036**	ug/L	0.002	6	34	546	8	Standard
>	**Tb**	**159**		ug/L			2081530	2233927	1	Standard
	Pb	**208**	**3.160**	ug/L	0.028	0	552	394908	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:53:17
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	47192	1	Standard
	Cl	**37**		ug/L			5204433	5029850	0	Standard
>	**Sc**	**45**		ug/L			828611	947349	2	Standard
	V	**51**	**47.271**	ug/L	1.354	2	3117	1226821	2	Standard
	V-1	**51**	**47.195**	ug/L	1.244	2	134	1232003	1	Standard
	Cr	**52**	**33.143**	ug/L	0.963	2	9220	760738	0	Standard
	Cr	**53**	**33.286**	ug/L	0.911	2	87	87620	1	Standard
	Mn	**55**	**205.364**	ug/L	2.934	1	670	6817933	0	Standard
>	**Ge**	**72**		ug/L			72813	74152	0	KED
	Ni	**60**	**41.003**	ug/L	0.777	1	53	75879	1	KED
	Ni	**62**	**41.572**	ug/L	1.354	3	12	12254	3	KED
	Cu	**63**	**39.018**	ug/L	0.683	1	82	210113	1	KED
	Cu	**65**	**38.122**	ug/L	0.297	0	41	105443	1	KED
	Zn	**66**	**104.769**	ug/L	1.233	1	140	73876	1	KED
	Zn	**67**	**101.199**	ug/L	1.345	1	26	11897	0	KED
		75		ug/L	0.199	0	3	8885	0	KED
	Y	**89**		ug/L			442615	631754	0	Standard
	Kr	**83**		ug/L			113	186	18	Standard
>	**In-1**	**115**		ug/L			16120	16570	1	KED
	Cd	**111**	**23.772**	ug/L	0.326	1	4	7549	0	KED
	Cd	**114**	**23.897**	ug/L	0.453	1	2	19949	1	KED
>	**In**	**115**		ug/L			952267	955009	2	Standard
	Ag	**107**	**23.404**	ug/L	0.988	4	34	338348	2	Standard
>	**Tb**	**159**		ug/L			2081530	2288563	1	Standard
	Pb	**208**	**26.802**	ug/L	0.554	2	552	3425868	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 19:57:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	43712	4	Standard
	Cl	**37**		ug/L			5204433	5052777	1	Standard
>	**Sc**	**45**		ug/L			828611	931542	0	Standard
	V	**51**	**52.878**	ug/L	0.754	1	3117	1349487	1	Standard
	V-1	**51**	**53.019**	ug/L	0.637	1	134	1361315	1	Standard
	Cr	**52**	**34.592**	ug/L	0.399	1	9220	780668	1	Standard
	Cr	**53**	**35.534**	ug/L	0.804	2	87	91998	1	Standard
	Mn	**55**	**250.276**	ug/L	2.838	1	670	8172065	1	Standard
>	**Ge**	**72**		ug/L			72813	73489	1	KED
	Ni	**60**	**41.839**	ug/L	0.172	0	53	76736	1	KED
	Ni	**62**	**42.639**	ug/L	0.362	0	12	12456	1	KED
	Cu	**63**	**47.151**	ug/L	0.348	0	82	251623	1	KED
	Cu	**65**	**45.650**	ug/L	0.427	0	41	125124	1	KED
	Zn	**66**	**109.959**	ug/L	2.388	2	140	76823	1	KED
	Zn	**67**	**105.353**	ug/L	2.172	2	26	12277	3	KED
		75		ug/L	0.301	1	3	9116	0	KED
	Y	**89**		ug/L			442615	692823	1	Standard
	Kr	**83**		ug/L			113	186	8	Standard
>	**In-1**	**115**		ug/L			16120	16172	0	KED
	Cd	**111**	**24.466**	ug/L	0.285	1	4	7583	0	KED
	Cd	**114**	**24.038**	ug/L	0.712	2	2	19584	2	KED
>	**In**	**115**		ug/L			952267	949563	0	Standard
	Ag	**107**	**21.714**	ug/L	0.557	2	34	312242	1	Standard
>	**Tb**	**159**		ug/L			2081530	2303350	2	Standard
	Pb	**208**	**26.669**	ug/L	0.769	2	552	3430171	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV7
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:06:22
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	25770	2	Standard
	Cl	**37**		ug/L			5204433	5227428	3	Standard
>	**Sc**	**45**		ug/L			828611	874166	1	Standard
	V	**51**	**46.366**	ug/L	0.463	0	3117	1110703	0	Standard
	V-1	**51**	**46.364**	ug/L	0.765	1	134	1116991	0	Standard
	Cr	**52**	**45.981**	ug/L	0.773	1	9220	970474	1	Standard
	Cr	**53**	**45.984**	ug/L	1.428	3	87	111674	2	Standard
	Mn	**55**	**46.473**	ug/L	1.360	2	670	1424172	1	Standard
>	**Ge**	**72**		ug/L			72813	71832	2	KED
	Ni	**60**	**48.697**	ug/L	0.806	1	53	87273	1	KED
	Ni	**62**	**47.970**	ug/L	1.098	2	12	13691	1	KED
	Cu	**63**	**48.292**	ug/L	0.839	1	82	251868	2	KED
	Cu	**65**	**46.941**	ug/L	0.685	1	41	125735	1	KED
	Zn	**66**	**48.010**	ug/L	1.662	3	140	32854	2	KED
	Zn	**67**	**46.876**	ug/L	0.676	1	26	5351	1	KED
	As	**75**	**47.342**	ug/L	0.880	1	3	15853	1	KED
	Y	**89**		ug/L			442615	466875	1	Standard
	Kr	**83**		ug/L			113	114	2	Standard
>	**In-1**	**115**		ug/L			16120	16608	2	KED
	Cd	**111**	**47.864**	ug/L	1.782	3	4	15224	1	KED
	Cd	**114**	**46.839**	ug/L	0.710	1	2	39185	1	KED
>	**In**	**115**		ug/L			952267	952744	4	Standard
	Ag	**107**	**51.438**	ug/L	1.989	3	34	741381	1	Standard
>	**Tb**	**159**		ug/L			2081530	2220132	2	Standard
	Pb	**208**	**48.403**	ug/L	1.251	2	552	6000470	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB7
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:13:08
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	22325	3	Standard
	Cl	**37**		ug/L			5204433	5053694	1	Standard
>	**Sc**	**45**		ug/L			828611	832971	2	Standard
	V	**51**	**0.000**	ug/L	0.003	1367	3117	3136	0	Standard
	V-1	**51**	**-0.000**	ug/L	0.000	140	134	127	10	Standard
	Cr	**52**	**0.003**	ug/L	0.011	331	9220	9334	0	Standard
	Cr	**53**	**0.002**	ug/L	0.002	105	87	92	2	Standard
	Mn	**55**	**0.001**	ug/L	0.001	125	670	701	2	Standard
>	**Ge**	**72**		ug/L			72813	70611	2	KED
	Ni	**60**	**0.010**	ug/L	0.005	52	53	69	11	KED
	Ni	**62**	**0.001**	ug/L	0.011	800	12	12	24	KED
	Cu	**63**	**0.006**	ug/L	0.004	64	82	108	14	KED
	Cu	**65**	**0.008**	ug/L	0.003	40	41	62	12	KED
	Zn	**66**	**0.061**	ug/L	0.014	23	140	177	7	KED
	Zn	**67**	**0.024**	ug/L	0.042	175	26	27	17	KED
	As	**75**	**0.003**	ug/L	0.001	44	3	4	11	KED
	Y	**89**		ug/L			442615	440270	2	Standard
	Kr	**83**		ug/L			113	121	14	Standard
>	**In-1**	**115**		ug/L			16120	15923	1	KED
	Cd	**111**	**0.017**	ug/L	0.026	156	4	9	82	KED
	Cd	**114**	**0.013**	ug/L	0.013	95	2	13	75	KED
>	**In**	**115**		ug/L			952267	924179	3	Standard
	Ag	**107**	**0.002**	ug/L	0.001	47	34	66	20	Standard
>	**Tb**	**159**		ug/L			2081530	2072986	1	Standard
	Pb	**208**	**0.003**	ug/L	0.000	6	552	887	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor: ~~50~~ 20x DIL
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:17:32 MB 8/12/21
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	37019	2	Standard
	Cl	**37**		ug/L			5204433	5000431	1	Standard
>	**Sc**	**45**		ug/L			828611	916047	0	Standard
	V	**51**	**22.885**	ug/L	0.387	1	3117	576271	1	Standard
	V-1	**51**	**22.904**	ug/L	0.307	1	134	578405	1	Standard
	Cr	**52**	**13.724**	ug/L	0.248	1	9220	310693	1	Standard
	Cr	**53**	**14.034**	ug/L	0.234	1	87	35790	1	Standard
	Mn	**55**	**181.789**	ug/L	2.161	1	670	5837177	1	Standard
>	**Ge**	**72**		ug/L			72813	71749	1	KED
	Ni	**60**	**16.022**	ug/L	0.441	2	53	28716	1	KED
	Ni	**62**	**16.134**	ug/L	0.253	1	12	4608	0	KED
	Cu	**63**	**14.174**	ug/L	0.455	3	82	73886	1	KED
	Cu	**65**	**13.891**	ug/L	0.237	1	41	37195	0	KED
	Zn	**66**	**26.717**	ug/L	0.674	2	140	18327	1	KED
	Zn	**67**	**26.409**	ug/L	0.845	3	26	3022	2	KED
		75		ug/L	0.039	1	3	869	3	KED
	Y	**89**		ug/L			442615	576064	0	Standard
	Kr	**83**		ug/L			113	158	3	Standard
>	**In-1**	**115**		ug/L			16120	15926	0	KED
	Cd	**111**	**0.041**	ug/L	0.017	42	4	17	30	KED
	Cd	**114**	**0.047**	ug/L	0.022	46	2	41	43	KED
>	**In**	**115**		ug/L			952267	902101	1	Standard
	Ag	**107**	**0.030**	ug/L	0.002	7	34	446	8	Standard
>	**Tb**	**159**		ug/L			2081530	2218896	1	Standard
	Pb	**208**	**1.980**	ug/L	0.035	1	552	245958	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor: ~~50~~ 20x DIL
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:21:34 MB 8/12/21
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	39562	1	Standard
	Cl	**37**		ug/L			5204433	5015780	2	Standard
>	**Sc**	**45**		ug/L			828611	912089	1	Standard
	V	**51**	**24.445**	ug/L	0.761	3	3117	612468	1	Standard
	V-1	**51**	**24.382**	ug/L	0.668	2	134	612876	1	Standard
	Cr	**52**	**13.904**	ug/L	0.361	2	9220	313213	1	Standard
	Cr	**53**	**13.990**	ug/L	0.075	0	87	35523	0	Standard
	Mn	**55**	**194.904**	ug/L	3.644	1	670	6230120	0	Standard
>	**Ge**	**72**		ug/L			72813	72991	0	KED
	Ni	**60**	**12.966**	ug/L	0.182	1	53	23655	0	KED
	Ni	**62**	**13.221**	ug/L	0.292	2	12	3844	2	KED
	Cu	**63**	**14.011**	ug/L	0.243	1	82	74319	1	KED
	Cu	**65**	**13.760**	ug/L	0.161	1	41	37487	0	KED
	Zn	**66**	**41.958**	ug/L	0.556	1	140	29208	1	KED
	Zn	**67**	**41.548**	ug/L	0.600	1	26	4823	1	KED
		75		ug/L	0.089	2	3	1328	2	KED
	Y	**89**		ug/L			442615	592611	1	Standard
	Kr	**83**		ug/L			113	168	8	Standard
>	**In-1**	**115**		ug/L			16120	16044	0	KED
	Cd	**111**	**0.075**	ug/L	0.008	10	4	27	8	KED
	Cd	**114**	**0.089**	ug/L	0.012	13	2	74	12	KED
>	**In**	**115**		ug/L			952267	918967	4	Standard
	Ag	**107**	**0.060**	ug/L	0.003	5	34	870	3	Standard
>	**Tb**	**159**		ug/L			2081530	2227741	0	Standard
	Pb	**208**	**8.923**	ug/L	0.120	1	552	1110773	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:25:36
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	45856	0	Standard
	Cl	**37**		ug/L			5204433	5033354	1	Standard
>	**Sc**	**45**		ug/L			828611	932197	1	Standard
	V	**51**	**28.569**	ug/L	0.630	2	3117	731039	1	Standard
	V-1	**51**	**28.499**	ug/L	0.562	1	134	732200	1	Standard
	Cr	**52**	**15.983**	ug/L	0.368	2	9220	366412	0	Standard
	Cr	**53**	**16.104**	ug/L	0.136	0	87	41775	1	Standard
	Mn	**55**	**209.442**	ug/L	4.228	2	670	6842240	1	Standard
>	**Ge**	**72**		ug/L			72813	73470	1	KED
	Ni	**60**	**19.646**	ug/L	0.298	1	53	36048	0	KED
	Ni	**62**	**20.171**	ug/L	0.278	1	12	5897	0	KED
	Cu	**63**	**14.013**	ug/L	0.254	1	82	74816	0	KED
	Cu	**65**	**14.058**	ug/L	0.117	0	41	38549	0	KED
	Zn	**66**	**27.074**	ug/L	0.623	2	140	19017	1	KED
	Zn	**67**	**26.905**	ug/L	1.087	4	26	3153	4	KED
		75		ug/L	0.029	1	3	923	1	KED
	Y	**89**		ug/L			442615	636539	2	Standard
	Kr	**83**		ug/L			113	185	14	Standard
>	**In-1**	**115**		ug/L			16120	16420	2	KED
	Cd	**111**	**0.054**	ug/L	0.014	26	4	21	23	KED
	Cd	**114**	**0.067**	ug/L	0.009	13	2	58	9	KED
>	**In**	**115**		ug/L			952267	901023	0	Standard
	Ag	**107**	**0.055**	ug/L	0.002	2	34	786	2	Standard
>	**Tb**	**159**		ug/L			2081530	2226554	1	Standard
	Pb	**208**	**5.787**	ug/L	0.119	2	552	720277	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:29:37
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	42660	2	Standard
	Cl	**37**		ug/L			5204433	4922546	0	Standard
>	**Sc**	**45**		ug/L			828611	920318	2	Standard
	V	**51**	**24.981**	ug/L	0.717	2	3117	631328	0	Standard
	V-1	**51**	**24.913**	ug/L	0.669	2	134	631735	0	Standard
	Cr	**52**	**10.304**	ug/L	0.371	3	9220	236782	1	Standard
	Cr	**53**	**10.488**	ug/L	0.213	2	87	26886	0	Standard
	Mn	**55**	**216.960**	ug/L	3.607	1	670	6996679	1	Standard
>	**Ge**	**72**		ug/L			72813	72778	0	KED
	Ni	**60**	**16.938**	ug/L	0.551	3	53	30798	3	KED
	Ni	**62**	**17.788**	ug/L	0.558	3	12	5152	2	KED
	Cu	**63**	**13.970**	ug/L	0.121	0	82	73892	1	KED
	Cu	**65**	**13.625**	ug/L	0.042	0	41	37013	0	KED
	Zn	**66**	**25.672**	ug/L	0.308	1	140	17872	1	KED
	Zn	**67**	**24.968**	ug/L	0.354	1	26	2900	0	KED
		75		ug/L	0.055	1	3	990	1	KED
	Y	**89**		ug/L			442615	606151	2	Standard
	Kr	**83**		ug/L			113	170	14	Standard
>	**In-1**	**115**		ug/L			16120	16284	1	KED
	Cd	**111**	**0.029**	ug/L	0.002	7	4	13	3	KED
	Cd	**114**	**0.048**	ug/L	0.014	30	2	42	27	KED
>	**In**	**115**		ug/L			952267	930415	0	Standard
	Ag	**107**	**0.049**	ug/L	0.003	6	34	720	7	Standard
>	**Tb**	**159**		ug/L			2081530	2229496	1	Standard
	Pb	**208**	**2.259**	ug/L	0.034	1	552	281854	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:34:03
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	46513	2	Standard
	Cl	**37**		ug/L			5204433	4965200	1	Standard
>	**Sc**	**45**		ug/L			828611	924995	1	Standard
	V	**51**	**27.457**	ug/L	0.210	0	3117	697386	1	Standard
	V-1	**51**	**27.487**	ug/L	0.165	0	134	700839	1	Standard
	Cr	**52**	**22.610**	ug/L	0.685	3	9220	510029	1	Standard
	Cr	**53**	**22.836**	ug/L	0.350	1	87	58737	1	Standard
	Mn	**55**	**164.720**	ug/L	1.545	0	670	5340305	1	Standard
>	**Ge**	**72**		ug/L			72813	71539	1	KED
	Ni	**60**	**36.982**	ug/L	0.597	1	53	66027	0	KED
	Ni	**62**	**37.742**	ug/L	0.792	2	12	10734	2	KED
		63		ug/L	0.242	1	82	74310	0	KED
	Cu	**65**	**14.046**	ug/L	0.179	1	41	37505	1	KED
		66		ug/L	0.618	1	140	23487	1	KED
	Zn	**67**	**32.648**	ug/L	1.156	3	26	3721	4	KED
	As	**75**	**2.956**	ug/L	0.026	0	3	989	1	KED
	Y	**89**		ug/L			442615	587719	1	Standard
	Kr	**83**		ug/L			113	164	16	Standard
>	**In-1**	**115**		ug/L			16120	16120	1	KED
	Cd	**111**	**0.088**	ug/L	0.022	25	4	31	19	KED
	Cd	**114**	**0.112**	ug/L	0.025	22	2	94	23	KED
>	**In**	**115**		ug/L			952267	914434	1	Standard
	Ag	**107**	**0.068**	ug/L	0.006	8	34	979	7	Standard
>	**Tb**	**159**		ug/L			2081530	2238373	0	Standard
	Pb	**208**	**3.708**	ug/L	0.016	0	552	464249	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:38:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	46813	4	Standard
	Cl	**37**		ug/L			5204433	4921976	0	Standard
>	**Sc**	**45**		ug/L			828611	927532	1	Standard
	V	**51**	**27.775**	ug/L	0.709	2	3117	707302	1	Standard
	V-1	**51**	**27.825**	ug/L	0.559	2	134	711327	0	Standard
	Cr	**52**	**20.641**	ug/L	0.587	2	9220	467866	1	Standard
	Cr	**53**	**20.992**	ug/L	0.241	1	87	54156	1	Standard
	Mn	**55**	**162.853**	ug/L	3.445	2	670	5293992	1	Standard
>	**Ge**	**72**		ug/L			72813	71959	0	KED
	Ni	**60**	**25.898**	ug/L	0.676	2	53	46526	2	KED
	Ni	**62**	**26.433**	ug/L	0.115	0	12	7565	0	KED
		63		ug/L	0.497	2	82	101972	2	KED
	Cu	**65**	**19.299**	ug/L	0.370	1	41	51816	1	KED
		66		ug/L	1.399	3	140	27253	2	KED
	Zn	**67**	**38.058**	ug/L	0.686	1	26	4358	1	KED
	As	**75**	**2.140**	ug/L	0.095	4	3	721	3	KED
	Y	**89**		ug/L			442615	579148	2	Standard
	Kr	**83**		ug/L			113	179	13	Standard
>	**In-1**	**115**		ug/L			16120	15980	0	KED
	Cd	**111**	**0.250**	ug/L	0.017	6	4	81	6	KED
	Cd	**114**	**0.256**	ug/L	0.004	1	2	208	0	KED
>	**In**	**115**		ug/L			952267	920796	1	Standard
	Ag	**107**	**0.077**	ug/L	0.006	7	34	1111	5	Standard
>	**Tb**	**159**		ug/L			2081530	2231260	1	Standard
	Pb	**208**	**4.436**	ug/L	0.170	3	552	553254	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:42:06
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	44785	0	Standard
	Cl	**37**		ug/L			5204433	5049676	2	Standard
>	**Sc**	**45**		ug/L			828611	918552	0	Standard
	V	**51**	**29.049**	ug/L	0.638	2	3117	732505	1	Standard
	V-1	**51**	**29.072**	ug/L	0.644	2	134	736077	1	Standard
	Cr	**52**	**21.661**	ug/L	0.487	2	9220	485798	1	Standard
	Cr	**53**	**21.935**	ug/L	0.387	1	87	56037	1	Standard
	Mn	**55**	**182.271**	ug/L	0.876	0	670	5868549	0	Standard
>	**Ge**	**72**		ug/L			72813	70807	1	KED
	Ni	**60**	**27.528**	ug/L	0.902	3	53	48653	2	KED
	Ni	**62**	**28.172**	ug/L	0.750	2	12	7932	1	KED
		63		ug/L	0.233	1	82	106812	1	KED
	Cu	**65**	**20.327**	ug/L	0.241	1	41	53704	1	KED
		66		ug/L	0.274	0	140	28071	0	KED
	Zn	**67**	**41.432**	ug/L	0.500	1	26	4666	2	KED
	As	**75**	**2.453**	ug/L	0.023	0	3	812	0	KED
	Y	**89**		ug/L			442615	604213	1	Standard
	Kr	**83**		ug/L			113	173	15	Standard
>	**In-1**	**115**		ug/L			16120	15632	2	KED
	Cd	**111**	**0.240**	ug/L	0.014	6	4	76	4	KED
	Cd	**114**	**0.251**	ug/L	0.046	18	2	200	15	KED
>	**In**	**115**		ug/L			952267	907235	3	Standard
	Ag	**107**	**0.084**	ug/L	0.002	2	34	1184	3	Standard
>	**Tb**	**159**		ug/L			2081530	2231504	1	Standard
	Pb	**208**	**4.674**	ug/L	0.060	1	552	583101	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:46:08
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	45825	1	Standard
	Cl	**37**		ug/L			5204433	4969761	0	Standard
>	**Sc**	**45**		ug/L			828611	926902	0	Standard
	V	**51**	**31.743**	ug/L	0.837	2	3117	807402	2	Standard
	V-1	**51**	**31.707**	ug/L	0.862	2	134	810054	2	Standard
	Cr	**52**	**21.456**	ug/L	0.041	0	9220	485707	1	Standard
	Cr	**53**	**21.620**	ug/L	0.278	1	87	55732	0	Standard
	Mn	**55**	**190.538**	ug/L	2.490	1	670	6190043	0	Standard
>	**Ge**	**72**		ug/L			72813	70836	0	KED
	Ni	**60**	**28.375**	ug/L	0.436	1	53	50180	1	KED
	Ni	**62**	**28.873**	ug/L	0.877	3	12	8133	2	KED
		63		ug/L	0.203	1	82	103568	0	KED
	Cu	**65**	**19.981**	ug/L	0.352	1	41	52809	1	KED
		66		ug/L	1.266	2	140	30391	2	KED
	Zn	**67**	**42.431**	ug/L	0.946	2	26	4780	2	KED
	As	**75**	**2.321**	ug/L	0.014	0	3	769	0	KED
	Y	**89**		ug/L			442615	609944	2	Standard
	Kr	**83**		ug/L			113	180	7	Standard
>	**In-1**	**115**		ug/L			16120	15706	1	KED
	Cd	**111**	**0.224**	ug/L	0.018	8	4	72	7	KED
	Cd	**114**	**0.239**	ug/L	0.043	17	2	192	18	KED
>	**In**	**115**		ug/L			952267	901340	3	Standard
	Ag	**107**	**0.084**	ug/L	0.004	4	34	1172	0	Standard
>	**Tb**	**159**		ug/L			2081530	2229204	0	Standard
	Pb	**208**	**4.888**	ug/L	0.046	0	552	609182	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:50:34
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	42966	1	Standard
	Cl	**37**		ug/L			5204433	4968593	0	Standard
>	**Sc**	**45**		ug/L			828611	906224	0	Standard
	V	**51**	**48.753**	ug/L	0.426	0	3117	1210617	0	Standard
	V-1	**51**	**48.902**	ug/L	0.447	0	134	1221497	0	Standard
	Cr	**52**	**42.000**	ug/L	0.475	1	9220	919872	0	Standard
	Cr	**53**	**42.658**	ug/L	0.913	2	87	107425	2	Standard
	Mn	**55**	**203.348**	ug/L	3.197	1	670	6459137	1	Standard
>	**Ge**	**72**		ug/L			72813	70838	0	KED
	Ni	**60**	**51.455**	ug/L	1.330	2	53	90945	1	KED
	Ni	**62**	**52.581**	ug/L	1.047	1	12	14805	2	KED
		63		ug/L	0.724	1	82	219394	1	KED
	Cu	**65**	**41.399**	ug/L	0.307	0	41	109379	0	KED
		66		ug/L	0.855	0	140	75328	0	KED
	Zn	**67**	**105.825**	ug/L	2.550	2	26	11883	1	KED
	As	**75**	**23.444**	ug/L	0.493	2	3	7745	2	KED
	Y	**89**		ug/L			442615	588760	1	Standard
	Kr	**83**		ug/L			113	173	1	Standard
>	**In-1**	**115**		ug/L			16120	15862	0	KED
	Cd	**111**	**21.509**	ug/L	0.462	2	4	6540	2	KED
	Cd	**114**	**21.852**	ug/L	0.315	1	2	17466	1	KED
>	**In**	**115**		ug/L			952267	854384	1	Standard
	Ag	**107**	**19.743**	ug/L	0.668	3	34	255368	1	Standard
>	**Tb**	**159**		ug/L			2081530	2175039	0	Standard
	Pb	**208**	**27.624**	ug/L	0.202	0	552	3356689	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL7
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 20:56:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	26689	1	Standard
	Cl	**37**		ug/L			5204433	4917596	0	Standard
⌈>	**Sc**	**45**		ug/L			828611	832707	1	Standard
|	**V**	**51**	**0.013**	ug/L	0.002	13	3117	3433	2	Standard
|	**V-1**	**51**	**0.013**	ug/L	0.002	14	134	421	8	Standard
|	**Cr**	**52**	**0.011**	ug/L	0.007	63	9220	9492	2	Standard
|	**Cr**	**53**	**0.009**	ug/L	0.007	73	87	109	12	Standard
⌊	**Mn**	**55**	**0.072**	ug/L	0.006	8	670	2782	5	Standard
⌈>	**Ge**	**72**		ug/L			72813	72389	1	KED
|	**Ni**	**60**	**0.222**	ug/L	0.024	10	53	454	10	KED
|	**Ni**	**62**	**0.250**	ug/L	0.055	21	12	83	17	KED
|	**Cu**	**63**	**0.013**	ug/L	0.003	25	82	150	11	KED
|	**Cu**	**65**	**0.009**	ug/L	0.001	8	41	64	1	KED
|	**Zn**	**66**	**0.041**	ug/L	0.027	66	140	167	10	KED
|	**Zn**	**67**	**-0.009**	ug/L	0.053	574	26	24	23	KED
⌊	**As**	**75**	**0.001**	ug/L	0.006	628	3	3	58	KED
	Y	**89**		ug/L			442615	439774	1	Standard
	Kr	**83**		ug/L			113	111	2	Standard
⌈>	**In-1**	**115**		ug/L			16120	16053	2	KED
|	**Cd**	**111**	**0.006**	ug/L	0.007	105	4	6	28	KED
⌊	**Cd**	**114**	**0.007**	ug/L	0.007	96	2	8	64	KED
⌈>	**In**	**115**		ug/L			952267	922455	2	Standard
⌊	**Ag**	**107**	**0.005**	ug/L	0.001	17	34	105	13	Standard
⌈>	**Tb**	**159**		ug/L			2081530	2121818	1	Standard
⌊	**Pb**	**208**	**0.012**	ug/L	0.001	5	552	1979	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV8
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:00:03
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	24918	2	Standard
	Cl	**37**		ug/L			5204433	5187151	1	Standard
>	**Sc**	**45**		ug/L			828611	825967	0	Standard
	V	**51**	**46.521**	ug/L	0.542	1	3117	1052978	0	Standard
	V-1	**51**	**46.654**	ug/L	0.445	0	134	1062106	0	Standard
	Cr	**52**	**46.466**	ug/L	0.621	1	9220	926550	0	Standard
	Cr	**53**	**46.892**	ug/L	0.522	1	87	107619	0	Standard
	Mn	**55**	**48.008**	ug/L	0.097	0	670	1390428	0	Standard
>	**Ge**	**72**		ug/L			72813	70829	0	KED
	Ni	**60**	**47.227**	ug/L	0.457	0	53	83480	1	KED
	Ni	**62**	**47.775**	ug/L	1.096	2	12	13451	2	KED
	Cu	**63**	**47.553**	ug/L	0.327	0	82	244586	0	KED
	Cu	**65**	**46.538**	ug/L	0.695	1	41	122934	0	KED
	Zn	**66**	**46.259**	ug/L	0.431	0	140	31234	1	KED
	Zn	**67**	**46.534**	ug/L	0.282	0	26	5239	1	KED
	As	**75**	**47.502**	ug/L	0.369	0	3	15689	1	KED
	Y	**89**		ug/L			442615	440323	0	Standard
	Kr	**83**		ug/L			113	130	14	Standard
>	**In-1**	**115**		ug/L			16120	15659	0	KED
	Cd	**111**	**48.909**	ug/L	0.430	0	4	14675	0	KED
	Cd	**114**	**48.196**	ug/L	0.570	1	2	38023	0	KED
>	**In**	**115**		ug/L			952267	912708	3	Standard
	Ag	**107**	**51.090**	ug/L	2.045	4	34	705535	0	Standard
>	**Tb**	**159**		ug/L			2081530	2132044	0	Standard
	Pb	**208**	**48.716**	ug/L	0.480	0	552	5802037	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB8
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:06:49
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	22543	2	Standard
	Cl	**37**		ug/L			5204433	4947613	1	Standard
>	**Sc**	**45**		ug/L			828611	832936	0	Standard
	V	**51**	**0.004**	ug/L	0.004	99	3117	3214	2	Standard
	V-1	**51**	**0.003**	ug/L	0.001	29	134	199	9	Standard
	Cr	**52**	**0.007**	ug/L	0.009	124	9220	9408	1	Standard
	Cr	**53**	**0.004**	ug/L	0.001	21	87	98	1	Standard
	Mn	**55**	**0.009**	ug/L	0.001	7	670	936	1	Standard
>	**Ge**	**72**		ug/L			72813	70703	0	KED
	Ni	**60**	**0.012**	ug/L	0.003	21	53	73	6	KED
	Ni	**62**	**0.017**	ug/L	0.014	83	12	16	24	KED
	Cu	**63**	**0.016**	ug/L	0.003	17	82	161	8	KED
	Cu	**65**	**0.017**	ug/L	0.004	23	41	85	12	KED
	Zn	**66**	**0.100**	ug/L	0.033	32	140	203	10	KED
	Zn	**67**	**0.137**	ug/L	0.044	32	26	40	11	KED
	As	**75**	**0.007**	ug/L	0.004	54	3	5	22	KED
	Y	**89**		ug/L			442615	432476	2	Standard
	Kr	**83**		ug/L			113	111	17	Standard
>	**In-1**	**115**		ug/L			16120	16278	2	KED
	Cd	**111**	**0.007**	ug/L	0.005	72	4	6	20	KED
	Cd	**114**	**0.004**	ug/L	0.003	58	2	6	32	KED
>	**In**	**115**		ug/L			952267	904558	1	Standard
	Ag	**107**	**0.006**	ug/L	0.000	2	34	109	1	Standard
>	**Tb**	**159**		ug/L			2081530	2112185	1	Standard
	Pb	**208**	**0.007**	ug/L	0.000	6	552	1412	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:10:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	44364	3	Standard
	Cl	**37**		ug/L			5204433	4932361	2	Standard
>	**Sc**	**45**		ug/L			828611	844627	2	Standard
	V	**51**	**0.014**	ug/L	0.006	42	3117	3509	3	Standard
	V-1	**51**	**0.004**	ug/L	0.001	26	134	222	10	Standard
		52		ug/L	0.011	9	9220	11549	2	Standard
	Cr	**53**	**0.070**	ug/L	0.006	8	87	253	6	Standard
	Mn	**55**	**0.227**	ug/L	0.005	2	670	7410	0	Standard
>	**Ge**	**72**		ug/L			72813	72564	1	KED
		60	**-**	ug/L	0.002	54	53	45	11	KED
	Ni	**62**	**-0.013**	ug/L	0.011	81	12	8	35	KED
		63		ug/L	0.003	16	82	191	7	KED
	Cu	**65**	**0.019**	ug/L	0.004	22	41	93	13	KED
		66		ug/L	0.011	7	140	236	3	KED
	Zn	**67**	**0.099**	ug/L	0.095	95	26	37	30	KED
		75		ug/L	0.004	132	3	4	29	KED
	Y	**89**		ug/L			442615	446114	1	Standard
	Kr	**83**		ug/L			113	115	15	Standard
>	**In-1**	**115**		ug/L			16120	16207	1	KED
		111		ug/L	0.005	495	4	5	28	KED
	Cd	**114**	**0.001**	ug/L	0.004	260	2	4	72	KED
>	**In**	**115**		ug/L			952267	938922	1	Standard
	Ag	**107**	**0.003**	ug/L	0.001	21	34	78	10	Standard
>	**Tb**	**159**		ug/L			2081530	2138499	2	Standard
		208		ug/L	0.000	17	552	852	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:14:54
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	47423	3	Standard
	Cl	**37**		ug/L			5204433	4992034	1	Standard
>	**Sc**	**45**		ug/L			828611	842243	0	Standard
	V	**51**	**23.403**	ug/L	0.152	0	3117	541741	0	Standard
	V-1	**51**	**23.536**	ug/L	0.226	0	134	546445	0	Standard
		52		ug/L	0.364	1	9220	486574	1	Standard
	Cr	**53**	**24.118**	ug/L	0.450	1	87	56487	1	Standard
	Mn	**55**	**24.186**	ug/L	0.108	0	670	714616	0	Standard
>	**Ge**	**72**		ug/L			72813	72904	0	KED
		60		ug/L	0.805	3	53	44140	2	KED
	Ni	**62**	**24.179**	ug/L	0.184	0	12	7012	0	KED
		63		ug/L	0.037	0	82	130252	0	KED
	Cu	**65**	**24.423**	ug/L	0.400	1	41	66425	1	KED
		66		ug/L	0.842	1	140	51447	0	KED
	Zn	**67**	**69.413**	ug/L	0.803	1	26	8031	0	KED
		75		ug/L	0.246	1	3	7915	1	KED
	Y	**89**		ug/L			442615	444508	0	Standard
	Kr	**83**		ug/L			113	120	15	Standard
>	**In-1**	**115**		ug/L			16120	16689	2	KED
		111		ug/L	0.140	0	4	7504	1	KED
	Cd	**114**	**23.760**	ug/L	0.390	1	2	19975	1	KED
>	**In**	**115**		ug/L			952267	910807	3	Standard
	Ag	**107**	**27.126**	ug/L	1.184	4	34	373858	1	Standard
>	**Tb**	**159**		ug/L			2081530	2098886	1	Standard
		208		ug/L	0.453	1	552	3023580	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:18:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	47531	1	Standard
	Cl	**37**		ug/L			5204433	4515405	3	Standard
>	**Sc**	**45**		ug/L			828611	906921	1	Standard
	V	**51**	**10.178**	ug/L	0.117	1	3117	255616	1	Standard
	V-1	**51**	**10.216**	ug/L	0.096	0	134	255490	1	Standard
		52		ug/L	0.114	1	9220	223829	0	Standard
	Cr	**53**	**9.990**	ug/L	0.031	0	87	25252	1	Standard
	Mn	**55**	**71.478**	ug/L	0.473	0	670	2272602	0	Standard
>	**Ge**	**72**		ug/L			72813	70911	1	KED
		60		ug/L	0.062	0	53	12268	1	KED
	Ni	**62**	**7.131**	ug/L	0.307	4	12	2019	4	KED
		63		ug/L	0.170	1	82	68353	1	KED
	Cu	**65**	**13.005**	ug/L	0.141	1	41	34423	0	KED
		66		ug/L	0.413	2	140	9969	1	KED
	Zn	**67**	**15.657**	ug/L	0.595	3	26	1782	4	KED
		75		ug/L	0.349	4	3	2817	2	KED
	Y	**89**		ug/L			442615	466734	0	Standard
	Kr	**83**		ug/L			113	133	25	Standard
>	**In-1**	**115**		ug/L			16120	15768	2	KED
		111		ug/L	0.007	17	4	17	14	KED
	Cd	**114**	**0.039**	ug/L	0.005	13	2	33	10	KED
>	**In**	**115**		ug/L			952267	923937	0	Standard
	Ag	**107**	**0.036**	ug/L	0.001	1	34	531	1	Standard
>	**Tb**	**159**		ug/L			2081530	2125834	1	Standard
		208		ug/L	0.039	2	552	221200	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:22:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	49144	2	Standard
	Cl	**37**		ug/L			5204433	4883394	0	Standard
>	**Sc**	**45**		ug/L			828611	902637	0	Standard
	V	**51**	**0.731**	ug/L	0.016	2	3117	21428	1	Standard
	V-1	**51**	**0.848**	ug/L	0.009	1	134	21241	1	Standard
		52		ug/L	0.033	1	9220	46266	2	Standard
	Cr	**53**	**2.024**	ug/L	0.078	3	87	5168	4	Standard
	Mn	**55**	**71.320**	ug/L	0.072	0	670	2256958	0	Standard
>	**Ge**	**72**		ug/L			72813	67531	0	KED
		60		ug/L	0.518	2	53	31072	1	KED
	Ni	**62**	**18.490**	ug/L	0.288	1	12	4969	1	KED
		63		ug/L	0.016	0	82	8048	1	KED
	Cu	**65**	**1.589**	ug/L	0.021	1	41	4039	0	KED
		66		ug/L	0.097	3	140	1842	3	KED
	Zn	**67**	**3.347**	ug/L	0.303	9	26	381	7	KED
		75		ug/L	0.166	1	3	3906	1	KED
	Y	**89**		ug/L			442615	422568	0	Standard
	Kr	**83**		ug/L			113	125	20	Standard
>	**In-1**	**115**		ug/L			16120	14950	3	KED
		111		ug/L	0.003	17	4	9	5	KED
	Cd	**114**	**0.009**	ug/L	0.003	37	2	9	27	KED
>	**In**	**115**		ug/L			952267	879529	2	Standard
	Ag	**107**	**0.009**	ug/L	0.003	28	34	153	20	Standard
>	**Tb**	**159**		ug/L			2081530	2083302	0	Standard
		208		ug/L	0.001	0	552	18892	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:26:53
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	50532	0	Standard
	Cl	**37**		ug/L			5204433	4870534	1	Standard
>	**Sc**	**45**		ug/L			828611	884005	0	Standard
	V	**51**	**0.942**	ug/L	0.013	1	3117	26069	1	Standard
	V-1	**51**	**1.047**	ug/L	0.005	0	134	25647	0	Standard
		52		ug/L	0.009	0	9220	53002	0	Standard
	Cr	**53**	**2.347**	ug/L	0.056	2	87	5854	1	Standard
	Mn	**55**	**29.917**	ug/L	0.225	0	670	927600	0	Standard
>	**Ge**	**72**		ug/L			72813	67793	1	KED
		60		ug/L	0.045	4	53	1726	2	KED
	Ni	**62**	**1.022**	ug/L	0.054	5	12	286	5	KED
		63		ug/L	0.066	3	82	8593	2	KED
	Cu	**65**	**1.716**	ug/L	0.034	1	41	4375	0	KED
		66		ug/L	0.199	2	140	5198	1	KED
	Zn	**67**	**7.479**	ug/L	0.271	3	26	826	1	KED
		75		ug/L	0.090	1	3	1819	0	KED
	Y	**89**		ug/L			442615	423867	0	Standard
	Kr	**83**		ug/L			113	119	18	Standard
>	**In-1**	**115**		ug/L			16120	15102	1	KED
		111		ug/L	0.008	867	4	4	52	KED
	Cd	**114**	**0.003**	ug/L	0.012	376	2	5	172	KED
>	**In**	**115**		ug/L			952267	904664	1	Standard
	Ag	**107**	**0.005**	ug/L	0.001	15	34	104	11	Standard
>	**Tb**	**159**		ug/L			2081530	2086310	1	Standard
		208		ug/L	0.001	0	552	20043	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:30:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	49437	1	Standard
	Cl	**37**		ug/L			5204433	4519298	1	Standard
>	**Sc**	**45**		ug/L			828611	886097	0	Standard
	V	**51**	**2.548**	ug/L	0.048	1	3117	65020	0	Standard
	V-1	**51**	**2.602**	ug/L	0.038	1	134	63683	0	Standard
		52		ug/L	0.054	1	9220	70939	0	Standard
	Cr	**53**	**3.046**	ug/L	0.024	0	87	7588	0	Standard
	Mn	**55**	**87.315**	ug/L	1.379	1	670	2712156	1	Standard
>	**Ge**	**72**		ug/L			72813	70176	0	KED
		60		ug/L	0.057	2	53	3562	3	KED
	Ni	**62**	**1.957**	ug/L	0.062	3	12	556	2	KED
		63		ug/L	0.092	1	82	30917	0	KED
	Cu	**65**	**5.880**	ug/L	0.104	1	41	15424	1	KED
		66		ug/L	0.063	0	140	7649	0	KED
	Zn	**67**	**10.519**	ug/L	0.184	1	26	1193	2	KED
		75		ug/L	0.049	1	3	1251	0	KED
	Y	**89**		ug/L			442615	433884	0	Standard
	Kr	**83**		ug/L			113	113	9	Standard
>	**In-1**	**115**		ug/L			16120	15437	2	KED
		111		ug/L	0.002	30	4	6	7	KED
	Cd	**114**	**0.021**	ug/L	0.007	33	2	18	25	KED
>	**In**	**115**		ug/L			952267	891758	2	Standard
	Ag	**107**	**0.011**	ug/L	0.001	5	34	180	4	Standard
>	**Tb**	**159**		ug/L			2081530	2088432	1	Standard
		208		ug/L	0.018	2	552	91175	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:34:57
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	51326	1	Standard
	Cl	**37**		ug/L			5204433	4630064	1	Standard
>	**Sc**	**45**		ug/L			828611	891664	1	Standard
	V	**51**	**2.683**	ug/L	0.031	1	3117	68725	0	Standard
	V-1	**51**	**2.752**	ug/L	0.022	0	134	67770	0	Standard
		52		ug/L	0.057	1	9220	76923	0	Standard
	Cr	**53**	**3.350**	ug/L	0.032	0	87	8386	0	Standard
	Mn	**55**	**88.452**	ug/L	1.024	1	670	2764679	0	Standard
>	**Ge**	**72**		ug/L			72813	68783	0	KED
		60		ug/L	0.063	2	53	3753	2	KED
	Ni	**62**	**2.221**	ug/L	0.245	11	12	617	10	KED
		63		ug/L	0.073	1	82	32137	0	KED
	Cu	**65**	**6.099**	ug/L	0.081	1	41	15681	1	KED
		66		ug/L	0.260	2	140	7732	2	KED
	Zn	**67**	**11.501**	ug/L	0.484	4	26	1276	4	KED
		75		ug/L	0.023	0	3	1231	0	KED
	Y	**89**		ug/L			442615	440895	2	Standard
	Kr	**83**		ug/L			113	132	9	Standard
>	**In-1**	**115**		ug/L			16120	14976	0	KED
		111		ug/L	0.010	37	4	11	23	KED
	Cd	**114**	**0.022**	ug/L	0.011	51	2	19	43	KED
>	**In**	**115**		ug/L			952267	903037	2	Standard
	Ag	**107**	**0.011**	ug/L	0.001	6	34	183	5	Standard
>	**Tb**	**159**		ug/L			2081530	2095358	0	Standard
		208		ug/L	0.019	2	552	92498	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:39:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	48501	2	Standard
	Cl	**37**		ug/L			5204433	4511790	1	Standard
>	**Sc**	**45**		ug/L			828611	880331	0	Standard
	V	**51**	**23.759**	ug/L	0.308	1	3117	574811	1	Standard
	V-1	**51**	**23.869**	ug/L	0.190	0	134	579243	0	Standard
		52		ug/L	0.323	1	9220	517818	1	Standard
	Cr	**53**	**24.482**	ug/L	0.125	0	87	59930	0	Standard
	Mn	**55**	**111.825**	ug/L	3.153	2	670	3450327	1	Standard
>	**Ge**	**72**		ug/L			72813	69463	1	KED
		60		ug/L	0.202	0	53	44855	1	KED
	Ni	**62**	**25.928**	ug/L	0.635	2	12	7163	2	KED
		63		ug/L	0.638	2	82	152318	1	KED
	Cu	**65**	**29.752**	ug/L	0.356	1	41	77083	0	KED
		66		ug/L	1.936	2	140	53653	1	KED
	Zn	**67**	**77.183**	ug/L	0.917	1	26	8505	0	KED
		75		ug/L	0.500	1	3	8674	0	KED
	Y	**89**		ug/L			442615	438532	2	Standard
	Kr	**83**		ug/L			113	97	14	Standard
>	**In-1**	**115**		ug/L			16120	15377	1	KED
		111		ug/L	0.852	3	4	6881	2	KED
	Cd	**114**	**23.061**	ug/L	0.373	1	2	17865	0	KED
>	**In**	**115**		ug/L			952267	920172	2	Standard
	Ag	**107**	**24.631**	ug/L	0.409	1	34	343175	0	Standard
>	**Tb**	**159**		ug/L			2081530	2091756	1	Standard
		208		ug/L	0.473	1	552	3008802	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:43:49
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	45742	1	Standard
	Cl	**37**		ug/L			5204433	4425688	0	Standard
>	**Sc**	**45**		ug/L			828611	871214	1	Standard
	V	**51**	**23.456**	ug/L	0.605	2	3117	561530	1	Standard
	V-1	**51**	**23.726**	ug/L	0.413	1	134	569747	0	Standard
		52		ug/L	0.781	3	9220	506007	1	Standard
	Cr	**53**	**24.688**	ug/L	0.230	0	87	59806	0	Standard
	Mn	**55**	**110.502**	ug/L	2.337	2	670	3374454	1	Standard
>	**Ge**	**72**		ug/L			72813	68669	1	KED
		60		ug/L	0.436	1	53	44937	1	KED
	Ni	**62**	**26.691**	ug/L	0.354	1	12	7290	2	KED
		63		ug/L	0.192	0	82	154085	1	KED
	Cu	**65**	**30.021**	ug/L	0.318	1	41	76897	0	KED
		66		ug/L	0.607	0	140	52616	1	KED
	Zn	**67**	**77.192**	ug/L	1.654	2	26	8408	0	KED
		75		ug/L	0.276	1	3	8626	0	KED
	Y	**89**		ug/L			442615	442682	0	Standard
	Kr	**83**		ug/L			113	117	6	Standard
>	**In-1**	**115**		ug/L			16120	15215	2	KED
		111		ug/L	0.762	3	4	6937	0	KED
	Cd	**114**	**23.886**	ug/L	0.708	2	2	18304	1	KED
>	**In**	**115**		ug/L			952267	902875	1	Standard
	Ag	**107**	**26.259**	ug/L	0.421	1	34	358989	0	Standard
>	**Tb**	**159**		ug/L			2081530	2089708	1	Standard
		208		ug/L	0.340	1	552	2980540	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL8
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:51:16
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	24613	0	Standard
	Cl	**37**		ug/L			5204433	4406334	3	Standard
>	**Sc**	**45**		ug/L			828611	790952	0	Standard
	V	**51**	**0.017**	ug/L	0.002	10	3117	3350	1	Standard
	V-1	**51**	**0.010**	ug/L	0.001	5	134	347	2	Standard
	Cr	**52**	**0.036**	ug/L	0.006	16	9220	9487	1	Standard
	Cr	**53**	**0.013**	ug/L	0.002	13	87	111	2	Standard
	Mn	**55**	**0.068**	ug/L	0.008	11	670	2511	8	Standard
>	**Ge**	**72**		ug/L			72813	68948	1	KED
	Ni	**60**	**0.223**	ug/L	0.016	7	53	434	5	KED
	Ni	**62**	**0.213**	ug/L	0.024	11	12	69	8	KED
	Cu	**63**	**0.011**	ug/L	0.004	38	82	133	14	KED
	Cu	**65**	**0.005**	ug/L	0.006	121	41	52	30	KED
	Zn	**66**	**0.116**	ug/L	0.022	18	140	208	7	KED
	Zn	**67**	**0.036**	ug/L	0.074	207	26	28	29	KED
	As	**75**	**0.011**	ug/L	0.003	28	3	6	16	KED
	Y	**89**		ug/L			442615	420809	2	Standard
	Kr	**83**		ug/L			113	106	10	Standard
>	**In-1**	**115**		ug/L			16120	15379	1	KED
	Cd	**111**	**0.002**	ug/L	0.005	264	4	5	28	KED
	Cd	**114**	**0.004**	ug/L	0.003	72	2	6	37	KED
>	**In**	**115**		ug/L			952267	883894	2	Standard
	Ag	**107**	**0.010**	ug/L	0.002	19	34	161	17	Standard
>	**Tb**	**159**		ug/L			2081530	2043775	2	Standard
	Pb	**208**	**0.014**	ug/L	0.001	4	552	2146	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 21:55:18
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	23196	0	Standard
	Cl	**37**		ug/L			5204433	4917318	1	Standard
>	**Sc**	**45**		ug/L			828611	785646	0	Standard
	V	**51**	**46.189**	ug/L	0.122	0	3117	994531	0	Standard
	V-1	**51**	**46.110**	ug/L	0.279	0	134	998553	1	Standard
	Cr	**52**	**46.891**	ug/L	0.443	0	9220	889317	0	Standard
	Cr	**53**	**46.621**	ug/L	0.124	0	87	101779	0	Standard
	Mn	**55**	**47.192**	ug/L	0.323	0	670	1300089	1	Standard
>	**Ge**	**72**		ug/L			72813	68844	0	KED
	Ni	**60**	**46.672**	ug/L	0.398	0	53	80187	1	KED
	Ni	**62**	**47.018**	ug/L	0.933	1	12	12864	1	KED
	Cu	**63**	**47.416**	ug/L	0.494	1	82	237040	0	KED
	Cu	**65**	**46.966**	ug/L	0.966	2	41	120603	2	KED
	Zn	**66**	**47.015**	ug/L	0.821	1	140	30853	2	KED
	Zn	**67**	**45.783**	ug/L	1.708	3	26	5011	3	KED
	As	**75**	**47.361**	ug/L	0.859	1	3	15203	1	KED
	Y	**89**		ug/L			442615	419153	1	Standard
	Kr	**83**		ug/L			113	113	10	Standard
>	**In-1**	**115**		ug/L			16120	15103	0	KED
	Cd	**111**	**48.727**	ug/L	0.581	1	4	14102	1	KED
	Cd	**114**	**47.958**	ug/L	0.228	0	2	36492	0	KED
>	**In**	**115**		ug/L			952267	847708	2	Standard
	Ag	**107**	**53.144**	ug/L	0.640	1	34	682166	2	Standard
>	**Tb**	**159**		ug/L			2081530	2086854	1	Standard
	Pb	**208**	**48.710**	ug/L	0.602	1	552	5677864	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:02:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	21862	2	Standard
	Cl	**37**		ug/L			5204433	4760448	0	Standard
⌈>	**Sc**	**45**		ug/L			828611	788814	0	Standard
|	**V**	**51**	**-0.002**	ug/L	0.002	147	3117	2934	2	Standard
|	**V-1**	**51**	**0.004**	ug/L	0.001	20	134	204	8	Standard
|	**Cr**	**52**	**-0.005**	ug/L	0.005	108	9220	8688	1	Standard
|	**Cr**	**53**	**0.012**	ug/L	0.005	41	87	108	9	Standard
⌊	**Mn**	**55**	**0.008**	ug/L	0.001	9	670	858	1	Standard
⌈>	**Ge**	**72**		ug/L			72813	69270	2	KED
|	**Ni**	**60**	**0.011**	ug/L	0.007	59	53	71	17	KED
|	**Ni**	**62**	**-0.012**	ug/L	0.015	126	12	8	48	KED
|	**Cu**	**63**	**0.013**	ug/L	0.001	4	82	142	2	KED
|	**Cu**	**65**	**0.014**	ug/L	0.003	19	41	74	10	KED
|	**Zn**	**66**	**0.085**	ug/L	0.007	8	140	189	2	KED
|	**Zn**	**67**	**0.047**	ug/L	0.080	171	26	29	28	KED
⌊	**As**	**75**	**0.008**	ug/L	0.007	87	3	5	41	KED
	Y	**89**		ug/L			442615	413059	1	Standard
	Kr	**83**		ug/L			113	114	5	Standard
⌈>	**In-1**	**115**		ug/L			16120	15453	1	KED
|	**Cd**	**111**	**-0.003**	ug/L	0.000	5	4	3	0	KED
⌊	**Cd**	**114**	**0.005**	ug/L	0.005	98	2	6	56	KED
⌈>	**In**	**115**		ug/L			952267	870634	2	Standard
⌊	**Ag**	**107**	**0.007**	ug/L	0.001	15	34	121	11	Standard
⌈>	**Tb**	**159**		ug/L			2081530	2072767	0	Standard
⌊	**Pb**	**208**	**0.007**	ug/L	0.001	8	552	1383	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:06:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	45489	1	Standard
	Cl	**37**		ug/L			5204433	4716751	1	Standard
>	**Sc**	**45**		ug/L			828611	815676	1	Standard
	V	**51**	**0.010**	ug/L	0.004	41	3117	3292	1	Standard
	V-1	**51**	**0.008**	ug/L	0.002	24	134	306	12	Standard
	Cr	**52**	**0.101**	ug/L	0.011	10	9220	11038	0	Standard
	Cr	**53**	**0.091**	ug/L	0.006	6	87	292	3	Standard
	Mn	**55**	**0.063**	ug/L	0.005	7	670	2470	5	Standard
>	**Ge**	**72**		ug/L			72813	70735	1	KED
	Ni	**60**	**-0.007**	ug/L	0.004	50	53	39	18	KED
	Ni	**62**	**-0.026**	ug/L	0.004	14	12	4	24	KED
		63		ug/L	0.003	12	82	205	7	KED
	Cu	**65**	**0.020**	ug/L	0.004	21	41	93	13	KED
		66		ug/L	0.053	12	140	424	7	KED
	Zn	**67**	**0.274**	ug/L	0.067	24	26	55	11	KED
	As	**75**	**0.001**	ug/L	0.006	469	3	3	54	KED
	Y	**89**		ug/L			442615	429118	0	Standard
	Kr	**83**		ug/L			113	120	8	Standard
>	**In-1**	**115**		ug/L			16120	15890	0	KED
	Cd	**111**	**-0.005**	ug/L	0.002	37	4	3	17	KED
	Cd	**114**	**0.003**	ug/L	0.007	222	2	5	104	KED
>	**In**	**115**		ug/L			952267	931787	1	Standard
	Ag	**107**	**0.006**	ug/L	0.002	32	34	111	21	Standard
>	**Tb**	**159**		ug/L			2081530	2120078	0	Standard
		208		ug/L	0.001	12	552	1231	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:10:09
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	48327	1	Standard
	Cl	**37**		ug/L			5204433	4821316	2	Standard
>	**Sc**	**45**		ug/L			828611	798763	0	Standard
	V	**51**	**23.512**	ug/L	0.225	0	3117	516166	1	Standard
	V-1	**51**	**23.516**	ug/L	0.268	1	134	517805	1	Standard
	Cr	**52**	**24.023**	ug/L	0.267	1	9220	467571	1	Standard
	Cr	**53**	**24.022**	ug/L	0.403	1	87	53359	1	Standard
	Mn	**55**	**24.737**	ug/L	0.144	0	670	693161	0	Standard
>	**Ge**	**72**		ug/L			72813	69708	2	KED
	Ni	**60**	**24.652**	ug/L	0.593	2	53	42897	1	KED
	Ni	**62**	**24.910**	ug/L	0.424	1	12	6905	0	KED
		63		ug/L	0.350	1	82	128392	0	KED
	Cu	**65**	**24.982**	ug/L	0.265	1	41	64965	1	KED
		66		ug/L	1.255	1	140	48215	0	KED
	Zn	**67**	**67.211**	ug/L	1.830	2	26	7436	3	KED
	As	**75**	**23.458**	ug/L	0.197	0	3	7626	1	KED
	Y	**89**		ug/L			442615	425883	1	Standard
	Kr	**83**		ug/L			113	123	3	Standard
>	**In-1**	**115**		ug/L			16120	15734	0	KED
	Cd	**111**	**24.259**	ug/L	0.118	0	4	7316	0	KED
	Cd	**114**	**23.433**	ug/L	0.335	1	2	18579	1	KED
>	**In**	**115**		ug/L			952267	908283	1	Standard
	Ag	**107**	**26.192**	ug/L	1.032	3	34	360175	2	Standard
>	**Tb**	**159**		ug/L			2081530	2103088	2	Standard
		208		ug/L	0.414	1	552	3004966	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:14:11
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	39634	0	Standard
	Cl	**37**		ug/L			5204433	4796068	0	Standard
>	**Sc**	**45**		ug/L			828611	796592	2	Standard
	V	**51**	**0.009**	ug/L	0.003	36	3117	3198	0	Standard
	V-1	**51**	**0.005**	ug/L	0.001	28	134	240	11	Standard
		52		ug/L	0.010	29	9220	9508	0	Standard
	Cr	**53**	**0.020**	ug/L	0.004	20	87	128	5	Standard
	Mn	**55**	**0.042**	ug/L	0.003	6	670	1806	2	Standard
>	**Ge**	**72**		ug/L			72813	69871	1	KED
		60	-	ug/L	0.007	195	53	45	27	KED
	Ni	**62**	**0.004**	ug/L	0.011	265	12	12	22	KED
		63		ug/L	0.008	2	82	1687	2	KED
	Cu	**65**	**0.310**	ug/L	0.002	0	41	846	0	KED
		66		ug/L	0.015	21	140	179	5	KED
	Zn	**67**	**0.073**	ug/L	0.044	60	26	33	14	KED
		75		ug/L	0.003	25	3	6	14	KED
	Y	**89**		ug/L			442615	425378	0	Standard
	Kr	**83**		ug/L			113	114	13	Standard
>	**In-1**	**115**		ug/L			16120	15839	3	KED
		111	-	ug/L	0.010	251	4	3	83	KED
	Cd	**114**	**0.008**	ug/L	0.004	54	2	9	35	KED
>	**In**	**115**		ug/L			952267	870363	2	Standard
	Ag	**107**	**0.008**	ug/L	0.001	10	34	136	5	Standard
>	**Tb**	**159**		ug/L			2081530	2097959	1	Standard
		208		ug/L	0.000	8	552	1093	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:18:13
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	42591	1	Standard
	Cl	**37**		ug/L			5204433	4792259	0	Standard
>	**Sc**	**45**		ug/L			828611	803402	1	Standard
	V	**51**	**23.042**	ug/L	0.422	1	3117	508771	1	Standard
	V-1	**51**	**23.190**	ug/L	0.415	1	134	513513	0	Standard
		52		ug/L	0.246	1	9220	458595	1	Standard
	Cr	**53**	**23.876**	ug/L	0.252	1	87	53337	0	Standard
	Mn	**55**	**24.086**	ug/L	0.756	3	670	678649	1	Standard
>	**Ge**	**72**		ug/L			72813	70427	1	KED
		60		ug/L	0.452	1	53	42478	0	KED
	Ni	**62**	**24.133**	ug/L	0.416	1	12	6760	0	KED
		63		ug/L	0.455	1	82	125838	0	KED
	Cu	**65**	**24.333**	ug/L	0.271	1	41	63934	1	KED
		66		ug/L	2.642	3	140	49664	2	KED
	Zn	**67**	**68.442**	ug/L	1.708	2	26	7649	1	KED
		75		ug/L	0.181	0	3	7608	0	KED
	Y	**89**		ug/L			442615	435246	2	Standard
	Kr	**83**		ug/L			113	140	11	Standard
>	**In-1**	**115**		ug/L			16120	15940	1	KED
		111		ug/L	0.115	0	4	7384	1	KED
	Cd	**114**	**24.054**	ug/L	0.111	0	2	19320	1	KED
>	**In**	**115**		ug/L			952267	874956	1	Standard
	Ag	**107**	**27.630**	ug/L	1.322	4	34	365927	2	Standard
>	**Tb**	**159**		ug/L			2081530	2098438	0	Standard
		208		ug/L	0.065	0	552	2976366	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:22:15
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	47665	1	Standard
	Cl	**37**		ug/L			5204433	9029740	0	Standard
>	**Sc**	**45**		ug/L			828611	832952	1	Standard
	V	**51**	**0.260**	ug/L	0.222	85	3117	9082	56	Standard
	V-1	**51**	**2.471**	ug/L	0.026	1	134	56845	0	Standard
		52		ug/L	0.965	1	9220	1205121	0	Standard
	Cr	**53**	**65.461**	ug/L	1.618	2	87	151453	1	Standard
	Mn	**55**	**6.234**	ug/L	0.107	1	670	182645	1	Standard
>	**Ge**	**72**		ug/L			72813	66848	0	KED
		60		ug/L	0.117	2	53	8065	1	KED
	Ni	**62**	**4.925**	ug/L	0.296	6	12	1318	5	KED
		63		ug/L	0.213	1	82	56920	1	KED
	Cu	**65**	**11.292**	ug/L	0.412	3	41	28179	3	KED
		66		ug/L	0.359	1	140	15857	1	KED
	Zn	**67**	**22.863**	ug/L	0.419	1	26	2441	0	KED
	As	**75**	**0.212**	ug/L	0.011	4	3	69	4	KED
	Y	**89**		ug/L			442615	425629	1	Standard
	Kr	**83**		ug/L			113	113	3	Standard
>	**In-1**	**115**		ug/L			16120	14726	2	KED
		111		ug/L	0.025	14	4	54	14	KED
	Cd	**114**	**0.164**	ug/L	0.028	17	2	124	18	KED
>	**In**	**115**		ug/L			952267	841027	2	Standard
	Ag	**107**	**0.012**	ug/L	0.001	5	34	186	5	Standard
>	**Tb**	**159**		ug/L			2081530	2049753	0	Standard
		208		ug/L	0.006	1	552	43560	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:27:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	51661	2	Standard
	Cl	**37**		ug/L			5204433	4806190	1	Standard
>	**Sc**	**45**		ug/L			828611	903021	0	Standard
	V	**51**	**1.155**	ug/L	0.024	2	3117	31895	1	Standard
	V-1	**51**	**1.227**	ug/L	0.018	1	134	30687	1	Standard
	Cr	**52**	**0.220**	ug/L	0.011	5	9220	14791	1	Standard
	Cr	**53**	**0.474**	ug/L	0.009	1	87	1285	1	Standard
	Mn	**55**	**42.853**	ug/L	0.175	0	670	1356984	0	Standard
>	**Ge**	**72**		ug/L			72813	69514	0	KED
	Ni	**60**	**0.289**	ug/L	0.015	5	53	553	4	KED
	Ni	**62**	**0.276**	ug/L	0.028	10	12	87	9	KED
		63		ug/L	0.008	2	82	1543	3	KED
	Cu	**65**	**0.291**	ug/L	0.026	8	41	792	7	KED
		66		ug/L	0.017	1	140	751	2	KED
	Zn	**67**	**0.918**	ug/L	0.140	15	26	125	11	KED
	As	**75**	**1.575**	ug/L	0.085	5	3	513	5	KED
	Y	**89**		ug/L			442615	437753	1	Standard
	Kr	**83**		ug/L			113	100	8	Standard
>	**In-1**	**115**		ug/L			16120	15564	1	KED
	Cd	**111**	**0.005**	ug/L	0.005	102	4	6	24	KED
	Cd	**114**	**0.004**	ug/L	0.008	189	2	6	99	KED
>	**In**	**115**		ug/L			952267	893856	4	Standard
	Ag	**107**	**0.020**	ug/L	0.001	5	34	300	4	Standard
>	**Tb**	**159**		ug/L			2081530	2081871	0	Standard
		208		ug/L	0.002	5	552	5654	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:31:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	48942	2	Standard
	Cl	**37**		ug/L			5204433	4655883	0	Standard
>	**Sc**	**45**		ug/L			828611	893677	1	Standard
	V	**51**	**0.029**	ug/L	0.005	18	3117	4067	2	Standard
	V-1	**51**	**0.102**	ug/L	0.001	0	134	2646	0	Standard
	Cr	**52**	**0.062**	ug/L	0.010	16	9220	11272	1	Standard
	Cr	**53**	**0.292**	ug/L	0.011	3	87	819	4	Standard
	Mn	**55**	**63.831**	ug/L	1.189	1	670	1999733	0	Standard
>	**Ge**	**72**		ug/L			72813	68946	1	KED
	Ni	**60**	**0.005**	ug/L	0.008	150	53	59	21	KED
	Ni	**62**	**0.007**	ug/L	0.013	194	12	13	28	KED
		63		ug/L	0.001	4	82	191	2	KED
	Cu	**65**	**0.031**	ug/L	0.011	34	41	120	23	KED
		66		ug/L	0.033	4	140	663	4	KED
	Zn	**67**	**1.346**	ug/L	0.134	9	26	171	7	KED
	As	**75**	**0.111**	ug/L	0.006	5	3	38	4	KED
	Y	**89**		ug/L			442615	434677	0	Standard
	Kr	**83**		ug/L			113	104	4	Standard
>	**In-1**	**115**		ug/L			16120	15575	0	KED
	Cd	**111**	**0.002**	ug/L	0.005	301	4	5	28	KED
	Cd	**114**	**0.001**	ug/L	0.004	532	2	3	94	KED
>	**In**	**115**		ug/L			952267	900471	1	Standard
	Ag	**107**	**0.002**	ug/L	0.001	30	34	65	13	Standard
>	**Tb**	**159**		ug/L			2081530	2117412	0	Standard
		208		ug/L	0.001	26	552	836	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:36:09
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	48220	2	Standard
	Cl	**37**		ug/L			5204433	4645831	1	Standard
>	**Sc**	**45**		ug/L			828611	903738	2	Standard
	V	**51**	**0.020**	ug/L	0.004	21	3117	3891	0	Standard
	V-1	**51**	**0.097**	ug/L	0.002	1	134	2559	0	Standard
	Cr	**52**	**0.078**	ug/L	0.007	9	9220	11742	1	Standard
	Cr	**53**	**0.321**	ug/L	0.003	1	87	900	2	Standard
	Mn	**55**	**63.431**	ug/L	1.378	2	670	2009206	0	Standard
>	**Ge**	**72**		ug/L			72813	70144	1	KED
	Ni	**60**	**0.014**	ug/L	0.004	26	53	76	8	KED
	Ni	**62**	**0.006**	ug/L	0.027	441	12	13	57	KED
		63		ug/L	0.006	16	82	262	11	KED
	Cu	**65**	**0.035**	ug/L	0.002	6	41	130	3	KED
		66		ug/L	0.074	8	140	705	6	KED
	Zn	**67**	**1.118**	ug/L	0.032	2	26	149	3	KED
	As	**75**	**0.102**	ug/L	0.010	9	3	36	8	KED
	Y	**89**		ug/L			442615	432917	0	Standard
	Kr	**83**		ug/L			113	107	14	Standard
>	**In-1**	**115**		ug/L			16120	15459	2	KED
	Cd	**111**	**0.006**	ug/L	0.006	107	4	6	31	KED
	Cd	**114**	**0.001**	ug/L	0.006	832	2	3	147	KED
>	**In**	**115**		ug/L			952267	902780	2	Standard
	Ag	**107**	**0.001**	ug/L	0.000	33	34	43	5	Standard
>	**Tb**	**159**		ug/L			2081530	2113429	1	Standard
		208		ug/L	0.000	25	552	645	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:40:35
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	50011	2	Standard
	Cl	**37**		ug/L			5204433	4742458	1	Standard
>	**Sc**	**45**		ug/L			828611	892989	2	Standard
	V	**51**	**19.937**	ug/L	0.483	2	3117	489738	2	Standard
	V-1	**51**	**19.937**	ug/L	0.449	2	134	490704	1	Standard
	Cr	**52**	**20.076**	ug/L	0.108	0	9220	438447	1	Standard
	Cr	**53**	**20.074**	ug/L	0.425	2	87	49853	1	Standard
	Mn	**55**	**81.254**	ug/L	2.268	2	670	2542858	1	Standard
>	**Ge**	**72**		ug/L			72813	69422	0	KED
	Ni	**60**	**22.915**	ug/L	0.387	1	53	39725	1	KED
	Ni	**62**	**23.062**	ug/L	0.054	0	12	6369	0	KED
		63		ug/L	0.164	0	82	116707	1	KED
