

SGS

AXYS

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SGS AXYS Client No.: 4972

Client Address: AECOM
1111 Third Avenue, Suite 1600
Seattle, WA, US, 98101

The SGS AXYS contact for these data is Sean Campbell.

BATCH SUMMARY

Batch ID:	WG65521	Date:	16-Nov-2018
Analysis Type:	PCB Congener	Matrix Type:	XAD
BATCH MAKEUP			
Contract:	4972	Blank:	WG65521-101
Samples:		Reference or Spike:	WG65521-102
L29924-1	PDI-RB-XD-180820	Duplicate:	
L29988-1	PDI-WS-T04-1808		
L29988-2	PDI-WS-T02-1808		
L29988-3	PDI-WS-T05-1808		
L29988-4	PDI-WS-T07-1808		
L29988-5	PDI-WS-T03-1808		
L29988-6	PDI-WS-T01-1808		
L29988-7	PDI-WS-T06-1808		
Comments: 1. Data are considered final. 2. Data are not blank corrected. Sample data should be evaluated with consideration of analyte levels in the Lab Blank (AXYS ID WG65521-101). 3. Disturbances of the mass ions used to monitor instrument performance (lock-mass) were observed at retention times corresponding to PCB 1, 11, 12/13, 20/28, 27, 32, 86/87/97/108/119/125, 128/166, 130, 137, 153/168, 164, 176, 187 and/or 197/200 in all client samples and the lab QC samples (Lab Blank and OPR). The congeners are flagged with a 'G'. As the interferences only affect congeners that are small contributors to the overall total, data are not considered affected by the variances. The lock-mass disturbances at retention times corresponding to PCB 32 and 86/87/97/108/119/125 are determined to originate from a labeled standard solution used for the quantification of target pesticide analytes. Test dilutions conducted for this matrix to minimize the disturbances have proven that the disturbances do not affect the quantification of these congeners. 4. Peaks for PCB 81, 123 and 126 in all client samples were on the tail or shoulder of a larger peak and there was no obvious valley between the two peaks. As a result, these congeners are flagged with a 'K' though their ion abundance ratios are within the method control limits in some samples. The reported concentrations should be interpreted as estimated maximum possible concentrations.			

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February 2017

FQA-006 Rev. 4. 20-Sep-2013

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-RB-XD-180820
Sample Collection:
20-Aug-2018 15:43

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29924-1
Sample Receipt Date:	22-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	25-Oct-2018 Time: 15:00:38	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_367 S: 8
Dilution Factor:	N/A	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_367 S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5'-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6'-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6'-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4'-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5'-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6'-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		X				
2,3,4',6'-TeCB	64		X				
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5'-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6'-TeCB	73		X				
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5'-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5'-TeCB	81		X				
2,2',3,3',4'-PeCB	82		K J	6.33	1.93 (S)	1.87	0.933
2,2',3,3',5'-PeCB	83	83 + 99	C	47.8	1.73 (S)	1.76	0.885
2,2',3,3',6'-PeCB	84			30.1	1.92 (S)	1.72	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	11.6	1.47 (S)	1.64	0.919
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C	54.1	1.47 (S)	1.50	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C	23.2	1.66 (S)	1.67	1.155
2,2',3,4,6'-PeCB	89		U		1.78 (S)		
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C	88.8	1.48 (S)	1.76	0.869
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			15.3	1.73 (S)	1.55	0.852
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C	112	1.60 (S)	1.53	1.121
2,2',3,5,6'-PeCB	94		U		1.79 (S)		
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		K J	2.36	0.878 (Q)	0.83	1.016
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		1.45 (S)		
2,2',4,6,6'-PeCB	104		U		0.878 (Q)		
2,3,3',4,4'-PeCB	105			17.5	1.50 (S)	1.63	1.000
2,3,3',4,5-PeCB	106		U		1.51 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C J	2.62	1.66 (S)	1.57	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		K J	2.94	1.57 (S)	1.31	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	81.2	1.29 (S)	1.48	0.925
2,3,3',5,5'-PeCB	111		U		1.30 (S)		
2,3,3',5,6-PeCB	112		U		1.26 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		K J	1.93	1.56 (S)	2.27	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118			41.9	1.47 (S)	1.45	1.001
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		1.26 (S)		
2,3',4,5',6-PeCB	121		U		1.31 (S)		
2',3,3',4,5-PeCB	122		U		1.83 (S)		
2',3,4,4',5-PeCB	123		K J	1.61	1.51 (S)	2.38	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		1.65 (S)		
3,3',4,5,5'-PeCB	127		U		1.70 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	10.7	1.09 (S)	1.28	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C	72.2	1.09 (S)	1.37	0.929
2,2',3,3',4,5'-HxCB	130		J G	3.10	1.38 (S)	1.30	0.914
2,2',3,3',4,6-HxCB	131		K J	1.52	1.25 (S)	0.95	1.160
2,2',3,3',4,6'-HxCB	132		K	33.0	1.35 (S)	1.59	1.176
2,2',3,3',5,5'-HxCB	133		K J	1.60	1.26 (S)	0.83	1.192
2,2',3,3',5,6-HxCB	134	134 + 143	C K J	6.11	1.28 (S)	2.07	1.141
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	38.2	0.878 (Q)	1.13	1.105
2,2',3,3',6,6'-HxCB	136			21.2	0.878 (Q)	1.28	1.026
2,2',3,4,4',5-HxCB	137		J G	4.04	1.27 (S)	1.18	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C K J	1.85	1.15 (S)	2.54	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			17.4	1.21 (S)	1.20	0.904
2,2',3,4,5,6-HxCB	142		U		1.29 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		K J	5.54	0.897 (S)	1.69	1.123
2,2',3,4,6,6'-HxCB	145		U		0.878 (Q)		
2,2',3,4',5,5'-HxCB	146		K	10.4	1.08 (S)	1.50	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C	88.5	1.13 (S)	1.36	1.135
2,2',3,4',5,6'-HxCB	148		U		0.878 (Q)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.878 (Q)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.878 (Q)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C	65.8	0.963 (S)	1.26	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.878 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C J	6.30	1.10 (S)	1.31	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		J	6.49	0.878 (Q)	1.18	0.938
2,3,3',4,5,5'-HxCB	159		J	1.60	0.919 (S)	1.37	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.907 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.878 (Q)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		U G		0.942 (S)		
2,3,3',5,5',6-HxCB	165		U		1.02 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		K J	2.14	0.954 (S)	0.97	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		0.993 (S)		
2,2',3,3',4,4',5-HpCB	170			30.5	0.878 (Q)	0.95	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C K	11.6	0.878 (Q)	1.31	1.164
2,2',3,3',4,5,5'-HpCB	172		K J	3.91	0.878 (Q)	2.30	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		K	31.5	0.878 (Q)	1.28	1.134
2,2',3,3',4,5',6-HpCB	175		K J	1.14	0.878 (Q)	1.60	1.104
2,2',3,3',4,6,6'-HpCB	176		J	3.92	0.878 (Q)	1.10	1.034
2,2',3,3',4',5,6-HpCB	177			13.7	0.878 (Q)	1.02	1.146
2,2',3,3',5,5',6-HpCB	178			7.16	0.878 (Q)	0.93	1.086
2,2',3,3',5,6,6'-HpCB	179			14.9	0.878 (Q)	1.04	1.011
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	76.0	0.878 (Q)	1.01	1.001
2,2',3,4,4',5,6-HpCB	181		U		0.878 (Q)		
2,2',3,4,4',5,6'-HpCB	182		U		0.878 (Q)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	21.7	0.878 (Q)	0.99	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.878 (Q)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.878 (Q)		
2,2',3,4',5,5',6-HpCB	187			35.3	0.878 (Q)	1.17	1.110
2,2',3,4',5,6,6'-HpCB	188		U		0.878 (Q)		
2,3,3',4,4',5,5'-HpCB	189		U		1.07 (S)		
2,3,3',4,4',5,6-HpCB	190		J	5.71	0.878 (Q)	0.91	0.947
2,3,3',4,4',5',6-HpCB	191		K J	1.02	0.878 (Q)	1.83	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.878 (Q)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		K	26.4	0.878 (Q)	0.72	0.991
2,2',3,3',4,4',5,6-OxCB	195			10.5	0.925 (S)	0.92	0.945
2,2',3,3',4,4',5,6'-OxCB	196			16.6	0.906 (S)	0.77	0.916
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C K J G	3.60	0.878 (Q)	1.65	1.047
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C	30.3	0.921 (S)	0.80	1.115
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201		K J	3.16	0.878 (Q)	1.39	1.023
2,2',3,3',5,5',6,6'-OxCB	202		K J	4.44	0.878 (Q)	0.44	1.000
2,2',3,4,4',5,5',6-OxCB	203			20.1	0.888 (S)	0.92	0.919
2,2',3,4,4',5,6,6'-OxCB	204		U		0.878 (Q)		
2,3,3',4,4',5,5',6-OxCB	205		J	1.49	0.878 (Q)	0.87	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			21.7	1.03 (S)	0.81	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		J	3.55	0.878 (Q)	0.84	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208		K	7.97	0.878 (Q)	0.60	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		K J	6.34	0.878 (Q)	0.84	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-RB-XD-180820
Sample Collection:
20-Aug-2018 15:43

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 22-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 25-Oct-2018 Time: 15:00:38
 Extract Volume (uL): 20
 Injection Volume (uL): 1.0
 Dilution Factor: N/A
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29924-1
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_367 S: 8
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_367 S: 1

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LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		X					
13C12-4-MoCB	3L		X					
13C12-2,2'-DiCB	4L		X					
13C12-4,4'-DiCB	15L		X					
13C12-2,2',6-TriCB	19L		X					
13C12-3,4,4'-TriCB	37L		X					
13C12-2,2',6,6'-TeCB	54L		X					
13C12-3,3',4,4'-TeCB	77L		X					
13C12-3,4,4',5-TeCB	81L		X					
13C12-2,2',4,6,6'-PeCB	104L			4000	1810	45.3	1.59	0.808
13C12-2,3,3',4,4'-PeCB	105L			4000	2430	60.6	1.57	1.201
13C12-2,3,4,4',5-PeCB	114L			4000	2250	56.2	1.59	1.179
13C12-2,3',4,4',5-PeCB	118L			4000	2380	59.6	1.57	1.162
13C12-2',3,4,4',5-PeCB	123L			4000	2440	61.1	1.57	1.152
13C12-3,3',4,4',5-PeCB	126L			4000	2280	57.1	1.56	1.302
13C12-2,2',4,4',6,6'-HxCB	155L			4000	1890	47.3	1.29	0.785
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	8000	5120	64.1	1.25	1.108
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			4000	2440	61.1	1.29	1.078
13C12-3,3',4,4',5,5'-HxCB	169L			4000	2440	61.0	1.24	1.192
13C12-2,2',3,3',4,4',5-HpCB	170L			4000	2840	71.0	1.06	0.897
13C12-2,2',3,4,4',5,5'-HpCB	180L			4000	2620	65.5	1.04	0.872
13C12-2,2',3,4',5,6,6'-HpCB	188L			4000	2380	59.5	1.07	0.712
13C12-2,3,3',4,4',5,5'-HpCB	189L			4000	2380	59.4	1.02	0.959
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			4000	1840	46.0	0.92	0.817
13C12-2,3,3',4,4',5,5',6-OxCB	205L			4000	2680	67.0	0.88	1.009
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			4000	2330	58.3	0.76	1.043
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			4000	2590	64.7	0.76	0.949
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			4000	1990	49.7	1.20	1.074
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		X					
13C12-2,3,3',5,5'-PeCB	111L			2000	1350	67.4	1.63	1.088
13C12-2,2',3,3',5,5',6-HpCB	178L			2000	1270	63.7	1.08	1.012

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-RB-XD-180820
Sample Collection:
20-Aug-2018 15:43

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29924-1 W
Sample Receipt Date:	22-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	30-Oct-2018 Time: 00:18:41	Instrument ID:	HR GC/MS
Extract Volume (uL):	100	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_372A S: 3
Dilution Factor:	5	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_372A S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		D	1300	5.54 (S)	2.98	1.001
3-MoCB	2		D	147	6.77 (S)	3.03	0.988
4-MoCB	3		D	485	6.07 (S)	3.07	1.001
2,2'-DiCB	4		K D	186	14.2 (S)	1.26	1.000
2,3-DiCB	5		K D J	18.5	10.5 (S)	0.78	1.196
2,3'-DiCB	6		K D	116	9.46 (S)	1.30	1.174
2,4-DiCB	7		K D	45.1	9.65 (S)	0.89	1.158
2,4'-DiCB	8		D	297	8.65 (S)	1.57	1.207
2,5-DiCB	9		K D J	24.6	9.31 (S)	1.05	1.145
2,6-DiCB	10		K D J	16.0	9.83 (S)	0.90	1.012
3,3'-DiCB	11		K D	437	9.89 (S)	2.14	0.968
3,4-DiCB	12	12 + 13	C K D J G	27.6	9.90 (S)	1.11	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		9.60 (S)		
4,4'-DiCB	15		K D	41.6	8.75 (S)	1.25	1.001
2,2',3-TriCB	16		D	73.4	6.50 (S)	0.98	1.165
2,2',4-TriCB	17		D	136	5.66 (S)	1.10	1.137
2,2',5-TriCB	18	18 + 30	C D	150	4.82 (S)	1.17	1.113
2,2',6-TriCB	19		D J	30.0	7.14 (S)	1.16	1.001
2,3,3'-TriCB	20	20 + 28	C D	137	4.94 (S)	1.13	0.847
2,3,4-TriCB	21	21 + 33	C D	364	4.76 (S)	0.91	0.854
2,3,4'-TriCB	22		D	54.9	5.53 (S)	0.90	0.871
2,3,5-TriCB	23		U D		5.31 (S)		
2,3,6-TriCB	24		U D		4.42 (S)		
2,3',4-TriCB	25		D	214	4.27 (S)	0.99	0.824
2,3',5-TriCB	26	26 + 29	C D J	27.3	5.01 (S)	0.93	1.301
2,3',6-TriCB	27		K D J	15.0	4.02 (S)	1.50	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		D	116	4.64 (S)	0.93	0.836
2,4',6-TriCB	32		K D G	41.0	4.92 (S)	1.30	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U D		5.17 (S)		
3,3',4-TriCB	35		U D		4.96 (S)		
3,3',5-TriCB	36		U D		4.68 (S)		
3,4,4'-TriCB	37		D J	18.4	4.63 (S)	0.96	1.001
3,4,5-TriCB	38		U D		5.01 (S)		
3,4',5-TriCB	39		U D		4.89 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C D	72.3	5.76 (S)	0.76	1.336
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D	35.1	6.00 (S)	0.78	1.311
2,2',3,5'-TeCB	43		K D J	7.68	6.91 (S)	0.23	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C D	5990	5.25 (S)	0.79	1.287
2,2',3,6'-TeCB	45	45 + 51	C D	8390	5.70 (S)	0.75	1.148
2,2',3,6'-TeCB	46		U D		6.54 (S)		
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		K D J	18.3	5.77 (S)	1.09	1.273
2,2',4,5'-TeCB	49	49 + 69	C D	118	4.88 (S)	0.85	1.258
2,2',4,6'-TeCB	50	50 + 53	C D J	29.0	5.49 (S)	0.80	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		D	187	5.47 (S)	0.73	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U D		3.63 (S)		
2,3,3',4'-TeCB	55		U D		5.37 (S)		
2,3,3',4'-TeCB	56		D J	28.4	5.29 (S)	0.84	0.904
2,3,3',5'-TeCB	57		U D		4.94 (S)		
2,3,3',5'-TeCB	58		U D		5.17 (S)		
2,3,3',6'-TeCB	59	59 + 62 + 75	C K D J	22.6	4.27 (S)	0.90	1.302
2,3,4,4'-TeCB	60		D J	16.5	5.33 (S)	0.66	0.910
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C D	109	4.92 (S)	0.67	0.874
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		U D		4.84 (S)		
2,3,4',6'-TeCB	64		K D	42.8	4.15 (S)	0.57	1.348
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		D	62.9	4.99 (S)	0.86	0.884
2,3',4,5'-TeCB	67		U D		4.25 (S)		
2,3',4,5'-TeCB	68		D	1870	4.70 (S)	0.77	0.831
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U D		3.46 (S)		
2,3',5',6'-TeCB	73		U D		4.26 (S)		
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D J	7.02	4.69 (S)	0.81	1.000
3,3',4,5'-TeCB	78		U D		5.29 (S)		
3,3',4,5'-TeCB	79		U D		4.32 (S)		
3,3',5,5'-TeCB	80		U D		4.82 (S)		
3,4,4',5'-TeCB	81		U D		4.74 (S)		
2,2',3,3',4'-PeCB	82		X				
2,2',3,3',5'-PeCB	83	83 + 99	C X				
2,2',3,3',6'-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		X				
2,2',3,3',4,4',5,6-OxCB	195		X				
2,2',3,3',4,4',5,6'-OxCB	196		X				
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201		X				
2,2',3,3',5,5',6,6'-OxCB	202		X				
2,2',3,4,4',5,5',6-OxCB	203		X				
2,2',3,4,4',5,6,6'-OxCB	204		X				
2,3,3',4,4',5,5',6-OxCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ **Matthew Ou** _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-RB-XD-180820
Sample Collection:
20-Aug-2018 15:43

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 22-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 30-Oct-2018 Time: 00:18:41
 Extract Volume (uL): 100
 Injection Volume (uL): 1.0
 Dilution Factor: 5
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29924-1 W
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_372A S: 3
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_372A S: 1

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LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		D	4000	1160	29.1	3.18	0.718
13C12-4-MoCB	3L		D	4000	1400	35.1	2.92	0.858
13C12-2,2'-DiCB	4L		D	4000	1470	36.7	1.47	0.874
13C12-4,4'-DiCB	15L		D	4000	2190	54.8	1.49	1.255
13C12-2,2',6-TriCB	19L		D	4000	1870	46.8	1.08	1.072
13C12-3,4,4'-TriCB	37L		D	4000	2390	59.8	1.00	1.092
13C12-2,2',6,6'-TeCB	54L		D	4000	2310	57.9	0.81	0.811
13C12-3,3',4,4'-TeCB	77L		D	4000	2490	62.3	0.73	1.397
13C12-3,4,4',5-TeCB	81L		D	4000	2380	59.6	0.77	1.373
13C12-2,2',4,6,6'-PeCB	104L		X					
13C12-2,3,3',4,4'-PeCB	105L		X					
13C12-2,3,4,4',5-PeCB	114L		X					
13C12-2,3',4,4',5-PeCB	118L		X					
13C12-2',3,4,4',5-PeCB	123L		X					
13C12-3,3',4,4',5-PeCB	126L		X					
13C12-2,2',4,4',6,6'-HxCB	155L		X					
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C X					
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L		X					
13C12-3,3',4,4',5,5'-HxCB	169L		X					
13C12-2,2',3,3',4,4',5-HpCB	170L		X					
13C12-2,2',3,4,4',5,5'-HpCB	180L		X					
13C12-2,2',3,4',5,6,6'-HpCB	188L		X					
13C12-2,3,3',4,4',5,5'-HpCB	189L		X					
13C12-2,2',3,3',5,5',6,6'-OxCB	202L		X					
13C12-2,3,3',4,4',5,5',6-OxCB	205L		X					
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L		X					
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L		X					
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		D	2000	1390	69.3	1.08	0.924
13C12-2,3,3',5,5'-PeCB	111L		X					
13C12-2,2',3,3',5,5',6-HpCB	178L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1B

PCB CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-RB-XD-180820

Sample Collection:

20-Aug-2018 15:43

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Matrix: XAD

Sample Receipt Date: 22-Aug-2018

Extraction Date: 09-Oct-2018

Analysis Date: 25-Oct-2018 Time: 15:00:38

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg/sample

Project No.

Lab Sample I.D.:

Sample Size:

Initial Calibration Date:

Instrument ID:

GC Column ID:

Sample Data Filename:

Blank Data Filename:

Cal. Ver. Data Filename:

PORTLAND HARBOR PDI AND
BASELINE WATER

L29924-1

1 sample

25-Oct-2018

HR GC/MS

SPB OCTYL

PB8C_367 S: 8

PB8C_367 S: 4

N/A

CLIENT STANDARD	IUPAC NO. ¹	SPIKE CONC.	LAB FLAG ²	CONC. FOUND	REPORTING LIMIT (RL) ³	R(%) ⁴	ION ABUND. RATIO ⁵	RRT
13C12-2,4',5-TriCB	31L	4000		3510	51.7 (S)	87.7	1.02	0.836
13C12-2,2',3,5',6-PeCB	95L	4000		3850	1.57 (S)	96.2	1.62	0.778
13C12-2,2',4,4',5,5'-HxCB	153L	4000		4380	1.31 (S)	109	1.25	0.898

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

(4) R% = percent recovery of labeled compounds.

(5) Required limits for ion abundance ratios are specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

For Axy Internal Use Only [XSL Template: Form16681B.xsl; Created: 16-Nov-2018 11:17:58; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PCBCS_L29924-1_Form1B_SJ2455370.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T04-1808
Sample Collection:
23-Aug-2018 10:08

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-1
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	25-Oct-2018 Time: 16:04:23	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_367 S: 9
Dilution Factor:	N/A	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_367 S: 1

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5'-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6'-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6'-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4'-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5'-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6'-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		X				
2,3,4',6'-TeCB	64		X				
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5'-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6'-TeCB	73		X				
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5'-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5'-TeCB	81		X				
2,2',3,3',4'-PeCB	82			202	3.86 (S)	1.57	0.934
2,2',3,3',5'-PeCB	83	83 + 99	C	1220	3.46 (S)	1.55	0.885
2,2',3,3',6'-PeCB	84			702	3.84 (S)	1.57	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	315	2.94 (S)	1.47	0.920
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C G	1330	2.95 (S)	1.62	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C	540	3.31 (S)	1.52	1.155
2,2',3,4,6'-PeCB	89			27.6	3.57 (S)	1.56	1.183
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C	2280	2.97 (S)	1.54	0.869
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			504	3.46 (S)	1.60	0.853
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C	2890	3.19 (S)	1.56	1.122
2,2',3,5,6'-PeCB	94			62.0	3.58 (S)	1.63	1.102
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			64.1	0.852 (Q)	1.57	1.016
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			108	2.91 (S)	1.66	1.094
2,2',4,6,6'-PeCB	104			23.1	0.852 (Q)	1.76	1.001
2,3,3',4,4'-PeCB	105			339	3.02 (S)	1.51	1.001
2,3,3',4,5-PeCB	106		U		2.96 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	42.8	3.25 (S)	1.58	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			102	3.08 (S)	1.48	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	2160	2.58 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		J	4.29	2.59 (S)	1.60	0.945
2,3,3',5,6-PeCB	112		U		2.52 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			20.4	2.93 (S)	1.75	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118			930	2.87 (S)	1.55	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K	12.3	2.53 (S)	1.87	0.959
2,3',4,5',6-PeCB	121		J	4.93	2.62 (S)	1.60	1.200
2',3,3',4,5-PeCB	122		K	13.7	3.59 (S)	1.84	1.010
2',3,4,4',5-PeCB	123		K	17.5	3.06 (S)	1.35	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		3.55 (S)		
3,3',4,5,5'-PeCB	127		U		3.33 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	161	4.33 (S)	1.26	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C	1430	4.30 (S)	1.24	0.928
2,2',3,3',4,5'-HxCB	130			77.9	5.48 (S)	1.38	0.913
2,2',3,3',4,6-HxCB	131			12.8	4.96 (S)	1.36	1.160
2,2',3,3',4,6'-HxCB	132			546	5.37 (S)	1.24	1.176
2,2',3,3',5,5'-HxCB	133			38.6	4.99 (S)	1.40	1.192
2,2',3,3',5,6-HxCB	134	134 + 143	C	99.4	5.07 (S)	1.24	1.141
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	846	0.852 (Q)	1.22	1.105
2,2',3,3',6,6'-HxCB	136			331	0.852 (Q)	1.28	1.025
2,2',3,4,4',5-HxCB	137		K	34.9	5.03 (S)	1.02	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C K	29.6	4.57 (S)	0.97	1.154
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			246	4.79 (S)	1.20	0.903
2,2',3,4,5,6-HxCB	142		U		5.11 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			87.3	0.852 (Q)	1.32	1.122
2,2',3,4,6,6'-HxCB	145		U		0.852 (Q)		
2,2',3,4',5,5'-HxCB	146			297	4.29 (S)	1.21	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C	1770	4.46 (S)	1.26	1.134
2,2',3,4',5,6'-HxCB	148		K	10.2	0.852 (Q)	0.92	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K	12.2	0.852 (Q)	1.55	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	6.52	0.852 (Q)	0.78	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C	1230	3.82 (S)	1.23	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	2.19	0.852 (Q)	1.95	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C	76.1	4.52 (S)	1.27	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			105	3.42 (S)	1.21	0.938
2,3,3',4,5,5'-HxCB	159			11.2	3.64 (S)	1.16	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		3.59 (S)		
2,3,3',4',5,5'-HxCB	162		U		3.26 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			97.7	3.73 (S)	1.32	0.921
2,3,3',5,5',6-HxCB	165		U		4.06 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			28.3	3.67 (S)	1.29	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		4.09 (S)		
2,2',3,3',4,4',5-HpCB	170			139	1.22 (S)	1.16	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	54.0	1.14 (S)	0.90	1.163
2,2',3,3',4,5,5'-HpCB	172		K	29.9	1.18 (S)	1.27	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			198	1.06 (S)	1.09	1.134
2,2',3,3',4,5',6-HpCB	175			8.16	1.09 (S)	0.91	1.102
2,2',3,3',4,6,6'-HpCB	176			30.5	0.852 (Q)	1.13	1.034
2,2',3,3',4',5,6-HpCB	177			83.4	0.852 (Q)	1.03	1.146
2,2',3,3',5,5',6-HpCB	178			54.2	1.09 (S)	0.99	1.085
2,2',3,3',5,6,6'-HpCB	179			133	0.852 (Q)	1.09	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	417	1.21 (S)	1.04	1.000
2,2',3,4,4',5,6-HpCB	181		K J	3.16	1.09 (S)	1.67	1.156
2,2',3,4,4',5,6'-HpCB	182		U		1.05 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	146	1.10 (S)	1.04	1.127
2,2',3,4,4',6,6'-HpCB	184		K J	1.10	0.852 (Q)	2.01	1.024
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.852 (Q)		
2,2',3,4',5,5',6-HpCB	187			313	0.997 (S)	1.11	1.110
2,2',3,4',5,6,6'-HpCB	188		U		0.852 (Q)		
2,3,3',4,4',5,5'-HpCB	189		J	4.61	1.03 (S)	0.97	1.000
2,3,3',4,4',5,6-HpCB	190			27.5	0.870 (S)	1.03	0.947
2,3,3',4,4',5',6-HpCB	191		J	5.76	0.883 (S)	0.96	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.977 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194			43.6	0.975 (S)	0.81	0.991
2,2',3,3',4,4',5,6-OxCB	195			23.6	1.05 (S)	0.98	0.946
2,2',3,3',4,4',5,6'-OxCB	196		K	26.8	0.864 (S)	1.11	0.916
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C G	11.9	0.852 (Q)	0.95	1.046
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C K	71.5	0.878 (S)	1.12	1.115
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5,6,6'-OxCB	201			9.86	0.852 (Q)	0.90	1.023
2,2',3,3',5,5',6,6'-OxCB	202			19.1	0.852 (Q)	0.85	1.001
2,2',3,4,4',5,5',6-OxCB	203			42.4	0.852 (Q)	0.84	0.919
2,2',3,4,4',5,6,6'-OxCB	204		U		0.852 (Q)		
2,3,3',4,4',5,5',6-OxCB	205		K J	2.79	0.852 (Q)	1.27	1.001
2,2',3,3',4,4',5,5',6-NoCB	206			26.0	1.14 (S)	0.82	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207		K J	5.78	0.852 (Q)	0.98	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208			11.2	0.854 (S)	0.75	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209		K	18.4	0.978 (S)	1.47	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T04-1808
Sample Collection:
23-Aug-2018 10:08

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 25-Oct-2018 Time: 16:04:23
 Extract Volume (uL): 20
 Injection Volume (uL): 1.0
 Dilution Factor: N/A
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-1
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_367 S: 9
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_367 S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		X					
13C12-4-MoCB	3L		X					
13C12-2,2'-DiCB	4L		X					
13C12-4,4'-DiCB	15L		X					
13C12-2,2',6-TriCB	19L		X					
13C12-3,4,4'-TriCB	37L		X					
13C12-2,2',6,6'-TeCB	54L		X					
13C12-3,3',4,4'-TeCB	77L		X					
13C12-3,4,4',5-TeCB	81L		X					
13C12-2,2',4,6,6'-PeCB	104L			4000	1980	49.6	1.64	0.808
13C12-2,3,3',4,4'-PeCB	105L			4000	2500	62.4	1.55	1.201
13C12-2,3,4,4',5-PeCB	114L			4000	2580	64.5	1.55	1.180
13C12-2,3',4,4',5-PeCB	118L			4000	2560	63.9	1.53	1.162
13C12-2',3,4,4',5-PeCB	123L			4000	2520	62.9	1.53	1.152
13C12-3,3',4,4',5-PeCB	126L			4000	2330	58.1	1.55	1.302
13C12-2,2',4,4',6,6'-HxCB	155L			4000	1790	44.6	1.28	0.785
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	8000	4510	56.4	1.25	1.108
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			4000	2250	56.3	1.25	1.078
13C12-3,3',4,4',5,5'-HxCB	169L			4000	2080	52.1	1.25	1.192
13C12-2,2',3,3',4,4',5-HpCB	170L			4000	2990	74.8	1.09	0.897
13C12-2,2',3,4,4',5,5'-HpCB	180L			4000	2830	70.7	1.04	0.872
13C12-2,2',3,4',5,6,6'-HpCB	188L			4000	2870	71.7	1.06	0.712
13C12-2,3,3',4,4',5,5'-HpCB	189L			4000	2520	63.0	0.99	0.959
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			4000	2010	50.2	0.88	0.817
13C12-2,3,3',4,4',5,5',6-OxCB	205L			4000	2750	68.7	0.93	1.009
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			4000	2450	61.3	0.77	1.043
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			4000	2770	69.2	0.77	0.949
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			4000	1970	49.4	1.22	1.075
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		X					
13C12-2,3,3',5,5'-PeCB	111L			2000	1380	68.9	1.58	1.088
13C12-2,2',3,3',5,5',6-HpCB	178L			2000	1060	52.9	1.05	1.012

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T04-1808
Sample Collection:
23-Aug-2018 10:08

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-1 W
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	30-Oct-2018 Time: 05:36:57	Instrument ID:	HR GC/MS
Extract Volume (uL):	100	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_372A S: 8
Dilution Factor:	5	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_372A S: 1

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This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		D	482	4.53 (S)	2.81	1.001
3-MoCB	2		D	74.1	5.64 (S)	3.24	0.989
4-MoCB	3		D	152	5.17 (S)	3.17	1.002
2,2'-DiCB	4		D	6270	9.41 (S)	1.53	1.001
2,3-DiCB	5		K D	39.3	11.7 (S)	1.13	1.197
2,3'-DiCB	6		D	346	10.5 (S)	1.48	1.176
2,4-DiCB	7		D	136	10.7 (S)	1.64	1.158
2,4'-DiCB	8		D	1480	9.62 (S)	1.52	1.207
2,5-DiCB	9		D	107	10.4 (S)	1.41	1.145
2,6-DiCB	10		D	356	10.9 (S)	1.53	1.013
3,3'-DiCB	11		D	3500	11.0 (S)	1.51	0.968
3,4-DiCB	12	12 + 13	C D	112	11.0 (S)	1.74	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		10.7 (S)		
4,4'-DiCB	15		D	524	8.44 (S)	1.51	1.001
2,2',3-TriCB	16		D	901	10.7 (S)	1.00	1.165
2,2',4-TriCB	17		D	2520	9.35 (S)	1.10	1.137
2,2',5-TriCB	18	18 + 30	C D	2250	7.95 (S)	1.09	1.113
2,2',6-TriCB	19		D	6070	9.31 (S)	1.07	1.001
2,3,3'-TriCB	20	20 + 28	C D	1820	6.50 (S)	0.96	0.846
2,3,4-TriCB	21	21 + 33	C D	2150	6.26 (S)	1.00	0.854
2,3,4'-TriCB	22		D	647	7.28 (S)	1.02	0.871
2,3,5-TriCB	23		U D		6.99 (S)		
2,3,6-TriCB	24		D	36.3	7.30 (S)	1.16	1.159
2,3',4-TriCB	25		D	845	5.62 (S)	0.96	0.824
2,3',5-TriCB	26	26 + 29	C D	402	6.59 (S)	0.96	1.301
2,3',6-TriCB	27		D	451	6.64 (S)	1.06	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		D	1450	6.11 (S)	1.03	0.835
2,4',6-TriCB	32		D	976	6.47 (S)	0.96	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		K D J	22.8	6.80 (S)	0.80	1.274
3,3',4-TriCB	35		K D J	23.0	6.53 (S)	0.67	0.984
3,3',5-TriCB	36		U D		6.15 (S)		
3,4,4'-TriCB	37		D	274	7.00 (S)	1.01	1.001
3,4,5-TriCB	38		U D		6.59 (S)		
3,4',5-TriCB	39		D J	28.4	6.43 (S)	0.93	0.945

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C D	1140	4.47 (S)	0.83	1.336
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D	525	4.66 (S)	0.77	1.313
2,2',3,5'-TeCB	43		D	68.5	5.36 (S)	0.81	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C D	9670	4.07 (S)	0.79	1.287
2,2',3,6'-TeCB	45	45 + 51	C D	32000	4.42 (S)	0.77	1.149
2,2',3,6'-TeCB	46		D	298	5.08 (S)	0.73	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		D	316	4.47 (S)	0.74	1.274
2,2',4,5'-TeCB	49	49 + 69	C D	2050	3.79 (S)	0.81	1.260
2,2',4,6'-TeCB	50	50 + 53	C D	1260	4.26 (S)	0.78	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		D	3350	4.24 (S)	0.78	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		D	601	3.20 (S)	0.84	1.001
2,3,3',4'-TeCB	55		U D		8.17 (S)		
2,3,3',4'-TeCB	56		D	563	8.05 (S)	0.79	0.904
2,3,3',5'-TeCB	57		U D		7.51 (S)		
2,3,3',5'-TeCB	58		K D J	8.72	7.87 (S)	0.46	0.851
2,3,3',6'-TeCB	59	59 + 62 + 75	C D	207	3.31 (S)	0.79	1.303
2,3,4,4'-TeCB	60		D	265	8.11 (S)	0.77	0.910
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C D	1990	7.48 (S)	0.78	0.874
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		D	56.9	7.37 (S)	0.67	0.863
2,3,4',6'-TeCB	64		D	805	3.22 (S)	0.79	1.350
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		D	1260	7.60 (S)	0.78	0.884
2,3',4,5'-TeCB	67		D J	24.3	6.46 (S)	0.66	0.855
2,3',4,5'-TeCB	68		D	3720	7.15 (S)	0.77	0.831
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		D	43.7	7.63 (S)	0.83	0.821
2,3',5',6'-TeCB	73		K D	62.9	3.31 (S)	0.61	1.241
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D	86.9	6.06 (S)	0.78	1.000
3,3',4,5'-TeCB	78		U D		8.05 (S)		
3,3',4,5'-TeCB	79		D	50.5	6.57 (S)	0.79	0.971
3,3',5,5'-TeCB	80		U D		7.34 (S)		
3,4,4',5'-TeCB	81		U D		6.25 (S)		
2,2',3,3',4'-PeCB	82		X				
2,2',3,3',5'-PeCB	83	83 + 99	C X				
2,2',3,3',6'-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		X				
2,2',3,3',4,4',5,6-OxCB	195		X				
2,2',3,3',4,4',5,6'-OxCB	196		X				
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201		X				
2,2',3,3',5,5',6,6'-OxCB	202		X				
2,2',3,4,4',5,5',6-OxCB	203		X				
2,2',3,4,4',5,6,6'-OxCB	204		X				
2,3,3',4,4',5,5',6-OxCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ **Matthew Ou** _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T04-1808
Sample Collection:
23-Aug-2018 10:08

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 30-Oct-2018 Time: 05:36:57
 Extract Volume (uL): 100
 Injection Volume (uL): 1.0
 Dilution Factor: 5
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-1 W
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_372A S: 8
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_372A S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		D	4000	1700	42.6	3.39	0.719
13C12-4-MoCB	3L		D	4000	1800	44.9	3.37	0.858
13C12-2,2'-DiCB	4L		D	4000	1830	45.7	1.54	0.874
13C12-4,4'-DiCB	15L		D	4000	1920	48.0	1.58	1.255
13C12-2,2',6-TriCB	19L		D	4000	1990	49.8	1.10	1.072
13C12-3,4,4'-TriCB	37L		D	4000	2260	56.6	1.01	1.093
13C12-2,2',6,6'-TeCB	54L		D	4000	2540	63.4	0.79	0.811
13C12-3,3',4,4'-TeCB	77L		D	4000	3170	79.2	0.74	1.397
13C12-3,4,4',5-TeCB	81L		D	4000	3000	75.0	0.72	1.374
13C12-2,2',4,6,6'-PeCB	104L		X					
13C12-2,3,3',4,4'-PeCB	105L		X					
13C12-2,3,4,4',5-PeCB	114L		X					
13C12-2,3',4,4',5-PeCB	118L		X					
13C12-2',3,4,4',5-PeCB	123L		X					
13C12-3,3',4,4',5-PeCB	126L		X					
13C12-2,2',4,4',6,6'-HxCB	155L		X					
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C X					
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L		X					
13C12-3,3',4,4',5,5'-HxCB	169L		X					
13C12-2,2',3,3',4,4',5-HpCB	170L		X					
13C12-2,2',3,4,4',5,5'-HpCB	180L		X					
13C12-2,2',3,4',5,6,6'-HpCB	188L		X					
13C12-2,3,3',4,4',5,5'-HpCB	189L		X					
13C12-2,2',3,3',5,5',6,6'-OxCB	202L		X					
13C12-2,3,3',4,4',5,5',6-OxCB	205L		X					
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L		X					
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L		X					
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		D	2000	1150	57.5	1.05	0.925
13C12-2,3,3',5,5'-PeCB	111L		X					
13C12-2,2',3,3',5,5',6-HpCB	178L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1B

PCB CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T04-1808

Sample Collection:

23-Aug-2018 10:08

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Matrix: XAD

Sample Receipt Date: 29-Aug-2018

Extraction Date: 09-Oct-2018

Analysis Date: 25-Oct-2018 Time: 16:04:23

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg/sample

Project No.

Lab Sample I.D.:

Sample Size:

Initial Calibration Date:

Instrument ID:

GC Column ID:

Sample Data Filename:

Blank Data Filename:

Cal. Ver. Data Filename:

PORTLAND HARBOR PDI AND
BASELINE WATER

L29988-1

1 sample

25-Oct-2018

HR GC/MS

SPB OCTYL

PB8C_367 S: 9

PB8C_367 S: 4

N/A

CLIENT STANDARD	IUPAC NO. ¹	SPIKE CONC.	LAB FLAG ²	CONC. FOUND	REPORTING LIMIT (RL) ³	R(%) ⁴	ION ABUND. RATIO ⁵	RRT
13C12-2,4',5-TriCB	31L	4000		3750	43.9 (S)	93.8	1.04	0.836
13C12-2,2',3,5',6-PeCB	95L	4000		3610	2.62 (S)	90.4	1.56	0.779
13C12-2,2',4,4',5,5'-HxCB	153L	4000		4170	0.951 (S)	104	1.30	0.898

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

(4) R% = percent recovery of labeled compounds.

(5) Required limits for ion abundance ratios are specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

For Axy Internal Use Only [XSL Template: Form16681B.xsl; Created: 16-Nov-2018 11:17:58; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PCBCS_L29988-1_Form1B_SJ2455371.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T02-1808
Sample Collection:
24-Aug-2018 12:22

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-2
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	25-Oct-2018 Time: 17:08:09	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_367 S: 10
Dilution Factor:	N/A	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_367 S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5'-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6'-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6'-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4'-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5'-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6'-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		X				
2,3,4',6'-TeCB	64		X				
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5'-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6'-TeCB	73		X				
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5'-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5'-TeCB	81		X				
2,2',3,3',4'-PeCB	82			115	2.51 (S)	1.61	0.934
2,2',3,3',5'-PeCB	83	83 + 99	C	722	2.24 (S)	1.62	0.885
2,2',3,3',6'-PeCB	84			395	2.49 (S)	1.52	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	181	1.91 (S)	1.61	0.919
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C G	738	1.91 (S)	1.61	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C	295	2.15 (S)	1.59	1.155
2,2',3,4,6'-PeCB	89			16.8	2.32 (S)	1.65	1.183
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C	1310	1.93 (S)	1.58	0.869
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			289	2.25 (S)	1.50	0.853
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C	1590	2.07 (S)	1.59	1.121
2,2',3,5,6'-PeCB	94			27.8	2.32 (S)	1.71	1.102
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			29.9	0.854 (Q)	1.51	1.015
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			54.4	1.89 (S)	1.64	1.092
2,2',4,6,6'-PeCB	104		K	11.1	0.854 (Q)	1.94	1.001
2,3,3',4,4'-PeCB	105			194	1.91 (S)	1.52	1.000
2,3,3',4,5-PeCB	106		U		2.07 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	26.5	2.28 (S)	1.51	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			61.4	2.15 (S)	1.43	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	1230	1.68 (S)	1.60	0.924
2,3,3',5,5'-PeCB	111		K J	1.86	1.68 (S)	2.32	0.945
2,3,3',5,6-PeCB	112		U		1.63 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			13.9	2.13 (S)	1.38	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118			544	2.04 (S)	1.50	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K	7.30	1.64 (S)	1.88	0.958
2,3',4,5',6-PeCB	121		J	2.76	1.70 (S)	1.41	1.200
2',3,3',4,5-PeCB	122			9.09	2.51 (S)	1.60	1.010
2',3,4,4',5-PeCB	123		K	10.5	2.13 (S)	1.56	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		2.43 (S)		
3,3',4,5,5'-PeCB	127		U		2.33 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	89.1	2.51 (S)	1.12	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C	702	2.49 (S)	1.21	0.928
2,2',3,3',4,5'-HxCB	130			41.0	3.17 (S)	1.08	0.913
2,2',3,3',4,6-HxCB	131			9.85	2.87 (S)	1.38	1.161
2,2',3,3',4,6'-HxCB	132			293	3.11 (S)	1.27	1.176
2,2',3,3',5,5'-HxCB	133			21.8	2.89 (S)	1.21	1.193
2,2',3,3',5,6-HxCB	134	134 + 143	C	53.0	2.94 (S)	1.23	1.141
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	417	0.854 (Q)	1.18	1.105
2,2',3,3',6,6'-HxCB	136		K	169	0.854 (Q)	1.47	1.025
2,2',3,4,4',5-HxCB	137			22.5	2.91 (S)	1.26	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	13.1	2.65 (S)	1.36	1.154
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			133	2.78 (S)	1.24	0.903
2,2',3,4,5,6-HxCB	142		U		2.96 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			44.9	0.860 (S)	1.35	1.122
2,2',3,4,6,6'-HxCB	145		K J	1.04	0.854 (Q)	0.74	1.035
2,2',3,4',5,5'-HxCB	146			163	2.48 (S)	1.31	0.883
2,2',3,4',5,6-HxCB	147	147 + 149	C	921	2.58 (S)	1.27	1.134
2,2',3,4',5,6'-HxCB	148		K J	6.05	0.854 (Q)	1.00	1.085
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	6.26	0.854 (Q)	1.19	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	3.27	0.854 (Q)	1.20	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C	668	2.21 (S)	1.24	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	1.20	0.854 (Q)	3.03	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C	39.9	2.63 (S)	1.31	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			54.7	1.98 (S)	1.27	0.938
2,3,3',4,5,5'-HxCB	159		K J	6.18	2.11 (S)	1.49	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		2.08 (S)		
2,3,3',4',5,5'-HxCB	162		U		1.89 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			56.1	2.16 (S)	1.15	0.921
2,3,3',5,5',6-HxCB	165		U		2.35 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			16.1	2.08 (S)	1.19	1.001
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		2.20 (S)		
2,2',3,3',4,4',5-HpCB	170		K	66.0	0.869 (S)	1.22	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	27.0	0.896 (S)	0.90	1.163
2,2',3,3',4,5,5'-HpCB	172			15.2	0.922 (S)	1.16	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			110	0.854 (Q)	1.05	1.134
2,2',3,3',4,5',6-HpCB	175		K J	4.46	0.854 (Q)	1.22	1.103
2,2',3,3',4,6,6'-HpCB	176		K	15.5	0.854 (Q)	0.88	1.034
2,2',3,3',4',5,6-HpCB	177		K	45.2	0.854 (Q)	1.28	1.146
2,2',3,3',5,5',6-HpCB	178			28.9	0.854 (Q)	0.99	1.085
2,2',3,3',5,6,6'-HpCB	179			66.3	0.854 (Q)	1.03	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	205	0.854 (Q)	0.99	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.854 (Q)		
2,2',3,4,4',5,6'-HpCB	182		U		0.854 (Q)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	77.6	0.864 (S)	0.99	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.854 (Q)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.854 (Q)		
2,2',3,4',5,5',6-HpCB	187		G	174	0.854 (Q)	0.99	1.110
2,2',3,4',5,6,6'-HpCB	188		K J	1.36	0.854 (Q)	2.20	1.000
2,3,3',4,4',5,5'-HpCB	189		J	2.04	1.24 (S)	1.13	1.001
2,3,3',4,4',5,6-HpCB	190			12.6	0.854 (Q)	1.03	0.947
2,3,3',4,4',5',6-HpCB	191		K J	3.88	0.854 (Q)	0.82	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.854 (Q)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194			21.8	0.854 (Q)	0.88	0.991
2,2',3,3',4,4',5,6-OxCB	195		K	10.0	0.854 (Q)	1.17	0.945
2,2',3,3',4,4',5,6'-OxCB	196			15.6	0.884 (S)	0.96	0.916
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C K J G	5.39	0.854 (Q)	0.59	1.046
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C	44.4	0.899 (S)	0.96	1.115
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5,6,6'-OxCB	201		K J	5.23	0.854 (Q)	1.28	1.023
2,2',3,3',5,5',6,6'-OxCB	202			11.8	0.854 (Q)	0.88	1.001
2,2',3,4,4',5,5',6-OxCB	203		K	27.0	0.866 (S)	1.03	0.919
2,2',3,4,4',5,6,6'-OxCB	204		U		0.854 (Q)		
2,3,3',4,4',5,5',6-OxCB	205		K J	1.47	0.854 (Q)	1.42	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			13.8	0.947 (S)	0.80	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207		J	3.74	0.854 (Q)	0.76	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			7.16	0.854 (Q)	0.70	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209		K	12.6	0.907 (S)	0.87	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T02-1808
Sample Collection:
24-Aug-2018 12:22

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 25-Oct-2018 Time: 17:08:09
 Extract Volume (uL): 20
 Injection Volume (uL): 1.0
 Dilution Factor: N/A
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-2
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_367 S: 10
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_367 S: 1

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 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		X					
13C12-4-MoCB	3L		X					
13C12-2,2'-DiCB	4L		X					
13C12-4,4'-DiCB	15L		X					
13C12-2,2',6-TriCB	19L		X					
13C12-3,4,4'-TriCB	37L		X					
13C12-2,2',6,6'-TeCB	54L		X					
13C12-3,3',4,4'-TeCB	77L		X					
13C12-3,4,4',5-TeCB	81L		X					
13C12-2,2',4,6,6'-PeCB	104L			4000	2110	52.6	1.62	0.809
13C12-2,3,3',4,4'-PeCB	105L			4000	3040	76.1	1.52	1.201
13C12-2,3,4,4',5-PeCB	114L			4000	2730	68.2	1.58	1.180
13C12-2,3',4,4',5-PeCB	118L			4000	2810	70.2	1.55	1.162
13C12-2',3,4,4',5-PeCB	123L			4000	2850	71.2	1.56	1.152
13C12-3,3',4,4',5-PeCB	126L			4000	2670	66.8	1.57	1.302
13C12-2,2',4,4',6,6'-HxCB	155L			4000	2030	50.8	1.29	0.785
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	8000	5760	72.0	1.24	1.108
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			4000	2920	72.9	1.25	1.078
13C12-3,3',4,4',5,5'-HxCB	169L			4000	2780	69.6	1.23	1.192
13C12-2,2',3,3',4,4',5-HpCB	170L			4000	3400	84.9	1.06	0.897
13C12-2,2',3,4,4',5,5'-HpCB	180L			4000	3300	82.6	1.03	0.872
13C12-2,2',3,4',5,6,6'-HpCB	188L			4000	2790	69.9	1.06	0.712
13C12-2,3,3',4,4',5,5'-HpCB	189L			4000	2780	69.5	0.98	0.959
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			4000	2190	54.8	0.91	0.817
13C12-2,3,3',4,4',5,5',6-OxCB	205L			4000	3220	80.5	0.89	1.009
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			4000	2800	70.1	0.78	1.043
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			4000	2950	73.9	0.77	0.949
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			4000	1990	49.8	1.19	1.074
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		X					
13C12-2,3,3',5,5'-PeCB	111L			2000	1380	68.8	1.59	1.088
13C12-2,2',3,3',5,5',6-HpCB	178L			2000	1320	66.2	1.06	1.011

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T02-1808
Sample Collection:
24-Aug-2018 12:22

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-2 W
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	30-Oct-2018 Time: 04:33:22	Instrument ID:	HR GC/MS
Extract Volume (uL):	100	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_372A S: 7
Dilution Factor:	5	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_372A S: 1

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		D	273	2.51 (S)	2.94	1.001
3-MoCB	2		D	92.8	3.24 (S)	2.90	0.989
4-MoCB	3		D	106	3.08 (S)	3.60	1.001
2,2'-DiCB	4		D	3460	12.5 (S)	1.46	1.001
2,3-DiCB	5		U D		11.9 (S)		
2,3'-DiCB	6		D	214	10.7 (S)	1.50	1.177
2,4-DiCB	7		D	76.1	10.9 (S)	1.72	1.158
2,4'-DiCB	8		D	848	9.78 (S)	1.48	1.208
2,5-DiCB	9		D	56.3	10.5 (S)	1.39	1.147
2,6-DiCB	10		D	219	11.1 (S)	1.47	1.014
3,3'-DiCB	11		D	3640	11.2 (S)	1.49	0.968
3,4-DiCB	12	12 + 13	C D	73.5	11.2 (S)	1.54	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		10.8 (S)		
4,4'-DiCB	15		D	378	12.1 (S)	1.53	1.001
2,2',3-TriCB	16		D	543	7.13 (S)	1.09	1.166
2,2',4-TriCB	17		D	1570	6.20 (S)	1.01	1.137
2,2',5-TriCB	18	18 + 30	C D	1370	5.28 (S)	1.05	1.113
2,2',6-TriCB	19		D	3120	6.20 (S)	1.01	1.001
2,3,3'-TriCB	20	20 + 28	C D	1360	8.83 (S)	1.01	0.847
2,3,4-TriCB	21	21 + 33	C D	1370	8.50 (S)	0.99	0.854
2,3,4'-TriCB	22		D	415	9.89 (S)	1.11	0.871
2,3,5-TriCB	23		U D		9.50 (S)		
2,3,6-TriCB	24		K D J	18.5	4.85 (S)	0.55	1.159
2,3',4-TriCB	25		D	828	7.64 (S)	0.99	0.824
2,3',5-TriCB	26	26 + 29	C D	291	8.95 (S)	0.95	1.301
2,3',6-TriCB	27		D	254	4.41 (S)	1.08	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		D	1030	8.30 (S)	0.99	0.836
2,4',6-TriCB	32		D G	406	8.79 (S)	1.00	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		K D J	10.8	9.24 (S)	1.25	1.274
3,3',4-TriCB	35		D J	23.2	8.87 (S)	1.15	0.986
3,3',5-TriCB	36		D J	12.9	8.36 (S)	0.96	0.930
3,4,4'-TriCB	37		D	203	9.49 (S)	1.02	1.001
3,4,5-TriCB	38		U D		8.95 (S)		
3,4',5-TriCB	39		K D J	15.8	8.74 (S)	0.73	0.944

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C D	763	6.25 (S)	0.78	1.336
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D	348	6.52 (S)	0.74	1.312
2,2',3,5'-TeCB	43		K D	47.2	7.50 (S)	0.99	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C D	4850	5.70 (S)	0.77	1.286
2,2',3,6'-TeCB	45	45 + 51	C D	21000	6.19 (S)	0.78	1.149
2,2',3,6'-TeCB	46		D	189	7.10 (S)	0.80	1.160
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		D	218	6.26 (S)	0.81	1.273
2,2',4,5'-TeCB	49	49 + 69	C D	1270	5.30 (S)	0.77	1.259
2,2',4,6'-TeCB	50	50 + 53	C D	680	5.96 (S)	0.80	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		D	2070	5.94 (S)	0.76	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		D	318	4.91 (S)	0.75	1.001
2,3,3',4'-TeCB	55		U D		6.65 (S)		
2,3,3',4'-TeCB	56		D	349	6.55 (S)	0.76	0.904
2,3,3',5'-TeCB	57		K D J	6.39	6.11 (S)	1.12	0.843
2,3,3',5'-TeCB	58		K D J	6.66	6.41 (S)	1.69	0.850
2,3,3',6'-TeCB	59	59 + 62 + 75	C D	137	4.63 (S)	0.80	1.302
2,3,4,4'-TeCB	60		D	150	6.60 (S)	0.75	0.911
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C D	1330	6.09 (S)	0.79	0.874
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		D	43.1	6.00 (S)	0.74	0.864
2,3,4',6'-TeCB	64		D	541	4.51 (S)	0.79	1.349
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		D	797	6.18 (S)	0.77	0.884
2,3',4,5'-TeCB	67		D J	24.9	5.26 (S)	0.81	0.856
2,3',4,5'-TeCB	68		D	4930	5.82 (S)	0.75	0.831
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		K D J	25.3	5.80 (S)	1.15	0.822
2,3',5',6'-TeCB	73		U D		4.63 (S)		
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D	53.1	6.37 (S)	0.71	1.000
3,3',4,5'-TeCB	78		U D		6.55 (S)		
3,3',4,5'-TeCB	79		K D J	19.5	5.35 (S)	1.25	0.969
3,3',5,5'-TeCB	80		U D		5.97 (S)		
3,4,4',5'-TeCB	81		U D		6.07 (S)		
2,2',3,3',4'-PeCB	82		X				
2,2',3,3',5'-PeCB	83	83 + 99	C X				
2,2',3,3',6'-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		X				
2,2',3,3',4,4',5,6-OxCB	195		X				
2,2',3,3',4,4',5,6'-OxCB	196		X				
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201		X				
2,2',3,3',5,5',6,6'-OxCB	202		X				
2,2',3,4,4',5,5',6-OxCB	203		X				
2,2',3,4,4',5,6,6'-OxCB	204		X				
2,3,3',4,4',5,5',6-OxCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T02-1808
Sample Collection:
24-Aug-2018 12:22

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 30-Oct-2018 Time: 04:33:22
 Extract Volume (uL): 100
 Injection Volume (uL): 1.0
 Dilution Factor: 5
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-2 W
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_372A S: 7
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_372A S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		D	4000	2420	60.6	3.16	0.718
13C12-4-MoCB	3L		D	4000	2370	59.3	3.36	0.858
13C12-2,2'-DiCB	4L		D	4000	2370	59.2	1.58	0.873
13C12-4,4'-DiCB	15L		D	4000	2290	57.4	1.50	1.254
13C12-2,2',6-TriCB	19L		D	4000	2400	60.1	1.08	1.072
13C12-3,4,4'-TriCB	37L		D	4000	2730	68.3	1.00	1.092
13C12-2,2',6,6'-TeCB	54L		D	4000	2610	65.2	0.81	0.811
13C12-3,3',4,4'-TeCB	77L		D	4000	3630	90.7	0.76	1.397
13C12-3,4,4',5-TeCB	81L		D	4000	3670	91.8	0.73	1.373
13C12-2,2',4,6,6'-PeCB	104L		X					
13C12-2,3,3',4,4'-PeCB	105L		X					
13C12-2,3,4,4',5-PeCB	114L		X					
13C12-2,3',4,4',5-PeCB	118L		X					
13C12-2',3,4,4',5-PeCB	123L		X					
13C12-3,3',4,4',5-PeCB	126L		X					
13C12-2,2',4,4',6,6'-HxCB	155L		X					
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C X					
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L		X					
13C12-3,3',4,4',5,5'-HxCB	169L		X					
13C12-2,2',3,3',4,4',5-HpCB	170L		X					
13C12-2,2',3,4,4',5,5'-HpCB	180L		X					
13C12-2,2',3,4',5,6,6'-HpCB	188L		X					
13C12-2,3,3',4,4',5,5'-HpCB	189L		X					
13C12-2,2',3,3',5,5',6,6'-OxCB	202L		X					
13C12-2,3,3',4,4',5,5',6-OxCB	205L		X					
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L		X					
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L		X					
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		D	2000	1430	71.3	1.08	0.925
13C12-2,3,3',5,5'-PeCB	111L		X					
13C12-2,2',3,3',5,5',6-HpCB	178L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1B

PCB CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T02-1808

Sample Collection:

24-Aug-2018 12:22

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Matrix: XAD

Sample Receipt Date: 29-Aug-2018

Extraction Date: 09-Oct-2018

Analysis Date: 25-Oct-2018 Time: 17:08:09

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg/sample

Project No.