	Cu	**65**	**22.300**	ug/L	0.285	1	41	57756	0	KED
		66		ug/L	0.373	0	140	44448	1	KED
	Zn	**67**	**63.554**	ug/L	0.699	1	26	7004	0	KED
	As	**75**	**22.146**	ug/L	0.399	1	3	7170	0	KED
	Y	**89**		ug/L			442615	433547	1	Standard
	Kr	**83**		ug/L			113	121	20	Standard
>	**In-1**	**115**		ug/L			16120	15627	1	KED
	Cd	**111**	**22.635**	ug/L	0.231	1	4	6780	0	KED
	Cd	**114**	**22.315**	ug/L	0.135	0	2	17570	0	KED
>	**In**	**115**		ug/L			952267	926496	1	Standard
	Ag	**107**	**24.315**	ug/L	0.589	2	34	341126	1	Standard
>	**Tb**	**159**		ug/L			2081530	2106966	1	Standard
		208		ug/L	0.300	1	552	2821903	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:48:02
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	25324	3	Standard
	Cl	**37**		ug/L			5204433	4902442	1	Standard
>	**Sc**	**45**		ug/L			828611	808949	0	Standard
	V	**51**	**0.012**	ug/L	0.001	11	3117	3312	1	Standard
	V-1	**51**	**0.005**	ug/L	0.000	6	134	237	3	Standard
	Cr	**52**	**0.037**	ug/L	0.007	19	9220	9707	1	Standard
	Cr	**53**	**0.012**	ug/L	0.004	28	87	113	7	Standard
	Mn	**55**	**0.018**	ug/L	0.001	7	670	1177	3	Standard
>	**Ge**	**72**		ug/L			72813	70217	2	KED
	Ni	**60**	**0.225**	ug/L	0.007	3	53	445	1	KED
	Ni	**62**	**0.196**	ug/L	0.034	17	12	66	11	KED
	Cu	**63**	**0.011**	ug/L	0.001	7	82	135	1	KED
	Cu	**65**	**0.012**	ug/L	0.004	32	41	70	15	KED
	Zn	**66**	**0.033**	ug/L	0.025	75	140	157	12	KED
	Zn	**67**	**0.003**	ug/L	0.007	276	26	25	4	KED
	As	**75**	**0.003**	ug/L	0.009	339	3	4	74	KED
	Y	**89**		ug/L			442615	421403	1	Standard
	Kr	**83**		ug/L			113	107	11	Standard
>	**In-1**	**115**		ug/L			16120	15776	2	KED
	Cd	**111**	**0.007**	ug/L	0.009	138	4	6	42	KED
	Cd	**114**	**0.006**	ug/L	0.009	160	2	7	94	KED
>	**In**	**115**		ug/L			952267	886223	2	Standard
	Ag	**107**	**0.015**	ug/L	0.002	12	34	238	9	Standard
>	**Tb**	**159**		ug/L			2081530	2083912	0	Standard
	Pb	**208**	**0.008**	ug/L	0.000	3	552	1432	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVA
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:52:04
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	23352	2	Standard
	Cl	**37**		ug/L			5204433	5209438	0	Standard
>	**Sc**	**45**		ug/L			828611	801368	1	Standard
	V	**51**	**46.021**	ug/L	0.144	0	3117	1010709	1	Standard
	V-1	**51**	**46.066**	ug/L	0.404	0	134	1017440	0	Standard
	Cr	**52**	**45.917**	ug/L	0.253	0	9220	888452	1	Standard
	Cr	**53**	**46.063**	ug/L	1.055	2	87	102547	0	Standard
	Mn	**55**	**46.501**	ug/L	0.631	1	670	1306492	0	Standard
>	**Ge**	**72**		ug/L			72813	69228	1	KED
	Ni	**60**	**47.279**	ug/L	1.676	3	53	81654	2	KED
	Ni	**62**	**47.508**	ug/L	0.586	1	12	13070	0	KED
	Cu	**63**	**47.988**	ug/L	1.184	2	82	241174	0	KED
	Cu	**65**	**46.236**	ug/L	0.658	1	41	119369	1	KED
	Zn	**66**	**47.655**	ug/L	0.407	0	140	31444	2	KED
	Zn	**67**	**46.483**	ug/L	0.556	1	26	5115	1	KED
	As	**75**	**47.376**	ug/L	0.563	1	3	15291	0	KED
	Y	**89**		ug/L			442615	431131	1	Standard
	Kr	**83**		ug/L			113	103	1	Standard
>	**In-1**	**115**		ug/L			16120	15668	1	KED
	Cd	**111**	**46.802**	ug/L	0.443	0	4	14051	0	KED
	Cd	**114**	**46.679**	ug/L	0.202	0	2	36851	1	KED
>	**In**	**115**		ug/L			952267	882530	1	Standard
	Ag	**107**	**52.173**	ug/L	0.488	0	34	697241	0	Standard
>	**Tb**	**159**		ug/L			2081530	2126256	0	Standard
	Pb	**208**	**48.895**	ug/L	0.374	0	552	5807459	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBA
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 22:58:51
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			21994	22009	1	Standard
	Cl	**37**		ug/L			5204433	4942538	2	Standard
>	**Sc**	**45**		ug/L			828611	800139	0	Standard
	V	**51**	**0.005**	ug/L	0.001	18	3117	3120	0	Standard
	V-1	**51**	**0.011**	ug/L	0.001	10	134	374	6	Standard
	Cr	**52**	**0.004**	ug/L	0.007	172	9220	8983	1	Standard
	Cr	**53**	**0.023**	ug/L	0.001	2	87	136	1	Standard
	Mn	**55**	**0.025**	ug/L	0.003	10	670	1360	5	Standard
>	**Ge**	**72**		ug/L			72813	68955	1	KED
	Ni	**60**	**0.011**	ug/L	0.003	30	53	69	9	KED
	Ni	**62**	**-0.002**	ug/L	0.018	849	12	10	44	KED
	Cu	**63**	**0.013**	ug/L	0.002	14	82	142	5	KED
	Cu	**65**	**0.016**	ug/L	0.004	23	41	79	12	KED
	Zn	**66**	**0.093**	ug/L	0.028	30	140	193	10	KED
	Zn	**67**	**0.130**	ug/L	0.062	48	26	38	15	KED
	As	**75**	**0.009**	ug/L	0.003	35	3	6	18	KED
	Y	**89**		ug/L			442615	424731	2	Standard
	Kr	**83**		ug/L			113	107	7	Standard
>	**In-1**	**115**		ug/L			16120	15755	1	KED
	Cd	**111**	**0.001**	ug/L	0.004	254	4	5	21	KED
	Cd	**114**	**0.008**	ug/L	0.005	63	2	9	42	KED
>	**In**	**115**		ug/L			952267	893209	5	Standard
	Ag	**107**	**0.044**	ug/L	0.003	5	34	633	0	Standard
>	**Tb**	**159**		ug/L			2081530	2079034	0	Standard
	Pb	**208**	**0.012**	ug/L	0.001	8	552	1888	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:02:54
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				22287	2	Standard
	Cl	**37**		ug/L				4880224	1	Standard
⌈>	**Sc**	**45**		ug/L				784146	1	Standard
|	**V**	**51**		ug/L				2997	1	Standard
|	**V-1**	**51**		ug/L				269	10	Standard
|	**Cr**	**52**		ug/L				8720	1	Standard
|	**Cr**	**53**		ug/L				113	3	Standard
⌊	**Mn**	**55**		ug/L				1024	5	Standard
⌈>	**Ge**	**72**		ug/L				69777	1	KED
|	**Ni**	**60**		ug/L				77	24	KED
|	**Ni**	**62**		ug/L				12	22	KED
|	**Cu**	**63**		ug/L				168	13	KED
|	**Cu**	**65**		ug/L				88	6	KED
|	**Zn**	**66**		ug/L				215	0	KED
|	**Zn**	**67**		ug/L				24	26	KED
⌊	**As**	**75**		ug/L				7	32	KED
	Y	**89**		ug/L				419657	0	Standard
	Kr	**83**		ug/L				121	10	Standard
⌈>	**In-1**	**115**		ug/L				15429	1	KED
|	**Cd**	**111**		ug/L				8	43	KED
⌊	**Cd**	**114**		ug/L				11	37	KED
⌈>	**In**	**115**		ug/L				883432	1	Standard
⌊	**Ag**	**107**		ug/L				147	10	Standard
⌈>	**Tb**	**159**		ug/L				2082091	1	Standard
⌊	**Pb**	**208**		ug/L				1476	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVB
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:06:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	23199	2	Standard
	Cl	**37**		ug/L			4880224	5200887	1	Standard
⌈>	**Sc**	**45**		ug/L			784146	795661	0	Standard
|	**V**	**51**	**46.348**	ug/L	0.768	1	2997	1010598	0	Standard
|	**V-1**	**51**	**46.543**	ug/L	0.630	1	269	1020812	0	Standard
|	**Cr**	**52**	**46.555**	ug/L	0.936	2	8720	894194	1	Standard
|	**Cr**	**53**	**47.168**	ug/L	0.358	0	113	104310	0	Standard
⌊	**Mn**	**55**	**48.020**	ug/L	1.111	2	1024	1339949	1	Standard
⌈>	**Ge**	**72**		ug/L			69777	69190	1	KED
|	**Ni**	**60**	**47.220**	ug/L	0.360	0	77	81559	1	KED
|	**Ni**	**62**	**46.993**	ug/L	0.628	1	12	12923	0	KED
|	**Cu**	**63**	**48.285**	ug/L	0.955	1	168	242664	0	KED
|	**Cu**	**65**	**46.743**	ug/L	0.195	0	88	120673	0	KED
|	**Zn**	**66**	**46.967**	ug/L	1.112	2	215	31050	1	KED
|	**Zn**	**67**	**47.006**	ug/L	1.405	2	24	5169	2	KED
⌊	**As**	**75**	**47.138**	ug/L	0.495	1	7	15212	0	KED
	Y	**89**		ug/L			419657	430781	1	Standard
	Kr	**83**		ug/L			121	135	11	Standard
⌈>	**In-1**	**115**		ug/L			15429	15692	1	KED
|	**Cd**	**111**	**47.256**	ug/L	0.706	1	8	14212	1	KED
⌊	**Cd**	**114**	**47.196**	ug/L	0.828	1	11	37332	3	KED
⌈>	**In**	**115**		ug/L			883432	878310	4	Standard
⌊	**Ag**	**107**	**52.897**	ug/L	2.652	5	147	702745	0	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2153229	0	Standard
⌊	**Pb**	**208**	**48.349**	ug/L	0.550	1	1476	5816209	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBB
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:13:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	22004	0	Standard
	Cl	**37**		ug/L			4880224	4985555	0	Standard
>	**Sc**	**45**		ug/L			784146	805376	1	Standard
	V	**51**	**0.020**	ug/L	0.011	53	2997	3520	5	Standard
	V-1	**51**	**0.025**	ug/L	0.011	41	269	836	27	Standard
	Cr	**52**	**0.012**	ug/L	0.022	182	8720	9185	3	Standard
	Cr	**53**	**0.029**	ug/L	0.020	70	113	179	23	Standard
	Mn	**55**	**0.036**	ug/L	0.019	53	1024	2072	25	Standard
>	**Ge**	**72**		ug/L			69777	69162	3	KED
	Ni	**60**	**-0.007**	ug/L	0.004	51	77	64	8	KED
	Ni	**62**	**-0.008**	ug/L	0.047	559	12	10	124	KED
	Cu	**63**	**-0.006**	ug/L	0.002	42	168	137	11	KED
	Cu	**65**	**0.003**	ug/L	0.005	194	88	93	11	KED
	Zn	**66**	**-0.010**	ug/L	0.010	97	215	206	5	KED
	Zn	**67**	**0.083**	ug/L	0.054	65	24	33	19	KED
	As	**75**	**-0.009**	ug/L	0.005	52	7	4	40	KED
	Y	**89**		ug/L			419657	426710	1	Standard
	Kr	**83**		ug/L			121	118	0	Standard
>	**In-1**	**115**		ug/L			15429	16047	3	KED
	Cd	**111**	**-0.012**	ug/L	0.009	69	8	4	52	KED
	Cd	**114**	**-0.005**	ug/L	0.003	65	11	8	36	KED
>	**In**	**115**		ug/L			883432	889681	3	Standard
	Ag	**107**	**0.060**	ug/L	0.012	20	147	949	15	Standard
>	**Tb**	**159**		ug/L			2082091	2114762	0	Standard
	Pb	**208**	**0.027**	ug/L	0.012	45	1476	4651	31	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:17:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	52875	0	Standard
	Cl	**37**		ug/L			4880224	5243195	2	Standard
>	**Sc**	**45**		ug/L			784146	866705	0	Standard
	V	**51**	**1.698**	ug/L	0.052	3	2997	43524	2	Standard
	V-1	**51**	**1.898**	ug/L	0.045	2	269	45636	1	Standard
		52		ug/L	0.017	8	8720	13922	2	Standard
	Cr	**53**	**0.882**	ug/L	0.032	3	113	2248	3	Standard
	Mn	**55**	**973.199**	ug/L	10.254	1	1024	29561786	0	Standard
>	**Ge**	**72**		ug/L			69777	68747	0	KED
	Ni	**60**	**1.486**	ug/L	0.041	2	77	2624	3	KED
	Ni	**62**	**1.591**	ug/L	0.016	1	12	446	1	KED
	Cu	**63**	**0.906**	ug/L	0.026	2	168	4685	2	KED
	Cu	**65**	**0.918**	ug/L	0.029	3	88	2440	3	KED
	Zn	**66**	**0.972**	ug/L	0.036	3	215	846	3	KED
	Zn	**67**	**1.043**	ug/L	0.069	6	24	137	4	KED
		75		ug/L	0.227	1	7	5128	1	KED
	Y	**89**		ug/L			419657	447024	0	Standard
	Kr	**83**		ug/L			121	125	11	Standard
>	**In-1**	**115**		ug/L			15429	15360	1	KED
	Cd	**111**	**0.001**	ug/L	0.003	244	8	8	11	KED
	Cd	**114**	**0.011**	ug/L	0.004	36	11	20	14	KED
>	**In**	**115**		ug/L			883432	840610	1	Standard
	Ag	**107**	**0.001**	ug/L	0.001	89	147	157	10	Standard
>	**Tb**	**159**		ug/L			2082091	2197801	1	Standard
	Pb	**208**	**0.048**	ug/L	0.002	3	1476	7476	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:22:13
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	46559	3	Standard
	Cl	**37**		ug/L			4880224	5332940	2	Standard
>	**Sc**	**45**		ug/L			784146	908891	0	Standard
	V	**51**	**3.531**	ug/L	0.021	0	2997	91176	0	Standard
	V-1	**51**	**3.755**	ug/L	0.024	0	269	94371	1	Standard
		52		ug/L	0.005	0	8720	22059	1	Standard
	Cr	**53**	**1.341**	ug/L	0.021	1	113	3514	2	Standard
	Mn	**55**	**853.778**	ug/L	11.129	1	1024	27197101	1	Standard
>	**Ge**	**72**		ug/L			69777	68150	1	KED
	Ni	**60**	**1.692**	ug/L	0.038	2	77	2951	1	KED
	Ni	**62**	**1.788**	ug/L	0.067	3	12	496	4	KED
	Cu	**63**	**1.368**	ug/L	0.044	3	168	6932	2	KED
	Cu	**65**	**1.389**	ug/L	0.018	1	88	3615	0	KED
	Zn	**66**	**1.889**	ug/L	0.039	2	215	1432	2	KED
	Zn	**67**	**2.007**	ug/L	0.075	3	24	240	4	KED
		75		ug/L	0.244	1	7	5906	0	KED
	Y	**89**		ug/L			419657	453588	0	Standard
	Kr	**83**		ug/L			121	128	3	Standard
>	**In-1**	**115**		ug/L			15429	15184	2	KED
	Cd	**111**	**0.006**	ug/L	0.013	211	8	9	36	KED
	Cd	**114**	**0.019**	ug/L	0.009	44	11	26	22	KED
>	**In**	**115**		ug/L			883432	870234	1	Standard
	Ag	**107**	**-0.002**	ug/L	0.001	49	147	113	13	Standard
>	**Tb**	**159**		ug/L			2082091	2218977	0	Standard
	Pb	**208**	**0.125**	ug/L	0.001	0	1476	17101	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:26:39
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	44709	0	Standard
	Cl	**37**		ug/L			4880224	5305384	3	Standard
>	**Sc**	**45**		ug/L			784146	896442	0	Standard
	V	**51**	**4.229**	ug/L	0.033	0	2997	107019	0	Standard
	V-1	**51**	**4.628**	ug/L	0.025	0	269	114645	0	Standard
		52		ug/L	0.011	2	8720	17810	0	Standard
	Cr	**53**	**1.736**	ug/L	0.018	1	113	4451	1	Standard
	Mn	**55**	**833.964**	ug/L	20.025	2	1024	26203479	2	Standard
>	**Ge**	**72**		ug/L			69777	69373	0	KED
	Ni	**60**	**1.673**	ug/L	0.047	2	77	2971	3	KED
	Ni	**62**	**1.632**	ug/L	0.038	2	12	462	2	KED
	Cu	**63**	**0.337**	ug/L	0.010	3	168	1864	2	KED
	Cu	**65**	**0.341**	ug/L	0.002	0	88	969	0	KED
	Zn	**66**	**4.406**	ug/L	0.088	1	215	3114	1	KED
	Zn	**67**	**4.219**	ug/L	0.188	4	24	487	4	KED
		75		ug/L	0.061	0	7	2890	0	KED
	Y	**89**		ug/L			419657	471408	0	Standard
	Kr	**83**		ug/L			121	133	16	Standard
>	**In-1**	**115**		ug/L			15429	15183	1	KED
	Cd	**111**	**-0.014**	ug/L	0.004	25	8	4	26	KED
	Cd	**114**	**0.004**	ug/L	0.005	140	11	14	27	KED
>	**In**	**115**		ug/L			883432	887413	0	Standard
	Ag	**107**	**-0.006**	ug/L	0.000	8	147	70	9	Standard
>	**Tb**	**159**		ug/L			2082091	2196118	1	Standard
	Pb	**208**	**0.050**	ug/L	0.001	1	1476	7671	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:31:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	48894	2	Standard
	Cl	**37**		ug/L			4880224	5774908	2	Standard
>	**Sc**	**45**		ug/L			784146	934324	0	Standard
	V	**51**	**4.105**	ug/L	0.027	0	2997	108383	0	Standard
	V-1	**51**	**4.391**	ug/L	0.028	0	269	113398	0	Standard
		52		ug/L	0.009	1	8720	23909	0	Standard
	Cr	**53**	**1.608**	ug/L	0.014	0	113	4305	1	Standard
	Mn	**55**	**549.408**	ug/L	2.602	0	1024	17991958	0	Standard
>	**Ge**	**72**		ug/L			69777	68552	1	KED
	Ni	**60**	**1.086**	ug/L	0.016	1	77	1933	1	KED
	Ni	**62**	**1.210**	ug/L	0.110	9	12	341	6	KED
	Cu	**63**	**2.004**	ug/L	0.043	2	168	10135	1	KED
	Cu	**65**	**1.988**	ug/L	0.046	2	88	5167	2	KED
	Zn	**66**	**1.685**	ug/L	0.026	1	215	1307	1	KED
	Zn	**67**	**1.956**	ug/L	0.328	16	24	236	16	KED
		75		ug/L	0.143	1	7	3636	1	KED
	Y	**89**		ug/L			419657	484499	3	Standard
	Kr	**83**		ug/L			121	137	9	Standard
>	**In-1**	**115**		ug/L			15429	15013	2	KED
	Cd	**111**	**-0.001**	ug/L	0.007	518	8	7	25	KED
	Cd	**114**	**0.005**	ug/L	0.010	177	11	15	46	KED
>	**In**	**115**		ug/L			883432	888727	3	Standard
	Ag	**107**	**-0.001**	ug/L	0.001	153	147	140	5	Standard
>	**Tb**	**159**		ug/L			2082091	2183534	1	Standard
	Pb	**208**	**0.141**	ug/L	0.004	2	1476	18756	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:35:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	42830	2	Standard
	Cl	**37**		ug/L			4880224	4830924	3	Standard
>	**Sc**	**45**		ug/L			784146	850923	1	Standard
	V	**51**	**0.272**	ug/L	0.009	3	2997	9564	1	Standard
	V-1	**51**	**0.418**	ug/L	0.006	1	269	10103	1	Standard
		52		ug/L	0.008	14	8720	10595	0	Standard
	Cr	**53**	**0.528**	ug/L	0.002	0	113	1369	1	Standard
	Mn	**55**	**43.800**	ug/L	0.692	1	1024	1307174	0	Standard
>	**Ge**	**72**		ug/L			69777	70757	0	KED
	Ni	**60**	**0.755**	ug/L	0.017	2	77	1410	2	KED
	Ni	**62**	**0.754**	ug/L	0.053	7	12	224	6	KED
	Cu	**63**	**0.258**	ug/L	0.008	3	168	1494	2	KED
	Cu	**65**	**0.247**	ug/L	0.015	5	88	740	5	KED
	Zn	**66**	**1.238**	ug/L	0.057	4	215	1049	3	KED
	Zn	**67**	**1.216**	ug/L	0.137	11	24	161	9	KED
		75		ug/L	0.066	10	7	217	9	KED
	Y	**89**		ug/L			419657	429571	0	Standard
	Kr	**83**		ug/L			121	117	8	Standard
>	**In-1**	**115**		ug/L			15429	15701	1	KED
	Cd	**111**	**-0.008**	ug/L	0.008	95	8	6	36	KED
	Cd	**114**	**-0.006**	ug/L	0.002	36	11	7	24	KED
>	**In**	**115**		ug/L			883432	913490	2	Standard
	Ag	**107**	**-0.002**	ug/L	0.001	40	147	125	9	Standard
>	**Tb**	**159**		ug/L			2082091	2114420	1	Standard
	Pb	**208**	**0.026**	ug/L	0.001	2	1476	4592	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:39:58
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	55582	1	Standard
	Cl	**37**		ug/L			4880224	5422949	0	Standard
>	**Sc**	**45**		ug/L			784146	915626	0	Standard
	V	**51**	**2.885**	ug/L	0.030	1	2997	75680	0	Standard
	V-1	**51**	**3.150**	ug/L	0.041	1	269	79786	0	Standard
		52		ug/L	0.011	2	8720	20547	1	Standard
	Cr	**53**	**1.378**	ug/L	0.053	3	113	3635	3	Standard
	Mn	**55**	**185.054**	ug/L	2.812	1	1024	5939400	1	Standard
>	**Ge**	**72**		ug/L			69777	67032	0	KED
	Ni	**60**	**0.811**	ug/L	0.062	7	77	1430	6	KED
	Ni	**62**	**0.918**	ug/L	0.062	6	12	256	5	KED
	Cu	**63**	**0.824**	ug/L	0.035	4	168	4170	3	KED
	Cu	**65**	**0.830**	ug/L	0.051	6	88	2158	5	KED
	Zn	**66**	**2.903**	ug/L	0.024	0	215	2053	0	KED
	Zn	**67**	**2.974**	ug/L	0.305	10	24	339	8	KED
		75		ug/L	0.127	2	7	1950	2	KED
	Y	**89**		ug/L			419657	471267	1	Standard
	Kr	**83**		ug/L			121	137	11	Standard
>	**In-1**	**115**		ug/L			15429	14525	1	KED
	Cd	**111**	**0.001**	ug/L	0.013	1986	8	7	45	KED
	Cd	**114**	**-0.005**	ug/L	0.009	173	11	7	95	KED
>	**In**	**115**		ug/L			883432	871125	2	Standard
	Ag	**107**	**-0.003**	ug/L	0.001	37	147	105	12	Standard
>	**Tb**	**159**		ug/L			2082091	2126029	0	Standard
	Pb	**208**	**0.117**	ug/L	0.001	0	1476	15396	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:44:24
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	56334	0	Standard
	Cl	**37**		ug/L			4880224	5578192	1	Standard
>	**Sc**	**45**		ug/L			784146	931272	2	Standard
	V	**51**	**3.253**	ug/L	0.050	1	2997	86330	1	Standard
	V-1	**51**	**3.625**	ug/L	0.058	1	269	93336	1	Standard
		52		ug/L	0.017	3	8720	22150	1	Standard
	Cr	**53**	**1.783**	ug/L	0.037	2	113	4743	1	Standard
	Mn	**55**	**392.066**	ug/L	4.172	1	1024	12795748	1	Standard
>	**Ge**	**72**		ug/L			69777	66689	0	KED
	Ni	**60**	**0.905**	ug/L	0.027	2	77	1579	3	KED
	Ni	**62**	**0.930**	ug/L	0.108	11	12	258	11	KED
	Cu	**63**	**0.129**	ug/L	0.003	2	168	785	2	KED
	Cu	**65**	**0.123**	ug/L	0.008	6	88	389	5	KED
	Zn	**66**	**1.081**	ug/L	0.046	4	215	890	3	KED
	Zn	**67**	**1.514**	ug/L	0.216	14	24	183	12	KED
		75		ug/L	0.006	1	7	109	1	KED
	Y	**89**		ug/L			419657	467206	2	Standard
	Kr	**83**		ug/L			121	126	17	Standard
>	**In-1**	**115**		ug/L			15429	15006	0	KED
	Cd	**111**	**-0.015**	ug/L	0.012	78	8	3	86	KED
	Cd	**114**	**-0.002**	ug/L	0.008	348	11	9	62	KED
>	**In**	**115**		ug/L			883432	870959	3	Standard
	Ag	**107**	**-0.007**	ug/L	0.001	9	147	58	12	Standard
>	**Tb**	**159**		ug/L			2082091	2119916	0	Standard
	Pb	**208**	**0.062**	ug/L	0.001	1	1476	8795	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:48:50
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	50602	1	Standard
	Cl	**37**		ug/L			4880224	5018338	1	Standard
>	**Sc**	**45**		ug/L			784146	890296	0	Standard
	V	**51**	**0.542**	ug/L	0.007	1	2997	16576	0	Standard
	V-1	**51**	**0.793**	ug/L	0.016	2	269	19771	1	Standard
		52		ug/L	0.006	4	8720	12444	1	Standard
	Cr	**53**	**0.930**	ug/L	0.025	2	113	2427	1	Standard
	Mn	**55**	**87.228**	ug/L	0.158	0	1024	2722895	0	Standard
>	**Ge**	**72**		ug/L			69777	69190	0	KED
	Ni	**60**	**1.533**	ug/L	0.013	0	77	2722	0	KED
	Ni	**62**	**1.629**	ug/L	0.195	11	12	460	11	KED
	Cu	**63**	**0.528**	ug/L	0.020	3	168	2817	3	KED
	Cu	**65**	**0.538**	ug/L	0.010	1	88	1476	2	KED
	Zn	**66**	**2.174**	ug/L	0.108	4	215	1641	4	KED
	Zn	**67**	**2.177**	ug/L	0.111	5	24	262	4	KED
		75		ug/L	0.051	3	7	443	3	KED
	Y	**89**		ug/L			419657	440649	1	Standard
	Kr	**83**		ug/L			121	128	19	Standard
>	**In-1**	**115**		ug/L			15429	15478	2	KED
	Cd	**111**	**0.004**	ug/L	0.023	578	8	9	72	KED
	Cd	**114**	**0.009**	ug/L	0.002	26	11	18	10	KED
>	**In**	**115**		ug/L			883432	896617	3	Standard
	Ag	**107**	**0.006**	ug/L	0.003	47	147	234	17	Standard
>	**Tb**	**159**		ug/L			2082091	2140360	1	Standard
	Pb	**208**	**0.052**	ug/L	0.002	4	1476	7789	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, August 12, 2021 23:54:16
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	61004	1	Standard
	Cl	**37**		ug/L			4880224	5990240	0	Standard
>	**Sc**	**45**		ug/L			784146	988055	1	Standard
	V	**51**	**7.166**	ug/L	0.128	1	2997	197202	0	Standard
	V-1	**51**	**7.414**	ug/L	0.124	1	269	202205	0	Standard
	Cr	**52**	**1.039**	ug/L	0.017	1	8720	35514	1	Standard
	Cr	**53**	**1.994**	ug/L	0.015	0	113	5613	2	Standard
	Mn	**55**	**1281.906**	ug/L	37.645	2	1024	44380918	1	Standard
>	**Ge**	**72**		ug/L			69777	64648	1	KED
	Ni	**60**	**1.710**	ug/L	0.074	4	77	2828	3	KED
	Ni	**62**	**1.700**	ug/L	0.065	3	12	448	4	KED
	Cu	**63**	**0.768**	ug/L	0.025	3	168	3760	2	KED
	Cu	**65**	**0.765**	ug/L	0.042	5	88	1923	4	KED
	Zn	**66**	**0.670**	ug/L	0.016	2	215	610	2	KED
	Zn	**67**	**1.548**	ug/L	0.333	21	24	180	17	KED
		75		ug/L	0.081	0	7	3558	1	KED
	Y	**89**		ug/L			419657	497477	1	Standard
	Kr	**83**		ug/L			121	153	2	Standard
>	**In-1**	**115**		ug/L			15429	14385	1	KED
	Cd	**111**	**-0.003**	ug/L	0.007	285	8	6	28	KED
	Cd	**114**	**0.007**	ug/L	0.004	54	11	16	18	KED
>	**In**	**115**		ug/L			883432	804546	1	Standard
	Ag	**107**	**-0.002**	ug/L	0.001	39	147	106	9	Standard
>	**Tb**	**159**		ug/L			2082091	2179356	1	Standard
	Pb	**208**	**0.059**	ug/L	0.002	4	1476	8729	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLA
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:01:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	26591	2	Standard
	Cl	**37**		ug/L			4880224	4669230	0	Standard
⌈>	**Sc**	**45**		ug/L			784146	816082	0	Standard
|	**V**	**51**	**-0.008**	ug/L	0.002	25	2997	2939	0	Standard
|	**V-1**	**51**	**0.001**	ug/L	0.000	44	269	303	2	Standard
|	**Cr**	**52**	**-0.020**	ug/L	0.009	43	8720	8690	1	Standard
|	**Cr**	**53**	**0.009**	ug/L	0.003	35	113	139	4	Standard
⌊	**Mn**	**55**	**0.167**	ug/L	0.023	13	1024	5840	11	Standard
⌈>	**Ge**	**72**		ug/L			69777	71278	1	KED
|	**Ni**	**60**	**0.217**	ug/L	0.020	9	77	466	8	KED
|	**Ni**	**62**	**0.183**	ug/L	0.059	32	12	64	25	KED
|	**Cu**	**63**	**-0.011**	ug/L	0.002	21	168	114	12	KED
|	**Cu**	**65**	**-0.009**	ug/L	0.003	40	88	67	12	KED
|	**Zn**	**66**	**-0.054**	ug/L	0.030	55	215	183	12	KED
|	**Zn**	**67**	**0.028**	ug/L	0.108	378	24	28	43	KED
⌊	**As**	**75**	**-0.009**	ug/L	0.001	16	7	4	12	KED
	Y	**89**		ug/L			419657	435200	2	Standard
	Kr	**83**		ug/L			121	108	6	Standard
⌈>	**In-1**	**115**		ug/L			15429	16118	2	KED
|	**Cd**	**111**	**-0.017**	ug/L	0.005	28	8	3	41	KED
⌊	**Cd**	**114**	**-0.010**	ug/L	0.003	33	11	4	71	KED
⌈>	**In**	**115**		ug/L			883432	929086	2	Standard
⌊	**Ag**	**107**	**-0.008**	ug/L	0.000	1	147	36	5	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2089553	1	Standard
⌊	**Pb**	**208**	**-0.002**	ug/L	0.001	31	1476	1282	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVC
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:06:10
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	23555	1	Standard
	Cl	**37**		ug/L			4880224	5041223	0	Standard
>	**Sc**	**45**		ug/L			784146	797799	0	Standard
	V	**51**	**45.962**	ug/L	0.627	1	2997	1004973	1	Standard
	V-1	**51**	**46.144**	ug/L	0.279	0	269	1014850	0	Standard
	Cr	**52**	**45.477**	ug/L	0.832	1	8720	876083	1	Standard
	Cr	**53**	**46.066**	ug/L	0.545	1	113	102156	1	Standard
	Mn	**55**	**47.036**	ug/L	0.870	1	1024	1316280	2	Standard
>	**Ge**	**72**		ug/L			69777	70158	0	KED
	Ni	**60**	**46.970**	ug/L	0.154	0	77	82262	0	KED
	Ni	**62**	**48.501**	ug/L	1.507	3	12	13524	2	KED
	Cu	**63**	**46.839**	ug/L	0.836	1	168	238710	1	KED
	Cu	**65**	**46.030**	ug/L	0.827	1	88	120486	1	KED
	Zn	**66**	**47.134**	ug/L	1.371	2	215	31597	2	KED
	Zn	**67**	**45.343**	ug/L	1.015	2	24	5057	2	KED
	As	**75**	**46.605**	ug/L	0.268	0	7	15251	0	KED
	Y	**89**		ug/L			419657	427199	1	Standard
	Kr	**83**		ug/L			121	137	16	Standard
>	**In-1**	**115**		ug/L			15429	15310	0	KED
	Cd	**111**	**48.909**	ug/L	0.388	0	8	14351	0	KED
	Cd	**114**	**47.839**	ug/L	0.590	1	11	36911	1	KED
>	**In**	**115**		ug/L			883432	906948	1	Standard
	Ag	**107**	**51.056**	ug/L	1.423	2	147	701168	1	Standard
>	**Tb**	**159**		ug/L			2082091	2107153	1	Standard
	Pb	**208**	**49.851**	ug/L	0.557	1	1476	5868289	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBC
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:12:57
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	22629	3	Standard
	Cl	**37**		ug/L			4880224	4900565	1	Standard
>	**Sc**	**45**		ug/L			784146	802100	1	Standard
	V	**51**	**-0.007**	ug/L	0.003	40	2997	2913	1	Standard
	V-1	**51**	**0.001**	ug/L	0.001	177	269	287	6	Standard
	Cr	**52**	**-0.019**	ug/L	0.007	37	8720	8550	0	Standard
	Cr	**53**	**0.005**	ug/L	0.006	121	113	126	9	Standard
	Mn	**55**	**0.046**	ug/L	0.004	9	1024	2334	3	Standard
>	**Ge**	**72**		ug/L			69777	70393	1	KED
	Ni	**60**	**-0.011**	ug/L	0.005	48	77	58	17	KED
	Ni	**62**	**-0.005**	ug/L	0.007	136	12	11	16	KED
	Cu	**63**	**-0.001**	ug/L	0.005	394	168	163	14	KED
	Cu	**65**	**-0.005**	ug/L	0.002	47	88	76	6	KED
	Zn	**66**	**-0.035**	ug/L	0.035	102	215	194	13	KED
	Zn	**67**	**-0.001**	ug/L	0.064	4524	24	24	27	KED
	As	**75**	**-0.007**	ug/L	0.003	47	7	5	21	KED
	Y	**89**		ug/L			419657	427616	2	Standard
	Kr	**83**		ug/L			121	116	11	Standard
>	**In-1**	**115**		ug/L			15429	15860	3	KED
	Cd	**111**	**-0.013**	ug/L	0.011	82	8	4	75	KED
	Cd	**114**	**-0.008**	ug/L	0.004	47	11	5	60	KED
>	**In**	**115**		ug/L			883432	918305	1	Standard
	Ag	**107**	**0.024**	ug/L	0.003	11	147	480	7	Standard
>	**Tb**	**159**		ug/L			2082091	2100625	0	Standard
	Pb	**208**	**-0.000**	ug/L	0.000	82	1476	1436	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:17:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	47507	2	Standard
	Cl	**37**		ug/L			4880224	4825835	1	Standard
>	**Sc**	**45**		ug/L			784146	797116	2	Standard
	V	**51**	**0.022**	ug/L	0.004	16	2997	3515	1	Standard
	V-1	**51**	**0.018**	ug/L	0.001	4	269	672	2	Standard
	Cr	**52**	**0.040**	ug/L	0.007	18	8720	9624	0	Standard
	Cr	**53**	**0.029**	ug/L	0.003	9	113	178	4	Standard
	Mn	**55**	**0.090**	ug/L	0.008	9	1024	3544	4	Standard
>	**Ge**	**72**		ug/L			69777	71334	0	KED
	Ni	**60**	**-0.016**	ug/L	0.008	50	77	50	27	KED
	Ni	**62**	**-0.010**	ug/L	0.004	40	12	10	10	KED
	Cu	**63**	**0.017**	ug/L	0.004	25	168	260	8	KED
	Cu	**65**	**0.011**	ug/L	0.005	46	88	120	12	KED
	Zn	**66**	**-0.108**	ug/L	0.010	8	215	146	4	KED
	Zn	**67**	**-0.016**	ug/L	0.052	316	24	23	26	KED
	As	**75**	**0.009**	ug/L	0.006	65	7	10	18	KED
	Y	**89**		ug/L			419657	428640	1	Standard
	Kr	**83**		ug/L			121	104	20	Standard
>	**In-1**	**115**		ug/L			15429	16018	1	KED
	Cd	**111**	**-0.002**	ug/L	0.006	302	8	7	24	KED
	Cd	**114**	**-0.007**	ug/L	0.001	13	11	6	13	KED
>	**In**	**115**		ug/L			883432	916809	1	Standard
		107	-	ug/L	0.001	69	147	131	13	Standard
>	**Tb**	**159**		ug/L			2082091	2098942	1	Standard
	Pb	**208**	**-0.006**	ug/L	0.000	5	1476	790	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:21:02
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	51478	1	Standard
	Cl	**37**		ug/L			4880224	5113923	0	Standard
>	**Sc**	**45**		ug/L			784146	805451	1	Standard
	V	**51**	**22.734**	ug/L	0.098	0	2997	503414	1	Standard
	V-1	**51**	**22.714**	ug/L	0.152	0	269	504455	1	Standard
	Cr	**52**	**23.074**	ug/L	0.388	1	8720	453125	0	Standard
	Cr	**53**	**23.001**	ug/L	0.691	3	113	51535	1	Standard
	Mn	**55**	**23.356**	ug/L	0.565	2	1024	660226	1	Standard
>	**Ge**	**72**		ug/L			69777	70394	0	KED
	Ni	**60**	**22.967**	ug/L	0.187	0	77	40401	1	KED
	Ni	**62**	**23.677**	ug/L	0.446	1	12	6632	2	KED
	Cu	**63**	**23.399**	ug/L	0.335	1	168	119738	0	KED
	Cu	**65**	**23.297**	ug/L	0.044	0	88	61236	0	KED
	Zn	**66**	**70.745**	ug/L	0.767	1	215	47479	0	KED
	Zn	**67**	**65.868**	ug/L	0.704	1	24	7360	1	KED
	As	**75**	**22.961**	ug/L	0.246	1	7	7542	0	KED
	Y	**89**		ug/L			419657	426711	1	Standard
	Kr	**83**		ug/L			121	121	4	Standard
>	**In-1**	**115**		ug/L			15429	15594	1	KED
	Cd	**111**	**23.443**	ug/L	0.401	1	8	7010	0	KED
	Cd	**114**	**23.510**	ug/L	0.359	1	11	18480	0	KED
>	**In**	**115**		ug/L			883432	895348	2	Standard
		107		ug/L	0.627	2	147	344473	3	Standard
>	**Tb**	**159**		ug/L			2082091	2160496	1	Standard
	Pb	**208**	**24.151**	ug/L	0.251	1	1476	2915749	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:25:04
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	51731	1	Standard
	Cl	**37**		ug/L			4880224	5036232	1	Standard
>	**Sc**	**45**		ug/L			784146	877173	0	Standard
	V	**51**	**0.485**	ug/L	0.002	0	2997	14970	0	Standard
	V-1	**51**	**0.597**	ug/L	0.008	1	269	14742	0	Standard
	Cr	**52**	**0.565**	ug/L	0.010	1	8720	21597	1	Standard
	Cr	**53**	**0.920**	ug/L	0.019	2	113	2367	1	Standard
	Mn	**55**	**6.289**	ug/L	0.079	1	1024	194485	1	Standard
>	**Ge**	**72**		ug/L			69777	69335	0	KED
	Ni	**60**	**1.046**	ug/L	0.055	5	77	1885	4	KED
	Ni	**62**	**1.042**	ug/L	0.054	5	12	299	5	KED
	Cu	**63**	**0.426**	ug/L	0.009	2	168	2313	1	KED
	Cu	**65**	**0.435**	ug/L	0.012	2	88	1212	2	KED
	Zn	**66**	**133.163**	ug/L	1.407	1	215	87843	1	KED
	Zn	**67**	**121.726**	ug/L	2.575	2	24	13376	2	KED
	As	**75**	**0.117**	ug/L	0.011	9	7	45	8	KED
	Y	**89**		ug/L			419657	431173	1	Standard
	Kr	**83**		ug/L			121	107	7	Standard
>	**In-1**	**115**		ug/L			15429	15228	2	KED
	Cd	**111**	**-0.009**	ug/L	0.008	82	8	5	40	KED
	Cd	**114**	**0.010**	ug/L	0.008	75	11	19	29	KED
>	**In**	**115**		ug/L			883432	903990	1	Standard
		107		ug/L	0.005	39	147	312	20	Standard
>	**Tb**	**159**		ug/L			2082091	2103909	1	Standard
	Pb	**208**	**0.214**	ug/L	0.005	2	1476	26670	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:29:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	52902	3	Standard
	Cl	**37**		ug/L			4880224	4981954	3	Standard
>	**Sc**	**45**		ug/L			784146	873441	0	Standard
	V	**51**	**0.075**	ug/L	0.002	3	2997	5117	1	Standard
	V-1	**51**	**0.188**	ug/L	0.000	0	269	4821	0	Standard
	Cr	**52**	**0.114**	ug/L	0.002	1	8720	12082	0	Standard
	Cr	**53**	**0.472**	ug/L	0.007	1	113	1270	0	Standard
	Mn	**55**	**89.219**	ug/L	1.271	1	1024	2732179	0	Standard
>	**Ge**	**72**		ug/L			69777	67420	0	KED
	Ni	**60**	**13.417**	ug/L	0.313	2	77	22632	1	KED
	Ni	**62**	**13.594**	ug/L	0.701	5	12	3651	4	KED
	Cu	**63**	**2.103**	ug/L	0.022	1	168	10453	0	KED
	Cu	**65**	**2.086**	ug/L	0.022	1	88	5328	0	KED
	Zn	**66**	**37.001**	ug/L	0.388	1	215	23884	1	KED
	Zn	**67**	**39.849**	ug/L	0.678	1	24	4274	2	KED
	As	**75**	**15.038**	ug/L	0.228	1	7	4733	1	KED
	Y	**89**		ug/L			419657	424033	0	Standard
	Kr	**83**		ug/L			121	117	12	Standard
>	**In-1**	**115**		ug/L			15429	14987	1	KED
	Cd	**111**	**-0.016**	ug/L	0.002	12	8	3	15	KED
	Cd	**114**	**-0.009**	ug/L	0.004	43	11	4	66	KED
>	**In**	**115**		ug/L			883432	889662	3	Standard
		107	-	ug/L	0.000	6	147	77	3	Standard
>	**Tb**	**159**		ug/L			2082091	2052647	1	Standard
	Pb	**208**	**4.244**	ug/L	0.110	2	1476	487919	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:33:33
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	49275	1	Standard
	Cl	**37**		ug/L			4880224	5064511	1	Standard
>	**Sc**	**45**		ug/L			784146	879837	2	Standard
	V	**51**	**0.026**	ug/L	0.001	2	2997	3977	1	Standard
	V-1	**51**	**0.132**	ug/L	0.003	2	269	3512	0	Standard
	Cr	**52**	**0.091**	ug/L	0.013	14	8720	11690	0	Standard
	Cr	**53**	**0.428**	ug/L	0.020	4	113	1172	2	Standard
	Mn	**55**	**82.954**	ug/L	1.279	1	1024	2558592	0	Standard
>	**Ge**	**72**		ug/L			69777	67050	1	KED
	Ni	**60**	**12.314**	ug/L	0.215	1	77	20661	0	KED
	Ni	**62**	**12.660**	ug/L	0.408	3	12	3383	3	KED
	Cu	**63**	**2.022**	ug/L	0.054	2	168	10001	2	KED
	Cu	**65**	**1.993**	ug/L	0.040	2	88	5065	0	KED
	Zn	**66**	**36.063**	ug/L	0.378	1	215	23153	1	KED
	Zn	**67**	**36.587**	ug/L	0.785	2	24	3904	1	KED
	As	**75**	**14.025**	ug/L	0.232	1	7	4390	0	KED
	Y	**89**		ug/L			419657	422648	3	Standard
	Kr	**83**		ug/L			121	111	10	Standard
>	**In-1**	**115**		ug/L			15429	14788	0	KED
	Cd	**111**	**-0.008**	ug/L	0.003	41	8	5	16	KED
	Cd	**114**	**-0.001**	ug/L	0.009	750	11	10	63	KED
>	**In**	**115**		ug/L			883432	868594	2	Standard
		107	-	ug/L	0.001	16	147	81	15	Standard
>	**Tb**	**159**		ug/L			2082091	2091139	0	Standard
	Pb	**208**	**3.830**	ug/L	0.071	1	1476	448853	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:37:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	49050	2	Standard
	Cl	**37**		ug/L			4880224	5237870	1	Standard
>	**Sc**	**45**		ug/L			784146	889935	1	Standard
	V	**51**	**19.135**	ug/L	0.270	1	2997	468741	2	Standard
	V-1	**51**	**19.269**	ug/L	0.158	0	269	472931	1	Standard
	Cr	**52**	**19.123**	ug/L	0.263	1	8720	416698	1	Standard
	Cr	**53**	**19.550**	ug/L	0.398	2	113	48427	1	Standard
	Mn	**55**	**99.892**	ug/L	0.933	0	1024	3116624	0	Standard
>	**Ge**	**72**		ug/L			69777	66839	0	KED
	Ni	**60**	**34.959**	ug/L	0.602	1	77	58351	2	KED
	Ni	**62**	**35.429**	ug/L	0.735	2	12	9416	2	KED
	Cu	**63**	**24.459**	ug/L	0.175	0	168	118846	1	KED
	Cu	**65**	**24.051**	ug/L	0.544	2	88	60023	2	KED
	Zn	**66**	**100.452**	ug/L	0.964	0	215	63929	1	KED
	Zn	**67**	**99.911**	ug/L	1.118	1	24	10588	1	KED
	As	**75**	**36.528**	ug/L	0.509	1	7	11389	1	KED
	Y	**89**		ug/L			419657	411626	1	Standard
	Kr	**83**		ug/L			121	135	17	Standard
>	**In-1**	**115**		ug/L			15429	14877	1	KED
	Cd	**111**	**22.310**	ug/L	0.503	2	8	6365	1	KED
	Cd	**114**	**22.191**	ug/L	0.795	3	11	16637	2	KED
>	**In**	**115**		ug/L			883432	875084	1	Standard
		107		ug/L	0.414	1	147	329161	0	Standard
>	**Tb**	**159**		ug/L			2082091	2079920	0	Standard
	Pb	**208**	**27.424**	ug/L	0.255	0	1476	3187398	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:45:26
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	50734	1	Standard
	Cl	**37**		ug/L			4880224	4751481	1	Standard
>	**Sc**	**45**		ug/L			784146	739843	1	Standard
	V	**51**	**1.059**	ug/L	0.027	2	2997	24243	2	Standard
	V-1	**51**	**1.192**	ug/L	0.015	1	269	24553	2	Standard
		52		ug/L	0.063	0	8720	144911	1	Standard
	Cr	**53**	**7.968**	ug/L	0.020	0	113	16473	1	Standard
	Mn	**55**	**2.514**	ug/L	0.035	1	1024	66147	0	Standard
>	**Ge**	**72**		ug/L			69777	61697	1	KED
		60		ug/L	0.076	7	77	1722	5	KED
	Ni	**62**	**1.040**	ug/L	0.086	8	12	266	8	KED
		63		ug/L	0.062	1	168	18165	2	KED
	Cu	**65**	**3.903**	ug/L	0.041	1	88	9054	0	KED
		66		ug/L	0.071	1	215	2509	1	KED
	Zn	**67**	**3.631**	ug/L	0.455	12	24	375	10	KED
		75		ug/L	0.019	18	7	35	15	KED
	Y	**89**		ug/L			419657	416183	0	Standard
	Kr	**83**		ug/L			121	132	30	Standard
>	**In-1**	**115**		ug/L			15429	13972	0	KED
		111	**-**	ug/L	0.005	44	8	4	35	KED
	Cd	**114**	**-0.007**	ug/L	0.005	78	11	5	65	KED
>	**In**	**115**		ug/L			883432	841645	1	Standard
	Ag	**107**	**0.003**	ug/L	0.000	16	147	173	4	Standard
>	**Tb**	**159**		ug/L			2082091	2031845	0	Standard
		208		ug/L	0.001	34	1476	1678	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:49:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	56454	2	Standard
	Cl	**37**		ug/L			4880224	4682021	2	Standard
>	**Sc**	**45**		ug/L			784146	763000	2	Standard
	V	**51**	**0.834**	ug/L	0.117	14	2997	20316	13	Standard
	V-1	**51**	**1.186**	ug/L	0.000	0	269	25211	2	Standard
		52		ug/L	0.380	1	8720	551245	1	Standard
	Cr	**53**	**30.098**	ug/L	0.501	1	113	63856	0	Standard
	Mn	**55**	**3.051**	ug/L	0.043	1	1024	82599	3	Standard
>	**Ge**	**72**		ug/L			69777	62807	2	KED
		60		ug/L	0.026	2	77	1836	2	KED
	Ni	**62**	**1.142**	ug/L	0.095	8	12	295	6	KED
		63		ug/L	0.039	0	168	22228	1	KED
	Cu	**65**	**4.689**	ug/L	0.057	1	88	11058	1	KED
		66		ug/L	0.127	3	215	2508	4	KED
	Zn	**67**	**4.007**	ug/L	0.144	3	24	420	2	KED
		75		ug/L	0.008	9	7	29	9	KED
	Y	**89**		ug/L			419657	421756	1	Standard
	Kr	**83**		ug/L			121	107	5	Standard
>	**In-1**	**115**		ug/L			15429	13457	1	KED
		111	-	ug/L	0.016	746	8	6	62	KED
	Cd	**114**	**0.002**	ug/L	0.009	477	11	11	49	KED
>	**In**	**115**		ug/L			883432	856212	2	Standard
	Ag	**107**	**0.008**	ug/L	0.007	96	147	242	40	Standard
>	**Tb**	**159**		ug/L			2082091	2085204	2	Standard
		208		ug/L	0.010	48	1476	3954	28	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 00:55:18
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	77139	3	Standard
	Cl	**37**		ug/L			4880224	4532992	3	Standard
>	**Sc**	**45**		ug/L			784146	725891	2	Standard
	V	**51**	**1.253**	ug/L	0.043	3	2997	27637	4	Standard
	V-1	**51**	**1.443**	ug/L	0.021	1	269	29122	2	Standard
		52		ug/L	0.219	1	8720	239273	2	Standard
	Cr	**53**	**13.602**	ug/L	0.155	1	113	27512	1	Standard
	Mn	**55**	**14.202**	ug/L	0.242	1	1024	362215	1	Standard
>	**Ge**	**72**		ug/L			69777	59882	2	KED
		60		ug/L	0.128	3	77	5978	1	KED
	Ni	**62**	**4.134**	ug/L	0.115	2	12	994	4	KED
		63		ug/L	0.463	3	168	53835	1	KED
	Cu	**65**	**12.117**	ug/L	0.208	1	88	27122	1	KED
		66		ug/L	0.601	3	215	9191	2	KED
	Zn	**67**	**14.918**	ug/L	0.544	3	24	1433	1	KED
		75		ug/L	0.019	16	7	39	15	KED
	Y	**89**		ug/L			419657	416840	0	Standard
	Kr	**83**		ug/L			121	120	14	Standard
>	**In-1**	**115**		ug/L			15429	13036	1	KED
		111		ug/L	0.008	95	8	9	23	KED
	Cd	**114**	**0.006**	ug/L	0.004	63	11	13	19	KED
>	**In**	**115**		ug/L			883432	812725	3	Standard
	Ag	**107**	**-0.005**	ug/L	0.001	23	147	74	16	Standard
>	**Tb**	**159**		ug/L			2082091	2023163	0	Standard
		208		ug/L	0.000	3	1476	2269	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLB
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:02:45
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	26158	2	Standard
	Cl	**37**		ug/L			4880224	5057253	0	Standard
>	**Sc**	**45**		ug/L			784146	792819	0	Standard
	V	**51**	**0.027**	ug/L	0.003	9	2997	3610	1	Standard
	V-1	**51**	**-0.004**	ug/L	0.001	14	269	178	7	Standard
	Cr	**52**	**0.105**	ug/L	0.013	12	8720	10809	2	Standard
	Cr	**53**	**0.004**	ug/L	0.006	128	113	123	10	Standard
	Mn	**55**	**0.003**	ug/L	0.001	17	1024	1115	1	Standard
>	**Ge**	**72**		ug/L			69777	72654	0	KED
	Ni	**60**	**0.211**	ug/L	0.006	2	77	462	2	KED
	Ni	**62**	**0.161**	ug/L	0.003	1	12	59	1	KED
	Cu	**63**	**-0.010**	ug/L	0.004	41	168	121	17	KED
	Cu	**65**	**-0.008**	ug/L	0.006	68	88	69	21	KED
	Zn	**66**	**-0.079**	ug/L	0.015	19	215	169	6	KED
	Zn	**67**	**0.041**	ug/L	0.058	141	24	30	21	KED
	As	**75**	**-0.011**	ug/L	0.002	21	7	3	21	KED
	Y	**89**		ug/L			419657	442850	0	Standard
	Kr	**83**		ug/L			121	110	7	Standard
>	**In-1**	**115**		ug/L			15429	16132	0	KED
	Cd	**111**	**-0.011**	ug/L	0.008	67	8	5	47	KED
	Cd	**114**	**-0.009**	ug/L	0.003	30	11	4	47	KED
>	**In**	**115**		ug/L			883432	904825	1	Standard
	Ag	**107**	**-0.008**	ug/L	0.000	4	147	40	12	Standard
>	**Tb**	**159**		ug/L			2082091	2141108	2	Standard
	Pb	**208**	**-0.001**	ug/L	0.000	42	1476	1438	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVD
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:07:12
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	24104	1	Standard
	Cl	**37**		ug/L			4880224	5113464	1	Standard
>	**Sc**	**45**		ug/L			784146	786212	1	Standard
	V	**51**	**45.290**	ug/L	0.604	1	2997	975878	0	Standard
	V-1	**51**	**45.466**	ug/L	0.425	0	269	985367	0	Standard
	Cr	**52**	**45.401**	ug/L	1.003	2	8720	861847	1	Standard
	Cr	**53**	**45.956**	ug/L	0.798	1	113	100423	1	Standard
	Mn	**55**	**47.392**	ug/L	0.335	0	1024	1306962	1	Standard
>	**Ge**	**72**		ug/L			69777	70938	0	KED
	Ni	**60**	**47.593**	ug/L	0.443	0	77	84279	0	KED
	Ni	**62**	**47.630**	ug/L	0.842	1	12	13431	1	KED
	Cu	**63**	**47.547**	ug/L	0.520	1	168	245034	1	KED
	Cu	**65**	**46.928**	ug/L	1.464	3	88	124211	3	KED
	Zn	**66**	**47.079**	ug/L	0.170	0	215	31915	0	KED
	Zn	**67**	**46.221**	ug/L	0.988	2	24	5212	2	KED
	As	**75**	**46.511**	ug/L	0.340	0	7	15390	0	KED
	Y	**89**		ug/L			419657	440921	1	Standard
	Kr	**83**		ug/L			121	128	5	Standard
>	**In-1**	**115**		ug/L			15429	15472	1	KED
	Cd	**111**	**48.476**	ug/L	0.750	1	8	14374	0	KED
	Cd	**114**	**48.263**	ug/L	0.501	1	11	37630	0	KED
>	**In**	**115**		ug/L			883432	901896	1	Standard
	Ag	**107**	**52.696**	ug/L	1.418	2	147	719715	2	Standard
>	**Tb**	**159**		ug/L			2082091	2191395	1	Standard
	Pb	**208**	**49.323**	ug/L	0.959	1	1476	6038089	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBD
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:13:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	22843	2	Standard
	Cl	**37**		ug/L			4880224	5096697	1	Standard
⌈>	**Sc**	**45**		ug/L			784146	802349	0	Standard
|	**V**	**51**	**-0.004**	ug/L	0.002	60	2997	2977	1	Standard
|	**V-1**	**51**	**-0.001**	ug/L	0.001	95	269	252	8	Standard
|	**Cr**	**52**	**-0.012**	ug/L	0.006	49	8720	8690	1	Standard
|	**Cr**	**53**	**-0.002**	ug/L	0.001	51	113	110	2	Standard
⌊	**Mn**	**55**	**-0.010**	ug/L	0.001	5	1024	758	2	Standard
⌈>	**Ge**	**72**		ug/L			69777	71149	1	KED
|	**Ni**	**60**	**-0.004**	ug/L	0.006	151	77	71	17	KED
|	**Ni**	**62**	**0.006**	ug/L	0.008	142	12	14	15	KED
|	**Cu**	**63**	**-0.003**	ug/L	0.003	89	168	154	9	KED
|	**Cu**	**65**	**-0.009**	ug/L	0.001	7	88	67	3	KED
|	**Zn**	**66**	**-0.045**	ug/L	0.073	163	215	189	27	KED
|	**Zn**	**67**	**0.058**	ug/L	0.052	90	24	31	18	KED
⌊	**As**	**75**	**-0.010**	ug/L	0.006	58	7	4	46	KED
	Y	**89**		ug/L			419657	435642	1	Standard
	Kr	**83**		ug/L			121	118	3	Standard
⌈>	**In-1**	**115**		ug/L			15429	15829	1	KED
|	**Cd**	**111**	**-0.013**	ug/L	0.005	35	8	4	32	KED
⌊	**Cd**	**114**	**-0.008**	ug/L	0.002	29	11	5	34	KED
⌈>	**In**	**115**		ug/L			883432	898496	1	Standard
⌊	**Ag**	**107**	**0.018**	ug/L	0.002	10	147	395	6	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2110827	0	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.001	154	1476	1419	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:18:01
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	49640	2	Standard
	Cl	**37**		ug/L			4880224	4735951	1	Standard
>	**Sc**	**45**		ug/L			784146	899183	1	Standard
	V	**51**	**2.357**	ug/L	0.059	2	2997	61344	0	Standard
	V-1	**51**	**2.403**	ug/L	0.059	2	269	59852	0	Standard
		52		ug/L	0.013	3	8720	18490	0	Standard
	Cr	**53**	**0.594**	ug/L	0.020	3	113	1612	2	Standard
	Mn	**55**	**2053.387**	ug/L	32.952	1	1024	64701180	0	Standard
>	**Ge**	**72**		ug/L			69777	71732	0	KED
		60		ug/L	0.098	0	77	28769	0	KED
	Ni	**62**	**16.386**	ug/L	0.186	1	12	4680	0	KED
	Cu	**63**	**1.980**	ug/L	0.027	1	168	10482	0	KED
	Cu	**65**	**1.972**	ug/L	0.043	2	88	5364	2	KED
		66		ug/L	0.057	0	215	6987	1	KED
	Zn	**67**	**10.311**	ug/L	0.527	5	24	1195	5	KED
		75		ug/L	0.060	3	7	642	2	KED
	Y	**89**		ug/L			419657	451027	0	Standard
	Kr	**83**		ug/L			121	141	9	Standard
>	**In-1**	**115**		ug/L			15429	15648	1	KED
		111		ug/L	0.021	26	8	32	18	KED
	Cd	**114**	**0.082**	ug/L	0.022	27	11	76	22	KED
>	**In**	**115**		ug/L			883432	933394	2	Standard
	Ag	**107**	**0.003**	ug/L	0.002	67	147	200	16	Standard
>	**Tb**	**159**		ug/L			2082091	2169690	2	Standard
		208		ug/L	0.001	2	1476	6249	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:22:04
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	52720	2	Standard
	Cl	**37**		ug/L			4880224	4766802	2	Standard
>	**Sc**	**45**		ug/L			784146	866773	0	Standard
	V	**51**	**1.031**	ug/L	0.019	1	2997	27724	1	Standard
	V-1	**51**	**1.136**	ug/L	0.012	1	269	27439	0	Standard
		52		ug/L	0.011	5	8720	13980	0	Standard
	Cr	**53**	**0.567**	ug/L	0.013	2	113	1488	2	Standard
	Mn	**55**	**485.166**	ug/L	3.430	0	1024	14739202	0	Standard
>	**Ge**	**72**		ug/L			69777	70638	0	KED
		60		ug/L	0.111	2	77	6935	3	KED
	Ni	**62**	**3.971**	ug/L	0.299	7	12	1127	7	KED
		63		ug/L	0.196	0	168	276866	0	KED
	Cu	**65**	**53.905**	ug/L	0.051	0	88	142062	0	KED
		66		ug/L	0.099	2	215	2919	2	KED
	Zn	**67**	**4.332**	ug/L	0.158	3	24	509	3	KED
		75		ug/L	0.011	1	7	199	1	KED
	Y	**89**		ug/L			419657	439673	2	Standard
	Kr	**83**		ug/L			121	118	11	Standard
>	**In-1**	**115**		ug/L			15429	15530	0	KED
		111		ug/L	0.023	154	8	12	53	KED
	Cd	**114**	**0.011**	ug/L	0.008	66	11	20	29	KED
>	**In**	**115**		ug/L			883432	940539	1	Standard
	Ag	**107**	**0.007**	ug/L	0.012	158	147	262	63	Standard
>	**Tb**	**159**		ug/L			2082091	2159683	0	Standard
		208		ug/L	0.001	5	1476	3897	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:26:06
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	51390	1	Standard
	Cl	**37**		ug/L			4880224	4651517	1	Standard
>	**Sc**	**45**		ug/L			784146	881485	0	Standard
	V	**51**	**0.880**	ug/L	0.012	1	2997	24559	1	Standard
	V-1	**51**	**0.933**	ug/L	0.014	1	269	22974	1	Standard
		52		ug/L	0.008	1	8720	18906	0	Standard
	Cr	**53**	**0.614**	ug/L	0.016	2	113	1629	2	Standard
	Mn	**55**	**2331.073**	ug/L	13.336	0	1024	72017222	0	Standard
>	**Ge**	**72**		ug/L			69777	70455	1	KED
		60		ug/L	0.116	1	77	12273	2	KED
	Ni	**62**	**7.120**	ug/L	0.186	2	12	2004	1	KED
		63		ug/L	0.070	1	168	24511	1	KED
	Cu	**65**	**4.678**	ug/L	0.133	2	88	12376	2	KED
		66		ug/L	2.043	2	215	53992	1	KED
	Zn	**67**	**74.968**	ug/L	1.444	1	24	8380	1	KED
		75		ug/L	0.079	4	7	560	3	KED
	Y	**89**		ug/L			419657	442356	2	Standard
	Kr	**83**		ug/L			121	144	20	Standard
>	**In-1**	**115**		ug/L			15429	15417	0	KED
		111		ug/L	0.004	6	8	27	5	KED
	Cd	**114**	**0.083**	ug/L	0.022	26	11	75	21	KED
>	**In**	**115**		ug/L			883432	937034	0	Standard
	Ag	**107**	**0.001**	ug/L	0.002	150	147	170	12	Standard
>	**Tb**	**159**		ug/L			2082091	2149002	0	Standard
		208		ug/L	0.003	2	1476	14491	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:30:08
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	50986	3	Standard
	Cl	**37**		ug/L			4880224	4858869	1	Standard
>	**Sc**	**45**		ug/L			784146	889853	1	Standard
	V	**51**	**4.111**	ug/L	0.082	1	2997	103341	1	Standard
	V-1	**51**	**4.271**	ug/L	0.080	1	269	105022	1	Standard
		52		ug/L	0.043	2	8720	45364	1	Standard
	Cr	**53**	**2.241**	ug/L	0.048	2	113	5663	0	Standard
	Mn	**55**	**902.707**	ug/L	7.383	0	1024	28151920	0	Standard
>	**Ge**	**72**		ug/L			69777	70376	0	KED
		60		ug/L	0.035	1	77	4903	1	KED
	Ni	**62**	**2.816**	ug/L	0.176	6	12	800	6	KED
		63		ug/L	0.017	4	168	1945	3	KED
	Cu	**65**	**0.336**	ug/L	0.011	3	88	970	2	KED
		66		ug/L	0.038	3	215	1012	3	KED
	Zn	**67**	**1.748**	ug/L	0.210	12	24	219	10	KED
		75		ug/L	0.452	1	7	9343	0	KED
	Y	**89**		ug/L			419657	493636	0	Standard
	Kr	**83**		ug/L			121	134	13	Standard
>	**In-1**	**115**		ug/L			15429	15198	1	KED
		111	**-**	ug/L	0.007	40	8	3	62	KED
	Cd	**114**	**-0.007**	ug/L	0.006	84	11	6	77	KED
>	**In**	**115**		ug/L			883432	902076	3	Standard
	Ag	**107**	**-0.003**	ug/L	0.001	36	147	112	8	Standard
>	**Tb**	**159**		ug/L			2082091	2191704	1	Standard
		208		ug/L	0.001	3	1476	4853	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:34:34
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	49096	2	Standard
	Cl	**37**		ug/L			4880224	5061438	1	Standard
>	**Sc**	**45**		ug/L			784146	878097	0	Standard
	V	**51**	**0.592**	ug/L	0.006	1	2997	17560	0	Standard
	V-1	**51**	**0.840**	ug/L	0.018	2	269	20618	1	Standard
		52		ug/L	0.004	2	8720	13391	0	Standard
	Cr	**53**	**0.970**	ug/L	0.039	4	113	2491	3	Standard
	Mn	**55**	**327.058**	ug/L	5.457	1	1024	10065429	0	Standard
>	**Ge**	**72**		ug/L			69777	70195	1	KED
		60		ug/L	0.235	1	77	31556	0	KED
	Ni	**62**	**18.357**	ug/L	0.220	1	12	5129	1	KED
	Cu	**63**	**0.877**	ug/L	0.027	3	168	4635	2	KED
	Cu	**65**	**0.845**	ug/L	0.032	3	88	2300	1	KED
		66		ug/L	0.062	3	215	1348	1	KED
	Zn	**67**	**2.716**	ug/L	0.131	4	24	326	2	KED
		75		ug/L	0.005	1	7	103	3	KED
	Y	**89**		ug/L			419657	441824	1	Standard
	Kr	**83**		ug/L			121	133	20	Standard
>	**In-1**	**115**		ug/L			15429	15452	1	KED
		111		ug/L	0.008	48	8	13	16	KED
	Cd	**114**	**0.024**	ug/L	0.006	26	11	30	16	KED
>	**In**	**115**		ug/L			883432	897012	3	Standard
	Ag	**107**	**-0.005**	ug/L	0.001	18	147	78	13	Standard
>	**Tb**	**159**		ug/L			2082091	2140856	0	Standard
		208		ug/L	0.001	6	1476	3272	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:38:37
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	45918	2	Standard
	Cl	**37**		ug/L			4880224	4845995	0	Standard
>	**Sc**	**45**		ug/L			784146	888446	0	Standard
	V	**51**	**0.435**	ug/L	0.020	4	2997	13961	2	Standard
	V-1	**51**	**0.603**	ug/L	0.014	2	269	15056	1	Standard
		52		ug/L	0.012	9	8720	12650	1	Standard
	Cr	**53**	**0.670**	ug/L	0.015	2	113	1779	2	Standard
	Mn	**55**	**258.311**	ug/L	0.875	0	1024	8044443	0	Standard
>	**Ge**	**72**		ug/L			69777	68908	1	KED
		60		ug/L	0.035	2	77	2066	3	KED
	Ni	**62**	**1.158**	ug/L	0.142	12	12	328	10	KED
		63		ug/L	0.028	7	168	1896	5	KED
	Cu	**65**	**0.354**	ug/L	0.020	5	88	994	3	KED
		66		ug/L	0.093	14	215	636	10	KED
	Zn	**67**	**1.350**	ug/L	0.160	11	24	171	8	KED
		75		ug/L	0.070	4	7	537	2	KED
	Y	**89**		ug/L			419657	441840	2	Standard
	Kr	**83**		ug/L			121	131	8	Standard
>	**In-1**	**115**		ug/L			15429	15170	2	KED