Lab Sample I.D.:

Sample Size:

Initial Calibration Date:

Instrument ID:

GC Column ID:

Sample Data Filename:

Blank Data Filename:

Cal. Ver. Data Filename:

PORTLAND HARBOR PDI AND
BASELINE WATER

L29988-2

1 sample

25-Oct-2018

HR GC/MS

SPB OCTYL

PB8C_367 S: 10

PB8C_367 S: 4

N/A

CLIENT STANDARD	IUPAC NO. ¹	SPIKE CONC.	LAB FLAG ²	CONC. FOUND	REPORTING LIMIT (RL) ³	R(%) ⁴	ION ABUND. RATIO ⁵	RRT
13C12-2,4',5'-TriCB	31L	4000		3310	40.9 (S)	82.7	1.05	0.835
13C12-2,2',3,5',6-PeCB	95L	4000		3220	2.09 (S)	80.4	1.59	0.779
13C12-2,2',4,4',5,5'-HxCB	153L	4000		3660	1.21 (S)	91.5	1.25	0.898

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

(4) R% = percent recovery of labeled compounds.

(5) Required limits for ion abundance ratios are specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

For Axs Internal Use Only [XSL Template: Form16681B.xsl; Created: 16-Nov-2018 11:17:58; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PCBCS_L29988-2_Form1B_SJ2455372.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T05-1808
Sample Collection:
21-Aug-2018 20:28

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-3
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	26-Oct-2018 Time: 00:53:42	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_368 S: 6
Dilution Factor:	N/A	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_368 S: 1

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This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5'-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6'-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6'-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4'-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5'-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6'-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		X				
2,3,4',6'-TeCB	64		X				
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5'-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6'-TeCB	73		X				
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5'-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5'-TeCB	81		X				
2,2',3,3',4'-PeCB	82		X				
2,2',3,3',5'-PeCB	83	83 + 99	C X				
2,2',3,3',6'-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C	101	3.38 (S)	1.27	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C	891	3.48 (S)	1.27	0.928
2,2',3,3',4,5'-HxCB	130			50.4	4.50 (S)	1.33	0.913
2,2',3,3',4,6-HxCB	131			11.0	4.18 (S)	1.26	1.161
2,2',3,3',4,6'-HxCB	132			379	4.39 (S)	1.28	1.175
2,2',3,3',5,5'-HxCB	133			25.8	4.19 (S)	1.09	1.192
2,2',3,3',5,6-HxCB	134	134 + 143	C	67.0	4.23 (S)	1.14	1.141
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	552	1.09 (S)	1.32	1.105
2,2',3,3',6,6'-HxCB	136			226	0.855 (Q)	1.25	1.025
2,2',3,4,4',5-HxCB	137			27.7	4.13 (S)	1.37	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	16.2	3.74 (S)	1.34	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			184	4.04 (S)	1.30	0.903
2,2',3,4,5,6-HxCB	142		U		4.25 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			57.6	1.11 (S)	1.10	1.122
2,2',3,4,6,6'-HxCB	145		U		0.899 (S)		
2,2',3,4',5,5'-HxCB	146			179	3.48 (S)	1.27	0.883
2,2',3,4',5,6-HxCB	147	147 + 149	C	1160	3.69 (S)	1.27	1.134
2,2',3,4',5,6'-HxCB	148		J	6.62	1.14 (S)	1.37	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K	7.91	0.868 (S)	1.71	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	5.18	0.855 (Q)	1.13	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C	815	3.18 (S)	1.27	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	1.95	0.855 (Q)	1.66	1.000
2,3,3',4,4',5-HxCB	156	156 + 157	C	50.5	3.68 (S)	1.40	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			69.2	2.71 (S)	1.19	0.938
2,3,3',4,4',6'-HxCB	159		U		2.92 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		3.03 (S)		
2,3,3',4',5,5'-HxCB	162		U		2.67 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			64.9	2.99 (S)	1.33	0.921
2,3,3',5,5',6-HxCB	165		U		3.34 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			20.7	2.95 (S)	1.38	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		3.19 (S)		
2,2',3,3',4,4',5-HpCB	170			84.4	0.855 (Q)	1.10	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	33.7	0.868 (S)	0.99	1.164
2,2',3,3',4,5,5'-HpCB	172			20.1	0.880 (S)	1.05	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			126	0.855 (Q)	1.01	1.134
2,2',3,3',4,5',6-HpCB	175		K J	4.93	0.855 (Q)	1.38	1.103
2,2',3,3',4,6,6'-HpCB	176			18.6	0.855 (Q)	1.03	1.035
2,2',3,3',4',5,6-HpCB	177			58.9	0.855 (Q)	1.01	1.146
2,2',3,3',5,5',6-HpCB	178			37.6	0.855 (Q)	0.93	1.085
2,2',3,3',5,6,6'-HpCB	179			81.6	0.855 (Q)	1.06	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	257	0.855 (Q)	1.01	1.000
2,2',3,4,4',5,6-HpCB	181		K J	1.32	0.855 (Q)	2.06	1.157
2,2',3,4,4',5,6'-HpCB	182		U		0.855 (Q)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	87.8	0.855 (Q)	1.04	1.128
2,2',3,4,4',6,6'-HpCB	184		K J	0.915	0.855 (Q)	0.70	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.855 (Q)		
2,2',3,4',5,5',6-HpCB	187		G	152	0.855 (Q)	1.06	1.111
2,2',3,4',5,6,6'-HpCB	188		K J	1.20	0.855 (Q)	0.72	1.001
2,3,3',4,4',5,5'-HpCB	189		K J	2.74	0.855 (Q)	0.55	1.001
2,3,3',4,4',5,6-HpCB	190		K	17.7	0.855 (Q)	0.81	0.947
2,3,3',4,4',5',6-HpCB	191		J	2.73	0.855 (Q)	1.07	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.855 (Q)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		K	31.3	0.855 (Q)	1.15	0.991
2,2',3,3',4,4',5,6-OxCB	195			12.0	0.855 (Q)	1.01	0.945
2,2',3,3',4,4',5,6'-OxCB	196			18.7	0.855 (Q)	0.88	0.916
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C K G	7.42	0.855 (Q)	1.07	1.046
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C	50.7	0.864 (S)	0.91	1.115
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5,6,6'-OxCB	201		K J	5.05	0.855 (Q)	1.20	1.022
2,2',3,3',5,5',6,6'-OxCB	202			13.2	0.855 (Q)	0.88	1.000
2,2',3,4,4',5,5',6-OxCB	203			33.6	0.855 (Q)	0.90	0.919
2,2',3,4,4',5,6,6'-OxCB	204		U		0.855 (Q)		
2,3,3',4,4',5,5',6-OxCB	205		J	1.77	0.855 (Q)	0.91	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			22.0	0.889 (S)	0.74	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		K J	4.52	0.855 (Q)	0.59	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			6.85	0.855 (Q)	0.85	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			10.3	0.855 (Q)	1.18	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T05-1808
Sample Collection:
21-Aug-2018 20:28

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 26-Oct-2018 Time: 00:53:42
 Extract Volume (uL): 20
 Injection Volume (uL): 1.0
 Dilution Factor: N/A
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-3
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_368 S: 6
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_368 S: 1

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 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		X					
13C12-4-MoCB	3L		X					
13C12-2,2'-DiCB	4L		X					
13C12-4,4'-DiCB	15L		X					
13C12-2,2',6-TriCB	19L		X					
13C12-3,4,4'-TriCB	37L		X					
13C12-2,2',6,6'-TeCB	54L		X					
13C12-3,3',4,4'-TeCB	77L		X					
13C12-3,4,4',5-TeCB	81L		X					
13C12-2,2',4,6,6'-PeCB	104L		X					
13C12-2,3,3',4,4'-PeCB	105L		X					
13C12-2,3,4,4',5-PeCB	114L		X					
13C12-2,3',4,4',5-PeCB	118L		X					
13C12-2',3,4,4',5-PeCB	123L		X					
13C12-3,3',4,4',5-PeCB	126L		X					
13C12-2,2',4,4',6,6'-HxCB	155L			4000	2250	56.3	1.27	0.785
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	8000	5850	73.2	1.24	1.108
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			4000	2950	73.8	1.27	1.078
13C12-3,3',4,4',5,5'-HxCB	169L			4000	2820	70.6	1.26	1.192
13C12-2,2',3,3',4,4',5-HpCB	170L			4000	3390	84.8	1.07	0.897
13C12-2,2',3,4,4',5,5'-HpCB	180L			4000	3200	79.9	1.07	0.872
13C12-2,2',3,4',5,6,6'-HpCB	188L			4000	2820	70.4	1.06	0.711
13C12-2,3,3',4,4',5,5'-HpCB	189L			4000	2730	68.3	0.99	0.959
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			4000	2120	53.0	0.92	0.817
13C12-2,3,3',4,4',5,5',6-OxCB	205L			4000	3020	75.5	0.88	1.009
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			4000	2720	67.9	0.77	1.043
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			4000	3020	75.5	0.77	0.949
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			4000	2370	59.3	1.18	1.074
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		X					
13C12-2,3,3',5,5'-PeCB	111L		X					
13C12-2,2',3,3',5,5',6-HpCB	178L			2000	1410	70.7	1.08	1.011

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T05-1808
Sample Collection:
21-Aug-2018 20:28

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-3 W
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	30-Oct-2018 Time: 07:44:18	Instrument ID:	HR GC/MS
Extract Volume (uL):	100	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_372A S: 10
Dilution Factor:	5	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_372A S: 1

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This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		D	626	4.81 (S)	2.94	1.001
3-MoCB	2		D	69.3	5.93 (S)	3.02	0.988
4-MoCB	3		D	215	5.37 (S)	3.07	1.001
2,2'-DiCB	4		D	14200	13.0 (S)	1.49	1.000
2,3-DiCB	5		K D J	29.5	12.0 (S)	1.07	1.196
2,3'-DiCB	6		D	581	10.8 (S)	1.49	1.174
2,4-DiCB	7		D	245	11.0 (S)	1.62	1.158
2,4'-DiCB	8		D	2470	9.87 (S)	1.48	1.207
2,5-DiCB	9		D	112	10.6 (S)	1.57	1.146
2,6-DiCB	10		D	566	11.2 (S)	1.73	1.012
3,3'-DiCB	11		D	2980	11.3 (S)	1.46	0.968
3,4-DiCB	12	12 + 13	C D	189	11.3 (S)	1.49	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		10.9 (S)		
4,4'-DiCB	15		D	818	11.3 (S)	1.50	1.000
2,2',3-TriCB	16		D	1210	7.71 (S)	1.18	1.165
2,2',4-TriCB	17		D	3410	6.71 (S)	1.06	1.137
2,2',5-TriCB	18	18 + 30	C D	2930	5.71 (S)	1.11	1.112
2,2',6-TriCB	19		D	10800	7.07 (S)	1.08	1.000
2,3,3'-TriCB	20	20 + 28	C D	2370	9.56 (S)	1.01	0.847
2,3,4-TriCB	21	21 + 33	C D	2890	9.20 (S)	1.02	0.854
2,3,4'-TriCB	22		D	796	10.7 (S)	1.00	0.871
2,3,5-TriCB	23		U D		10.3 (S)		
2,3,6-TriCB	24		D	45.8	5.24 (S)	0.91	1.158
2,3',4-TriCB	25		D	764	8.27 (S)	0.99	0.824
2,3',5-TriCB	26	26 + 29	C D	591	9.69 (S)	1.02	1.301
2,3',6-TriCB	27		D	653	4.77 (S)	1.12	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		D	1970	8.98 (S)	1.00	0.836
2,4',6-TriCB	32		D G	1580	9.52 (S)	1.02	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		K D J	18.0	10.0 (S)	0.75	1.274
3,3',4-TriCB	35		D J	30.5	9.60 (S)	1.02	0.985
3,3',5-TriCB	36		D J	19.0	9.05 (S)	1.03	0.931
3,4,4'-TriCB	37		D	349	9.89 (S)	1.00	1.001
3,4,5-TriCB	38		U D		9.69 (S)		
3,4',5-TriCB	39		D J	22.1	9.46 (S)	0.94	0.945

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C D	996	4.84 (S)	0.78	1.336
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D	431	5.04 (S)	0.78	1.311
2,2',3,5'-TeCB	43		K D	56.4	5.80 (S)	0.97	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C D	10500	4.41 (S)	0.78	1.287
2,2',3,6'-TeCB	45	45 + 51	C D	41900	4.79 (S)	0.77	1.148
2,2',3,6'-TeCB	46		D	337	5.50 (S)	0.88	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		D	303	4.84 (S)	0.84	1.273
2,2',4,5'-TeCB	49	49 + 69	C D	1780	4.10 (S)	0.77	1.259
2,2',4,6'-TeCB	50	50 + 53	C D	1310	4.61 (S)	0.76	1.110
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		D	2950	4.59 (S)	0.79	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		D	686	3.40 (S)	0.77	1.001
2,3,3',4'-TeCB	55		D J	25.2	5.08 (S)	0.69	0.888
2,3,3',4'-TeCB	56		D	423	5.01 (S)	0.70	0.904
2,3,3',5'-TeCB	57		U D		4.68 (S)		
2,3,3',5'-TeCB	58		U D		4.90 (S)		
2,3,3',6'-TeCB	59	59 + 62 + 75	C D	181	3.59 (S)	0.84	1.302
2,3,4,4'-TeCB	60		D	190	5.05 (S)	0.75	0.910
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C D	1660	4.66 (S)	0.78	0.874
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		K D	39.3	4.59 (S)	1.32	0.863
2,3,4',6'-TeCB	64		D	639	3.49 (S)	0.81	1.348
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		D	915	4.73 (S)	0.78	0.883
2,3',4,5'-TeCB	67		D J	25.2	4.02 (S)	0.81	0.855
2,3',4,5'-TeCB	68		D	3630	4.45 (S)	0.76	0.831
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		D J	22.2	4.43 (S)	0.71	0.822
2,3',5',6'-TeCB	73		D	63.5	3.58 (S)	0.87	1.242
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D	55.0	3.80 (S)	0.86	1.000
3,3',4,5'-TeCB	78		U D		5.01 (S)		
3,3',4,5'-TeCB	79		U D		4.09 (S)		
3,3',5,5'-TeCB	80		U D		4.57 (S)		
3,4,4',5'-TeCB	81		U D		4.00 (S)		
2,2',3,3',4'-PeCB	82		D	128	8.50 (S)	1.45	0.934
2,2',3,3',5'-PeCB	83	83 + 99	C D	802	8.04 (S)	1.63	0.885
2,2',3,3',6'-PeCB	84		D	461	8.64 (S)	1.60	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C D	207	6.50 (S)	1.60	0.919
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C D	877	6.57 (S)	1.63	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C D	350	7.73 (S)	1.50	1.155
2,2',3,4,6'-PeCB	89		K D J	18.3	8.04 (S)	2.21	1.182
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C D	1490	6.66 (S)	1.55	0.869
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		D	303	7.89 (S)	1.67	0.853
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C D	1940	5.44 (S)	1.56	1.121
2,2',3,5,6'-PeCB	94		K D J	33.5	6.14 (S)	2.12	1.103
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		D	42.2	3.94 (S)	1.65	1.015
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K D	67.8	4.91 (S)	1.90	1.093
2,2',4,6,6'-PeCB	104		K D J	17.0	5.78 (S)	1.93	1.000
2,3,3',4,4'-PeCB	105		D	249	4.41 (S)	1.56	1.000
2,3,3',4,5-PeCB	106		U D		6.55 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C K D J	31.4	6.54 (S)	1.93	0.990
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		D	80.7	6.43 (S)	1.69	0.997
2,3,3',4',6-PeCB	110	110 + 115	C D	1530	5.76 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		U D		5.85 (S)		
2,3,3',5,6-PeCB	112		U D		5.56 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		D J	16.3	6.67 (S)	1.37	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		D	698	6.27 (S)	1.45	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U D		5.51 (S)		
2,3',4,5',6-PeCB	121		U D		5.92 (S)		
2',3,3',4,5-PeCB	122		K D J	12.8	7.08 (S)	1.14	1.009
2',3,4,4',5-PeCB	123		K D J	12.2	6.58 (S)	0.59	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U D		6.88 (S)		
3,3',4,5,5'-PeCB	127		U D		6.66 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		X				
2,2',3,3',4,4',5,6-OxCB	195		X				
2,2',3,3',4,4',5,6'-OxCB	196		X				
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201		X				
2,2',3,3',5,5',6,6'-OxCB	202		X				
2,2',3,4,4',5,5',6-OxCB	203		X				
2,2',3,4,4',5,6,6'-OxCB	204		X				
2,3,3',4,4',5,5',6-OxCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ **Matthew Ou** _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T05-1808
Sample Collection:
21-Aug-2018 20:28

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 30-Oct-2018 Time: 07:44:18
 Extract Volume (uL): 100
 Injection Volume (uL): 1.0
 Dilution Factor: 5
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-3 W
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_372A S: 10
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_372A S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		D	4000	1960	49.0	3.30	0.719
13C12-4-MoCB	3L		D	4000	2270	56.6	3.14	0.859
13C12-2,2'-DiCB	4L		D	4000	2260	56.6	1.49	0.875
13C12-4,4'-DiCB	15L		D	4000	2520	63.0	1.55	1.256
13C12-2,2',6-TriCB	19L		D	4000	2330	58.2	1.05	1.073
13C12-3,4,4'-TriCB	37L		D	4000	2780	69.6	1.05	1.092
13C12-2,2',6,6'-TeCB	54L		D	4000	3100	77.4	0.82	0.811
13C12-3,3',4,4'-TeCB	77L		D	4000	3980	99.5	0.73	1.397
13C12-3,4,4',5-TeCB	81L		D	4000	3730	93.2	0.74	1.374
13C12-2,2',4,6,6'-PeCB	104L		D	4000	2350	58.8	1.58	0.808
13C12-2,3,3',4,4'-PeCB	105L		D	4000	4880	122	1.52	1.201
13C12-2,3,4,4',5-PeCB	114L		D	4000	3550	88.7	1.54	1.179
13C12-2,3',4,4',5-PeCB	118L		D	4000	3560	89.1	1.57	1.162
13C12-2',3,4,4',5-PeCB	123L		D	4000	3540	88.5	1.57	1.151
13C12-3,3',4,4',5-PeCB	126L		D	4000	3710	92.8	1.57	1.302
13C12-2,2',4,4',6,6'-HxCB	155L		X					
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C X					
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L		X					
13C12-3,3',4,4',5,5'-HxCB	169L		X					
13C12-2,2',3,3',4,4',5-HpCB	170L		X					
13C12-2,2',3,4,4',5,5'-HpCB	180L		X					
13C12-2,2',3,4',5,6,6'-HpCB	188L		X					
13C12-2,3,3',4,4',5,5'-HpCB	189L		X					
13C12-2,2',3,3',5,5',6,6'-OxCB	202L		X					
13C12-2,3,3',4,4',5,5',6-OxCB	205L		X					
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L		X					
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L		X					
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		D	2000	1390	69.4	0.99	0.924
13C12-2,3,3',5,5'-PeCB	111L		D	2000	1770	88.7	1.68	1.088
13C12-2,2',3,3',5,5',6-HpCB	178L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1B

PCB CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T05-1808

Sample Collection:

21-Aug-2018 20:28

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Matrix: XAD

Sample Receipt Date: 29-Aug-2018

Extraction Date: 09-Oct-2018

Analysis Date: 26-Oct-2018 Time: 00:53:42

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg/sample

Project No.

Lab Sample I.D.:

Sample Size:

Initial Calibration Date:

Instrument ID:

GC Column ID:

Sample Data Filename:

Blank Data Filename:

Cal. Ver. Data Filename:

PORTLAND HARBOR PDI AND
BASELINE WATER

L29988-3

1 sample

25-Oct-2018

HR GC/MS

SPB OCTYL

PB8C_368 S: 6

PB8C_367 S: 4

N/A

CLIENT STANDARD	IUPAC NO. ¹	SPIKE CONC.	LAB FLAG ²	CONC. FOUND	REPORTING LIMIT (RL) ³	R(%) ⁴	ION ABUND. RATIO ⁵	RRT
13C12-2,4',5'-TriCB	31L	4000		3630	43.0 (S)	90.7	1.00	0.835
13C12-2,2',3,5',6-PeCB	95L	4000		3880	1.02 (S)	97.1	1.54	0.779
13C12-2,2',4,4',5,5'-HxCB	153L	4000		4250	1.14 (S)	106	1.24	0.898

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

(4) R% = percent recovery of labeled compounds.

(5) Required limits for ion abundance ratios are specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

For Axy Internal Use Only [XSL Template: Form16681B.xsl; Created: 16-Nov-2018 11:17:58; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PCBCS_L29988-3_Form1B_SJ2455374.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T07-1808
Sample Collection:
23-Aug-2018 18:20

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-4
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	26-Oct-2018 Time: 01:57:29	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_368 S: 7
Dilution Factor:	N/A	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_368 S: 1

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5'-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6'-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6'-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4'-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5'-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6'-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		X				
2,3,4',6'-TeCB	64		X				
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5'-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6'-TeCB	73		X				
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5'-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5'-TeCB	81		X				
2,2',3,3',4'-PeCB	82		X				
2,2',3,3',5'-PeCB	83	83 + 99	C X				
2,2',3,3',6'-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C G	52.0	1.90 (S)	1.15	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C	414	1.96 (S)	1.21	0.928
2,2',3,3',4,5'-HxCB	130			30.1	2.53 (S)	1.24	0.913
2,2',3,3',4,6-HxCB	131		J	6.87	2.35 (S)	1.42	1.160
2,2',3,3',4,6'-HxCB	132			137	2.47 (S)	1.26	1.175
2,2',3,3',5,5'-HxCB	133			8.70	2.35 (S)	1.39	1.192
2,2',3,3',5,6-HxCB	134	134 + 143	C K	29.3	2.38 (S)	1.55	1.140
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	185	0.871 (S)	1.29	1.104
2,2',3,3',6,6'-HxCB	136			69.3	0.860 (Q)	1.20	1.025
2,2',3,4,4',5-HxCB	137			13.7	2.32 (S)	1.13	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	8.55	2.10 (S)	1.15	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			56.3	2.27 (S)	1.25	0.903
2,2',3,4,5,6-HxCB	142		U		2.39 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			18.1	0.888 (S)	1.12	1.122
2,2',3,4,6,6'-HxCB	145		U		0.860 (Q)		
2,2',3,4',5,5'-HxCB	146			75.7	1.95 (S)	1.28	0.883
2,2',3,4',5,6-HxCB	147	147 + 149	C	438	2.08 (S)	1.34	1.134
2,2',3,4',5,6'-HxCB	148		K J	1.63	0.909 (S)	2.08	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K J	1.78	0.860 (Q)	0.78	1.012
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.860 (Q)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C	356	1.79 (S)	1.31	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	2.39	0.860 (Q)	1.54	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C	26.3	2.15 (S)	1.20	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			34.2	1.53 (S)	1.27	0.938
2,3,3',4,4',6'-HxCB	159		U		1.64 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		1.70 (S)		
2,3,3',4',5,5'-HxCB	162		U		1.50 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			26.0	1.68 (S)	1.27	0.921
2,3,3',5,5',6-HxCB	165		U		1.88 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			11.6	1.66 (S)	1.19	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		1.75 (S)		
2,2',3,3',4,4',5-HpCB	170			33.2	1.08 (S)	0.95	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	14.8	1.26 (S)	0.98	1.164
2,2',3,3',4,5,5'-HpCB	172		K	8.84	1.28 (S)	1.41	0.896
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			50.8	1.13 (S)	0.98	1.134
2,2',3,3',4,5',6-HpCB	175		J	2.73	1.15 (S)	1.07	1.103
2,2',3,3',4,6,6'-HpCB	176		K	7.92	0.860 (Q)	1.35	1.035
2,2',3,3',4',5,6-HpCB	177			27.0	0.909 (S)	1.11	1.146
2,2',3,3',5,5',6-HpCB	178			19.8	1.16 (S)	1.02	1.085
2,2',3,3',5,6,6'-HpCB	179			34.6	0.860 (Q)	1.11	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	90.0	1.06 (S)	1.02	1.000
2,2',3,4,4',5,6-HpCB	181		U		1.17 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		1.09 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	38.7	1.16 (S)	1.17	1.127
2,2',3,4,4',6,6'-HpCB	184		K J	1.41	0.860 (Q)	1.50	1.025
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.913 (S)		
2,2',3,4',5,5',6-HpCB	187		G	69.3	1.05 (S)	1.03	1.110
2,2',3,4',5,6,6'-HpCB	188		U		0.860 (Q)		
2,3,3',4,4',5,5'-HpCB	189		U		1.14 (S)		
2,3,3',4,4',5,6-HpCB	190			8.43	0.962 (S)	1.20	0.946
2,3,3',4,4',5',6-HpCB	191		K J	1.84	0.938 (S)	0.52	0.917
2,3,3',4,5,5',6-HpCB	192		U		1.04 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194			10.3	0.860 (Q)	0.84	0.991
2,2',3,3',4,4',5,6-OxCB	195		J	6.54	0.860 (Q)	0.98	0.945
2,2',3,3',4,4',5,6'-OxCB	196		K	6.95	0.952 (S)	0.55	0.915
2,2',3,3',4,4',6'-OxCB	197	197 + 200	C J G	3.10	0.860 (Q)	0.93	1.047
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C	18.3	0.964 (S)	0.95	1.115
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5,6,6'-OxCB	201		K J	3.04	0.860 (Q)	1.04	1.023
2,2',3,3',5,5',6,6'-OxCB	202		K J	6.85	0.860 (Q)	0.73	1.000
2,2',3,4,4',5,5',6-OxCB	203		K	11.8	0.918 (S)	1.06	0.919
2,2',3,4,4',5,6,6'-OxCB	204		U		0.860 (Q)		
2,3,3',4,4',5,5',6-OxCB	205		U		0.860 (Q)		
2,2',3,3',4,4',5,5',6-NoCB	206		K	8.65	0.990 (S)	1.10	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		J	2.58	0.860 (Q)	0.87	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208		J	3.53	0.860 (Q)	0.81	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		K J	5.74	0.860 (Q)	0.89	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Matthew Ou

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T07-1808
Sample Collection:
23-Aug-2018 18:20

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 26-Oct-2018 Time: 01:57:29
 Extract Volume (uL): 20
 Injection Volume (uL): 1.0
 Dilution Factor: N/A
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-4
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_368 S: 7
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_368 S: 1

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LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		X					
13C12-4-MoCB	3L		X					
13C12-2,2'-DiCB	4L		X					
13C12-4,4'-DiCB	15L		X					
13C12-2,2',6-TriCB	19L		X					
13C12-3,4,4'-TriCB	37L		X					
13C12-2,2',6,6'-TeCB	54L		X					
13C12-3,3',4,4'-TeCB	77L		X					
13C12-3,4,4',5-TeCB	81L		X					
13C12-2,2',4,6,6'-PeCB	104L		X					
13C12-2,3,3',4,4'-PeCB	105L		X					
13C12-2,3,4,4',5-PeCB	114L		X					
13C12-2,3',4,4',5-PeCB	118L		X					
13C12-2',3,4,4',5-PeCB	123L		X					
13C12-3,3',4,4',5-PeCB	126L		X					
13C12-2,2',4,4',6,6'-HxCB	155L			4000	2350	58.8	1.27	0.785
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	8000	5770	72.1	1.23	1.108
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			4000	2970	74.2	1.26	1.078
13C12-3,3',4,4',5,5'-HxCB	169L			4000	2850	71.3	1.25	1.192
13C12-2,2',3,3',4,4',5-HpCB	170L			4000	3470	86.7	1.07	0.897
13C12-2,2',3,4,4',5,5'-HpCB	180L			4000	3230	80.7	1.06	0.872
13C12-2,2',3,4',5,6,6'-HpCB	188L			4000	2900	72.5	1.07	0.712
13C12-2,3,3',4,4',5,5'-HpCB	189L			4000	2080	52.0	1.01	0.959
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			4000	2170	54.2	0.90	0.817
13C12-2,3,3',4,4',5,5',6-OxCB	205L			4000	3060	76.6	0.89	1.009
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			4000	2810	70.3	0.76	1.043
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			4000	3060	76.5	0.77	0.949
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			4000	2250	56.3	1.18	1.075
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		X					
13C12-2,3,3',5,5'-PeCB	111L		X					
13C12-2,2',3,3',5,5',6-HpCB	178L			2000	1410	70.3	1.05	1.011

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T07-1808
Sample Collection:
23-Aug-2018 18:20

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-4 W
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	30-Oct-2018 Time: 01:22:28	Instrument ID:	HR GC/MS
Extract Volume (uL):	100	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_372A S: 4
Dilution Factor:	5	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_372A S: 1

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		D	252	3.24 (S)	2.97	1.001
3-MoCB	2		D	82.3	4.10 (S)	3.29	0.989
4-MoCB	3		D	109	3.80 (S)	3.02	1.001
2,2'-DiCB	4		D	711	7.89 (S)	1.43	1.000
2,3-DiCB	5		K D J	11.2	7.02 (S)	1.23	1.196
2,3'-DiCB	6		D	128	6.30 (S)	1.63	1.176
2,4-DiCB	7		D	68.9	6.42 (S)	1.40	1.158
2,4'-DiCB	8		D	430	7.63 (S)	1.50	1.208
2,5-DiCB	9		D J	31.0	6.20 (S)	1.54	1.146
2,6-DiCB	10		K D J	31.6	8.64 (S)	1.26	1.013
3,3'-DiCB	11		D	5810	6.58 (S)	1.50	0.967
3,4-DiCB	12	12 + 13	C K D	65.0	6.59 (S)	1.10	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		6.39 (S)		
4,4'-DiCB	15		D	173	6.41 (S)	1.34	1.000
2,2',3-TriCB	16		D	236	6.96 (S)	1.14	1.166
2,2',4-TriCB	17		D	798	6.06 (S)	1.08	1.137
2,2',5-TriCB	18	18 + 30	C D	542	5.16 (S)	1.05	1.113
2,2',6-TriCB	19		K D	139	6.45 (S)	0.84	1.000
2,3,3'-TriCB	20	20 + 28	C D G	625	6.15 (S)	0.98	0.847
2,3,4-TriCB	21	21 + 33	C D	1530	5.92 (S)	1.04	0.853
2,3,4'-TriCB	22		D	131	6.88 (S)	0.89	0.872
2,3,5-TriCB	23		U D		6.61 (S)		
2,3,6-TriCB	24		K D J	8.74	4.73 (S)	1.33	1.160
2,3',4-TriCB	25		D	308	5.32 (S)	1.09	0.824
2,3',5-TriCB	26	26 + 29	C D	120	6.23 (S)	0.97	1.301
2,3',6-TriCB	27		D	60.7	4.31 (S)	1.10	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		D	432	5.78 (S)	1.01	0.836
2,4',6-TriCB	32		D G	100	6.12 (S)	0.97	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U D		6.43 (S)		
3,3',4-TriCB	35		K D J	17.6	6.17 (S)	0.69	0.985
3,3',5-TriCB	36		D J	14.6	5.82 (S)	1.09	0.931
3,4,4'-TriCB	37		D	88.4	6.31 (S)	0.94	1.001
3,4,5-TriCB	38		U D		6.23 (S)		
3,4',5-TriCB	39		D J	9.18	6.08 (S)	0.89	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C D	231	5.25 (S)	0.88	1.337
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D	111	5.47 (S)	0.85	1.312
2,2',3,5'-TeCB	43		K D J	17.6	6.29 (S)	1.11	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C D	5880	4.78 (S)	0.77	1.287
2,2',3,6'-TeCB	45	45 + 51	C D	30400	5.19 (S)	0.78	1.149
2,2',3,6'-TeCB	46		D	90.9	5.96 (S)	0.68	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		D	78.4	5.25 (S)	0.81	1.273
2,2',4,5'-TeCB	49	49 + 69	C D	429	4.44 (S)	0.84	1.259
2,2',4,6'-TeCB	50	50 + 53	C D	128	5.00 (S)	0.78	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		D	980	4.98 (S)	0.80	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K D J	7.98	3.50 (S)	0.36	1.002
2,3,3',4'-TeCB	55		U D		6.38 (S)		
2,3,3',4'-TeCB	56		D	108	6.28 (S)	0.67	0.903
2,3,3',5'-TeCB	57		U D		5.87 (S)		
2,3,3',5'-TeCB	58		U D		6.15 (S)		
2,3,3',6'-TeCB	59	59 + 62 + 75	C K D	41.7	3.89 (S)	0.51	1.302
2,3,4,4'-TeCB	60		D	72.1	6.33 (S)	0.84	0.911
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C D	603	5.84 (S)	0.74	0.874
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		D J	14.6	5.75 (S)	0.72	0.863
2,3,4',6'-TeCB	64		D	210	3.78 (S)	0.71	1.350
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		D	299	5.93 (S)	0.71	0.883
2,3',4,5'-TeCB	67		D J	12.3	5.05 (S)	0.70	0.855
2,3',4,5'-TeCB	68		D	4340	5.58 (S)	0.76	0.831
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		D J	12.2	5.56 (S)	0.69	0.822
2,3',5',6'-TeCB	73		U D		3.88 (S)		
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D	35.2	5.46 (S)	0.84	1.000
3,3',4,5'-TeCB	78		U D		6.29 (S)		
3,3',4,5'-TeCB	79		U D		5.13 (S)		
3,3',5,5'-TeCB	80		U D		5.73 (S)		
3,4,4',5'-TeCB	81		U D		5.22 (S)		
2,2',3,3',4'-PeCB	82		D	53.8	5.87 (S)	1.77	0.933
2,2',3,3',5'-PeCB	83	83 + 99	C D	372	5.55 (S)	1.60	0.885
2,2',3,3',6'-PeCB	84		D	177	5.97 (S)	1.33	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C D	105	4.49 (S)	1.75	0.919
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C D	386	4.54 (S)	1.61	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C D	130	5.34 (S)	1.42	1.155
2,2',3,4,6'-PeCB	89		K D J	8.23	5.55 (S)	1.00	1.183
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C D	608	4.60 (S)	1.65	0.869
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		D	127	5.45 (S)	1.63	0.853
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C D	683	5.14 (S)	1.52	1.121
2,2',3,5,6'-PeCB	94		U D		5.80 (S)		
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		D J	5.50	5.09 (S)	1.34	1.015
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K D J	12.6	4.64 (S)	0.68	1.094
2,2',4,6,6'-PeCB	104		U D		5.99 (S)		
2,3,3',4,4'-PeCB	105		D	130	6.03 (S)	1.76	1.000
2,3,3',4,5-PeCB	106		U D		8.06 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C D J	15.9	8.05 (S)	1.42	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		D	42.1	7.91 (S)	1.40	0.998
2,3,3',4',6-PeCB	110	110 + 115	C D	622	3.98 (S)	1.51	0.925
2,3,3',5,5'-PeCB	111		U D		4.04 (S)		
2,3,3',5,6-PeCB	112		U D		3.84 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		K D J	12.8	7.96 (S)	2.13	1.001
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		D	357	7.72 (S)	1.57	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U D		3.80 (S)		
2,3',4,5',6-PeCB	121		U D		4.09 (S)		
2',3,3',4,5-PeCB	122		U D		8.72 (S)		
2',3,4,4',5-PeCB	123		U D		7.55 (S)		
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U D		9.10 (S)		
3,3',4,5,5'-PeCB	127		U D		8.20 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		X				
2,2',3,3',4,4',5,6-OxCB	195		X				
2,2',3,3',4,4',5,6'-OxCB	196		X				
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201		X				
2,2',3,3',5,5',6,6'-OxCB	202		X				
2,2',3,4,4',5,5',6-OxCB	203		X				
2,2',3,4,4',5,6,6'-OxCB	204		X				
2,3,3',4,4',5,5',6-OxCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T07-1808
Sample Collection:
23-Aug-2018 18:20

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 30-Oct-2018 Time: 01:22:28
 Extract Volume (uL): 100
 Injection Volume (uL): 1.0
 Dilution Factor: 5
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-4 W
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_372A S: 4
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_372A S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		D	4000	1940	48.4	3.21	0.719
13C12-4-MoCB	3L		D	4000	2090	52.2	3.25	0.858
13C12-2,2'-DiCB	4L		D	4000	2130	53.3	1.62	0.874
13C12-4,4'-DiCB	15L		D	4000	2460	61.6	1.55	1.255
13C12-2,2',6-TriCB	19L		D	4000	2360	59.1	1.07	1.072
13C12-3,4,4'-TriCB	37L		D	4000	2840	71.0	1.04	1.092
13C12-2,2',6,6'-TeCB	54L		D	4000	3230	80.9	0.78	0.811
13C12-3,3',4,4'-TeCB	77L		D	4000	3580	89.5	0.75	1.397
13C12-3,4,4',5-TeCB	81L		D	4000	3670	91.8	0.76	1.374
13C12-2,2',4,6,6'-PeCB	104L		D	4000	2270	56.6	1.53	0.808
13C12-2,3,3',4,4'-PeCB	105L		D	4000	4060	101	1.57	1.201
13C12-2,3,4,4',5-PeCB	114L		D	4000	3260	81.5	1.65	1.180
13C12-2,3',4,4',5-PeCB	118L		D	4000	3290	82.3	1.53	1.162
13C12-2',3,4,4',5-PeCB	123L		D	4000	3470	86.7	1.54	1.152
13C12-3,3',4,4',5-PeCB	126L		D	4000	3270	81.7	1.63	1.302
13C12-2,2',4,4',6,6'-HxCB	155L		X					
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C X					
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L		X					
13C12-3,3',4,4',5,5'-HxCB	169L		X					
13C12-2,2',3,3',4,4',5-HpCB	170L		X					
13C12-2,2',3,4,4',5,5'-HpCB	180L		X					
13C12-2,2',3,4',5,6,6'-HpCB	188L		X					
13C12-2,3,3',4,4',5,5'-HpCB	189L		X					
13C12-2,2',3,3',5,5',6,6'-OxCB	202L		X					
13C12-2,3,3',4,4',5,5',6-OxCB	205L		X					
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L		X					
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L		X					
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		D	2000	1750	87.5	1.02	0.925
13C12-2,3,3',5,5'-PeCB	111L		D	2000	1590	79.7	1.63	1.088
13C12-2,2',3,3',5,5',6-HpCB	178L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1B

PCB CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T07-1808

Sample Collection:

23-Aug-2018 18:20

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Matrix: XAD

Sample Receipt Date: 29-Aug-2018

Extraction Date: 09-Oct-2018

Analysis Date: 26-Oct-2018 Time: 01:57:29

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg/sample

Project No.

Lab Sample I.D.:

Sample Size:

Initial Calibration Date:

Instrument ID:

GC Column ID:

Sample Data Filename:

Blank Data Filename:

Cal. Ver. Data Filename:

PORTLAND HARBOR PDI AND
BASELINE WATER

L29988-4

1 sample

25-Oct-2018

HR GC/MS

SPB OCTYL

PB8C_368 S: 7

PB8C_367 S: 4

N/A

CLIENT STANDARD	IUPAC NO. ¹	SPIKE CONC.	LAB FLAG ²	CONC. FOUND	REPORTING LIMIT (RL) ³	R(%) ⁴	ION ABUND. RATIO ⁵	RRT
13C12-2,4',5'-TriCB	31L	4000		2430	92.8 (S)	60.7	1.02	0.836
13C12-2,2',3,5',6-PeCB	95L	4000		2470	1.33 (S)	61.7	1.59	0.779
13C12-2,2',4,4',5,5'-HxCB	153L	4000		2610	1.21 (S)	65.2	1.27	0.898

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

(4) R% = percent recovery of labeled compounds.

(5) Required limits for ion abundance ratios are specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

For Axs Internal Use Only [XSL Template: Form16681B.xsl; Created: 16-Nov-2018 11:17:58; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PCBCS_L29988-4_Form1B_SJ2455375.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T03-1808
Sample Collection:
22-Aug-2018 17:55

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-5
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	26-Oct-2018 Time: 03:01:20	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_368 S: 8
Dilution Factor:	N/A	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_368 S: 1

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5'-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6'-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6'-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4'-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5'-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6'-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		X				
2,3,4',6'-TeCB	64		X				
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5'-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6'-TeCB	73		X				
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5'-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5'-TeCB	81		X				
2,2',3,3',4'-PeCB	82			232	5.64 (S)	1.68	0.934
2,2',3,3',5'-PeCB	83	83 + 99	C	1320	5.16 (S)	1.55	0.885
2,2',3,3',6'-PeCB	84			736	5.44 (S)	1.59	1.165
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	334	4.29 (S)	1.52	0.919
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C G	1440	4.38 (S)	1.54	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C	535	4.99 (S)	1.59	1.155
2,2',3,4,6'-PeCB	89			31.4	5.29 (S)	1.50	1.183
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C	2370	4.33 (S)	1.61	0.869
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			522	5.03 (S)	1.58	0.852
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C	3010	4.76 (S)	1.56	1.122
2,2',3,5,6'-PeCB	94			49.9	5.29 (S)	1.33	1.103
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			55.8	0.862 (Q)	1.54	1.017
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			94.4	4.33 (S)	1.45	1.094
2,2',4,6,6'-PeCB	104			20.5	0.862 (Q)	1.48	1.001
2,3,3',4,4'-PeCB	105			388	5.14 (S)	1.50	1.000
2,3,3',4,5-PeCB	106		U		5.34 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	53.4	5.86 (S)	1.33	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			109	5.65 (S)	1.60	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	2410	3.77 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		U		3.78 (S)		
2,3,3',5,6-PeCB	112		U		3.66 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114			21.5	5.45 (S)	1.34	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118			1050	5.27 (S)	1.52	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120			9.05	3.64 (S)	1.61	0.958
2,3',4,5',6-PeCB	121		J	4.73	3.79 (S)	1.42	1.200
2',3,3',4,5-PeCB	122			16.3	6.43 (S)	1.59	1.010
2',3,4,4',5-PeCB	123		K	22.1	5.29 (S)	1.17	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		6.42 (S)		
3,3',4,5,5'-PeCB	127		U		5.99 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C	173	5.09 (S)	1.34	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C	1320	5.24 (S)	1.28	0.928
2,2',3,3',4,5'-HxCB	130			85.5	6.76 (S)	1.19	0.913
2,2',3,3',4,6-HxCB	131			19.5	6.29 (S)	1.23	1.160
2,2',3,3',4,6'-HxCB	132			564	6.61 (S)	1.24	1.175
2,2',3,3',5,5'-HxCB	133			34.0	6.30 (S)	1.22	1.191
2,2',3,3',5,6-HxCB	134	134 + 143	C	106	6.37 (S)	1.27	1.141
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	762	0.876 (S)	1.25	1.104
2,2',3,3',6,6'-HxCB	136			301	0.862 (Q)	1.34	1.025
2,2',3,4,4',5-HxCB	137			39.5	6.21 (S)	1.13	0.917
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	31.1	5.62 (S)	1.25	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			251	6.08 (S)	1.17	0.903
2,2',3,4,5,6-HxCB	142		U		6.39 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			76.6	0.892 (S)	1.37	1.122
2,2',3,4,6,6'-HxCB	145		U		0.862 (Q)		
2,2',3,4',5,5'-HxCB	146			266	5.23 (S)	1.25	0.883
2,2',3,4',5,6-HxCB	147	147 + 149	C	1720	5.55 (S)	1.27	1.134
2,2',3,4',5,6'-HxCB	148		K	8.45	0.914 (S)	1.57	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		K	11.2	0.862 (Q)	1.65	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		J	4.64	0.862 (Q)	1.20	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C	1200	4.78 (S)	1.29	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	1.55	0.862 (Q)	0.48	1.002
2,3,3',4,4',5-HxCB	156	156 + 157	C	84.6	5.57 (S)	1.32	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			106	4.08 (S)	1.21	0.938
2,3,3',4,5,5'-HxCB	159		K	11.1	4.39 (S)	1.60	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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2,3,3',4,5',6-HxCB	161		U		4.56 (S)		
2,3,3',4',5,5'-HxCB	162		U		4.02 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			100	4.50 (S)	1.25	0.920
2,3,3',5,5',6-HxCB	165		U		5.02 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			32.8	4.33 (S)	1.21	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		4.80 (S)		
2,2',3,3',4,4',5-HpCB	170			115	0.953 (S)	1.10	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	54.4	1.05 (S)	1.01	1.163
2,2',3,3',4,5,5'-HpCB	172			28.9	1.06 (S)	0.99	0.896
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			199	0.937 (S)	1.14	1.134
2,2',3,3',4,5',6-HpCB	175			8.14	0.958 (S)	1.06	1.103
2,2',3,3',4,6,6'-HpCB	176			29.1	0.862 (Q)	1.06	1.035
2,2',3,3',4',5,6-HpCB	177		K	90.8	0.862 (Q)	1.22	1.146
2,2',3,3',5,5',6-HpCB	178			51.9	0.966 (S)	1.10	1.086
2,2',3,3',5,6,6'-HpCB	179			113	0.862 (Q)	1.07	1.011
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	365	0.912 (S)	1.08	1.000
2,2',3,4,4',5,6-HpCB	181		J	2.93	0.976 (S)	1.18	1.157
2,2',3,4,4',5,6'-HpCB	182		K J	1.90	0.907 (S)	1.50	1.116
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	128	0.965 (S)	1.01	1.128
2,2',3,4,4',6,6'-HpCB	184		U		0.862 (Q)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.862 (Q)		
2,2',3,4',5,5',6-HpCB	187			304	0.870 (S)	1.03	1.110
2,2',3,4',5,6,6'-HpCB	188		U		0.862 (Q)		
2,3,3',4,4',5,5'-HpCB	189		K J	4.03	0.862 (Q)	0.72	1.000
2,3,3',4,4',5,6-HpCB	190			29.8	0.862 (Q)	1.09	0.947
2,3,3',4,4',5',6-HpCB	191		J	5.94	0.862 (Q)	1.14	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.862 (S)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194			50.3	0.909 (S)	0.97	0.991
2,2',3,3',4,4',5,6-OxCB	195		K	19.8	1.00 (S)	1.13	0.945
2,2',3,3',4,4',5,6'-OxCB	196			34.3	0.862 (Q)	1.00	0.916
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C G	10.2	0.862 (Q)	0.99	1.047
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C	95.8	0.862 (Q)	0.79	1.115
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201			11.7	0.862 (Q)	1.01	1.023
2,2',3,3',5,5',6,6'-OxCB	202			19.9	0.862 (Q)	0.96	1.001
2,2',3,4,4',5,5',6-OxCB	203			63.6	0.862 (Q)	0.89	0.919
2,2',3,4,4',5,6,6'-OxCB	204		U		0.862 (Q)		
2,3,3',4,4',5,5',6-OxCB	205		J	1.95	0.862 (Q)	0.90	1.000
2,2',3,3',4,4',5,5',6-NoCB	206			54.3	1.16 (S)	0.72	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207			9.79	0.862 (Q)	0.67	1.020
2,2',3,3',4,5,5',6,6'-NoCB	208			23.6	0.971 (S)	0.82	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			18.9	0.862 (Q)	1.01	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T03-1808
Sample Collection:
22-Aug-2018 17:55

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 26-Oct-2018 Time: 03:01:20
 Extract Volume (uL): 20
 Injection Volume (uL): 1.0
 Dilution Factor: N/A
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-5
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_368 S: 8
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_368 S: 1

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LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		X					
13C12-4-MoCB	3L		X					
13C12-2,2'-DiCB	4L		X					
13C12-4,4'-DiCB	15L		X					
13C12-2,2',6-TriCB	19L		X					
13C12-3,4,4'-TriCB	37L		X					
13C12-2,2',6,6'-TeCB	54L		X					
13C12-3,3',4,4'-TeCB	77L		X					
13C12-3,4,4',5-TeCB	81L		X					
13C12-2,2',4,6,6'-PeCB	104L			4000	2130	53.3	1.60	0.808
13C12-2,3,3',4,4'-PeCB	105L			4000	2910	72.8	1.51	1.201
13C12-2,3,4,4',5-PeCB	114L			4000	2770	69.3	1.58	1.179
13C12-2,3',4,4',5-PeCB	118L			4000	2830	70.7	1.54	1.162
13C12-2',3,4,4',5-PeCB	123L			4000	2950	73.8	1.56	1.151
13C12-3,3',4,4',5-PeCB	126L			4000	2690	67.2	1.54	1.302
13C12-2,2',4,4',6,6'-HxCB	155L			4000	2200	55.0	1.29	0.785
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	8000	5860	73.3	1.24	1.108
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			4000	2980	74.4	1.27	1.078
13C12-3,3',4,4',5,5'-HxCB	169L			4000	2840	70.9	1.24	1.192
13C12-2,2',3,3',4,4',5-HpCB	170L			4000	3530	88.2	1.09	0.897
13C12-2,2',3,4,4',5,5'-HpCB	180L			4000	3370	84.3	1.06	0.872
13C12-2,2',3,4',5,6,6'-HpCB	188L			4000	2950	73.7	1.05	0.712
13C12-2,3,3',4,4',5,5'-HpCB	189L			4000	2480	61.9	1.05	0.959
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			4000	2230	55.6	0.93	0.817
13C12-2,3,3',4,4',5,5',6-OxCB	205L			4000	3150	78.8	0.86	1.009
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			4000	2960	74.0	0.76	1.043
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			4000	3020	75.4	0.80	0.949
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			4000	2400	60.0	1.19	1.074
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		X					
13C12-2,3,3',5,5'-PeCB	111L			2000	1470	73.6	1.61	1.088
13C12-2,2',3,3',5,5',6-HpCB	178L			2000	1340	66.8	1.07	1.011

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T03-1808
Sample Collection:
22-Aug-2018 17:55

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-5 W
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	30-Oct-2018 Time: 06:40:39	Instrument ID:	HR GC/MS
Extract Volume (uL):	100	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_372A S: 9
Dilution Factor:	5	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_372A S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		D	457	3.95 (S)	2.92	1.001
3-MoCB	2		D	84.6	5.10 (S)	2.83	0.988
4-MoCB	3		D	154	4.84 (S)	3.32	1.001
2,2'-DiCB	4		D	6340	15.8 (S)	1.49	1.001
2,3-DiCB	5		K D	46.7	14.6 (S)	1.04	1.199
2,3'-DiCB	6		D	458	13.1 (S)	1.33	1.176
2,4-DiCB	7		D	175	13.3 (S)	1.37	1.158
2,4'-DiCB	8		D	1990	11.9 (S)	1.48	1.208
2,5-DiCB	9		D	135	12.9 (S)	1.36	1.147
2,6-DiCB	10		D	367	13.6 (S)	1.41	1.014
3,3'-DiCB	11		D	4600	13.6 (S)	1.51	0.968
3,4-DiCB	12	12 + 13	C D	137	13.7 (S)	1.36	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		13.2 (S)		
4,4'-DiCB	15		D	786	13.6 (S)	1.50	1.000
2,2',3-TriCB	16		D	1120	10.2 (S)	1.08	1.166
2,2',4-TriCB	17		D	2580	8.85 (S)	1.05	1.138
2,2',5-TriCB	18	18 + 30	C D	2620	7.54 (S)	1.02	1.113
2,2',6-TriCB	19		D	5370	10.4 (S)	1.04	1.001
2,3,3'-TriCB	20	20 + 28	C D	2950	11.0 (S)	1.02	0.847
2,3,4-TriCB	21	21 + 33	C D	2890	10.6 (S)	1.04	0.855
2,3,4'-TriCB	22		D	997	12.3 (S)	1.00	0.871
2,3,5-TriCB	23		U D		11.8 (S)		
2,3,6-TriCB	24		D	45.0	6.92 (S)	1.17	1.159
2,3',4-TriCB	25		D	935	9.49 (S)	0.97	0.824
2,3',5-TriCB	26	26 + 29	C D	539	11.1 (S)	0.99	1.301
2,3',6-TriCB	27		D	381	6.29 (S)	1.06	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		D	2230	10.3 (S)	1.01	0.836
2,4',6-TriCB	32		D G	943	10.9 (S)	0.99	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		D J	23.4	11.5 (S)	1.09	1.273
3,3',4-TriCB	35		K D	45.7	11.0 (S)	0.76	0.985
3,3',5-TriCB	36		D J	15.3	10.4 (S)	0.95	0.930
3,4,4'-TriCB	37		D	459	10.6 (S)	1.04	1.001
3,4,5-TriCB	38		U D		11.1 (S)		
3,4',5-TriCB	39		K D J	26.0	10.9 (S)	1.34	0.945

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C D	1530	5.02 (S)	0.79	1.336
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D	703	5.23 (S)	0.74	1.312
2,2',3,5'-TeCB	43		D	131	6.02 (S)	0.83	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C D	11400	4.57 (S)	0.76	1.286
2,2',3,6'-TeCB	45	45 + 51	C D	38800	4.97 (S)	0.78	1.149
2,2',3,6'-TeCB	46		D	378	5.70 (S)	0.71	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		D	459	5.02 (S)	0.83	1.273
2,2',4,5'-TeCB	49	49 + 69	C D	2360	4.25 (S)	0.76	1.259
2,2',4,6'-TeCB	50	50 + 53	C D	1180	4.78 (S)	0.79	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		D	3870	4.76 (S)	0.76	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		D	508	4.24 (S)	0.77	1.001
2,3,3',4'-TeCB	55		U D		5.71 (S)		
2,3,3',4'-TeCB	56		D	674	5.63 (S)	0.74	0.904
2,3,3',5'-TeCB	57		K D J	13.7	5.26 (S)	1.17	0.843
2,3,3',5'-TeCB	58		K D J	10.3	5.51 (S)	1.11	0.851
2,3,3',6'-TeCB	59	59 + 62 + 75	C D	272	3.72 (S)	0.79	1.302
2,3,4,4'-TeCB	60		D	307	5.67 (S)	0.72	0.910
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C D	2550	5.24 (S)	0.79	0.874
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		D	69.3	5.16 (S)	0.71	0.864
2,3,4',6'-TeCB	64		D	1060	3.62 (S)	0.79	1.349
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		D	1540	5.32 (S)	0.79	0.884
2,3',4,5'-TeCB	67		D	35.8	4.52 (S)	0.78	0.855
2,3',4,5'-TeCB	68		D	6550	5.00 (S)	0.77	0.830
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		D	44.4	4.98 (S)	0.80	0.821
2,3',5',6'-TeCB	73		D	77.2	3.71 (S)	0.81	1.241
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D	91.8	5.44 (S)	0.75	1.000
3,3',4,5'-TeCB	78		U D		5.63 (S)		
3,3',4,5'-TeCB	79		U D		4.60 (S)		
3,3',5,5'-TeCB	80		U D		5.14 (S)		
3,4,4',5'-TeCB	81		U D		8.38 (S)		
2,2',3,3',4'-PeCB	82		X				
2,2',3,3',5'-PeCB	83	83 + 99	C X				
2,2',3,3',6'-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		X				
2,2',3,3',4,4',5,6-OxCB	195		X				
2,2',3,3',4,4',5,6'-OxCB	196		X				
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201		X				
2,2',3,3',5,5',6,6'-OxCB	202		X				
2,2',3,4,4',5,5',6-OxCB	203		X				
2,2',3,4,4',5,6,6'-OxCB	204		X				
2,3,3',4,4',5,5',6-OxCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ **Matthew Ou** _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T03-1808
Sample Collection:
22-Aug-2018 17:55

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 30-Oct-2018 Time: 06:40:39
 Extract Volume (uL): 100
 Injection Volume (uL): 1.0
 Dilution Factor: 5
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-5 W
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_372A S: 9
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_372A S: 1

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LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		D	4000	1720	43.1	3.16	0.718
13C12-4-MoCB	3L		D	4000	1720	42.9	3.45	0.858
13C12-2,2'-DiCB	4L		D	4000	1750	43.9	1.54	0.873
13C12-4,4'-DiCB	15L		D	4000	1990	49.9	1.53	1.255
13C12-2,2',6-TriCB	19L		D	4000	1970	49.2	1.15	1.072
13C12-3,4,4'-TriCB	37L		D	4000	2710	67.7	1.11	1.092
13C12-2,2',6,6'-TeCB	54L		D	4000	2300	57.5	0.79	0.811
13C12-3,3',4,4'-TeCB	77L		D	4000	3620	90.5	0.74	1.397
13C12-3,4,4',5-TeCB	81L		D	4000	3790	94.8	0.78	1.374
13C12-2,2',4,6,6'-PeCB	104L		X					
13C12-2,3,3',4,4'-PeCB	105L		X					
13C12-2,3,4,4',5-PeCB	114L		X					
13C12-2,3',4,4',5-PeCB	118L		X					
13C12-2',3,4,4',5-PeCB	123L		X					
13C12-3,3',4,4',5-PeCB	126L		X					
13C12-2,2',4,4',6,6'-HxCB	155L		X					
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C X					
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L		X					
13C12-3,3',4,4',5,5'-HxCB	169L		X					
13C12-2,2',3,3',4,4',5-HpCB	170L		X					
13C12-2,2',3,4,4',5,5'-HpCB	180L		X					
13C12-2,2',3,4',5,6,6'-HpCB	188L		X					
13C12-2,3,3',4,4',5,5'-HpCB	189L		X					
13C12-2,2',3,3',5,5',6,6'-OxCB	202L		X					
13C12-2,3,3',4,4',5,5',6-OxCB	205L		X					
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L		X					
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L		X					
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		D	2000	1300	65.0	1.01	0.924
13C12-2,3,3',5,5'-PeCB	111L		X					
13C12-2,2',3,3',5,5',6-HpCB	178L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1B

PCB CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T03-1808

Sample Collection:

22-Aug-2018 17:55

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Matrix: XAD

Sample Receipt Date: 29-Aug-2018

Extraction Date: 09-Oct-2018

Analysis Date: 26-Oct-2018 Time: 03:01:20

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg/sample

Project No.

Lab Sample I.D.:

Sample Size:

Initial Calibration Date:

Instrument ID:

GC Column ID:

Sample Data Filename:

Blank Data Filename:

Cal. Ver. Data Filename:

PORTLAND HARBOR PDI AND
BASELINE WATER

L29988-5

1 sample

25-Oct-2018

HR GC/MS

SPB OCTYL

PB8C_368 S: 8

PB8C_367 S: 4

N/A

CLIENT STANDARD	IUPAC NO. ¹	SPIKE CONC.	LAB FLAG ²	CONC. FOUND	REPORTING LIMIT (RL) ³	R(%) ⁴	ION ABUND. RATIO ⁵	RRT
13C12-2,4',5-TriCB	31L	4000		3560	49.1 (S)	89.1	1.01	0.836
13C12-2,2',3,5',6-PeCB	95L	4000		3710	1.65 (S)	92.7	1.59	0.779
13C12-2,2',4,4',5,5'-HxCB	153L	4000		4220	1.61 (S)	105	1.26	0.898

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

(4) R% = percent recovery of labeled compounds.

(5) Required limits for ion abundance ratios are specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

For Axs Internal Use Only [XSL Template: Form16681B.xsl; Created: 16-Nov-2018 11:17:58; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PCBCS_L29988-5_Form1B_SJ2455376.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T01-1808
Sample Collection:
25-Aug-2018 12:02

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-6
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	26-Oct-2018 Time: 04:05:12	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_368 S: 9
Dilution Factor:	N/A	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_368 S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5'-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6'-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6'-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4'-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5'-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6'-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		X				
2,3,4',6'-TeCB	64		X				
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5'-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6'-TeCB	73		X				
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5'-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5'-TeCB	81		X				
2,2',3,3',4'-PeCB	82		X				
2,2',3,3',5'-PeCB	83	83 + 99	C X				
2,2',3,3',6'-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C	78.9	1.97 (S)	1.20	0.959
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C	681	2.03 (S)	1.25	0.928
2,2',3,3',4,5'-HxCB	130			44.9	2.62 (S)	1.37	0.913
2,2',3,3',4,6-HxCB	131		K	8.46	2.44 (S)	1.51	1.161
2,2',3,3',4,6'-HxCB	132			283	2.56 (S)	1.27	1.176
2,2',3,3',5,5'-HxCB	133		K	16.6	2.44 (S)	0.86	1.192
2,2',3,3',5,6-HxCB	134	134 + 143	C	54.2	2.47 (S)	1.23	1.141
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	360	0.866 (Q)	1.24	1.105
2,2',3,3',6,6'-HxCB	136			154	0.866 (Q)	1.28	1.025
2,2',3,4,4',5-HxCB	137			21.8	2.41 (S)	1.40	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	12.1	2.18 (S)	1.38	1.154
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			133	2.36 (S)	1.30	0.903
2,2',3,4,5,6-HxCB	142		U		2.48 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			15.7	0.866 (Q)	1.14	1.123
2,2',3,4,6,6'-HxCB	145		U		0.866 (Q)		
2,2',3,4',5,5'-HxCB	146			126	2.03 (S)	1.22	0.884
2,2',3,4',5,6-HxCB	147	147 + 149	C	772	2.15 (S)	1.29	1.134
2,2',3,4',5,6'-HxCB	148		J	3.94	0.866 (Q)	1.10	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	4.56	0.866 (Q)	1.11	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	2.22	0.866 (Q)	1.58	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C G	616	1.85 (S)	1.27	0.899
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	1.12	0.866 (Q)	0.82	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C	42.3	2.12 (S)	1.06	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			55.7	1.58 (S)	1.33	0.938
2,3,3',4,5,5'-HxCB	159		K J	4.48	1.70 (S)	1.62	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		1.77 (S)		
2,3,3',4',5,5'-HxCB	162		U		1.56 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			50.1	1.75 (S)	1.19	0.921
2,3,3',5,5',6-HxCB	165		U		1.95 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167			16.5	1.74 (S)	1.29	1.001
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		1.90 (S)		
2,2',3,3',4,4',5-HpCB	170			57.5	0.915 (S)	1.05	1.000
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	26.9	0.941 (S)	1.19	1.163
2,2',3,3',4,5,5'-HpCB	172		K	15.0	0.954 (S)	1.45	0.896
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			100	0.866 (Q)	0.94	1.134
2,2',3,3',4,5',6-HpCB	175		K J	4.29	0.866 (Q)	1.36	1.103
2,2',3,3',4,6,6'-HpCB	176		G	13.2	0.866 (Q)	0.91	1.034
2,2',3,3',4',5,6-HpCB	177			42.1	0.866 (Q)	1.17	1.146
2,2',3,3',5,5',6-HpCB	178		K	25.9	0.867 (S)	0.83	1.085
2,2',3,3',5,6,6'-HpCB	179			59.6	0.866 (Q)	1.18	1.010
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	181	0.878 (S)	1.07	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.875 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.866 (Q)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	65.5	0.866 (Q)	1.19	1.127
2,2',3,4,4',6,6'-HpCB	184		U		0.866 (Q)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.866 (Q)		
2,2',3,4',5,5',6-HpCB	187		G	114	0.866 (Q)	1.07	1.111
2,2',3,4',5,6,6'-HpCB	188		U		0.866 (Q)		
2,3,3',4,4',5,5'-HpCB	189		K J	1.48	0.866 (Q)	0.54	1.001
2,3,3',4,4',5,6-HpCB	190			14.4	0.866 (Q)	1.13	0.947
2,3,3',4,4',5',6-HpCB	191		K J	3.17	0.866 (Q)	1.86	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.866 (Q)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		K	21.8	0.866 (Q)	0.75	0.991
2,2',3,3',4,4',5,6-OxCB	195		K	9.76	0.869 (S)	1.12	0.945
2,2',3,3',4,4',5,6'-OxCB	196			13.6	0.950 (S)	0.83	0.915
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C K J G	4.56	0.866 (Q)	1.09	1.046
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C	42.4	0.963 (S)	0.84	1.115
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5,6,6'-OxCB	201		J	5.27	0.866 (Q)	0.97	1.023
2,2',3,3',5,5',6,6'-OxCB	202			11.1	0.866 (Q)	0.99	1.000
2,2',3,4,4',5,5',6-OxCB	203			22.9	0.916 (S)	1.02	0.919
2,2',3,4,4',5,6,6'-OxCB	204		U		0.866 (Q)		
2,3,3',4,4',5,5',6-OxCB	205		K J	1.79	0.866 (Q)	0.58	1.001
2,2',3,3',4,4',5,5',6-NoCB	206			17.5	1.09 (S)	0.87	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207		J	2.34	0.866 (Q)	0.86	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208		K J	6.13	0.866 (Q)	0.98	1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			12.5	0.866 (Q)	1.24	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T01-1808
Sample Collection:
25-Aug-2018 12:02

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 26-Oct-2018 Time: 04:05:12
 Extract Volume (uL): 20
 Injection Volume (uL): 1.0
 Dilution Factor: N/A
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-6
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_368 S: 9
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_368 S: 1

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LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		X					
13C12-4-MoCB	3L		X					
13C12-2,2'-DiCB	4L		X					
13C12-4,4'-DiCB	15L		X					
13C12-2,2',6-TriCB	19L		X					
13C12-3,4,4'-TriCB	37L		X					
13C12-2,2',6,6'-TeCB	54L		X					
13C12-3,3',4,4'-TeCB	77L		X					
13C12-3,4,4',5-TeCB	81L		X					
13C12-2,2',4,6,6'-PeCB	104L		X					
13C12-2,3,3',4,4'-PeCB	105L		X					
13C12-2,3,4,4',5-PeCB	114L		X					
13C12-2,3',4,4',5-PeCB	118L		X					
13C12-2',3,4,4',5-PeCB	123L		X					
13C12-3,3',4,4',5-PeCB	126L		X					
13C12-2,2',4,4',6,6'-HxCB	155L			4000	2290	57.3	1.29	0.785
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	8000	5870	73.4	1.24	1.108
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			4000	2940	73.4	1.27	1.078
13C12-3,3',4,4',5,5'-HxCB	169L			4000	2790	69.6	1.20	1.192
13C12-2,2',3,3',4,4',5-HpCB	170L			4000	3450	86.2	1.05	0.897
13C12-2,2',3,4,4',5,5'-HpCB	180L			4000	3310	82.9	1.05	0.872
13C12-2,2',3,4',5,6,6'-HpCB	188L			4000	3020	75.6	1.07	0.712
13C12-2,3,3',4,4',5,5'-HpCB	189L			4000	2600	65.1	1.02	0.959
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			4000	2110	52.8	0.91	0.817
13C12-2,3,3',4,4',5,5',6-OxCB	205L			4000	2930	73.2	0.88	1.009
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			4000	2730	68.2	0.76	1.043
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			4000	3010	75.3	0.77	0.949
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			4000	2350	58.9	1.20	1.074
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		X					
13C12-2,3,3',5,5'-PeCB	111L		X					
13C12-2,2',3,3',5,5',6-HpCB	178L			2000	1450	72.3	1.07	1.011

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T01-1808
Sample Collection:
25-Aug-2018 12:02

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-6 W
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	30-Oct-2018 Time: 03:29:40	Instrument ID:	HR GC/MS
Extract Volume (uL):	100	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_372A S: 6
Dilution Factor:	5	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_372A S: 1

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This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		D	362	4.22 (S)	3.04	1.001
3-MoCB	2		D	135	5.67 (S)	3.09	0.988
4-MoCB	3		D	178	5.66 (S)	3.06	1.001
2,2'-DiCB	4		D	3330	9.68 (S)	1.44	1.000
2,3-DiCB	5		K D J	31.7	11.5 (S)	1.06	1.198
2,3'-DiCB	6		D	456	10.3 (S)	1.43	1.176
2,4-DiCB	7		K D	167	10.5 (S)	1.25	1.158
2,4'-DiCB	8		D	1660	9.44 (S)	1.43	1.207
2,5-DiCB	9		D	122	10.2 (S)	1.36	1.146
2,6-DiCB	10		D	222	10.7 (S)	1.38	1.013
3,3'-DiCB	11		D G	6510	10.8 (S)	1.51	0.968
3,4-DiCB	12	12 + 13	C K D	153	10.8 (S)	5.30	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		10.5 (S)		
4,4'-DiCB	15		D	532	12.1 (S)	1.70	1.000
2,2',3-TriCB	16		D	790	7.68 (S)	0.98	1.166
2,2',4-TriCB	17		D	2310	6.68 (S)	1.04	1.138
2,2',5-TriCB	18	18 + 30	C D	2220	9.18 (S)	1.08	1.113
2,2',6-TriCB	19		D	2340	6.28 (S)	1.03	1.000
2,3,3'-TriCB	20	20 + 28	C D	2460	8.32 (S)	0.98	0.847
2,3,4-TriCB	21	21 + 33	C D	2570	8.01 (S)	0.93	0.854
2,3,4'-TriCB	22		D	768	9.31 (S)	1.00	0.871
2,3,5-TriCB	23		U D		8.95 (S)		
2,3,6-TriCB	24		K D J	28.9	5.22 (S)	0.78	1.160
2,3',4-TriCB	25		D	814	7.19 (S)	0.99	0.824
2,3',5-TriCB	26	26 + 29	C D	563	8.43 (S)	0.98	1.301
2,3',6-TriCB	27		D G	293	4.75 (S)	0.99	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		D	1820	7.81 (S)	0.97	0.836
2,4',6-TriCB	32		D G	704	8.28 (S)	0.94	1.198
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		D J	21.8	8.70 (S)	1.07	1.273
3,3',4-TriCB	35		D J	28.4	8.35 (S)	1.03	0.985
3,3',5-TriCB	36		U D		7.87 (S)		
3,4,4'-TriCB	37		D	273	9.38 (S)	0.99	1.001
3,4,5-TriCB	38		U D		8.43 (S)		
3,4',5-TriCB	39		D J	24.2	8.23 (S)	1.01	0.946

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C D	962	6.70 (S)	0.82	1.336
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D	506	6.99 (S)	0.77	1.311
2,2',3,5'-TeCB	43		D	91.4	8.04 (S)	0.67	1.246
2,2',3,5'-TeCB	44	44 + 47 + 65	C D	8060	6.11 (S)	0.77	1.286
2,2',3,6'-TeCB	45	45 + 51	C D	36200	6.63 (S)	0.77	1.149
2,2',3,6'-TeCB	46		D	313	7.62 (S)	0.81	1.160
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		D	297	6.71 (S)	0.69	1.273
2,2',4,5'-TeCB	49	49 + 69	C D	1720	5.68 (S)	0.80	1.259
2,2',4,6'-TeCB	50	50 + 53	C D	825	6.39 (S)	0.80	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		D	2960	6.37 (S)	0.79	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		D	192	4.33 (S)	0.87	1.001
2,3,3',4'-TeCB	55		K D J	16.0	7.86 (S)	1.02	0.889
2,3,3',4'-TeCB	56		D	516	7.74 (S)	0.79	0.903
2,3,3',5'-TeCB	57		U D		7.23 (S)		
2,3,3',5'-TeCB	58		U D		7.57 (S)		
2,3,3',6'-TeCB	59	59 + 62 + 75	C D	192	4.97 (S)	0.87	1.302
2,3,4,4'-TeCB	60		D	221	7.80 (S)	0.74	0.911
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C D	1770	7.20 (S)	0.77	0.874
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		D	46.7	7.09 (S)	0.68	0.863
2,3,4',6'-TeCB	64		D	790	4.83 (S)	0.82	1.348
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		D	1050	7.31 (S)	0.78	0.883
2,3',4,5'-TeCB	67		D J	23.7	6.22 (S)	0.69	0.855
2,3',4,5'-TeCB	68		D	6570	6.88 (S)	0.77	0.830
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		K D J	26.2	6.85 (S)	0.57	0.822
2,3',5',6'-TeCB	73		D J	24.7	4.96 (S)	0.84	1.242
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D	69.8	7.82 (S)	0.81	1.001
3,3',4,5'-TeCB	78		U D		7.74 (S)		
3,3',4,5'-TeCB	79		U D		6.32 (S)		
3,3',5,5'-TeCB	80		U D		7.06 (S)		
3,4,4',5'-TeCB	81		U D		7.36 (S)		
2,2',3,3',4'-PeCB	82		D	154	6.24 (S)	1.38	0.934
2,2',3,3',5'-PeCB	83	83 + 99	C D	797	5.90 (S)	1.47	0.885
2,2',3,3',6'-PeCB	84		D	405	6.34 (S)	1.56	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C D	225	4.77 (S)	1.58	0.919
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C D	823	4.82 (S)	1.61	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C D	304	5.67 (S)	1.67	1.155
2,2',3,4,6'-PeCB	89		K D J	24.3	5.90 (S)	2.22	1.182
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C D	1180	4.89 (S)	1.51	0.869
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		K D	265	5.79 (S)	1.92	0.853
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C D	1530	5.46 (S)	1.59	1.121
2,2',3,5,6'-PeCB	94		D J	19.0	6.16 (S)	1.43	1.102
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		D J	25.9	3.80 (S)	1.73	1.015
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		K D J	34.6	4.93 (S)	1.29	1.094
2,2',4,6,6'-PeCB	104		D J	8.78	4.19 (S)	1.37	1.001
2,3,3',4,4'-PeCB	105		D	248	4.32 (S)	1.53	1.001
2,3,3',4,5-PeCB	106		U D		5.27 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C D J	31.4	5.26 (S)	1.46	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		K D	52.1	5.17 (S)	1.89	0.997
2,3,3',4',6-PeCB	110	110 + 115	C D	1460	4.23 (S)	1.56	0.925
2,3,3',5,5'-PeCB	111		U D		4.29 (S)		
2,3,3',5,6-PeCB	112		U D		4.08 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		D J	12.7	5.14 (S)	1.63	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		D	630	5.03 (S)	1.54	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U D		4.04 (S)		
2,3',4,5',6-PeCB	121		U D		4.34 (S)		
2',3,3',4,5-PeCB	122		K D J	10.4	5.70 (S)	4.48	1.010
2',3,4,4',5-PeCB	123		K D J	11.7	4.73 (S)	1.64	1.000
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U D		5.37 (S)		
3,3',4,5,5'-PeCB	127		U D		5.36 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		X				
2,2',3,3',4,4',5,6-OxCB	195		X				
2,2',3,3',4,4',5,6'-OxCB	196		X				
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201		X				
2,2',3,3',5,5',6,6'-OxCB	202		X				
2,2',3,4,4',5,5',6-OxCB	203		X				
2,2',3,4,4',5,6,6'-OxCB	204		X				
2,3,3',4,4',5,5',6-OxCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T01-1808
Sample Collection:
25-Aug-2018 12:02

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 30-Oct-2018 Time: 03:29:40
 Extract Volume (uL): 100
 Injection Volume (uL): 1.0
 Dilution Factor: 5
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-6 W
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_372A S: 6
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_372A S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		D	4000	1860	46.6	3.24	0.719
13C12-4-MoCB	3L		D	4000	1660	41.6	3.29	0.859
13C12-2,2'-DiCB	4L		D	4000	2120	53.1	1.54	0.874
13C12-4,4'-DiCB	15L		D	4000	1570	39.3	1.48	1.255
13C12-2,2',6-TriCB	19L		D	4000	2450	61.2	1.06	1.072
13C12-3,4,4'-TriCB	37L		D	4000	2000	49.9	1.07	1.093
13C12-2,2',6,6'-TeCB	54L		D	4000	2960	74.0	0.80	0.811
13C12-3,3',4,4'-TeCB	77L		D	4000	3230	80.7	0.79	1.398
13C12-3,4,4',5'-TeCB	81L		D	4000	3370	84.3	0.77	1.375
13C12-2,2',4,6,6'-PeCB	104L		D	4000	2590	64.8	1.60	0.808
13C12-2,3,3',4,4'-PeCB	105L		D	4000	4050	101	1.51	1.201
13C12-2,3,4,4',5'-PeCB	114L		D	4000	3480	87.1	1.62	1.179
13C12-2,3',4,4',5'-PeCB	118L		D	4000	3600	90.0	1.60	1.162
13C12-2',3,4,4',5'-PeCB	123L		D	4000	3780	94.5	1.51	1.151
13C12-3,3',4,4',5'-PeCB	126L		D	4000	3750	93.9	1.52	1.302
13C12-2,2',4,4',6,6'-HxCB	155L		X					
13C12-2,3,3',4,4',5'-HxCB	156L	156L + 157L	C X					
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L		X					
13C12-3,3',4,4',5,5'-HxCB	169L		X					
13C12-2,2',3,3',4,4',5'-HpCB	170L		X					
13C12-2,2',3,4,4',5,5'-HpCB	180L		X					
13C12-2,2',3,4',5,6,6'-HpCB	188L		X					
13C12-2,3,3',4,4',5,5'-HpCB	189L		X					
13C12-2,2',3,3',5,5',6,6'-OxCB	202L		X					
13C12-2,3,3',4,4',5,5',6'-OxCB	205L		X					
13C12-2,2',3,3',4,4',5,5',6'-NoCB	206L		X					
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L		X					
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		D	2000	1640	82.1	1.04	0.925
13C12-2,3,3',5,5'-PeCB	111L		D	2000	1760	87.8	1.61	1.088
13C12-2,2',3,3',5,5',6'-HpCB	178L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1B

PCB CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T01-1808

Sample Collection:

25-Aug-2018 12:02

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Matrix: XAD

Sample Receipt Date: 29-Aug-2018

Extraction Date: 09-Oct-2018

Analysis Date: 26-Oct-2018 Time: 04:05:12

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg/sample

Project No.

Lab Sample I.D.:

Sample Size:

Initial Calibration Date:

Instrument ID:

GC Column ID:

Sample Data Filename:

Blank Data Filename:

Cal. Ver. Data Filename:

PORTLAND HARBOR PDI AND
BASELINE WATER

L29988-6

1 sample

25-Oct-2018

HR GC/MS

SPB OCTYL

PB8C_368 S: 9

PB8C_367 S: 4

N/A

CLIENT STANDARD	IUPAC NO. ¹	SPIKE CONC.	LAB FLAG ²	CONC. FOUND	REPORTING LIMIT (RL) ³	R(%) ⁴	ION ABUND. RATIO ⁵	RRT
13C12-2,4',5'-TriCB	31L	4000		4150	84.4 (S)	104	1.02	0.836
13C12-2,2',3,5',6-PeCB	95L	4000		3590	1.80 (S)	89.7	1.61	0.779
13C12-2,2',4,4',5,5'-HxCB	153L	4000		3900	0.962 (S)	97.6	1.23	0.898

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

(4) R% = percent recovery of labeled compounds.

(5) Required limits for ion abundance ratios are specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

For Axy Internal Use Only [XSL Template: Form16681B.xsl; Created: 16-Nov-2018 11:17:58; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PCBCS_L29988-6_Form1B_SJ2455377.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T06-1808
Sample Collection:
24-Aug-2018 16:32

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-7
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	26-Oct-2018 Time: 05:09:07	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_368 S: 10
Dilution Factor:	N/A	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_368 S: 1

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		X				
3-MoCB	2		X				
4-MoCB	3		X				
2,2'-DiCB	4		X				
2,3-DiCB	5		X				
2,3'-DiCB	6		X				
2,4-DiCB	7		X				
2,4'-DiCB	8		X				
2,5-DiCB	9		X				
2,6-DiCB	10		X				
3,3'-DiCB	11		X				
3,4-DiCB	12	12 + 13	C X				
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		X				
4,4'-DiCB	15		X				
2,2',3-TriCB	16		X				
2,2',4-TriCB	17		X				
2,2',5-TriCB	18	18 + 30	C X				
2,2',6-TriCB	19		X				
2,3,3'-TriCB	20	20 + 28	C X				
2,3,4-TriCB	21	21 + 33	C X				
2,3,4'-TriCB	22		X				
2,3,5-TriCB	23		X				
2,3,6-TriCB	24		X				
2,3',4-TriCB	25		X				
2,3',5-TriCB	26	26 + 29	C X				
2,3',6-TriCB	27		X				
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		X				
2,4',6-TriCB	32		X				
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		X				
3,3',4-TriCB	35		X				
3,3',5-TriCB	36		X				
3,4,4'-TriCB	37		X				
3,4,5-TriCB	38		X				
3,4',5-TriCB	39		X				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C X				
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		X				
2,2',3,5'-TeCB	43		X				
2,2',3,5'-TeCB	44	44 + 47 + 65	C X				
2,2',3,6'-TeCB	45	45 + 51	C X				
2,2',3,6'-TeCB	46		X				
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		X				
2,2',4,5'-TeCB	49	49 + 69	C X				
2,2',4,6'-TeCB	50	50 + 53	C X				
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		X				
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		X				
2,3,3',4'-TeCB	55		X				
2,3,3',4'-TeCB	56		X				
2,3,3',5'-TeCB	57		X				
2,3,3',5'-TeCB	58		X				
2,3,3',6'-TeCB	59	59 + 62 + 75	C X				
2,3,4,4'-TeCB	60		X				
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C X				
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		X				
2,3,4',6'-TeCB	64		X				
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		X				
2,3',4,5'-TeCB	67		X				
2,3',4,5'-TeCB	68		X				
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		X				
2,3',5',6'-TeCB	73		X				
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		X				
3,3',4,5'-TeCB	78		X				
3,3',4,5'-TeCB	79		X				
3,3',5,5'-TeCB	80		X				
3,4,4',5'-TeCB	81		X				
2,2',3,3',4'-PeCB	82			93.6	2.33 (S)	1.63	0.934
2,2',3,3',5'-PeCB	83	83 + 99	C	575	2.13 (S)	1.58	0.885
2,2',3,3',6'-PeCB	84			311	2.25 (S)	1.52	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	166	1.77 (S)	1.51	0.919
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C G	612	1.81 (S)	1.53	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C	199	2.06 (S)	1.65	1.155
2,2',3,4,6'-PeCB	89			10.6	2.18 (S)	1.70	1.183
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C	978	1.79 (S)	1.58	0.869
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92			218	2.08 (S)	1.56	0.853
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C	1120	1.96 (S)	1.57	1.121
2,2',3,5,6'-PeCB	94			10.8	2.18 (S)	1.55	1.102
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96			11.9	0.856 (Q)	1.44	1.016
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103			21.7	1.79 (S)	1.49	1.093
2,2',4,6,6'-PeCB	104		K J	2.09	0.856 (Q)	2.20	1.001
2,3,3',4,4'-PeCB	105			174	2.26 (S)	1.50	1.000
2,3,3',4,5-PeCB	106		U		2.11 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C	22.4	2.32 (S)	1.50	0.991
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109			53.5	2.24 (S)	1.42	0.997
2,3,3',4',6-PeCB	110	110 + 115	C	1040	1.56 (S)	1.60	0.925
2,3,3',5,5'-PeCB	111		U		1.56 (S)		
2,3,3',5,6-PeCB	112		U		1.51 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		K	10.3	2.16 (S)	1.26	1.000
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118			458	2.03 (S)	1.53	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		K J	3.68	1.50 (S)	1.24	0.958
2,3',4,5',6-PeCB	121		U		1.57 (S)		
2',3,3',4,5-PeCB	122			8.29	2.55 (S)	1.71	1.011
2',3,4,4',5-PeCB	123		K	13.9	2.06 (S)	1.56	1.001
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		K J	2.41	2.40 (S)	1.72	1.000
3,3',4,5,5'-PeCB	127		U		2.37 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C G	77.0	1.58 (S)	1.29	0.958
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C	589	1.62 (S)	1.25	0.928
2,2',3,3',4,5'-HxCB	130			40.2	2.10 (S)	1.08	0.913
2,2',3,3',4,6-HxCB	131			8.88	1.95 (S)	1.34	1.161
2,2',3,3',4,6'-HxCB	132			210	2.05 (S)	1.22	1.175
2,2',3,3',5,5'-HxCB	133			14.0	1.95 (S)	1.16	1.192
2,2',3,3',5,6-HxCB	134	134 + 143	C	42.0	1.97 (S)	1.29	1.141
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	292	0.856 (Q)	1.27	1.105
2,2',3,3',6,6'-HxCB	136			114	0.856 (Q)	1.18	1.025
2,2',3,4,4',5-HxCB	137			24.6	1.92 (S)	1.14	0.918
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C	12.7	1.74 (S)	1.30	1.153
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141			88.4	1.88 (S)	1.26	0.903
2,2',3,4,5,6-HxCB	142		U		1.98 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144			31.2	0.856 (Q)	1.26	1.122
2,2',3,4,6,6'-HxCB	145		U		0.856 (Q)		
2,2',3,4',5,5'-HxCB	146			106	1.62 (S)	1.24	0.883
2,2',3,4',5,6-HxCB	147	147 + 149	C	633	1.72 (S)	1.25	1.134
2,2',3,4',5,6'-HxCB	148		K J	2.69	0.856 (Q)	0.98	1.084
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		J	2.23	0.856 (Q)	1.32	1.013
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		K J	1.18	0.856 (Q)	1.67	1.007
2,2',4,4',5,5'-HxCB	153	153 + 168	C	524	1.48 (S)	1.28	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		K J	1.67	0.856 (Q)	3.17	1.001
2,3,3',4,4',5-HxCB	156	156 + 157	C	36.8	1.75 (S)	1.29	1.000
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158			45.8	1.26 (S)	1.33	0.938
2,3,3',4,4',5'-HxCB	159		K J	4.09	1.36 (S)	0.94	0.981
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		1.41 (S)		
2,3,3',4',5,5'-HxCB	162		U		1.25 (S)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164			40.0	1.39 (S)	1.35	0.921
2,3,3',5,5',6-HxCB	165		U		1.55 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		K	15.1	1.39 (S)	1.55	1.000
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		1.48 (S)		
2,2',3,3',4,4',5-HpCB	170			44.2	0.933 (S)	0.98	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C	20.3	1.02 (S)	0.98	1.163
2,2',3,3',4,5,5'-HpCB	172		K	13.2	1.03 (S)	0.75	0.897
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174			79.1	0.911 (S)	1.05	1.134
2,2',3,3',4,5',6-HpCB	175		J	3.50	0.932 (S)	1.00	1.103
2,2',3,3',4,6,6'-HpCB	176			10.2	0.856 (Q)	1.11	1.035
2,2',3,3',4',5,6-HpCB	177			40.7	0.856 (Q)	1.09	1.146
2,2',3,3',5,5',6-HpCB	178			26.9	0.940 (S)	1.05	1.085
2,2',3,3',5,6,6'-HpCB	179			47.1	0.856 (Q)	1.06	1.011
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	139	0.904 (S)	0.97	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.949 (S)		
2,2',3,4,4',5,6'-HpCB	182		U		0.882 (S)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C	52.8	0.938 (S)	0.96	1.128
2,2',3,4,4',6,6'-HpCB	184		K J	0.918	0.856 (Q)	0.65	1.024
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.856 (Q)		
2,2',3,4',5,5',6-HpCB	187		G	117	0.856 (Q)	1.00	1.111
2,2',3,4',5,6,6'-HpCB	188		U		0.856 (Q)		
2,3,3',4,4',5,5'-HpCB	189		K J	1.33	0.875 (S)	1.66	1.000
2,3,3',4,4',5,6-HpCB	190			12.8	0.856 (Q)	1.03	0.947
2,3,3',4,4',5',6-HpCB	191		K J	1.68	0.856 (Q)	0.64	0.917
2,3,3',4,5,5',6-HpCB	192		U		0.856 (Q)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194			16.4	0.856 (Q)	0.86	0.991
2,2',3,3',4,4',5,6-OxCB	195			7.07	0.898 (S)	0.82	0.945
2,2',3,3',4,4',5,6'-OxCB	196		K	11.0	1.02 (S)	1.65	0.915
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C K J G	6.69	0.856 (Q)	1.07	1.047
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C	37.1	1.03 (S)	0.80	1.115
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5,6,6'-OxCB	201		K J	4.41	0.856 (Q)	0.66	1.023
2,2',3,3',5,5',6,6'-OxCB	202			10.2	0.863 (S)	0.86	1.001
2,2',3,4,4',5,5',6-OxCB	203			25.9	0.982 (S)	0.87	0.919
2,2',3,4,4',5,6,6'-OxCB	204		U		0.856 (Q)		
2,3,3',4,4',5,5',6-OxCB	205		K J	1.78	0.856 (Q)	1.04	1.001
2,2',3,3',4,4',5,5',6-NoCB	206		K	14.6	1.22 (S)	0.94	1.000
2,2',3,3',4,4',5,6,6'-NoCB	207		J	4.02	0.856 (Q)	0.74	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208			6.86	0.901 (S)	0.67	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209			8.94	0.856 (Q)	1.12	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T06-1808
Sample Collection:
24-Aug-2018 16:32

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 26-Oct-2018 Time: 05:09:07
 Extract Volume (uL): 20
 Injection Volume (uL): 1.0
 Dilution Factor: N/A
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-7
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_368 S: 10
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_368 S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		X					
13C12-4-MoCB	3L		X					
13C12-2,2'-DiCB	4L		X					
13C12-4,4'-DiCB	15L		X					
13C12-2,2',6-TriCB	19L		X					
13C12-3,4,4'-TriCB	37L		X					
13C12-2,2',6,6'-TeCB	54L		X					
13C12-3,3',4,4'-TeCB	77L		X					
13C12-3,4,4',5-TeCB	81L		X					
13C12-2,2',4,6,6'-PeCB	104L			4000	2200	55.1	1.60	0.808
13C12-2,3,3',4,4'-PeCB	105L			4000	2570	64.2	1.57	1.201
13C12-2,3,4,4',5-PeCB	114L			4000	2650	66.3	1.58	1.179
13C12-2,3',4,4',5-PeCB	118L			4000	2770	69.3	1.56	1.162
13C12-2',3,4,4',5-PeCB	123L			4000	2830	70.9	1.55	1.151
13C12-3,3',4,4',5-PeCB	126L			4000	2660	66.6	1.55	1.302
13C12-2,2',4,4',6,6'-HxCB	155L			4000	2320	58.0	1.28	0.785
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	8000	5660	70.7	1.23	1.108
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			4000	2870	71.7	1.26	1.078
13C12-3,3',4,4',5,5'-HxCB	169L			4000	2760	69.1	1.27	1.192
13C12-2,2',3,3',4,4',5-HpCB	170L			4000	3520	88.0	1.08	0.897
13C12-2,2',3,4,4',5,5'-HpCB	180L			4000	3350	83.7	1.08	0.872
13C12-2,2',3,4',5,6,6'-HpCB	188L			4000	2970	74.2	1.07	0.712
13C12-2,3,3',4,4',5,5'-HpCB	189L			4000	2430	60.8	1.00	0.959
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			4000	2210	55.2	0.94	0.817
13C12-2,3,3',4,4',5,5',6-OxCB	205L			4000	3000	75.1	0.87	1.009
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			4000	2680	67.1	0.76	1.043
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			4000	3040	76.1	0.79	0.949
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			4000	2300	57.4	1.21	1.075
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		X					
13C12-2,3,3',5,5'-PeCB	111L			2000	1450	72.6	1.65	1.088
13C12-2,2',3,3',5,5',6-HpCB	178L			2000	1360	67.8	1.07	1.011

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T06-1808
Sample Collection:
24-Aug-2018 16:32

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Project No.	PORTLAND HARBOR PDI AND BASELINE WATER
Matrix:	XAD	Lab Sample I.D.:	L29988-7 W
Sample Receipt Date:	29-Aug-2018	Sample Size:	1 sample
Extraction Date:	09-Oct-2018	Initial Calibration Date:	07-Jul-2018
Analysis Date:	30-Oct-2018 Time: 02:26:06	Instrument ID:	HR GC/MS
Extract Volume (uL):	100	GC Column ID:	SPB OCTYL
Injection Volume (uL):	1.0	Sample Data Filename:	PB8C_372A S: 5
Dilution Factor:	5	Blank Data Filename:	PB8C_367 S: 4
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	PB8C_372A S: 1

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This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		D	228	3.05 (S)	2.91	1.001
3-MoCB	2		D	75.0	4.02 (S)	3.14	0.988
4-MoCB	3		D	118	3.87 (S)	3.55	1.001
2,2'-DiCB	4		D	987	9.70 (S)	1.52	1.001
2,3-DiCB	5		K D J	17.2	9.79 (S)	0.84	1.199
2,3'-DiCB	6		D	152	8.79 (S)	1.42	1.176
2,4-DiCB	7		K D	58.9	8.96 (S)	1.19	1.159
2,4'-DiCB	8		D	595	8.04 (S)	1.42	1.208
2,5-DiCB	9		D	41.3	8.65 (S)	1.35	1.146
2,6-DiCB	10		K D	52.6	9.13 (S)	1.18	1.013
3,3'-DiCB	11		D	5210	9.18 (S)	1.48	0.968
3,4-DiCB	12	12 + 13	C K D	67.0	9.20 (S)	2.45	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14		U D		8.91 (S)		
4,4'-DiCB	15		D	233	9.37 (S)	1.49	1.001
2,2',3-TriCB	16		D	289	8.14 (S)	0.96	1.165
2,2',4-TriCB	17		D	781	7.08 (S)	1.03	1.137
2,2',5-TriCB	18	18 + 30	C D	737	6.03 (S)	1.15	1.112
2,2',6-TriCB	19		D	325	7.27 (S)	1.01	1.000
2,3,3'-TriCB	20	20 + 28	C D	844	6.99 (S)	1.02	0.847
2,3,4-TriCB	21	21 + 33	C D	1160	6.73 (S)	1.03	0.854
2,3,4'-TriCB	22		D	301	7.83 (S)	0.94	0.871
2,3,5-TriCB	23		U D		7.52 (S)		
2,3,6-TriCB	24		K D J	12.1	5.53 (S)	0.63	1.157
2,3',4-TriCB	25		D	303	6.05 (S)	0.92	0.824
2,3',5-TriCB	26	26 + 29	C D	156	7.09 (S)	0.90	1.301
2,3',6-TriCB	27		D	78.9	5.03 (S)	0.99	1.151
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31		D	607	6.57 (S)	0.95	0.836
2,4',6-TriCB	32		D	187	6.96 (S)	0.90	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U D		7.32 (S)		
3,3',4-TriCB	35		K D J	25.8	7.03 (S)	0.67	0.985
3,3',5-TriCB	36		U D		6.62 (S)		
3,4,4'-TriCB	37		D	138	7.37 (S)	1.15	1.001
3,4,5-TriCB	38		U D		7.09 (S)		
3,4',5-TriCB	39		U D		6.92 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C D	324	4.95 (S)	0.76	1.336
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		D	170	5.16 (S)	0.77	1.311
2,2',3,5'-TeCB	43		D J	21.8	5.94 (S)	0.76	1.245
2,2',3,5'-TeCB	44	44 + 47 + 65	C D	4420	4.51 (S)	0.75	1.287
2,2',3,6'-TeCB	45	45 + 51	C D	19500	4.90 (S)	0.77	1.148
2,2',3,6'-TeCB	46		K D	92.8	5.63 (S)	0.61	1.161
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		D	101	4.96 (S)	0.71	1.273
2,2',4,5'-TeCB	49	49 + 69	C D	609	4.20 (S)	0.76	1.259
2,2',4,6'-TeCB	50	50 + 53	C D	173	4.72 (S)	0.74	1.110
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52		D	1230	4.70 (S)	0.76	1.234
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		K D J	18.0	3.73 (S)	1.02	1.001
2,3,3',4'-TeCB	55		U D		7.66 (S)		
2,3,3',4'-TeCB	56		D	176	7.55 (S)	0.71	0.904
2,3,3',5'-TeCB	57		U D		7.04 (S)		
2,3,3',5'-TeCB	58		U D		7.38 (S)		
2,3,3',6'-TeCB	59	59 + 62 + 75	C K D	60.0	3.67 (S)	0.49	1.302
2,3,4,4'-TeCB	60		D	112	7.60 (S)	0.81	0.911
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C D	887	7.02 (S)	0.72	0.874
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		K D J	23.1	6.91 (S)	1.14	0.863
2,3,4',6'-TeCB	64		D	283	3.57 (S)	0.70	1.348
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		D	420	7.12 (S)	0.76	0.884
2,3',4,5'-TeCB	67		K D J	14.9	6.06 (S)	1.17	0.856
2,3',4,5'-TeCB	68		D	3490	6.70 (S)	0.76	0.831
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		K D J	16.6	6.68 (S)	1.02	0.821
2,3',5',6'-TeCB	73		D J	8.90	3.67 (S)	0.73	1.241
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		D	44.2	7.46 (S)	0.79	1.000
3,3',4,5'-TeCB	78		U D		7.55 (S)		
3,3',4,5'-TeCB	79		D J	7.81	6.16 (S)	0.77	0.969
3,3',5,5'-TeCB	80		U D		9.69 (S)		
3,4,4',5'-TeCB	81		U D		6.93 (S)		
2,2',3,3',4'-PeCB	82		X				
2,2',3,3',5'-PeCB	83	83 + 99	C X				
2,2',3,3',6'-PeCB	84		X				
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C X				
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C X				
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C X				
2,2',3,4,6'-PeCB	89		X				
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C X				
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		X				
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C X				
2,2',3,5,6'-PeCB	94		X				
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		X				
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		X				
2,2',4,6,6'-PeCB	104		X				
2,3,3',4,4'-PeCB	105		X				
2,3,3',4,5-PeCB	106		X				
2,3,3',4',5-PeCB	107	107 + 124	C X				
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		X				
2,3,3',4',6-PeCB	110	110 + 115	C X				
2,3,3',5,5'-PeCB	111		X				
2,3,3',5,6-PeCB	112		X				
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		X				
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		X				
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		X				
2,3',4,5',6-PeCB	121		X				
2',3,3',4,5-PeCB	122		X				
2',3,4,4',5-PeCB	123		X				
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		X				
3,3',4,5,5'-PeCB	127		X				
2,2',3,3',4,4'-HxCB	128	128 + 166	C X				
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C X				
2,2',3,3',4,5'-HxCB	130		X				
2,2',3,3',4,6-HxCB	131		X				
2,2',3,3',4,6'-HxCB	132		X				
2,2',3,3',5,5'-HxCB	133		X				
2,2',3,3',5,6-HxCB	134	134 + 143	C X				
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C X				
2,2',3,3',6,6'-HxCB	136		X				
2,2',3,4,4',5-HxCB	137		X				
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C X				
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		X				
2,2',3,4,5,6-HxCB	142		X				
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		X				
2,2',3,4,6,6'-HxCB	145		X				
2,2',3,4',5,5'-HxCB	146		X				
2,2',3,4',5,6-HxCB	147	147 + 149	C X				
2,2',3,4',5,6'-HxCB	148		X				
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		X				
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		X				
2,2',4,4',5,5'-HxCB	153	153 + 168	C X				
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		X				
2,3,3',4,4',5-HxCB	156	156 + 157	C X				
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		X				
2,3,3',4,5,5'-HxCB	159		X				
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

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This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		X				
2,3,3',4',5,5'-HxCB	162		X				
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		X				
2,3,3',5,5',6-HxCB	165		X				
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		X				
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		X				
2,2',3,3',4,4',5-HpCB	170		X				
2,2',3,3',4,4',6-HpCB	171	171 + 173	C X				
2,2',3,3',4,5,5'-HpCB	172		X				
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		X				
2,2',3,3',4,5',6-HpCB	175		X				
2,2',3,3',4,6,6'-HpCB	176		X				
2,2',3,3',4',5,6-HpCB	177		X				
2,2',3,3',5,5',6-HpCB	178		X				
2,2',3,3',5,6,6'-HpCB	179		X				
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C X				
2,2',3,4,4',5,6-HpCB	181		X				
2,2',3,4,4',5,6'-HpCB	182		X				
2,2',3,4,4',5',6-HpCB	183	183 + 185	C X				
2,2',3,4,4',6,6'-HpCB	184		X				
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		X				
2,2',3,4',5,5',6-HpCB	187		X				
2,2',3,4',5,6,6'-HpCB	188		X				
2,3,3',4,4',5,5'-HpCB	189		X				
2,3,3',4,4',5,6-HpCB	190		X				
2,3,3',4,4',5',6-HpCB	191		X				
2,3,3',4,5,5',6-HpCB	192		X				
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		X				
2,2',3,3',4,4',5,6-OxCB	195		X				
2,2',3,3',4,4',5,6'-OxCB	196		X				
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C X				
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C X				
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5',6,6'-OxCB	201		X				
2,2',3,3',5,5',6,6'-OxCB	202		X				
2,2',3,4,4',5,5',6-OxCB	203		X				
2,2',3,4,4',5,6,6'-OxCB	204		X				
2,3,3',4,4',5,5',6-OxCB	205		X				
2,2',3,3',4,4',5,5',6-NoCB	206		X				
2,2',3,3',4,4',5,6,6'-NoCB	207		X				
2,2',3,3',4,5,5',6,6'-NoCB	208		X				
2,2',3,3',4,4',5,5',6,6'-DeCB	209		X				

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener; X = result reported separately.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T06-1808
Sample Collection:
24-Aug-2018 16:32

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: 29-Aug-2018
 Extraction Date: 09-Oct-2018
 Analysis Date: 30-Oct-2018 Time: 02:26:06
 Extract Volume (uL): 100
 Injection Volume (uL): 1.0
 Dilution Factor: 5
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND
 BASELINE WATER
 Lab Sample I.D.: L29988-7 W
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_372A S: 5
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_372A S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		D	4000	2150	53.8	3.28	0.719
13C12-4-MoCB	3L		D	4000	2170	54.2	3.31	0.859
13C12-2,2'-DiCB	4L		D	4000	2280	56.9	1.55	0.874
13C12-4,4'-DiCB	15L		D	4000	2370	59.3	1.62	1.255
13C12-2,2',6-TriCB	19L		D	4000	2330	58.2	1.05	1.073
13C12-3,4,4'-TriCB	37L		D	4000	2740	68.4	1.08	1.093
13C12-2,2',6,6'-TeCB	54L		D	4000	2870	71.8	0.80	0.811
13C12-3,3',4,4'-TeCB	77L		D	4000	3770	94.2	0.73	1.398
13C12-3,4,4',5-TeCB	81L		D	4000	3860	96.5	0.75	1.374
13C12-2,2',4,6,6'-PeCB	104L		X					
13C12-2,3,3',4,4'-PeCB	105L		X					
13C12-2,3,4,4',5-PeCB	114L		X					
13C12-2,3',4,4',5-PeCB	118L		X					
13C12-2',3,4,4',5-PeCB	123L		X					
13C12-3,3',4,4',5-PeCB	126L		X					
13C12-2,2',4,4',6,6'-HxCB	155L		X					
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C X					
13C12-2,3,3',4,4',5-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L		X					
13C12-3,3',4,4',5,5'-HxCB	169L		X					
13C12-2,2',3,3',4,4',5-HpCB	170L		X					
13C12-2,2',3,4,4',5,5'-HpCB	180L		X					
13C12-2,2',3,4',5,6,6'-HpCB	188L		X					
13C12-2,3,3',4,4',5,5'-HpCB	189L		X					
13C12-2,2',3,3',5,5',6,6'-OxCB	202L		X					
13C12-2,3,3',4,4',5,5',6-OxCB	205L		X					
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L		X					
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L		X					
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L		D	2000	1540	76.8	1.00	0.925
13C12-2,3,3',5,5'-PeCB	111L		X					
13C12-2,2',3,3',5,5',6-HpCB	178L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1B

PCB CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T06-1808

Sample Collection:

24-Aug-2018 16:32

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Matrix: XAD

Sample Receipt Date: 29-Aug-2018

Extraction Date: 09-Oct-2018

Analysis Date: 26-Oct-2018 Time: 05:09:07

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg/sample

Project No.