		111	**-**	ug/L	0.007	81	8	5	33	KED
	Cd	**114**	**-0.013**	ug/L	0.001	11	11	1	52	KED
>	**In**	**115**		ug/L			883432	894408	1	Standard
	Ag	**107**	**-0.008**	ug/L	0.000	5	147	34	17	Standard
>	**Tb**	**159**		ug/L			2082091	2158781	1	Standard
		208		ug/L	0.001	2	1476	5804	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:42:39
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	44827	1	Standard
	Cl	**37**		ug/L			4880224	4852835	1	Standard
>	**Sc**	**45**		ug/L			784146	869182	1	Standard
	V	**51**	**0.445**	ug/L	0.001	0	2997	13894	1	Standard
	V-1	**51**	**0.617**	ug/L	0.006	1	269	15089	1	Standard
		52		ug/L	0.011	8	8720	12457	1	Standard
	Cr	**53**	**0.690**	ug/L	0.015	2	113	1789	2	Standard
	Mn	**55**	**266.043**	ug/L	0.955	0	1024	8105476	0	Standard
>	**Ge**	**72**		ug/L			69777	68691	0	KED
		60		ug/L	0.030	2	77	1923	2	KED
	Ni	**62**	**1.083**	ug/L	0.032	2	12	307	3	KED
		63		ug/L	0.008	2	168	1685	1	KED
	Cu	**65**	**0.302**	ug/L	0.022	7	88	860	6	KED
		66		ug/L	0.025	27	215	271	5	KED
	Zn	**67**	**0.914**	ug/L	0.169	18	24	123	15	KED
		75		ug/L	0.063	3	7	524	4	KED
	Y	**89**		ug/L			419657	429734	1	Standard
	Kr	**83**		ug/L			121	144	5	Standard
>	**In-1**	**115**		ug/L			15429	15300	3	KED
		111	**-**	ug/L	0.009	138	8	6	43	KED
	Cd	**114**	**-0.003**	ug/L	0.006	196	11	9	54	KED
>	**In**	**115**		ug/L			883432	924848	2	Standard
	Ag	**107**	**-0.008**	ug/L	0.000	4	147	36	15	Standard
>	**Tb**	**159**		ug/L			2082091	2112356	1	Standard
		208		ug/L	0.001	4	1476	4703	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:47:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	44948	3	Standard
	Cl	**37**		ug/L			4880224	4946362	0	Standard
>	**Sc**	**45**		ug/L			784146	879660	1	Standard
	V	**51**	**20.230**	ug/L	0.536	2	2997	489567	2	Standard
	V-1	**51**	**20.401**	ug/L	0.508	2	269	494855	2	Standard
		52		ug/L	0.301	1	8720	424945	0	Standard
	Cr	**53**	**20.305**	ug/L	0.330	1	113	49710	0	Standard
	Mn	**55**	**276.004**	ug/L	4.784	1	1024	8509033	0	Standard
>	**Ge**	**72**		ug/L			69777	68227	0	KED
		60		ug/L	0.352	1	77	41739	1	KED
	Ni	**62**	**24.381**	ug/L	0.489	2	12	6618	1	KED
		63		ug/L	0.132	0	168	120618	0	KED
	Cu	**65**	**23.669**	ug/L	0.415	1	88	60293	1	KED
		66		ug/L	1.666	2	215	44781	2	KED
	Zn	**67**	**64.724**	ug/L	2.662	4	24	7009	3	KED
		75		ug/L	0.351	1	7	7783	0	KED
	Y	**89**		ug/L			419657	435407	1	Standard
	Kr	**83**		ug/L			121	139	8	Standard
>	**In-1**	**115**		ug/L			15429	15121	1	KED
		111		ug/L	0.219	0	8	6753	1	KED
	Cd	**114**	**23.358**	ug/L	0.204	0	11	17806	1	KED
>	**In**	**115**		ug/L			883432	886328	1	Standard
	Ag	**107**	**26.925**	ug/L	0.221	0	147	361558	2	Standard
>	**Tb**	**159**		ug/L			2082091	2126086	1	Standard
		208		ug/L	0.253	1	1476	2951348	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 01:52:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	47368	0	Standard
	Cl	**37**		ug/L			4880224	5033993	3	Standard
>	**Sc**	**45**		ug/L			784146	885688	1	Standard
	V	**51**	**19.963**	ug/L	0.123	0	2997	486487	1	Standard
	V-1	**51**	**20.160**	ug/L	0.194	0	269	492379	0	Standard
		52		ug/L	0.172	0	8720	425350	1	Standard
	Cr	**53**	**20.263**	ug/L	0.417	2	113	49949	1	Standard
	Mn	**55**	**278.898**	ug/L	4.575	1	1024	8657627	1	Standard
>	**Ge**	**72**		ug/L			69777	68339	1	KED
		60		ug/L	0.639	2	77	41696	0	KED
	Ni	**62**	**24.676**	ug/L	0.381	1	12	6708	1	KED
		63		ug/L	0.164	0	168	118941	1	KED
	Cu	**65**	**23.749**	ug/L	0.165	0	88	60596	1	KED
		66		ug/L	1.248	1	215	44252	0	KED
	Zn	**67**	**66.153**	ug/L	1.762	2	24	7177	4	KED
		75		ug/L	0.459	1	7	7769	0	KED
	Y	**89**		ug/L			419657	430009	2	Standard
	Kr	**83**		ug/L			121	129	10	Standard
>	**In-1**	**115**		ug/L			15429	14999	1	KED
		111		ug/L	0.417	1	8	6643	0	KED
	Cd	**114**	**23.388**	ug/L	0.134	0	11	17683	1	KED
>	**In**	**115**		ug/L			883432	916039	1	Standard
	Ag	**107**	**25.124**	ug/L	0.236	0	147	348653	0	Standard
>	**Tb**	**159**		ug/L			2082091	2095097	1	Standard
		208		ug/L	0.089	0	1476	2890256	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLC
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:00:01
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	24823	1	Standard
	Cl	**37**		ug/L			4880224	5014960	1	Standard
>	**Sc**	**45**		ug/L			784146	764056	1	Standard
	V	**51**	**0.012**	ug/L	0.003	26	2997	3164	1	Standard
	V-1	**51**	**-0.000**	ug/L	0.001	1569	269	261	6	Standard
	Cr	**52**	**0.038**	ug/L	0.010	26	8720	9180	0	Standard
	Cr	**53**	**-0.001**	ug/L	0.003	598	113	108	6	Standard
	Mn	**55**	**0.083**	ug/L	0.006	6	1024	3220	4	Standard
>	**Ge**	**72**		ug/L			69777	68382	1	KED
	Ni	**60**	**0.196**	ug/L	0.017	8	77	410	5	KED
	Ni	**62**	**0.221**	ug/L	0.043	19	12	72	16	KED
	Cu	**63**	**-0.007**	ug/L	0.005	69	168	131	16	KED
	Cu	**65**	**-0.008**	ug/L	0.002	30	88	66	8	KED
	Zn	**66**	**-0.087**	ug/L	0.019	21	215	154	8	KED
	Zn	**67**	**-0.030**	ug/L	0.033	107	24	20	15	KED
	As	**75**	**-0.005**	ug/L	0.009	178	7	5	52	KED
	Y	**89**		ug/L			419657	422942	1	Standard
	Kr	**83**		ug/L			121	120	6	Standard
>	**In-1**	**115**		ug/L			15429	15500	1	KED
	Cd	**111**	**-0.010**	ug/L	0.002	17	8	5	10	KED
	Cd	**114**	**-0.002**	ug/L	0.003	142	11	9	28	KED
>	**In**	**115**		ug/L			883432	891733	1	Standard
	Ag	**107**	**0.005**	ug/L	0.002	39	147	221	13	Standard
>	**Tb**	**159**		ug/L			2082091	2084034	0	Standard
	Pb	**208**	**0.001**	ug/L	0.000	55	1476	1566	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVE
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:04:28
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	23856	0	Standard
	Cl	**37**		ug/L			4880224	5192003	1	Standard
>	**Sc**	**45**		ug/L			784146	780614	1	Standard
	V	**51**	**45.150**	ug/L	0.654	1	2997	965896	1	Standard
	V-1	**51**	**45.349**	ug/L	0.651	1	269	975788	1	Standard
	Cr	**52**	**45.397**	ug/L	1.494	3	8720	855410	1	Standard
	Cr	**53**	**46.019**	ug/L	1.229	2	113	99824	1	Standard
	Mn	**55**	**46.619**	ug/L	0.722	1	1024	1276309	1	Standard
>	**Ge**	**72**		ug/L			69777	68439	0	KED
	Ni	**60**	**46.932**	ug/L	0.623	1	77	80184	1	KED
	Ni	**62**	**47.442**	ug/L	0.217	0	12	12906	0	KED
	Cu	**63**	**47.834**	ug/L	0.422	0	168	237819	0	KED
	Cu	**65**	**46.763**	ug/L	0.353	0	88	119412	0	KED
	Zn	**66**	**47.525**	ug/L	0.802	1	215	31080	1	KED
	Zn	**67**	**46.399**	ug/L	0.906	1	24	5047	1	KED
	As	**75**	**46.759**	ug/L	0.167	0	7	14927	0	KED
	Y	**89**		ug/L			419657	416961	0	Standard
	Kr	**83**		ug/L			121	124	23	Standard
>	**In-1**	**115**		ug/L			15429	15427	3	KED
	Cd	**111**	**46.731**	ug/L	1.520	3	8	13809	0	KED
	Cd	**114**	**46.612**	ug/L	1.213	2	11	36221	0	KED
>	**In**	**115**		ug/L			883432	895443	1	Standard
	Ag	**107**	**52.605**	ug/L	1.637	3	147	713289	1	Standard
>	**Tb**	**159**		ug/L			2082091	2115672	1	Standard
	Pb	**208**	**50.099**	ug/L	0.377	0	1476	5921539	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBE
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:11:14
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	22473	1	Standard
	Cl	**37**		ug/L			4880224	5136933	0	Standard
⌈>	**Sc**	**45**		ug/L			784146	776250	0	Standard
|	**V**	**51**	**-0.003**	ug/L	0.003	97	2997	2906	1	Standard
|	**V-1**	**51**	**0.003**	ug/L	0.001	28	269	323	4	Standard
|	**Cr**	**52**	**-0.018**	ug/L	0.007	41	8720	8300	1	Standard
|	**Cr**	**53**	**-0.000**	ug/L	0.003	4360	113	111	5	Standard
⌊	**Mn**	**55**	**0.098**	ug/L	0.017	17	1024	3676	12	Standard
⌈>	**Ge**	**72**		ug/L			69777	68922	2	KED
|	**Ni**	**60**	**0.009**	ug/L	0.011	132	77	91	23	KED
|	**Ni**	**62**	**0.028**	ug/L	0.041	147	12	20	57	KED
|	**Cu**	**63**	**0.008**	ug/L	0.017	210	168	207	43	KED
|	**Cu**	**65**	**0.005**	ug/L	0.012	265	88	99	34	KED
|	**Zn**	**66**	**-0.008**	ug/L	0.070	901	215	208	24	KED
|	**Zn**	**67**	**0.084**	ug/L	0.084	100	24	33	27	KED
⌊	**As**	**75**	**-0.002**	ug/L	0.008	433	7	6	39	KED
	Y	**89**		ug/L			419657	423961	1	Standard
	Kr	**83**		ug/L			121	95	14	Standard
⌈>	**In-1**	**115**		ug/L			15429	15223	2	KED
|	**Cd**	**111**	**-0.003**	ug/L	0.011	390	8	7	39	KED
⌊	**Cd**	**114**	**0.008**	ug/L	0.010	123	11	17	40	KED
⌈>	**In**	**115**		ug/L			883432	907064	2	Standard
⌊	**Ag**	**107**	**0.025**	ug/L	0.002	7	147	498	4	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2066491	0	Standard
⌊	**Pb**	**208**	**0.004**	ug/L	0.002	45	1476	1905	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:15:18
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	41538	3	Standard
	Cl	**37**		ug/L			4880224	5184078	1	Standard
>	**Sc**	**45**		ug/L			784146	794904	0	Standard
	V	**51**	**0.006**	ug/L	0.005	84	2997	3163	3	Standard
	V-1	**51**	**0.000**	ug/L	0.001	296	269	279	7	Standard
		52		ug/L	0.016	40	8720	9577	3	Standard
	Cr	**53**	**0.021**	ug/L	0.003	14	113	160	4	Standard
	Mn	**55**	**0.223**	ug/L	0.005	2	1024	7241	1	Standard
>	**Ge**	**72**		ug/L			69777	70570	0	KED
		60	-	ug/L	0.010	38	77	34	47	KED
	Ni	**62**	**-0.019**	ug/L	0.007	37	12	7	25	KED
		63		ug/L	0.005	102	168	195	13	KED
	Cu	**65**	**0.004**	ug/L	0.003	73	88	100	8	KED
		66	-	ug/L	0.011	81	215	208	2	KED
	Zn	**67**	**-0.042**	ug/L	0.114	271	24	20	62	KED
		75	-	ug/L	0.005	45	7	3	38	KED
	Y	**89**		ug/L			419657	419849	1	Standard
	Kr	**83**		ug/L			121	104	14	Standard
>	**In-1**	**115**		ug/L			15429	15819	2	KED
		111	-	ug/L	0.006	38	8	3	56	KED
	Cd	**114**	**-0.005**	ug/L	0.006	112	11	7	61	KED
>	**In**	**115**		ug/L			883432	924657	2	Standard
		107		ug/L	0.000	9	147	193	1	Standard
>	**Tb**	**159**		ug/L			2082091	2108803	1	Standard
		208		ug/L	0.001	8	1476	732	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:19:44
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	42705	1	Standard
	Cl	**37**		ug/L			4880224	5135584	0	Standard
>	**Sc**	**45**		ug/L			784146	798550	0	Standard
	V	**51**	**22.309**	ug/L	0.338	1	2997	489833	1	Standard
	V-1	**51**	**22.347**	ug/L	0.123	0	269	492097	0	Standard
		52		ug/L	0.729	3	8720	444383	3	Standard
	Cr	**53**	**22.923**	ug/L	0.143	0	113	50939	1	Standard
	Mn	**55**	**23.604**	ug/L	0.336	1	1024	661638	1	Standard
>	**Ge**	**72**		ug/L			69777	70274	1	KED
		60		ug/L	0.267	1	77	41167	2	KED
	Ni	**62**	**24.187**	ug/L	0.398	1	12	6763	2	KED
		63		ug/L	0.230	0	168	130963	0	KED
	Cu	**65**	**25.154**	ug/L	0.221	0	88	65992	0	KED
		66		ug/L	1.246	1	215	49998	2	KED
	Zn	**67**	**69.584**	ug/L	0.642	0	24	7760	0	KED
		75		ug/L	0.216	0	7	7460	0	KED
	Y	**89**		ug/L			419657	438820	1	Standard
	Kr	**83**		ug/L			121	126	15	Standard
>	**In-1**	**115**		ug/L			15429	15569	0	KED
		111		ug/L	0.484	1	8	7257	1	KED
	Cd	**114**	**23.463**	ug/L	0.082	0	11	18415	0	KED
>	**In**	**115**		ug/L			883432	916693	3	Standard
		107		ug/L	0.702	2	147	365517	1	Standard
>	**Tb**	**159**		ug/L			2082091	2115315	1	Standard
		208		ug/L	0.292	1	1476	3002334	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:23:46
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	46182	1	Standard
	Cl	**37**		ug/L			4880224	5070044	1	Standard
>	**Sc**	**45**		ug/L			784146	824276	2	Standard
	V	**51**	**0.119**	ug/L	0.011	9	2997	5822	2	Standard
	V-1	**51**	**0.214**	ug/L	0.009	4	269	5148	2	Standard
		52		ug/L	0.112	2	8720	92147	0	Standard
	Cr	**53**	**4.405**	ug/L	0.107	2	113	10197	0	Standard
	Mn	**55**	**7.898**	ug/L	0.214	2	1024	229162	0	Standard
>	**Ge**	**72**		ug/L			69777	66899	2	KED
		60		ug/L	1.366	2	77	86512	0	KED
	Ni	**62**	**52.978**	ug/L	0.464	0	12	14085	1	KED
		63		ug/L	0.045	0	168	58107	1	KED
	Cu	**65**	**11.616**	ug/L	0.363	3	88	29046	1	KED
		66		ug/L	0.271	2	215	8528	0	KED
	Zn	**67**	**12.483**	ug/L	0.633	5	24	1344	5	KED
	As	**75**	**0.090**	ug/L	0.023	25	7	35	22	KED
	Y	**89**		ug/L			419657	427780	1	Standard
	Kr	**83**		ug/L			121	104	16	Standard
>	**In-1**	**115**		ug/L			15429	14809	0	KED
	Cd	**111**	**-0.006**	ug/L	0.008	151	8	6	37	KED
	Cd	**114**	**0.004**	ug/L	0.010	229	11	14	51	KED
>	**In**	**115**		ug/L			883432	895368	1	Standard
	Ag	**107**	**0.015**	ug/L	0.003	20	147	351	10	Standard
>	**Tb**	**159**		ug/L			2082091	2137857	0	Standard
	Pb	**208**	**0.125**	ug/L	0.003	2	1476	16419	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:28:12
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	47079	3	Standard
	Cl	**37**		ug/L			4880224	4825807	2	Standard
>	**Sc**	**45**		ug/L			784146	885230	0	Standard
	V	**51**	**0.763**	ug/L	0.005	0	2997	21848	0	Standard
	V-1	**51**	**0.845**	ug/L	0.005	0	269	20911	0	Standard
		52		ug/L	0.015	7	8720	13881	2	Standard
	Cr	**53**	**0.464**	ug/L	0.015	3	113	1268	3	Standard
	Mn	**55**	**389.976**	ug/L	3.610	0	1024	12100491	1	Standard
>	**Ge**	**72**		ug/L			69777	70131	0	KED
		60		ug/L	0.233	0	77	87702	0	KED
	Ni	**62**	**49.156**	ug/L	1.017	2	12	13703	1	KED
		63		ug/L	0.209	1	168	78327	1	KED
	Cu	**65**	**15.110**	ug/L	0.231	1	88	39600	1	KED
		66		ug/L	0.104	2	215	3325	1	KED
	Zn	**67**	**4.914**	ug/L	0.292	5	24	570	6	KED
		75		ug/L	0.026	0	7	904	1	KED
	Y	**89**		ug/L			419657	444877	1	Standard
	Kr	**83**		ug/L			121	148	10	Standard
>	**In-1**	**115**		ug/L			15429	15532	0	KED
		111		ug/L	0.021	61	8	18	33	KED
	Cd	**114**	**0.033**	ug/L	0.009	26	11	38	18	KED
>	**In**	**115**		ug/L			883432	914761	2	Standard
	Ag	**107**	**0.001**	ug/L	0.002	272	147	162	14	Standard
>	**Tb**	**159**		ug/L			2082091	2180323	1	Standard
		208		ug/L	0.001	2	1476	8093	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:32:38
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	49058	1	Standard
	Cl	**37**		ug/L			4880224	4709132	0	Standard
>	**Sc**	**45**		ug/L			784146	879431	1	Standard
	V	**51**	**0.374**	ug/L	0.008	2	2997	12351	2	Standard
	V-1	**51**	**0.467**	ug/L	0.008	1	269	11609	1	Standard
		52		ug/L	0.041	2	8720	45111	0	Standard
	Cr	**53**	**1.939**	ug/L	0.056	2	113	4860	1	Standard
	Mn	**55**	**92.227**	ug/L	1.129	1	1024	2843633	1	Standard
>	**Ge**	**72**		ug/L			69777	70777	1	KED
		60		ug/L	0.050	6	77	1379	4	KED
	Ni	**62**	**0.711**	ug/L	0.019	2	12	212	3	KED
		63		ug/L	0.020	1	168	8223	1	KED
	Cu	**65**	**1.523**	ug/L	0.087	5	88	4105	3	KED
		66		ug/L	0.108	4	215	1957	4	KED
	Zn	**67**	**3.119**	ug/L	0.291	9	24	373	7	KED
		75		ug/L	0.075	3	7	741	2	KED
	Y	**89**		ug/L			419657	442069	0	Standard
	Kr	**83**		ug/L			121	112	13	Standard
>	**In-1**	**115**		ug/L			15429	15414	1	KED
		111	**-**	ug/L	0.003	21	8	3	25	KED
	Cd	**114**	**-0.008**	ug/L	0.005	67	11	5	71	KED
>	**In**	**115**		ug/L			883432	925551	1	Standard
	Ag	**107**	**-0.005**	ug/L	0.001	18	147	86	12	Standard
>	**Tb**	**159**		ug/L			2082091	2131727	1	Standard
		208		ug/L	0.003	3	1476	11963	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:36:41
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	52943	1	Standard
	Cl	**37**		ug/L			4880224	4678281	1	Standard
>	**Sc**	**45**		ug/L			784146	873983	1	Standard
	V	**51**	**0.626**	ug/L	0.011	1	2997	18285	0	Standard
	V-1	**51**	**0.698**	ug/L	0.004	0	269	17120	1	Standard
		52		ug/L	0.045	3	8720	38527	1	Standard
	Cr	**53**	**1.589**	ug/L	0.017	1	113	3981	0	Standard
	Mn	**55**	**61.169**	ug/L	1.089	1	1024	1874583	1	Standard
>	**Ge**	**72**		ug/L			69777	70802	1	KED
		60		ug/L	0.020	3	77	1091	4	KED
	Ni	**62**	**0.568**	ug/L	0.103	18	12	172	17	KED
		63		ug/L	0.048	2	168	11258	1	KED
	Cu	**65**	**2.139**	ug/L	0.087	4	88	5736	4	KED
		66		ug/L	0.077	2	215	2263	3	KED
	Zn	**67**	**3.278**	ug/L	0.165	5	24	392	5	KED
		75		ug/L	0.076	6	7	410	5	KED
	Y	**89**		ug/L			419657	431709	1	Standard
	Kr	**83**		ug/L			121	113	2	Standard
>	**In-1**	**115**		ug/L			15429	15195	2	KED
		111	**-**	ug/L	0.005	25	8	2	65	KED
	Cd	**114**	**-0.009**	ug/L	0.003	35	11	5	44	KED
>	**In**	**115**		ug/L			883432	915872	1	Standard
		107		ug/L	0.000	6	147	64	8	Standard
>	**Tb**	**159**		ug/L			2082091	2169999	2	Standard
		208		ug/L	0.003	1	1476	19670	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:40:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	54138	2	Standard
	Cl	**37**		ug/L			4880224	4548036	0	Standard
>	**Sc**	**45**		ug/L			784146	875300	2	Standard
	V	**51**	**0.643**	ug/L	0.024	3	2997	18713	1	Standard
	V-1	**51**	**0.728**	ug/L	0.012	1	269	17868	0	Standard
		52		ug/L	0.054	3	8720	39575	0	Standard
	Cr	**53**	**1.677**	ug/L	0.016	0	113	4201	1	Standard
	Mn	**55**	**60.223**	ug/L	1.522	2	1024	1847972	0	Standard
>	**Ge**	**72**		ug/L			69777	69598	1	KED
		60		ug/L	0.014	2	77	1119	2	KED
	Ni	**62**	**0.615**	ug/L	0.126	20	12	182	19	KED
		63		ug/L	0.025	2	168	5490	2	KED
	Cu	**65**	**0.995**	ug/L	0.031	3	88	2670	4	KED
		66		ug/L	0.083	3	215	1632	2	KED
	Zn	**67**	**2.528**	ug/L	0.176	6	24	302	5	KED
		75		ug/L	0.069	5	7	415	4	KED
	Y	**89**		ug/L			419657	439766	1	Standard
	Kr	**83**		ug/L			121	128	6	Standard
>	**In-1**	**115**		ug/L			15429	15284	2	KED
		111	**-**	ug/L	0.009	82	8	5	47	KED
	Cd	**114**	**-0.001**	ug/L	0.008	846	11	10	56	KED
>	**In**	**115**		ug/L			883432	909352	1	Standard
		107		ug/L	0.001	67	147	130	10	Standard
>	**Tb**	**159**		ug/L			2082091	2165236	0	Standard
		208		ug/L	0.002	1	1476	20081	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:45:09
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	52561	1	Standard
	Cl	**37**		ug/L			4880224	4636557	0	Standard
>	**Sc**	**45**		ug/L			784146	865757	1	Standard
	V	**51**	**20.239**	ug/L	0.284	1	2997	482021	0	Standard
	V-1	**51**	**20.305**	ug/L	0.278	1	269	484729	0	Standard
		52		ug/L	0.363	1	8720	443769	1	Standard
	Cr	**53**	**21.172**	ug/L	0.216	1	113	51011	0	Standard
	Mn	**55**	**77.474**	ug/L	1.387	1	1024	2351601	0	Standard
>	**Ge**	**72**		ug/L			69777	71002	0	KED
		60		ug/L	0.285	1	77	40511	0	KED
	Ni	**62**	**22.767**	ug/L	0.609	2	12	6431	2	KED
		63		ug/L	0.499	2	168	121676	1	KED
	Cu	**65**	**22.991**	ug/L	0.008	0	88	60955	0	KED
		66		ug/L	1.492	2	215	47433	1	KED
	Zn	**67**	**68.089**	ug/L	1.959	2	24	7671	1	KED
		75		ug/L	0.652	2	7	7582	2	KED
	Y	**89**		ug/L			419657	435895	2	Standard
	Kr	**83**		ug/L			121	126	13	Standard
>	**In-1**	**115**		ug/L			15429	15627	1	KED
		111		ug/L	0.739	3	8	6588	2	KED
	Cd	**114**	**21.710**	ug/L	0.511	2	11	17105	2	KED
>	**In**	**115**		ug/L			883432	924117	2	Standard
		107		ug/L	0.082	0	147	333206	2	Standard
>	**Tb**	**159**		ug/L			2082091	2179478	0	Standard
		208		ug/L	0.186	0	1476	2852536	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:50:35
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	51887	1	Standard
	Cl	**37**		ug/L			4880224	4715722	0	Standard
>	**Sc**	**45**		ug/L			784146	878866	1	Standard
	V	**51**	**21.424**	ug/L	0.104	0	2997	517837	1	Standard
	V-1	**51**	**21.522**	ug/L	0.192	0	269	521546	0	Standard
		52		ug/L	0.137	0	8720	475716	1	Standard
	Cr	**53**	**22.468**	ug/L	0.436	1	113	54941	0	Standard
	Mn	**55**	**80.639**	ug/L	0.539	0	1024	2484990	1	Standard
>	**Ge**	**72**		ug/L			69777	70100	2	KED
		60		ug/L	0.538	2	77	42051	2	KED
	Ni	**62**	**24.097**	ug/L	0.568	2	12	6719	1	KED
		63		ug/L	0.299	1	168	125924	2	KED
	Cu	**65**	**24.213**	ug/L	0.301	1	88	63362	1	KED
		66		ug/L	1.319	1	215	47713	1	KED
	Zn	**67**	**67.192**	ug/L	1.929	2	24	7473	2	KED
		75		ug/L	0.601	2	7	7854	1	KED
	Y	**89**		ug/L			419657	435660	2	Standard
	Kr	**83**		ug/L			121	124	3	Standard
>	**In-1**	**115**		ug/L			15429	15610	0	KED
		111		ug/L	0.260	1	8	7163	1	KED
	Cd	**114**	**23.462**	ug/L	0.153	0	11	18463	0	KED
>	**In**	**115**		ug/L			883432	911210	1	Standard
		107		ug/L	0.988	3	147	349579	2	Standard
>	**Tb**	**159**		ug/L			2082091	2167487	1	Standard
		208		ug/L	0.510	2	1476	3018608	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLD
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 02:58:02
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	25637	0	Standard
	Cl	**37**		ug/L			4880224	4795401	1	Standard
>	**Sc**	**45**		ug/L			784146	794840	0	Standard
	V	**51**	**0.012**	ug/L	0.002	14	2997	3293	1	Standard
	V-1	**51**	**-0.002**	ug/L	0.001	28	269	226	5	Standard
	Cr	**52**	**0.038**	ug/L	0.002	6	8720	9554	0	Standard
	Cr	**53**	**-0.007**	ug/L	0.003	45	113	98	7	Standard
	Mn	**55**	**0.021**	ug/L	0.002	7	1024	1632	2	Standard
>	**Ge**	**72**		ug/L			69777	70159	1	KED
	Ni	**60**	**0.204**	ug/L	0.005	2	77	434	2	KED
	Ni	**62**	**0.260**	ug/L	0.018	6	12	85	4	KED
	Cu	**63**	**-0.003**	ug/L	0.000	10	168	153	0	KED
	Cu	**65**	**-0.005**	ug/L	0.004	93	88	76	13	KED
	Zn	**66**	**-0.052**	ug/L	0.025	47	215	181	8	KED
	Zn	**67**	**0.072**	ug/L	0.072	99	24	33	26	KED
	As	**75**	**-0.003**	ug/L	0.010	378	7	6	52	KED
	Y	**89**		ug/L			419657	430102	1	Standard
	Kr	**83**		ug/L			121	121	18	Standard
>	**In-1**	**115**		ug/L			15429	16450	1	KED
	Cd	**111**	**-0.013**	ug/L	0.006	46	8	4	40	KED
	Cd	**114**	**-0.004**	ug/L	0.002	62	11	9	19	KED
>	**In**	**115**		ug/L			883432	908128	2	Standard
	Ag	**107**	**0.009**	ug/L	0.001	10	147	273	5	Standard
>	**Tb**	**159**		ug/L			2082091	2088887	1	Standard
	Pb	**208**	**0.002**	ug/L	0.000	14	1476	1722	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVF
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:02:29
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	24336	4	Standard
	Cl	**37**		ug/L			4880224	5141312	1	Standard
>	**Sc**	**45**		ug/L			784146	799447	0	Standard
	V	**51**	**45.727**	ug/L	0.584	1	2997	1001955	1	Standard
	V-1	**51**	**45.768**	ug/L	0.489	1	269	1008697	1	Standard
	Cr	**52**	**45.725**	ug/L	0.850	1	8720	882693	1	Standard
	Cr	**53**	**45.856**	ug/L	0.403	0	113	101900	1	Standard
	Mn	**55**	**46.783**	ug/L	0.353	0	1024	1311838	0	Standard
>	**Ge**	**72**		ug/L			69777	69315	1	KED
	Ni	**60**	**47.127**	ug/L	0.732	1	77	81536	1	KED
	Ni	**62**	**47.991**	ug/L	1.807	3	12	13220	3	KED
	Cu	**63**	**48.194**	ug/L	1.184	2	168	242624	1	KED
	Cu	**65**	**47.642**	ug/L	0.812	1	88	123200	1	KED
	Zn	**66**	**47.394**	ug/L	0.833	1	215	31387	0	KED
	Zn	**67**	**47.337**	ug/L	0.876	1	24	5215	2	KED
	As	**75**	**47.370**	ug/L	0.591	1	7	15313	0	KED
	Y	**89**		ug/L			419657	424926	1	Standard
	Kr	**83**		ug/L			121	127	11	Standard
>	**In-1**	**115**		ug/L			15429	15157	4	KED
	Cd	**111**	**48.522**	ug/L	0.937	1	8	14090	2	KED
	Cd	**114**	**48.382**	ug/L	1.517	3	11	36927	0	KED
>	**In**	**115**		ug/L			883432	872517	2	Standard
	Ag	**107**	**52.822**	ug/L	1.723	3	147	697756	1	Standard
>	**Tb**	**159**		ug/L			2082091	2147945	0	Standard
	Pb	**208**	**49.920**	ug/L	0.525	1	1476	5990752	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBF
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:09:16
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	22935	1	Standard
	Cl	**37**		ug/L			4880224	5008620	1	Standard
⌈>	**Sc**	**45**		ug/L			784146	788391	0	Standard
|	**V**	**51**	**-0.008**	ug/L	0.004	46	2997	2846	2	Standard
|	**V-1**	**51**	**-0.003**	ug/L	0.000	12	269	205	3	Standard
|	**Cr**	**52**	**-0.016**	ug/L	0.006	37	8720	8462	1	Standard
|	**Cr**	**53**	**-0.001**	ug/L	0.007	875	113	111	14	Standard
⌊	**Mn**	**55**	**-0.007**	ug/L	0.001	10	1024	844	1	Standard
⌈>	**Ge**	**72**		ug/L			69777	70954	2	KED
|	**Ni**	**60**	**-0.021**	ug/L	0.002	10	77	41	7	KED
|	**Ni**	**62**	**-0.017**	ug/L	0.014	84	12	8	48	KED
|	**Cu**	**63**	**-0.015**	ug/L	0.003	19	168	91	15	KED
|	**Cu**	**65**	**-0.015**	ug/L	0.004	28	88	50	25	KED
|	**Zn**	**66**	**-0.144**	ug/L	0.007	4	215	121	3	KED
|	**Zn**	**67**	**-0.071**	ug/L	0.060	84	24	17	38	KED
⌊	**As**	**75**	**-0.004**	ug/L	0.005	116	7	6	29	KED
	Y	**89**		ug/L			419657	425180	1	Standard
	Kr	**83**		ug/L			121	123	15	Standard
⌈>	**In-1**	**115**		ug/L			15429	15957	3	KED
|	**Cd**	**111**	**-0.021**	ug/L	0.005	24	8	2	65	KED
⌊	**Cd**	**114**	**-0.008**	ug/L	0.005	63	11	6	64	KED
⌈>	**In**	**115**		ug/L			883432	909542	0	Standard
⌊	**Ag**	**107**	**0.024**	ug/L	0.003	10	147	476	7	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2091130	0	Standard
⌊	**Pb**	**208**	**-0.004**	ug/L	0.000	3	1476	1031	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:13:19
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	210756	0	Standard
	Cl	**37**		ug/L			4880224	5549940	1	Standard
>	**Sc**	**45**		ug/L			784146	802040	2	Standard
	V	**51**	**-4.548**	ug/L	1.094	24	2997	-96389	23	Standard
	V-1	**51**	**0.342**	ug/L	0.004	1	269	7843	2	Standard
	Cr	**52**	**292.290**	ug/L	7.988	2	8720	5610519	0	Standard
	Cr	**53**	**299.757**	ug/L	10.090	3	113	667321	1	Standard
	Mn	**55**	**59.511**	ug/L	1.736	2	1024	1673243	1	Standard
>	**Ge**	**72**		ug/L			69777	68678	0	KED
		60		ug/L	0.102	2	77	6679	2	KED
	Ni	**62**	**3.847**	ug/L	0.215	5	12	1061	5	KED
		63		ug/L	0.088	1	168	33257	1	KED
	Cu	**65**	**6.519**	ug/L	0.085	1	88	16780	1	KED
	Zn	**66**	**352.777**	ug/L	1.905	0	215	230159	0	KED
	Zn	**67**	**321.673**	ug/L	2.584	0	24	34973	0	KED
	As	**75**	**0.555**	ug/L	0.004	0	7	184	0	KED
	Y	**89**		ug/L			419657	430617	1	Standard
	Kr	**83**		ug/L			121	109	8	Standard
>	**In-1**	**115**		ug/L			15429	15169	2	KED
		111		ug/L	0.095	6	8	442	5	KED
	Cd	**114**	**1.486**	ug/L	0.102	6	11	1146	4	KED
>	**In**	**115**		ug/L			883432	923332	2	Standard
	Ag	**107**	**0.169**	ug/L	0.013	7	147	2517	5	Standard
>	**Tb**	**159**		ug/L			2082091	2146287	0	Standard
		208		ug/L	0.026	1	1476	167931	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:17:45
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	54283	0	Standard
	Cl	**37**		ug/L			4880224	5114368	1	Standard
>	**Sc**	**45**		ug/L			784146	918689	1	Standard
	V	**51**	**2.730**	ug/L	0.061	2	2997	72019	1	Standard
	V-1	**51**	**2.919**	ug/L	0.057	1	269	74218	1	Standard
	Cr	**52**	**1.664**	ug/L	0.054	3	8720	46761	2	Standard
	Cr	**53**	**2.296**	ug/L	0.036	1	113	5987	1	Standard
	Mn	**55**	**705.314**	ug/L	9.594	1	1024	22708446	1	Standard
>	**Ge**	**72**		ug/L			69777	69144	2	KED
		60		ug/L	0.669	2	77	56271	0	KED
	Ni	**62**	**32.398**	ug/L	0.833	2	12	8904	0	KED
		63		ug/L	0.095	3	168	13152	1	KED
	Cu	**65**	**2.535**	ug/L	0.086	3	88	6619	1	KED
		66		ug/L	0.189	1	215	7082	2	KED
	Zn	**67**	**10.889**	ug/L	0.630	5	24	1214	3	KED
		75		ug/L	0.029	1	7	531	1	KED
	Y	**89**		ug/L			419657	503099	1	Standard
	Kr	**83**		ug/L			121	179	8	Standard
>	**In-1**	**115**		ug/L			15429	15599	3	KED
		111		ug/L	0.069	1	8	1848	3	KED
	Cd	**114**	**6.105**	ug/L	0.257	4	11	4805	1	KED
>	**In**	**115**		ug/L			883432	912744	1	Standard
	Ag	**107**	**0.042**	ug/L	0.000	0	147	727	1	Standard
>	**Tb**	**159**		ug/L			2082091	2152977	2	Standard
		208		ug/L	0.021	3	1476	67818	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:21:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	51344	1	Standard
	Cl	**37**		ug/L			4880224	4986375	1	Standard
>	**Sc**	**45**		ug/L			784146	889824	1	Standard
	V	**51**	**1.347**	ug/L	0.034	2	2997	36136	0	Standard
	V-1	**51**	**1.498**	ug/L	0.036	2	269	37034	1	Standard
	Cr	**52**	**0.280**	ug/L	0.007	2	8720	15846	0	Standard
	Cr	**53**	**0.789**	ug/L	0.019	2	113	2077	2	Standard
	Mn	**55**	**236.590**	ug/L	5.929	2	1024	7377761	1	Standard
>	**Ge**	**72**		ug/L			69777	69717	0	KED
		60		ug/L	0.150	0	77	45513	0	KED
	Ni	**62**	**26.889**	ug/L	0.805	2	12	7457	2	KED
		63		ug/L	0.103	2	168	22324	1	KED
	Cu	**65**	**4.374**	ug/L	0.039	0	88	11457	0	KED
		66		ug/L	0.314	1	215	10968	0	KED
	Zn	**67**	**15.442**	ug/L	0.649	4	24	1727	3	KED
		75		ug/L	0.028	4	7	219	3	KED
	Y	**89**		ug/L			419657	436028	1	Standard
	Kr	**83**		ug/L			121	127	1	Standard
>	**In-1**	**115**		ug/L			15429	15246	1	KED
		111		ug/L	0.017	50	8	18	29	KED
	Cd	**114**	**0.053**	ug/L	0.009	16	11	52	12	KED
>	**In**	**115**		ug/L			883432	922794	0	Standard
	Ag	**107**	**-0.002**	ug/L	0.001	40	147	125	10	Standard
>	**Tb**	**159**		ug/L			2082091	2130435	1	Standard
		208		ug/L	0.002	2	1476	13077	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:25:50
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	52098	3	Standard
	Cl	**37**		ug/L			4880224	4759197	3	Standard
>	**Sc**	**45**		ug/L			784146	866184	7	Standard
	V	**51**	**0.309**	ug/L	0.022	7	2997	10608	3	Standard
	V-1	**51**	**0.413**	ug/L	0.024	5	269	10123	2	Standard
	Cr	**52**	**0.537**	ug/L	0.042	7	8720	20711	3	Standard
	Cr	**53**	**0.859**	ug/L	0.064	7	113	2185	4	Standard
	Mn	**55**	**1006.350**	ug/L	50.953	5	1024	30474869	2	Standard
>	**Ge**	**72**		ug/L			69777	69055	1	KED
		60		ug/L	0.086	2	77	5715	3	KED
	Ni	**62**	**3.429**	ug/L	0.245	7	12	953	8	KED
		63		ug/L	0.004	0	168	5759	1	KED
	Cu	**65**	**1.097**	ug/L	0.045	4	88	2911	3	KED
	Zn	**66**	**128.990**	ug/L	2.972	2	215	84728	0	KED
				ug/L	0.587	0	24	13310	1	KED
		75		ug/L	0.149	3	7	1461	2	KED
	Y	**89**		ug/L			419657	430874	8	Standard
	Kr	**83**		ug/L			121	132	17	Standard
>	**In-1**	**115**		ug/L			15429	15196	0	KED
		111		ug/L	0.008	89	8	10	22	KED
	Cd	**114**	**0.003**	ug/L	0.012	344	11	14	63	KED
>	**In**	**115**		ug/L			883432	868999	9	Standard
	Ag	**107**	**0.000**	ug/L	0.000	56	147	149	7	Standard
>	**Tb**	**159**		ug/L			2082091	2075798	8	Standard
		208		ug/L	0.037	9	1476	48054	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:29:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	47912	3	Standard
	Cl	**37**		ug/L			4880224	5036287	1	Standard
>	**Sc**	**45**		ug/L			784146	894623	1	Standard
	V	**51**	**5.730**	ug/L	0.143	2	2997	143457	1	Standard
	V-1	**51**	**5.865**	ug/L	0.144	2	269	144900	1	Standard
	Cr	**52**	**0.172**	ug/L	0.012	7	8720	13616	0	Standard
	Cr	**53**	**0.754**	ug/L	0.021	2	113	2000	1	Standard
	Mn	**55**	**1422.526**	ug/L	29.575	2	1024	44594675	0	Standard
>	**Ge**	**72**		ug/L			69777	70554	1	KED
		60		ug/L	0.045	1	77	4422	1	KED
	Ni	**62**	**2.449**	ug/L	0.036	1	12	699	2	KED
		63		ug/L	0.211	3	168	34936	2	KED
	Cu	**65**	**6.614**	ug/L	0.105	1	88	17486	1	KED
		66		ug/L	0.037	0	215	4102	1	KED
	Zn	**67**	**6.641**	ug/L	0.090	1	24	766	2	KED
		75		ug/L	0.137	3	7	1154	4	KED
	Y	**89**		ug/L			419657	454925	0	Standard
	Kr	**83**		ug/L			121	138	17	Standard
>	**In-1**	**115**		ug/L			15429	15595	1	KED
		111		ug/L	0.014	88	8	13	32	KED
	Cd	**114**	**0.026**	ug/L	0.008	31	11	32	18	KED
>	**In**	**115**		ug/L			883432	930462	2	Standard
	Ag	**107**	**-0.004**	ug/L	0.002	36	147	92	26	Standard
>	**Tb**	**159**		ug/L			2082091	2187851	0	Standard
		208		ug/L	0.001	3	1476	4458	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:34:18
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	53337	4	Standard
	Cl	**37**		ug/L			4880224	5243153	1	Standard
>	**Sc**	**45**		ug/L			784146	894487	1	Standard
	V	**51**	**3.354**	ug/L	0.059	1	2997	85379	0	Standard
	V-1	**51**	**3.462**	ug/L	0.071	2	269	85642	0	Standard
	Cr	**52**	**2.000**	ug/L	0.022	1	8720	52716	1	Standard
	Cr	**53**	**2.381**	ug/L	0.071	2	113	6041	2	Standard
	Mn	**55**	**977.265**	ug/L	17.433	1	1024	30632201	0	Standard
>	**Ge**	**72**		ug/L			69777	70215	1	KED
		60		ug/L	0.045	0	77	12641	0	KED
	Ni	**62**	**7.237**	ug/L	0.508	7	12	2030	6	KED
		63		ug/L	0.280	2	168	66224	2	KED
	Cu	**65**	**12.662**	ug/L	0.156	1	88	33235	0	KED
		66		ug/L	0.092	0	215	6886	1	KED
	Zn	**67**	**11.584**	ug/L	0.176	1	24	1311	2	KED
		75		ug/L	0.097	1	7	2418	0	KED
	Y	**89**		ug/L			419657	451018	0	Standard
	Kr	**83**		ug/L			121	116	5	Standard
>	**In-1**	**115**		ug/L			15429	15554	1	KED
		111		ug/L	0.015	29	8	24	20	KED
	Cd	**114**	**0.063**	ug/L	0.013	20	11	61	14	KED
>	**In**	**115**		ug/L			883432	911797	1	Standard
	Ag	**107**	**-0.000**	ug/L	0.002	574	147	146	20	Standard
>	**Tb**	**159**		ug/L			2082091	2214523	2	Standard
		208		ug/L	0.039	2	1476	185637	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:38:20
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	50183	2	Standard
	Cl	**37**		ug/L			4880224	4898576	2	Standard
>	**Sc**	**45**		ug/L			784146	904067	1	Standard
	V	**51**	**0.164**	ug/L	0.012	7	2997	7508	2	Standard
	V-1	**51**	**0.251**	ug/L	0.008	3	269	6558	2	Standard
	Cr	**52**	**0.140**	ug/L	0.018	12	8720	13079	1	Standard
	Cr	**53**	**0.416**	ug/L	0.007	1	113	1174	2	Standard
	Mn	**55**	**195.161**	ug/L	3.376	1	1024	6184054	1	Standard
>	**Ge**	**72**		ug/L			69777	71225	0	KED
		60		ug/L	0.028	7	77	746	5	KED
	Ni	**62**	**0.333**	ug/L	0.059	17	12	107	16	KED
		63		ug/L	0.019	5	168	1918	4	KED
	Cu	**65**	**0.340**	ug/L	0.007	2	88	994	2	KED
		66		ug/L	0.055	1	215	2321	2	KED
	Zn	**67**	**3.257**	ug/L	0.199	6	24	392	6	KED
		75		ug/L	0.044	2	7	518	1	KED
	Y	**89**		ug/L			419657	443649	1	Standard
	Kr	**83**		ug/L			121	124	12	Standard
>	**In-1**	**115**		ug/L			15429	15263	0	KED
		111		ug/L	0.018	109	8	13	40	KED
	Cd	**114**	**0.007**	ug/L	0.007	111	11	16	34	KED
>	**In**	**115**		ug/L			883432	962453	1	Standard
	Ag	**107**	**-0.007**	ug/L	0.001	10	147	59	17	Standard
>	**Tb**	**159**		ug/L			2082091	2158529	1	Standard
		208		ug/L	0.003	4	1476	10680	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:42:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	78255	1	Standard
	Cl	**37**		ug/L			4880224	3486166	2	Standard
>	**Sc**	**45**		ug/L			784146	593748	2	Standard
	V	**51**	**4.960**	ug/L	0.059	1	2997	82744	2	Standard
	V-1	**51**	**4.935**	ug/L	0.050	1	269	80968	2	Standard
	Cr	**52**	**2.799**	ug/L	0.049	1	8720	46327	1	Standard
	Cr	**53**	**2.779**	ug/L	0.010	0	113	4667	1	Standard
	Mn	**55**	**27.904**	ug/L	0.141	0	1024	581410	1	Standard
>	**Ge**	**72**		ug/L			69777	45981	1	KED
	Ni	**60**	**7.999**	ug/L	0.136	1	77	9223	1	KED
	Ni	**62**	**8.324**	ug/L	0.153	1	12	1528	1	KED
	Cu	**63**	**1.186**	ug/L	0.034	2	168	4069	1	KED
	Cu	**65**	**1.132**	ug/L	0.038	3	88	1998	2	KED
	Zn	**66**	**22.686**	ug/L	0.285	1	215	10040	0	KED
	Zn	**67**	**20.076**	ug/L	0.648	3	24	1476	3	KED
	As	**75**	**0.143**	ug/L	0.007	4	7	35	3	KED
	Y	**89**		ug/L			419657	363890	1	Standard
	Kr	**83**		ug/L			121	168	8	Standard
>	**In-1**	**115**		ug/L			15429	10223	0	KED
	Cd	**111**	**0.312**	ug/L	0.047	15	8	66	14	KED
	Cd	**114**	**0.325**	ug/L	0.040	12	11	174	10	KED
>	**In**	**115**		ug/L			883432	692012	2	Standard
		107	-	ug/L	0.005	136	147	74	78	Standard
>	**Tb**	**159**		ug/L			2082091	1705204	0	Standard
		208		ug/L	0.002	9	1476	2917	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID:
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:47:13
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	44289	2	Standard
	Cl	**37**		ug/L			4880224	13847984	4	Standard
>	**Sc**	**45**		ug/L			784146	773768	1	Standard
	V	**51**	**183.592**	ug/L	0.990	0	2997	3884769	2	Standard
	V-1	**51**	**184.377**	ug/L	0.988	0	269	3932296	2	Standard
	Cr	**52**	**0.932**	ug/L	0.017	1	8720	25848	1	Standard
	Cr	**53**	**8.382**	ug/L	0.071	0	113	18120	2	Standard
	Mn	**55**	**0.695**	ug/L	0.122	17	1024	19818	15	Standard
>	**Ge**	**72**		ug/L			69777	64246	0	KED
		60		ug/L	0.611	1	77	77672	1	KED
	Ni	**62**	**49.043**	ug/L	0.443	0	12	12524	0	KED
		63		ug/L	0.061	3	168	9473	3	KED
	Cu	**65**	**1.920**	ug/L	0.008	0	88	4681	0	KED
		66		ug/L	0.164	6	215	1796	5	KED
	Zn	**67**	**3.606**	ug/L	0.207	5	24	389	4	KED
		75		ug/L	0.014	5	7	75	5	KED
	Y	**89**		ug/L			419657	426633	1	Standard
	Kr	**83**		ug/L			121	204	10	Standard
>	**In-1**	**115**		ug/L			15429	14009	2	KED
		111	**-**	ug/L	0.014	648	8	6	55	KED
	Cd	**114**	**0.006**	ug/L	0.010	164	11	14	45	KED
>	**In**	**115**		ug/L			883432	800003	4	Standard
	Ag	**107**	**-0.004**	ug/L	0.002	40	147	84	21	Standard
>	**Tb**	**159**		ug/L			2082091	2031166	1	Standard
		208		ug/L	0.001	9	1476	2603	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLE
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 03:55:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	26181	4	Standard
	Cl	**37**		ug/L			4880224	5228402	1	Standard
⌈>	**Sc**	**45**		ug/L			784146	819325	1	Standard
|	**V**	**51**	**0.044**	ug/L	0.003	7	2997	4104	0	Standard
|	**V-1**	**51**	**0.021**	ug/L	0.001	5	269	760	2	Standard
|	**Cr**	**52**	**0.108**	ug/L	0.002	2	8720	11227	1	Standard
|	**Cr**	**53**	**0.036**	ug/L	0.005	14	113	199	7	Standard
⌊	**Mn**	**55**	**0.088**	ug/L	0.005	5	1024	3606	2	Standard
⌈>	**Ge**	**72**		ug/L			69777	72638	2	KED
|	**Ni**	**60**	**0.209**	ug/L	0.023	10	77	458	9	KED
|	**Ni**	**62**	**0.247**	ug/L	0.035	14	12	84	13	KED
|	**Cu**	**63**	**-0.010**	ug/L	0.001	8	168	122	3	KED
|	**Cu**	**65**	**-0.009**	ug/L	0.005	52	88	66	17	KED
|	**Zn**	**66**	**-0.090**	ug/L	0.024	26	215	161	12	KED
|	**Zn**	**67**	**0.052**	ug/L	0.057	109	24	31	21	KED
⌊	**As**	**75**	**-0.012**	ug/L	0.003	26	7	3	28	KED
	Y	**89**		ug/L			419657	447118	0	Standard
	Kr	**83**		ug/L			121	130	5	Standard
⌈>	**In-1**	**115**		ug/L			15429	16074	1	KED
|	**Cd**	**111**	**-0.013**	ug/L	0.012	88	8	4	81	KED
⌊	**Cd**	**114**	**-0.005**	ug/L	0.003	50	11	8	26	KED
⌈>	**In**	**115**		ug/L			883432	991964	0	Standard
⌊	**Ag**	**107**	**-0.008**	ug/L	0.001	8	147	45	22	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2211946	0	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	33	1476	1449	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVG
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 04:02:26
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	24498	2	Standard
	Cl	**37**		ug/L			4880224	5240622	3	Standard
>	**Sc**	**45**		ug/L			784146	809096	0	Standard
	V	**51**	**44.640**	ug/L	0.158	0	2997	989976	0	Standard
	V-1	**51**	**44.935**	ug/L	0.268	0	269	1002237	0	Standard
	Cr	**52**	**44.534**	ug/L	0.687	1	8720	870233	0	Standard
	Cr	**53**	**45.473**	ug/L	1.050	2	113	102257	1	Standard
	Mn	**55**	**46.803**	ug/L	0.639	1	1024	1328325	2	Standard
>	**Ge**	**72**		ug/L			69777	70964	2	KED
	Ni	**60**	**46.532**	ug/L	0.384	0	77	82424	1	KED
	Ni	**62**	**47.612**	ug/L	1.405	2	12	13424	0	KED
	Cu	**63**	**47.099**	ug/L	1.358	2	168	242734	2	KED
	Cu	**65**	**46.649**	ug/L	0.550	1	88	123498	1	KED
	Zn	**66**	**47.430**	ug/L	0.387	0	215	32159	1	KED
	Zn	**67**	**45.267**	ug/L	0.643	1	24	5107	3	KED
	As	**75**	**46.575**	ug/L	0.519	1	7	15414	1	KED
	Y	**89**		ug/L			419657	445572	0	Standard
	Kr	**83**		ug/L			121	130	5	Standard
>	**In-1**	**115**		ug/L			15429	15739	1	KED
	Cd	**111**	**46.964**	ug/L	0.511	1	8	14167	0	KED
	Cd	**114**	**47.371**	ug/L	0.464	0	11	37573	0	KED
>	**In**	**115**		ug/L			883432	933405	0	Standard
	Ag	**107**	**51.834**	ug/L	0.317	0	147	732815	0	Standard
>	**Tb**	**159**		ug/L			2082091	2218335	2	Standard
	Pb	**208**	**49.547**	ug/L	1.214	2	1476	6138002	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBG
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 04:09:13
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	23562	2	Standard
	Cl	**37**		ug/L			4880224	5276910	1	Standard
⌈>	**Sc**	**45**		ug/L			784146	796453	0	Standard
|	**V**	**51**	**-0.008**	ug/L	0.003	32	2997	2869	2	Standard
|	**V-1**	**51**	**0.005**	ug/L	0.001	21	269	377	6	Standard
|	**Cr**	**52**	**-0.032**	ug/L	0.007	21	8720	8238	1	Standard
|	**Cr**	**53**	**0.009**	ug/L	0.002	24	113	133	3	Standard
⌊	**Mn**	**55**	**0.009**	ug/L	0.002	23	1024	1287	4	Standard
⌈>	**Ge**	**72**		ug/L			69777	71021	1	KED
|	**Ni**	**60**	**-0.011**	ug/L	0.012	109	77	58	35	KED
|	**Ni**	**62**	**-0.001**	ug/L	0.010	1336	12	12	22	KED
|	**Cu**	**63**	**-0.008**	ug/L	0.014	180	168	131	51	KED
|	**Cu**	**65**	**-0.007**	ug/L	0.013	191	88	71	45	KED
|	**Zn**	**66**	**-0.130**	ug/L	0.027	20	215	131	12	KED
|	**Zn**	**67**	**-0.004**	ug/L	0.072	1685	24	24	33	KED
⌊	**As**	**75**	**-0.005**	ug/L	0.007	161	7	5	39	KED
	Y	**89**		ug/L			419657	442026	2	Standard
	Kr	**83**		ug/L			121	126	10	Standard
⌈>	**In-1**	**115**		ug/L			15429	15812	1	KED
|	**Cd**	**111**	**-0.010**	ug/L	0.006	62	8	5	36	KED
⌊	**Cd**	**114**	**-0.006**	ug/L	0.004	71	11	7	44	KED
⌈>	**In**	**115**		ug/L			883432	951911	2	Standard
⌊	**Ag**	**107**	**0.013**	ug/L	0.001	5	147	351	3	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2126427	0	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	44	1476	1413	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 04:13:16
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	36955	3	Standard
	Cl	**37**		ug/L			4880224	5369408	1	Standard
>	**Sc**	**45**		ug/L			784146	878514	0	Standard
	V	**51**	**0.003**	ug/L	0.002	72	2997	3433	2	Standard
	V-1	**51**	**0.001**	ug/L	0.001	62	269	329	6	Standard
	Cr	**52**	**0.025**	ug/L	0.008	33	8720	10297	2	Standard
	Cr	**53**	**0.018**	ug/L	0.002	12	113	170	3	Standard
	Mn	**55**	**0.024**	ug/L	0.001	4	1024	1892	2	Standard
>	**Ge**	**72**		ug/L			69777	74382	1	KED
	Ni	**60**	**-0.001**	ug/L	0.003	301	77	80	7	KED
	Ni	**62**	**0.010**	ug/L	0.014	140	12	16	24	KED
	Cu	**63**	**-0.004**	ug/L	0.000	3	168	158	1	KED
	Cu	**65**	**-0.000**	ug/L	0.002	3415	88	93	6	KED
	Zn	**66**	**-0.106**	ug/L	0.034	31	215	154	15	KED
	Zn	**67**	**-0.025**	ug/L	0.055	220	24	23	28	KED
	As	**75**	**-0.004**	ug/L	0.004	109	7	6	22	KED
	Y	**89**		ug/L			419657	495370	1	Standard
	Kr	**83**		ug/L			121	108	7	Standard
>	**In-1**	**115**		ug/L			15429	17452	1	KED
	Cd	**111**	**-0.014**	ug/L	0.003	20	8	4	20	KED
	Cd	**114**	**-0.007**	ug/L	0.002	32	11	7	26	KED
>	**In**	**115**		ug/L			883432	1077422	1	Standard
	Ag	**107**	**0.003**	ug/L	0.000	10	147	227	1	Standard
>	**Tb**	**159**		ug/L			2082091	2326745	0	Standard
	Pb	**208**	**-0.001**	ug/L	0.000	29	1476	1456	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 04:17:18
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	37539	1	Standard
	Cl	**37**		ug/L			4880224	5409741	0	Standard
>	**Sc**	**45**		ug/L			784146	886108	1	Standard
	V	**51**	**0.002**	ug/L	0.005	293	2997	3431	3	Standard
	V-1	**51**	**-0.001**	ug/L	0.001	129	269	286	6	Standard
	Cr	**52**	**0.021**	ug/L	0.012	60	8720	10289	2	Standard
	Cr	**53**	**0.012**	ug/L	0.004	35	113	157	5	Standard
	Mn	**55**	**0.017**	ug/L	0.002	12	1024	1679	2	Standard
>	**Ge**	**72**		ug/L			69777	74614	2	KED
	Ni	**60**	**-0.016**	ug/L	0.007	44	77	53	22	KED
	Ni	**62**	**-0.005**	ug/L	0.019	375	12	12	48	KED
	Cu	**63**	**-0.005**	ug/L	0.004	74	168	149	12	KED
	Cu	**65**	**-0.009**	ug/L	0.005	56	88	70	17	KED
	Zn	**66**	**-0.103**	ug/L	0.017	16	215	156	6	KED
	Zn	**67**	**-0.068**	ug/L	0.022	32	24	18	11	KED
	As	**75**	**-0.012**	ug/L	0.003	28	7	3	34	KED
	Y	**89**		ug/L			419657	492854	1	Standard
	Kr	**83**		ug/L			121	130	14	Standard
>	**In-1**	**115**		ug/L			15429	17039	1	KED
	Cd	**111**	**-0.007**	ug/L	0.002	22	8	6	7	KED
	Cd	**114**	**-0.005**	ug/L	0.006	126	11	8	64	KED
>	**In**	**115**		ug/L			883432	1076741	1	Standard
	Ag	**107**	**-0.005**	ug/L	0.001	11	147	95	11	Standard
>	**Tb**	**159**		ug/L			2082091	2335151	0	Standard
	Pb	**208**	**-0.004**	ug/L	0.000	6	1476	1161	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 04:21:21
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	37460	2	Standard
	Cl	**37**		ug/L			4880224	5452590	1	Standard
>	**Sc**	**45**		ug/L			784146	887414	1	Standard
	V	**51**	**-0.003**	ug/L	0.003	117	2997	3320	3	Standard
	V-1	**51**	**-0.003**	ug/L	0.001	16	269	221	7	Standard
	Cr	**52**	**0.015**	ug/L	0.007	45	8720	10177	2	Standard
	Cr	**53**	**0.013**	ug/L	0.003	24	113	159	4	Standard
	Mn	**55**	**0.013**	ug/L	0.002	14	1024	1555	3	Standard
>	**Ge**	**72**		ug/L			69777	74968	1	KED
	Ni	**60**	**-0.017**	ug/L	0.004	25	77	50	15	KED
	Ni	**62**	**-0.018**	ug/L	0.018	99	12	8	66	KED
	Cu	**63**	**-0.009**	ug/L	0.001	13	168	133	3	KED
	Cu	**65**	**-0.008**	ug/L	0.005	65	88	71	22	KED
	Zn	**66**	**-0.116**	ug/L	0.014	12	215	148	5	KED
	Zn	**67**	**-0.026**	ug/L	0.009	33	24	23	4	KED
	As	**75**	**-0.014**	ug/L	0.004	25	7	2	44	KED
	Y	**89**		ug/L			419657	490140	1	Standard
	Kr	**83**		ug/L			121	131	24	Standard
>	**In-1**	**115**		ug/L			15429	17114	1	KED
	Cd	**111**	**-0.015**	ug/L	0.004	27	8	4	35	KED
	Cd	**114**	**-0.010**	ug/L	0.003	32	11	4	66	KED
>	**In**	**115**		ug/L			883432	1067215	3	Standard
	Ag	**107**	**-0.008**	ug/L	0.001	8	147	54	17	Standard
>	**Tb**	**159**		ug/L			2082091	2377902	1	Standard
	Pb	**208**	**-0.005**	ug/L	0.000	3	1476	1054	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 04:25:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	23951	1	Standard
	Cl	**37**		ug/L			4880224	5059784	0	Standard
⌈>	**Sc**	**45**		ug/L			784146	776892	1	Standard
|	**V**	**51**	**-0.011**	ug/L	0.005	44	2997	2745	2	Standard
|	**V-1**	**51**	**-0.003**	ug/L	0.000	8	269	198	1	Standard
|	**Cr**	**52**	**-0.025**	ug/L	0.012	48	8720	8172	1	Standard
|	**Cr**	**53**	**-0.001**	ug/L	0.003	179	113	108	6	Standard
⌊	**Mn**	**55**	**-0.015**	ug/L	0.001	6	1024	600	4	Standard
⌈>	**Ge**	**72**		ug/L			69777	70061	2	KED
|	**Ni**	**60**	**-0.039**	ug/L	0.003	7	77	9	52	KED
|	**Ni**	**62**	**-0.028**	ug/L	0.004	15	12	5	21	KED
|	**Cu**	**63**	**-0.019**	ug/L	0.001	3	168	71	3	KED
|	**Cu**	**65**	**-0.020**	ug/L	0.004	21	88	37	31	KED
|	**Zn**	**66**	**-0.211**	ug/L	0.022	10	215	75	16	KED
|	**Zn**	**67**	**-0.092**	ug/L	0.053	57	24	14	37	KED
⌊	**As**	**75**	**-0.015**	ug/L	0.002	15	7	2	28	KED
	Y	**89**		ug/L			419657	414677	2	Standard
	Kr	**83**		ug/L			121	111	4	Standard
⌈>	**In-1**	**115**		ug/L			15429	15388	0	KED
|	**Cd**	**111**	**-0.005**	ug/L	0.009	176	8	6	42	KED
⌊	**Cd**	**114**	**-0.006**	ug/L	0.001	19	11	6	14	KED
⌈>	**In**	**115**		ug/L			883432	884077	0	Standard
⌊	**Ag**	**107**	**-0.007**	ug/L	0.001	8	147	49	16	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2069678	0	Standard
⌊	**Pb**	**208**	**-0.010**	ug/L	0.000	3	1476	326	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 04:29:26
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	24160	0	Standard
	Cl	**37**		ug/L			4880224	5210077	1	Standard
⌈>	**Sc**	**45**		ug/L			784146	781531	1	Standard
|	**V**	**51**	**-0.009**	ug/L	0.000	1	2997	2794	1	Standard
|	**V-1**	**51**	**-0.003**	ug/L	0.000	13	269	195	6	Standard
|	**Cr**	**52**	**-0.021**	ug/L	0.005	25	8720	8303	0	Standard
|	**Cr**	**53**	**-0.002**	ug/L	0.004	164	113	107	7	Standard
⌊	**Mn**	**55**	**-0.016**	ug/L	0.001	5	1024	587	3	Standard
⌈>	**Ge**	**72**		ug/L			69777	70760	0	KED
|	**Ni**	**60**	**-0.039**	ug/L	0.002	5	77	9	40	KED
|	**Ni**	**62**	**-0.034**	ug/L	0.008	23	12	3	69	KED
|	**Cu**	**63**	**-0.018**	ug/L	0.002	10	168	80	10	KED
|	**Cu**	**65**	**-0.017**	ug/L	0.001	8	88	43	8	KED
|	**Zn**	**66**	**-0.232**	ug/L	0.016	6	215	62	16	KED
|	**Zn**	**67**	**-0.122**	ug/L	0.001	0	24	11	0	KED
⌊	**As**	**75**	**-0.014**	ug/L	0.006	45	7	2	72	KED
	Y	**89**		ug/L			419657	423001	2	Standard
	Kr	**83**		ug/L			121	107	14	Standard
⌈>	**In-1**	**115**		ug/L			15429	15501	1	KED
|	**Cd**	**111**	**-0.014**	ug/L	0.008	54	8	4	53	KED
⌊	**Cd**	**114**	**-0.009**	ug/L	0.004	41	11	4	58	KED
⌈>	**In**	**115**		ug/L			883432	897792	1	Standard
⌊	**Ag**	**107**	**-0.008**	ug/L	0.000	5	147	36	14	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2062800	0	Standard
⌊	**Pb**	**208**	**-0.010**	ug/L	0.000	2	1476	316	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, August 13, 2021 04:33:29
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\081221_MOD.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			22287	24301	4	Standard
	Cl	**37**		ug/L			4880224	5171593	2	Standard
⌈>	**Sc**	**45**		ug/L			784146	774911	0	Standard
|	**V**	**51**	**-0.005**	ug/L	0.002	52	2997	2861	1	Standard
|	**V-1**	**51**	**-0.002**	ug/L	0.001	29	269	220	6	Standard
|	**Cr**	**52**	**-0.013**	ug/L	0.006	46	8720	8378	1	Standard
|	**Cr**	**53**	**-0.004**	ug/L	0.005	106	113	102	9	Standard
⌊	**Mn**	**55**	**0.000**	ug/L	0.004	888	1024	1025	10	Standard
⌈>	**Ge**	**72**		ug/L			69777	70970	1	KED
|	**Ni**	**60**	**-0.039**	ug/L	0.003	7	77	9	52	KED
|	**Ni**	**62**	**-0.030**	ug/L	0.016	52	12	4	98	KED
|	**Cu**	**63**	**-0.023**	ug/L	0.001	5	168	54	10	KED
|	**Cu**	**65**	**-0.023**	ug/L	0.002	7	88	28	17	KED
|	**Zn**	**66**	**-0.226**	ug/L	0.012	5	215	66	13	KED
|	**Zn**	**67**	**-0.139**	ug/L	0.017	12	24	9	20	KED
⌊	**As**	**75**	**-0.011**	ug/L	0.006	59	7	3	57	KED
	Y	**89**		ug/L			419657	415288	1	Standard
	Kr	**83**		ug/L			121	112	1	Standard
⌈>	**In-1**	**115**		ug/L			15429	15238	1	KED
|	**Cd**	**111**	**-0.010**	ug/L	0.011	104	8	5	60	KED
⌊	**Cd**	**114**	**-0.005**	ug/L	0.004	78	11	8	36	KED
⌈>	**In**	**115**		ug/L			883432	885617	2	Standard
⌊	**Ag**	**107**	**-0.007**	ug/L	0.001	15	147	46	31	Standard
⌈>	**Tb**	**159**		ug/L			2082091	2047973	0	Standard
⌊	**Pb**	**208**	**-0.009**	ug/L	0.000	4	1476	366	14	Standard