Lab Sample I.D.:

Sample Size:

Initial Calibration Date:

Instrument ID:

GC Column ID:

Sample Data Filename:

Blank Data Filename:

Cal. Ver. Data Filename:

PORTLAND HARBOR PDI AND
BASELINE WATER

L29988-7

1 sample

25-Oct-2018

HR GC/MS

SPB OCTYL

PB8C_368 S: 10

PB8C_367 S: 4

N/A

CLIENT STANDARD	IUPAC NO. ¹	SPIKE CONC.	LAB FLAG ²	CONC. FOUND	REPORTING LIMIT (RL) ³	R(%) ⁴	ION ABUND. RATIO ⁵	RRT
13C12-2,4',5'-TriCB	31L	4000		3820	42.2 (S)	95.4	1.04	0.836
13C12-2,2',3,5',6-PeCB	95L	4000		3940	1.82 (S)	98.4	1.61	0.779
13C12-2,2',4,4',5,5'-HxCB	153L	4000		4550	1.35 (S)	114	1.25	0.898

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

(4) R% = percent recovery of labeled compounds.

(5) Required limits for ion abundance ratios are specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

For Axy Internal Use Only [XSL Template: Form16681B.xsl; Created: 16-Nov-2018 11:17:58; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PCBCS_L29988-7_Form1B_SJ2455378.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 1A
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Project No.

N/A

Lab Sample I.D.:

WG65521-101

Matrix: XAD

Sample Size:

1 sample

Sample Receipt Date: N/A

Initial Calibration Date:

07-Jul-2018

Extraction Date: 09-Oct-2018

Instrument ID:

HR GC/MS

Analysis Date: 25-Oct-2018 Time: 10:45:27

GC Column ID:

SPB OCTYL

Extract Volume (uL): 20

Sample Data Filename:

PB8C_367 S: 4

Injection Volume (uL): 1.0

Blank Data Filename:

PB8C_367 S: 4

Dilution Factor: N/A

Cal. Ver. Data Filename:

PB8C_367 S: 1

Concentration Units: pg/sample

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This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2-MoCB	1		J G	6.12	1.46 (S)	3.49	1.001
3-MoCB	2			8.26	1.36 (S)	2.87	0.988
4-MoCB	3		K	7.37	0.944 (S)	4.14	1.001
2,2'-DiCB	4		K	17.3	7.10 (S)	1.08	1.001
2,3-DiCB	5		U		6.08 (S)		
2,3'-DiCB	6			9.42	5.41 (S)	1.54	1.176
2,4-DiCB	7		U		5.42 (S)		
2,4'-DiCB	8			27.9	4.92 (S)	1.37	1.208
2,5-DiCB	9			7.31	5.43 (S)	1.44	1.146
2,6-DiCB	10		U		5.60 (S)		
3,3'-DiCB	11			87.7	5.62 (S)	1.53	0.968
3,4-DiCB	12	12 + 13	C K	9.25	5.67 (S)	0.99	0.983
3,4'-DiCB	13	12 + 13	C12				
3,5-DiCB	14			9.39	5.64 (S)	1.41	0.925
4,4'-DiCB	15		K	9.24	5.51 (S)	1.22	1.001
2,2',3-TriCB	16		J	5.09	1.28 (S)	0.97	1.165
2,2',4-TriCB	17			9.74	1.12 (S)	1.15	1.137
2,2',5-TriCB	18	18 + 30	C	18.4	0.966 (S)	1.04	1.113
2,2',6-TriCB	19		J	5.64	1.34 (S)	1.07	1.000
2,3,3'-TriCB	20	20 + 28	C	15.6	1.01 (S)	0.98	0.848
2,3,4-TriCB	21	21 + 33	C J	6.34	0.960 (S)	0.89	0.857
2,3,4'-TriCB	22		J	4.99	1.09 (S)	0.89	0.871
2,3,5-TriCB	23		U		1.04 (S)		
2,3,6-TriCB	24		U		0.872 (S)		
2,3',4-TriCB	25		J	2.74	0.861 (S)	1.07	0.824
2,3',5-TriCB	26	26 + 29	C	10.9	1.02 (S)	0.99	1.301
2,3',6-TriCB	27		J	1.63	0.860 (Q)	1.12	1.150
2,4,4'-TriCB	28	20 + 28	C20				
2,4,5-TriCB	29	26 + 29	C26				
2,4,6-TriCB	30	18 + 30	C18				
2,4',5-TriCB	31			18.3	0.939 (S)	1.04	0.836
2,4',6-TriCB	32		J G	3.93	0.964 (S)	1.13	1.197
2',3,4-TriCB	33	21 + 33	C21				
2',3,5-TriCB	34		U		1.09 (S)		
3,3',4-TriCB	35		K J	1.32	1.03 (S)	0.75	0.985
3,3',5-TriCB	36		U		0.943 (S)		
3,4,4'-TriCB	37		J	3.39	0.982 (S)	1.15	1.001
3,4,5-TriCB	38		U		1.02 (S)		
3,4',5-TriCB	39		U		1.00 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',3,3'-TeCB	40	40 + 41 + 71	C J	4.15	0.860 (Q)	0.66	1.336
2,2',3,4'-TeCB	41	40 + 41 + 71	C40				
2,2',3,4'-TeCB	42		K J	1.91	0.860 (Q)	0.99	1.312
2,2',3,5'-TeCB	43		U		0.860 (Q)		
2,2',3,5'-TeCB	44	44 + 47 + 65	C	15.9	0.860 (Q)	0.73	1.284
2,2',3,6'-TeCB	45	45 + 51	C J	5.01	0.860 (Q)	0.72	1.146
2,2',3,6'-TeCB	46		U		0.860 (Q)		
2,2',4,4'-TeCB	47	44 + 47 + 65	C44				
2,2',4,5'-TeCB	48		K J	1.38	0.860 (Q)	1.00	1.272
2,2',4,5'-TeCB	49	49 + 69	C J	5.81	0.860 (Q)	0.86	1.258
2,2',4,6'-TeCB	50	50 + 53	C K J	6.30	0.860 (Q)	0.59	1.111
2,2',4,6'-TeCB	51	45 + 51	C45				
2,2',5,5'-TeCB	52			13.7	0.860 (Q)	0.82	1.233
2,2',5,6'-TeCB	53	50 + 53	C50				
2,2',6,6'-TeCB	54		U		0.860 (Q)		
2,3,3',4'-TeCB	55		U		1.19 (S)		
2,3,3',4'-TeCB	56		J	1.63	1.21 (S)	0.84	0.903
2,3,3',5'-TeCB	57		U		1.08 (S)		
2,3,3',5'-TeCB	58		U		1.15 (S)		
2,3,3',6'-TeCB	59	59 + 62 + 75	C U		0.860 (Q)		
2,3,4,4'-TeCB	60		U		1.22 (S)		
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C	9.19	1.10 (S)	0.84	0.874
2,3,4,6'-TeCB	62	59 + 62 + 75	C59				
2,3,4',5'-TeCB	63		U		1.08 (S)		
2,3,4',6'-TeCB	64		J	3.75	0.860 (Q)	0.69	1.348
2,3,5,6'-TeCB	65	44 + 47 + 65	C44				
2,3',4,4'-TeCB	66		J	4.14	1.12 (S)	0.66	0.883
2,3',4,5'-TeCB	67		U		0.944 (S)		
2,3',4,5'-TeCB	68		K J	1.48	1.04 (S)	1.28	0.831
2,3',4,6'-TeCB	69	49 + 69	C49				
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61				
2,3',4',6'-TeCB	71	40 + 41 + 71	C40				
2,3',5,5'-TeCB	72		U		1.02 (S)		
2,3',5',6'-TeCB	73		U		0.860 (Q)		
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61				
2,4,4',6'-TeCB	75	59 + 62 + 75	C59				
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61				
3,3',4,4'-TeCB	77		J	1.63	1.07 (S)	0.77	1.001
3,3',4,5'-TeCB	78		U		1.16 (S)		
3,3',4,5'-TeCB	79		U		0.970 (S)		
3,3',5,5'-TeCB	80		U		1.05 (S)		
3,4,4',5'-TeCB	81		U		1.11 (S)		
2,2',3,3',4'-PeCB	82		U		1.32 (S)		
2,2',3,3',5'-PeCB	83	83 + 99	C K J	2.73	1.18 (S)	2.34	0.886
2,2',3,3',6'-PeCB	84		K J	1.43	1.32 (S)	2.36	1.164
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C J	1.19	1.01 (S)	1.45	0.919
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C K G	7.09	1.01 (S)	0.76	0.901
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3,4,6'-PeCB	88	88 + 91	C U		1.13 (S)		
2,2',3,4,6'-PeCB	89		U		1.22 (S)		
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C J	5.42	1.02 (S)	1.49	0.869
2,2',3,4',6'-PeCB	91	88 + 91	C88				
2,2',3,5,5'-PeCB	92		U		1.19 (S)		
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C K J	5.58	1.09 (S)	1.83	1.122
2,2',3,5,6'-PeCB	94		U		1.23 (S)		
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93				
2,2',3,6,6'-PeCB	96		U		0.860 (Q)		
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86				
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93				
2,2',4,4',5'-PeCB	99	83 + 99	C83				

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,2',4,4',6-PeCB	100	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90				
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93				
2,2',4,5',6-PeCB	103		U		0.995 (S)		
2,2',4,6,6'-PeCB	104		U		0.860 (Q)		
2,3,3',4,4'-PeCB	105		K J	1.92	0.860 (Q)	1.26	1.000
2,3,3',4,5-PeCB	106		U		0.947 (S)		
2,3,3',4',5-PeCB	107	107 + 124	C U		1.04 (S)		
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3,3',4,6-PeCB	109		U		0.986 (S)		
2,3,3',4',6-PeCB	110	110 + 115	C K J	5.16	0.885 (S)	1.30	0.925
2,3,3',5,5'-PeCB	111		U		0.888 (S)		
2,3,3',5,6-PeCB	112		U		0.862 (S)		
2,3,3',5',6-PeCB	113	90 + 101 + 113	C90				
2,3,4,4',5-PeCB	114		U		1.01 (S)		
2,3,4,4',6-PeCB	115	110 + 115	C110				
2,3,4,5,6-PeCB	116	85 + 116 + 117	C85				
2,3,4',5,6-PeCB	117	85 + 116 + 117	C85				
2,3',4,4',5-PeCB	118		K J	3.01	0.994 (S)	2.94	1.000
2,3',4,4',6-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86				
2,3',4,5,5'-PeCB	120		U		0.866 (S)		
2,3',4,5',6-PeCB	121		U		0.898 (S)		
2',3,3',4,5-PeCB	122		U		1.15 (S)		
2',3,4,4',5-PeCB	123		U		1.04 (S)		
2',3,4,5,5'-PeCB	124	107 + 124	C107				
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86				
3,3',4,4',5-PeCB	126		U		1.17 (S)		
3,3',4,5,5'-PeCB	127		U		1.07 (S)		
2,2',3,3',4,4'-HxCB	128	128 + 166	C U		1.11 (S)		
2,2',3,3',4,5-HxCB	129	129 + 138 + 160 + 163	C J	5.37	1.10 (S)	1.22	0.928
2,2',3,3',4,5'-HxCB	130		U		1.40 (S)		
2,2',3,3',4,6-HxCB	131		U		1.27 (S)		
2,2',3,3',4,6'-HxCB	132		U		1.37 (S)		
2,2',3,3',5,5'-HxCB	133		U		1.28 (S)		
2,2',3,3',5,6-HxCB	134	134 + 143	C U		1.30 (S)		
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C J	1.79	0.965 (S)	1.22	1.104
2,2',3,3',6,6'-HxCB	136		K J	1.17	0.860 (Q)	0.35	1.025
2,2',3,4,4',5-HxCB	137		U		1.29 (S)		
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129				
2,2',3,4,4',6-HxCB	139	139 + 140	C U		1.17 (S)		
2,2',3,4,4',6'-HxCB	140	139 + 140	C139				
2,2',3,4,5,5'-HxCB	141		U		1.23 (S)		
2,2',3,4,5,6-HxCB	142		U		1.31 (S)		
2,2',3,4,5,6'-HxCB	143	134 + 143	C134				
2,2',3,4,5',6-HxCB	144		U		1.02 (S)		
2,2',3,4,6,6'-HxCB	145		U		0.860 (Q)		
2,2',3,4',5,5'-HxCB	146		U		1.10 (S)		
2,2',3,4',5,6-HxCB	147	147 + 149	C J	3.17	1.14 (S)	1.34	1.134
2,2',3,4',5,6'-HxCB	148		U		0.996 (S)		
2,2',3,4',5',6-HxCB	149	147 + 149	C147				
2,2',3,4',6,6'-HxCB	150		U		0.860 (Q)		
2,2',3,5,5',6-HxCB	151	135 + 151 + 154	C135				
2,2',3,5,6,6'-HxCB	152		U		0.860 (Q)		
2,2',4,4',5,5'-HxCB	153	153 + 168	C K J	4.05	0.978 (S)	1.89	0.898
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135				
2,2',4,4',6,6'-HxCB	155		U		0.860 (Q)		
2,3,3',4,4',5-HxCB	156	156 + 157	C U		1.18 (S)		
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3,3',4,4',6-HxCB	158		U		0.876 (S)		
2,3,3',4,5,5'-HxCB	159		U		0.933 (S)		
2,3,3',4,5,6-HxCB	160	129 + 138 + 160 + 163	C129				

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO	RRT
2,3,3',4,5',6-HxCB	161		U		0.920 (S)		
2,3,3',4',5,5'-HxCB	162		U		0.860 (Q)		
2,3,3',4',5,6-HxCB	163	129 + 138 + 160 + 163	C129				
2,3,3',4',5',6-HxCB	164		U		0.957 (S)		
2,3,3',5,5',6-HxCB	165		U		1.04 (S)		
2,3,4,4',5,6-HxCB	166	128 + 166	C128				
2,3',4,4',5,5'-HxCB	167		U		0.891 (S)		
2,3',4,4',5',6-HxCB	168	153 + 168	C153				
3,3',4,4',5,5'-HxCB	169		U		1.02 (S)		
2,2',3,3',4,4',5-HpCB	170		K J	1.66	0.860 (Q)	0.65	1.001
2,2',3,3',4,4',6-HpCB	171	171 + 173	C U		0.860 (Q)		
2,2',3,3',4,5,5'-HpCB	172		U		0.882 (S)		
2,2',3,3',4,5,6-HpCB	173	171 + 173	C171				
2,2',3,3',4,5,6'-HpCB	174		U		0.860 (Q)		
2,2',3,3',4,5',6-HpCB	175		U		0.860 (Q)		
2,2',3,3',4,6,6'-HpCB	176		U		0.860 (Q)		
2,2',3,3',4',5,6-HpCB	177		U		0.860 (Q)		
2,2',3,3',5,5',6-HpCB	178		U		0.860 (Q)		
2,2',3,3',5,6,6'-HpCB	179		U		0.860 (Q)		
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C J	4.98	0.860 (Q)	0.97	1.000
2,2',3,4,4',5,6-HpCB	181		U		0.860 (Q)		
2,2',3,4,4',5,6'-HpCB	182		U		0.860 (Q)		
2,2',3,4,4',5',6-HpCB	183	183 + 185	C U		0.860 (Q)		
2,2',3,4,4',6,6'-HpCB	184		U		0.860 (Q)		
2,2',3,4,5,5',6-HpCB	185	183 + 185	C183				
2,2',3,4,5,6,6'-HpCB	186		U		0.860 (Q)		
2,2',3,4',5,5',6-HpCB	187		K J	3.82	0.860 (Q)	1.66	1.110
2,2',3,4',5,6,6'-HpCB	188		U		0.860 (Q)		
2,3,3',4,4',5,5'-HpCB	189		U		0.870 (S)		
2,3,3',4,4',5,6-HpCB	190		U		0.860 (Q)		
2,3,3',4,4',5',6-HpCB	191		U		0.860 (Q)		
2,3,3',4,5,5',6-HpCB	192		U		0.860 (Q)		
2,3,3',4',5,5',6-HpCB	193	180 + 193	C180				
2,2',3,3',4,4',5,5'-OxCB	194		K J	1.55	0.860 (Q)	0.57	0.991
2,2',3,3',4,4',5,6-OxCB	195		U		0.909 (S)		
2,2',3,3',4,4',5,6'-OxCB	196		U		1.07 (S)		
2,2',3,3',4,4',6,6'-OxCB	197	197 + 200	C U		0.860 (Q)		
2,2',3,3',4,5,5',6-OxCB	198	198 + 199	C J	4.00	1.08 (S)	0.87	1.115
2,2',3,3',4,5,5',6'-OxCB	199	198 + 199	C198				
2,2',3,3',4,5,6,6'-OxCB	200	197 + 200	C197				
2,2',3,3',4,5,6,6'-OxCB	201		U		0.860 (Q)		
2,2',3,3',5,5',6,6'-OxCB	202		U		0.958 (S)		
2,2',3,4,4',5,5',6-OxCB	203		K J	2.96	1.04 (S)	1.18	0.919
2,2',3,4,4',5,6,6'-OxCB	204		U		0.860 (Q)		
2,3,3',4,4',5,5',6-OxCB	205		U		0.860 (Q)		
2,2',3,3',4,4',5,5',6-NoCB	206		K J	2.70	1.15 (S)	1.13	1.001
2,2',3,3',4,4',5,6,6'-NoCB	207		K J	0.955	0.860 (Q)	0.92	1.019
2,2',3,3',4,5,5',6,6'-NoCB	208		K J	1.24	0.860 (Q)	0.38	1.000
2,2',3,3',4,4',5,5',6,6'-DeCB	209		K J	2.30	0.860 (Q)	0.96	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; G = lock mass interference present; C = co-eluting congener.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ **Matthew Ou** _____

SGS AXYS METHOD MLA-010 Rev 12

Form 2
PCB CONGENER ANALYSIS REPORTCLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972
 Matrix: XAD
 Sample Receipt Date: N/A
 Extraction Date: 09-Oct-2018
 Analysis Date: 25-Oct-2018 Time: 10:45:27
 Extract Volume (uL): 20
 Injection Volume (uL): 1.0
 Dilution Factor: N/A
 Concentration Units: pg absolute

Project No. N/A
 Lab Sample I.D.: WG65521-101
 Sample Size: 1 sample
 Initial Calibration Date: 07-Jul-2018
 Instrument ID: HR GC/MS
 GC Column ID: SPB OCTYL
 Sample Data Filename: PB8C_367 S: 4
 Blank Data Filename: PB8C_367 S: 4
 Cal. Ver. Data Filename: PB8C_367 S: 1

This page is part of a total report that contains information necessary for accreditation compliance.
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	SPIKE CONC.	CONC. FOUND	R(%) ³	ION ABUND. RATIO	RRT
13C12-2-MoCB	1L		G	4000	1250	31.3	3.16	0.720
13C12-4-MoCB	3L			4000	1820	45.4	3.17	0.859
13C12-2,2'-DiCB	4L			4000	1830	45.7	1.55	0.874
13C12-4,4'-DiCB	15L			4000	2130	53.2	1.55	1.254
13C12-2,2',6-TriCB	19L			4000	2070	51.8	1.06	1.072
13C12-3,4,4'-TriCB	37L			4000	2230	55.8	1.02	1.092
13C12-2,2',6,6'-TeCB	54L			4000	2220	55.4	0.80	0.811
13C12-3,3',4,4'-TeCB	77L			4000	2790	69.7	0.73	1.397
13C12-3,4,4',5-TeCB	81L			4000	2600	64.9	0.76	1.374
13C12-2,2',4,6,6'-PeCB	104L			4000	2030	50.6	1.61	0.808
13C12-2,3,3',4,4'-PeCB	105L			4000	3350	83.7	1.55	1.201
13C12-2,3,4,4',5-PeCB	114L			4000	2570	64.4	1.57	1.180
13C12-2,3',4,4',5-PeCB	118L			4000	2640	66.1	1.57	1.162
13C12-2',3,4,4',5-PeCB	123L			4000	2610	65.2	1.56	1.152
13C12-3,3',4,4',5-PeCB	126L			4000	2530	63.2	1.53	1.303
13C12-2,2',4,4',6,6'-HxCB	155L			4000	2140	53.4	1.27	0.785
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	8000	5520	69.0	1.26	1.108
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			4000	2920	73.0	1.25	1.078
13C12-3,3',4,4',5,5'-HxCB	169L			4000	2630	65.7	1.28	1.192
13C12-2,2',3,3',4,4',5-HpCB	170L			4000	3290	82.3	1.05	0.897
13C12-2,2',3,4,4',5,5'-HpCB	180L			4000	3020	75.4	1.07	0.872
13C12-2,2',3,4',5,6,6'-HpCB	188L			4000	2830	70.9	1.06	0.712
13C12-2,3,3',4,4',5,5'-HpCB	189L			4000	2680	66.9	1.00	0.959
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			4000	2190	54.8	0.89	0.817
13C12-2,3,3',4,4',5,5',6-OxCB	205L			4000	3150	78.8	0.87	1.009
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			4000	2780	69.5	0.76	1.043
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			4000	3120	78.1	0.79	0.949
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			4000	2370	59.2	1.21	1.075
CLEANUP STANDARD								
13C12-2,4,4'-TriCB	28L			2000	1090	54.5	1.04	0.925
13C12-2,3,3',5,5'-PeCB	111L			2000	1390	69.7	1.61	1.088
13C12-2,2',3,3',5,5',6-HpCB	178L			2000	1230	61.7	1.07	1.012

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; G = lock mass interference present; C = co-eluting congener.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

SGS AXYS METHOD MLA-010 Rev 12

Form 1B

PCB CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

Lab Blank

Sample Collection:

N/A

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Project No.

N/A

Lab Sample I.D.:

WG65521-101

Matrix: XAD

Sample Size:

1 sample

Sample Receipt Date: N/A

Initial Calibration Date:

25-Oct-2018

Extraction Date: 09-Oct-2018

Instrument ID:

HR GC/MS

Analysis Date: 25-Oct-2018 Time: 10:45:27

GC Column ID:

SPB OCTYL

Extract Volume (uL): 20

Sample Data Filename:

PB8C_367 S: 4

Injection Volume (uL): 1.0

Blank Data Filename:

PB8C_367 S: 4

Dilution Factor: N/A

Cal. Ver. Data Filename:

N/A

Concentration Units: pg/sample

CLIENT STANDARD	IUPAC NO. ¹	SPIKE CONC.	LAB FLAG ²	CONC. FOUND	REPORTING LIMIT (RL) ³	R(%) ⁴	ION ABUND. RATIO ⁵	RRT
13C12-2,4',5-TriCB	31L	4000		3720	37.7 (S)	93.0	1.01	0.836
13C12-2,2',3,5',6-PeCB	95L	4000		3780	1.75 (S)	94.4	1.60	0.779
13C12-2,2',4,4',5,5'-HxCB	153L	4000		4070	1.03 (S)	102	1.23	0.898

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

(4) R% = percent recovery of labeled compounds.

(5) Required limits for ion abundance ratios are specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

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Report Filename: 1668_PCB1668_PCBSCS_WG65521-101_Form1B_SJ2455369.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 8A

PCB CONGENER ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Lab Sample I.D.:	WG65521-102
Matrix:	XAD	Initial Calibration Date:	07-Jul-2018
Extraction Date:	09-Oct-2018	Instrument ID:	HR GC/MS
Analysis Date:	25-Oct-2018 Time: 08:37:43	GC Column ID:	SPB OCTYL
Extract Volume (uL):	20	OPR Data Filename:	PB8C_367 S: 2
Injection Volume (uL):	1.0	Blank Data Filename:	PB8C_367 S: 4
Dilution Factor:	N/A	Cal. Ver. Data Filename:	PB8C_367 S: 1

CONCENTRATIONS REPORTED ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (ng/mL)	% RECOVERY
2-MoCB	1		G	3.03	100	81.0	50.0 - 150	81.0
4-MoCB	3			3.02	100	87.7	50.0 - 150	87.7
2,2'-DiCB	4			1.50	100	84.3	50.0 - 150	84.3
4,4'-DiCB	15			1.50	100	84.7	50.0 - 150	84.7
2,2',6-TriCB	19			1.06	100	104	50.0 - 150	104
3,4,4'-TriCB	37			0.99	100	86.4	50.0 - 150	86.4
2,2',6,6'-TeCB	54			0.79	100	103	50.0 - 150	103
3,3',4,4'-TeCB	77			0.73	100	90.4	50.0 - 150	90.4
3,4,4',5-TeCB	81			0.77	100	90.9	50.0 - 150	90.9
2,2',4,6,6'-PeCB	104			1.56	100	110	50.0 - 150	110
2,3,3',4,4'-PeCB	105			1.52	100	85.7	50.0 - 150	85.7
2,3,4,4',5-PeCB	114			1.56	100	90.4	50.0 - 150	90.4
2,3',4,4',5-PeCB	118			1.52	100	88.0	50.0 - 150	88.0
2',3,4,4',5-PeCB	123			1.51	100	90.1	50.0 - 150	90.1
3,3',4,4',5-PeCB	126			1.52	100	90.0	50.0 - 150	90.0
2,2',4,4',6,6'-HxCB	155			1.25	100	110	50.0 - 150	110
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.26	200	201	100 - 300	101
2,3,3',4,4',5'-HxCB	157	156 + 157	C156					
2,3',4,4',5,5'-HxCB	167			1.26	100	104	50.0 - 150	104
3,3',4,4',5,5'-HxCB	169			1.26	100	98.6	50.0 - 150	98.6
2,2',3,4',5,6,6'-HpCB	188			1.05	100	105	50.0 - 150	105
2,3,3',4,4',5,5'-HpCB	189			1.00	100	82.5	50.0 - 150	82.5
2,2',3,3',5,5',6,6'-OxCB	202			0.88	100	112	50.0 - 150	112
2,3,3',4,4',5,5',6-OxCB	205			0.89	100	99.2	50.0 - 150	99.2
2,2',3,3',4,4',5,5',6-NoCB	206			0.79	100	101	50.0 - 150	101
2,2',3,3',4,5,5',6,6'-NoCB	208			0.79	100	104	50.0 - 150	104
2,2',3,3',4,4',5,5',6,6'-DeCB	209			1.18	100	104	50.0 - 150	104

(1) Where applicable, custom lab flags have been used on this report; G = lock mass interference present; C = co-eluting congener.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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SGS AXYS METHOD MLA-010 Rev 12

Form 8B

PCB CONGENER ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4972	Lab Sample I.D.:	WG65521-102
Matrix:	XAD	Initial Calibration Date:	07-Jul-2018
Extraction Date:	09-Oct-2018	Instrument ID:	HR GC/MS
Analysis Date:	25-Oct-2018 Time: 08:37:43	GC Column ID:	SPB OCTYL
Extract Volume (uL):	20	OPR Data Filename:	PB8C_367 S: 2
Injection Volume (uL):	1.0	Blank Data Filename:	PB8C_367 S: 4
Dilution Factor:	N/A	Cal. Ver. Data Filename:	PB8C_367 S: 1

CONCENTRATIONS REPORTED ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (ng/mL)	% RECOVERY
13C12-2-MoCB	1L		G	3.20	200	59.2	30.0 - 280	29.6
13C12-4-MoCB	3L			3.13	200	85.1	30.0 - 280	42.5
13C12-2,2'-DiCB	4L			1.55	200	88.1	60.0 - 280	44.1
13C12-4,4'-DiCB	15L			1.57	200	99.3	60.0 - 280	49.7
13C12-2,2',6-TriCB	19L			1.06	200	103	60.0 - 280	51.4
13C12-3,4,4'-TriCB	37L			1.03	200	100	60.0 - 280	50.1
13C12-2,2',6,6'-TeCB	54L			0.80	200	106	60.0 - 280	53.1
13C12-3,3',4,4'-TeCB	77L			0.74	200	122	60.0 - 280	60.8
13C12-3,4,4',5-TeCB	81L			0.75	200	111	60.0 - 280	55.6
13C12-2,2',4,6,6'-PeCB	104L			1.63	200	94.9	60.0 - 280	47.4
13C12-2,3,3',4,4'-PeCB	105L			1.54	200	140	60.0 - 280	70.1
13C12-2,3,4,4',5-PeCB	114L			1.57	200	110	60.0 - 280	55.1
13C12-2,3',4,4',5-PeCB	118L			1.56	200	114	60.0 - 280	56.9
13C12-2',3,4,4',5-PeCB	123L			1.54	200	112	60.0 - 280	55.9
13C12-3,3',4,4',5-PeCB	126L			1.58	200	112	60.0 - 280	55.8
13C12-2,2',4,4',6,6'-HxCB	155L			1.25	200	98.4	60.0 - 280	49.2
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	1.27	400	246	120 - 560	61.4
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			1.24	200	121	60.0 - 280	60.7
13C12-3,3',4,4',5,5'-HxCB	169L			1.26	200	125	60.0 - 280	62.6
13C12-2,2',3,4',5,6,6'-HpCB	188L			1.04	200	116	60.0 - 280	57.9
13C12-2,3,3',4,4',5,5'-HpCB	189L			1.02	200	120	60.0 - 280	60.0
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			0.91	200	88.8	60.0 - 280	44.4
13C12-2,3,3',4,4',5,5',6-OxCB	205L			0.88	200	134	60.0 - 280	66.8
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			0.78	200	119	60.0 - 280	59.3
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			0.78	200	129	60.0 - 280	64.4
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			1.16	200	99.3	60.0 - 280	49.6

CLEANUP STANDARD

13C12-2,4,4'-TriCB	28L	1.04	100	52.2	40.0 - 125	52.2
13C12-2,3,3',5,5'-PeCB	111L	1.58	100	62.3	40.0 - 125	62.3
13C12-2,2',3,3',5,5',6-HpCB	178L	1.04	100	56.7	40.0 - 125	56.7

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; G = lock mass interference present; C = co-eluting congener.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Matthew Ou _____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

SGS AXYS METHOD MLA-010 Rev 12

Form 3A

PCB CONGENERS INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

Instrument ID: HR GC/MS

GC Column ID: SPB OCTYL

CS0 Data Filename: PB8C_220 S: 1

CS1 Data Filename: PB8C_220 S: 4

CS2 Data Filename: PB8C_220A S: 4

CS3 Data Filename: PB8C_220A S: 3

CS4 Data Filename: PB8C_220A S: 2

CS5 Data Filename: PB8C_220A S: 1

CS6 Data Filename: PB8C_220A S: 6

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RELATIVE RESPONSE (RR)							MEAN RR	CV ² (%RSD)
				CS0	CS1	CS2	CS3	CS4	CS5	CS6		
2-MoCB	1			1.07	1.05	1.11	1.09	1.10	1.02		1.07	3.46
4-MoCB	3			1.11	1.01	1.07	1.09	1.10	1.10		1.08	3.55
2,2'-DiCB	4			0.97	0.94	0.98	0.99	1.03	1.05		0.99	4.14
4,4'-DiCB	15			0.85	0.89	0.90	0.92	0.93	0.96		0.91	4.50
2,2',6-TriCB	19			1.08	1.05	1.05	1.06	1.08	1.11	1.06	1.07	2.11
3,4,4'-TriCB	37			0.98	0.98	1.00	0.99	1.03	1.05	0.96	1.00	3.27
2,2',6,6'-TeCB	54			1.04	1.02	1.06	1.07	1.08	1.10	1.03	1.06	2.71
3,3',4,4'-TeCB	77			1.05	1.01	1.01	1.02	1.03	1.06	1.03	1.03	1.99
3,4,4',5-TeCB	81			1.02	0.96	1.04	1.02	1.05	1.07	1.04	1.03	3.35
2,2',4,6,6'-PeCB	104			1.03	1.05	1.08	1.05	1.07	1.11	1.07	1.07	2.30
2,3,3',4,4'-PeCB	105			1.03	0.95	1.04	1.03	1.03	1.07	1.04	1.03	3.45
2,3,4,4',5-PeCB	114			1.00	1.01	1.07	1.07	1.07	1.11	1.08	1.06	3.55
2,3',4,4',5-PeCB	118			1.08	0.98	1.05	1.03	1.04	1.09	1.05	1.04	3.33
2',3,4,4',5-PeCB	123			0.94	0.94	0.98	0.98	0.99	1.03	1.00	0.98	3.19
3,3',4,4',5-PeCB	126			1.01	1.01	1.06	1.03	1.05	1.09	1.05	1.04	2.59
2,2',4,4',6,6'-HxCB	155			1.07	0.96	0.98	1.01	1.04	1.06	1.03	1.02	4.12
2,3,3',4,4',5-HxCB	156	156 + 157	C	1.08	1.07	1.12	1.10	1.11	1.14	1.08	1.10	2.24
2,3,3',4,4',5'-HxCB	157	156 + 157	C156									
2,3',4,4',5,5'-HxCB	167			1.03	1.05	1.14	1.12	1.14	1.17	1.14	1.11	4.67
3,3',4,4',5,5'-HxCB	169			1.05	1.01	1.06	1.05	1.06	1.09	1.06	1.05	2.32
2,2',3,4',5,6,6'-HpCB	188			0.96	0.94	0.96	0.96	1.00	1.03	0.97	0.98	2.92
2,3,3',4,4',5,5'-HpCB	189			1.16	0.95	1.09	1.03	1.06	1.08	1.05	1.06	5.83
2,2',3,3',5,5',6,6'-OcCB	202			0.89	0.83	0.86	0.86	0.88	0.91	0.89	0.87	3.14
2,3,3',4,4',5,5',6-OcCB	205			0.97	0.92	1.00	0.99	0.99	1.03	1.00	0.99	3.45
2,2',3,3',4,4',5,5',6-NoCB	206			1.09	0.96	1.00	0.99	0.99	1.02	0.97	1.00	4.46
2,2',3,3',4,5,5',6,6'-NoCB	208			0.95	0.90	0.94	0.94	0.96	0.98	0.95	0.95	2.57
2,2',3,3',4,4',5,5',6,6'-DeCB	209			1.22	1.04	1.07	1.01	1.04	1.05	1.02	1.06	6.55

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) For contract CV specifications, see Section 10.4.4, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Bjorn Arvi _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 3B

PCB CONGENERS INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

Instrument ID: HR GC/MS

GC Column ID: SPB OCTYL

CS0 Data Filename: PB8C_220 S: 1

CS1 Data Filename: PB8C_220 S: 4

CS2 Data Filename: PB8C_220A S: 4

CS3 Data Filename: PB8C_220A S: 3

CS4 Data Filename: PB8C_220A S: 2

CS5 Data Filename: PB8C_220A S: 1

CS6 Data Filename: PB8C_220A S: 6

COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	RELATIVE RESPONSE (RR)							MEAN RR	CV ³ (%RSD)
				CS0	CS1	CS2	CS3	CS4	CS5	CS6		
13C12-2-MoCB	1L			1.06	1.05	1.08	1.09	1.14	1.18	1.29	1.13	7.50
13C12-4-MoCB	3L			0.99	1.00	1.00	1.02	1.07	1.13	1.31	1.07	10.6
13C12-2,2'-DiCB	4L			0.64	0.65	0.65	0.65	0.67	0.72	0.80	0.68	8.43
13C12-4,4'-DiCB	15L			1.02	1.01	0.99	1.00	1.02	1.10	1.32	1.07	11.1
13C12-2,2',6-TriCB	19L			0.53	0.52	0.54	0.54	0.56	0.58	0.67	0.56	9.42
13C12-3,4,4'-TriCB	37L			1.64	1.63	1.52	1.60	1.56	1.74	2.16	1.69	12.8
13C12-2,2',6,6'-TeCB	54L			1.40	1.41	1.42	1.43	1.48	1.53	1.70	1.48	7.14
13C12-3,3',4,4'-TeCB	77L			1.30	1.23	1.18	1.25	1.19	1.35	1.69	1.31	13.3
13C12-3,4,4',5-TeCB	81L			1.27	1.22	1.15	1.21	1.18	1.34	1.67	1.29	13.7
13C12-2,2',4,6,6'-PeCB	104L			1.36	1.32	1.40	1.45	1.52	1.57	1.70	1.47	9.00
13C12-2,3,3',4,4'-PeCB	105L			1.41	1.40	1.29	1.31	1.30	1.43	1.69	1.40	9.92
13C12-2,3,4,4',5-PeCB	114L			1.29	1.29	1.21	1.25	1.30	1.49	1.64	1.35	11.5
13C12-2,3',4,4',5-PeCB	118L			1.31	1.32	1.25	1.26	1.28	1.42	1.71	1.37	12.0
13C12-2',3,4,4',5-PeCB	123L			1.34	1.34	1.26	1.30	1.30	1.46	1.74	1.39	12.0
13C12-3,3',4,4',5-PeCB	126L			1.23	1.21	1.11	1.16	1.13	1.29	1.62	1.25	14.0
13C12-2,2',4,4',6,6'-HxCB	155L			1.50	1.51	1.59	1.60	1.74	1.79	1.90	1.66	9.04
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	1.25	1.24	1.21	1.25	1.31	1.47	1.65	1.34	12.1
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L									
13C12-3,3',4,4',5,5'-HxCB	167L			1.21	1.20	1.18	1.22	1.26	1.37	1.55	1.28	10.3
13C12-3,3',4,4',5,5'-HxCB	169L			1.22	1.30	1.23	1.29	1.27	1.38	1.64	1.33	10.9
13C12-2,2',3,4',5,6,6'-HpCB	188L			1.80	1.63	1.75	1.76	1.96	2.12	2.18	1.89	10.9
13C12-2,3,3',4,4',5,5'-HpCB	189L			1.48	1.39	1.40	1.42	1.47	1.60	1.85	1.52	10.8
13C12-2,2',3,3',5,5',6,6'-OcCB	202L			1.69	1.54	1.71	1.72	1.88	1.91	2.03	1.78	9.16
13C12-2,3,3',4,4',5,5',6-OcCB	205L			1.42	1.43	1.42	1.41	1.52	1.61	1.72	1.50	7.96
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			1.02	1.03	1.04	1.04	1.11	1.18	1.26	1.10	8.51
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			1.26	1.25	1.28	1.25	1.36	1.44	1.60	1.35	9.73
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			1.29	1.28	1.29	1.31	1.42	1.50	1.55	1.38	8.22
CLEAN-UP STANDARD												
13C12-2,4,4'-TriCB	28L			1.74	1.76	1.69	1.73	1.67	1.66	1.65	1.70	2.52
13C12-2,3,3',5,5'-PeCB	111L			1.28	1.28	1.25	1.29	1.29	1.39	1.60	1.34	9.12
13C12-2,2',3,3',5,5',6-HpCB	178L			0.94	0.91	0.94	0.96	0.98	0.96	0.97	0.95	2.57

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) For contract CV specifications, see Section 10.4.4, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Bjorn Arvi

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Report Filename: 1668_PCB1668_07-Jul-2018_PB8C_Form3B_GS78408.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 3C

PCB CONGENER INITIAL CALIBRATION ION ABUNDANCE RATIOS

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

Instrument ID: HR GC/MS

GC Column ID: SPB OCTYL

CS0 Data Filename: PB8C_220 S: 1

CS1 Data Filename: PB8C_220 S: 4

CS2 Data Filename: PB8C_220A S: 4

CS3 Data Filename: PB8C_220A S: 3

CS4 Data Filename: PB8C_220A S: 2

CS5 Data Filename: PB8C_220A S: 1

CS6 Data Filename: PB8C_220A S: 6

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	M/Z's FORMING RATIO ²	ION ABUNDANCE RATIO							QC LIMITS ²
					CS0	CS1	CS2	CS3	CS4	CS5	CS6	
2-MoCB	1			M/M+2	3.33	3.15	3.15	3.14	3.12	2.71		2.66-3.60
4-MoCB	3			M/M+2	3.27	3.06	3.15	3.12	3.12	3.06		2.66-3.60
2,2'-DiCB	4			M/M+2	1.52	1.59	1.58	1.54	1.54	1.54		1.33-1.79
4,4'-DiCB	15			M/M+2	1.56	1.49	1.56	1.55	1.54	1.54		1.33-1.79
2,2',6-TriCB	19			M/M+2	0.99	1.06	1.05	1.06	1.07	1.07	1.04	0.88-1.20
3,4,4'-TriCB	37			M/M+2	0.99	1.03	1.03	1.02	1.03	1.04	1.02	0.88-1.20
2,2',6,6'-TeCB	54			M/M+2	0.74	0.80	0.76	0.78	0.79	0.78	0.85	0.65-0.89
3,3',4,4'-TeCB	77			M/M+2	0.79	0.78	0.77	0.80	0.77	0.77	0.81	0.65-0.89
3,4,4',5-TeCB	81			M/M+2	0.83	0.80	0.78	0.77	0.77	0.77	0.78	0.65-0.89
2,2',4,6,6'-PeCB	104			M+2/M+4	1.57	1.68	1.56	1.57	1.56	1.55	1.52	1.32-1.78
2,3,3',4,4'-PeCB	105			M+2/M+4	1.52	1.53	1.53	1.57	1.53	1.56	1.56	1.32-1.78
2,3,4,4',5-PeCB	114			M+2/M+4	1.41	1.55	1.60	1.56	1.57	1.56	1.56	1.32-1.78
2,3',4,4',5-PeCB	118			M+2/M+4	1.47	1.51	1.59	1.53	1.52	1.56	1.55	1.32-1.78
2',3,4,4',5-PeCB	123			M+2/M+4	1.67	1.51	1.60	1.55	1.55	1.55	1.55	1.32-1.78
3,3',4,4',5-PeCB	126			M+2/M+4	1.49	1.62	1.53	1.56	1.54	1.55	1.57	1.32-1.78
2,2',4,4',6,6'-HxCB	155			M+2/M+4	1.42	1.26	1.24	1.28	1.26	1.24	1.28	1.05-1.43
2,3,3',4,4',5-HxCB	156	156 + 157	C	M+2/M+4	1.24	1.23	1.25	1.25	1.25	1.25	1.21	1.05-1.43
2,3,3',4,4',5'-HxCB	157	156 + 157	C156									
2,3',4,4',5,5'-HxCB	167			M+2/M+4	1.02	1.22	1.22	1.26	1.25	1.25	1.25	1.05-1.43
3,3',4,4',5,5'-HxCB	169			M+2/M+4	1.39	1.32	1.23	1.26	1.26	1.27	1.26	1.05-1.43
2,2',3,4',5,6,6'-HpCB	188			M+2/M+4	0.94	1.02	1.02	1.05	1.04	1.05	1.04	0.89-1.21
2,3,3',4,4',5,5'-HpCB	189			M+2/M+4	1.10	0.99	1.07	1.03	1.05	1.05	1.05	0.89-1.21
2,2',3,3',5,5',6,6'-OcCB	202			M+2/M+4	0.79	0.94	0.89	0.88	0.89	0.90	0.88	0.76-1.02
2,3,3',4,4',5,5',6-OcCB	205			M+2/M+4	0.85	0.91	0.91	0.90	0.88	0.90	0.90	0.76-1.02
2,2',3,3',4,4',5,5',6-NoCB	206			M+2/M+4	0.76	0.82	0.79	0.78	0.77	0.78	0.78	0.65-0.89
2,2',3,3',4,5,5',6,6'-NoCB	208			M+2/M+4	0.82	0.78	0.79	0.78	0.79	0.79	0.79	0.65-0.89
2,2',3,3',4,4',5,5',6,6'-DeCB	209			M+4/M+6	1.08	1.14	1.16	1.16	1.17	1.17	1.18	0.99-1.33

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8 Method 1668A for m/z specifications and ion abundance ratio control limits.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Bjorn Arvi _____

For Axy Internal Use Only [XSL Template: Form16683C.xsl; Created: 16-Nov-2018 11:16:18; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_07-Jul-2018_PB8C__Form3C_GS78408.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 3D

PCB CONGENER INITIAL CALIBRATION ION ABUNDANCE RATIOS

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

Instrument ID: HR GC/MS

GC Column ID: SPB OCTYL

CS0 Data Filename: PB8C_220 S: 1

CS1 Data Filename: PB8C_220 S: 4

CS2 Data Filename: PB8C_220A S: 4

CS3 Data Filename: PB8C_220A S: 3

CS4 Data Filename: PB8C_220A S: 2

CS5 Data Filename: PB8C_220A S: 1

CS6 Data Filename: PB8C_220A S: 6

LABELED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	M/Z's FORMING RATIO ³	ION ABUNDANCE RATIO							QC LIMITS ³
					CS0	CS1	CS2	CS3	CS4	CS5	CS6	
13C12-2-MoCB	1L			M/M+2	3.21	3.14	3.13	3.21	3.17	3.12	3.06	2.66-3.60
13C12-4-MoCB	3L			M/M+2	3.14	3.18	3.11	3.09	3.17	3.17	3.14	2.66-3.60
13C12-2,2'-DiCB	4L			M/M+2	1.57	1.59	1.57	1.60	1.58	1.59	1.59	1.33-1.79
13C12-4,4'-DiCB	15L			M/M+2	1.58	1.57	1.58	1.58	1.57	1.59	1.57	1.33-1.79
13C12-2,2',6-TriCB	19L			M/M+2	1.05	1.06	1.06	1.06	1.05	1.06	1.05	0.88-1.20
13C12-3,4,4'-TriCB	37L			M/M+2	1.04	1.05	1.04	1.05	1.06	1.06	1.04	0.88-1.20
13C12-2,2',6,6'-TeCB	54L			M/M+2	0.79	0.80	0.80	0.79	0.80	0.79	0.80	0.65-0.89
13C12-3,3',4,4'-TeCB	77L			M/M+2	0.74	0.76	0.72	0.77	0.71	0.74	0.77	0.65-0.89
13C12-3,4,4',5-TeCB	81L			M/M+2	0.77	0.72	0.76	0.72	0.73	0.74	0.74	0.65-0.89
13C12-2,2',4,6,6'-PeCB	104L			M+2/M+4	1.59	1.56	1.55	1.57	1.57	1.58	1.53	1.32-1.78
13C12-2,3,3',4,4'-PeCB	105L			M+2/M+4	1.58	1.58	1.59	1.54	1.60	1.59	1.58	1.32-1.78
13C12-2,3,4,4',5-PeCB	114L			M+2/M+4	1.57	1.62	1.60	1.58	1.61	1.58	1.59	1.32-1.78
13C12-2,3',4,4',5-PeCB	118L			M+2/M+4	1.53	1.59	1.58	1.55	1.58	1.56	1.57	1.32-1.78
13C12-2',3,4,4',5-PeCB	123L			M+2/M+4	1.59	1.59	1.55	1.57	1.56	1.57	1.58	1.32-1.78
13C12-3,3',4,4',5-PeCB	126L			M+2/M+4	1.55	1.59	1.54	1.57	1.60	1.57	1.56	1.32-1.78
13C12-2,2',4,4',6,6'-HxCB	155L			M+2/M+4	1.27	1.25	1.27	1.27	1.24	1.23	1.28	1.05-1.43
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	M+2/M+4	1.28	1.22	1.27	1.27	1.26	1.27	1.26	1.05-1.43
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L									
13C12-2,3',4,4',5,5'-HxCB	167L			M+2/M+4	1.26	1.26	1.26	1.23	1.24	1.25	1.27	1.05-1.43
13C12-3,3',4,4',5,5'-HxCB	169L			M+2/M+4	1.27	1.24	1.25	1.24	1.25	1.25	1.27	1.05-1.43
13C12-2,2',3,4',5,6,6'-HpCB	188L			M+2/M+4	1.05	1.04	1.06	1.07	1.02	1.05	1.05	0.89-1.21
13C12-2,3,3',4,4',5,5'-HpCB	189L			M+2/M+4	1.02	1.04	1.02	1.05	1.05	1.01	1.05	0.89-1.21
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			M+2/M+4	0.91	0.91	0.90	0.90	0.89	0.90	0.91	0.76-1.02
13C12-2,3,3',4,4',5,5',6-OxCB	205L			M+2/M+4	0.87	0.89	0.87	0.88	0.88	0.89	0.86	0.76-1.02
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			M+2/M+4	0.76	0.76	0.78	0.79	0.79	0.79	0.79	0.65-0.89
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			M+2/M+4	0.77	0.75	0.78	0.78	0.78	0.77	0.79	0.65-0.89
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			M+4/M+6	1.19	1.15	1.19	1.17	1.16	1.18	1.18	0.99-1.33
CLEAN-UP STANDARD												
13C12-2,4,4'-TriCB	28L			M/M+2	1.06	1.05	1.06	1.05	1.07	1.06	1.05	0.88-1.20
13C12-2,3,3',5,5'-PeCB	111L			M+2/M+4	1.60	1.62	1.63	1.63	1.58	1.57	1.62	1.32-1.78
13C12-2,2',3,3',5,5',6-HpCB	178L			M+2/M+4	1.01	1.03	1.03	1.04	1.06	1.05	1.03	0.89-1.21

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) See Table 8 Method 1668A for m/z specifications and ion abundance ratio control limits.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Bjorn Arvi _____

SGS AXYS METHOD MLA-010 Rev 12

Form 4A
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018 VER Data Filename: PB8C_367 S: 1

Instrument ID: HR GC/MS Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL Analysis Time: 07:33:58

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
2-MoCB	1			M/M+2	3.05	2.66-3.60	21.3	17.5 - 32.5
4-MoCB	3			M/M+2	3.04	2.66-3.60	22.6	17.5 - 32.5
2,2'-DiCB	4			M/M+2	1.50	1.33-1.79	20.8	17.5 - 32.5
4,4'-DiCB	15			M/M+2	1.47	1.33-1.79	24.9	19.6 - 36.4
2,2',6-TriCB	19			M/M+2	1.07	0.88-1.20	27.5	17.5 - 32.5
3,4,4'-TriCB	37			M/M+2	1.01	0.88-1.20	21.8	17.5 - 32.5
2,2',6,6'-TeCB	54			M/M+2	0.80	0.65-0.89	51.7	35.0 - 65.0
3,3',4,4'-TeCB	77			M/M+2	0.77	0.65-0.89	44.9	35.0 - 65.0
3,4,4',5-TeCB	81			M/M+2	0.78	0.65-0.89	47.3	35.0 - 65.0
2,2',4,6,6'-PeCB	104			M+2/M+4	1.56	1.32-1.78	55.2	35.0 - 65.0
2,3,3',4,4'-PeCB	105			M+2/M+4	1.54	1.32-1.78	46.5	35.0 - 65.0
2,3,4,4',5-PeCB	114			M+2/M+4	1.51	1.32-1.78	46.6	35.0 - 65.0
2,3',4,4',5-PeCB	118			M+2/M+4	1.52	1.32-1.78	44.7	35.0 - 65.0
2',3,4,4',5-PeCB	123			M+2/M+4	1.52	1.32-1.78	44.3	35.0 - 65.0
3,3',4,4',5-PeCB	126			M+2/M+4	1.55	1.32-1.78	48.4	39.0 - 72.4
2,2',4,4',6,6'-HxCB	155			M+2/M+4	1.25	1.05-1.43	54.3	35.0 - 65.0
2,3,3',4,4',5-HxCB	156	156 + 157	C	M+2/M+4	1.25	1.05-1.43	104	70.0 - 130
2,3,3',4,4',5'-HxCB	157	156 + 157	C156					
2,3',4,4',5,5'-HxCB	167			M+2/M+4	1.28	1.05-1.43	56.6	35.0 - 65.0
3,3',4,4',5,5'-HxCB	169			M+2/M+4	1.29	1.05-1.43	54.8	35.0 - 65.0
2,2',3,4',5,6,6'-HpCB	188			M+2/M+4	1.07	0.89-1.21	52.8	35.0 - 65.0
2,3,3',4,4',5,5'-HpCB	189			M+2/M+4	1.04	0.89-1.21	41.7	35.0 - 65.0
2,2',3,3',5,5',6,6'-OoCB	202			M+2/M+4	0.89	0.76-1.02	87.4	58.9 - 110
2,3,3',4,4',5,5',6-OoCB	205			M+2/M+4	0.88	0.76-1.02	76.6	52.5 - 97.5
2,2',3,3',4,4',5,5',6-NoCB	206			M+2/M+4	0.79	0.65-0.89	75.2	52.5 - 97.5
2,2',3,3',4,5,5',6,6'-NoCB	208			M+2/M+4	0.78	0.65-0.89	84.0	58.7 - 109
2,2',3,3',4,4',5,5',6,6'-DeCB	209			M+4/M+6	1.16	0.99-1.33	75.6	52.5 - 97.5

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1668A, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 4B
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018 VER Data Filename: PB8C_367 S: 1

Instrument ID: HR GC/MS Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL Analysis Time: 07:33:58

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	MZ's FORMING RATIO ³	ION ABUND. RATIO	QC LIMITS ⁴	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
13C12-2-MoCB	1L			M/M+2	3.14	2.66-3.60	92.3	50.0 - 150
13C12-4-MoCB	3L			M/M+2	3.13	2.66-3.60	91.9	50.0 - 150
13C12-2,2'-DiCB	4L			M/M+2	1.56	1.33-1.79	90.9	50.0 - 150
13C12-4,4'-DiCB	15L			M/M+2	1.54	1.33-1.79	89.3	50.0 - 150
13C12-2,2',6-TriCB	19L			M/M+2	1.07	0.88-1.20	96.8	50.0 - 150
13C12-3,4,4'-TriCB	37L			M/M+2	1.03	0.88-1.20	78.6	50.0 - 150
13C12-2,2',6,6'-TeCB	54L			M/M+2	0.79	0.65-0.89	92.4	50.0 - 150
13C12-3,3',4,4'-TeCB	77L			M/M+2	0.75	0.65-0.89	85.4	50.0 - 150
13C12-3,4,4',5-TeCB	81L			M/M+2	0.75	0.65-0.89	86.1	50.0 - 150
13C12-2,2',4,6,6'-PeCB	104L			M+2/M+4	1.56	1.32-1.78	75.3	50.0 - 150
13C12-2,3,3',4,4'-PeCB	105L			M+2/M+4	1.54	1.32-1.78	84.0	50.0 - 150
13C12-2,3,4,4',5-PeCB	114L			M+2/M+4	1.55	1.32-1.78	81.0	50.0 - 150
13C12-2,3',4,4',5-PeCB	118L			M+2/M+4	1.58	1.32-1.78	83.2	50.0 - 150
13C12-2',3,4,4',5-PeCB	123L			M+2/M+4	1.58	1.32-1.78	84.8	50.0 - 150
13C12-3,3',4,4',5-PeCB	126L			M+2/M+4	1.59	1.32-1.78	80.8	50.0 - 150
13C12-2,2',4,4',6,6'-HxCB	155L			M+2/M+4	1.25	1.05-1.43	74.8	50.0 - 150
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	M+2/M+4	1.25	1.05-1.43	179	100 - 300
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			M+2/M+4	1.23	1.05-1.43	90.4	50.0 - 150
13C12-3,3',4,4',5,5'-HxCB	169L			M+2/M+4	1.27	1.05-1.43	85.3	50.0 - 150
13C12-2,2',3,4',5,6,6'-HpCB	188L			M+2/M+4	1.05	0.89-1.21	92.5	50.0 - 150
13C12-2,3,3',4,4',5,5'-HpCB	189L			M+2/M+4	1.00	0.89-1.21	83.7	50.0 - 150
13C12-2,2',3,3',5,5',6,6'-OoCB	202L			M+2/M+4	0.89	0.76-1.02	76.0	50.0 - 150
13C12-2,3,3',4,4',5,5',6-OoCB	205L			M+2/M+4	0.88	0.76-1.02	90.6	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			M+2/M+4	0.76	0.65-0.89	87.2	50.0 - 150
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			M+2/M+4	0.77	0.65-0.89	95.8	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			M+4/M+6	1.20	0.99-1.33	72.3	50.0 - 150

CLEAN-UP STANDARD

13C12-2,4,4'-TriCB	28L			M/M+2	1.05	0.88-1.20	88.4	60.0 - 130
13C12-2,3,3',5,5'-PeCB	111L			M+2/M+4	1.61	1.32-1.78	88.4	60.0 - 130
13C12-2,2',3,3',5,5',6-HpCB	178L			M+2/M+4	1.07	0.89-1.21	80.9	60.0 - 130

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 6A
PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_367 S: 1

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 07:33:58

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RETENTION TIME REFERENCE	IUPAC NO. ²	RRT	RRT QC LIMITS
2-MoCB	1			13C12-2-MoCB	1L	1.001	0.999-1.004
4-MoCB	3			13C12-4-MoCB	3L	1.001	0.999-1.004
2,2'-DiCB	4			13C12-2,2'-DiCB	4L	1.001	0.999-1.004
4,4'-DiCB	15			13C12-4,4'-DiCB	15L	1.001	0.999-1.002
2,2',6-TriCB	19			13C12-2,2',6-TriCB	19L	1.001	0.999-1.003
3,4,4'-TriCB	37			13C12-3,4,4'-TriCB	37L	1.001	0.999-1.002
2,2',6,6'-TeCB	54			13C12-2,2',6,6'-TeCB	54L	1.001	0.999-1.002
3,3',4,4'-TeCB	77			13C12-3,3',4,4'-TeCB	77L	1.000	1.000-1.001
3,4,4',5-TeCB	81			13C12-3,4,4',5-TeCB	81L	1.000	1.000-1.001
2,2',4,6,6'-PeCB	104			13C12-2,2',4,6,6'-PeCB	104L	1.001	0.999-1.002
2,3,3',4,4'-PeCB	105			13C12-2,3,3',4,4'-PeCB	105L	1.001	1.000-1.001
2,3,4,4',5-PeCB	114			13C12-2,3,4,4',5-PeCB	114L	1.000	1.000-1.001
2,3',4,4',5-PeCB	118			13C12-2,3',4,4',5-PeCB	118L	1.000	1.000-1.001
2',3,4,4',5-PeCB	123			13C12-2',3,4,4',5-PeCB	123L	1.000	1.000-1.001
3,3',4,4',5-PeCB	126			13C12-3,3',4,4',5-PeCB	126L	1.000	1.000-1.001
2,2',4,4',6,6'-HxCB	155			13C12-2,2',4,4',6,6'-HxCB	155L	1.001	0.999-1.002
2,3,3',4,4',5-HxCB	156	156 + 157	C	13C12-2,3,3',4,4',5-HxCB and 13C12-2,3,3',4,4',5'-HxCB	156L/157L	1.000	0.998-1.003
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3',4,4',5,5'-HxCB	167			13C12-2,3',4,4',5,5'-HxCB	167L	1.000	1.000-1.001
3,3',4,4',5,5'-HxCB	169			13C12-3,3',4,4',5,5'-HxCB	169L	1.000	1.000-1.001
2,2',3,4',5,6,6'-HpCB	188			13C12-2,2',3,4',5,6,6'-HpCB	188L	1.001	1.000-1.001
2,3,3',4,4',5,5'-HpCB	189			13C12-2,3,3',4,4',5,5'-HpCB	189L	1.000	1.000-1.001
2,2',3,3',5,5',6,6'-OxCB	202			13C12-2,2',3,3',5,5',6,6'-OxCB	202L	1.000	1.000-1.001
2,3,3',4,4',5,5',6-OxCB	205			13C12-2,3,3',4,4',5,5',6-OxCB	205L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6-NoCB	206			13C12-2,2',3,3',4,4',5,5',6-NoCB	206L	1.001	1.000-1.001
2,2',3,3',4,5,5',6,6'-NoCB	208			13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L	1.000	1.000-1.001

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_367S1__Form6A_SJ2455295.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 6B
PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018 VER Data Filename: PB8C_367 S: 1

Instrument ID: HR GC/MS Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL Analysis Time: 07:33:58

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	RETENTION TIME REFERENCE	IUPAC NO. ¹	RRT	RRT QC LIMITS
13C12-2-MoCB	1L			13C12-2,5-DiCB	9L	0.720	0.689-0.752
13C12-4-MoCB	3L			13C12-2,5-DiCB	9L	0.859	0.828-0.890
13C12-2,2'-DiCB	4L			13C12-2,5-DiCB	9L	0.875	0.843-0.906
13C12-4,4'-DiCB	15L			13C12-2,5-DiCB	9L	1.254	1.222-1.285
13C12-2,2',6-TriCB	19L			13C12-2,5-DiCB	9L	1.072	1.041-1.103
13C12-3,4,4'-TriCB	37L			13C12-2,2',5,5'-TeCB	52L	1.093	1.073-1.113
13C12-2,2',6,6'-TeCB	54L			13C12-2,2',5,5'-TeCB	52L	0.811	0.798-0.825
13C12-3,3',4,4'-TeCB	77L			13C12-2,2',5,5'-TeCB	52L	1.397	1.384-1.411
13C12-3,4,4',5-TeCB	81L			13C12-2,2',5,5'-TeCB	52L	1.374	1.361-1.387
13C12-2,2',4,6,6'-PeCB	104L			13C12-2,2',4,5,5'-PeCB	101L	0.808	0.797-0.818
13C12-2,3,3',4,4'-PeCB	105L			13C12-2,2',4,5,5'-PeCB	101L	1.200	1.190-1.211
13C12-2,3,4,4',5-PeCB	114L			13C12-2,2',4,5,5'-PeCB	101L	1.179	1.169-1.189
13C12-2,3',4,4',5-PeCB	118L			13C12-2,2',4,5,5'-PeCB	101L	1.162	1.151-1.172
13C12-2',3,4,4',5-PeCB	123L			13C12-2,2',4,5,5'-PeCB	101L	1.151	1.141-1.162
13C12-3,3',4,4',5-PeCB	126L			13C12-2,2',4,5,5'-PeCB	101L	1.301	1.291-1.312
13C12-2,2',4,4',6,6'-HxCB	155L			13C12-2,2',3,4,4',5'-HxCB	138L	0.785	0.777-0.793
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	13C12-2,2',3,4,4',5'-HxCB	138L	1.108	1.100-1.116
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L				
13C12-2,3',4,4',5,5'-HxCB	167L			13C12-2,2',3,4,4',5'-HxCB	138L	1.078	1.070-1.086
13C12-3,3',4,4',5,5'-HxCB	169L			13C12-2,2',3,4,4',5'-HxCB	138L	1.192	1.184-1.200
13C12-2,2',3,4',5,6,6'-HpCB	188L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.712	0.705-0.718
13C12-2,3,3',4,4',5,5'-HpCB	189L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.959	0.953-0.966
13C12-2,2',3,3',5,5',6,6'-OcCB	202L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.817	0.811-0.824
13C12-2,3,3',4,4',5,5',6-OcCB	205L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	1.009	1.000-1.019
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	1.043	1.034-1.053
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.949	0.942-0.955
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	1.074	1.065-1.084

CLEANUP STANDARD

13C12-2,4,4'-TriCB	28L			13C12-2,2',5,5'-TeCB	52L	0.925	0.911-0.938
13C12-2,3,3',5,5'-PeCB	111L			13C12-2,2',4,5,5'-PeCB	101L	1.087	1.077-1.098
13C12-2,2',3,3',5,5',6-HpCB	178L			13C12-2,2',3,4,4',5'-HxCB	138L	1.012	1.003-1.020

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_367S1__Form6B_SJ2455295.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 3A

PCB CONGENER INITIAL CALIBRATION RELATIVE RESPONSES,
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

CAL Data Filename: PB8C_367 S: 1

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 07:33:58

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
3-MoCB	2			0.92	M/M+2	3.04	2.66-3.60	0.988	0.984 - 0.991
2,3-DiCB	5			0.94	M/M+2	1.48	1.33-1.79	1.197	1.193 - 1.200
2,3'-DiCB	6			1.06	M/M+2	1.46	1.33-1.79	1.175	1.172 - 1.179
2,4-DiCB	7			1.06	M/M+2	1.49	1.33-1.79	1.158	1.154 - 1.161
2,4'-DiCB	8			1.17	M/M+2	1.52	1.33-1.79	1.206	1.203 - 1.210
2,5-DiCB	9			1.06	M/M+2	1.48	1.33-1.79	1.144	1.141 - 1.148
2,6-DiCB	10			1.03	M/M+2	1.47	1.33-1.79	1.013	1.010 - 1.017
3,3'-DiCB	11			1.02	M/M+2	1.51	1.33-1.79	0.970	0.968 - 0.973
3,4-DiCB	12	12 + 13	C	1.01	M/M+2	1.48	1.33-1.79	0.986	0.983 - 0.988
3,4'-DiCB	13	12 + 13	C12						
3,5-DiCB	14			1.02	M/M+2	1.49	1.33-1.79	0.926	0.923 - 0.928
2,2',3-TriCB	16			0.93	M/M+2	1.07	0.88-1.20	1.166	1.163 - 1.168
2,2',4-TriCB	17			1.06	M/M+2	1.06	0.88-1.20	1.138	1.135 - 1.141
2,2',5-TriCB	18	18 + 30	C	1.23	M/M+2	1.06	0.88-1.20	1.112	1.109 - 1.115
2,3,3'-TriCB	20	20 + 28	C	1.10	M/M+2	1.00	0.88-1.20	0.848	0.845 - 0.851
2,3,4-TriCB	21	21 + 33	C	1.16	M/M+2	1.00	0.88-1.20	0.855	0.852 - 0.858
2,3,4'-TriCB	22			1.02	M/M+2	1.02	0.88-1.20	0.872	0.870 - 0.874
2,3,5-TriCB	23			1.07	M/M+2	1.01	0.88-1.20	1.282	1.279 - 1.285
2,3,6-TriCB	24			1.36	M/M+2	1.05	0.88-1.20	1.159	1.156 - 1.162
2,3',4-TriCB	25			1.29	M/M+2	1.01	0.88-1.20	0.824	0.822 - 0.826
2,3',5-TriCB	26	26 + 29	C	1.09	M/M+2	1.01	0.88-1.20	1.302	1.297 - 1.307
2,3',6-TriCB	27			1.51	M/M+2	1.08	0.88-1.20	1.152	1.149 - 1.155
2,4,4'-TriCB	28	20 + 28	C20						
2,4,5-TriCB	29	26 + 29	C26						
2,4,6-TriCB	30	18 + 30	C18						
2,4',5-TriCB	31			1.19	M/M+2	1.03	0.88-1.20	0.836	0.835 - 0.838
2,4',6-TriCB	32			1.16	M/M+2	1.01	0.88-1.20	1.198	1.195 - 1.201
2',3,4-TriCB	33	21 + 33	C21						
2',3,5-TriCB	34			1.03	M/M+2	1.00	0.88-1.20	1.274	1.271 - 1.277
3,3',4-TriCB	35			1.08	M/M+2	1.01	0.88-1.20	0.985	0.984 - 0.987
3,3',5-TriCB	36			1.18	M/M+2	1.01	0.88-1.20	0.932	0.930 - 0.933
3,4,5-TriCB	38			1.09	M/M+2	0.99	0.88-1.20	0.966	0.965 - 0.968
3,4',5-TriCB	39			1.11	M/M+2	1.01	0.88-1.20	0.945	0.943 - 0.947
2,2',3,3'-TeCB	40	40 + 41 + 71	C	0.89	M/M+2	0.79	0.65-0.89	1.334	1.330 - 1.339
2,2',3,4-TeCB	41	40 + 41 + 71	C40						
2,2',3,4'-TeCB	42			0.88	M/M+2	0.79	0.65-0.89	1.311	1.309 - 1.314
2,2',3,5-TeCB	43			0.84	M/M+2	0.78	0.65-0.89	1.246	1.243 - 1.248
2,2',3,5'-TeCB	44	44 + 47 + 65	C	0.98	M/M+2	0.79	0.65-0.89	1.286	1.282 - 1.290
2,2',3,6-TeCB	45	45 + 51	C	0.93	M/M+2	0.78	0.65-0.89	1.146	1.142 - 1.150
2,2',3,6'-TeCB	46			0.81	M/M+2	0.79	0.65-0.89	1.160	1.158 - 1.163
2,2',4,4'-TeCB	47	44 + 47 + 65	C44						
2,2',4,5-TeCB	48			0.91	M/M+2	0.78	0.65-0.89	1.273	1.270 - 1.275
2,2',4,5'-TeCB	49	49 + 69	C	1.06	M/M+2	0.78	0.65-0.89	1.257	1.253 - 1.261
2,2',4,6-TeCB	50	50 + 53	C	0.95	M/M+2	0.78	0.65-0.89	1.111	1.107 - 1.115
2,2',4,6'-TeCB	51	45 + 51	C45						
2,2',5,5'-TeCB	52			0.95	M/M+2	0.79	0.65-0.89	1.234	1.232 - 1.237
2,2',5,6'-TeCB	53	50 + 53	C50						
2,3,3',4-TeCB	55			0.89	M/M+2	0.76	0.65-0.89	0.889	0.887 - 0.890
2,3,3',4'-TeCB	56			0.87	M/M+2	0.78	0.65-0.89	0.904	0.903 - 0.906

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
2,3,3',5'-TeCB	57			0.98	M/M+2	0.75	0.65-0.89	0.843	0.842 - 0.845
2,3,3',5'-TeCB	58			0.91	M/M+2	0.79	0.65-0.89	0.851	0.849 - 0.852
2,3,3',6'-TeCB	59	59 + 62 + 75	C	1.21	M/M+2	0.79	0.65-0.89	1.302	1.297 - 1.306
2,3,4,4'-TeCB	60			0.86	M/M+2	0.78	0.65-0.89	0.911	0.909 - 0.912
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C	0.96	M/M+2	0.76	0.65-0.89	0.873	0.870 - 0.876
2,3,4,6'-TeCB	62	59 + 62 + 75	C59						
2,3,4',5'-TeCB	63			0.98	M/M+2	0.76	0.65-0.89	0.864	0.862 - 0.865
2,3,4',6'-TeCB	64			1.24	M/M+2	0.78	0.65-0.89	1.348	1.345 - 1.350
2,3,5,6'-TeCB	65	44 + 47 + 65	C44						
2,3',4,4'-TeCB	66			0.95	M/M+2	0.78	0.65-0.89	0.884	0.882 - 0.885
2,3',4,5'-TeCB	67			1.12	M/M+2	0.77	0.65-0.89	0.855	0.854 - 0.857
2,3',4,5'-TeCB	68			1.02	M/M+2	0.79	0.65-0.89	0.831	0.829 - 0.832
2,3',4,6'-TeCB	69	49 + 69	C49						
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61						
2,3',4',6'-TeCB	71	40 + 41 + 71	C40						
2,3',5,5'-TeCB	72			1.03	M/M+2	0.79	0.65-0.89	0.822	0.820 - 0.823
2,3',5,6'-TeCB	73			1.13	M/M+2	0.78	0.65-0.89	1.241	1.238 - 1.243
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61						
2,4,4',6'-TeCB	75	59 + 62 + 75	C59						
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61						
3,3',4,5'-TeCB	78			0.91	M/M+2	0.76	0.65-0.89	0.987	0.985 - 0.988
3,3',4,5'-TeCB	79			1.09	M/M+2	0.77	0.65-0.89	0.970	0.968 - 0.971
3,3',5,5'-TeCB	80			1.01	M/M+2	0.78	0.65-0.89	0.923	0.922 - 0.925
2,2',3,3',4'-PeCB	82			0.78	M+2/M+4	1.64	1.32-1.78	0.934	0.932 - 0.935
2,2',3,3',5'-PeCB	83	83 + 99	C	0.87	M+2/M+4	1.59	1.32-1.78	0.884	0.881 - 0.886
2,2',3,3',6'-PeCB	84			0.79	M+2/M+4	1.60	1.32-1.78	1.164	1.162 - 1.166
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	1.02	M+2/M+4	1.57	1.32-1.78	0.919	0.916 - 0.922
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C	1.02	M+2/M+4	1.58	1.32-1.78	0.900	0.896 - 0.904
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86						
2,2',3,4,6'-PeCB	88	88 + 91	C	0.91	M+2/M+4	1.57	1.32-1.78	1.154	1.150 - 1.157
2,2',3,4,6'-PeCB	89			0.84	M+2/M+4	1.56	1.32-1.78	1.183	1.181 - 1.185
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C	1.02	M+2/M+4	1.60	1.32-1.78	0.868	0.866 - 0.870
2,2',3,4',6'-PeCB	91	88 + 91	C88						
2,2',3,5,5'-PeCB	92			0.87	M+2/M+4	1.61	1.32-1.78	0.852	0.851 - 0.854
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C	0.94	M+2/M+4	1.57	1.32-1.78	1.130	1.119 - 1.141
2,2',3,5,6'-PeCB	94			0.84	M+2/M+4	1.55	1.32-1.78	1.103	1.101 - 1.105
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93						
2,2',3,6,6'-PeCB	96			1.16	M+2/M+4	1.57	1.32-1.78	1.017	1.013 - 1.020
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86						
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93						
2,2',4,4',5'-PeCB	99	83 + 99	C83						
2,2',4,4',6'-PeCB	100	93 + 95 + 98 + 100 + 102	C93						
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90						
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93						
2,2',4,5',6'-PeCB	103			1.04	M+2/M+4	1.56	1.32-1.78	1.094	1.092 - 1.096
2,3,3',4,5'-PeCB	106			1.03	M+2/M+4	1.52	1.32-1.78	1.004	1.002 - 1.005
2,3,3',4',5'-PeCB	107	107 + 124	C	0.94	M+2/M+4	1.52	1.32-1.78	0.990	0.988 - 0.992
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86						
2,3,3',4,6'-PeCB	109			0.99	M+2/M+4	1.50	1.32-1.78	0.997	0.995 - 0.998
2,3,3',4',6'-PeCB	110	110 + 115	C	1.17	M+2/M+4	1.59	1.32-1.78	0.926	0.923 - 0.928
2,3,3',5,5'-PeCB	111			1.16	M+2/M+4	1.55	1.32-1.78	0.945	0.944 - 0.946
2,3,3',5,6'-PeCB	112			1.20	M+2/M+4	1.60	1.32-1.78	0.889	0.887 - 0.890
2,3,3',5',6'-PeCB	113	90 + 101 + 113	C90						
2,3,4,4',6'-PeCB	115	110 + 115	C110						
2,3,4,5,6'-PeCB	116	85 + 116 + 117	C85						
2,3,4',5,6'-PeCB	117	85 + 116 + 117	C85						
2,3',4,4',6'-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86						
2,3',4,5,5'-PeCB	120			1.19	M+2/M+4	1.58	1.32-1.78	0.958	0.957 - 0.959
2,3',4,5',6'-PeCB	121			1.15	M+2/M+4	1.56	1.32-1.78	1.200	1.198 - 1.202
2',3,3',4,5'-PeCB	122			0.85	M+2/M+4	1.53	1.32-1.78	1.010	1.009 - 1.012
2',3,4,5,5'-PeCB	124	107 + 124	C107						
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86						

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
3,3',4,5,5'-PeCB	127			0.92	M+2/M+4	1.53	1.32-1.78	1.041	1.040 - 1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C	0.97	M+2/M+4	1.27	1.05-1.43	0.958	0.956 - 0.960
2,2',3,3',4,5'-HxCB	129	129 + 138 + 160 + 163	C	0.98	M+2/M+4	1.25	1.05-1.43	0.929	0.927 - 0.932
2,2',3,3',4,5'-HxCB	130			0.77	M+2/M+4	1.24	1.05-1.43	0.913	0.912 - 0.914
2,2',3,3',4,6'-HxCB	131			0.85	M+2/M+4	1.28	1.05-1.43	1.160	1.159 - 1.162
2,2',3,3',4,6'-HxCB	132			0.79	M+2/M+4	1.27	1.05-1.43	1.176	1.173 - 1.178
2,2',3,3',5,5'-HxCB	133			0.85	M+2/M+4	1.26	1.05-1.43	1.192	1.190 - 1.194
2,2',3,3',5,6'-HxCB	134	134 + 143	C	0.83	M+2/M+4	1.27	1.05-1.43	1.142	1.140 - 1.145
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	0.84	M+2/M+4	1.26	1.05-1.43	1.107	1.102 - 1.113
2,2',3,3',6,6'-HxCB	136			1.13	M+2/M+4	1.29	1.05-1.43	1.025	1.024 - 1.027
2,2',3,4,4',5'-HxCB	137			0.84	M+2/M+4	1.26	1.05-1.43	0.918	0.917 - 0.919
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129						
2,2',3,4,4',6'-HxCB	139	139 + 140	C	0.92	M+2/M+4	1.26	1.05-1.43	1.154	1.151 - 1.156
2,2',3,4,4',6'-HxCB	140	139 + 140	C139						
2,2',3,4,5,5'-HxCB	141			0.88	M+2/M+4	1.25	1.05-1.43	0.903	0.902 - 0.904
2,2',3,4,5,6'-HxCB	142			0.83	M+2/M+4	1.26	1.05-1.43	1.166	1.164 - 1.167
2,2',3,4,5,6'-HxCB	143	134 + 143	C134						
2,2',3,4,5,6'-HxCB	144			0.80	M+2/M+4	1.27	1.05-1.43	1.122	1.121 - 1.124
2,2',3,4,6,6'-HxCB	145			1.03	M+2/M+4	1.27	1.05-1.43	1.035	1.033 - 1.036
2,2',3,4',5,5'-HxCB	146			0.98	M+2/M+4	1.38	1.05-1.43	0.883	0.882 - 0.885
2,2',3,4',5,6'-HxCB	147	147 + 149	C	0.95	M+2/M+4	1.26	1.05-1.43	1.134	1.132 - 1.137
2,2',3,4',5,6'-HxCB	148			0.82	M+2/M+4	1.28	1.05-1.43	1.084	1.083 - 1.086
2,2',3,4',5',6'-HxCB	149	147 + 149	C147						
2,2',3,4',6,6'-HxCB	150			1.08	M+2/M+4	1.29	1.05-1.43	1.013	1.011 - 1.014
2,2',3,5,5',6'-HxCB	151	135 + 151 + 154	C135						
2,2',3,5,6,6'-HxCB	152			1.16	M+2/M+4	1.28	1.05-1.43	1.007	1.006 - 1.009
2,2',4,4',5,5'-HxCB	153	153 + 168	C	1.11	M+2/M+4	1.26	1.05-1.43	0.899	0.897 - 0.901
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135						
2,3,3',4,4',6'-HxCB	158			1.24	M+2/M+4	1.26	1.05-1.43	0.938	0.937 - 0.939
2,3,3',4,5,5'-HxCB	159			1.16	M+2/M+4	1.26	1.05-1.43	0.982	0.981 - 0.983
2,3,3',4,5,6'-HxCB	160	129 + 138 + 160 + 163	C129						
2,3,3',4,5',6'-HxCB	161			1.17	M+2/M+4	1.17	1.05-1.43	0.887	0.886 - 0.888
2,3,3',4',5,5'-HxCB	162			1.29	M+2/M+4	1.30	1.05-1.43	0.989	0.988 - 0.990
2,3,3',4',5,6'-HxCB	163	129 + 138 + 160 + 163	C129						
2,3,3',4',5',6'-HxCB	164			1.13	M+2/M+4	1.26	1.05-1.43	0.921	0.920 - 0.922
2,3,3',5,5',6'-HxCB	165			1.04	M+2/M+4	1.30	1.05-1.43	0.878	0.877 - 0.879
2,3,4,4',5,6'-HxCB	166	128 + 166	C128						
2,3',4,4',5',6'-HxCB	168	153 + 168	C153						
2,2',3,3',4,4',5'-HpCB	170			1.17	M+2/M+4	1.04	0.89-1.21	1.000	0.999 - 1.001
2,2',3,3',4,4',6'-HpCB	171	171 + 173	C	0.80	M+2/M+4	1.05	0.89-1.21	1.163	1.161 - 1.165
2,2',3,3',4,5,5'-HpCB	172			0.78	M+2/M+4	1.07	0.89-1.21	0.896	0.895 - 0.897
2,2',3,3',4,5,6'-HpCB	173	171 + 173	C171						
2,2',3,3',4',5,6'-HpCB	174			0.87	M+2/M+4	1.03	0.89-1.21	1.134	1.133 - 1.136
2,2',3,3',4,5',6'-HpCB	175			0.84	M+2/M+4	1.04	0.89-1.21	1.103	1.101 - 1.104
2,2',3,3',4,6,6'-HpCB	176			1.12	M+2/M+4	1.06	0.89-1.21	1.034	1.033 - 1.036
2,2',3,3',4',5,6'-HpCB	177			1.13	M+2/M+4	1.06	0.89-1.21	1.146	1.145 - 1.148
2,2',3,3',5,5',6'-HpCB	178			0.84	M+2/M+4	1.08	0.89-1.21	1.086	1.084 - 1.087
2,2',3,3',5,6,6'-HpCB	179			1.19	M+2/M+4	1.04	0.89-1.21	1.011	1.009 - 1.012
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	1.04	M+2/M+4	1.05	0.89-1.21	1.000	0.999 - 1.001
2,2',3,4,4',5,6'-HpCB	181			0.84	M+2/M+4	1.05	0.89-1.21	1.157	1.156 - 1.159
2,2',3,4,4',5,6'-HpCB	182			0.87	M+2/M+4	1.03	0.89-1.21	1.116	1.115 - 1.117
2,2',3,4,4',5',6'-HpCB	183	183 + 185	C	0.83	M+2/M+4	1.05	0.89-1.21	1.129	1.127 - 1.130
2,2',3,4,4',6,6'-HpCB	184			1.18	M+2/M+4	1.05	0.89-1.21	1.025	1.023 - 1.026
2,2',3,4,5,5',6'-HpCB	185	183 + 185	C183						
2,2',3,4,5,6,6'-HpCB	186			1.08	M+2/M+4	1.06	0.89-1.21	1.047	1.046 - 1.048
2,2',3,4',5,5',6'-HpCB	187			0.92	M+2/M+4	1.06	0.89-1.21	1.110	1.109 - 1.112
2,3,3',4,4',5,6'-HpCB	190			1.06	M+2/M+4	1.04	0.89-1.21	0.947	0.946 - 0.948
2,3,3',4,4',5',6'-HpCB	191			1.04	M+2/M+4	1.06	0.89-1.21	0.917	0.916 - 0.918
2,3,3',4,5,5',6'-HpCB	192			0.94	M+2/M+4	1.08	0.89-1.21	0.902	0.901 - 0.903
2,3,3',4',5,5',6'-HpCB	193	180 + 193	C180						
2,2',3,3',4,4',5,5'-OcCB	194			0.87	M+2/M+4	0.89	0.76-1.02	0.991	0.990 - 0.992
2,2',3,3',4,4',5,6'-OcCB	195			0.81	M+2/M+4	0.88	0.76-1.02	0.946	0.945 - 0.947
2,2',3,3',4,4',5,6'-OcCB	196			0.71	M+2/M+4	0.89	0.76-1.02	0.916	0.915 - 0.916

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	1.04	M+2/M+4	0.90	0.76-1.02	1.045	1.043 - 1.048
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	0.70	M+2/M+4	0.92	0.76-1.02	1.114	1.112 - 1.116
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198						
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197						
2,2',3,3',4,5',6,6'-OcCB	201			1.04	M+2/M+4	0.89	0.76-1.02	1.022	1.020 - 1.024
2,2',3,4,4',5,5',6-OcCB	203			0.73	M+2/M+4	0.94	0.76-1.02	0.920	0.919 - 0.920
2,2',3,4,4',5,6,6'-OcCB	204			1.02	M+2/M+4	0.89	0.76-1.02	1.038	1.037 - 1.040
2,2',3,3',4,4',5,6,6'-NoCB	207			1.26	M+2/M+4	0.78	0.65-0.89	1.020	1.019 - 1.021

(1) Where applicable, custom lab flags have been used on this report.

(2) See Table 8, Method 1668A, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 3B

PCB CONGENER INITIAL CALIBRATION RELATIVE RESPONSES,
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

CAL Data Filename: PB8C_367 S: 1

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 07:33:58

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	RRF	MZ's FORMING RATIO ³	ION ABUND. RATIO	RATIO QC LIMITS ⁴	RRT	RRT QC LIMITS
13C12-2-MoCB	1L			1.04	M/M+2	3.14	2.66-3.60	0.720	0.705 - 0.736
13C12-4-MoCB	3L			0.99	M/M+2	3.13	2.66-3.60	0.859	0.843 - 0.875
13C12-2,2'-DiCB	4L			0.62	M/M+2	1.56	1.33-1.79	0.875	0.859 - 0.890
13C12-4,4'-DiCB	15L			0.95	M/M+2	1.54	1.33-1.79	1.254	1.238 - 1.269
13C12-2,2',6'-TriCB	19L			0.54	M/M+2	1.07	0.88-1.20	1.072	1.056 - 1.088
13C12-3,4,4'-TriCB	37L			1.33	M/M+2	1.03	0.88-1.20	1.093	1.083 - 1.103
13C12-2,2',6,6'-TeCB	54L			1.37	M/M+2	0.79	0.65-0.89	0.811	0.805 - 0.818
13C12-3,3',4,4'-TeCB	77L			1.12	M/M+2	0.75	0.65-0.89	1.397	1.391 - 1.404
13C12-3,4,4',5'-TeCB	81L			1.11	M/M+2	0.75	0.65-0.89	1.374	1.367 - 1.381
13C12-2,2',4,6,6'-PeCB	104L			1.11	M+2/M+4	1.56	1.32-1.78	0.808	0.802 - 0.813
13C12-2,3,3',4,4'-PeCB	105L			1.18	M+2/M+4	1.54	1.32-1.78	1.200	1.195 - 1.205
13C12-2,3,4,4',5'-PeCB	114L			1.10	M+2/M+4	1.55	1.32-1.78	1.179	1.174 - 1.184
13C12-2,3',4,4',5'-PeCB	118L			1.14	M+2/M+4	1.58	1.32-1.78	1.162	1.157 - 1.167
13C12-2',3,4,4',5'-PeCB	123L			1.18	M+2/M+4	1.58	1.32-1.78	1.151	1.146 - 1.157
13C12-3,3',4,4',5'-PeCB	126L			1.01	M+2/M+4	1.59	1.32-1.78	1.301	1.296 - 1.307
13C12-2,2',4,4',6,6'-HxCB	155L			1.24	M+2/M+4	1.25	1.05-1.43	0.785	0.781 - 0.789
13C12-2,3,3',4,4',5'-HxCB	156L	156L + 157L	C	1.20	M+2/M+4	1.25	1.05-1.43	1.108	1.104 - 1.112
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L						
13C12-2,3',4,4',5,5'-HxCB	167L			1.16	M+2/M+4	1.23	1.05-1.43	1.078	1.074 - 1.082
13C12-3,3',4,4',5,5'-HxCB	169L			1.13	M+2/M+4	1.27	1.05-1.43	1.192	1.188 - 1.196
13C12-2,2',3,3',4,4',5'-HpCB	170L			0.97	M+2/M+4	1.07	0.89-1.21	0.897	0.894 - 0.901
13C12-2,2',3,4,4',5,5'-HpCB	180L			1.21	M+2/M+4	1.08	0.89-1.21	0.872	0.869 - 0.876
13C12-2,2',3,4,5,6,6'-HpCB	188L			1.74	M+2/M+4	1.05	0.89-1.21	0.712	0.708 - 0.715
13C12-2,3,3',4,4',5,5'-HpCB	189L			1.27	M+2/M+4	1.00	0.89-1.21	0.959	0.956 - 0.962
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			1.36	M+2/M+4	0.89	0.76-1.02	0.817	0.814 - 0.821
13C12-2,3,3',4,4',5,5',6-OxCB	205L			1.36	M+2/M+4	0.88	0.76-1.02	1.009	1.005 - 1.014
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			0.96	M+2/M+4	0.76	0.65-0.89	1.043	1.039 - 1.048
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			1.29	M+2/M+4	0.77	0.65-0.89	0.949	0.945 - 0.952

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 3B

PCB CONGENER INITIAL CALIBRATION RELATIVE RESPONSES,
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

CAL Data Filename: PB8C_367 S: 1

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 07:33:58

LABELED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	RRF	MZ's FORMING RATIO ³	ION ABUND. RATIO	RATIO QC LIMITS ⁴	RRT	RRT QC LIMITS
13C12-3,4,4'-TriCB	37L			1.33	M/M+2	1.03	0.88-1.20	1.093	1.079 - 1.106
13C12-2,3',4,4',5-PeCB	118L			1.14	M+2/M+4	1.58	1.32-1.78	1.162	1.151 - 1.172
13C12-2,3',4,4',5,5'-HxCB	167L			1.16	M+2/M+4	1.23	1.05-1.43	1.078	1.070 - 1.086
ADDITIONAL STANDARD									
13C12-2,4',5-TriCB	31L			1.15	M/M+2	1.03	0.88-1.20	0.835	0.823 - 0.847
13C12-2,2',3,5',6-PeCB	95L			0.80	M+2/M+4	1.61	1.32-1.78	0.779	0.770 - 0.788
13C12-2,2',4,4',5,5'-HxCB	153L			0.97	M+2/M+4	1.26	1.05-1.43	0.897	0.890 - 0.905

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_367S1__Form346B_SJ2455366_GS78410.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 4A
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	07-Jul-2018	VER Data Filename:	PB8C_367 S: 11
Instrument ID:	HR GC/MS	Analysis Date:	25-Oct-2018
GC Column ID:	SPB OCTYL	Analysis Time:	18:11:56

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
2-MoCB	1			M/M+2	3.02	2.66-3.60	21.2	17.5 - 32.5
4-MoCB	3			M/M+2	3.08	2.66-3.60	22.8	17.5 - 32.5
2,2'-DiCB	4			M/M+2	1.50	1.33-1.79	20.7	17.5 - 32.5
4,4'-DiCB	15			M/M+2	1.47	1.33-1.79	24.6	19.6 - 36.4
2,2',6-TriCB	19			M/M+2	1.07	0.88-1.20	27.0	17.5 - 32.5
3,4,4'-TriCB	37			M/M+2	1.00	0.88-1.20	21.7	17.5 - 32.5
2,2',6,6'-TeCB	54			M/M+2	0.79	0.65-0.89	51.8	35.0 - 65.0
3,3',4,4'-TeCB	77			M/M+2	0.76	0.65-0.89	44.2	35.0 - 65.0
3,4,4',5-TeCB	81			M/M+2	0.75	0.65-0.89	46.7	35.0 - 65.0
2,2',4,6,6'-PeCB	104			M+2/M+4	1.58	1.32-1.78	54.4	35.0 - 65.0
2,3,3',4,4'-PeCB	105			M+2/M+4	1.49	1.32-1.78	46.8	35.0 - 65.0
2,3,4,4',5-PeCB	114			M+2/M+4	1.53	1.32-1.78	46.4	35.0 - 65.0
2,3',4,4',5-PeCB	118			M+2/M+4	1.52	1.32-1.78	44.1	35.0 - 65.0
2',3,4,4',5-PeCB	123			M+2/M+4	1.48	1.32-1.78	45.6	35.0 - 65.0
3,3',4,4',5-PeCB	126			M+2/M+4	1.52	1.32-1.78	46.3	39.0 - 72.4
2,2',4,4',6,6'-HxCB	155			M+2/M+4	1.28	1.05-1.43	54.2	35.0 - 65.0
2,3,3',4,4',5-HxCB	156	156 + 157	C	M+2/M+4	1.28	1.05-1.43	104	70.0 - 130
2,3,3',4,4',5'-HxCB	157	156 + 157	C156					
2,3',4,4',5,5'-HxCB	167			M+2/M+4	1.25	1.05-1.43	55.6	35.0 - 65.0
3,3',4,4',5,5'-HxCB	169			M+2/M+4	1.33	1.05-1.43	55.1	35.0 - 65.0
2,2',3,4',5,6,6'-HpCB	188			M+2/M+4	1.04	0.89-1.21	51.4	35.0 - 65.0
2,3,3',4,4',5,5'-HpCB	189			M+2/M+4	1.00	0.89-1.21	39.4	35.0 - 65.0
2,2',3,3',5,5',6,6'-OoCB	202			M+2/M+4	0.91	0.76-1.02	88.8	58.9 - 110
2,3,3',4,4',5,5',6-OoCB	205			M+2/M+4	0.88	0.76-1.02	75.3	52.5 - 97.5
2,2',3,3',4,4',5,5',6-NoCB	206			M+2/M+4	0.80	0.65-0.89	76.0	52.5 - 97.5
2,2',3,3',4,5,5',6,6'-NoCB	208			M+2/M+4	0.80	0.65-0.89	84.8	58.7 - 109
2,2',3,3',4,4',5,5',6,6'-DeCB	209			M+4/M+6	1.17	0.99-1.33	76.1	52.5 - 97.5

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1668A, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 4B
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018 VER Data Filename: PB8C_367 S: 11

Instrument ID: HR GC/MS Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL Analysis Time: 18:11:56

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	MZ's FORMING RATIO ³	ION ABUND. RATIO	QC LIMITS ⁴	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
13C12-2-MoCB	1L			M/M+2	3.15	2.66-3.60	94.9	50.0 - 150
13C12-4-MoCB	3L			M/M+2	3.12	2.66-3.60	94.3	50.0 - 150
13C12-2,2'-DiCB	4L			M/M+2	1.55	1.33-1.79	91.6	50.0 - 150
13C12-4,4'-DiCB	15L			M/M+2	1.54	1.33-1.79	92.2	50.0 - 150
13C12-2,2',6-TriCB	19L			M/M+2	1.07	0.88-1.20	97.1	50.0 - 150
13C12-3,4,4'-TriCB	37L			M/M+2	1.03	0.88-1.20	80.5	50.0 - 150
13C12-2,2',6,6'-TeCB	54L			M/M+2	0.79	0.65-0.89	92.0	50.0 - 150
13C12-3,3',4,4'-TeCB	77L			M/M+2	0.76	0.65-0.89	88.6	50.0 - 150
13C12-3,4,4',5-TeCB	81L			M/M+2	0.74	0.65-0.89	89.2	50.0 - 150
13C12-2,2',4,6,6'-PeCB	104L			M+2/M+4	1.58	1.32-1.78	76.2	50.0 - 150
13C12-2,3,3',4,4'-PeCB	105L			M+2/M+4	1.55	1.32-1.78	87.9	50.0 - 150
13C12-2,3,4,4',5-PeCB	114L			M+2/M+4	1.58	1.32-1.78	87.3	50.0 - 150
13C12-2,3',4,4',5-PeCB	118L			M+2/M+4	1.55	1.32-1.78	92.1	50.0 - 150
13C12-2',3,4,4',5-PeCB	123L			M+2/M+4	1.55	1.32-1.78	94.9	50.0 - 150
13C12-3,3',4,4',5-PeCB	126L			M+2/M+4	1.56	1.32-1.78	87.3	50.0 - 150
13C12-2,2',4,4',6,6'-HxCB	155L			M+2/M+4	1.28	1.05-1.43	74.8	50.0 - 150
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	M+2/M+4	1.25	1.05-1.43	195	100 - 300
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			M+2/M+4	1.26	1.05-1.43	97.9	50.0 - 150
13C12-3,3',4,4',5,5'-HxCB	169L			M+2/M+4	1.25	1.05-1.43	96.1	50.0 - 150
13C12-2,2',3,4',5,6,6'-HpCB	188L			M+2/M+4	1.06	0.89-1.21	85.7	50.0 - 150
13C12-2,3,3',4,4',5,5'-HpCB	189L			M+2/M+4	1.03	0.89-1.21	93.8	50.0 - 150
13C12-2,2',3,3',5,5',6,6'-OoCB	202L			M+2/M+4	0.91	0.76-1.02	68.1	50.0 - 150
13C12-2,3,3',4,4',5,5',6-OoCB	205L			M+2/M+4	0.86	0.76-1.02	92.8	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			M+2/M+4	0.76	0.65-0.89	85.8	50.0 - 150
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			M+2/M+4	0.77	0.65-0.89	87.3	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			M+4/M+6	1.18	0.99-1.33	72.8	50.0 - 150

CLEAN-UP STANDARD

13C12-2,4,4'-TriCB	28L			M/M+2	1.05	0.88-1.20	88.1	60.0 - 130
13C12-2,3,3',5,5'-PeCB	111L			M+2/M+4	1.61	1.32-1.78	88.2	60.0 - 130
13C12-2,2',3,3',5,5',6-HpCB	178L			M+2/M+4	1.05	0.89-1.21	84.0	60.0 - 130

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 6A
PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_367 S: 11

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 18:11:56

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RETENTION TIME REFERENCE	IUPAC NO. ²	RRT	RRT QC LIMITS
2-MoCB	1			13C12-2-MoCB	1L	1.001	0.999-1.004
4-MoCB	3			13C12-4-MoCB	3L	1.001	0.999-1.004
2,2'-DiCB	4			13C12-2,2'-DiCB	4L	1.001	0.999-1.004
4,4'-DiCB	15			13C12-4,4'-DiCB	15L	1.001	0.999-1.002
2,2',6-TriCB	19			13C12-2,2',6-TriCB	19L	1.001	0.999-1.003
3,4,4'-TriCB	37			13C12-3,4,4'-TriCB	37L	1.001	0.999-1.002
2,2',6,6'-TeCB	54			13C12-2,2',6,6'-TeCB	54L	1.002	0.999-1.002
3,3',4,4'-TeCB	77			13C12-3,3',4,4'-TeCB	77L	1.001	1.000-1.001
3,4,4',5-TeCB	81			13C12-3,4,4',5-TeCB	81L	1.000	1.000-1.001
2,2',4,6,6'-PeCB	104			13C12-2,2',4,6,6'-PeCB	104L	1.001	0.999-1.002
2,3,3',4,4'-PeCB	105			13C12-2,3,3',4,4'-PeCB	105L	1.001	1.000-1.001
2,3,4,4',5-PeCB	114			13C12-2,3,4,4',5-PeCB	114L	1.000	1.000-1.001
2,3',4,4',5-PeCB	118			13C12-2,3',4,4',5-PeCB	118L	1.001	1.000-1.001
2',3,4,4',5-PeCB	123			13C12-2',3,4,4',5-PeCB	123L	1.001	1.000-1.001
3,3',4,4',5-PeCB	126			13C12-3,3',4,4',5-PeCB	126L	1.000	1.000-1.001
2,2',4,4',6,6'-HxCB	155			13C12-2,2',4,4',6,6'-HxCB	155L	1.001	0.999-1.002
2,3,3',4,4',5-HxCB	156	156 + 157	C	13C12-2,3,3',4,4',5-HxCB and 13C12-2,3,3',4,4',5'-HxCB	156L/157L	1.001	0.999-1.003
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3',4,4',5,5'-HxCB	167			13C12-2,3',4,4',5,5'-HxCB	167L	1.001	1.000-1.001
3,3',4,4',5,5'-HxCB	169			13C12-3,3',4,4',5,5'-HxCB	169L	1.000	1.000-1.001
2,2',3,4',5,6,6'-HpCB	188			13C12-2,2',3,4',5,6,6'-HpCB	188L	1.000	1.000-1.001
2,3,3',4,4',5,5'-HpCB	189			13C12-2,3,3',4,4',5,5'-HpCB	189L	1.000	1.000-1.001
2,2',3,3',5,5',6,6'-OxCB	202			13C12-2,2',3,3',5,5',6,6'-OxCB	202L	1.001	1.000-1.001
2,3,3',4,4',5,5',6-OxCB	205			13C12-2,3,3',4,4',5,5',6-OxCB	205L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6-NoCB	206			13C12-2,2',3,3',4,4',5,5',6-NoCB	206L	1.001	1.000-1.001
2,2',3,3',4,5,5',6,6'-NoCB	208			13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L	1.000	1.000-1.001