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: EH00031
Control Limt: +/- 10.00%
Sequence: SJH0167

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SJH0167-ICV1	Arsenic-75a	50.000	46.8	93.6	ug/L	PA 6020B UCT-KE
SJH0167-CCV1	Arsenic-75a	50.000	48.3	96.6	ug/L	PA 6020B UCT-KE
SJH0167-CCV2	Arsenic-75a	50.000	48.1	96.3	ug/L	PA 6020B UCT-KE
SJH0167-CCV3	Arsenic-75a	50.000	47.8	95.6	ug/L	PA 6020B UCT-KE
SJH0167-CCV4	Arsenic-75a	50.000	48.0	96.1	ug/L	PA 6020B UCT-KE
SJH0167-CCV5	Arsenic-75a	50.000	46.6	93.2	ug/L	PA 6020B UCT-KE
SJH0167-CCV6	Arsenic-75a	50.000	47.3	94.6	ug/L	PA 6020B UCT-KE
SJH0167-CCV7	Arsenic-75a	50.000	47.3	94.7	ug/L	PA 6020B UCT-KE
SJH0167-CCV8	Arsenic-75a	50.000	47.5	95.0	ug/L	PA 6020B UCT-KE
SJH0167-CCV9	Arsenic-75a	50.000	47.4	94.7	ug/L	PA 6020B UCT-KE
SJH0167-CCVA	Arsenic-75a	50.000	47.4	94.8	ug/L	PA 6020B UCT-KE
SJH0167-CCVB	Arsenic-75a	50.000	47.1	94.3	ug/L	PA 6020B UCT-KE
SJH0167-CCVC	Arsenic-75a	50.000	46.6	93.2	ug/L	PA 6020B UCT-KE
SJH0167-CCVD	Arsenic-75a	50.000	46.5	93.0	ug/L	PA 6020B UCT-KE
SJH0167-CCVE	Arsenic-75a	50.000	46.8	93.5	ug/L	PA 6020B UCT-KE
SJH0167-CCVF	Arsenic-75a	50.000	47.4	94.7	ug/L	PA 6020B UCT-KE
SJH0167-CCVG	Arsenic-75a	50.000	46.6	93.2	ug/L	PA 6020B UCT-KE