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 6B
PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_367 S: 11

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 18:11:56

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	RETENTION TIME REFERENCE	IUPAC NO. ¹	RRT	RRT QC LIMITS
13C12-2-MoCB	1L			13C12-2,5-DiCB	9L	0.719	0.688-0.751
13C12-4-MoCB	3L			13C12-2,5-DiCB	9L	0.859	0.828-0.890
13C12-2,2'-DiCB	4L			13C12-2,5-DiCB	9L	0.874	0.842-0.905
13C12-4,4'-DiCB	15L			13C12-2,5-DiCB	9L	1.254	1.222-1.285
13C12-2,2',6-TriCB	19L			13C12-2,5-DiCB	9L	1.072	1.041-1.103
13C12-3,4,4'-TriCB	37L			13C12-2,2',5,5'-TeCB	52L	1.092	1.072-1.112
13C12-2,2',6,6'-TeCB	54L			13C12-2,2',5,5'-TeCB	52L	0.811	0.797-0.824
13C12-3,3',4,4'-TeCB	77L			13C12-2,2',5,5'-TeCB	52L	1.397	1.384-1.411
13C12-3,4,4',5-TeCB	81L			13C12-2,2',5,5'-TeCB	52L	1.374	1.361-1.387
13C12-2,2',4,6,6'-PeCB	104L			13C12-2,2',4,5,5'-PeCB	101L	0.808	0.798-0.818
13C12-2,3,3',4,4'-PeCB	105L			13C12-2,2',4,5,5'-PeCB	101L	1.201	1.190-1.211
13C12-2,3,4,4',5-PeCB	114L			13C12-2,2',4,5,5'-PeCB	101L	1.180	1.170-1.190
13C12-2,3',4,4',5-PeCB	118L			13C12-2,2',4,5,5'-PeCB	101L	1.162	1.152-1.173
13C12-2',3,4,4',5-PeCB	123L			13C12-2,2',4,5,5'-PeCB	101L	1.152	1.141-1.162
13C12-3,3',4,4',5-PeCB	126L			13C12-2,2',4,5,5'-PeCB	101L	1.303	1.292-1.313
13C12-2,2',4,4',6,6'-HxCB	155L			13C12-2,2',3,4,4',5'-HxCB	138L	0.785	0.777-0.793
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	13C12-2,2',3,4,4',5'-HxCB	138L	1.108	1.100-1.116
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L				
13C12-2,3',4,4',5,5'-HxCB	167L			13C12-2,2',3,4,4',5'-HxCB	138L	1.078	1.070-1.086
13C12-3,3',4,4',5,5'-HxCB	169L			13C12-2,2',3,4,4',5'-HxCB	138L	1.192	1.184-1.200
13C12-2,2',3,4',5,6,6'-HpCB	188L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.712	0.705-0.718
13C12-2,3,3',4,4',5,5'-HpCB	189L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.959	0.953-0.965
13C12-2,2',3,3',5,5',6,6'-OcCB	202L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.817	0.811-0.823
13C12-2,3,3',4,4',5,5',6-OcCB	205L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	1.009	1.000-1.018
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	1.043	1.034-1.052
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.949	0.942-0.955
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	1.074	1.065-1.084

CLEANUP STANDARD

13C12-2,4,4'-TriCB	28L			13C12-2,2',5,5'-TeCB	52L	0.925	0.911-0.938
13C12-2,3,3',5,5'-PeCB	111L			13C12-2,2',4,5,5'-PeCB	101L	1.088	1.078-1.099
13C12-2,2',3,3',5,5',6-HpCB	178L			13C12-2,2',3,4,4',5'-HxCB	138L	1.012	1.003-1.020

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 4A
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	07-Jul-2018	VER Data Filename:	PB8C_368 S: 1
Instrument ID:	HR GC/MS	Analysis Date:	25-Oct-2018
GC Column ID:	SPB OCTYL	Analysis Time:	19:34:37

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
2-MoCB	1			M/M+2	3.01	2.66-3.60	21.6	17.5 - 32.5
4-MoCB	3			M/M+2	2.98	2.66-3.60	22.4	17.5 - 32.5
2,2'-DiCB	4			M/M+2	1.46	1.33-1.79	21.4	17.5 - 32.5
4,4'-DiCB	15			M/M+2	1.50	1.33-1.79	24.7	19.6 - 36.4
2,2',6-TriCB	19			M/M+2	1.06	0.88-1.20	26.9	17.5 - 32.5
3,4,4'-TriCB	37			M/M+2	0.99	0.88-1.20	21.9	17.5 - 32.5
2,2',6,6'-TeCB	54			M/M+2	0.79	0.65-0.89	52.0	35.0 - 65.0
3,3',4,4'-TeCB	77			M/M+2	0.79	0.65-0.89	45.3	35.0 - 65.0
3,4,4',5-TeCB	81			M/M+2	0.77	0.65-0.89	48.5	35.0 - 65.0
2,2',4,6,6'-PeCB	104			M+2/M+4	1.60	1.32-1.78	55.3	35.0 - 65.0
2,3,3',4,4'-PeCB	105			M+2/M+4	1.57	1.32-1.78	46.9	35.0 - 65.0
2,3,4,4',5-PeCB	114			M+2/M+4	1.52	1.32-1.78	46.9	35.0 - 65.0
2,3',4,4',5-PeCB	118			M+2/M+4	1.53	1.32-1.78	44.7	35.0 - 65.0
2',3,4,4',5-PeCB	123			M+2/M+4	1.54	1.32-1.78	45.3	35.0 - 65.0
3,3',4,4',5-PeCB	126			M+2/M+4	1.60	1.32-1.78	46.9	39.0 - 72.4
2,2',4,4',6,6'-HxCB	155			M+2/M+4	1.26	1.05-1.43	53.8	35.0 - 65.0
2,3,3',4,4',5-HxCB	156	156 + 157	C	M+2/M+4	1.28	1.05-1.43	105	70.0 - 130
2,3,3',4,4',5'-HxCB	157	156 + 157	C156					
2,3',4,4',5,5'-HxCB	167			M+2/M+4	1.24	1.05-1.43	54.8	35.0 - 65.0
3,3',4,4',5,5'-HxCB	169			M+2/M+4	1.30	1.05-1.43	56.5	35.0 - 65.0
2,2',3,4',5,6,6'-HpCB	188			M+2/M+4	1.05	0.89-1.21	51.8	35.0 - 65.0
2,3,3',4,4',5,5'-HpCB	189			M+2/M+4	1.02	0.89-1.21	43.0	35.0 - 65.0
2,2',3,3',5,5',6,6'-OoCB	202			M+2/M+4	0.88	0.76-1.02	87.8	58.9 - 110
2,3,3',4,4',5,5',6-OoCB	205			M+2/M+4	0.89	0.76-1.02	74.3	52.5 - 97.5
2,2',3,3',4,4',5,5',6-NoCB	206			M+2/M+4	0.80	0.65-0.89	76.6	52.5 - 97.5
2,2',3,3',4,5,5',6,6'-NoCB	208			M+2/M+4	0.78	0.65-0.89	86.0	58.7 - 109
2,2',3,3',4,4',5,5',6,6'-DeCB	209			M+4/M+6	1.17	0.99-1.33	75.8	52.5 - 97.5

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1668A, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 4B
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018 VER Data Filename: PB8C_368 S: 1

Instrument ID: HR GC/MS Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL Analysis Time: 19:34:37

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	MZ's FORMING RATIO ³	ION ABUND. RATIO	QC LIMITS ⁴	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
13C12-2-MoCB	1L			M/M+2	3.14	2.66-3.60	93.0	50.0 - 150
13C12-4-MoCB	3L			M/M+2	3.14	2.66-3.60	91.9	50.0 - 150
13C12-2,2'-DiCB	4L			M/M+2	1.56	1.33-1.79	90.0	50.0 - 150
13C12-4,4'-DiCB	15L			M/M+2	1.56	1.33-1.79	87.5	50.0 - 150
13C12-2,2',6-TriCB	19L			M/M+2	1.07	0.88-1.20	96.6	50.0 - 150
13C12-3,4,4'-TriCB	37L			M/M+2	1.01	0.88-1.20	78.6	50.0 - 150
13C12-2,2',6,6'-TeCB	54L			M/M+2	0.79	0.65-0.89	93.4	50.0 - 150
13C12-3,3',4,4'-TeCB	77L			M/M+2	0.76	0.65-0.89	88.4	50.0 - 150
13C12-3,4,4',5-TeCB	81L			M/M+2	0.75	0.65-0.89	89.1	50.0 - 150
13C12-2,2',4,6,6'-PeCB	104L			M+2/M+4	1.63	1.32-1.78	74.9	50.0 - 150
13C12-2,3,3',4,4'-PeCB	105L			M+2/M+4	1.52	1.32-1.78	82.3	50.0 - 150
13C12-2,3,4,4',5-PeCB	114L			M+2/M+4	1.55	1.32-1.78	82.1	50.0 - 150
13C12-2,3',4,4',5-PeCB	118L			M+2/M+4	1.52	1.32-1.78	81.7	50.0 - 150
13C12-2',3,4,4',5-PeCB	123L			M+2/M+4	1.57	1.32-1.78	84.1	50.0 - 150
13C12-3,3',4,4',5-PeCB	126L			M+2/M+4	1.61	1.32-1.78	84.2	50.0 - 150
13C12-2,2',4,4',6,6'-HxCB	155L			M+2/M+4	1.22	1.05-1.43	75.7	50.0 - 150
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	M+2/M+4	1.23	1.05-1.43	178	100 - 300
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			M+2/M+4	1.25	1.05-1.43	91.2	50.0 - 150
13C12-3,3',4,4',5,5'-HxCB	169L			M+2/M+4	1.24	1.05-1.43	87.5	50.0 - 150
13C12-2,2',3,4',5,6,6'-HpCB	188L			M+2/M+4	1.04	0.89-1.21	88.3	50.0 - 150
13C12-2,3,3',4,4',5,5'-HpCB	189L			M+2/M+4	1.00	0.89-1.21	81.9	50.0 - 150
13C12-2,2',3,3',5,5',6,6'-OoCB	202L			M+2/M+4	0.92	0.76-1.02	73.0	50.0 - 150
13C12-2,3,3',4,4',5,5',6-OoCB	205L			M+2/M+4	0.87	0.76-1.02	92.7	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			M+2/M+4	0.76	0.65-0.89	85.2	50.0 - 150
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			M+2/M+4	0.78	0.65-0.89	89.3	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			M+4/M+6	1.18	0.99-1.33	71.3	50.0 - 150

CLEAN-UP STANDARD

13C12-2,4,4'-TriCB	28L			M/M+2	1.02	0.88-1.20	89.0	60.0 - 130
13C12-2,3,3',5,5'-PeCB	111L			M+2/M+4	1.62	1.32-1.78	88.8	60.0 - 130
13C12-2,2',3,3',5,5',6-HpCB	178L			M+2/M+4	1.08	0.89-1.21	85.7	60.0 - 130

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

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SGS AXYS METHOD MLA-010 Rev 12

Form 6A
PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_368 S: 1

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 19:34:37

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RETENTION TIME REFERENCE	IUPAC NO. ²	RRT	RRT QC LIMITS
2-MoCB	1			13C12-2-MoCB	1L	1.001	0.999-1.004
4-MoCB	3			13C12-4-MoCB	3L	1.001	0.999-1.004
2,2'-DiCB	4			13C12-2,2'-DiCB	4L	1.002	0.999-1.004
4,4'-DiCB	15			13C12-4,4'-DiCB	15L	1.001	0.999-1.002
2,2',6-TriCB	19			13C12-2,2',6-TriCB	19L	1.001	0.999-1.003
3,4,4'-TriCB	37			13C12-3,4,4'-TriCB	37L	1.001	0.999-1.002
2,2',6,6'-TeCB	54			13C12-2,2',6,6'-TeCB	54L	1.002	0.999-1.002
3,3',4,4'-TeCB	77			13C12-3,3',4,4'-TeCB	77L	1.000	1.000-1.001
3,4,4',5-TeCB	81			13C12-3,4,4',5-TeCB	81L	1.000	1.000-1.001
2,2',4,6,6'-PeCB	104			13C12-2,2',4,6,6'-PeCB	104L	1.001	0.999-1.002
2,3,3',4,4'-PeCB	105			13C12-2,3,3',4,4'-PeCB	105L	1.001	1.000-1.001
2,3,4,4',5-PeCB	114			13C12-2,3,4,4',5-PeCB	114L	1.001	1.000-1.001
2,3',4,4',5-PeCB	118			13C12-2,3',4,4',5-PeCB	118L	1.001	1.000-1.001
2',3,4,4',5-PeCB	123			13C12-2',3,4,4',5-PeCB	123L	1.001	1.000-1.001
3,3',4,4',5-PeCB	126			13C12-3,3',4,4',5-PeCB	126L	1.001	1.000-1.001
2,2',4,4',6,6'-HxCB	155			13C12-2,2',4,4',6,6'-HxCB	155L	1.001	0.999-1.002
2,3,3',4,4',5-HxCB	156	156 + 157	C	13C12-2,3,3',4,4',5-HxCB and 13C12-2,3,3',4,4',5'-HxCB	156L/157L	1.000	0.998-1.003
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3',4,4',5,5'-HxCB	167			13C12-2,3',4,4',5,5'-HxCB	167L	1.001	1.000-1.001
3,3',4,4',5,5'-HxCB	169			13C12-3,3',4,4',5,5'-HxCB	169L	1.000	1.000-1.001
2,2',3,4',5,6,6'-HpCB	188			13C12-2,2',3,4',5,6,6'-HpCB	188L	1.001	1.000-1.001
2,3,3',4,4',5,5'-HpCB	189			13C12-2,3,3',4,4',5,5'-HpCB	189L	1.000	1.000-1.001
2,2',3,3',5,5',6,6'-OxCB	202			13C12-2,2',3,3',5,5',6,6'-OxCB	202L	1.001	1.000-1.001
2,3,3',4,4',5,5',6-OxCB	205			13C12-2,3,3',4,4',5,5',6-OxCB	205L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6-NoCB	206			13C12-2,2',3,3',4,4',5,5',6-NoCB	206L	1.001	1.000-1.001
2,2',3,3',4,5,5',6,6'-NoCB	208			13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L	1.000	1.000-1.001

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 6B

PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_368 S: 1

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 19:34:37

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	RETENTION TIME REFERENCE	IUPAC NO. ¹	RRT	RRT QC LIMITS
13C12-2-MoCB	1L			13C12-2,5-DiCB	9L	0.721	0.689-0.752
13C12-4-MoCB	3L			13C12-2,5-DiCB	9L	0.859	0.828-0.891
13C12-2,2'-DiCB	4L			13C12-2,5-DiCB	9L	0.874	0.843-0.905
13C12-4,4'-DiCB	15L			13C12-2,5-DiCB	9L	1.253	1.222-1.285
13C12-2,2',6'-TriCB	19L			13C12-2,5-DiCB	9L	1.072	1.041-1.103
13C12-3,4,4'-TriCB	37L			13C12-2,2',5,5'-TeCB	52L	1.092	1.072-1.112
13C12-2,2',6,6'-TeCB	54L			13C12-2,2',5,5'-TeCB	52L	0.811	0.797-0.824
13C12-3,3',4,4'-TeCB	77L			13C12-2,2',5,5'-TeCB	52L	1.397	1.384-1.410
13C12-3,4,4',5'-TeCB	81L			13C12-2,2',5,5'-TeCB	52L	1.374	1.360-1.387
13C12-2,2',4,6,6'-PeCB	104L			13C12-2,2',4,5,5'-PeCB	101L	0.808	0.798-0.819
13C12-2,3,3',4,4'-PeCB	105L			13C12-2,2',4,5,5'-PeCB	101L	1.200	1.190-1.210
13C12-2,3,4,4',5'-PeCB	114L			13C12-2,2',4,5,5'-PeCB	101L	1.179	1.168-1.189
13C12-2,3',4,4',5'-PeCB	118L			13C12-2,2',4,5,5'-PeCB	101L	1.162	1.151-1.172
13C12-2',3,4,4',5'-PeCB	123L			13C12-2,2',4,5,5'-PeCB	101L	1.151	1.140-1.161
13C12-3,3',4,4',5'-PeCB	126L			13C12-2,2',4,5,5'-PeCB	101L	1.301	1.291-1.312
13C12-2,2',4,4',6,6'-HxCB	155L			13C12-2,2',3,4,4',5'-HxCB	138L	0.785	0.777-0.793
13C12-2,3,3',4,4',5'-HxCB	156L	156L + 157L	C	13C12-2,2',3,4,4',5'-HxCB	138L	1.108	1.100-1.116
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L				
13C12-2,3',4,4',5,5'-HxCB	167L			13C12-2,2',3,4,4',5'-HxCB	138L	1.078	1.069-1.086
13C12-3,3',4,4',5,5'-HxCB	169L			13C12-2,2',3,4,4',5'-HxCB	138L	1.192	1.184-1.200
13C12-2,2',3,4',5,6,6'-HpCB	188L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.712	0.705-0.718
13C12-2,3,3',4,4',5,5'-HpCB	189L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.959	0.953-0.966
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.817	0.811-0.824
13C12-2,3,3',4,4',5,5',6-OxCB	205L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	1.009	1.000-1.019
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	1.043	1.034-1.053
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.949	0.942-0.955
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	1.074	1.065-1.084

CLEANUP STANDARD

13C12-2,4,4'-TriCB	28L			13C12-2,2',5,5'-TeCB	52L	0.925	0.911-0.938
13C12-2,3,3',5,5'-PeCB	111L			13C12-2,2',4,5,5'-PeCB	101L	1.087	1.077-1.097
13C12-2,2',3,3',5,5',6-HpCB	178L			13C12-2,2',3,4,4',5'-HxCB	138L	1.011	1.003-1.020

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 3A

PCB CONGENER INITIAL CALIBRATION RELATIVE RESPONSES,
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

CAL Data Filename: PB8C_368 S: 1

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 19:34:37

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
3-MoCB	2			0.93	M/M+2	3.05	2.66-3.60	0.988	0.984 - 0.992
2,3-DiCB	5			0.94	M/M+2	1.49	1.33-1.79	1.198	1.195 - 1.202
2,3'-DiCB	6			1.07	M/M+2	1.48	1.33-1.79	1.177	1.173 - 1.180
2,4-DiCB	7			1.07	M/M+2	1.50	1.33-1.79	1.158	1.154 - 1.161
2,4'-DiCB	8			1.19	M/M+2	1.48	1.33-1.79	1.208	1.204 - 1.211
2,5-DiCB	9			1.10	M/M+2	1.51	1.33-1.79	1.147	1.143 - 1.150
2,6-DiCB	10			1.07	M/M+2	1.49	1.33-1.79	1.014	1.011 - 1.018
3,3'-DiCB	11			1.02	M/M+2	1.52	1.33-1.79	0.969	0.967 - 0.972
3,4-DiCB	12	12 + 13	C	1.02	M/M+2	1.49	1.33-1.79	0.985	0.983 - 0.988
3,4'-DiCB	13	12 + 13	C12						
3,5-DiCB	14			1.03	M/M+2	1.50	1.33-1.79	0.926	0.923 - 0.928
2,2',3-TriCB	16			0.94	M/M+2	1.06	0.88-1.20	1.165	1.162 - 1.168
2,2',4-TriCB	17			1.06	M/M+2	1.05	0.88-1.20	1.138	1.135 - 1.141
2,2',5-TriCB	18	18 + 30	C	1.25	M/M+2	1.06	0.88-1.20	1.112	1.109 - 1.115
2,3,3'-TriCB	20	20 + 28	C	1.10	M/M+2	1.00	0.88-1.20	0.849	0.846 - 0.852
2,3,4-TriCB	21	21 + 33	C	1.16	M/M+2	1.02	0.88-1.20	0.855	0.852 - 0.858
2,3,4'-TriCB	22			0.99	M/M+2	1.02	0.88-1.20	0.872	0.870 - 0.874
2,3,5-TriCB	23			1.08	M/M+2	1.00	0.88-1.20	1.282	1.279 - 1.285
2,3,6-TriCB	24			1.38	M/M+2	1.06	0.88-1.20	1.159	1.156 - 1.161
2,3',4-TriCB	25			1.27	M/M+2	1.00	0.88-1.20	0.825	0.823 - 0.827
2,3',5-TriCB	26	26 + 29	C	1.09	M/M+2	0.99	0.88-1.20	1.302	1.297 - 1.306
2,3',6-TriCB	27			1.50	M/M+2	1.05	0.88-1.20	1.151	1.148 - 1.154
2,4,4'-TriCB	28	20 + 28	C20						
2,4,5-TriCB	29	26 + 29	C26						
2,4,6-TriCB	30	18 + 30	C18						
2,4',5-TriCB	31			1.16	M/M+2	1.03	0.88-1.20	0.837	0.835 - 0.839
2,4',6-TriCB	32			1.15	M/M+2	1.01	0.88-1.20	1.197	1.195 - 1.200
2',3,4-TriCB	33	21 + 33	C21						
2',3,5-TriCB	34			1.03	M/M+2	0.99	0.88-1.20	1.273	1.270 - 1.276
3,3',4-TriCB	35			1.08	M/M+2	1.01	0.88-1.20	0.986	0.984 - 0.988
3,3',5-TriCB	36			1.17	M/M+2	1.03	0.88-1.20	0.932	0.930 - 0.933
3,4,5-TriCB	38			1.08	M/M+2	1.01	0.88-1.20	0.967	0.965 - 0.969
3,4',5-TriCB	39			1.11	M/M+2	1.01	0.88-1.20	0.946	0.944 - 0.948
2,2',3,3'-TeCB	40	40 + 41 + 71	C	0.88	M/M+2	0.78	0.65-0.89	1.336	1.332 - 1.340
2,2',3,4-TeCB	41	40 + 41 + 71	C40						
2,2',3,4'-TeCB	42			0.86	M/M+2	0.78	0.65-0.89	1.312	1.310 - 1.315
2,2',3,5-TeCB	43			0.73	M/M+2	0.77	0.65-0.89	1.247	1.245 - 1.250
2,2',3,5'-TeCB	44	44 + 47 + 65	C	0.99	M/M+2	0.78	0.65-0.89	1.286	1.282 - 1.290
2,2',3,6-TeCB	45	45 + 51	C	0.90	M/M+2	0.78	0.65-0.89	1.147	1.143 - 1.151
2,2',3,6'-TeCB	46			0.78	M/M+2	0.78	0.65-0.89	1.161	1.159 - 1.164
2,2',4,4'-TeCB	47	44 + 47 + 65	C44						
2,2',4,5-TeCB	48			0.88	M/M+2	0.77	0.65-0.89	1.274	1.271 - 1.276
2,2',4,5'-TeCB	49	49 + 69	C	1.06	M/M+2	0.78	0.65-0.89	1.258	1.254 - 1.262
2,2',4,6-TeCB	50	50 + 53	C	0.94	M/M+2	0.78	0.65-0.89	1.113	1.108 - 1.117
2,2',4,6'-TeCB	51	45 + 51	C45						
2,2',5,5'-TeCB	52			0.94	M/M+2	0.78	0.65-0.89	1.234	1.232 - 1.237
2,2',5,6'-TeCB	53	50 + 53	C50						
2,3,3',4-TeCB	55			0.90	M/M+2	0.77	0.65-0.89	0.889	0.887 - 0.890
2,3,3',4'-TeCB	56			0.90	M/M+2	0.79	0.65-0.89	0.904	0.903 - 0.906

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
2,3,3',5'-TeCB	57			0.99	M/M+2	0.77	0.65-0.89	0.843	0.842 - 0.845
2,3,3',5'-TeCB	58			0.94	M/M+2	0.78	0.65-0.89	0.850	0.849 - 0.852
2,3,3',6'-TeCB	59	59 + 62 + 75	C	1.19	M/M+2	0.78	0.65-0.89	1.302	1.297 - 1.306
2,3,4,4'-TeCB	60			0.90	M/M+2	0.77	0.65-0.89	0.911	0.909 - 0.912
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C	0.97	M/M+2	0.75	0.65-0.89	0.873	0.871 - 0.876
2,3,4,6'-TeCB	62	59 + 62 + 75	C59						
2,3,4',5'-TeCB	63			0.98	M/M+2	0.79	0.65-0.89	0.864	0.862 - 0.865
2,3,4',6'-TeCB	64			1.24	M/M+2	0.78	0.65-0.89	1.349	1.347 - 1.352
2,3,5,6'-TeCB	65	44 + 47 + 65	C44						
2,3',4,4'-TeCB	66			0.96	M/M+2	0.78	0.65-0.89	0.884	0.882 - 0.885
2,3',4,5'-TeCB	67			1.16	M/M+2	0.75	0.65-0.89	0.855	0.854 - 0.857
2,3',4,5'-TeCB	68			1.02	M/M+2	0.76	0.65-0.89	0.831	0.829 - 0.832
2,3',4,6'-TeCB	69	49 + 69	C49						
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61						
2,3',4',6'-TeCB	71	40 + 41 + 71	C40						
2,3',5,5'-TeCB	72			1.04	M/M+2	0.76	0.65-0.89	0.822	0.821 - 0.823
2,3',5,6'-TeCB	73			1.22	M/M+2	0.78	0.65-0.89	1.241	1.238 - 1.243
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61						
2,4,4',6'-TeCB	75	59 + 62 + 75	C59						
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61						
3,3',4,5'-TeCB	78			0.91	M/M+2	0.77	0.65-0.89	0.986	0.985 - 0.988
3,3',4,5'-TeCB	79			1.10	M/M+2	0.79	0.65-0.89	0.970	0.968 - 0.971
3,3',5,5'-TeCB	80			1.03	M/M+2	0.77	0.65-0.89	0.923	0.921 - 0.924
2,2',3,3',4'-PeCB	82			0.80	M+2/M+4	1.55	1.32-1.78	0.934	0.932 - 0.935
2,2',3,3',5'-PeCB	83	83 + 99	C	0.87	M+2/M+4	1.56	1.32-1.78	0.884	0.882 - 0.887
2,2',3,3',6'-PeCB	84			0.83	M+2/M+4	1.58	1.32-1.78	1.163	1.161 - 1.165
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	1.05	M+2/M+4	1.56	1.32-1.78	0.919	0.917 - 0.922
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C	1.03	M+2/M+4	1.57	1.32-1.78	0.900	0.897 - 0.904
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86						
2,2',3,4,6'-PeCB	88	88 + 91	C	0.90	M+2/M+4	1.57	1.32-1.78	1.153	1.149 - 1.157
2,2',3,4,6'-PeCB	89			0.85	M+2/M+4	1.58	1.32-1.78	1.182	1.180 - 1.184
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C	1.04	M+2/M+4	1.59	1.32-1.78	0.868	0.866 - 0.871
2,2',3,4',6'-PeCB	91	88 + 91	C88						
2,2',3,5,5'-PeCB	92			0.89	M+2/M+4	1.61	1.32-1.78	0.853	0.851 - 0.854
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C	0.94	M+2/M+4	1.57	1.32-1.78	1.129	1.118 - 1.140
2,2',3,5,6'-PeCB	94			0.85	M+2/M+4	1.56	1.32-1.78	1.102	1.100 - 1.104
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93						
2,2',3,6,6'-PeCB	96			1.16	M+2/M+4	1.59	1.32-1.78	1.015	1.012 - 1.019
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86						
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93						
2,2',4,4',5'-PeCB	99	83 + 99	C83						
2,2',4,4',6'-PeCB	100	93 + 95 + 98 + 100 + 102	C93						
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90						
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93						
2,2',4,5',6'-PeCB	103			1.04	M+2/M+4	1.57	1.32-1.78	1.093	1.091 - 1.095
2,3,3',4,5'-PeCB	106			1.03	M+2/M+4	1.54	1.32-1.78	1.004	1.002 - 1.005
2,3,3',4',5'-PeCB	107	107 + 124	C	0.94	M+2/M+4	1.54	1.32-1.78	0.991	0.988 - 0.993
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86						
2,3,3',4,6'-PeCB	109			0.97	M+2/M+4	1.53	1.32-1.78	0.997	0.996 - 0.999
2,3,3',4',6'-PeCB	110	110 + 115	C	1.19	M+2/M+4	1.58	1.32-1.78	0.926	0.924 - 0.928
2,3,3',5,5'-PeCB	111			1.19	M+2/M+4	1.58	1.32-1.78	0.945	0.944 - 0.947
2,3,3',5,6'-PeCB	112			1.23	M+2/M+4	1.60	1.32-1.78	0.889	0.888 - 0.891
2,3,3',5',6'-PeCB	113	90 + 101 + 113	C90						
2,3,4,4',6'-PeCB	115	110 + 115	C110						
2,3,4,5,6'-PeCB	116	85 + 116 + 117	C85						
2,3,4',5,6'-PeCB	117	85 + 116 + 117	C85						
2,3',4,4',6'-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86						
2,3',4,5,5'-PeCB	120			1.24	M+2/M+4	1.60	1.32-1.78	0.959	0.957 - 0.960
2,3',4,5',6'-PeCB	121			1.18	M+2/M+4	1.60	1.32-1.78	1.199	1.198 - 1.201
2',3,3',4,5'-PeCB	122			0.85	M+2/M+4	1.56	1.32-1.78	1.010	1.008 - 1.011
2',3,4,5,5'-PeCB	124	107 + 124	C107						
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86						

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
3,3',4,5,5'-PeCB	127			0.92	M+2/M+4	1.57	1.32-1.78	1.041	1.039 - 1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C	1.01	M+2/M+4	1.24	1.05-1.43	0.958	0.957 - 0.960
2,2',3,3',4,5'-HxCB	129	129 + 138 + 160 + 163	C	0.98	M+2/M+4	1.25	1.05-1.43	0.930	0.927 - 0.933
2,2',3,3',4,5'-HxCB	130			0.76	M+2/M+4	1.24	1.05-1.43	0.913	0.912 - 0.914
2,2',3,3',4,6'-HxCB	131			0.82	M+2/M+4	1.26	1.05-1.43	1.160	1.158 - 1.162
2,2',3,3',4,6'-HxCB	132			0.78	M+2/M+4	1.21	1.05-1.43	1.176	1.173 - 1.178
2,2',3,3',5,5'-HxCB	133			0.82	M+2/M+4	1.25	1.05-1.43	1.192	1.190 - 1.194
2,2',3,3',5,6'-HxCB	134	134 + 143	C	0.81	M+2/M+4	1.27	1.05-1.43	1.142	1.140 - 1.145
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	0.85	M+2/M+4	1.27	1.05-1.43	1.107	1.101 - 1.113
2,2',3,3',6,6'-HxCB	136			1.11	M+2/M+4	1.24	1.05-1.43	1.025	1.024 - 1.027
2,2',3,4,4',5'-HxCB	137			0.83	M+2/M+4	1.26	1.05-1.43	0.918	0.917 - 0.919
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129						
2,2',3,4,4',6'-HxCB	139	139 + 140	C	0.92	M+2/M+4	1.24	1.05-1.43	1.154	1.151 - 1.156
2,2',3,4,4',6'-HxCB	140	139 + 140	C139						
2,2',3,4,5,5'-HxCB	141			0.85	M+2/M+4	1.26	1.05-1.43	0.904	0.902 - 0.905
2,2',3,4,5,6'-HxCB	142			0.81	M+2/M+4	1.27	1.05-1.43	1.165	1.164 - 1.167
2,2',3,4,5,6'-HxCB	143	134 + 143	C134						
2,2',3,4,5,6'-HxCB	144			0.83	M+2/M+4	1.26	1.05-1.43	1.122	1.121 - 1.124
2,2',3,4,6,6'-HxCB	145			1.03	M+2/M+4	1.26	1.05-1.43	1.035	1.033 - 1.036
2,2',3,4',5,5'-HxCB	146			0.99	M+2/M+4	1.25	1.05-1.43	0.884	0.883 - 0.885
2,2',3,4',5,6'-HxCB	147	147 + 149	C	0.93	M+2/M+4	1.24	1.05-1.43	1.134	1.131 - 1.137
2,2',3,4',5,6'-HxCB	148			0.81	M+2/M+4	1.22	1.05-1.43	1.084	1.082 - 1.085
2,2',3,4',5',6'-HxCB	149	147 + 149	C147						
2,2',3,4',6,6'-HxCB	150			1.06	M+2/M+4	1.27	1.05-1.43	1.013	1.011 - 1.014
2,2',3,5,5',6'-HxCB	151	135 + 151 + 154	C135						
2,2',3,5,6,6'-HxCB	152			1.15	M+2/M+4	1.23	1.05-1.43	1.007	1.006 - 1.009
2,2',4,4',5,5'-HxCB	153	153 + 168	C	1.08	M+2/M+4	1.27	1.05-1.43	0.899	0.897 - 0.901
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135						
2,3,3',4,4',6'-HxCB	158			1.26	M+2/M+4	1.25	1.05-1.43	0.938	0.937 - 0.939
2,3,3',4,5,5'-HxCB	159			1.17	M+2/M+4	1.25	1.05-1.43	0.982	0.981 - 0.984
2,3,3',4,5,6'-HxCB	160	129 + 138 + 160 + 163	C129						
2,3,3',4,5',6'-HxCB	161			1.13	M+2/M+4	1.27	1.05-1.43	0.887	0.886 - 0.888
2,3,3',4',5,5'-HxCB	162			1.28	M+2/M+4	1.25	1.05-1.43	0.989	0.988 - 0.990
2,3,3',4',5,6'-HxCB	163	129 + 138 + 160 + 163	C129						
2,3,3',4',5',6'-HxCB	164			1.14	M+2/M+4	1.24	1.05-1.43	0.921	0.920 - 0.922
2,3,3',5,5',6'-HxCB	165			1.03	M+2/M+4	1.26	1.05-1.43	0.878	0.877 - 0.879
2,3,4,4',5,6'-HxCB	166	128 + 166	C128						
2,3',4,4',5',6'-HxCB	168	153 + 168	C153						
2,2',3,3',4,4',5'-HpCB	170			1.16	M+2/M+4	1.06	0.89-1.21	1.000	0.999 - 1.001
2,2',3,3',4,4',6'-HpCB	171	171 + 173	C	0.78	M+2/M+4	1.05	0.89-1.21	1.163	1.161 - 1.165
2,2',3,3',4,5,5'-HpCB	172			0.77	M+2/M+4	1.03	0.89-1.21	0.896	0.895 - 0.897
2,2',3,3',4,5,6'-HpCB	173	171 + 173	C171						
2,2',3,3',4,5,6'-HpCB	174			0.87	M+2/M+4	1.04	0.89-1.21	1.134	1.133 - 1.136
2,2',3,3',4,5',6'-HpCB	175			0.85	M+2/M+4	1.06	0.89-1.21	1.103	1.101 - 1.104
2,2',3,3',4,6,6'-HpCB	176			1.14	M+2/M+4	1.05	0.89-1.21	1.034	1.033 - 1.036
2,2',3,3',4',5,6'-HpCB	177			1.08	M+2/M+4	1.05	0.89-1.21	1.146	1.145 - 1.148
2,2',3,3',5,5',6'-HpCB	178			0.84	M+2/M+4	1.07	0.89-1.21	1.085	1.084 - 1.087
2,2',3,3',5,6,6'-HpCB	179			1.16	M+2/M+4	1.05	0.89-1.21	1.011	1.009 - 1.012
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	1.03	M+2/M+4	1.06	0.89-1.21	1.000	0.999 - 1.001
2,2',3,4,4',5,6'-HpCB	181			0.84	M+2/M+4	1.06	0.89-1.21	1.157	1.156 - 1.159
2,2',3,4,4',5,6'-HpCB	182			0.90	M+2/M+4	1.04	0.89-1.21	1.116	1.115 - 1.117
2,2',3,4,4',5',6'-HpCB	183	183 + 185	C	0.85	M+2/M+4	1.05	0.89-1.21	1.129	1.127 - 1.130
2,2',3,4,4',6,6'-HpCB	184			1.17	M+2/M+4	1.04	0.89-1.21	1.025	1.023 - 1.026
2,2',3,4,5,5',6'-HpCB	185	183 + 185	C183						
2,2',3,4,5,6,6'-HpCB	186			1.08	M+2/M+4	1.04	0.89-1.21	1.048	1.046 - 1.049
2,2',3,4',5,5',6'-HpCB	187			0.94	M+2/M+4	1.06	0.89-1.21	1.110	1.109 - 1.111
2,3,3',4,4',5,6'-HpCB	190			1.02	M+2/M+4	1.05	0.89-1.21	0.947	0.946 - 0.948
2,3,3',4,4',5',6'-HpCB	191			1.05	M+2/M+4	1.07	0.89-1.21	0.917	0.916 - 0.918
2,3,3',4,5,5',6'-HpCB	192			0.95	M+2/M+4	1.08	0.89-1.21	0.902	0.901 - 0.903
2,3,3',4',5,5',6'-HpCB	193	180 + 193	C180						
2,2',3,3',4,4',5,5'-OcCB	194			0.85	M+2/M+4	0.90	0.76-1.02	0.991	0.990 - 0.992
2,2',3,3',4,4',5,6'-OcCB	195			0.77	M+2/M+4	0.88	0.76-1.02	0.946	0.945 - 0.947
2,2',3,3',4,4',5,6'-OcCB	196			0.69	M+2/M+4	0.92	0.76-1.02	0.916	0.915 - 0.916

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
2,2',3,3',4,4',6,6'-OcCB	197	197 + 200	C	0.99	M+2/M+4	0.90	0.76-1.02	1.046	1.043 - 1.048
2,2',3,3',4,5,5',6-OcCB	198	198 + 199	C	0.68	M+2/M+4	0.88	0.76-1.02	1.114	1.112 - 1.116
2,2',3,3',4,5,5',6'-OcCB	199	198 + 199	C198						
2,2',3,3',4,5,6,6'-OcCB	200	197 + 200	C197						
2,2',3,3',4,5',6,6'-OcCB	201			1.01	M+2/M+4	0.90	0.76-1.02	1.023	1.021 - 1.025
2,2',3,4,4',5,5',6-OcCB	203			0.72	M+2/M+4	0.92	0.76-1.02	0.919	0.918 - 0.920
2,2',3,4,4',5,6,6'-OcCB	204			0.99	M+2/M+4	0.89	0.76-1.02	1.039	1.038 - 1.040
2,2',3,3',4,4',5,6,6'-NoCB	207			1.38	M+2/M+4	0.81	0.65-0.89	1.020	1.019 - 1.021

(1) Where applicable, custom lab flags have been used on this report.

(2) See Table 8, Method 1668A, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 3B

PCB CONGENER INITIAL CALIBRATION RELATIVE RESPONSES,
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

CAL Data Filename: PB8C_368 S: 1

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 19:34:37

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	RRF	MZ's FORMING RATIO ³	ION ABUND. RATIO	RATIO QC LIMITS ⁴	RRT	RRT QC LIMITS
13C12-2-MoCB	1L			1.05	M/M+2	3.14	2.66-3.60	0.721	0.705 - 0.736
13C12-4-MoCB	3L			0.99	M/M+2	3.14	2.66-3.60	0.859	0.844 - 0.875
13C12-2,2'-DiCB	4L			0.61	M/M+2	1.56	1.33-1.79	0.874	0.858 - 0.889
13C12-4,4'-DiCB	15L			0.93	M/M+2	1.56	1.33-1.79	1.253	1.238 - 1.269
13C12-2,2',6'-TriCB	19L			0.54	M/M+2	1.07	0.88-1.20	1.072	1.056 - 1.088
13C12-3,4,4'-TriCB	37L			1.33	M/M+2	1.01	0.88-1.20	1.092	1.082 - 1.102
13C12-2,2',6,6'-TeCB	54L			1.38	M/M+2	0.79	0.65-0.89	0.811	0.804 - 0.817
13C12-3,3',4,4'-TeCB	77L			1.16	M/M+2	0.76	0.65-0.89	1.397	1.390 - 1.404
13C12-3,4,4',5'-TeCB	81L			1.15	M/M+2	0.75	0.65-0.89	1.374	1.367 - 1.380
13C12-2,2',4,6,6'-PeCB	104L			1.10	M+2/M+4	1.63	1.32-1.78	0.808	0.803 - 0.813
13C12-2,3,3',4,4'-PeCB	105L			1.15	M+2/M+4	1.52	1.32-1.78	1.200	1.195 - 1.205
13C12-2,3,4,4',5'-PeCB	114L			1.11	M+2/M+4	1.55	1.32-1.78	1.179	1.174 - 1.184
13C12-2,3',4,4',5'-PeCB	118L			1.12	M+2/M+4	1.52	1.32-1.78	1.162	1.157 - 1.167
13C12-2',3,4,4',5'-PeCB	123L			1.17	M+2/M+4	1.57	1.32-1.78	1.151	1.146 - 1.156
13C12-3,3',4,4',5'-PeCB	126L			1.06	M+2/M+4	1.61	1.32-1.78	1.301	1.296 - 1.306
13C12-2,2',4,4',6,6'-HxCB	155L			1.26	M+2/M+4	1.22	1.05-1.43	0.785	0.781 - 0.789
13C12-2,3,3',4,4',5'-HxCB	156L	156L + 157L	C	1.19	M+2/M+4	1.23	1.05-1.43	1.108	1.104 - 1.112
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L						
13C12-2,3',4,4',5,5'-HxCB	167L			1.17	M+2/M+4	1.25	1.05-1.43	1.078	1.074 - 1.082
13C12-3,3',4,4',5,5'-HxCB	169L			1.16	M+2/M+4	1.24	1.05-1.43	1.192	1.188 - 1.196
13C12-2,2',3,3',4,4',5'-HpCB	170L			0.95	M+2/M+4	1.03	0.89-1.21	0.897	0.894 - 0.901
13C12-2,2',3,4,4',5,5'-HpCB	180L			1.18	M+2/M+4	1.07	0.89-1.21	0.872	0.869 - 0.876
13C12-2,2',3,4,5,6,6'-HpCB	188L			1.67	M+2/M+4	1.04	0.89-1.21	0.712	0.708 - 0.715
13C12-2,3,3',4,4',5,5'-HpCB	189L			1.24	M+2/M+4	1.00	0.89-1.21	0.959	0.956 - 0.962
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			1.30	M+2/M+4	0.92	0.76-1.02	0.817	0.814 - 0.820
13C12-2,3,3',4,4',5,5',6-OxCB	205L			1.39	M+2/M+4	0.87	0.76-1.02	1.009	1.005 - 1.014
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			0.93	M+2/M+4	0.76	0.65-0.89	1.043	1.039 - 1.048
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			1.20	M+2/M+4	0.78	0.65-0.89	0.949	0.945 - 0.952

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

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SGS AXYS METHOD MLA-010 Rev 12

Form 3B

PCB CONGENER INITIAL CALIBRATION RELATIVE RESPONSES,
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

CAL Data Filename: PB8C_368 S: 1

Instrument ID: HR GC/MS

Analysis Date: 25-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 19:34:37

LABELED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	RRF	MZ's FORMING RATIO ³	ION ABUND. RATIO	RATIO QC LIMITS ⁴	RRT	RRT QC LIMITS
13C12-3,4,4'-TriCB	37L			1.33	M/M+2	1.01	0.88-1.20	1.092	1.079 - 1.105
13C12-2,3',4,4',5-PeCB	118L			1.12	M+2/M+4	1.52	1.32-1.78	1.162	1.151 - 1.172
13C12-2,3',4,4',5,5'-HxCB	167L			1.17	M+2/M+4	1.25	1.05-1.43	1.078	1.069 - 1.086
ADDITIONAL STANDARD									
13C12-2,4',5-TriCB	31L			1.17	M/M+2	1.01	0.88-1.20	0.836	0.824 - 0.848
13C12-2,2',3,5',6-PeCB	95L			0.81	M+2/M+4	1.61	1.32-1.78	0.779	0.770 - 0.788
13C12-2,2',4,4',5,5'-HxCB	153L			0.95	M+2/M+4	1.30	1.05-1.43	0.898	0.890 - 0.905

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_368S1__Form346B_SJ2456496_GS78411.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 4A
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_368 S: 11

Instrument ID: HR GC/MS

Analysis Date: 26-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 06:12:57

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
2-MoCB	1			M/M+2	3.01	2.66-3.60	21.5	17.5 - 32.5
4-MoCB	3			M/M+2	3.08	2.66-3.60	22.6	17.5 - 32.5
2,2'-DiCB	4			M/M+2	1.47	1.33-1.79	21.1	17.5 - 32.5
4,4'-DiCB	15			M/M+2	1.50	1.33-1.79	25.3	19.6 - 36.4
2,2',6-TriCB	19			M/M+2	1.03	0.88-1.20	27.1	17.5 - 32.5
3,4,4'-TriCB	37			M/M+2	0.98	0.88-1.20	21.4	17.5 - 32.5
2,2',6,6'-TeCB	54			M/M+2	0.79	0.65-0.89	52.2	35.0 - 65.0
3,3',4,4'-TeCB	77			M/M+2	0.74	0.65-0.89	44.7	35.0 - 65.0
3,4,4',5-TeCB	81			M/M+2	0.76	0.65-0.89	49.6	35.0 - 65.0
2,2',4,6,6'-PeCB	104			M+2/M+4	1.56	1.32-1.78	54.6	35.0 - 65.0
2,3,3',4,4'-PeCB	105			M+2/M+4	1.65	1.32-1.78	47.6	35.0 - 65.0
2,3,4,4',5-PeCB	114			M+2/M+4	1.59	1.32-1.78	46.2	35.0 - 65.0
2,3',4,4',5-PeCB	118			M+2/M+4	1.52	1.32-1.78	44.1	35.0 - 65.0
2',3,4,4',5-PeCB	123			M+2/M+4	1.54	1.32-1.78	49.8	35.0 - 65.0
3,3',4,4',5-PeCB	126			M+2/M+4	1.70	1.32-1.78	47.4	39.0 - 72.4
2,2',4,4',6,6'-HxCB	155			M+2/M+4	1.27	1.05-1.43	53.1	35.0 - 65.0
2,3,3',4,4',5-HxCB	156	156 + 157	C	M+2/M+4	1.29	1.05-1.43	106	70.0 - 130
2,3,3',4,4',5'-HxCB	157	156 + 157	C156					
2,3',4,4',5,5'-HxCB	167			M+2/M+4	1.25	1.05-1.43	55.4	35.0 - 65.0
3,3',4,4',5,5'-HxCB	169			M+2/M+4	1.34	1.05-1.43	56.1	35.0 - 65.0
2,2',3,4',5,6,6'-HpCB	188			M+2/M+4	1.06	0.89-1.21	50.4	35.0 - 65.0
2,3,3',4,4',5,5'-HpCB	189			M+2/M+4	1.02	0.89-1.21	40.2	35.0 - 65.0
2,2',3,3',5,5',6,6'-OoCB	202			M+2/M+4	0.91	0.76-1.02	89.2	58.9 - 110
2,3,3',4,4',5,5',6-OoCB	205			M+2/M+4	0.89	0.76-1.02	74.1	52.5 - 97.5
2,2',3,3',4,4',5,5',6-NoCB	206			M+2/M+4	0.79	0.65-0.89	75.5	52.5 - 97.5
2,2',3,3',4,5,5',6,6'-NoCB	208			M+2/M+4	0.79	0.65-0.89	84.9	58.7 - 109
2,2',3,3',4,4',5,5',6,6'-DeCB	209			M+4/M+6	1.18	0.99-1.33	74.4	52.5 - 97.5

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1668A, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 4B
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018 VER Data Filename: PB8C_368 S: 11

Instrument ID: HR GC/MS Analysis Date: 26-Oct-2018

GC Column ID: SPB OCTYL Analysis Time: 06:12:57

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	MZ's FORMING RATIO ³	ION ABUND. RATIO	QC LIMITS ⁴	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
13C12-2-MoCB	1L			M/M+2	3.14	2.66-3.60	92.6	50.0 - 150
13C12-4-MoCB	3L			M/M+2	3.10	2.66-3.60	94.4	50.0 - 150
13C12-2,2'-DiCB	4L			M/M+2	1.54	1.33-1.79	91.5	50.0 - 150
13C12-4,4'-DiCB	15L			M/M+2	1.55	1.33-1.79	89.6	50.0 - 150
13C12-2,2',6-TriCB	19L			M/M+2	1.08	0.88-1.20	99.3	50.0 - 150
13C12-3,4,4'-TriCB	37L			M/M+2	1.05	0.88-1.20	79.7	50.0 - 150
13C12-2,2',6,6'-TeCB	54L			M/M+2	0.78	0.65-0.89	92.5	50.0 - 150
13C12-3,3',4,4'-TeCB	77L			M/M+2	0.75	0.65-0.89	88.8	50.0 - 150
13C12-3,4,4',5-TeCB	81L			M/M+2	0.74	0.65-0.89	84.6	50.0 - 150
13C12-2,2',4,6,6'-PeCB	104L			M+2/M+4	1.58	1.32-1.78	76.5	50.0 - 150
13C12-2,3,3',4,4'-PeCB	105L			M+2/M+4	1.57	1.32-1.78	83.6	50.0 - 150
13C12-2,3,4,4',5-PeCB	114L			M+2/M+4	1.60	1.32-1.78	84.0	50.0 - 150
13C12-2,3',4,4',5-PeCB	118L			M+2/M+4	1.52	1.32-1.78	88.3	50.0 - 150
13C12-2',3,4,4',5-PeCB	123L			M+2/M+4	1.57	1.32-1.78	90.3	50.0 - 150
13C12-3,3',4,4',5-PeCB	126L			M+2/M+4	1.54	1.32-1.78	88.0	50.0 - 150
13C12-2,2',4,4',6,6'-HxCB	155L			M+2/M+4	1.27	1.05-1.43	74.3	50.0 - 150
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	M+2/M+4	1.23	1.05-1.43	184	100 - 300
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			M+2/M+4	1.22	1.05-1.43	94.8	50.0 - 150
13C12-3,3',4,4',5,5'-HxCB	169L			M+2/M+4	1.27	1.05-1.43	93.7	50.0 - 150
13C12-2,2',3,4',5,6,6'-HpCB	188L			M+2/M+4	1.05	0.89-1.21	87.9	50.0 - 150
13C12-2,3,3',4,4',5,5'-HpCB	189L			M+2/M+4	1.01	0.89-1.21	90.6	50.0 - 150
13C12-2,2',3,3',5,5',6,6'-OoCB	202L			M+2/M+4	0.91	0.76-1.02	67.6	50.0 - 150
13C12-2,3,3',4,4',5,5',6-OoCB	205L			M+2/M+4	0.88	0.76-1.02	94.0	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			M+2/M+4	0.77	0.65-0.89	87.3	50.0 - 150
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			M+2/M+4	0.76	0.65-0.89	89.1	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			M+4/M+6	1.17	0.99-1.33	75.6	50.0 - 150

CLEAN-UP STANDARD

13C12-2,4,4'-TriCB	28L			M/M+2	1.02	0.88-1.20	88.8	60.0 - 130
13C12-2,3,3',5,5'-PeCB	111L			M+2/M+4	1.62	1.32-1.78	89.1	60.0 - 130
13C12-2,2',3,3',5,5',6-HpCB	178L			M+2/M+4	1.09	0.89-1.21	85.3	60.0 - 130