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: EH00031
Sequence: SJH0167
Date Analyzed: 08/12/21 14:00

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SJH0167-IBL1	Arsenic-75a	0.00300	0.0373	0.200	ug/L	
SJH0167-ICB1	Arsenic-75a	0.00200	0.0373	0.200	ug/L	
SJH0167-CCB1	Arsenic-75a	0.00800	0.0373	0.200	ug/L	
SJH0167-IBL2	Arsenic-75a	0.0410	0.0373	0.200	ug/L	
SJH0167-IBL3	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SJH0167-CCB2	Arsenic-75a	0.00100	0.0373	0.200	ug/L	
SJH0167-IBL4	Arsenic-75a	-0.00500	0.0373	0.200	ug/L	
SJH0167-CCB3	Arsenic-75a	0.00200	0.0373	0.200	ug/L	
SJH0167-IBL5	Arsenic-75a	-0.00100	0.0373	0.200	ug/L	
SJH0167-CCB4	Arsenic-75a	0.00300	0.0373	0.200	ug/L	
SJH0167-IBL6	Arsenic-75a	-0.00500	0.0373	0.200	ug/L	
SJH0167-CCB5	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SJH0167-CCB6	Arsenic-75a	0.00400	0.0373	0.200	ug/L	
SJH0167-CCB7	Arsenic-75a	0.00300	0.0373	0.200	ug/L	
SJH0167-IBL7	Arsenic-75a	0.00100	0.0373	0.200	ug/L	
SJH0167-CCB8	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SJH0167-IBL8	Arsenic-75a	0.0110	0.0373	0.200	ug/L	
SJH0167-CCB9	Arsenic-75a	0.00800	0.0373	0.200	ug/L	
SJH0167-IBL9	Arsenic-75a	0.00300	0.0373	0.200	ug/L	
SJH0167-CCBA	Arsenic-75a	0.00900	0.0373	0.200	ug/L	
SJH0167-CCBB	Arsenic-75a	-0.00900	0.0373	0.200	ug/L	
SJH0167-IBLA	Arsenic-75a	-0.00900	0.0373	0.200	ug/L	
SJH0167-CCBC	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	
SJH0167-IBLB	Arsenic-75a	-0.0110	0.0373	0.200	ug/L	
SJH0167-CCBD	Arsenic-75a	-0.0100	0.0373	0.200	ug/L	
SJH0167-IBLC	Arsenic-75a	-0.00500	0.0373	0.200	ug/L	
SJH0167-CCBE	Arsenic-75a	-0.00200	0.0373	0.200	ug/L	
SJH0167-IBLD	Arsenic-75a	-0.00300	0.0373	0.200	ug/L	
SJH0167-CCBF	Arsenic-75a	-0.00400	0.0373	0.200	ug/L	
SJH0167-IBLE	Arsenic-75a	-0.0120	0.0373	0.200	ug/L	
SJH0167-CCBG	Arsenic-75a	-0.00500	0.0373	0.200	ug/L	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0167	Instrument:	ICPMS1
		Calibration:	EH00031

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SJH0167-CAL1	XDT_m1210812-006	NA	08/12/21 13:28
CAL 1 - LOW CHECK	SJH0167-CAL2	XDT_m1210812-007	NA	08/12/21 13:32
CAL 2	SJH0167-CAL3	XDT_m1210812-008	NA	08/12/21 13:37
CAL 3	SJH0167-CAL4	XDT_m1210812-009	NA	08/12/21 13:41
CAL 4	SJH0167-CAL5	XDT_m1210812-010	NA	08/12/21 13:46
CAL 5	SJH0167-CAL6	XDT_m1210812-011	NA	08/12/21 13:52
RINSE	SJH0167-IBL1	XDT_m1210812-012	NA	08/12/21 14:00
Initial Cal Check	SJH0167-ICV1	XDT_m1210812-015	NA	08/12/21 14:14
Initial Cal Blank	SJH0167-ICB1	XDT_m1210812-016	NA	08/12/21 14:22
Calibration Check	SJH0167-CCV1	XDT_m1210812-017	NA	08/12/21 14:26
Calibration Blank	SJH0167-CCB1	XDT_m1210812-018	NA	08/12/21 14:33
Instrument RL Check	SJH0167-CRL1	XDT_m1210812-019	NA	08/12/21 14:37
Interference Check A	SJH0167-IFA1	XDT_m1210812-020	NA	08/12/21 14:44
Interference Check B	SJH0167-IFB1	XDT_m1210812-021	NA	08/12/21 14:48
LR300	SJH0167-HCV2	XDT_m1210812-023	NA	08/12/21 14:57
LR200	SJH0167-HCV1	XDT_m1210812-024	NA	08/12/21 15:09
Instrument Blank	SJH0167-IBL2	XDT_m1210812-025	NA	08/12/21 15:13
Instrument Blank	SJH0167-IBL3	XDT_m1210812-026	NA	08/12/21 15:19
Calibration Check	SJH0167-CCV2	XDT_m1210812-027	NA	08/12/21 15:26
Calibration Blank	SJH0167-CCB2	XDT_m1210812-028	NA	08/12/21 15:33
Instrument Blank	SJH0167-IBL4	XDT_m1210812-038	NA	08/12/21 16:25
Calibration Check	SJH0167-CCV3	XDT_m1210812-039	NA	08/12/21 16:30
Calibration Blank	SJH0167-CCB3	XDT_m1210812-040	NA	08/12/21 16:37
ZZZZZ	21G0291-02	XDT_m1210812-042	Water	08/12/21 16:51
ZZZZZ	21G0291-01	XDT_m1210812-046	Water	08/12/21 17:14
ZZZZZ	21G0291-01	XDT_m1210812-046	Water	08/12/21 17:14
Instrument Blank	SJH0167-IBL5	XDT_m1210812-050	NA	08/12/21 17:37
Calibration Check	SJH0167-CCV4	XDT_m1210812-051	NA	08/12/21 17:41
Calibration Blank	SJH0167-CCB4	XDT_m1210812-052	NA	08/12/21 17:48
ZZZZZ	21G0291-03	XDT_m1210812-057	Water	08/12/21 18:13

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0167	Instrument:	ICPMS1
		Calibration:	EH00031

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	21G0291-04	XDT_m1210812-058	Water	08/12/21 18:18
Instrument Blank	SJH0167-IBL6	XDT_m1210812-062	NA	08/12/21 18:40
Calibration Check	SJH0167-CCV5	XDT_m1210812-063	NA	08/12/21 18:45
Calibration Blank	SJH0167-CCB5	XDT_m1210812-064	NA	08/12/21 18:52
Calibration Check	SJH0167-CCV6	XDT_m1210812-066	NA	08/12/21 19:02
Calibration Blank	SJH0167-CCB6	XDT_m1210812-067	NA	08/12/21 19:08
Blank	BJH0241-BLK1	XDT_m1210812-070	Solid	08/12/21 19:22
LCS	BJH0241-BS1	XDT_m1210812-071	Solid	08/12/21 19:27
LDW21-IT615A	21G0321-01	XDT_m1210812-074	Solid	08/12/21 19:44
LDW21-IT615A	BJH0241-DUP1	XDT_m1210812-075	Solid	08/12/21 19:48
LDW21-IT615A	BJH0241-MS1	XDT_m1210812-076	Solid	08/12/21 19:53
LDW21-IT615A	BJH0241-MSD1	XDT_m1210812-077	Solid	08/12/21 19:57
Calibration Check	SJH0167-CCV7	XDT_m1210812-078	NA	08/12/21 20:06
Calibration Blank	SJH0167-CCB7	XDT_m1210812-079	NA	08/12/21 20:13
LDW21-IT617A	21G0321-02	XDT_m1210812-080	Solid	08/12/21 20:17
LDW21-IT618A	21G0321-03	XDT_m1210812-081	Solid	08/12/21 20:21
LDW21-IT624A	21G0321-04	XDT_m1210812-082	Solid	08/12/21 20:25
LDW21-IT626A	21G0321-05	XDT_m1210812-083	Solid	08/12/21 20:29
ZZZZZ	21G0322-07	XDT_m1210812-084	Solid	08/12/21 20:34
ZZZZZ	21G0322-07	XDT_m1210812-084	Solid	08/12/21 20:34
ZZZZZ	21G0322-06	XDT_m1210812-085	Solid	08/12/21 20:38
ZZZZZ	21G0322-06	XDT_m1210812-085	Solid	08/12/21 20:38
ZZZZZ	21G0322-05	XDT_m1210812-086	Solid	08/12/21 20:42
ZZZZZ	21G0322-05	XDT_m1210812-086	Solid	08/12/21 20:42
Instrument Blank	SJH0167-IBL7	XDT_m1210812-089	NA	08/12/21 20:56
Calibration Check	SJH0167-CCV8	XDT_m1210812-090	NA	08/12/21 21:00
Calibration Blank	SJH0167-CCB8	XDT_m1210812-091	NA	08/12/21 21:06
ZZZZZ	BJH0290-BLK1	XDT_m1210812-092	Water	08/12/21 21:10
ZZZZZ	BJH0290-BS1	XDT_m1210812-093	Water	08/12/21 21:14
ZZZZZ	21G0359-04	XDT_m1210812-094	Water	08/12/21 21:18

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0167	Instrument:	ICPMS1
		Calibration:	EH00031

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	21G0359-04	XDT_m1210812-094	Water	08/12/21 21:18
ZZZZZ	21G0359-04	XDT_m1210812-094	Water	08/12/21 21:18
ZZZZZ	21G0359-04	XDT_m1210812-094	Water	08/12/21 21:18
ZZZZZ	21G0359-04	XDT_m1210812-094	Water	08/12/21 21:18
ZZZZZ	21G0359-01	XDT_m1210812-095	Water	08/12/21 21:22
ZZZZZ	21G0359-01	XDT_m1210812-095	Water	08/12/21 21:22
ZZZZZ	21G0359-01	XDT_m1210812-095	Water	08/12/21 21:22
ZZZZZ	21G0359-01	XDT_m1210812-095	Water	08/12/21 21:22
ZZZZZ	21G0359-01	XDT_m1210812-095	Water	08/12/21 21:22
ZZZZZ	21G0359-03	XDT_m1210812-096	Water	08/12/21 21:26
ZZZZZ	21G0359-03	XDT_m1210812-096	Water	08/12/21 21:26
ZZZZZ	21G0359-03	XDT_m1210812-096	Water	08/12/21 21:26
ZZZZZ	21G0359-03	XDT_m1210812-096	Water	08/12/21 21:26
ZZZZZ	21G0359-03	XDT_m1210812-096	Water	08/12/21 21:26
ZZZZZ	21G0359-02	XDT_m1210812-097	Water	08/12/21 21:30
ZZZZZ	21G0359-02	XDT_m1210812-097	Water	08/12/21 21:30
ZZZZZ	21G0359-02	XDT_m1210812-097	Water	08/12/21 21:30
ZZZZZ	21G0359-02	XDT_m1210812-097	Water	08/12/21 21:30
ZZZZZ	21G0359-02	XDT_m1210812-097	Water	08/12/21 21:30
Instrument Blank	SJH0167-IBL8	XDT_m1210812-101	NA	08/12/21 21:51
Calibration Check	SJH0167-CCV9	XDT_m1210812-102	NA	08/12/21 21:55
Calibration Blank	SJH0167-CCB9	XDT_m1210812-103	NA	08/12/21 22:02
ZZZZZ	BJH0316-BLK1	XDT_m1210812-106	Water	08/12/21 22:14
ZZZZZ	BJH0316-BS1	XDT_m1210812-107	Water	08/12/21 22:18
Instrument Blank	SJH0167-IBL9	XDT_m1210812-113	NA	08/12/21 22:48
Calibration Check	SJH0167-CCVA	XDT_m1210812-114	NA	08/12/21 22:52
Calibration Blank	SJH0167-CCBA	XDT_m1210812-115	NA	08/12/21 22:58
Calibration Check	SJH0167-CCVB	XDT_m1210812-117	NA	08/12/21 23:06
Calibration Blank	SJH0167-CCBB	XDT_m1210812-118	NA	08/12/21 23:13
Instrument Blank	SJH0167-IBLA	XDT_m1210812-128	NA	08/13/21 00:01

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0167	Instrument:	ICPMS1
		Calibration:	EH00031

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Check	SJH0167-CCVC	XDT_m1210812-129	NA	08/13/21 00:06
Calibration Blank	SJH0167-CCBC	XDT_m1210812-130	NA	08/13/21 00:12
Instrument Blank	SJH0167-IBLB	XDT_m1210812-140	NA	08/13/21 01:02
Calibration Check	SJH0167-CCVD	XDT_m1210812-141	NA	08/13/21 01:07
Calibration Blank	SJH0167-CCBD	XDT_m1210812-142	NA	08/13/21 01:13
ZZZZZ	21G0376-01	XDT_m1210812-143	Water	08/13/21 01:18
ZZZZZ	21G0376-01	XDT_m1210812-143	Water	08/13/21 01:18
ZZZZZ	21G0376-01	XDT_m1210812-143	Water	08/13/21 01:18
ZZZZZ	21G0376-01	XDT_m1210812-143	Water	08/13/21 01:18
ZZZZZ	21G0376-01	XDT_m1210812-143	Water	08/13/21 01:18
ZZZZZ	21G0376-02	XDT_m1210812-144	Water	08/13/21 01:22
ZZZZZ	21G0376-02	XDT_m1210812-144	Water	08/13/21 01:22
ZZZZZ	21G0376-02	XDT_m1210812-144	Water	08/13/21 01:22
ZZZZZ	21G0376-02	XDT_m1210812-144	Water	08/13/21 01:22
ZZZZZ	21G0376-02	XDT_m1210812-144	Water	08/13/21 01:22
ZZZZZ	21G0376-05	XDT_m1210812-145	Water	08/13/21 01:26
ZZZZZ	21G0376-05	XDT_m1210812-145	Water	08/13/21 01:26
ZZZZZ	21G0376-05	XDT_m1210812-145	Water	08/13/21 01:26
ZZZZZ	21G0376-05	XDT_m1210812-145	Water	08/13/21 01:26
ZZZZZ	21G0376-05	XDT_m1210812-145	Water	08/13/21 01:26
ZZZZZ	21G0376-06	XDT_m1210812-146	Water	08/13/21 01:30
ZZZZZ	21G0376-06	XDT_m1210812-146	Water	08/13/21 01:30
ZZZZZ	21G0376-06	XDT_m1210812-146	Water	08/13/21 01:30
ZZZZZ	21G0376-06	XDT_m1210812-146	Water	08/13/21 01:30
ZZZZZ	21G0376-06	XDT_m1210812-146	Water	08/13/21 01:30
ZZZZZ	21G0375-04	XDT_m1210812-147	Water	08/13/21 01:34
ZZZZZ	21G0375-04	XDT_m1210812-147	Water	08/13/21 01:34
ZZZZZ	21G0375-04	XDT_m1210812-147	Water	08/13/21 01:34
ZZZZZ	21G0375-04	XDT_m1210812-147	Water	08/13/21 01:34
ZZZZZ	21G0375-04	XDT_m1210812-147	Water	08/13/21 01:34

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0167	Instrument:	ICPMS1
		Calibration:	EH00031

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	21G0375-01	XDT_m1210812-148	Water	08/13/21 01:38
ZZZZZ	21G0375-01	XDT_m1210812-148	Water	08/13/21 01:38
ZZZZZ	21G0375-01	XDT_m1210812-148	Water	08/13/21 01:38
ZZZZZ	21G0375-01	XDT_m1210812-148	Water	08/13/21 01:38
ZZZZZ	21G0375-01	XDT_m1210812-148	Water	08/13/21 01:38
Instrument Blank	SJH0167-IBLC	XDT_m1210812-152	NA	08/13/21 02:00
Calibration Check	SJH0167-CCVE	XDT_m1210812-153	NA	08/13/21 02:04
Calibration Blank	SJH0167-CCBE	XDT_m1210812-154	NA	08/13/21 02:11
ZZZZZ	BJH0317-BLK1	XDT_m1210812-155	Water	08/13/21 02:15
ZZZZZ	BJH0317-BS1	XDT_m1210812-156	Water	08/13/21 02:19
ZZZZZ	21G0374-01	XDT_m1210812-158	Water	08/13/21 02:28
ZZZZZ	21G0374-01	XDT_m1210812-158	Water	08/13/21 02:28
ZZZZZ	21G0374-01	XDT_m1210812-158	Water	08/13/21 02:28
ZZZZZ	21G0374-01	XDT_m1210812-158	Water	08/13/21 02:28
ZZZZZ	21G0374-01	XDT_m1210812-158	Water	08/13/21 02:28
ZZZZZ	21G0397-02	XDT_m1210812-159	Water	08/13/21 02:32
ZZZZZ	21G0397-02	XDT_m1210812-159	Water	08/13/21 02:32
ZZZZZ	21G0397-02	XDT_m1210812-159	Water	08/13/21 02:32
ZZZZZ	21G0397-02	XDT_m1210812-159	Water	08/13/21 02:32
ZZZZZ	21G0397-02	XDT_m1210812-159	Water	08/13/21 02:32
ZZZZZ	21G0397-01	XDT_m1210812-160	Water	08/13/21 02:36
ZZZZZ	21G0397-01	XDT_m1210812-160	Water	08/13/21 02:36
ZZZZZ	21G0397-01	XDT_m1210812-160	Water	08/13/21 02:36
ZZZZZ	21G0397-01	XDT_m1210812-160	Water	08/13/21 02:36
ZZZZZ	21G0397-01	XDT_m1210812-160	Water	08/13/21 02:36
Instrument Blank	SJH0167-IBLD	XDT_m1210812-164	NA	08/13/21 02:58
Calibration Check	SJH0167-CCVF	XDT_m1210812-165	NA	08/13/21 03:02
Calibration Blank	SJH0167-CCBF	XDT_m1210812-166	NA	08/13/21 03:09
ZZZZZ	21G0398-01	XDT_m1210812-168	Water	08/13/21 03:17
ZZZZZ	21G0398-01	XDT_m1210812-168	Water	08/13/21 03:17

Analytical Resources, Incorporated
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ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0167	Instrument:	ICPMS1
		Calibration:	EH00031

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	21G0398-01	XDT_m1210812-168	Water	08/13/21 03:17
ZZZZZ	21G0398-01	XDT_m1210812-168	Water	08/13/21 03:17
ZZZZZ	21G0398-01	XDT_m1210812-168	Water	08/13/21 03:17
ZZZZZ	21G0398-02	XDT_m1210812-169	Water	08/13/21 03:21
ZZZZZ	21G0398-02	XDT_m1210812-169	Water	08/13/21 03:21
ZZZZZ	21G0398-02	XDT_m1210812-169	Water	08/13/21 03:21
ZZZZZ	21G0398-02	XDT_m1210812-169	Water	08/13/21 03:21
ZZZZZ	21G0398-02	XDT_m1210812-169	Water	08/13/21 03:21
ZZZZZ	21G0398-03	XDT_m1210812-170	Water	08/13/21 03:25
ZZZZZ	21G0398-03	XDT_m1210812-170	Water	08/13/21 03:25
ZZZZZ	21G0398-03	XDT_m1210812-170	Water	08/13/21 03:25
ZZZZZ	21G0398-03	XDT_m1210812-170	Water	08/13/21 03:25
ZZZZZ	21G0398-03	XDT_m1210812-170	Water	08/13/21 03:25
ZZZZZ	21G0398-04	XDT_m1210812-171	Water	08/13/21 03:29
ZZZZZ	21G0398-04	XDT_m1210812-171	Water	08/13/21 03:29
ZZZZZ	21G0398-04	XDT_m1210812-171	Water	08/13/21 03:29
ZZZZZ	21G0398-04	XDT_m1210812-171	Water	08/13/21 03:29
ZZZZZ	21G0398-04	XDT_m1210812-171	Water	08/13/21 03:29
ZZZZZ	21G0400-01	XDT_m1210812-172	Water	08/13/21 03:34
ZZZZZ	21G0400-01	XDT_m1210812-172	Water	08/13/21 03:34
ZZZZZ	21G0400-01	XDT_m1210812-172	Water	08/13/21 03:34
ZZZZZ	21G0400-01	XDT_m1210812-172	Water	08/13/21 03:34
ZZZZZ	21G0400-01	XDT_m1210812-172	Water	08/13/21 03:34
ZZZZZ	21G0400-02	XDT_m1210812-173	Water	08/13/21 03:38
ZZZZZ	21G0400-02	XDT_m1210812-173	Water	08/13/21 03:38
ZZZZZ	21G0400-02	XDT_m1210812-173	Water	08/13/21 03:38
ZZZZZ	21G0400-02	XDT_m1210812-173	Water	08/13/21 03:38
ZZZZZ	21G0400-02	XDT_m1210812-173	Water	08/13/21 03:38
ZZZZZ	21G0381-01	XDT_m1210812-175	Water	08/13/21 03:47
ZZZZZ	21G0381-01	XDT_m1210812-175	Water	08/13/21 03:47

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ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0167	Instrument:	ICPMS1
		Calibration:	EH00031

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	21G0381-01	XDT_m1210812-175	Water	08/13/21 03:47
ZZZZZ	21G0381-01	XDT_m1210812-175	Water	08/13/21 03:47
ZZZZZ	21G0381-01	XDT_m1210812-175	Water	08/13/21 03:47
Instrument Blank	SJH0167-IBLE	XDT_m1210812-176	NA	08/13/21 03:55
Calibration Check	SJH0167-CCVG	XDT_m1210812-177	NA	08/13/21 04:02
Calibration Blank	SJH0167-CCBG	XDT_m1210812-178	NA	08/13/21 04:09

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ICP INTERFERENCE CHECK SAMPLE

EPA 6020B UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: EH00031
Sequence: SJH0167
Standard ID: J008098

Lab Sample ID	Analyte	True	Found	%R	Units
SJH0167-IFA1	Arsenic-75a	0	0.0220		ug/L

* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

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ICP INTERFERENCE CHECK SAMPLE

EPA 6020B UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: EH00031
Sequence: SJH0167
Standard ID: J008098

Lab Sample ID	Analyte	True	Found	%R	Units
SJH0167-IFB1	Arsenic-75a	20.000	18.759	93.8	ug/L

* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

Analytical Resources, Incorporated
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DETECTION LEVEL STANDARD
EPA 6020B UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: EH00031
Sequence: SJH0167
Lab Sample ID: SJH0167-CRL1

Analyte	True	Found	%R	Units	QC Limts
Arsenic-75a	0.20000	0.206	103	ug/L	50 - 150

* Values outside of QC limits

Analytical Resources, Incorporated
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HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: EH00031
Laboratory ID: SJH0167-HCV1
Sequence: SJH0167
Standard ID: J007549

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	200.00	190	-4.8	10.00

* Values outside of QC limits

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HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: EH00031
Laboratory ID: SJH0167-HCV2
Sequence: SJH0167
Standard ID: J007893

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	300.00	282	-5.9	10.00

* Values outside of QC limits

Analytical Resources, Incorporated
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HOLDING TIME SUMMARY

Analysis: EPA 6020B UCT-KED

Laboratory: Analytical Resources, Inc. SDG: 21G0321

Client: Anchor QEA, LLC Project: Lower Duwamish AOC4

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
LDW21-IT615A 21G0321-01	07/07/21 14:51	07/27/21 12:20	08/10/21 11:55	33	180	08/12/21 19:44	36	180	
LDW21-IT617A 21G0321-02	07/07/21 15:40	07/27/21 12:20	08/10/21 11:55	33	180	08/12/21 20:17	36	180	
LDW21-IT618A 21G0321-03	07/07/21 16:20	07/27/21 12:20	08/10/21 11:55	33	180	08/12/21 20:21	36	180	
LDW21-IT624A 21G0321-04	07/07/21 17:02	07/27/21 12:20	08/10/21 11:55	33	180	08/12/21 20:25	36	180	
LDW21-IT626A 21G0321-05	07/07/21 18:32	07/27/21 12:20	08/10/21 11:55	33	180	08/12/21 20:29	36	180	
Duplicate BJH0241-DUP1	07/07/21 14:51	07/27/21 12:20	08/10/21 11:55	33	180	08/12/21 19:48	36	180	
Matrix Spike BJH0241-MS1	07/07/21 14:51	07/27/21 12:20	08/10/21 11:55	33	180	08/12/21 19:53	36	180	
Matrix Spike Dup BJH0241-MSD1	07/07/21 14:51	07/27/21 12:20	08/10/21 11:55	33	180	08/12/21 19:57	36	180	

* Indicates hold time exceedance.

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METHOD DETECTION AND REPORTING LIMITS

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21G0321
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Instrument:	ICPMS1

Analyte	MDL	RL	Units
Arsenic-75a	0.04	0.20	mg/kg

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METHOD DETECTION AND REPORTING LIMITS

EPA 6020B UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21G0321
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Water
Instrument: ICPMS1

Analyte	MDL	RL	Units
Arsenic-75a	0.0373	0.200	ug/L

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG10
Lot Number:	P2-AG679501
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Silver
Starting Material:	Ag Shot
Starting Material Lot#:	2217
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9996 ± 30 µg/mL

Density: 1.053 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10015 ± 56 µg/mL**
ICP Assay NIST SRM 3151 Lot Number: 160729

Assay Method #2 **9992 ± 25 µg/mL**
Volhard NIST SRM 999c Lot Number: 999c

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.000253	O	Na		0.005562	M	Se	<	0.018179	M	Zn		0.005799
O	Al		0.006295	O	Fe		0.002932	M	Nb	<	0.000253	M	Si		0.022484	M	Zr	<	0.005559
M	As	<	0.002403	M	Ga	<	0.000253	M	Nd	<	0.000253	M	Sm	<	0.000253				
M	Au		0.001634	M	Gd	<	0.000253	O	Ni	<	0.005472	M	Sn		0.001927				
O	B	<	0.009978	M	Ge	<	0.000754	M	Os	<	0.000254	O	Sr		0.000086				
M	Ba	<	0.000785	M	Hf	<	0.000253	M	P	<	0.053784	M	Ta	<	0.000253				
M	Be	<	0.002407	M	Hg	<	0.001332	M	Pb		0.003281	M	Tb	<	0.000253				
M	Bi		0.001671	M	Ho	<	0.000253	M	Pd	<	0.001382	M	Te	<	0.003715				
O	Ca		0.007115	M	In	<	0.003483	M	Pr	<	0.000253	M	Th	<	0.000253				
M	Cd	<	0.000253	M	Ir	<	0.000254	M	Pt	<	0.000253	M	Ti	<	0.002706				
M	Ce	<	0.000573	O	K		0.004010	M	Rb	<	0.000253	M	Tl	<	0.000253				
M	Co	<	0.000253	M	La	<	0.000253	M	Re	<	0.000253	M	Tm	<	0.000253				
O	Cr	<	0.005043	O	Li	<	0.000214	M	Rh	<	0.000253	M	U	<	0.000253				
M	Cs	<	0.002769	M	Lu	<	0.000253	M	Ru	<	0.000254	M	V	<	0.000822				
O	Cu		0.004614	O	Mg		0.001034	M	S	<	0.560935	M	W	<	0.002146				
M	Dy	<	0.000253	M	Mn	<	0.000253	M	Sb	<	0.006899	M	Y	<	0.000253				
M	Er	<	0.000253	M	Mo	<	0.000479	M	Sc	<	0.000733	M	Yb	<	0.000253				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 $Ag(H_2O)_6^+$
Chemical Compatibility -Stable in HNO_3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [$AgCl_{x1-x}$] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.
Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HNO_3); Ores (Digestion with conc. HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 07, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 07, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS10
Lot Number:	R2-AS691113
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Arsenic
Starting Material:	As Pieces
Starting Material Lot#:	2208
Starting Material Purity:	99.9980%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9981 ± 55 µg/mL

Density: 1.028 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9981 ± 55 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) $= U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) $= U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001578	M	Eu	<	0.000526	O	Na		0.036136	M	Se	<	0.014204	O	Zn	<	0.003390
O	Al		0.006694	M	Fe		0.002633	O	Nb	<	0.011526	O	Si		0.139479	M	Zr	<	0.003156
s	As	<		M	Ga	<	0.000526	M	Nd	<	0.000526	M	Sm	<	0.000526				
M	Au	<	0.000526	M	Gd	<	0.000526	O	Ni	<	0.005537	M	Sn	<	0.001052				
M	B		0.017011	M	Ge	<	0.000526	M	Os	<	0.000526	M	Sr	<	0.000526				
M	Ba	<	0.000526	M	Hf	<	0.000526	O	P	<	0.056500	M	Ta	<	0.000526				
O	Be	<	0.001130	M	Hg	<	0.002104	M	Pb	<	0.000526	M	Tb	<	0.000526				
M	Bi	<	0.002104	M	Ho	<	0.000526	M	Pd	<	0.000526	M	Te	<	0.003682				
O	Ca		0.005657	M	In	<	0.000526	M	Pr	<	0.002630	M	Th	<	0.000526				
M	Cd	<	0.000526	M	Ir	<	0.000526	M	Pt	<	0.000526	O	Ti	<	0.001017				
M	Ce	<	0.000526	O	K		0.003865	M	Rb	<	0.002104	M	Tl	<	0.000526				
M	Co	<	0.003156	M	La	<	0.000526	M	Re	<	0.000526	M	Tm	<	0.000526				
M	Cr		0.000877	M	Li	<	0.000526	M	Rh	<	0.000526	M	U	<	0.000526				
M	Cs	<	0.002104	M	Lu	<	0.000526	M	Ru	<	0.000526	M	V	<	0.001578				
M	Cu	<	0.003156	O	Mg		0.000235	O	S	<	0.056500	M	W	<	0.000526				
M	Dy	<	0.000526	M	Mn	<	0.001052	M	Sb	<	0.000526	M	Y	<	0.000526				
M	Er	<	0.000526	M	Mo	<	0.000526	M	Sc	<	0.002104	M	Yb	<	0.000526				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H_3AsO_4 and $HAsO_2$

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices water and NH_4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H_2O / HNO_3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K_2CO_3 and KNO_3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na_2CO_3 / Na_2O_2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 25, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 25, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCD10
Lot Number:	P2-CD675954
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cadmium
Starting Material:	Cd Shot
Starting Material Lot#:	1954
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10014 ± 30 µg/mL

Density: 1.029 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10021 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10038 ± 43 µg/mL**
ICP Assay NIST SRM 3108 Lot Number: 130116

Assay Method #3 **9996 ± 30 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.000834	O	Eu	<	0.002146	O	Na		0.003359	M	Se	<	0.003997	O	Zn		0.000251
O	Al		0.002435	O	Fe	<	0.001180	M	Nb	<	0.000399	O	Si		0.009519	M	Zr	<	0.000399
M	As	<	0.003997	M	Ga	<	0.000399	M	Nd	<	0.000399	M	Sm	<	0.000799				
M	Au	<	0.002809	M	Gd	<	0.000399	M	Ni	<	0.002398	M	Sn	<	0.000799				
M	B	<	0.005197	M	Ge	<	0.004397	M	Os	<	0.000401	O	Sr	<	0.000107				
M	Ba	<	0.000399	M	Hf	<	0.000399	O	P	<	0.023606	M	Ta	<	0.000399				
O	Be	<	0.000107	O	Hg	<	0.010730	M	Pb	<	0.001599	M	Tb	<	0.000399				
M	Bi	<	0.000399	M	Ho	<	0.000399	M	Pd	<	0.000799	M	Te	<	0.005596				
O	Ca		0.001399	O	In	<	0.015558	M	Pr	<	0.000399	M	Th	<	0.000399				
s	Cd	<		M	Ir	<	0.000401	M	Pt	<	0.000399	O	Ti	<	0.000536				
M	Ce	<	0.000399	O	K		0.004479	M	Rb	<	0.000399	M	Tl		0.000625				
M	Co	<	0.000399	M	La	<	0.000399	M	Re	<	0.000399	M	Tm	<	0.000399				
M	Cr	<	0.001199	O	Li	<	0.000214	M	Rh	<	0.000399	M	U	<	0.000399				
M	Cs	<	0.000399	M	Lu	<	0.000399	M	Ru	<	0.000401	M	V	<	0.001599				
O	Cu	<	0.003219	O	Mg		0.000083	O	S	<	0.021460	M	W	<	0.000799				
M	Dy	<	0.000399	O	Mn	<	0.000429	M	Sb	<	0.001599	M	Y	<	0.000399				
M	Er	<	0.000399	M	Mo	<	0.000399	O	Sc	<	0.000429	M	Yb	<	0.000399				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 112.41 +2 4 Cd2(OH) (aq)3+ and Cd(OH)(aq)
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 , and HF. Avoid basic media forming insoluble carbonate and hydroxide.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3 / LDPE container.
Cd Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (soluble in HCl or HNO3); Ores (dissolve in HCl /HNO3 then take to fumes with H2SO4. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 07, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 07, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCO10
Lot Number:	N2-CO671028
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cobalt
Starting Material:	COBALT
Starting Material Lot#:	1749
Starting Material Purity:	99.9978%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9988 ± 34 µg/mL