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_368S11__Form4B_SJ2455365.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 6A
PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_368 S: 11

Instrument ID: HR GC/MS

Analysis Date: 26-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 06:12:57

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RETENTION TIME REFERENCE	IUPAC NO. ²	RRT	RRT QC LIMITS
2-MoCB	1			13C12-2-MoCB	1L	1.001	0.999-1.004
4-MoCB	3			13C12-4-MoCB	3L	1.001	0.999-1.004
2,2'-DiCB	4			13C12-2,2'-DiCB	4L	1.001	0.999-1.004
4,4'-DiCB	15			13C12-4,4'-DiCB	15L	1.001	0.999-1.002
2,2',6-TriCB	19			13C12-2,2',6-TriCB	19L	1.001	0.999-1.003
3,4,4'-TriCB	37			13C12-3,4,4'-TriCB	37L	1.001	0.999-1.002
2,2',6,6'-TeCB	54			13C12-2,2',6,6'-TeCB	54L	1.001	0.999-1.002
3,3',4,4'-TeCB	77			13C12-3,3',4,4'-TeCB	77L	1.000	1.000-1.001
3,4,4',5-TeCB	81			13C12-3,4,4',5-TeCB	81L	1.000	1.000-1.001
2,2',4,6,6'-PeCB	104			13C12-2,2',4,6,6'-PeCB	104L	1.001	0.999-1.002
2,3,3',4,4'-PeCB	105			13C12-2,3,3',4,4'-PeCB	105L	1.001	1.000-1.001
2,3,4,4',5-PeCB	114			13C12-2,3,4,4',5-PeCB	114L	1.001	1.000-1.001
2,3',4,4',5-PeCB	118			13C12-2,3',4,4',5-PeCB	118L	1.000	1.000-1.001
2',3,4,4',5-PeCB	123			13C12-2',3,4,4',5-PeCB	123L	1.000	1.000-1.001
3,3',4,4',5-PeCB	126			13C12-3,3',4,4',5-PeCB	126L	1.000	1.000-1.001
2,2',4,4',6,6'-HxCB	155			13C12-2,2',4,4',6,6'-HxCB	155L	1.001	0.999-1.002
2,3,3',4,4',5-HxCB	156	156 + 157	C	13C12-2,3,3',4,4',5-HxCB and 13C12-2,3,3',4,4',5'-HxCB	156L/157L	1.001	0.999-1.003
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3',4,4',5,5'-HxCB	167			13C12-2,3',4,4',5,5'-HxCB	167L	1.000	1.000-1.001
3,3',4,4',5,5'-HxCB	169			13C12-3,3',4,4',5,5'-HxCB	169L	1.000	1.000-1.001
2,2',3,4',5,6,6'-HpCB	188			13C12-2,2',3,4',5,6,6'-HpCB	188L	1.000	1.000-1.001
2,3,3',4,4',5,5'-HpCB	189			13C12-2,3,3',4,4',5,5'-HpCB	189L	1.000	1.000-1.001
2,2',3,3',5,5',6,6'-OxCB	202			13C12-2,2',3,3',5,5',6,6'-OxCB	202L	1.000	1.000-1.001
2,3,3',4,4',5,5',6-OxCB	205			13C12-2,3,3',4,4',5,5',6-OxCB	205L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6-NoCB	206			13C12-2,2',3,3',4,4',5,5',6-NoCB	206L	1.001	1.000-1.001
2,2',3,3',4,5,5',6,6'-NoCB	208			13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L	1.000	1.000-1.001

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 6B
PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_368 S: 11

Instrument ID: HR GC/MS

Analysis Date: 26-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 06:12:57

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	RETENTION TIME REFERENCE	IUPAC NO. ¹	RRT	RRT QC LIMITS
13C12-2-MoCB	1L			13C12-2,5-DiCB	9L	0.720	0.689-0.752
13C12-4-MoCB	3L			13C12-2,5-DiCB	9L	0.859	0.828-0.890
13C12-2,2'-DiCB	4L			13C12-2,5-DiCB	9L	0.875	0.843-0.906
13C12-4,4'-DiCB	15L			13C12-2,5-DiCB	9L	1.255	1.223-1.286
13C12-2,2',6-TriCB	19L			13C12-2,5-DiCB	9L	1.072	1.041-1.103
13C12-3,4,4'-TriCB	37L			13C12-2,2',5,5'-TeCB	52L	1.092	1.072-1.112
13C12-2,2',6,6'-TeCB	54L			13C12-2,2',5,5'-TeCB	52L	0.811	0.797-0.824
13C12-3,3',4,4'-TeCB	77L			13C12-2,2',5,5'-TeCB	52L	1.397	1.384-1.410
13C12-3,4,4',5-TeCB	81L			13C12-2,2',5,5'-TeCB	52L	1.374	1.360-1.387
13C12-2,2',4,6,6'-PeCB	104L			13C12-2,2',4,5,5'-PeCB	101L	0.808	0.798-0.818
13C12-2,3,3',4,4'-PeCB	105L			13C12-2,2',4,5,5'-PeCB	101L	1.201	1.190-1.211
13C12-2,3,4,4',5-PeCB	114L			13C12-2,2',4,5,5'-PeCB	101L	1.179	1.169-1.190
13C12-2,3',4,4',5-PeCB	118L			13C12-2,2',4,5,5'-PeCB	101L	1.162	1.152-1.173
13C12-2',3,4,4',5-PeCB	123L			13C12-2,2',4,5,5'-PeCB	101L	1.151	1.141-1.162
13C12-3,3',4,4',5-PeCB	126L			13C12-2,2',4,5,5'-PeCB	101L	1.302	1.292-1.313
13C12-2,2',4,4',6,6'-HxCB	155L			13C12-2,2',3,4,4',5'-HxCB	138L	0.785	0.777-0.793
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	13C12-2,2',3,4,4',5'-HxCB	138L	1.108	1.100-1.116
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L				
13C12-2,3',4,4',5,5'-HxCB	167L			13C12-2,2',3,4,4',5'-HxCB	138L	1.078	1.070-1.086
13C12-3,3',4,4',5,5'-HxCB	169L			13C12-2,2',3,4,4',5'-HxCB	138L	1.192	1.184-1.200
13C12-2,2',3,4',5,6,6'-HpCB	188L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.712	0.705-0.718
13C12-2,3,3',4,4',5,5'-HpCB	189L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.959	0.953-0.965
13C12-2,2',3,3',5,5',6,6'-OcCB	202L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.817	0.811-0.824
13C12-2,3,3',4,4',5,5',6-OcCB	205L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	1.009	1.000-1.018
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	1.043	1.034-1.052
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	0.949	0.942-0.955
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			13C12-2,2',3,3',4,4',5,5'-OcCB	194L	1.074	1.065-1.084

CLEANUP STANDARD

13C12-2,4,4'-TriCB	28L			13C12-2,2',5,5'-TeCB	52L	0.925	0.911-0.938
13C12-2,3,3',5,5'-PeCB	111L			13C12-2,2',4,5,5'-PeCB	101L	1.088	1.077-1.098
13C12-2,2',3,3',5,5',6-HpCB	178L			13C12-2,2',3,4,4',5'-HxCB	138L	1.011	1.003-1.020

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

For Axy Internal Use Only [XSL Template: Form16686B.xsl; Created: 16-Nov-2018 11:16:18; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PB8C_368S11__Form6B_SJ2455365.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 4A
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_372A S: 1

Instrument ID: HR GC/MS

Analysis Date: 29-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 22:11:26

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
2-MoCB	1			M/M+2	3.02	2.66-3.60	21.6	17.5 - 32.5
4-MoCB	3			M/M+2	3.01	2.66-3.60	22.5	17.5 - 32.5
2,2'-DiCB	4			M/M+2	1.47	1.33-1.79	21.0	17.5 - 32.5
4,4'-DiCB	15			M/M+2	1.48	1.33-1.79	23.8	19.6 - 36.4
2,2',6-TriCB	19			M/M+2	1.04	0.88-1.20	27.3	17.5 - 32.5
3,4,4'-TriCB	37			M/M+2	0.99	0.88-1.20	21.0	17.5 - 32.5
2,2',6,6'-TeCB	54			M/M+2	0.78	0.65-0.89	52.0	35.0 - 65.0
3,3',4,4'-TeCB	77			M/M+2	0.75	0.65-0.89	44.3	35.0 - 65.0
3,4,4',5-TeCB	81			M/M+2	0.77	0.65-0.89	47.9	35.0 - 65.0
2,2',4,6,6'-PeCB	104			M+2/M+4	1.59	1.32-1.78	54.1	35.0 - 65.0
2,3,3',4,4'-PeCB	105			M+2/M+4	1.54	1.32-1.78	46.1	35.0 - 65.0
2,3,4,4',5-PeCB	114			M+2/M+4	1.49	1.32-1.78	46.9	35.0 - 65.0
2,3',4,4',5-PeCB	118			M+2/M+4	1.54	1.32-1.78	44.4	35.0 - 65.0
2',3,4,4',5-PeCB	123			M+2/M+4	1.50	1.32-1.78	50.5	35.0 - 65.0
3,3',4,4',5-PeCB	126			M+2/M+4	1.56	1.32-1.78	47.8	39.0 - 72.4
2,2',4,4',6,6'-HxCB	155			M+2/M+4	1.26	1.05-1.43	53.7	35.0 - 65.0
2,3,3',4,4',5-HxCB	156	156 + 157	C	M+2/M+4	1.25	1.05-1.43	103	70.0 - 130
2,3,3',4,4',5'-HxCB	157	156 + 157	C156					
2,3',4,4',5,5'-HxCB	167			M+2/M+4	1.26	1.05-1.43	56.2	35.0 - 65.0
3,3',4,4',5,5'-HxCB	169			M+2/M+4	1.28	1.05-1.43	53.4	35.0 - 65.0
2,2',3,4',5,6,6'-HpCB	188			M+2/M+4	1.05	0.89-1.21	52.3	35.0 - 65.0
2,3,3',4,4',5,5'-HpCB	189			M+2/M+4	1.02	0.89-1.21	41.4	35.0 - 65.0
2,2',3,3',5,5',6,6'-OoCB	202			M+2/M+4	0.91	0.76-1.02	89.2	58.9 - 110
2,3,3',4,4',5,5',6-OoCB	205			M+2/M+4	0.89	0.76-1.02	76.1	52.5 - 97.5
2,2',3,3',4,4',5,5',6-NoCB	206			M+2/M+4	0.79	0.65-0.89	77.2	52.5 - 97.5
2,2',3,3',4,5,5',6,6'-NoCB	208			M+2/M+4	0.79	0.65-0.89	85.3	58.7 - 109
2,2',3,3',4,4',5,5',6,6'-DeCB	209			M+4/M+6	1.20	0.99-1.33	77.8	52.5 - 97.5

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1668A, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 4B
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018 VER Data Filename: PB8C_372A S: 1

Instrument ID: HR GC/MS Analysis Date: 29-Oct-2018

GC Column ID: SPB OCTYL Analysis Time: 22:11:26

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	MZ's FORMING RATIO ³	ION ABUND. RATIO	QC LIMITS ⁴	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
13C12-2-MoCB	1L			M/M+2	3.17	2.66-3.60	93.0	50.0 - 150
13C12-4-MoCB	3L			M/M+2	3.11	2.66-3.60	90.9	50.0 - 150
13C12-2,2'-DiCB	4L			M/M+2	1.58	1.33-1.79	90.8	50.0 - 150
13C12-4,4'-DiCB	15L			M/M+2	1.57	1.33-1.79	91.4	50.0 - 150
13C12-2,2',6-TriCB	19L			M/M+2	1.06	0.88-1.20	94.1	50.0 - 150
13C12-3,4,4'-TriCB	37L			M/M+2	1.06	0.88-1.20	82.5	50.0 - 150
13C12-2,2',6,6'-TeCB	54L			M/M+2	0.79	0.65-0.89	93.4	50.0 - 150
13C12-3,3',4,4'-TeCB	77L			M/M+2	0.77	0.65-0.89	94.1	50.0 - 150
13C12-3,4,4',5-TeCB	81L			M/M+2	0.75	0.65-0.89	94.4	50.0 - 150
13C12-2,2',4,6,6'-PeCB	104L			M+2/M+4	1.62	1.32-1.78	72.9	50.0 - 150
13C12-2,3,3',4,4'-PeCB	105L			M+2/M+4	1.59	1.32-1.78	90.5	50.0 - 150
13C12-2,3,4,4',5-PeCB	114L			M+2/M+4	1.56	1.32-1.78	86.5	50.0 - 150
13C12-2,3',4,4',5-PeCB	118L			M+2/M+4	1.53	1.32-1.78	87.4	50.0 - 150
13C12-2',3,4,4',5-PeCB	123L			M+2/M+4	1.57	1.32-1.78	88.7	50.0 - 150
13C12-3,3',4,4',5-PeCB	126L			M+2/M+4	1.55	1.32-1.78	88.0	50.0 - 150
13C12-2,2',4,4',6,6'-HxCB	155L			M+2/M+4	1.24	1.05-1.43	69.0	50.0 - 150
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	M+2/M+4	1.26	1.05-1.43	179	100 - 300
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			M+2/M+4	1.27	1.05-1.43	92.0	50.0 - 150
13C12-3,3',4,4',5,5'-HxCB	169L			M+2/M+4	1.24	1.05-1.43	86.0	50.0 - 150
13C12-2,2',3,4',5,6,6'-HpCB	188L			M+2/M+4	1.06	0.89-1.21	92.1	50.0 - 150
13C12-2,3,3',4,4',5,5'-HpCB	189L			M+2/M+4	1.04	0.89-1.21	88.1	50.0 - 150
13C12-2,2',3,3',5,5',6,6'-OoCB	202L			M+2/M+4	0.92	0.76-1.02	72.1	50.0 - 150
13C12-2,3,3',4,4',5,5',6-OoCB	205L			M+2/M+4	0.90	0.76-1.02	92.8	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			M+2/M+4	0.80	0.65-0.89	84.5	50.0 - 150
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			M+2/M+4	0.78	0.65-0.89	98.5	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			M+4/M+6	1.22	0.99-1.33	70.1	50.0 - 150

CLEAN-UP STANDARD

13C12-2,4,4'-TriCB	28L			M/M+2	1.04	0.88-1.20	89.7	60.0 - 130
13C12-2,3,3',5,5'-PeCB	111L			M+2/M+4	1.62	1.32-1.78	91.0	60.0 - 130
13C12-2,2',3,3',5,5',6-HpCB	178L			M+2/M+4	1.06	0.89-1.21	81.1	60.0 - 130

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 6A
PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_372A S: 1

Instrument ID: HR GC/MS

Analysis Date: 29-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 22:11:26

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RETENTION TIME REFERENCE	IUPAC NO. ²	RRT	RRT QC LIMITS
2-MoCB	1			13C12-2-MoCB	1L	1.001	0.999-1.004
4-MoCB	3			13C12-4-MoCB	3L	1.001	0.999-1.004
2,2'-DiCB	4			13C12-2,2'-DiCB	4L	1.001	0.999-1.004
4,4'-DiCB	15			13C12-4,4'-DiCB	15L	1.001	0.999-1.002
2,2',6-TriCB	19			13C12-2,2',6-TriCB	19L	1.001	0.999-1.003
3,4,4'-TriCB	37			13C12-3,4,4'-TriCB	37L	1.001	0.999-1.002
2,2',6,6'-TeCB	54			13C12-2,2',6,6'-TeCB	54L	1.001	0.999-1.002
3,3',4,4'-TeCB	77			13C12-3,3',4,4'-TeCB	77L	1.001	1.000-1.001
3,4,4',5-TeCB	81			13C12-3,4,4',5-TeCB	81L	1.000	1.000-1.001
2,2',4,6,6'-PeCB	104			13C12-2,2',4,6,6'-PeCB	104L	1.001	0.999-1.002
2,3,3',4,4'-PeCB	105			13C12-2,3,3',4,4'-PeCB	105L	1.000	1.000-1.001
2,3,4,4',5-PeCB	114			13C12-2,3,4,4',5-PeCB	114L	1.000	1.000-1.001
2,3',4,4',5-PeCB	118			13C12-2,3',4,4',5-PeCB	118L	1.001	1.000-1.001
2',3,4,4',5-PeCB	123			13C12-2',3,4,4',5-PeCB	123L	1.000	1.000-1.001
3,3',4,4',5-PeCB	126			13C12-3,3',4,4',5-PeCB	126L	1.001	1.000-1.001
2,2',4,4',6,6'-HxCB	155			13C12-2,2',4,4',6,6'-HxCB	155L	1.001	0.999-1.002
2,3,3',4,4',5-HxCB	156	156 + 157	C	13C12-2,3,3',4,4',5-HxCB and 13C12-2,3,3',4,4',5'-HxCB	156L/157L	1.000	0.998-1.003
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3',4,4',5,5'-HxCB	167			13C12-2,3',4,4',5,5'-HxCB	167L	1.001	1.000-1.001
3,3',4,4',5,5'-HxCB	169			13C12-3,3',4,4',5,5'-HxCB	169L	1.000	1.000-1.001
2,2',3,4',5,6,6'-HpCB	188			13C12-2,2',3,4',5,6,6'-HpCB	188L	1.001	1.000-1.001
2,3,3',4,4',5,5'-HpCB	189			13C12-2,3,3',4,4',5,5'-HpCB	189L	1.000	1.000-1.001
2,2',3,3',5,5',6,6'-OxCB	202			13C12-2,2',3,3',5,5',6,6'-OxCB	202L	1.001	1.000-1.001
2,3,3',4,4',5,5',6-OxCB	205			13C12-2,3,3',4,4',5,5',6-OxCB	205L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6-NoCB	206			13C12-2,2',3,3',4,4',5,5',6-NoCB	206L	1.001	1.000-1.001
2,2',3,3',4,5,5',6,6'-NoCB	208			13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L	1.001	1.000-1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L	1.001	1.000-1.001

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_372AS1_Form6A_SJ2457029.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 6B

PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_372A S: 1

Instrument ID: HR GC/MS

Analysis Date: 29-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 22:11:26

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	RETENTION TIME REFERENCE	IUPAC NO. ¹	RRT	RRT QC LIMITS
13C12-2-MoCB	1L			13C12-2,5-DiCB	9L	0.719	0.688-0.751
13C12-4-MoCB	3L			13C12-2,5-DiCB	9L	0.859	0.828-0.891
13C12-2,2'-DiCB	4L			13C12-2,5-DiCB	9L	0.874	0.843-0.905
13C12-4,4'-DiCB	15L			13C12-2,5-DiCB	9L	1.253	1.222-1.285
13C12-2,2',6-TriCB	19L			13C12-2,5-DiCB	9L	1.072	1.041-1.103
13C12-3,4,4'-TriCB	37L			13C12-2,2',5,5'-TeCB	52L	1.092	1.072-1.112
13C12-2,2',6,6'-TeCB	54L			13C12-2,2',5,5'-TeCB	52L	0.811	0.798-0.825
13C12-3,3',4,4'-TeCB	77L			13C12-2,2',5,5'-TeCB	52L	1.397	1.384-1.410
13C12-3,4,4',5-TeCB	81L			13C12-2,2',5,5'-TeCB	52L	1.374	1.360-1.387
13C12-2,2',4,6,6'-PeCB	104L			13C12-2,2',4,5,5'-PeCB	101L	0.808	0.798-0.819
13C12-2,3,3',4,4'-PeCB	105L			13C12-2,2',4,5,5'-PeCB	101L	1.201	1.190-1.211
13C12-2,3,4,4',5-PeCB	114L			13C12-2,2',4,5,5'-PeCB	101L	1.179	1.169-1.190
13C12-2,3',4,4',5-PeCB	118L			13C12-2,2',4,5,5'-PeCB	101L	1.162	1.151-1.172
13C12-2',3,4,4',5-PeCB	123L			13C12-2,2',4,5,5'-PeCB	101L	1.151	1.141-1.162
13C12-3,3',4,4',5-PeCB	126L			13C12-2,2',4,5,5'-PeCB	101L	1.301	1.291-1.312
13C12-2,2',4,4',6,6'-HxCB	155L			13C12-2,2',3,4,4',5'-HxCB	138L	0.786	0.777-0.794
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	13C12-2,2',3,4,4',5'-HxCB	138L	1.108	1.100-1.116
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L				
13C12-2,3',4,4',5,5'-HxCB	167L			13C12-2,2',3,4,4',5'-HxCB	138L	1.078	1.070-1.086
13C12-3,3',4,4',5,5'-HxCB	169L			13C12-2,2',3,4,4',5'-HxCB	138L	1.192	1.184-1.200
13C12-2,2',3,4',5,6,6'-HpCB	188L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.712	0.705-0.718
13C12-2,3,3',4,4',5,5'-HpCB	189L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.959	0.953-0.965
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.817	0.811-0.823
13C12-2,3,3',4,4',5,5',6-OxCB	205L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	1.009	1.000-1.018
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	1.043	1.034-1.052
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.949	0.942-0.955
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	1.074	1.065-1.083

CLEANUP STANDARD

13C12-2,4,4'-TriCB	28L	13C12-2,2',5,5'-TeCB	52L	0.925	0.911-0.938
13C12-2,3,3',5,5'-PeCB	111L	13C12-2,2',4,5,5'-PeCB	101L	1.088	1.077-1.098
13C12-2,2',3,3',5,5',6-HpCB	178L	13C12-2,2',3,4,4',5'-HxCB	138L	1.011	1.003-1.020

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_372AS1__Form6B_SJ2457029.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 3A

PCB CONGENER INITIAL CALIBRATION RELATIVE RESPONSES,
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

CAL Data Filename: PB8C_372A S: 1

Instrument ID: HR GC/MS

Analysis Date: 29-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 22:11:26

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
3-MoCB	2			0.93	M/M+2	2.99	2.66-3.60	0.988	0.984 - 0.992
2,3-DiCB	5			0.93	M/M+2	1.47	1.33-1.79	1.198	1.195 - 1.202
2,3'-DiCB	6			1.04	M/M+2	1.49	1.33-1.79	1.177	1.173 - 1.180
2,4-DiCB	7			1.02	M/M+2	1.51	1.33-1.79	1.158	1.154 - 1.161
2,4'-DiCB	8			1.14	M/M+2	1.50	1.33-1.79	1.208	1.204 - 1.211
2,5-DiCB	9			1.06	M/M+2	1.49	1.33-1.79	1.146	1.142 - 1.149
2,6-DiCB	10			1.00	M/M+2	1.48	1.33-1.79	1.014	1.011 - 1.018
3,3'-DiCB	11			1.00	M/M+2	1.48	1.33-1.79	0.969	0.967 - 0.972
3,4-DiCB	12	12 + 13	C	0.99	M/M+2	1.49	1.33-1.79	0.985	0.983 - 0.988
3,4'-DiCB	13	12 + 13	C12						
3,5-DiCB	14			1.03	M/M+2	1.48	1.33-1.79	0.926	0.923 - 0.928
2,2',3-TriCB	16			0.90	M/M+2	1.05	0.88-1.20	1.165	1.162 - 1.168
2,2',4-TriCB	17			1.03	M/M+2	1.03	0.88-1.20	1.138	1.135 - 1.141
2,2',5-TriCB	18	18 + 30	C	1.21	M/M+2	1.05	0.88-1.20	1.112	1.109 - 1.115
2,3,3'-TriCB	20	20 + 28	C	1.10	M/M+2	1.00	0.88-1.20	0.849	0.846 - 0.852
2,3,4-TriCB	21	21 + 33	C	1.14	M/M+2	0.97	0.88-1.20	0.855	0.852 - 0.858
2,3,4'-TriCB	22			0.98	M/M+2	0.99	0.88-1.20	0.872	0.870 - 0.874
2,3,5-TriCB	23			1.02	M/M+2	1.02	0.88-1.20	1.282	1.279 - 1.285
2,3,6-TriCB	24			1.32	M/M+2	1.05	0.88-1.20	1.159	1.156 - 1.161
2,3',4-TriCB	25			1.27	M/M+2	1.00	0.88-1.20	0.825	0.823 - 0.827
2,3',5-TriCB	26	26 + 29	C	1.09	M/M+2	0.98	0.88-1.20	1.302	1.297 - 1.306
2,3',6-TriCB	27			1.45	M/M+2	1.07	0.88-1.20	1.151	1.148 - 1.154
2,4,4'-TriCB	28	20 + 28	C20						
2,4,5-TriCB	29	26 + 29	C26						
2,4,6-TriCB	30	18 + 30	C18						
2,4',5-TriCB	31			1.17	M/M+2	0.99	0.88-1.20	0.837	0.835 - 0.839
2,4',6-TriCB	32			1.11	M/M+2	0.99	0.88-1.20	1.197	1.195 - 1.200
2',3,4-TriCB	33	21 + 33	C21						
2',3,5-TriCB	34			1.05	M/M+2	0.97	0.88-1.20	1.273	1.270 - 1.276
3,3',4-TriCB	35			1.10	M/M+2	0.99	0.88-1.20	0.986	0.984 - 0.988
3,3',5-TriCB	36			1.16	M/M+2	0.99	0.88-1.20	0.932	0.930 - 0.933
3,4,5-TriCB	38			1.09	M/M+2	1.00	0.88-1.20	0.967	0.965 - 0.969
3,4',5-TriCB	39			1.11	M/M+2	0.99	0.88-1.20	0.946	0.944 - 0.948
2,2',3,3'-TeCB	40	40 + 41 + 71	C	0.87	M/M+2	0.78	0.65-0.89	1.335	1.331 - 1.339
2,2',3,4-TeCB	41	40 + 41 + 71	C40						
2,2',3,4'-TeCB	42			0.83	M/M+2	0.77	0.65-0.89	1.311	1.309 - 1.314
2,2',3,5-TeCB	43			0.72	M/M+2	0.78	0.65-0.89	1.246	1.244 - 1.249
2,2',3,5'-TeCB	44	44 + 47 + 65	C	0.95	M/M+2	0.78	0.65-0.89	1.285	1.281 - 1.289
2,2',3,6-TeCB	45	45 + 51	C	0.87	M/M+2	0.77	0.65-0.89	1.147	1.143 - 1.151
2,2',3,6'-TeCB	46			0.76	M/M+2	0.77	0.65-0.89	1.161	1.158 - 1.163
2,2',4,4'-TeCB	47	44 + 47 + 65	C44						
2,2',4,5-TeCB	48			0.86	M/M+2	0.77	0.65-0.89	1.273	1.270 - 1.275
2,2',4,5'-TeCB	49	49 + 69	C	1.02	M/M+2	0.78	0.65-0.89	1.257	1.253 - 1.261
2,2',4,6-TeCB	50	50 + 53	C	0.91	M/M+2	0.78	0.65-0.89	1.112	1.108 - 1.116
2,2',4,6'-TeCB	51	45 + 51	C45						
2,2',5,5'-TeCB	52			0.91	M/M+2	0.77	0.65-0.89	1.233	1.231 - 1.236
2,2',5,6'-TeCB	53	50 + 53	C50						
2,3,3',4-TeCB	55			0.90	M/M+2	0.77	0.65-0.89	0.889	0.887 - 0.890
2,3,3',4'-TeCB	56			0.91	M/M+2	0.75	0.65-0.89	0.904	0.903 - 0.906

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
2,3,3',5'-TeCB	57			0.97	M/M+2	0.78	0.65-0.89	0.843	0.842 - 0.845
2,3,3',5'-TeCB	58			0.93	M/M+2	0.77	0.65-0.89	0.851	0.849 - 0.852
2,3,3',6'-TeCB	59	59 + 62 + 75	C	1.17	M/M+2	0.78	0.65-0.89	1.301	1.297 - 1.305
2,3,4,4'-TeCB	60			0.90	M/M+2	0.74	0.65-0.89	0.911	0.909 - 0.912
2,3,4,5'-TeCB	61	61 + 70 + 74 + 76	C	0.98	M/M+2	0.75	0.65-0.89	0.873	0.871 - 0.876
2,3,4,6'-TeCB	62	59 + 62 + 75	C59						
2,3,4',5'-TeCB	63			0.99	M/M+2	0.76	0.65-0.89	0.864	0.862 - 0.865
2,3,4',6'-TeCB	64			1.20	M/M+2	0.79	0.65-0.89	1.348	1.346 - 1.351
2,3,5,6'-TeCB	65	44 + 47 + 65	C44						
2,3',4,4'-TeCB	66			0.96	M/M+2	0.77	0.65-0.89	0.884	0.883 - 0.886
2,3',4,5'-TeCB	67			1.13	M/M+2	0.74	0.65-0.89	0.855	0.854 - 0.857
2,3',4,5'-TeCB	68			1.02	M/M+2	0.75	0.65-0.89	0.831	0.829 - 0.832
2,3',4,6'-TeCB	69	49 + 69	C49						
2,3',4',5'-TeCB	70	61 + 70 + 74 + 76	C61						
2,3',4',6'-TeCB	71	40 + 41 + 71	C40						
2,3',5,5'-TeCB	72			1.03	M/M+2	0.76	0.65-0.89	0.822	0.821 - 0.823
2,3',5,6'-TeCB	73			1.17	M/M+2	0.79	0.65-0.89	1.241	1.238 - 1.243
2,4,4',5'-TeCB	74	61 + 70 + 74 + 76	C61						
2,4,4',6'-TeCB	75	59 + 62 + 75	C59						
2',3,4,5'-TeCB	76	61 + 70 + 74 + 76	C61						
3,3',4,5'-TeCB	78			0.91	M/M+2	0.77	0.65-0.89	0.986	0.985 - 0.988
3,3',4,5'-TeCB	79			1.11	M/M+2	0.77	0.65-0.89	0.970	0.968 - 0.971
3,3',5,5'-TeCB	80			1.00	M/M+2	0.74	0.65-0.89	0.923	0.921 - 0.924
2,2',3,3',4'-PeCB	82			0.79	M+2/M+4	1.58	1.32-1.78	0.933	0.932 - 0.935
2,2',3,3',5'-PeCB	83	83 + 99	C	0.83	M+2/M+4	1.58	1.32-1.78	0.884	0.881 - 0.887
2,2',3,3',6'-PeCB	84			0.77	M+2/M+4	1.59	1.32-1.78	1.164	1.162 - 1.165
2,2',3,4,4'-PeCB	85	85 + 116 + 117	C	1.03	M+2/M+4	1.56	1.32-1.78	0.919	0.917 - 0.922
2,2',3,4,5'-PeCB	86	86 + 87 + 97 + 108 + 119 + 125	C	1.02	M+2/M+4	1.58	1.32-1.78	0.900	0.896 - 0.904
2,2',3,4,5'-PeCB	87	86 + 87 + 97 + 108 + 119 + 125	C86						
2,2',3,4,6'-PeCB	88	88 + 91	C	0.86	M+2/M+4	1.55	1.32-1.78	1.153	1.149 - 1.157
2,2',3,4,6'-PeCB	89			0.83	M+2/M+4	1.60	1.32-1.78	1.182	1.180 - 1.184
2,2',3,4',5'-PeCB	90	90 + 101 + 113	C	1.00	M+2/M+4	1.56	1.32-1.78	0.868	0.866 - 0.870
2,2',3,4',6'-PeCB	91	88 + 91	C88						
2,2',3,5,5'-PeCB	92			0.85	M+2/M+4	1.58	1.32-1.78	0.852	0.851 - 0.854
2,2',3,5,6'-PeCB	93	93 + 95 + 98 + 100 + 102	C	0.90	M+2/M+4	1.55	1.32-1.78	1.130	1.119 - 1.140
2,2',3,5,6'-PeCB	94			0.80	M+2/M+4	1.57	1.32-1.78	1.102	1.100 - 1.104
2,2',3,5',6'-PeCB	95	93 + 95 + 98 + 100 + 102	C93						
2,2',3,6,6'-PeCB	96			1.06	M+2/M+4	1.59	1.32-1.78	1.016	1.013 - 1.019
2,2',3',4,5'-PeCB	97	86 + 87 + 97 + 108 + 119 + 125	C86						
2,2',3',4,6'-PeCB	98	93 + 95 + 98 + 100 + 102	C93						
2,2',4,4',5'-PeCB	99	83 + 99	C83						
2,2',4,4',6'-PeCB	100	93 + 95 + 98 + 100 + 102	C93						
2,2',4,5,5'-PeCB	101	90 + 101 + 113	C90						
2,2',4,5,6'-PeCB	102	93 + 95 + 98 + 100 + 102	C93						
2,2',4,5',6'-PeCB	103			0.99	M+2/M+4	1.56	1.32-1.78	1.093	1.091 - 1.095
2,3,3',4,5'-PeCB	106			0.95	M+2/M+4	1.53	1.32-1.78	1.004	1.003 - 1.005
2,3,3',4',5'-PeCB	107	107 + 124	C	0.95	M+2/M+4	1.52	1.32-1.78	0.991	0.988 - 0.993
2,3,3',4,5'-PeCB	108	86 + 87 + 97 + 108 + 119 + 125	C86						
2,3,3',4,6'-PeCB	109			0.97	M+2/M+4	1.49	1.32-1.78	0.997	0.996 - 0.999
2,3,3',4',6'-PeCB	110	110 + 115	C	1.16	M+2/M+4	1.58	1.32-1.78	0.926	0.923 - 0.928
2,3,3',5,5'-PeCB	111			1.14	M+2/M+4	1.59	1.32-1.78	0.945	0.944 - 0.946
2,3,3',5,6'-PeCB	112			1.20	M+2/M+4	1.57	1.32-1.78	0.889	0.887 - 0.890
2,3,3',5',6'-PeCB	113	90 + 101 + 113	C90						
2,3,4,4',6'-PeCB	115	110 + 115	C110						
2,3,4,5,6'-PeCB	116	85 + 116 + 117	C85						
2,3,4',5,6'-PeCB	117	85 + 116 + 117	C85						
2,3',4,4',6'-PeCB	119	86 + 87 + 97 + 108 + 119 + 125	C86						
2,3',4,5,5'-PeCB	120			1.21	M+2/M+4	1.60	1.32-1.78	0.958	0.957 - 0.959
2,3',4,5',6'-PeCB	121			1.13	M+2/M+4	1.54	1.32-1.78	1.199	1.198 - 1.201
2',3,3',4,5'-PeCB	122			0.88	M+2/M+4	1.52	1.32-1.78	1.010	1.009 - 1.012
2',3,4,5,5'-PeCB	124	107 + 124	C107						
2',3,4,5,6'-PeCB	125	86 + 87 + 97 + 108 + 119 + 125	C86						

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
3,3',4,5,5'-PeCB	127			0.94	M+2/M+4	1.50	1.32-1.78	1.041	1.039 - 1.042
2,2',3,3',4,4'-HxCB	128	128 + 166	C	1.01	M+2/M+4	1.24	1.05-1.43	0.958	0.957 - 0.960
2,2',3,3',4,5'-HxCB	129	129 + 138 + 160 + 163	C	0.99	M+2/M+4	1.27	1.05-1.43	0.930	0.927 - 0.933
2,2',3,3',4,5'-HxCB	130			0.77	M+2/M+4	1.26	1.05-1.43	0.913	0.912 - 0.914
2,2',3,3',4,6'-HxCB	131			0.81	M+2/M+4	1.26	1.05-1.43	1.159	1.158 - 1.161
2,2',3,3',4,6'-HxCB	132			0.78	M+2/M+4	1.26	1.05-1.43	1.175	1.173 - 1.178
2,2',3,3',5,5'-HxCB	133			0.83	M+2/M+4	1.25	1.05-1.43	1.191	1.190 - 1.193
2,2',3,3',5,6'-HxCB	134	134 + 143	C	0.82	M+2/M+4	1.25	1.05-1.43	1.142	1.139 - 1.144
2,2',3,3',5,6'-HxCB	135	135 + 151 + 154	C	0.79	M+2/M+4	1.28	1.05-1.43	1.107	1.101 - 1.112
2,2',3,3',6,6'-HxCB	136			1.01	M+2/M+4	1.35	1.05-1.43	1.025	1.023 - 1.026
2,2',3,4,4',5'-HxCB	137			0.82	M+2/M+4	1.25	1.05-1.43	0.918	0.917 - 0.919
2,2',3,4,4',5'-HxCB	138	129 + 138 + 160 + 163	C129						
2,2',3,4,4',6'-HxCB	139	139 + 140	C	0.91	M+2/M+4	1.25	1.05-1.43	1.153	1.151 - 1.156
2,2',3,4,4',6'-HxCB	140	139 + 140	C139						
2,2',3,4,5,5'-HxCB	141			0.90	M+2/M+4	1.27	1.05-1.43	0.903	0.902 - 0.904
2,2',3,4,5,6'-HxCB	142			0.81	M+2/M+4	1.25	1.05-1.43	1.165	1.163 - 1.166
2,2',3,4,5,6'-HxCB	143	134 + 143	C134						
2,2',3,4,5',6'-HxCB	144			0.76	M+2/M+4	1.26	1.05-1.43	1.122	1.120 - 1.123
2,2',3,4,6,6'-HxCB	145			0.96	M+2/M+4	1.28	1.05-1.43	1.034	1.032 - 1.036
2,2',3,4',5,5'-HxCB	146			1.01	M+2/M+4	1.25	1.05-1.43	0.884	0.883 - 0.885
2,2',3,4',5,6'-HxCB	147	147 + 149	C	0.92	M+2/M+4	1.25	1.05-1.43	1.133	1.131 - 1.136
2,2',3,4',5,6'-HxCB	148			0.75	M+2/M+4	1.26	1.05-1.43	1.084	1.082 - 1.085
2,2',3,4',5',6'-HxCB	149	147 + 149	C147						
2,2',3,4',6,6'-HxCB	150			1.00	M+2/M+4	1.28	1.05-1.43	1.013	1.011 - 1.014
2,2',3,5,5',6'-HxCB	151	135 + 151 + 154	C135						
2,2',3,5,6,6'-HxCB	152			1.04	M+2/M+4	1.24	1.05-1.43	1.007	1.006 - 1.009
2,2',4,4',5,5'-HxCB	153	153 + 168	C	1.11	M+2/M+4	1.25	1.05-1.43	0.899	0.897 - 0.901
2,2',4,4',5,6'-HxCB	154	135 + 151 + 154	C135						
2,3,3',4,4',6'-HxCB	158			1.29	M+2/M+4	1.26	1.05-1.43	0.938	0.936 - 0.939
2,3,3',4,5,5'-HxCB	159			1.18	M+2/M+4	1.26	1.05-1.43	0.982	0.981 - 0.983
2,3,3',4,5,6'-HxCB	160	129 + 138 + 160 + 163	C129						
2,3,3',4,5',6'-HxCB	161			1.19	M+2/M+4	1.26	1.05-1.43	0.887	0.886 - 0.888
2,3,3',4',5,5'-HxCB	162			1.28	M+2/M+4	1.26	1.05-1.43	0.989	0.988 - 0.990
2,3,3',4',5,6'-HxCB	163	129 + 138 + 160 + 163	C129						
2,3,3',4',5',6'-HxCB	164			1.17	M+2/M+4	1.26	1.05-1.43	0.921	0.920 - 0.922
2,3,3',5,5',6'-HxCB	165			1.03	M+2/M+4	1.26	1.05-1.43	0.878	0.877 - 0.879
2,3,4,4',5,6'-HxCB	166	128 + 166	C128						
2,3',4,4',5',6'-HxCB	168	153 + 168	C153						
2,2',3,3',4,4',5'-HpCB	170			1.12	M+2/M+4	1.04	0.89-1.21	1.000	0.999 - 1.001
2,2',3,3',4,4',6'-HpCB	171	171 + 173	C	0.79	M+2/M+4	1.03	0.89-1.21	1.162	1.160 - 1.165
2,2',3,3',4,5,5'-HpCB	172			0.77	M+2/M+4	1.05	0.89-1.21	0.896	0.895 - 0.897
2,2',3,3',4,5,6'-HpCB	173	171 + 173	C171						
2,2',3,3',4',5,6'-HpCB	174			0.88	M+2/M+4	1.08	0.89-1.21	1.134	1.133 - 1.135
2,2',3,3',4,5',6'-HpCB	175			0.84	M+2/M+4	1.09	0.89-1.21	1.103	1.101 - 1.104
2,2',3,3',4,6,6'-HpCB	176			1.13	M+2/M+4	1.06	0.89-1.21	1.034	1.033 - 1.036
2,2',3,3',4',5,6'-HpCB	177			1.01	M+2/M+4	1.07	0.89-1.21	1.146	1.144 - 1.147
2,2',3,3',5,5',6'-HpCB	178			0.82	M+2/M+4	1.04	0.89-1.21	1.085	1.084 - 1.087
2,2',3,3',5,6,6'-HpCB	179			1.19	M+2/M+4	1.04	0.89-1.21	1.010	1.009 - 1.011
2,2',3,4,4',5,5'-HpCB	180	180 + 193	C	1.05	M+2/M+4	1.05	0.89-1.21	1.000	0.999 - 1.001
2,2',3,4,4',5,6'-HpCB	181			0.82	M+2/M+4	1.06	0.89-1.21	1.157	1.155 - 1.158
2,2',3,4,4',5,6'-HpCB	182			0.86	M+2/M+4	1.05	0.89-1.21	1.115	1.114 - 1.117
2,2',3,4,4',5',6'-HpCB	183	183 + 185	C	0.83	M+2/M+4	1.05	0.89-1.21	1.128	1.127 - 1.129
2,2',3,4,4',6,6'-HpCB	184			1.18	M+2/M+4	1.05	0.89-1.21	1.024	1.023 - 1.026
2,2',3,4,5,5',6'-HpCB	185	183 + 185	C183						
2,2',3,4,5,6,6'-HpCB	186			1.07	M+2/M+4	1.07	0.89-1.21	1.047	1.046 - 1.048
2,2',3,4',5,5',6'-HpCB	187			0.92	M+2/M+4	1.04	0.89-1.21	1.110	1.109 - 1.111
2,3,3',4,4',5,6'-HpCB	190			1.04	M+2/M+4	1.03	0.89-1.21	0.947	0.946 - 0.948
2,3,3',4,4',5',6'-HpCB	191			1.04	M+2/M+4	1.04	0.89-1.21	0.917	0.916 - 0.918
2,3,3',4,5,5',6'-HpCB	192			0.95	M+2/M+4	1.06	0.89-1.21	0.903	0.902 - 0.904
2,3,3',4',5,5',6'-HpCB	193	180 + 193	C180						
2,2',3,3',4,4',5,5'-OcCB	194			0.88	M+2/M+4	0.87	0.76-1.02	0.991	0.990 - 0.992
2,2',3,3',4,4',5,6'-OcCB	195			0.86	M+2/M+4	0.90	0.76-1.02	0.946	0.945 - 0.947
2,2',3,3',4,4',5,6'-OcCB	196			0.72	M+2/M+4	0.90	0.76-1.02	0.916	0.915 - 0.916

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
2,2',3,3',4,4',6,6'-O ₂ CB	197	197 + 200	C	1.04	M+2/M+4	0.91	0.76-1.02	1.046	1.043 - 1.048
2,2',3,3',4,5,5',6-O ₂ CB	198	198 + 199	C	0.72	M+2/M+4	0.93	0.76-1.02	1.115	1.113 - 1.117
2,2',3,3',4,5,5',6'-O ₂ CB	199	198 + 199	C198						
2,2',3,3',4,5,6,6'-O ₂ CB	200	197 + 200	C197						
2,2',3,3',4,5',6,6'-O ₂ CB	201			1.03	M+2/M+4	0.90	0.76-1.02	1.023	1.021 - 1.025
2,2',3,4,4',5,5',6-O ₂ CB	203			0.74	M+2/M+4	0.88	0.76-1.02	0.919	0.918 - 0.920
2,2',3,4,4',5,6,6'-O ₂ CB	204			1.02	M+2/M+4	0.91	0.76-1.02	1.039	1.038 - 1.040
2,2',3,3',4,4',5,6,6'-NoCB	207			1.25	M+2/M+4	0.80	0.65-0.89	1.020	1.019 - 1.021

(1) Where applicable, custom lab flags have been used on this report.

(2) See Table 8, Method 1668A, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 3B

PCB CONGENER INITIAL CALIBRATION RELATIVE RESPONSES,
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

CAL Data Filename: PB8C_372A S: 1

Instrument ID: HR GC/MS

Analysis Date: 29-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 22:11:26

LABELLED COMPOUND	IUPAC NO. ¹	CO-ELUTIONS	LAB FLAG ²	RRF	MZ's FORMING RATIO ³	ION ABUND. RATIO	RATIO QC LIMITS ⁴	RRT	RRT QC LIMITS
13C12-2-MoCB	1L			1.05	M/M+2	3.17	2.66-3.60	0.719	0.704 - 0.735
13C12-4-MoCB	3L			0.98	M/M+2	3.11	2.66-3.60	0.859	0.844 - 0.875
13C12-2,2'-DiCB	4L			0.62	M/M+2	1.58	1.33-1.79	0.874	0.858 - 0.889
13C12-4,4'-DiCB	15L			0.97	M/M+2	1.57	1.33-1.79	1.253	1.238 - 1.269
13C12-2,2',6'-TriCB	19L			0.53	M/M+2	1.06	0.88-1.20	1.072	1.056 - 1.088
13C12-3,4,4'-TriCB	37L			1.39	M/M+2	1.06	0.88-1.20	1.092	1.082 - 1.102
13C12-2,2',6,6'-TeCB	54L			1.38	M/M+2	0.79	0.65-0.89	0.811	0.805 - 0.818
13C12-3,3',4,4'-TeCB	77L			1.24	M/M+2	0.77	0.65-0.89	1.397	1.390 - 1.404
13C12-3,4,4',5'-TeCB	81L			1.22	M/M+2	0.75	0.65-0.89	1.374	1.367 - 1.380
13C12-2,2',4,6,6'-PeCB	104L			1.07	M+2/M+4	1.62	1.32-1.78	0.808	0.803 - 0.813
13C12-2,3,3',4,4'-PeCB	105L			1.27	M+2/M+4	1.59	1.32-1.78	1.201	1.195 - 1.206
13C12-2,3,4,4',5'-PeCB	114L			1.17	M+2/M+4	1.56	1.32-1.78	1.179	1.174 - 1.185
13C12-2,3',4,4',5'-PeCB	118L			1.19	M+2/M+4	1.53	1.32-1.78	1.162	1.157 - 1.167
13C12-2',3,4,4',5'-PeCB	123L			1.23	M+2/M+4	1.57	1.32-1.78	1.151	1.146 - 1.157
13C12-3,3',4,4',5'-PeCB	126L			1.10	M+2/M+4	1.55	1.32-1.78	1.301	1.296 - 1.306
13C12-2,2',4,4',6,6'-HxCB	155L			1.15	M+2/M+4	1.24	1.05-1.43	0.786	0.782 - 0.790
13C12-2,3,3',4,4',5'-HxCB	156L	156L + 157L	C	1.20	M+2/M+4	1.26	1.05-1.43	1.108	1.104 - 1.112
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L						
13C12-2,3',4,4',5,5'-HxCB	167L			1.18	M+2/M+4	1.27	1.05-1.43	1.078	1.074 - 1.082
13C12-3,3',4,4',5,5'-HxCB	169L			1.14	M+2/M+4	1.24	1.05-1.43	1.192	1.188 - 1.196
13C12-2,2',3,3',4,4',5'-HpCB	170L			1.03	M+2/M+4	1.06	0.89-1.21	0.897	0.894 - 0.900
13C12-2,2',3,4,4',5,5'-HpCB	180L			1.21	M+2/M+4	1.09	0.89-1.21	0.872	0.869 - 0.876
13C12-2,2',3,4,5,6,6'-HpCB	188L			1.74	M+2/M+4	1.06	0.89-1.21	0.712	0.709 - 0.715
13C12-2,3,3',4,4',5,5'-HpCB	189L			1.34	M+2/M+4	1.04	0.89-1.21	0.959	0.956 - 0.962
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			1.29	M+2/M+4	0.92	0.76-1.02	0.817	0.814 - 0.820
13C12-2,3,3',4,4',5,5',6-OxCB	205L			1.40	M+2/M+4	0.90	0.76-1.02	1.009	1.004 - 1.014
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			0.93	M+2/M+4	0.80	0.65-0.89	1.043	1.038 - 1.048
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			1.33	M+2/M+4	0.78	0.65-0.89	0.949	0.945 - 0.952

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_372AS1__Form346B_SJ2457050_GS78478.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 4A
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_373 S: 1

Instrument ID: HR GC/MS

Analysis Date: 30-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 09:37:31

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
2-MoCB	1			M/M+2	2.95	2.66-3.60	18.6	17.5 - 32.5
4-MoCB	3			M/M+2	2.95	2.66-3.60	19.4	17.5 - 32.5
2,2'-DiCB	4			M/M+2	1.44	1.33-1.79	18.0	17.5 - 32.5
4,4'-DiCB	15			M/M+2	1.45	1.33-1.79	21.2	19.6 - 36.4
2,2',6-TriCB	19			M/M+2	1.04	0.88-1.20	25.4	17.5 - 32.5
3,4,4'-TriCB	37			M/M+2	0.96	0.88-1.20	18.8	17.5 - 32.5
2,2',6,6'-TeCB	54			M/M+2	0.77	0.65-0.89	48.9	35.0 - 65.0
3,3',4,4'-TeCB	77			M/M+2	0.74	0.65-0.89	42.4	35.0 - 65.0
3,4,4',5-TeCB	81			M/M+2	0.76	0.65-0.89	43.9	35.0 - 65.0
2,2',4,6,6'-PeCB	104			M+2/M+4	1.56	1.32-1.78	52.6	35.0 - 65.0
2,3,3',4,4'-PeCB	105			M+2/M+4	1.41	1.32-1.78	41.0	35.0 - 65.0
2,3,4,4',5-PeCB	114			M+2/M+4	1.47	1.32-1.78	44.4	35.0 - 65.0
2,3',4,4',5-PeCB	118			M+2/M+4	1.48	1.32-1.78	41.0	35.0 - 65.0
2',3,4,4',5-PeCB	123			M+2/M+4	1.32	1.32-1.78	43.4	35.0 - 65.0
3,3',4,4',5-PeCB	126			M+2/M+4	1.50	1.32-1.78	42.8	39.0 - 72.4
2,2',4,4',6,6'-HxCB	155			M+2/M+4	1.29	1.05-1.43	51.0	35.0 - 65.0
2,3,3',4,4',5-HxCB	156	156 + 157	C	M+2/M+4	1.29	1.05-1.43	97.1	70.0 - 130
2,3,3',4,4',5'-HxCB	157	156 + 157	C156					
2,3',4,4',5,5'-HxCB	167			M+2/M+4	1.28	1.05-1.43	53.1	35.0 - 65.0
3,3',4,4',5,5'-HxCB	169			M+2/M+4	1.27	1.05-1.43	50.7	35.0 - 65.0
2,2',3,4',5,6,6'-HpCB	188			M+2/M+4	1.03	0.89-1.21	51.1	35.0 - 65.0
2,3,3',4,4',5,5'-HpCB	189			M+2/M+4	1.00	0.89-1.21	38.0	35.0 - 65.0
2,2',3,3',5,5',6,6'-OoCB	202			M+2/M+4	0.89	0.76-1.02	87.4	58.9 - 110
2,3,3',4,4',5,5',6-OoCB	205			M+2/M+4	0.88	0.76-1.02	71.6	52.5 - 97.5
2,2',3,3',4,4',5,5',6-NoCB	206			M+2/M+4	0.78	0.65-0.89	75.7	52.5 - 97.5
2,2',3,3',4,5,5',6,6'-NoCB	208			M+2/M+4	0.77	0.65-0.89	82.6	58.7 - 109
2,2',3,3',4,4',5,5',6,6'-DeCB	209			M+4/M+6	1.17	0.99-1.33	75.2	52.5 - 97.5

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1668A, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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SGS AXYS METHOD MLA-010 Rev 12

Form 4B
PCB CONGENER CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_373 S: 1

Instrument ID: HR GC/MS

Analysis Date: 30-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 09:37:31

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	MZ's FORMING RATIO ³	ION ABUND. RATIO	QC LIMITS ⁴	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
13C12-2-MoCB	1L			M/M+2	3.09	2.66-3.60	98.9	50.0 - 150
13C12-4-MoCB	3L			M/M+2	3.06	2.66-3.60	98.6	50.0 - 150
13C12-2,2'-DiCB	4L			M/M+2	1.50	1.33-1.79	90.9	50.0 - 150
13C12-4,4'-DiCB	15L			M/M+2	1.54	1.33-1.79	93.2	50.0 - 150
13C12-2,2',6-TriCB	19L			M/M+2	1.04	0.88-1.20	123	50.0 - 150
13C12-3,4,4'-TriCB	37L			M/M+2	1.00	0.88-1.20	65.7	50.0 - 150
13C12-2,2',6,6'-TeCB	54L			M/M+2	0.80	0.65-0.89	89.6	50.0 - 150
13C12-3,3',4,4'-TeCB	77L			M/M+2	0.73	0.65-0.89	76.0	50.0 - 150
13C12-3,4,4',5-TeCB	81L			M/M+2	0.71	0.65-0.89	76.8	50.0 - 150
13C12-2,2',4,6,6'-PeCB	104L			M+2/M+4	1.61	1.32-1.78	81.6	50.0 - 150
13C12-2,3,3',4,4'-PeCB	105L			M+2/M+4	1.55	1.32-1.78	68.8	50.0 - 150
13C12-2,3,4,4',5-PeCB	114L			M+2/M+4	1.56	1.32-1.78	67.2	50.0 - 150
13C12-2,3',4,4',5-PeCB	118L			M+2/M+4	1.54	1.32-1.78	68.3	50.0 - 150
13C12-2',3,4,4',5-PeCB	123L			M+2/M+4	1.51	1.32-1.78	68.4	50.0 - 150
13C12-3,3',4,4',5-PeCB	126L			M+2/M+4	1.53	1.32-1.78	70.4	50.0 - 150
13C12-2,2',4,4',6,6'-HxCB	155L			M+2/M+4	1.26	1.05-1.43	84.4	50.0 - 150
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	M+2/M+4	1.27	1.05-1.43	180	100 - 300
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L					
13C12-2,3',4,4',5,5'-HxCB	167L			M+2/M+4	1.28	1.05-1.43	90.5	50.0 - 150
13C12-3,3',4,4',5,5'-HxCB	169L			M+2/M+4	1.23	1.05-1.43	86.8	50.0 - 150
13C12-2,2',3,4',5,6,6'-HpCB	188L			M+2/M+4	1.06	0.89-1.21	109	50.0 - 150
13C12-2,3,3',4,4',5,5'-HpCB	189L			M+2/M+4	0.99	0.89-1.21	68.8	50.0 - 150
13C12-2,2',3,3',5,5',6,6'-OoCB	202L			M+2/M+4	0.95	0.76-1.02	93.1	50.0 - 150
13C12-2,3,3',4,4',5,5',6-OoCB	205L			M+2/M+4	0.85	0.76-1.02	90.3	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			M+2/M+4	0.76	0.65-0.89	88.7	50.0 - 150
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			M+2/M+4	0.77	0.65-0.89	104	50.0 - 150
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			M+4/M+6	1.21	0.99-1.33	81.6	50.0 - 150

CLEAN-UP STANDARD

13C12-2,4,4'-TriCB	28L			M/M+2	0.99	0.88-1.20	69.9	60.0 - 130
13C12-2,3,3',5,5'-PeCB	111L			M+2/M+4	1.63	1.32-1.78	90.8	60.0 - 130
13C12-2,2',3,3',5,5',6-HpCB	178L			M+2/M+4	1.06	0.89-1.21	95.8	60.0 - 130

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) See Table 8, Method 1668A, for m/z specifications.