Density: 1.057 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9973 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10024 ± 50 µg/mL**
ICP Assay NIST SRM traceable to 3113 Lot Number: M2-CO661665

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.022956	M	Eu	<	0.000422	O	Na		0.008125	M	Se	<	0.009290	M	Zn		0.007197
O	Al		0.013621	O	Fe		0.048700	M	Nb	<	0.000422	O	Si		0.017539	M	Zr	<	0.014357
i	As	<		M	Ga	<	0.000844	M	Nd	<	0.017735	M	Sm	<	0.001689				
M	Au	<	0.000583	M	Gd		0.003247	O	Ni	<	0.043642	M	Sn	<	0.005067				
M	B	<	0.013512	M	Ge	<	0.004645	M	Os	<	0.000583	O	Sr		0.000841				
O	Ba		0.071210	M	Hf	<	0.000422	n	P	<		M	Ta	<	0.000422				
O	Be	<	0.001771	M	Hg	<	0.002334	M	Pb		0.010094	M	Tb	<	0.001689				
M	Bi		0.000614	M	Ho	<	0.000422	M	Pd	<	0.000422	M	Te	<	0.008445				
O	Ca		0.025034	M	In	<	0.003378	M	Pr	<	0.006756	M	Th	<	0.000422				
M	Cd	<	0.000844	M	Ir	<	0.000583	M	Pt	<	0.000422	M	Ti	<	0.002533				
M	Ce		0.002721	O	K		0.005785	M	Rb	<	0.001689	M	Tl	<	0.000422				
s	Co	<		M	La		0.000877	M	Re		0.016853	M	Tm	<	0.000422				
M	Cr	<	0.020269	O	Li		0.000262	M	Rh	<	0.000422	M	U	<	0.000422				
M	Cs		0.000877	M	Lu	<	0.000422	M	Ru	<	0.000583	M	V	<	0.001689				
M	Cu		0.007197	O	Mg		0.003444	n	S	<		M	W	<	0.000844				
M	Dy	<	0.000422	O	Mn	<	0.006072	M	Sb	<	0.005911	M	Y		0.001228				
M	Er	<	0.000422	M	Mo	<	0.005911	M	Sc	<	0.001689	M	Yb	<	0.003378				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.93 +2 6 Co(H2O)62+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 15, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 15, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCR(3)10
Lot Number:	P2-CR684202
Matrix:	10% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chromium
Starting Material:	Cr METAL
Starting Material Lot#:	2077
Starting Material Purity:	99.9942%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10056 ± 49 µg/mL

Density: 1.084 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10061 ± 71 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 170630

Assay Method #2 **10052 ± 64 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000540	M	Eu	<	0.003200	O	Na		0.130027	M	Se	<	0.012000	O	Zn	<	0.002700
O	Al		0.016626	O	Fe		0.202502	M	Nb	<	0.022000	n	Si	<		M	Zr	<	0.020000
M	As		0.003836	O	Ga	<	0.031000	M	Nd	<	0.000540	M	Sm	<	0.035000				
M	Au	<	0.000540	M	Gd	<	0.000540	O	Ni		0.009165	M	Sn		0.004049				
M	B	<	0.049000	M	Ge	<	0.005400	M	Os	<	0.088000	O	Sr	<	0.000250				
O	Ba	<	0.002000	M	Hf	<	0.000540	i	P	<		M	Ta	<	0.000540				
O	Be	<	0.000250	M	Hg	<	0.001600	M	Pb		0.002557	M	Tb	<	0.000540				
M	Bi		0.008952	M	Ho	<	0.000540	M	Pd	<	0.001100	M	Te	<	0.004800				
O	Ca		0.074605	M	In	<	0.001100	M	Pr	<	0.000540	M	Th	<	0.000540				
M	Cd	<	0.000540	M	Ir	<	0.000540	M	Pt	<	0.000540	O	Ti		0.013428				
M	Ce	<	0.000540	O	K		0.034105	i	Rb	<		M	Tl	<	0.001100				
O	Co	<	0.002900	M	La	<	0.001100	M	Re	<	0.002700	O	Tm	<	0.001800				
s	Cr	<		O	Li	<	0.000130	M	Rh	<	0.032000	M	U	<	0.001100				
M	Cs	<	0.019000	M	Lu	<	0.000540	M	Ru	<	0.094000	O	V		0.159869				
O	Cu		0.010018	O	Mg		0.001449	i	S	<		M	W	<	0.028000				
M	Dy	<	0.000540	O	Mn	<	0.014000	M	Sb	<	0.008600	M	Y	<	0.001100				
M	Er	<	0.016000	O	Mo	<	0.013000	O	Sc	<	0.001400	M	Yb	<	0.000540				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 52.00 +3 6 Cr(H2O)63+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4, HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Cr3 Containing Samples (Preparation and Solution) -Metal (soluble in HCl); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with KHSO4 and extraction with hot KCl. The residue fused with Na2CO3 and KClO3, 3:1. B. Fusion with NaKSO4 and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na2O2 or NaOH and KNO3 or NaOH and Na2O2. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, B, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCU10
Lot Number:	P2-CU682108
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Copper
Starting Material:	Cu Metal
Starting Material Lot#:	2095
Starting Material Purity:	99.9996%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10013 ± 30 µg/mL

Density: 1.032 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9977 ± 50 µg/mL**
ICP Assay NIST SRM 3114 Lot Number: 121207

Assay Method #2 **10024 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10007 ± 46 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.007542	M	Eu	<	0.000942	O	Na		0.001434	M	Se	<	0.016971	M	Zn	<	0.005657
O	Al	<	0.000609	O	Fe		0.008700	M	Nb	<	0.000942	O	Si		0.003052	M	Zr	<	0.000942
M	As	<	0.010371	M	Ga	<	0.000942	M	Nd	<	0.000942	M	Sm	<	0.000942				
M	Au	<	0.001885	M	Gd	<	0.000942	M	Ni		0.003781	M	Sn	<	0.005657				
O	B		0.003663	M	Ge	<	0.005657	M	Os	<	0.000942	M	Sr	<	0.000942				
M	Ba		0.004253	M	Hf	<	0.000942	O	P	<	0.031668	M	Ta	<	0.000942				
M	Be	<	0.000942	O	Hg	<	0.007064	M	Pb		0.005789	M	Tb	<	0.000942				
M	Bi	<	0.000942	M	Ho	<	0.000942	M	Pd	<	0.000942	M	Te	<	0.004714				
O	Ca		0.002304	M	In	<	0.000942	M	Pr	<	0.000942	M	Th	<	0.000942				
M	Cd	<	0.000942	M	Ir	<	0.000942	M	Pt	<	0.000942	O	Ti	<	0.002801				
M	Ce	<	0.000942	O	K		0.000763	M	Rb	<	0.000942	M	Tl	<	0.000942				
M	Co		0.001890	M	La	<	0.000942	M	Re	<	0.000942	M	Tm	<	0.000942				
M	Cr	<	0.005657	O	Li	<	0.000243	i	Rh	<		M	U	<	0.000942				
M	Cs	<	0.000942	M	Lu	<	0.000942	M	Ru	<	0.039588	M	V	<	0.003771				
s	Cu	<		O	Mg		0.000320	O	S		0.007174	M	W	<	0.005657				
M	Dy	<	0.000942	O	Mn		0.000793	M	Sb	<	0.001885	M	Y	<	0.000942				
M	Er	<	0.000942	M	Mo	<	0.005657	M	Sc	<	0.000942	M	Yb	<	0.000942				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 Cu(H2O)62+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4, HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 24, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 24, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

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fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMN10
Lot Number:	P2-MN687536
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Manganese
Starting Material:	Mn Metal
Starting Material Lot#:	2275
Starting Material Purity:	99.9909%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10046 ± 30 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10045 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10083 ± 68 µg/mL**
ICP Assay NIST SRM 3132 Lot Number: 050429

Assay Method #3 **10031 ± 47 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001500	M	Eu	<	0.000730	O	Na		0.176713	M	Se	<	0.006600	M	Zn		0.009960
O	Al		0.004337	M	Fe	<	0.650000	M	Nb	<	0.000730	O	Si		0.097995	M	Zr	<	0.000730
M	As	<	0.008000	M	Ga		0.004337	M	Nd	<	0.001500	M	Sm	<	0.000730				
M	Au	<	0.000730	M	Gd	<	0.000730	M	Ni		0.024097	M	Sn	<	0.002200				
M	B		0.069078	M	Ge	<	0.004400	M	Os	<	0.000730	O	Sr		0.000931				
M	Ba	<	0.001500	M	Hf	<	0.000730	i	P	<		M	Ta	<	0.000730				
M	Be	<	0.000730	M	Hg	<	0.002200	M	Pb		0.007389	M	Tb	<	0.000730				
M	Bi	<	0.003000	M	Ho	<	0.000730	M	Pd	<	0.000730	M	Te	<	0.019000				
O	Ca		0.062652	M	In	<	0.003000	M	Pr	<	0.000730	M	Th	<	0.000730				
M	Cd	<	0.001500	M	Ir	<	0.000730	M	Pt	<	0.000730	O	Ti	<	0.006500				
M	Ce	<	0.007300	O	K		0.006425	M	Rb	<	0.006600	M	Tl	<	0.000730				
O	Co		0.014779	M	La	<	0.003000	M	Re	<	0.000730	M	Tm	<	0.000730				
O	Cr		0.273102	O	Li		0.000417	M	Rh	<	0.003000	M	U	<	0.001500				
M	Cs	<	0.000730	M	Lu	<	0.000730	M	Ru	<	0.004400	M	V	<	0.000730				
O	Cu		0.007711	O	Mg		0.321297	i	S	<		M	W	<	0.004400				
M	Dy	<	0.001500	s	Mn	<		M	Sb	<	0.021000	O	Y		0.001365				
M	Er	<	0.001500	M	Mo		0.010281	O	Sc	<	0.004100	M	Yb	<	0.000730				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 54.94 +2 6 Mn(H2O)62+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3/LDPE container.

Mn Containing Samples (Preparation and Solution) -Metal (Soluble in dilute acids); Oxides (Soluble in dilute acids); Ores (Dissolve with HCl. If silica is present add HF and then fume off silica by adding H2SO4 and heat to SO3 fumes - dense white fumes).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 55 amu	10 ppt	n/a	40Ar14N1H,39K16O,37Cl18O,40Ar15N,38Ar17O,36Ar18O1H ,38Ar16O1H,37Cl17O1H,23Na32S
ICP-OES 257.610 nm	0.0014 / 0.00002 µg/mL	1	Ce, W, Re
ICP-OES 259.373 nm	0.0016 / 0.00002 µg/mL	1	U, Ta, Mo, Fe, Nb
ICP-OES 260.569 nm	0.0021 / 0.00002 µg/mL	1	Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 05, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 05, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNI10
Lot Number:	P2-NI686384
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Nickel
Starting Material:	Ni Metal
Starting Material Lot#:	2277 and 2282
Starting Material Purity:	99.9992%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9979 ± 30 µg/mL

Density: 1.038 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9971 ± 54 µg/mL**
ICP Assay NIST SRM 3136 Lot Number: 120619

Assay Method #2 **9970 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **9993 ± 33 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.002606	M	Eu	<	0.001100	O	Na		0.004965	O	Se	<	0.067000	M	Zn		0.006578
M	Al	<	0.013000	O	Fe		0.018618	M	Nb	<	0.001100	O	Si		0.010923	M	Zr	<	0.001100
O	As	<	0.067000	M	Ga	<	0.001100	M	Nd	<	0.001100	M	Sm	<	0.001100				
M	Au	<	0.002100	M	Gd	<	0.001100	s	Ni	<		M	Sn	<	0.016000				
M	B	<	0.017000	M	Ge	<	0.004200	M	Os		0.002110	O	Sr	<	0.000940				
M	Ba	<	0.001100	M	Hf	<	0.001100	i	P	<		M	Ta	<	0.001100				
O	Be	<	0.000410	M	Hg		0.014895	M	Pb		0.006578	M	Tb	<	0.001100				
M	Bi	<	0.004200	M	Ho	<	0.001100	M	Pd	<	0.001100	M	Te	<	0.015000				
O	Ca		0.003351	M	In	<	0.001100	M	Pr	<	0.001100	M	Th	<	0.001100				
M	Cd		0.001365	M	Ir		0.004716	M	Pt	<	0.001100	M	Ti	<	0.004200				
M	Ce	<	0.001100	O	K		0.004716	M	Rb	<	0.001100	M	Tl	<	0.001100				
O	Co		0.017377	M	La	<	0.001100	M	Re		0.001737	M	Tm	<	0.001100				
O	Cr	<	0.006700	O	Li	<	0.000140	M	Rh	<	0.006300	M	U	<	0.001100				
M	Cs	<	0.007300	M	Lu	<	0.001100	M	Ru	<	0.019000	M	V	<	0.002100				
M	Cu		0.004096	O	Mg		0.000372	i	S	<		M	W	<	0.006300				
M	Dy	<	0.001100	O	Mn	<	0.001900	M	Sb		0.005833	O	Y	<	0.000540				
M	Er	<	0.001100	M	Mo	<	0.008400	M	Sc	<	0.002100	M	Yb	<	0.001100				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 Ni(H2O)62+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN10
Lot Number:	P2-ZN686137
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Zinc
Starting Material:	Zn Shot
Starting Material Lot#:	2201
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10040 ± 30 µg/mL

Density: 1.033 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10009 ± 54 µg/mL**
ICP Assay NIST SRM 3168a Lot Number: 120629

Assay Method #2 **10049 ± 33 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10041 ± 28 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.003057	M	Eu	<	0.000509	O	Na		0.001874	M	Se	<	0.023441	s	Zn	<	
O	Al	<	0.005720	O	Fe		0.006348	M	Nb	<	0.000509	O	Si	<	0.057200	M	Zr	<	0.000509
M	As	<	0.003057	M	Ga	<	0.007134	M	Nd	<	0.000509	M	Sm	<	0.000509				
M	Au	<	0.000510	M	Gd	<	0.000509	M	Ni	<	0.000509	M	Sn	<	0.000509				
O	B	<	0.017160	M	Ge	<	0.003057	M	Os	<	0.000510	M	Sr	<	0.000509				
M	Ba	<	0.000509	M	Hf	<	0.000509	O	P	<	0.057200	M	Ta	<	0.000509				
M	Be	<	0.000509	M	Hg	<	0.001021	O	Pb		0.023870	M	Tb	<	0.000509				
M	Bi	<	0.005095	M	Ho	<	0.000509	M	Pd	<	0.002038	M	Te	<	0.023441				
O	Ca		0.033793	M	In	<	0.000509	M	Pr	<	0.000509	M	Th	<	0.000509				
O	Cd		0.003924	M	Ir	<	0.000510	M	Pt	<	0.000509	M	Ti	<	0.000509				
M	Ce	<	0.000509	O	K		0.001499	M	Rb	<	0.002038	M	Tl	<	0.009172				
M	Co	<	0.000509	M	La	<	0.000509	M	Re	<	0.000509	M	Tm	<	0.000509				
O	Cr		0.001549	O	Li	<	0.000457	M	Rh	<	0.000509	M	U	<	0.000509				
M	Cs	<	0.000509	M	Lu	<	0.000509	M	Ru	<	0.006129	M	V	<	0.000509				
O	Cu	<	0.010296	O	Mg		0.000349	O	S	<	0.034320	M	W	<	0.001019				
M	Dy	<	0.000509	M	Mn	<	0.000509	M	Sb	<	0.001019	M	Y	<	0.000509				
M	Er	<	0.000509	M	Mo	<	0.000509	M	Sc	<	0.000509	M	Yb	<	0.000509				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 05, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 05, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	P2-U683975
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Uranium
Starting Material:	Uranyl Nitrate
Starting Material Lot#:	1948
Starting Material Purity:	99.9985%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Density: 1.010 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **1001 ± 5 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1002 ± 6 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.24 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000103	M	Eu	<	0.000103	M	Na		0.020618	M	Se	<	0.001246	M	Zn	<	0.003533
M	Al	<	0.003740	M	Fe		0.001029	M	Nb	<	0.000207	M	Si	<	0.035027	M	Zr	<	0.000103
M	As	<	0.001143	M	Ga	<	0.001350	M	Nd	<	0.000623	M	Sm	<	0.000311				
M	Au	<	0.000207	M	Gd	<	0.000311	M	Ni	<	0.008313	M	Sn	<	0.007273				
M	B	<	0.005819	M	Ge	<	0.001974	M	Os	<	0.000103	M	Sr	<	0.001039				
M	Ba	<	0.002286	M	Hf	<	0.000103	i	P	<		M	Ta	<	0.000103				
M	Be	<	0.001350	M	Hg	<	0.000415	M	Pb	<	0.000103	M	Tb	<	0.000103				
M	Bi	<	0.000103	M	Ho	<	0.000103	M	Pd	<	0.000207	M	Te	<	0.006234				
M	Ca	<	0.010391	M	In	<	0.000103	M	Pr	<	0.000103	M	Th		0.010535				
M	Cd	<	0.000103	M	Ir	<	0.000103	M	Pt	<	0.000103	M	Ti	<	0.000207				
M	Ce	<	0.000103	M	K	<	0.041565	M	Rb	<	0.000519	M	Tl	<	0.000103				
M	Co	<	0.000415	M	La	<	0.001662	M	Re	<	0.000103	M	Tm	<	0.000103				
M	Cr	<	0.001870	M	Li	<	0.001662	M	Rh	<	0.000103	s	U	<					
M	Cs		0.000175	M	Lu	<	0.000103	M	Ru	<	0.000519	M	V	<	0.000207				
M	Cu		0.000792	M	Mg	<	0.002493	i	S	<		M	W	<	0.000103				
M	Dy	<	0.000103	M	Mn	<	0.001454	M	Sb	<	0.000103	M	Y	<	0.000103				
M	Er	<	0.000103	M	Mo	<	0.000415	M	Sc	<	0.006234	M	Yb	<	0.000103				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 238.03 +6 8 UO22+(uranyl)

Chemical Compatibility - Soluble in HCl and HNO3. Avoid H3PO4. H2SO4 and HF matrices should not be a problem depending upon [U]. Although the UO22+ ion is distinctly basic, any U+4 will precipitate in basic media. UO22+salts are generally soluble in water and UO22+ is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF4 and UF6 are water soluble.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

U Containing Samples (Preparation and Solution) -Metal (Dissolves rapidly in HCl and HNO3); Oxide (Soluble in HNO3); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO3. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H2SO4.)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 28, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 28, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution

Catalog Number: AR-6020ICS-0A10

Lot Number: R2-MEB692465

Matrix: 1.4% (v/v) HNO3

Value / Analyte(s):

1 000 µg/mL ea:
Chloride,

200 µg/mL ea:
Carbon,

100 µg/mL ea:
Calcium, Aluminum,
Iron, Potassium,
Magnesium, Sodium,
Phosphorus, Sulfur,

2 µg/mL ea:
Titanium, Molybdenum

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.3 µg/mL	Calcium, Ca	100.0 ± 0.5 µg/mL
Carbon, C	200.1 ± 0.5 µg/mL	Chloride, Cl	1 000 ± 5 µg/mL
Iron, Fe	100.0 ± 0.5 µg/mL	Magnesium, Mg	100.0 ± 0.5 µg/mL
Molybdenum, Mo	2.001 ± 0.012 µg/mL	Phosphorus, P	100.1 ± 0.6 µg/mL
Potassium, K	100.0 ± 0.5 µg/mL	Sodium, Na	100.0 ± 0.5 µg/mL
Sulfur, S	100.0 ± 0.5 µg/mL	Titanium, Ti	2.001 ± 0.017 µg/mL

Density: 1.007 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 22, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 22, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG10
Lot Number:	P2-AG688237
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Silver
Starting Material:	Ag Shot
Starting Material Lot#:	2217
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10004 ± 30 µg/mL

Density: 1.054 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9984 ± 32 µg/mL**
ICP Assay NIST SRM 3151 Lot Number: 160729

Assay Method #2 **10016 ± 26 µg/mL**
Volhard NIST SRM 999c Lot Number: 999c

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.000253	O	Na		0.005563	M	Se	<	0.018179	M	Zn		0.005800
O	Al		0.006296	O	Fe		0.002932	M	Nb	<	0.000253	M	Si		0.022487	M	Zr	<	0.005559
M	As	<	0.002403	M	Ga	<	0.000253	M	Nd	<	0.000253	M	Sm	<	0.000253				
M	Au		0.001635	M	Gd	<	0.000253	O	Ni	<	0.005472	M	Sn		0.001928				
O	B	<	0.009978	M	Ge	<	0.000754	M	Os	<	0.000254	O	Sr		0.000086				
M	Ba	<	0.000785	M	Hf	<	0.000253	M	P	<	0.053784	M	Ta	<	0.000253				
M	Be	<	0.002407	M	Hg	<	0.001332	M	Pb		0.003281	M	Tb	<	0.000253				
M	Bi		0.001671	M	Ho	<	0.000253	M	Pd	<	0.001382	M	Te	<	0.003715				
O	Ca		0.007116	M	In	<	0.003483	M	Pr	<	0.000253	M	Th	<	0.000253				
M	Cd	<	0.000253	M	Ir	<	0.000254	M	Pt	<	0.000253	M	Ti	<	0.002706				
M	Ce	<	0.000573	O	K		0.004010	M	Rb	<	0.000253	M	Tl	<	0.000253				
M	Co	<	0.000253	M	La	<	0.000253	M	Re	<	0.000253	M	Tm	<	0.000253				
O	Cr	<	0.005043	O	Li	<	0.000214	M	Rh	<	0.000253	M	U	<	0.000253				
M	Cs	<	0.002769	M	Lu	<	0.000253	M	Ru	<	0.000254	M	V	<	0.000822				
O	Cu		0.004614	O	Mg		0.001035	M	S	<	0.560935	M	W	<	0.002146				
M	Dy	<	0.000253	M	Mn	<	0.000253	M	Sb	<	0.006899	M	Y	<	0.000253				
M	Er	<	0.000253	M	Mo	<	0.000479	M	Sc	<	0.000733	M	Yb	<	0.000253				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 $Ag(H_2O)_6^+$

Chemical Compatibility -Stable in HNO_3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [$AgCl_{x1-x}$] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.

Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HNO_3); Ores (Digestion with conc. HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 29, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 29, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAL10
Lot Number:	S2-AL700843
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Aluminum
Starting Material:	Al(NO3)3 * 9H2O
Starting Material Lot#:	P2-2302
Starting Material Purity:	99.9913%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10011 ± 31 µg/mL

Density: 1.087 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10015 ± 44 µg/mL**
ICP Assay NIST SRM 3101a Lot Number: 140903

Assay Method #2 **10008 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10014 ± 36 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001500	M	Eu	<	0.000680	O	Na		0.510200	M	Se	<	0.014000	M	Zn		0.009183
s	Al	<		O	Fe		0.114284	M	Nb	<	0.000680	O	Si		0.053060	O	Zr		0.003673
M	As	<	0.006800	O	Ga		0.191835	M	Nd	<	0.000680	M	Sm	<	0.000680				
M	Au	<	0.000680	M	Gd	<	0.004100	O	Ni		0.001102	M	Sn	<	0.006800				
O	B	<	0.021000	M	Ge	<	0.001400	M	Os	<	0.008700	O	Sr		0.006530				
O	Ba		0.012652	M	Hf	<	0.002700	n	P	<		M	Ta	<	0.000680				
O	Be	<	0.001300	M	Hg	<	0.006100	M	Pb		0.006530	M	Tb	<	0.000680				
M	Bi	<	0.008100	M	Ho	<	0.000680	M	Pd	<	0.000680	M	Te	<	0.030000				
O	Ca		0.071428	M	In	<	0.000900	M	Pr	<	0.000680	M	Th	<	0.000680				
M	Cd	<	0.001400	M	Ir	<	0.000680	M	Pt	<	0.000680	O	Ti		0.001142				
M	Ce	<	0.002700	O	K		0.053060	M	Rb	<	0.014000	M	Tl	<	0.000680				
O	Co		0.001979	M	La	<	0.002900	M	Re	<	0.000680	M	Tm	<	0.000680				
O	Cr		0.014285	O	Li		0.000142	M	Rh	<	0.000680	M	U	<	0.001400				
M	Cs		0.005306	M	Lu	<	0.000680	M	Ru	<	0.000680	M	V	<	0.005400				
O	Cu		0.003469	O	Mg		0.069387	i	S	<		M	W	<	0.012000				
M	Dy	<	0.005400	O	Mn		0.001653	M	Sb	<	0.004200	M	Y	<	0.000680				
M	Er	<	0.000680	M	Mo	<	0.012000	M	Sc	<	0.002100	M	Yb	<	0.000680				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 26.98 +3 6 Al(H2O)6+3

Chemical Compatibility -Soluble in HCl, HNO3, HF and H2SO4. Avoid neutral media. Soluble in strongly basic NaOH forming the Al(OH)4(H2O)21- species. Stable with most metals and inorganic anions. The phosphate is insoluble in water and only slightly soluble in acid.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Al Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); a- Al2O3 (Na2CO3 fusion in Pt0);

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 27 amu	30 ppt	N/A	12C15N, 13C14N, 1H12C14N, 11B16O, 54Cr2+, 54Fe2+
ICP-OES 167.078 nm	0.1/0.009 µg/mL	1	Fe
ICP-OES 394.401 nm	0.05/0.006 µg/mL	1	U, Ce
ICP-OES 396.152 nm	0.03/0.006 µg/mL	1	Mo, Zr, Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 27, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 27, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
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Christiansburg, VA 24073 · USA
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS10
Lot Number:	R2-AS691113
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Arsenic
Starting Material:	As Pieces
Starting Material Lot#:	2208
Starting Material Purity:	99.9980%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9981 ± 55 µg/mL

Density: 1.028 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9981 ± 55 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001578	M	Eu	<	0.000526	O	Na		0.036136	M	Se	<	0.014204	O	Zn	<	0.003390
O	Al		0.006694	M	Fe		0.002633	O	Nb	<	0.011526	O	Si		0.139479	M	Zr	<	0.003156
s	As	<		M	Ga	<	0.000526	M	Nd	<	0.000526	M	Sm	<	0.000526				
M	Au	<	0.000526	M	Gd	<	0.000526	O	Ni	<	0.005537	M	Sn	<	0.001052				
M	B		0.017011	M	Ge	<	0.000526	M	Os	<	0.000526	M	Sr	<	0.000526				
M	Ba	<	0.000526	M	Hf	<	0.000526	O	P	<	0.056500	M	Ta	<	0.000526				
O	Be	<	0.001130	M	Hg	<	0.002104	M	Pb	<	0.000526	M	Tb	<	0.000526				
M	Bi	<	0.002104	M	Ho	<	0.000526	M	Pd	<	0.000526	M	Te	<	0.003682				
O	Ca		0.005657	M	In	<	0.000526	M	Pr	<	0.002630	M	Th	<	0.000526				
M	Cd	<	0.000526	M	Ir	<	0.000526	M	Pt	<	0.000526	O	Ti	<	0.001017				
M	Ce	<	0.000526	O	K		0.003865	M	Rb	<	0.002104	M	Tl	<	0.000526				
M	Co	<	0.003156	M	La	<	0.000526	M	Re	<	0.000526	M	Tm	<	0.000526				
M	Cr		0.000877	M	Li	<	0.000526	M	Rh	<	0.000526	M	U	<	0.000526				
M	Cs	<	0.002104	M	Lu	<	0.000526	M	Ru	<	0.000526	M	V	<	0.001578				
M	Cu	<	0.003156	O	Mg		0.000235	O	S	<	0.056500	M	W	<	0.000526				
M	Dy	<	0.000526	M	Mn	<	0.001052	M	Sb	<	0.000526	M	Y	<	0.000526				
M	Er	<	0.000526	M	Mo	<	0.000526	M	Sc	<	0.002104	M	Yb	<	0.000526				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H_3AsO_4 and $HAsO_2$

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices water and NH_4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H_2O / HNO_3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K_2CO_3 and KNO_3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na_2CO_3 / Na_2O_2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 25, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 25, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

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fax: 540.585.3012
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBA10
Lot Number:	P2-BA682107
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Barium
Starting Material:	Ba(NO3)2
Starting Material Lot#:	Mixed Lots
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10072 ± 32 µg/mL

Density: 1.024 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10054 ± 80 µg/mL**
ICP Assay NIST SRM 3104a Lot Number: 140909

Assay Method #2 **10075 ± 30 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001538	O	Eu	<	0.028728	O	Na		0.006767	M	Se	<	0.007964	O	Zn		0.004335
M	Al		0.005194	M	Fe		0.016554	M	Nb	<	0.000200	O	Si	<	0.020780	M	Zr	<	0.000271
M	As	<	0.000519	M	Ga	<	0.000200	M	Nd	<	0.000200	M	Sm	<	0.082480				
M	Au	<	0.003452	M	Gd	<	0.000200	M	Ni	<	0.001290	M	Sn	<	0.000200				
M	B	<	0.002519	M	Ge	<	0.000430	M	Os	<	0.000752	O	Sr		0.027070				
s	Ba	<		M	Hf	<	0.002746	O	P	<	0.044677	M	Ta	<	0.001008				
M	Be	<	0.000430	M	Hg	<	0.001063	M	Pb	<	0.002257	M	Tb	<	0.000200				
M	Bi	<	0.002971	M	Ho	<	0.000200	M	Pd	<	0.000286	M	Te	<	0.001470				
O	Ca		0.026224	M	In	<	0.000200	M	Pr	<	0.000200	M	Th	<	0.000200				
M	Cd	<	0.000200	M	Ir	<	0.000446	M	Pt	<	0.000200	M	Ti	<	0.000324				
M	Ce	<	0.004362	O	K		0.011526	M	Rb		0.001487	M	Tl	<	0.000200				
M	Co	<	0.000200	O	La	<	0.091587	M	Re	<	0.000200	M	Tm	<	0.000954				
M	Cr	<	0.002191	O	Li	<	0.002181	M	Rh	<	0.000200	M	U	<	0.000200				
M	Cs	<	0.001640	M	Lu	<	0.002934	M	Ru	<	0.000200	M	V	<	0.000229				
M	Cu	<	0.003646	O	Mg		0.002379	O	S	<	0.073041	M	W	<	0.001627				
M	Dy	<	0.000200	M	Mn	<	0.000902	M	Sb	<	0.000514	O	Y	<	0.019637				
M	Er	<	0.000556	M	Mo	<	0.000455	M	Sc	<	0.000478	M	Yb	<	0.001991				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 137.33 +2 6 Ba(H2O)6+2
Chemical Compatibility - Soluble in HCl, and HNO3. Avoid H2SO4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO3 / LDPE container.
Ba Containing Samples (Preparation and Solution) -Metal(is best dissolved in diluted HNO3); Ores(Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent BaSO4 precipitate); Organic Matrices (dry ash and dissolve in dilute HCl.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 13, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 13, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBE10
Lot Number:	P2-BE678865
Matrix:	6% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Beryllium
Starting Material:	Beryllium diacetate
Starting Material Lot#:	2221
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10036 ± 35 µg/mL

Density: 1.140 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10051 ± 42 µg/mL**
ICP Assay NIST SRM 3105a Lot Number: 090514

Assay Method #2 **10008 ± 59 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.045414	M	Eu	<	0.000254	O	Na		0.015009	M	Se	<	0.015257	O	Zn		0.004059
O	Al		0.008058	O	Fe		0.011749	M	Nb	<	0.000254	O	Si		0.063793	O	Zr	<	0.007064
M	As	<	0.006473	M	Ga	<	0.000254	M	Nd	<	0.000254	M	Sm	<	0.000254				
M	Au	<	0.000248	M	Gd	<	0.000254	M	Ni	<	0.002034	M	Sn	<	0.002542				
O	B	<	0.021661	M	Ge	<	0.000508	M	Os	<	0.000248	M	Sr	<	0.000254				
M	Ba		0.001760	M	Hf	<	0.000254	O	P	<	0.666500	M	Ta	<	0.000254				
s	Be	<		M	Hg	<	0.001244	M	Pb	<	0.001271	M	Tb	<	0.000254				
M	Bi	<	0.000254	M	Ho	<	0.000254	M	Pd	<	0.000254	M	Te	<	0.001780				
O	Ca		0.015256	M	In	<	0.000254	M	Pr	<	0.000254	M	Th	<	0.000254				
M	Cd	<	0.000254	M	Ir	<	0.000248	M	Pt	<	0.000254	O	Ti	<	0.002266				
M	Ce	<	0.000254	O	K		0.031127	M	Rb	<	0.000508	M	Tl	<	0.000254				
M	Co	<	0.004068	M	La	<	0.000254	M	Re	<	0.000254	M	Tm	<	0.000254				
M	Cr	<	0.001525	O	Li	<	0.000666	M	Rh	<	0.000254	M	U	<	0.000254				
M	Cs		0.001642	M	Lu	<	0.000254	M	Ru	<	0.000248	M	V	<	0.000508				
M	Cu	<	0.005085	O	Mg		0.001907	i	S	<		M	W	<	0.004068				
M	Dy	<	0.000254	O	Mn	<	0.001333	M	Sb	<	0.000254	M	Y	<	0.000254				
M	Er	<	0.000254	M	Mo	<	0.000762	O	Sc	<	0.001333	M	Yb	<	0.000254				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 9.01 +2 4 $Be(H_2O)_4^{+2}$

Chemical Compatibility -Soluble in HCl, HNO_3, H_2SO_4 and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1 % HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO_3 / LDPE container.

Be Containing Samples (Preparation and Solution) - Meta l(is best dissolved in diluted H_2SO_4); BeO (boiling nitric, hydrochloric, or sulfuric acids or $KHSO_4$ fusion); Ores (H_2SO_4/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION, PERIOD OF VALIDITY AND REVISION HISTORY

11.1 Certification Issue Date

April 22, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 22, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

11.4 Revision Status

- Revision 1 - Revised on Thursday, Jan 14, 2021 by utruong. Revision was made for the following reason: Modified Section 7 Chemical Form in Solution.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCA10
Lot Number:	R2-CA697921
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Calcium
Starting Material:	Calcium Oxide
Starting Material Lot#:	P2-CA677788
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9985 ± 30 µg/mL

Density: 1.039 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9976 ± 43 µg/mL**
ICP Assay NIST SRM 3109a Lot Number: 130213

Assay Method #2 **9965 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10008 ± 26 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002500	M	Eu	<	0.001300	M	Na		0.008214	O	Se	<	0.022000	O	Zn		0.001158
O	Al	<	0.030000	O	Fe		0.002316	M	Nb	<	0.001300	O	Si	<	0.022000	M	Zr	<	0.006200
O	As	<	0.025000	M	Ga	<	0.002500	M	Nd	<	0.001300	M	Sm	<	0.001300				
M	Au	<	0.013000	M	Gd	<	0.001300	O	Ni	<	0.005300	O	Sn	<	0.013000				
O	B	<	0.006900	O	Ge	<	0.018000	M	Os	<	0.002500	M	Sr		0.115847				
M	Ba		0.000905	M	Hf	<	0.002500	O	P	<	0.027000	M	Ta	<	0.008600				
O	Be	<	0.000270	M	Hg	<	0.001300	M	Pb		0.001685	M	Tb	<	0.001300				
M	Bi	<	0.002500	M	Ho	<	0.001300	M	Pd	<	0.006200	O	Te	<	0.045000				
s	Ca	<		M	In	<	0.001300	M	Pr	<	0.001300	M	Th	<	0.001300				
O	Cd	<	0.000540	M	Ir	<	0.001300	M	Pt	<	0.001300	O	Ti	<	0.004200				
M	Ce	<	0.001300	O	K		0.015797	M	Rb	<	0.014000	M	Tl	<	0.001300				
O	Co		0.000558	M	La	<	0.001300	M	Re	<	0.001300	M	Tm	<	0.001300				
O	Cr	<	0.006000	O	Li	<	0.006900	M	Rh	<	0.002500	M	U	<	0.001300				
M	Cs	<	0.001300	M	Lu	<	0.001300	M	Ru	<	0.003800	O	V	<	0.002200				
M	Cu	<	0.002500	O	Mg		0.002843	n	S	<		M	W	<	0.012000				
M	Dy	<	0.001300	O	Mn		0.000115	M	Sb	<	0.007400	M	Y	<	0.001300				
M	Er	<	0.001300	M	Mo		0.002527	O	Sc	<	0.006100	M	Yb	<	0.001300				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 40.08 +2 6 Ca(H2O)6+2

Chemical Compatibility - Soluble in HCl and HNO3. Avoid H2SO4, HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO3 / LDPE container.

Ca Containing Samples (Preparation and Solution) -Metal (best dissolved in diluted HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO2). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO3. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na2CO3 followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 44 amu	1200 ppt	n/a	16O212C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 09, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 09, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
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CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCD10
Lot Number:	P2-CD685077
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cadmium
Starting Material:	Cd Shot
Starting Material Lot#:	1954
Starting Material Purity:	99.9996%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9954 ± 30 µg/mL

Density: 1.029 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9956 ± 54 µg/mL**
ICP Assay NIST SRM 3108 Lot Number: 130116

Assay Method #2 **9953 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag	<	0.006348	M	Eu	<	0.010622	O	Na		0.004020	M	Se	<	0.008116	O	Zn	<	0.002152
O	Al		0.011566	M	Fe		0.003011	M	Nb	<	0.000405	O	Si		0.005480	M	Zr	<	0.000405
M	As	<	0.001623	M	Ga	<	0.000405	M	Nd	<	0.000405	M	Sm	<	0.000405				
M	Au	<	0.000405	M	Gd	<	0.000405	M	Ni	<	0.002840	M	Sn	<	0.001217				
M	B	<	0.004463	M	Ge	<	0.000405	M	Os	<	0.000405	M	Sr	<	0.000405				
O	Ba	<	0.000968	M	Hf	<	0.000405	O	P	<	0.045730	M	Ta	<	0.000405				
M	Be	<	0.000405	O	Hg	<	0.002152	M	Pb	<	0.002434	M	Tb	<	0.000405				
M	Bi	<	0.000405	M	Ho	<	0.000405	M	Pd	<	0.000405	M	Te	<	0.016636				
O	Ca		0.002946	O	In	<	0.021520	M	Pr	<	0.000405	M	Th	<	0.000405				
s	Cd	<		M	Ir	<	0.000405	M	Pt	<	0.000405	M	Ti	<	0.001217				
M	Ce	<	0.000405	O	K		0.008179	M	Rb	<	0.000405	M	Tl	<	0.004495				
M	Co	<	0.000405	M	La	<	0.000405	M	Re	<	0.000405	M	Tm	<	0.000405				
M	Cr		0.002907	M	Li	<	0.000405	M	Rh	<	0.000405	M	U	<	0.000405				
M	Cs	<	0.002374	M	Lu	<	0.000405	M	Ru	<	0.000405	M	V	<	0.003179				
M	Cu	<	0.002434	O	Mg		0.000137	O	S	<	0.037660	M	W	<	0.000405				
M	Dy	<	0.000405	M	Mn	<	0.001623	M	Sb	<	0.004057	M	Y	<	0.000405				
M	Er	<	0.000405	M	Mo	<	0.000811	M	Sc	<	0.001623	M	Yb	<	0.000811				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 112.41 +2 4 Cd2(OH) (aq)3+ and Cd(OH)(aq)

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 , and HF. Avoid basic media forming insoluble carbonate and hydroxide.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3 / LDPE container.

Cd Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (soluble in HCl or HNO3); Ores (dissolve in HCl /HNO3 then take to fumes with H2SO4. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 08, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 08, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
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CERTIFICATE OF ANALYSIS

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCO10
Lot Number:	N2-CO671028
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cobalt
Starting Material:	COBALT
Starting Material Lot#:	1749
Starting Material Purity:	99.9978%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9988 ± 34 µg/mL

Density: 1.057 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9973 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10024 ± 50 µg/mL**
ICP Assay NIST SRM traceable to 3113 Lot Number: M2-CO661665

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.022956	M	Eu	<	0.000422	O	Na		0.008125	M	Se	<	0.009290	M	Zn		0.007197
O	Al		0.013621	O	Fe		0.048700	M	Nb	<	0.000422	O	Si		0.017539	M	Zr	<	0.014357
i	As	<		M	Ga	<	0.000844	M	Nd	<	0.017735	M	Sm	<	0.001689				
M	Au	<	0.000583	M	Gd		0.003247	O	Ni	<	0.043642	M	Sn	<	0.005067				
M	B	<	0.013512	M	Ge	<	0.004645	M	Os	<	0.000583	O	Sr		0.000841				
O	Ba		0.071210	M	Hf	<	0.000422	n	P	<		M	Ta	<	0.000422				
O	Be	<	0.001771	M	Hg	<	0.002334	M	Pb		0.010094	M	Tb	<	0.001689				
M	Bi		0.000614	M	Ho	<	0.000422	M	Pd	<	0.000422	M	Te	<	0.008445				
O	Ca		0.025034	M	In	<	0.003378	M	Pr	<	0.006756	M	Th	<	0.000422				
M	Cd	<	0.000844	M	Ir	<	0.000583	M	Pt	<	0.000422	M	Ti	<	0.002533				
M	Ce		0.002721	O	K		0.005785	M	Rb	<	0.001689	M	Tl	<	0.000422				
s	Co	<		M	La		0.000877	M	Re		0.016853	M	Tm	<	0.000422				
M	Cr	<	0.020269	O	Li		0.000262	M	Rh	<	0.000422	M	U	<	0.000422				
M	Cs		0.000877	M	Lu	<	0.000422	M	Ru	<	0.000583	M	V	<	0.001689				
M	Cu		0.007197	O	Mg		0.003444	n	S	<		M	W	<	0.000844				
M	Dy	<	0.000422	O	Mn	<	0.006072	M	Sb	<	0.005911	M	Y		0.001228				
M	Er	<	0.000422	M	Mo	<	0.005911	M	Sc	<	0.001689	M	Yb	<	0.003378				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.93 +2 6 Co(H2O)62+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 15, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 15, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

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ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCR(3)10
Lot Number:	R2-CR691013
Matrix:	10% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chromium
Starting Material:	Cr METAL
Starting Material Lot#:	2077
Starting Material Purity:	99.9942%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10044 ± 40 µg/mL

Density: 1.082 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10057 ± 58 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 170630

Assay Method #2 **10035 ± 50 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

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4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000540	M	Eu	<	0.003200	O	Na		0.130091	M	Se	<	0.012000	O	Zn	<	0.002700
O	Al		0.016634	O	Fe		0.202602	M	Nb	<	0.022000	n	Si	<		M	Zr	<	0.020000
M	As		0.003838	O	Ga	<	0.031000	M	Nd	<	0.000540	M	Sm	<	0.035000				
M	Au	<	0.000540	M	Gd	<	0.000540	O	Ni		0.009170	M	Sn		0.004051				
M	B	<	0.049000	M	Ge	<	0.005400	M	Os	<	0.088000	O	Sr	<	0.000250				
O	Ba	<	0.002000	M	Hf	<	0.000540	i	P	<		M	Ta	<	0.000540				
O	Be	<	0.000250	M	Hg	<	0.001600	M	Pb		0.002559	M	Tb	<	0.000540				
M	Bi		0.008956	M	Ho	<	0.000540	M	Pd	<	0.001100	M	Te	<	0.004800				
O	Ca		0.074642	M	In	<	0.001100	M	Pr	<	0.000540	M	Th	<	0.000540				
M	Cd	<	0.000540	M	Ir	<	0.000540	M	Pt	<	0.000540	O	Ti		0.013435				
M	Ce	<	0.000540	O	K		0.034122	i	Rb	<		M	Tl	<	0.001100				
O	Co	<	0.002900	M	La	<	0.001100	M	Re	<	0.002700	O	Tm	<	0.001800				
s	Cr	<		O	Li	<	0.000130	M	Rh	<	0.032000	M	U	<	0.001100				
M	Cs	<	0.019000	M	Lu	<	0.000540	M	Ru	<	0.094000	O	V		0.159949				
O	Cu		0.010023	O	Mg		0.001450	i	S	<		M	W	<	0.028000				
M	Dy	<	0.000540	O	Mn	<	0.014000	M	Sb	<	0.008600	M	Y	<	0.001100				
M	Er	<	0.016000	O	Mo	<	0.013000	O	Sc	<	0.001400	M	Yb	<	0.000540				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 52.00 +3 6 Cr(H2O)63+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4, HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Cr3 Containing Samples (Preparation and Solution) -Metal (soluble in HCl); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with KHSO4 and extraction with hot KCl. The residue fused with Na2CO3 and KClO3, 3:1. B. Fusion with NaKSO4 and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na2O2 or NaOH and KNO3 or NaOH and Na2O2. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, B, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	**Interferences** (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 25, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 25, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

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fax: 540.585.3012
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCU10
Lot Number:	R2-CU693370
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Copper
Starting Material:	Cu Metal
Starting Material Lot#:	2095
Starting Material Purity:	99.9996%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10016 ± 30 µg/mL

Density: 1.033 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10010 ± 55 µg/mL**
ICP Assay NIST SRM 3114 Lot Number: 121207

Assay Method #2 **10017 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10015 ± 25 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.007542	M	Eu	<	0.000942	O	Na		0.001434	M	Se	<	0.016971	M	Zn	<	0.005657
O	Al	<	0.000609	O	Fe		0.008698	M	Nb	<	0.000942	O	Si		0.003052	M	Zr	<	0.000942
M	As	<	0.010371	M	Ga	<	0.000942	M	Nd	<	0.000942	M	Sm	<	0.000942				
M	Au	<	0.001885	M	Gd	<	0.000942	M	Ni		0.003780	M	Sn	<	0.005657				
O	B		0.003662	M	Ge	<	0.005657	M	Os	<	0.000942	M	Sr	<	0.000942				
M	Ba		0.004252	M	Hf	<	0.000942	O	P	<	0.031668	M	Ta	<	0.000942				
M	Be	<	0.000942	O	Hg	<	0.007064	M	Pb		0.005788	M	Tb	<	0.000942				
M	Bi	<	0.000942	M	Ho	<	0.000942	M	Pd	<	0.000942	M	Te	<	0.004714				
O	Ca		0.002304	M	In	<	0.000942	M	Pr	<	0.000942	M	Th	<	0.000942				
M	Cd	<	0.000942	M	Ir	<	0.000942	M	Pt	<	0.000942	O	Ti	<	0.002801				
M	Ce	<	0.000942	O	K		0.000762	M	Rb	<	0.000942	M	Tl	<	0.000942				
M	Co		0.001890	M	La	<	0.000942	M	Re	<	0.000942	M	Tm	<	0.000942				
M	Cr	<	0.005657	O	Li	<	0.000243	i	Rh	<		M	U	<	0.000942				
M	Cs	<	0.000942	M	Lu	<	0.000942	M	Ru	<	0.039588	M	V	<	0.003771				
s	Cu	<		O	Mg		0.000320	O	S		0.007172	M	W	<	0.005657				
M	Dy	<	0.000942	O	Mn		0.000793	M	Sb	<	0.001885	M	Y	<	0.000942				
M	Er	<	0.000942	M	Mo	<	0.005657	M	Sc	<	0.000942	M	Yb	<	0.000942				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 Cu(H2O)62+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4, HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 05, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 05, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Certificate of Analysis

Refine your results. Redefine your industry.

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	ARI-1
Lot Number:	S2-MEB704284
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Iron

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Iron, Fe	**10 000.0 ± 40.0 µg/mL**		

Density: 1.033 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 20, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 20, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGK10
Lot Number:	S2-K700978
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Potassium
Starting Material:	KNO3
Starting Material Lot#:	2313
Starting Material Purity:	99.9971%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10016 ± 30 µg/mL

Density: 1.025 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1	**10018 ± 54 µg/mL** ICP Assay NIST SRM 3141a Lot Number: 140813
Assay Method #2	**10016 ± 24 µg/mL** Gravimetric NIST SRM Lot Number: See Sec. 4.2
Assay Method #3	**10014 ± 45 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001400	M	Eu	<	0.000660	O	Na		0.240000	M	Se	<	0.007900	O	Zn		0.017000
O	Al		0.001600	O	Fe		0.005800	M	Nb	<	0.000660	O	Si		0.012000	O	Zr	<	0.001600
M	As	<	0.005300	M	Ga	<	0.000660	M	Nd	<	0.000660	M	Sm	<	0.000660				
M	Au	<	0.002000	M	Gd	<	0.000660	O	Ni	<	0.004900	M	Sn	<	0.000660				
O	B	<	0.005600	M	Ge	<	0.002000	M	Os	<	0.003300	O	Sr		0.000055				
O	Ba	<	0.000860	M	Hf	<	0.000660	O	P	<	0.032000	M	Ta	<	0.000660				
O	Be	<	0.000082	M	Hg	<	0.002000	M	Pb	<	0.002300	M	Tb	<	0.000660				
M	Bi	<	0.006600	M	Ho	<	0.000660	M	Pd	<	0.000660	M	Te	<	0.017000				
O	Ca		0.031000	M	In	<	0.000660	M	Pr	<	0.000660	M	Th	<	0.000660				
O	Cd	<	0.000450	M	Ir	<	0.000660	M	Pt	<	0.002700	M	Ti	<	0.000660				
M	Ce	<	0.000660	s	K	<		M	Rb		0.480000	M	Tl	<	0.000660				
O	Co	<	0.000780	M	La	<	0.000660	M	Re	<	0.000660	M	Tm	<	0.000660				
O	Cr		0.000530	O	Li	<	0.000084	M	Rh	<	0.000660	M	U	<	0.000660				
M	Cs	<	0.000660	M	Lu	<	0.000660	M	Ru	<	0.000660	O	V	<	0.001100				
M	Cu	<	0.002700	O	Mg		0.006300	O	S		0.028000	M	W	<	0.000660				
M	Dy	<	0.000660	O	Mn		0.000480	M	Sb	<	0.000660	M	Y	<	0.000660				
M	Er	<	0.000660	M	Mo	<	0.000660	O	Sc	<	0.000340	O	Yb	<	0.000270				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 39.10 +1 (6) K+(aq)

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Avoid use of HClO4 due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO4-.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

K Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 06, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 06, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMG10
Lot Number:	R2-MG695748
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Magnesium
Starting Material:	Magnesium Metal
Starting Material Lot#:	2168
Starting Material Purity:	99.9984%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10044 ± 30 µg/mL

Density: 1.053 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1	**10055 ± 26 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	**10042 ± 57 µg/mL** ICP Assay NIST SRM 3131a Lot Number: 140110
Assay Method #3	**10033 ± 26 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.002104	M	Eu	<	0.000910	O	Na		0.071011	O	Se	<	0.048000	O	Zn		0.003296
M	Al		0.003550	M	Fe		0.002536	M	Nb	<	0.000460	O	Si	<	0.032000	O	Zr	<	0.002700
M	As	<	0.001400	M	Ga	<	0.000460	M	Nd	<	0.000910	M	Sm	<	0.000460				
M	Au	<	0.001400	M	Gd	<	0.000460	O	Ni	<	0.001600	M	Sn	<	0.002300				
O	B		0.006847	M	Ge	<	0.001400	M	Os	<	0.000460	O	Sr		0.000278				
O	Ba		0.000963	M	Hf	<	0.000460	O	P		0.015216	M	Ta	<	0.000460				
O	Be	<	0.000120	M	Hg	<	0.000460	M	Pb	<	0.000460	M	Tb	<	0.000460				
M	Bi	<	0.000460	M	Ho	<	0.000460	M	Pd	<	0.003200	M	Te	<	0.007300				
O	Ca		0.053258	M	In	<	0.000460	M	Pr	<	0.000460	M	Th	<	0.000460				
O	Cd	<	0.000360	M	Ir	<	0.000460	M	Pt	<	0.001900	O	Ti	<	0.001700				
M	Ce	<	0.002300	M	K		0.048186	M	Rb		0.002409	M	Tl		0.003043				
M	Co	<	0.000910	M	La	<	0.002800	M	Re	<	0.000460	M	Tm	<	0.000460				
M	Cr	<	0.002300	O	Li		0.027897	M	Rh	<	0.000460	M	U	<	0.000460				
M	Cs		0.001039	M	Lu	<	0.000460	M	Ru	<	0.000460	M	V	<	0.000460				
O	Cu	<	0.003000	s	Mg	<		O	S	<	0.190000	M	W	<	0.000460				
M	Dy	<	0.000460	O	Mn		0.015216	M	Sb		0.020796	O	Y	<	0.000720				
M	Er	<	0.000460	M	Mo	<	0.000910	O	Sc	<	0.000480	M	Yb	<	0.000460				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 24.31 +2 6 Mg(H2O)6+2

Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4 avoid HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO3 / LDPE container.

Mg Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO3); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 01, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 01, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMN10
Lot Number:	P2-MN687536
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Manganese
Starting Material:	Mn Metal
Starting Material Lot#:	2275
Starting Material Purity:	99.9909%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10046 ± 30 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10045 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10083 ± 68 µg/mL**
ICP Assay NIST SRM 3132 Lot Number: 050429

Assay Method #3 **10031 ± 47 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001500	M	Eu	<	0.000730	O	Na		0.176713	M	Se	<	0.006600	M	Zn		0.009960
O	Al		0.004337	M	Fe	<	0.650000	M	Nb	<	0.000730	O	Si		0.097995	M	Zr	<	0.000730
M	As	<	0.008000	M	Ga		0.004337	M	Nd	<	0.001500	M	Sm	<	0.000730				
M	Au	<	0.000730	M	Gd	<	0.000730	M	Ni		0.024097	M	Sn	<	0.002200				
M	B		0.069078	M	Ge	<	0.004400	M	Os	<	0.000730	O	Sr		0.000931				
M	Ba	<	0.001500	M	Hf	<	0.000730	i	P	<		M	Ta	<	0.000730				
M	Be	<	0.000730	M	Hg	<	0.002200	M	Pb		0.007389	M	Tb	<	0.000730				
M	Bi	<	0.003000	M	Ho	<	0.000730	M	Pd	<	0.000730	M	Te	<	0.019000				
O	Ca		0.062652	M	In	<	0.003000	M	Pr	<	0.000730	M	Th	<	0.000730				
M	Cd	<	0.001500	M	Ir	<	0.000730	M	Pt	<	0.000730	O	Ti	<	0.006500				
M	Ce	<	0.007300	O	K		0.006425	M	Rb	<	0.006600	M	Tl	<	0.000730				
O	Co		0.014779	M	La	<	0.003000	M	Re	<	0.000730	M	Tm	<	0.000730				
O	Cr		0.273102	O	Li		0.000417	M	Rh	<	0.003000	M	U	<	0.001500				
M	Cs	<	0.000730	M	Lu	<	0.000730	M	Ru	<	0.004400	M	V	<	0.000730				
O	Cu		0.007711	O	Mg		0.321297	i	S	<		M	W	<	0.004400				
M	Dy	<	0.001500	s	Mn	<		M	Sb	<	0.021000	O	Y		0.001365				
M	Er	<	0.001500	M	Mo		0.010281	O	Sc	<	0.004100	M	Yb	<	0.000730				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 54.94 +2 6 Mn(H2O)62+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3/LDPE container.

Mn Containing Samples (Preparation and Solution) -Metal (Soluble in dilute acids); Oxides (Soluble in dilute acids); Ores (Dissolve with HCl. If silica is present add HF and then fume off silica by adding H2SO4 and heat to SO3 fumes - dense white fumes).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 55 amu	10 ppt	n/a	40Ar14N1H,39K16 O,37Cl18O,40Ar15 N,38Ar17O,36Ar18O 1H ,38Ar16O1H,37Cl17 O1H,23Na32S
ICP-OES 257.610 nm	0.0014 / 0.00002 µg/mL	1	Ce, W, Re
ICP-OES 259.373 nm	0.0016 / 0.00002 µg/mL	1	U, Ta, Mo, Fe, Nb
ICP-OES 260.569 nm	0.0021 / 0.00002 µg/mL	1	Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 05, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 05, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO10
Lot Number:	R2-MO693167
Matrix:	tr. NH4OH H2O
Value / Analyte(s):	10 000 µg/mL ea: Molybdenum
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	2257
Starting Material Purity:	99.9914%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10013 ± 35 µg/mL

Density: 1.011 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10035 ± 67 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

Assay Method #2 **10005 ± 40 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001826	M	Eu	<	0.000300	M	Na		0.008750	M	Se	<	0.007480	M	Zn		0.002553
M	Al		0.004455	M	Fe		0.002093	M	Nb	<	0.015030	i	Si	<		M	Zr	<	0.005393
M	As	<	0.003006	M	Ga	<	0.000300	i	Nd	<		M	Sm	<	0.000300				
M	Au	<	0.006012	M	Gd	<	0.000300	M	Ni	<	0.004828	M	Sn		0.001004				
M	B	<	0.035184	M	Ge	<	0.000903	M	Os	<	0.003006	M	Sr		0.001903				
O	Ba		0.015613	M	Hf	<	0.000896	i	P	<		M	Ta	<	0.000300				
M	Be	<	0.003006	M	Hg	<	0.003006	M	Pb	<	0.000409	M	Tb	<	0.000300				
M	Bi	<	0.000401	M	Ho	<	0.000300	M	Pd	<	0.001114	M	Te	<	0.060122				
O	Ca		0.032589	M	In	<	0.015030	M	Pr	<	0.090184	M	Th	<	0.000786				
O	Cd	<	0.051800	M	Ir	<	0.007483	M	Pt	<	0.000388	O	Ti	<	0.093240				
M	Ce	<	0.015030	M	K		1.114508	M	Rb		0.040641	M	Tl		0.013140				
M	Co		0.004032	M	La	<	0.000300	M	Re	<	0.000300	M	Tm	<	0.000300				
M	Cr		0.005931	O	Li		0.000215	M	Rh	<	0.000300	M	U		0.000937				
M	Cs		0.002812	M	Lu	<	0.000300	M	Ru	<	0.003006	M	V	<	0.000759				
M	Cu		0.005172	M	Mg		0.005212	i	S	<		M	W		0.592427				
M	Dy	<	0.000300	M	Mn		0.000952	M	Sb		0.003147	M	Y	<	0.000300				
M	Er	<	0.000300	s	Mo	<		M	Sc	<	0.009019	M	Yb	<	0.000300				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9 [MoO4] -2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5] -2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4] -2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 28, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 28, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael L Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNA10
Lot Number:	S2-NA700842
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Sodium
Starting Material:	Na2CO3
Starting Material Lot#:	2274
Starting Material Purity:	99.9958%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10053 ± 30 µg/mL

Density: 1.036 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10070 ± 26 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **10012 ± 31 µg/mL**
ICP Assay NIST SRM 3152a Lot Number: 120715

Assay Method #3 **10059 ± 20 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag	<	0.000250	M	Eu	<	0.000840	s	Na	<		O	Se	<	0.004700	O	Zn		0.000226
O	Al		0.003688	O	Fe		0.001560	O	Nb	<	0.001300	O	Si		0.049648	O	Zr		0.000680
O	As	<	0.006900	M	Ga	<	0.000840	M	Nd	<	0.000840	M	Sm	<	0.000840				
M	Au	<	0.000840	M	Gd	<	0.000840	O	Ni	<	0.000250	M	Sn	<	0.001700				
O	B		0.000936	M	Ge	<	0.003400	M	Os	<	0.000840	O	Sr		0.000255				
O	Ba		0.002269	M	Hf	<	0.000840	O	P		0.006525	M	Ta	<	0.004200				
O	Be	<	0.000130	M	Hg	<	0.001700	M	Pb	<	0.000840	M	Tb	<	0.000840				
O	Bi	<	0.008100	M	Ho	<	0.000840	M	Pd	<	0.000840	O	Te	<	0.004800				
O	Ca		0.085112	M	In	<	0.000840	M	Pr	<	0.000840	M	Th	<	0.002500				
O	Cd	<	0.000250	M	Ir	<	0.000840	M	Pt	<	0.000840	O	Ti		0.000553				
M	Ce	<	0.001700	O	K		1.049718	M	Rb	<	0.003400	M	Tl	<	0.000840				
O	Co	<	0.000370	M	La	<	0.000840	M	Re	<	0.000840	M	Tm	<	0.000840				
O	Cr	<	0.001400	O	Li		0.000069	M	Rh	<	0.000840	M	U	<	0.000840				
M	Cs	<	0.003400	M	Lu	<	0.000840	M	Ru	<	0.001700	O	V	<	0.001600				
O	Cu	<	0.001400	O	Mg		0.028370	O	S		0.048230	O	W	<	0.005000				
M	Dy	<	0.000840	O	Mn		0.000139	M	Sb	<	0.001700	O	Y	<	0.000730				
M	Er	<	0.000840	O	Mo	<	0.004800	O	Sc	<	0.000370	O	Yb	<	0.000130				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 22.99 +1 (6) Na+(aq) largely ionic in nature

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Na Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Lithium carbonate fusion in graphite crucible followed by HCl dissolution - blank levels of Na in lithium carbonate critical); Organic Matrices (Sulfuric / peroxide digestion or nitric/sulfuric/perchloric acid decomposition).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 23 amu	310 ppt	n/a	46Ti+2 , 46Ca+2
ICP-OES 330.237 nm	2.0 / 0.09 µg/mL	1	Pd, Zn
ICP-OES 588.995 nm	0.03 / 0.006 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 589.595 nm	0.07 / 0.00009 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 25, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 25, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNI10
Lot Number:	P2-NI686384
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Nickel
Starting Material:	Ni Metal
Starting Material Lot#:	2277 and 2282
Starting Material Purity:	99.9992%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9979 ± 30 µg/mL

Density: 1.038 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9971 ± 54 µg/mL**
ICP Assay NIST SRM 3136 Lot Number: 120619

Assay Method #2 **9970 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **9993 ± 33 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.002606	M	Eu	<	0.001100	O	Na		0.004965	O	Se	<	0.067000	M	Zn		0.006578
M	Al	<	0.013000	O	Fe		0.018618	M	Nb	<	0.001100	O	Si		0.010923	M	Zr	<	0.001100
O	As	<	0.067000	M	Ga	<	0.001100	M	Nd	<	0.001100	M	Sm	<	0.001100				
M	Au	<	0.002100	M	Gd	<	0.001100	s	Ni	<		M	Sn	<	0.016000				
M	B	<	0.017000	M	Ge	<	0.004200	M	Os		0.002110	O	Sr	<	0.000940				
M	Ba	<	0.001100	M	Hf	<	0.001100	i	P	<		M	Ta	<	0.001100				
O	Be	<	0.000410	M	Hg		0.014895	M	Pb		0.006578	M	Tb	<	0.001100				
M	Bi	<	0.004200	M	Ho	<	0.001100	M	Pd	<	0.001100	M	Te	<	0.015000				
O	Ca		0.003351	M	In	<	0.001100	M	Pr	<	0.001100	M	Th	<	0.001100				
M	Cd		0.001365	M	Ir		0.004716	M	Pt	<	0.001100	M	Ti	<	0.004200				
M	Ce	<	0.001100	O	K		0.004716	M	Rb	<	0.001100	M	Tl	<	0.001100				
O	Co		0.017377	M	La	<	0.001100	M	Re		0.001737	M	Tm	<	0.001100				
O	Cr	<	0.006700	O	Li	<	0.000140	M	Rh	<	0.006300	M	U	<	0.001100				
M	Cs	<	0.007300	M	Lu	<	0.001100	M	Ru	<	0.019000	M	V	<	0.002100				
M	Cu		0.004096	O	Mg		0.000372	i	S	<		M	W	<	0.006300				
M	Dy	<	0.001100	O	Mn	<	0.001900	M	Sb		0.005833	O	Y	<	0.000540				
M	Er	<	0.001100	M	Mo	<	0.008400	M	Sc	<	0.002100	M	Yb	<	0.001100				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 Ni(H2O)62+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB10
Lot Number:	P2-PB686383
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Lead
Starting Material:	Lead Nitrate
Starting Material Lot#:	2299
Starting Material Purity:	99.9974%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10031 ± 30 µg/mL

Density: 1.015 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10060 ± 63 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

Assay Method #2 **10048 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10007 ± 32 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.000850	M	Eu	<	0.000310	O	Na		0.005780	M	Se	<	0.004600	M	Zn		0.005440
O	Al		0.234602	O	Fe		0.023460	M	Nb	<	0.000310	O	Si		0.047600	M	Zr	<	0.000610
M	As	<	0.001900	M	Ga	<	0.000310	M	Nd	<	0.000310	M	Sm	<	0.000310				
M	Au	<	0.002200	M	Gd	<	0.004300	M	Ni	<	0.001600	M	Sn	<	0.000610				
O	B	<	0.005200	M	Ge	<	0.000610	M	Os	<	0.000310	O	Sr		0.000442				
O	Ba		0.001530	M	Hf	<	0.000310	O	P	<	0.052000	M	Ta	<	0.000310				
O	Be	<	0.000630	M	Hg	<	0.001600	s	Pb	<		M	Tb	<	0.000310				
O	Bi		0.021080	M	Ho	<	0.000610	M	Pd	<	0.000310	M	Te	<	0.004300				
O	Ca		0.037400	M	In	<	0.000310	M	Pr	<	0.000310	M	Th	<	0.000310				
M	Cd	<	0.000610	M	Ir	<	0.000310	M	Pt	<	0.000310	M	Ti		0.002992				
M	Ce	<	0.000910	O	K		0.008840	M	Rb	<	0.000610	M	Tl		0.037400				
M	Co	<	0.000610	M	La	<	0.000610	M	Re	<	0.000310	M	Tm	<	0.000610				
M	Cr	<	0.003400	O	Li		0.000108	O	Rh	<	0.006300	M	U	<	0.000310				
M	Cs		0.002686	M	Lu	<	0.000310	M	Ru	<	0.000310	M	V	<	0.000310				
M	Cu	<	0.002500	O	Mg		0.004760	O	S	<	0.052000	M	W	<	0.002200				
M	Dy	<	0.000310	M	Mn	<	0.000310	M	Sb	<	0.001300	M	Y	<	0.000310				
M	Er	<	0.000310	O	Mo	<	0.005400	M	Sc	<	0.000310	M	Yb	<	0.000310				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$

Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.

Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSB10
Lot Number:	R2-SB688559
Matrix:	3% (v/v) HNO3 3% (w/v) tartaric acid
Value / Analyte(s):	10 000 µg/mL ea: Antimony
Starting Material:	Antimony Metal
Starting Material Lot#:	1857
Starting Material Purity:	99.9894%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10003 ± 47 µg/mL

Density: 1.061 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10003 ± 41 µg/mL**
ICP Assay NIST SRM 3102a Lot Number: 140911

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$
w_i = the weighting factors for each method calculated using the inverse square of the variance:
$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2
$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method
u_{bb} = bottle to bottle homogeneity standard uncertainty
u_{lts} = long term stability standard uncertainty (storage)
u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with
$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2
$u_{char\ a}$ = the errors from characterization
u_{bb} = bottle to bottle homogeneity standard uncertainty
u_{lts} = long term stability standard uncertainty (storage)
u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000200	M	Eu	<	0.000300	O	Na		0.140000	M	Se	<	0.007300	O	Zn		0.005000
M	Al		0.003200	O	Fe		0.060000	M	Nb	<	0.000100	O	Si		0.150000	O	Zr	<	0.006300
M	As	<	0.004400	M	Ga	<	0.000400	M	Nd	<	0.000100	M	Sm	<	0.000100				
M	Au	<	0.000210	M	Gd	<	0.000100	O	Ni		0.004800	M	Sn	<	0.001800				
M	B	<	0.011000	M	Ge	<	0.000600	M	Os	<	0.000110	O	Sr		0.000750				
O	Ba	<	0.004900	M	Hf	<	0.000100	O	P		0.540000	M	Ta		0.003300				
M	Be	<	0.000400	M	Hg	<	0.000110	M	Pb	<	0.000400	M	Tb	<	0.000100				
M	Bi	<	0.000200	M	Ho	<	0.000100	M	Pd	<	0.000210	M	Te	<	0.000600				
O	Ca		0.110000	M	In	<	0.000100	M	Pr	<	0.001600	M	Th	<	0.000100				
M	Cd	<	0.000200	M	Ir	<	0.000110	M	Pt	<	0.000600	M	Ti	<	0.002800				
M	Ce		0.006500	O	K		0.020000	M	Rb	<	0.001000	M	Tl	<	0.000100				
M	Co	<	0.000200	O	La	<	0.016000	M	Re	<	0.000100	M	Tm	<	0.000100				
M	Cr		0.006900	O	Li	<	0.000430	M	Rh	<	0.000300	M	U	<	0.000100				
M	Cs	<	0.000200	M	Lu	<	0.000100	M	Ru	<	0.000310	M	V	<	0.000800				
M	Cu	<	0.000600	O	Mg		0.021000	n	S	<		M	W	<	0.000200				
M	Dy	<	0.000100	O	Mn		0.001900	s	Sb	<		M	Y	<	0.000100				
M	Er	<	0.000100	M	Mo	<	0.000500	O	Sc	<	0.002300	M	Yb	<	0.000100				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 Sb(O)C4H4O6-1

Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.

Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides (Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 30, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 30, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSE10
Lot Number:	P2-SE684206
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Selenium
Starting Material:	Se Metal
Starting Material Lot#:	1962
Starting Material Purity:	99.9991%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9992 ± 61 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9993 ± 67 µg/mL**
ICP Assay NIST SRM 3149 Lot Number: 100901

Assay Method #2 **9992 ± 73 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002242	M	Eu	<	0.000373	O	Na		0.013700	s	Se	<		O	Zn		0.002382
M	Al		0.004465	M	Fe		0.008506	O	Nb	<	0.002975	O	Si		0.006270	M	Zr	<	0.001868
O	As	<	0.022040	M	Ga	<	0.000373	M	Nd	<	0.000373	M	Sm	<	0.000373				
M	Au	<	0.000373	M	Gd	<	0.000373	O	Ni		0.001849	M	Sn		0.000850				
O	B	<	0.007714	M	Ge	<	0.002616	M	Os	<	0.000373	M	Sr	<	0.001121				
M	Ba	<	0.001495	M	Hf	<	0.000373	O	P	<	0.022040	M	Ta	<	0.000373				
M	Be	<	0.001495	M	Hg	<	0.002240	M	Pb		0.006379	M	Tb	<	0.006353				
M	Bi	<	0.000373	M	Ho	<	0.000373	M	Pd	<	0.000373	M	Te	<	0.012707				
O	Ca		0.006552	M	In	<	0.000373	M	Pr	<	0.001495	M	Th	<	0.002990				
M	Cd		0.001169	M	Ir	<	0.000373	M	Pt	<	0.000373	M	Ti	<	0.003363				
M	Ce	<	0.000373	O	K		0.002006	M	Rb	<	0.001868	M	Tl		0.008613				
M	Co	<	0.000373	M	La	<	0.001121	M	Re	<	0.000373	M	Tm	<	0.000373				
M	Cr		0.002870	O	Li		0.000062	M	Rh	<	0.000373	M	U	<	0.000373				
M	Cs	<	0.001121	M	Lu	<	0.000373	M	Ru	<	0.001493	M	V	<	0.000747				
M	Cu	<	0.000747	O	Mg		0.001159	O	S		0.024674	M	W	<	0.002242				
M	Dy	<	0.000373	M	Mn	<	0.000373	M	Sb	<	0.002242	M	Y	<	0.000373				
M	Er	<	0.000373	O	Mo	<	0.003195	M	Sc	<	0.001121	M	Yb	<	0.000373				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 78.96 +4 6 H_2SeO_3

Chemical Compatibility -Soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Se Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (readily soluble in water); Minerals and alloys (acid digestion with HNO_3or HNO_3 / HF); Organic Matrices (acid digestion with hot concentrated H_2SO_4 accompanied by the careful dropwise addition of H_2O_2 until clear).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 13, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 13, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTL10
Lot Number:	R2-TL691937
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Thallium
Starting Material:	TlNO3
Starting Material Lot#:	2118
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9987 ± 49 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9968 ± 68 µg/mL**
ICP Assay NIST SRM 3158 Lot Number: 151215

Assay Method #2 **10001 ± 58 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000200	M	Eu	<	0.000200	O	Na		0.002479	M	Se	<	0.011019	O	Zn		0.002288
O	Al	<	0.004184	O	Fe	<	0.002824	M	Nb	<	0.000200	O	Si		0.003744	M	Zr	<	0.000200
M	As	<	0.002003	M	Ga	<	0.000200	M	Nd	<	0.000200	M	Sm	<	0.000200				
O	Au	<	0.002824	M	Gd	<	0.000200	M	Ni		0.001717	M	Sn	<	0.000601				
O	B	<	0.004184	M	Ge	<	0.000801	M	Os	<	0.000198	O	Sr	<	0.000313				
M	Ba	<	0.000400	M	Hf	<	0.000200	O	P	<	0.010460	M	Ta	<	0.000200				
O	Be	<	0.000104	M	Hg	<	0.000794	M	Pb		0.000807	M	Tb	<	0.000200				
M	Bi	<	0.005209	M	Ho	<	0.000200	M	Pd	<	0.000400	M	Te	<	0.005008				
O	Ca		0.002426	M	In	<	0.000200	M	Pr	<	0.000200	M	Th	<	0.000200				
M	Cd		0.001312	M	Ir	<	0.000198	M	Pt	<	0.000801	O	Ti	<	0.001255				
M	Ce	<	0.000200	O	K		0.006150	M	Rb	<	0.000200	s	Tl	<					
M	Co	<	0.000601	M	La	<	0.000200	M	Re	<	0.000200	M	Tm	<	0.000200				
M	Cr	<	0.000801	O	Li	<	0.000177	M	Rh	<	0.000200	M	U	<	0.000200				
M	Cs	<	0.003606	M	Lu	<	0.000200	M	Ru	<	0.000397	M	V	<	0.002203				
M	Cu	<	0.001001	O	Mg		0.000527	O	S	<	0.015690	M	W	<	0.000601				
M	Dy	<	0.000200	M	Mn	<	0.000801	M	Sb	<	0.000400	M	Y	<	0.000200				
M	Er	<	0.000200	M	Mo	<	0.001202	O	Sc	<	0.000711	M	Yb	<	0.000200				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 204.38 +1 6 Tl(H2O)61+

Chemical Compatibility - Soluble in HCl, HNO3, and H2SO4. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Tl Containing Samples (Preparation and Solution) -Metal (Best dissolved in HNO3 which forms chiefly the Tl1+ ion.); Oxide (The thallous oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 08, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 08, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGV10
Lot Number:	R2-V688296
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Vanadium
Starting Material:	Vanadium pentoxide
Starting Material Lot#:	1782
Starting Material Purity:	99.9907%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10026 ± 30 µg/mL

Density: 1.105 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10025 ± 56 µg/mL**
ICP Assay NIST SRM 3165 Lot Number: 160906

Assay Method #2 **10027 ± 30 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000510	M	Eu	<	0.000110	M	Na		0.095000	M	Se	<	0.002300	M	Zn		0.008900
O	Al		0.051000	O	Fe		0.350000	M	Nb	<	0.000710	O	Si		0.260000	M	Zr	<	0.002500
M	As	<	0.000410	M	Ga	<	0.007100	M	Nd	<	0.000210	M	Sm	<	0.000110				
M	Au	<	0.000410	M	Gd	<	0.000110	M	Ni		0.011000	M	Sn	<	0.003300				
M	B	<	0.006000	M	Ge	<	0.000110	M	Os	<	0.000410	M	Sr		0.001400				
M	Ba		0.001800	M	Hf	<	0.000110	O	P	<	0.120000	M	Ta	<	0.000110				
M	Be	<	0.000110	M	Hg	<	0.000310	M	Pb	<	0.002300	M	Tb	<	0.000110				
M	Bi	<	0.000610	M	Ho	<	0.000110	M	Pd	<	0.000610	M	Te	<	0.000610				
M	Ca		0.180000	M	In	<	0.000110	M	Pr	<	0.000110	M	Th	<	0.000210				
M	Cd	<	0.000410	M	Ir	<	0.000110	M	Pt	<	0.000410	M	Ti	<	0.021000				
M	Ce	<	0.000310	M	K		0.400000	M	Rb	<	0.000410	M	Tl	<	0.000110				
M	Co	<	0.001100	M	La	<	0.000110	M	Re	<	0.000110	M	Tm	<	0.000110				
O	Cr		0.190000	M	Li	<	0.001400	M	Rh	<	0.000110	M	U	<	0.000310				
M	Cs		0.005700	M	Lu	<	0.000110	M	Ru	<	0.000410	s	V	<					
M	Cu	<	0.001800	M	Mg		0.009200	n	S	<		M	W	<	0.003100				
M	Dy	<	0.000110	M	Mn		0.008700	M	Sb		0.076000	M	Y	<	0.000110				
M	Er	<	0.000110	M	Mo		0.086000	M	Sc	<	0.000310	M	Yb	<	0.000110				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 $H_2V_{10}O_{28}^{4-}$

Chemical Compatibility -Soluble in HCl, HNO_3, H_2SO_4, HF, H_3PO_4 and strong basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in Ni0 or Na_2CO_3 / KNO_3); Oxides (V_2O_3 - use HCl, V_2O_4 - use HCl or HNO_3, V_2O_5 - use concentrated acids); Ores (Na_2CO_3 / KNO_3 in Pt0 caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V_2O_5 above) .

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 01, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 01, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN10
Lot Number:	P2-ZN686137
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Zinc
Starting Material:	Zn Shot
Starting Material Lot#:	2201
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10040 ± 30 µg/mL

Density: 1.033 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10009 ± 54 µg/mL**
ICP Assay NIST SRM 3168a Lot Number: 120629

Assay Method #2 **10049 ± 33 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10041 ± 28 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.003057	M	Eu	<	0.000509	O	Na		0.001874	M	Se	<	0.023441	s	Zn	<	
O	Al	<	0.005720	O	Fe		0.006348	M	Nb	<	0.000509	O	Si	<	0.057200	M	Zr	<	0.000509
M	As	<	0.003057	M	Ga	<	0.007134	M	Nd	<	0.000509	M	Sm	<	0.000509				
M	Au	<	0.000510	M	Gd	<	0.000509	M	Ni	<	0.000509	M	Sn	<	0.000509				
O	B	<	0.017160	M	Ge	<	0.003057	M	Os	<	0.000510	M	Sr	<	0.000509				
M	Ba	<	0.000509	M	Hf	<	0.000509	O	P	<	0.057200	M	Ta	<	0.000509				
M	Be	<	0.000509	M	Hg	<	0.001021	O	Pb		0.023870	M	Tb	<	0.000509				
M	Bi	<	0.005095	M	Ho	<	0.000509	M	Pd	<	0.002038	M	Te	<	0.023441				
O	Ca		0.033793	M	In	<	0.000509	M	Pr	<	0.000509	M	Th	<	0.000509				
O	Cd		0.003924	M	Ir	<	0.000510	M	Pt	<	0.000509	M	Ti	<	0.000509				
M	Ce	<	0.000509	O	K		0.001499	M	Rb	<	0.002038	M	Tl	<	0.009172				
M	Co	<	0.000509	M	La	<	0.000509	M	Re	<	0.000509	M	Tm	<	0.000509				
O	Cr		0.001549	O	Li	<	0.000457	M	Rh	<	0.000509	M	U	<	0.000509				
M	Cs	<	0.000509	M	Lu	<	0.000509	M	Ru	<	0.006129	M	V	<	0.000509				
O	Cu	<	0.010296	O	Mg		0.000349	O	S	<	0.034320	M	W	<	0.001019				
M	Dy	<	0.000509	M	Mn	<	0.000509	M	Sb	<	0.001019	M	Y	<	0.000509				
M	Er	<	0.000509	M	Mo	<	0.000509	M	Sc	<	0.000509	M	Yb	<	0.000509				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 05, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 05, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director