(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1668A.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_373S1__Form4B_SJ2457049.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 6A
PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_373 S: 1

Instrument ID: HR GC/MS

Analysis Date: 30-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 09:37:31

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG ¹	RETENTION TIME REFERENCE	IUPAC NO. ²	RRT	RRT QC LIMITS
2-MoCB	1			13C12-2-MoCB	1L	1.001	0.999-1.004
4-MoCB	3			13C12-4-MoCB	3L	1.001	0.999-1.004
2,2'-DiCB	4			13C12-2,2'-DiCB	4L	1.002	0.999-1.004
4,4'-DiCB	15			13C12-4,4'-DiCB	15L	1.001	0.999-1.002
2,2',6-TriCB	19			13C12-2,2',6-TriCB	19L	1.002	0.999-1.003
3,4,4'-TriCB	37			13C12-3,4,4'-TriCB	37L	1.001	0.999-1.002
2,2',6,6'-TeCB	54			13C12-2,2',6,6'-TeCB	54L	1.001	0.999-1.002
3,3',4,4'-TeCB	77			13C12-3,3',4,4'-TeCB	77L	1.000	1.000-1.001
3,4,4',5-TeCB	81			13C12-3,4,4',5-TeCB	81L	1.000	1.000-1.001
2,2',4,6,6'-PeCB	104			13C12-2,2',4,6,6'-PeCB	104L	1.001	0.999-1.002
2,3,3',4,4'-PeCB	105			13C12-2,3,3',4,4'-PeCB	105L	1.001	1.000-1.001
2,3,4,4',5-PeCB	114			13C12-2,3,4,4',5-PeCB	114L	1.001	1.000-1.001
2,3',4,4',5-PeCB	118			13C12-2,3',4,4',5-PeCB	118L	1.001	1.000-1.001
2',3,4,4',5-PeCB	123			13C12-2',3,4,4',5-PeCB	123L	1.000	1.000-1.001
3,3',4,4',5-PeCB	126			13C12-3,3',4,4',5-PeCB	126L	1.001	1.000-1.001
2,2',4,4',6,6'-HxCB	155			13C12-2,2',4,4',6,6'-HxCB	155L	1.001	0.999-1.002
2,3,3',4,4',5-HxCB	156	156 + 157	C	13C12-2,3,3',4,4',5-HxCB and 13C12-2,3,3',4,4',5'-HxCB	156L/157L	1.001	0.999-1.003
2,3,3',4,4',5'-HxCB	157	156 + 157	C156				
2,3',4,4',5,5'-HxCB	167			13C12-2,3',4,4',5,5'-HxCB	167L	1.001	1.000-1.001
3,3',4,4',5,5'-HxCB	169			13C12-3,3',4,4',5,5'-HxCB	169L	1.001	1.000-1.001
2,2',3,4',5,6,6'-HpCB	188			13C12-2,2',3,4',5,6,6'-HpCB	188L	1.001	1.000-1.001
2,3,3',4,4',5,5'-HpCB	189			13C12-2,3,3',4,4',5,5'-HpCB	189L	1.000	1.000-1.001
2,2',3,3',5,5',6,6'-OxCB	202			13C12-2,2',3,3',5,5',6,6'-OxCB	202L	1.000	1.000-1.001
2,3,3',4,4',5,5',6-OxCB	205			13C12-2,3,3',4,4',5,5',6-OxCB	205L	1.000	1.000-1.001
2,2',3,3',4,4',5,5',6-NoCB	206			13C12-2,2',3,3',4,4',5,5',6-NoCB	206L	1.000	1.000-1.001
2,2',3,3',4,5,5',6,6'-NoCB	208			13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L	1.000	1.000-1.001
2,2',3,3',4,4',5,5',6,6'-DeCB	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L	1.001	1.000-1.001

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

For Axy Internal Use Only [XSL Template: Form16686A.xsl; Created: 16-Nov-2018 11:16:18; Application: XMLTransformer-1.16.51;
Report Filename: 1668_PCB1668_PB8C_373S1__Form6A_SJ2457049.html; Workgroup: WG65521; Design ID: 3360]

SGS AXYS METHOD MLA-010 Rev 12

Form 6B

PCB CONGENER RELATIVE RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 07-Jul-2018

VER Data Filename: PB8C_373 S: 1

Instrument ID: HR GC/MS

Analysis Date: 30-Oct-2018

GC Column ID: SPB OCTYL

Analysis Time: 09:37:31

LABELLED COMPOUND	IUPAC NO. ¹	CO- ELUTIONS	LAB FLAG ²	RETENTION TIME REFERENCE	IUPAC NO. ¹	RRT	RRT QC LIMITS
13C12-2-MoCB	1L			13C12-2,5-DiCB	9L	0.719	0.688-0.751
13C12-4-MoCB	3L			13C12-2,5-DiCB	9L	0.859	0.828-0.891
13C12-2,2'-DiCB	4L			13C12-2,5-DiCB	9L	0.873	0.842-0.904
13C12-4,4'-DiCB	15L			13C12-2,5-DiCB	9L	1.252	1.221-1.284
13C12-2,2',6-TriCB	19L			13C12-2,5-DiCB	9L	1.071	1.040-1.102
13C12-3,4,4'-TriCB	37L			13C12-2,2',5,5'-TeCB	52L	1.092	1.072-1.112
13C12-2,2',6,6'-TeCB	54L			13C12-2,2',5,5'-TeCB	52L	0.811	0.798-0.825
13C12-3,3',4,4'-TeCB	77L			13C12-2,2',5,5'-TeCB	52L	1.397	1.384-1.411
13C12-3,4,4',5-TeCB	81L			13C12-2,2',5,5'-TeCB	52L	1.374	1.361-1.387
13C12-2,2',4,6,6'-PeCB	104L			13C12-2,2',4,5,5'-PeCB	101L	0.808	0.798-0.818
13C12-2,3,3',4,4'-PeCB	105L			13C12-2,2',4,5,5'-PeCB	101L	1.201	1.190-1.211
13C12-2,3,4,4',5-PeCB	114L			13C12-2,2',4,5,5'-PeCB	101L	1.180	1.169-1.190
13C12-2,3',4,4',5-PeCB	118L			13C12-2,2',4,5,5'-PeCB	101L	1.162	1.152-1.173
13C12-2',3,4,4',5-PeCB	123L			13C12-2,2',4,5,5'-PeCB	101L	1.152	1.141-1.162
13C12-3,3',4,4',5-PeCB	126L			13C12-2,2',4,5,5'-PeCB	101L	1.302	1.292-1.312
13C12-2,2',4,4',6,6'-HxCB	155L			13C12-2,2',3,4,4',5'-HxCB	138L	0.785	0.777-0.793
13C12-2,3,3',4,4',5-HxCB	156L	156L + 157L	C	13C12-2,2',3,4,4',5'-HxCB	138L	1.108	1.099-1.116
13C12-2,3,3',4,4',5'-HxCB	157L	156L + 157L	C156L				
13C12-2,3',4,4',5,5'-HxCB	167L			13C12-2,2',3,4,4',5'-HxCB	138L	1.078	1.069-1.086
13C12-3,3',4,4',5,5'-HxCB	169L			13C12-2,2',3,4,4',5'-HxCB	138L	1.191	1.183-1.200
13C12-2,2',3,4',5,6,6'-HpCB	188L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.712	0.705-0.718
13C12-2,3,3',4,4',5,5'-HpCB	189L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.959	0.953-0.965
13C12-2,2',3,3',5,5',6,6'-OxCB	202L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.817	0.811-0.824
13C12-2,3,3',4,4',5,5',6-OxCB	205L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	1.009	1.000-1.019
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	1.043	1.034-1.053
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	0.949	0.943-0.955
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L			13C12-2,2',3,3',4,4',5,5'-OxCB	194L	1.074	1.065-1.084

CLEANUP STANDARD

13C12-2,4,4'-TriCB	28L	13C12-2,2',5,5'-TeCB	52L	0.925	0.911-0.938
13C12-2,3,3',5,5'-PeCB	111L	13C12-2,2',4,5,5'-PeCB	101L	1.088	1.077-1.098
13C12-2,2',3,3',5,5',6-HpCB	178L	13C12-2,2',3,4,4',5'-HxCB	138L	1.011	1.003-1.019

(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Leanne Henley _____

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Report Filename: 1668_PCB1668_PB8C_373S1__Form6B_SJ2457049.html; Workgroup: WG65521; Design ID: 3360]

Accreditation Scope																		Serum	Solids															Tissue															Urine	Water	Water, Non-Potable
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **																	
BFR	BTBPE	SGS AXYS MLA-033	MLA-033		Y											Y							Y																												
	DBDPE	SGS AXYS MLA-033	MLA-033		Y											Y							Y																												
	HBB	SGS AXYS MLA-033	MLA-033		Y											Y							Y																												
	PBEB	SGS AXYS MLA-033	MLA-033		Y											Y							Y																												
Bisphenols	Bisphenol A	SGS AXYS MLA-113	MLA-113		Y																			Y																											
	Bisphenol AF	SGS AXYS MLA-113	MLA-113		Y																			Y																											
	Bisphenol B	SGS AXYS MLA-113	MLA-113		Y																			Y																											
	Bisphenol E	SGS AXYS MLA-113	MLA-113		Y																			Y																											
	Bisphenol F	SGS AXYS MLA-113	MLA-113		Y																			Y																											
	Bisphenol S	SGS AXYS MLA-113	MLA-113		Y																				Y																										
BPA and MPE	4,4'-dihydroxy-2,2-diphenylpropane (Bisphenol A) (BPA)	SGS AXYS MLA-059	MLA-059																				Y																												
	Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)	SGS AXYS MLA-059	MLA-059																					Y																											
	Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)	SGS AXYS MLA-059	MLA-059																					Y																											
	Mono-(3-carboxypropyl) phthalate (MCPHP)	SGS AXYS MLA-059	MLA-059																					Y																											
	Mono-2-ethylhexyl phthalate (MEHP)	SGS AXYS MLA-059	MLA-059																					Y																											
	Mono-benzyl phthalate (MBzP)	SGS AXYS MLA-059	MLA-059																					Y																											
	Mono-butyl phthalate (MBP) (n + iso)	SGS AXYS MLA-059	MLA-059																					Y																											
	Mono-cyclohexyl phthalate (MCHP)	SGS AXYS MLA-059	MLA-059																					Y																											
	Mono-ethyl phthalate (MEP)	SGS AXYS MLA-059	MLA-059																					Y																											
	Mono-iso-nonyl phthalate (MiNP)	SGS AXYS MLA-059	MLA-059																					Y																											
Mono-methyl phthalate (MMP)	SGS AXYS MLA-059	MLA-059																					Y																												
HBCDD	alpha-hexabromocyclododecane (a-HBCDD)	SGS AXYS MLA-070	MLA-070	Y																																															
	beta-hexabromocyclododecane (b-HBCDD)	SGS AXYS MLA-070	MLA-070	Y																																															
	gamma-hexabromocyclododecane (g-HBCDD)	SGS AXYS MLA-070	MLA-070	Y																																															
OC Pesticides	"Organochlorine Pesticides" category (CA only)	EPA 608	MLA-007																							Y																									
		EPA 625	MLA-007																							Y																									
		EPA 8081	MLA-007			Y																																													
	"Pesticides" category (CA only)	EPA 8270	MLA-007			Y																																													
	2,4'-DDD	EPA 625	MLA-007																								Y							Y																	
		EPA 8270	MLA-007				Y					Y			Y																																				
		EPA 1699	MLA-028				Y						Y													Y								Y																	
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y	Y		Y	Y	Y	Y						Y	Y	Y				Y					Y																	
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y	Y	Y						Y	Y	Y				Y					Y																	
		EPA 625	MLA-007																							Y								Y																	
	2,4'-DDE	EPA 8270	MLA-007				Y					Y		Y	Y																																				
		EPA 1699	MLA-028				Y								Y											Y								Y																	
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y	Y		Y	Y	Y	Y						Y	Y	Y				Y					Y																	
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y	Y	Y						Y	Y	Y				Y					Y																	
		EPA 625	MLA-007																							Y								Y																	
		EPA 8270	MLA-007				Y					Y		Y	Y												Y		Y	Y		Y		Y																	
	2,4'-DDT	EPA 1699	MLA-028				Y																			Y									Y																
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y	Y		Y	Y	Y	Y						Y	Y	Y				Y					Y																	
		SGS AXYS MLA-007	MLA-007	Y	Y	Y										Y	Y	Y					Y	Y	Y				Y					Y																	
		EPA 625	MLA-007																							Y								Y																	
		EPA 8270	MLA-007				Y					Y		Y	Y												Y		Y	Y		Y		Y																	
		EPA 1699	MLA-028				Y																			Y									Y																
	4,4'-DDD	SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y	Y		Y	Y	Y	Y						Y	Y	Y				Y					Y																	
		SGS AXYS MLA-007	MLA-007	Y	Y	Y										Y	Y	Y					Y	Y	Y				Y					Y																	
		EPA 625	MLA-007																							Y																									
		EPA 8270	MLA-007				Y				Y	Y	Y	Y	Y	Y											Y		Y	Y		Y		Y																	
		EPA 1699	MLA-028				Y																			Y									Y																
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y	Y		Y	Y	Y	Y						Y	Y	Y				Y					Y																	
	4,4'-DDE	SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y	Y	Y						Y	Y	Y				Y					Y																	
		EPA 625	MLA-007																							Y																									
		EPA 8270	MLA-007				Y				Y	Y	Y	Y	Y	Y											Y		Y	Y		Y		Y																	

Accreditation ScopeSGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 40

Accreditation Scope																																							
SGS AXYS Analytical Services Ltd.																																							
file ref.: ACC-101 Rev. 40																																							
				Serum	Solids											Tissue		Urine	Water	Water, Non-Potable																			
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **					
	4,4'-DDT	EPA 1699	MLA-028			Y								Y		Y								Y								Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y					Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y								Y							
		EPA 625	MLA-007																						Y		Y	Y		Y		Y							
		EPA 8270	MLA-007			Y				Y	Y	Y	Y	Y	Y																								
		EPA 1699	MLA-028			Y									Y											Y						Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y							
	Aldrin	EPA 625	MLA-007																							Y		Y	Y		Y		Y						
		EPA 8270	MLA-007			Y				Y	Y	Y	Y	Y	Y																								
		EPA 1699	MLA-028			Y									Y										Y							Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y							
		EPA 625	MLA-007																							Y		Y	Y		Y		Y						
		EPA 8270	MLA-007			Y				Y	Y	Y	Y	Y	Y																								
		EPA 1699	MLA-028			Y									Y										Y							Y							
	Alpha-HCH	SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y							
		EPA 625	MLA-007																							Y		Y	Y		Y		Y						
		EPA 8270	MLA-007			Y				Y	Y	Y	Y	Y	Y																								
		EPA 1699	MLA-028			Y									Y										Y							Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y							
		EPA 625	MLA-007																							Y		Y	Y		Y		Y						
	Chlordane, technical	EPA 8270	MLA-007			Y				Y	Y		Y	Y																		Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y							
		EPA 625	MLA-007																																				
	cis-Chlordane (alpha-Chlordane)	EPA 8270	MLA-007			Y				Y		Y	Y	Y	Y											Y		Y		Y		Y							
		EPA 1699	MLA-028			Y									Y										Y							Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y							
	cis-Nonachlor	EPA 8270	MLA-007			Y						Y		Y												Y						Y							
		EPA 1699	MLA-028			Y									Y										Y							Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y							
	Delta-HCH	EPA 608	MLA-007																							Y		Y	Y		Y		Y						
		EPA 8081	MLA-007			Y				Y	Y	Y	Y	Y	Y																								
		EPA 1699	MLA-028			Y									Y										Y							Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y							
		EPA 608	MLA-007																							Y		Y	Y		Y		Y						
	Dieldrin	EPA 8081	MLA-007			Y				Y	Y	Y	Y	Y	Y											Y		Y	Y		Y		Y						
		EPA 1699	MLA-028			Y									Y										Y							Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y							
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y							
		EPA 608	MLA-007																							Y		Y	Y		Y		Y						
		EPA 8081	MLA-007			Y				Y	Y	Y	Y	Y	Y											Y		Y	Y		Y		Y						
Endosulphan I	EPA 1699	MLA-028			Y									Y										Y							Y								
	SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y		Y		Y		Y						Y		Y			Y			Y								
	SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y		Y							Y		Y						Y								
	EPA 608	MLA-007																							Y		Y	Y		Y		Y							
	EPA 8081	MLA-007			Y				Y	Y	Y	Y	Y	Y											Y		Y	Y		Y		Y							
Endosulphan II	EPA 608	MLA-007																							Y		Y	Y		Y		Y							

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 40

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **
	Endosulphan sulphate	EPA 8081	MLA-007				Y			Y	Y	Y	Y	Y																				
		EPA 1699	MLA-028				Y								Y										Y								Y	
		SGS AXYS MLA-028	MLA-028		Y	Y	Y					Y	Y	Y	Y			Y						Y	Y	Y		Y		Y			Y	
		SGS AXYS MLA-007	MLA-007		Y	Y	Y								Y			Y						Y	Y	Y		Y					Y	
		EPA 608	MLA-007																							Y		Y	Y		Y		Y	
		EPA 8081	MLA-007				Y				Y	Y	Y	Y	Y																			
		EPA 1699	MLA-028				Y								Y											Y							Y	
		SGS AXYS MLA-028	MLA-028		Y	Y	Y						Y	Y	Y			Y						Y	Y	Y		Y					Y	
	Endrin	SGS AXYS MLA-007	MLA-007		Y	Y	Y								Y			Y						Y	Y	Y		Y						Y
		EPA 608	MLA-007																							Y		Y	Y		Y		Y	
		EPA 8081	MLA-007				Y				Y	Y	Y	Y	Y																			
		EPA 1699	MLA-028				Y								Y											Y							Y	
	Endrin aldehyde	SGS AXYS MLA-028	MLA-028		Y	Y	Y						Y	Y	Y			Y						Y	Y	Y		Y						Y
		SGS AXYS MLA-007	MLA-007		Y	Y	Y								Y			Y						Y	Y	Y		Y						Y
		EPA 608	MLA-007																							Y		Y	Y		Y		Y	
		EPA 8081	MLA-007				Y				Y	Y	Y	Y	Y											Y								Y
	Endrin ketone	EPA 1699	MLA-028				Y								Y											Y								Y
		SGS AXYS MLA-028	MLA-028		Y	Y	Y					Y	Y	Y	Y			Y						Y	Y	Y		Y						Y
		SGS AXYS MLA-007	MLA-007		Y	Y	Y								Y			Y						Y	Y	Y		Y						Y
		EPA 8081	MLA-007				Y				Y	Y	Y	Y	Y												Y							Y
	Gamma-HCH (Lindane)	SGS AXYS MLA-028	MLA-028		Y	Y	Y					Y	Y	Y	Y			Y						Y	Y	Y		Y						Y
		SGS AXYS MLA-007	MLA-007		Y	Y	Y								Y			Y						Y	Y	Y		Y						Y
		EPA 625	MLA-007																							Y		Y	Y		Y		Y	
		EPA 8270	MLA-007				Y				Y	Y	Y	Y	Y																			Y
	Heptachlor	EPA 1699	MLA-028				Y								Y											Y								Y
		SGS AXYS MLA-028	MLA-028		Y	Y	Y					Y	Y	Y	Y			Y						Y	Y	Y		Y						Y
		SGS AXYS MLA-007	MLA-007		Y	Y	Y								Y			Y						Y	Y	Y		Y						Y
		EPA 625	MLA-007																							Y		Y	Y		Y		Y	
	Heptachlor epoxide	EPA 8270	MLA-007				Y				Y	Y	Y	Y	Y																			
		EPA 1699	MLA-028				Y								Y											Y								Y
		SGS AXYS MLA-028	MLA-028		Y	Y	Y					Y	Y	Y	Y			Y						Y	Y	Y		Y						Y
		SGS AXYS MLA-007	MLA-007		Y	Y	Y								Y			Y						Y	Y	Y		Y						Y
	Hexachlorobenzene	EPA 8081	MLA-007				Y				Y	Y	Y	Y	Y											Y		Y	Y		Y			Y
		EPA 1699	MLA-028				Y								Y											Y								Y
		SGS AXYS MLA-028	MLA-028		Y	Y	Y					Y	Y	Y	Y			Y						Y	Y	Y		Y						Y
		SGS AXYS MLA-007	MLA-007		Y	Y	Y								Y			Y						Y	Y	Y		Y						Y
	Methoxychlor	EPA 1625	MLA-007																							Y		Y						Y
		EPA 8270	MLA-007				Y				Y	Y	Y	Y	Y																			Y
		EPA 1699	MLA-028				Y								Y											Y								Y
		SGS AXYS MLA-028	MLA-028		Y	Y	Y					Y	Y	Y	Y			Y						Y	Y	Y		Y						Y
Mirex	SGS AXYS MLA-007	MLA-007		Y	Y	Y								Y			Y						Y	Y	Y		Y						Y	
	EPA 8270	MLA-007				Y				Y	Y	Y	Y	Y											Y		Y	Y		Y			Y	
		EPA 1699	MLA-028				Y							Y											Y		Y						Y	

Accreditation Scope																		Serum	Solids																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Accreditation Scope				Serum		Solids		Tissue		Urine		Water		Water, Non-Potable	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **
Anthracene		SGS AXYS MLA-021	MLA-021		Y	Y									
		EPA 1625	MLA-021												
		EPA 8270	MLA-021			Y		Y	Y		Y	Y			
		SGS AXYS MLA-021	MLA-021		Y	Y				Y					
Benz[a]anthracene		EPA 1625	MLA-021												
		EPA 8270	MLA-021			Y		Y	Y		Y	Y			
		SGS AXYS MLA-021	MLA-021		Y	Y				Y					
Benzo[a]pyrene		EPA 1625	MLA-021												
		EPA 8270	MLA-021			Y		Y	Y		Y	Y			
		SGS AXYS MLA-021	MLA-021		Y	Y				Y					
Benzo[b]fluoranthene		EPA 1625	MLA-021												
		EPA 8270	MLA-021			Y		Y	Y		Y	Y			
		SGS AXYS MLA-021	MLA-021		Y	Y				Y					
Benzo[e]pyrene		SGS AXYS MLA-021	MLA-021		Y										
		EPA 1625	MLA-021												
		EPA 8270	MLA-021			Y		Y	Y		Y	Y			
		SGS AXYS MLA-021	MLA-021		Y	Y				Y					
Benzo[ghi]perylene		SGS AXYS MLA-021	MLA-021		Y										
		EPA 1625	MLA-021												
		EPA 8270	MLA-021			Y		Y	Y		Y	Y			
		SGS AXYS MLA-021	MLA-021		Y	Y				Y					
Benzofluoranthenes		SGS AXYS MLA-021	MLA-021		Y										
		EPA 1625	MLA-021												
		EPA 8270	MLA-021			Y		Y		Y	Y				
		SGS AXYS MLA-021	MLA-021			Y				Y					
Benzokjfluoranthene		SGS AXYS MLA-021	MLA-021												
		EPA 1625	MLA-021												
		EPA 8270	MLA-021			Y		Y		Y	Y				
		SGS AXYS MLA-021	MLA-021			Y				Y					
Biphenyl		SGS AXYS MLA-021	MLA-021		Y										
C1-Acenaphthenes		SGS AXYS MLA-021	MLA-021		Y										
C1-Benz(a)anthracenes/chrysenes		SGS AXYS MLA-021	MLA-021		Y										
C1-Benzofluoranthenes/ Benzopyrenes		SGS AXYS MLA-021	MLA-021		Y										
C1-Biphenyls		SGS AXYS MLA-021	MLA-021		Y										
C1-Dibenzothiophene		SGS AXYS MLA-021	MLA-021		Y										
C1-Fluoranthenes/Pyrenes		SGS AXYS MLA-021	MLA-021		Y										
C1-Fluorenes		SGS AXYS MLA-021	MLA-021		Y										
C1-Naphthalenes		SGS AXYS MLA-021	MLA-021		Y										
C1-Phenanthrenes/Anthracenes		SGS AXYS MLA-021	MLA-021		Y										
C2-Benz(a)anthracenes/Chrysenes		SGS AXYS MLA-021	MLA-021		Y										
C2-Benzofluoranthenes/ Benzopyrenes		SGS AXYS MLA-021	MLA-021		Y										
C2-Biphenyls		SGS AXYS MLA-021	MLA-021		Y										
C2-Dibenzothiophene		SGS AXYS MLA-021	MLA-021		Y										
C2-Fluoranthenes/Pyrenes		SGS AXYS MLA-021	MLA-021		Y										
C2-Fluorenes		SGS AXYS MLA-021	MLA-021		Y										
C2-Naphthalenes		SGS AXYS MLA-021	MLA-021		Y										
C2-Phenanthrenes/Anthracenes		SGS AXYS MLA-021	MLA-021		Y										
C3-Benz(a)anthracenes/Chrysenes		SGS AXYS MLA-021	MLA-021		Y										
C3-Dibenzothiophene		SGS AXYS MLA-021	MLA-021		Y										
C3-Fluoranthenes/Pyrenes		SGS AXYS MLA-021	MLA-021		Y										
C3-Fluorenes		SGS AXYS MLA-021	MLA-021		Y										
C3-Naphthalenes		SGS AXYS MLA-021	MLA-021		Y										
C3-Phenanthrenes/Anthracenes		SGS AXYS MLA-021	MLA-021		Y										
C4-Benz(a)anthracenes/Chrysenes		SGS AXYS MLA-021	MLA-021		Y										
C4-Dibenzothiophene		SGS AXYS MLA-021	MLA-021		Y										
C4-Fluoranthenes/Pyrenes		SGS AXYS MLA-021	MLA-021		Y										
C4-Naphthalenes		SGS AXYS MLA-021	MLA-021		Y										
C4-Phenanthrenes/Anthracenes		SGS AXYS MLA-021	MLA-021		Y										

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Accreditation Scope																Serum									Tissue			Urine	Water	Water, Non-Potable							
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **			
	BDE-33 2',3,4-tribromodiphenylether	SGS AXYS MLA-033	MLA-033	Y	Y											Y							Y							Y							
		EPA 1614	MLA-033										Y																	Y							
PCB Aroclors	"PCBs" category (CA only)	SGS AXYS MLA-033	MLA-033	Y	Y											Y							Y														
		EPA 625	MLA-007																						Y												
	EPA 8270	MLA-007			Y																																
	PCB Aroclor 1016	EPA 1668	MLA-010				Y						Y	Y												Y						Y	Y				
		EPA 625	MLA-007																							Y			Y	Y		Y	Y				
		EPA 8270	MLA-007				Y			Y	Y			Y												Y						Y	Y				
		SGS AXYS MLA-010	MLA-010				Y							Y												Y							Y				
		SGS AXYS MLA-007	MLA-007		Y	Y								Y			Y						Y	Y		Y						Y	Y				
PCB Aroclor 1016/1242	EPA 8270	MLA-007									Y					Y						Y		Y	Y							Y	Y				
PCB Aroclor 1221		EPA 1668	MLA-010				Y						Y	Y												Y					Y	Y	Y				
		EPA 625	MLA-007																						Y			Y	Y		Y	Y					
		EPA 8270	MLA-007				Y			Y	Y	Y		Y											Y							Y	Y				
		SGS AXYS MLA-010	MLA-010				Y							Y												Y							Y				
		SGS AXYS MLA-007	MLA-007		Y	Y								Y		Y							Y	Y	Y								Y				
		EPA 1668	MLA-010				Y							Y	Y										Y							Y	Y				
		EPA 625	MLA-007																						Y			Y	Y		Y	Y					
		EPA 8270	MLA-007				Y			Y	Y	Y		Y																			Y				
PCB Aroclor 1232		SGS AXYS MLA-010	MLA-010				Y							Y											Y								Y				
		SGS AXYS MLA-007	MLA-007		Y	Y									Y		Y						Y	Y	Y								Y				
		EPA 1668	MLA-010				Y							Y	Y										Y							Y	Y				
		EPA 625	MLA-007																						Y			Y	Y		Y	Y					
		EPA 8270	MLA-007				Y			Y	Y	Y		Y																							
		SGS AXYS MLA-010	MLA-010				Y								Y											Y							Y				
		SGS AXYS MLA-007	MLA-007		Y	Y									Y		Y						Y	Y	Y								Y				
		EPA 1668	MLA-010				Y							Y	Y										Y							Y	Y				
PCB Aroclor 1242		EPA 625	MLA-007																						Y			Y	Y		Y	Y					
		EPA 8270	MLA-007				Y			Y	Y			Y											Y							Y	Y				
		SGS AXYS MLA-010	MLA-010				Y								Y										Y								Y				
		SGS AXYS MLA-007	MLA-007		Y	Y									Y		Y						Y	Y	Y								Y				
PCB Aroclor 1248		EPA 1668	MLA-010				Y							Y	Y										Y						Y	Y	Y				
		EPA 625	MLA-007																						Y			Y	Y		Y	Y					
		EPA 8270	MLA-007				Y			Y	Y	Y		Y																							
		SGS AXYS MLA-010	MLA-010				Y								Y										Y								Y				
		SGS AXYS MLA-007	MLA-007		Y	Y								Y		Y							Y	Y	Y								Y				
		EPA 1668	MLA-010				Y								Y	Y									Y							Y	Y				
		EPA 625	MLA-007																						Y			Y	Y		Y	Y					
		EPA 8270	MLA-007				Y			Y	Y	Y		Y																							
PCB Aroclor 1254		SGS AXYS MLA-010	MLA-010				Y							Y										Y									Y				
		SGS AXYS MLA-007	MLA-007		Y	Y									Y		Y						Y	Y	Y								Y				
		EPA 1668	MLA-010				Y							Y	Y										Y							Y	Y				
		EPA 625	MLA-007																						Y			Y	Y		Y	Y					
		EPA 8270	MLA-007				Y			Y	Y	Y		Y											Y												
		SGS AXYS MLA-010	MLA-010				Y								Y										Y								Y				
		SGS AXYS MLA-007	MLA-007		Y	Y									Y		Y						Y	Y	Y								Y				
		EPA 1668	MLA-010				Y								Y	Y									Y							Y	Y				
PCB Aroclor 1260		EPA 625	MLA-007																						Y												
		EPA 8270	MLA-007				Y			Y	Y	Y		Y											Y			Y	Y		Y	Y					
		SGS AXYS MLA-010	MLA-010				Y								Y										Y								Y				
		SGS AXYS MLA-007	MLA-007		Y	Y									Y		Y						Y	Y	Y								Y				
PCB Aroclor 1268		SGS AXYS MLA-007	MLA-007		Y											Y							Y		Y							Y					
PCB congeners	PCB 1 2-Chlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y			Y		Y	Y	Y	Y		Y	Y				
		EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-010	MLA-010		Y	Y									Y		Y						Y	Y	Y							Y	Y				
	PCB 10 2,6-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y		Y									Y			Y		Y	Y	Y	Y		Y	Y			
		SGS AXYS MLA-010	MLA-010		Y	Y									Y		Y						Y	Y	Y							Y	Y				
		EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y		Y	Y	Y	Y		Y	Y			
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010		Y	Y		Y							Y		Y						Y	Y	Y							Y					

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 40

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **
	PCB 101 2,2',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y					Y				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y	Y	Y								Y		
	PCB 101/90/89	EPA 8270	MLA-007									Y														Y	Y	Y	Y	Y	Y			
		SGS AXYS MLA-007	MLA-007		Y												Y							Y										
	PCB 102 2,2',4,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y	Y	Y	Y	Y		Y	Y	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y	Y	Y							Y		
	PCB 103 2,2',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y	Y	Y	Y	Y		Y	Y	
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y		
	PCB 104 2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y		
	PCB 105 2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y	Y	Y							Y	Y	
	PCB 105/127	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y												Y							Y										
	PCB 106 2,3,3',4,5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y		
	PCB 107 2,3,3',4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y		
	PCB 107/109	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y												Y							Y										
	PCB 108 2,3,3',4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y		
	PCB 109 2,3,3',4,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y		
	PCB 11 3,3'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y		
	PCB 110 2,3,3',4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y
EPA 8270		MLA-007									Y																							
SGS AXYS MLA-010		MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y			
SGS AXYS MLA-007		MLA-007		Y													Y						Y											
PCB 111 2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y	
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y			
PCB 111/117	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y	
PCB 112 2,3,3',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y	
	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y			
PCB 113 2,3,3',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y	
	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y			
PCB 114 2,3,4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y	
	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y			
PCB 115 2,3,4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y	
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y			
PCB 116 2,3,4,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y	
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y				Y		Y		Y							Y			
PCB 117 2,3,4',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y	Y	Y	Y		Y	Y	

Accreditation Scope																																			
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 40																																			
				Serum	Solids											Tissue					Urine	Water	Water, Non-Potable												
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y					Y		Y		Y								Y		
	PCB 118 2,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y							Y				Y		Y	Y	Y	Y		Y	Y		
		SGS AXYS MLA-010	MLA-010		Y	Y		Y							Y		Y				Y		Y		Y								Y		
		SGS AXYS MLA-901	MLA-901	Y																															
	PCB 118/106	EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-007	MLA-007		Y												Y							Y		Y									
		EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y	Y	Y	Y		Y	Y	
	PCB 119 2,3',4,4',6-Pentachlorobiphenyl	EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
		EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y	Y	Y	Y		Y	Y	
	PCB 12 3,4-Dichlorobiphenyl	EPA 1668	MLA-010				Y					Y	Y	Y	Y						Y					Y		Y						Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
		EPA 8270	MLA-007									Y																							
	PCB 12 3,4-Dichlorobiphenyl	EPA 1668	MLA-010				Y					Y	Y	Y	Y						Y					Y		Y						Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
		EPA 8270	MLA-007									Y																							
	PCB 120 2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
		EPA 8270	MLA-007									Y																							
	PCB 121 2,3',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
		EPA 8270	MLA-007									Y																							
	PCB 122 2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
	PCB 123 2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
	PCB 124 2,3',4',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
	PCB 125 2,3',4',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
	PCB 126 3,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
	PCB 127 3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
		EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
	PCB 128 2,2',3,3',4,4'-Hexachlorobiphenyl	EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
		SGS AXYS MLA-007	MLA-007		Y												Y							Y		Y									
	PCB 129 2,2',3,3',4,5-Hexachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		EPA 8270	MLA-007									Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
	PCB 13 3,4'-Dichlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y		
		EPA 8270	MLA-007									Y																							
	PCB 130 2,2',3,3',4,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y	
		EPA 8270	MLA-007									Y																							
SGS AXYS MLA-010		MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y			
PCB 131 2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y			Y	Y	Y	Y	Y	Y						Y					Y		Y		Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y			

Accreditation Scope																																			
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 40																																			
				Serum	Solids									Tissue					Urine	Water	Water, Non-Potable														
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **	
	PCB 131/142	EPA 8270	MLA-007								Y																								
		SGS AXYS MLA-007	MLA-007		Y												Y							Y											
	PCB 132 2,2',3,3',4,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y						Y				Y		Y	Y	Y	Y		Y	Y		
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y	Y	Y			Y		
	PCB 132/168	EPA 8270	MLA-007									Y																							
	PCB 133 2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y		Y	Y	Y	Y		Y	Y	
		EPA 8270	MLA-007										Y														Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y	Y	Y			Y	Y	
	PCB 134 2,2',3,3',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y	Y	Y	Y		Y	Y	
	PCB 134/143	EPA 8270	MLA-007										Y																						
		SGS AXYS MLA-007	MLA-007			Y												Y																	
	PCB 135 2,2',3,3',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y		Y	Y	Y		Y	Y
	PCB 136 2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		EPA 8270	MLA-007										Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
		SGS AXYS MLA-007	MLA-007			Y												Y							Y		Y								
	PCB 137 2,2',3,4,4',5-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		EPA 8270	MLA-007										Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
		SGS AXYS MLA-007	MLA-007			Y												Y							Y		Y							Y	
	PCB 138 2,2',3,4,4',5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y	Y	
		SGS AXYS MLA-901	MLA-901	Y																															
	PCB 138/163/164	EPA 8270	MLA-007										Y																						
		SGS AXYS MLA-007	MLA-007			Y												Y																	
	PCB 139 2,2',3,4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
	PCB 14 3,5-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		EPA 8270	MLA-007										Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
	PCB 140 2,2',3,4,4',6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		EPA 8270	MLA-007										Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
	PCB 141 2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		EPA 8270	MLA-007										Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
	PCB 142 2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
	PCB 143 2,2',3,4,5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
	PCB 144 2,2',3,4,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
	PCB 144/135	EPA 8270	MLA-007										Y																						
		SGS AXYS MLA-007	MLA-007			Y												Y																	
	PCB 145 2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y
		EPA 8270	MLA-007										Y																						
		SGS AXYS MLA-010	MLA-010	Y	Y		Y									Y		Y				Y		Y		Y		Y					Y		
	PCB 146 2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y

Accreditation Scope																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Accreditation Scope				Serum	Solids	Tissue	Urine	Water	Water, Non-Potable																									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID																															
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **
	PCB 158/160	EPA 8270	MLA-007							Y							Y																	
		SGS AXYS MLA-007	MLA-007		Y												Y							Y										
	PCB 159 2,3,3',4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y					Y						Y	Y	Y	Y	Y	Y		Y	Y
EPA 8270		MLA-007									Y																							
SGS AXYS MLA-010		MLA-010	Y	Y	Y									Y		Y			Y		Y		Y	Y								Y		
SGS AXYS MLA-007		MLA-007		Y												Y						Y		Y										
PCB 16 2,2',3-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y	Y		Y	Y	
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
PCB 16/32	EPA 8270	MLA-007										Y																						
	SGS AXYS MLA-007	MLA-007		Y												Y							Y											
PCB 160 2,3,3',4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
	SGS AXYS MLA-007	MLA-007		Y												Y							Y		Y								Y	
	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
PCB 161 2,3,3',4,5',6-Hexachlorobiphenyl	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
	SGS AXYS MLA-007	MLA-007		Y												Y							Y		Y									
	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
PCB 162 2,3,3',4',5,5'-Hexachlorobiphenyl	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
PCB 163 2,3,3',4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
PCB 164 2,3,3',4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
PCB 165 2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
PCB 166 2,3,4,4',5,6-Hexachlorobiphenyl	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
PCB 167 2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
PCB 168 2,3',4,4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
PCB 169 3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
	SGS AXYS MLA-007	MLA-007		Y													Y						Y											
PCB 17 2,2',4-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y		Y			Y		Y		Y		Y								Y	
	SGS AXYS MLA-007	MLA-007		Y													Y						Y											
PCB 170 2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y					Y		Y		Y		Y								Y	
	SGS AXYS MLA-901	MLA-901	Y																															
PCB 170/190	EPA 8270	MLA-007									Y																							
	SGS AXYS MLA-007	MLA-007		Y													Y																	
PCB 171 2,2',3,3',4,4',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y							Y				Y	Y	Y	Y	Y		Y	Y		
	EPA 8270	MLA-007									Y																							

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Accreditation Scope																Serum	Solids													Tissue		Urine	Water	Water, Non-Potable																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
																CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
	PCB 197 2,2',3,3',4,4',6,6'-Octachlorobiphenyl	SGS AXYS MLA-007	MLA-007		Y																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

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SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 40																																					
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable															
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **			
	PCB 49 2,2',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y				Y			Y		Y									
		SGS AXYS MLA-010	MLA-010	Y	Y		Y						Y		Y		Y		Y		Y		Y		Y		Y						Y				
	PCB 49/43	EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-007	MLA-007		Y										Y							Y															
	PCB 5 2,3-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y						Y		Y	Y	Y	Y		Y	Y				
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 50 2,2',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y						Y		Y		Y	Y	Y		Y	Y			
		EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
		SGS AXYS MLA-007	MLA-007		Y											Y						Y		Y													
	PCB 51 2,2',4,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 52 2,2',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 52/73	EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-007	MLA-007		Y											Y						Y															
	PCB 53 2,2',5,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 54 2,2',6,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 55 2,3,3',4-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 56 2,3,3',4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 56/60	EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-007	MLA-007		Y													Y							Y		Y										
	PCB 57 2,3,3',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 58 2,3,3',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		EPA 8270	MLA-007										Y																								
	PCB 59 2,3,3',6-Tetrachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
		EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
	PCB 6 2,3'-Dichlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
		EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
	PCB 60 2,3,4,4'-Tetrachlorobiphenyl	EPA 8270	MLA-007										Y																								
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 61 2,3,4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 62 2,3,4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y		Y		Y		Y		Y		Y							Y				
	PCB 62/65	EPA 8270	MLA-007										Y																								
		EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y				Y					Y			Y		Y	Y	Y		Y	Y			
	PCB 63 2,3,4',5-Tetrachlorobiphenyl	EPA 8270	MLA-007										Y																								

Accreditation Scope																Serum	Solids													Tissue													Urine	Water	Water, Non-Potable
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **											
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y												
	PCB 64 2,3,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y		Y				Y			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y												
	PCB 65 2,3,5,6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y		Y				Y			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y												
	PCB 66 2,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y												
	PCB 66/80	EPA 8270	MLA-007									Y																																	
		SGS AXYS MLA-007	MLA-007		Y												Y							Y																					
	PCB 67 2,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y						Y	Y	Y	Y	Y	Y	Y	Y	Y											
		EPA 8270	MLA-007									Y																																	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 68 2,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 69 2,3',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		EPA 8270	MLA-007									Y																																	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 7 2,4-Dichlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 7/9	EPA 8270	MLA-007									Y																																	
	PCB 70 2,3',4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 70/76	EPA 8270	MLA-007									Y																																	
		SGS AXYS MLA-007	MLA-007		Y												Y							Y																					
	PCB 71 2,3',4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 72 2,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		EPA 8270	MLA-007									Y																																	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 73 2,3',5',6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 74 2,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-901	MLA-901	Y																																									
	PCB 74/61	EPA 8270	MLA-007									Y																																	
		SGS AXYS MLA-007	MLA-007		Y												Y							Y																					
	PCB 75 2,4,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 76 2,3',4',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 77 3,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		EPA 8270	MLA-007									Y																																	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		SGS AXYS MLA-007	MLA-007		Y												Y							Y																					
	PCB 78 3,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		EPA 8270	MLA-007									Y																																	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
	PCB 79 3,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y	Y						Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
		EPA 8270	MLA-007									Y																																	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											

Accreditation Scope																																																															
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 40																																																															
				Serum										Solids										Tissue										Urine										Water										Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **																													
	PCB 8 2,4'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y							Y				Y		Y		Y		Y	Y																															
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y		Y			Y																															
	PCB 8/5	EPA 8270	MLA-007									Y																																																			
		SGS AXYS MLA-007	MLA-007		Y													Y						Y																																							
	PCB 80 3,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y							Y					Y		Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y					Y																															
	PCB 81 3,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010					Y		Y	Y	Y	Y	Y	Y							Y					Y	Y	Y	Y	Y		Y	Y																													
		EPA 8270	MLA-007										Y																																																		
	PCB 82 2,2',3,3',4-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y																														
		EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y	Y	Y	Y	Y		Y	Y																														
	PCB 83 2,2',3,3',5-Pentachlorobiphenyl	EPA 8270	MLA-007									Y															Y	Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y		Y	Y	Y		Y																														
	PCB 83/108	EPA 8270	MLA-007									Y																																																			
		SGS AXYS MLA-007	MLA-007		Y													Y						Y																																							
	PCB 84 2,2',3,3',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		EPA 8270	MLA-007										Y																																																		
	PCB 85 2,2',3,4,4'-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y																														
		SGS AXYS MLA-007	MLA-007		Y													Y						Y		Y																																					
	PCB 85/120	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y					Y																															
	PCB 86 2,2',3,4,5-Pentachlorobiphenyl	EPA 8270	MLA-007									Y																																																			
		SGS AXYS MLA-007	MLA-007		Y													Y						Y		Y																																					
	PCB 86 2,2',3,4,5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y					Y																															
	PCB 87 2,2',3,4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y					Y																															
	PCB 87/115/116	EPA 8270	MLA-007									Y																																																			
		SGS AXYS MLA-007	MLA-007		Y													Y						Y																																							
	PCB 88 2,2',3,4,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y					Y																															
	PCB 88/121	EPA 8270	MLA-007									Y																																																			
	PCB 89 2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y												Y		Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y						Y																														
	PCB 9 2,5-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y					Y																															
	PCB 90 2,2',3,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y					Y																															
	PCB 91 2,2',3,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		EPA 8270	MLA-007										Y																																																		
	PCB 91 2,2',3,4',6-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y					Y																															
		SGS AXYS MLA-007	MLA-007		Y													Y						Y																																							
	PCB 92 2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		EPA 8270	MLA-007										Y																																																		
	PCB 92 2,2',3,5,5'-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y		Y							Y		Y					Y		Y		Y		Y					Y																															
	PCB 93 2,2',3,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y		Y				Y		Y		Y		Y					Y																															
	PCB 94 2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y								Y				Y		Y	Y	Y	Y		Y	Y																													
		EPA 8270	MLA-007										Y																																																		

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Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 40

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **
	Total Nonachlorobiphenyls	SGS AXYS MLA-010	MLA-010	Y	Y									Y		Y				Y		Y											Y	
		EPA 1668	MLA-010												Y						Y												Y	
		EPA 8270	MLA-007										Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y										Y		Y				Y		Y										Y	
	Total Octachlorobiphenyls	SGS AXYS MLA-007	MLA-007		Y												Y							Y										
		EPA 1668	MLA-010												Y						Y													Y
		EPA 8270	MLA-007										Y																					
		SGS AXYS MLA-010	MLA-010	Y	Y										Y		Y				Y		Y										Y	
	Total PCBs	SGS AXYS MLA-007	MLA-007		Y												Y							Y										
		EPA 1668	MLA-010												Y						Y													Y
		SGS AXYS MLA-010	MLA-010												Y						Y													Y
		SGS AXYS MLA-007	MLA-007		Y												Y							Y										Y
	Total Pentachlorobiphenyls	EPA 1668	MLA-010												Y						Y													Y
		EPA 8270	MLA-007											Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y										Y		Y				Y		Y										Y	
		SGS AXYS MLA-007	MLA-007		Y												Y							Y										Y
	Total Polychlorinated biphenyls	EPA 1668	MLA-010												Y						Y													Y
		EPA 8270	MLA-007											Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y										Y		Y				Y		Y										Y	
		SGS AXYS MLA-007	MLA-007		Y												Y							Y										Y
	Total Tetrachlorobiphenyls	EPA 1668	MLA-010												Y						Y													Y
		EPA 8270	MLA-007											Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y										Y		Y				Y		Y										Y	
		SGS AXYS MLA-007	MLA-007		Y												Y							Y										Y
Total Trichlorobiphenyls	EPA 1668	MLA-010												Y						Y													Y	
	EPA 8270	MLA-007											Y																					
	SGS AXYS MLA-010	MLA-010	Y	Y										Y		Y				Y		Y										Y		
	SGS AXYS MLA-007	MLA-007		Y												Y							Y										Y	
PCDDF	"Dioxins and Dibenzofurans" category (CA only)	EPA 1613	MLA-017																					Y										
		EPA 8290	MLA-017			Y																												
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	
	1,2,3,4,6,7,8-HpCDD	EPA 1613	MLA-017									Y		Y						Y					Y		Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y	Y			Y	Y	Y	Y	Y	Y	Y		Y		Y	Y					Y	
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y	Y	Y	Y	Y		Y						Y	
	1,2,3,4,6,7,8-HpCDF	EPA 1613	MLA-017									Y		Y						Y					Y		Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y	Y			Y	Y	Y	Y	Y	Y	Y		Y		Y	Y					Y	
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y	Y	Y	Y	Y		Y						Y	
	1,2,3,4,7,8,9-HpCDF	EPA 1613	MLA-017									Y		Y						Y					Y		Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y	Y			Y	Y	Y	Y	Y	Y	Y		Y		Y	Y					Y	
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y	Y	Y	Y	Y		Y						Y	
	1,2,3,4,7,8-HxCDD	EPA 1613	MLA-017									Y		Y						Y					Y		Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y	Y			Y	Y	Y	Y	Y	Y	Y		Y		Y	Y					Y	
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y	Y	Y	Y	Y		Y						Y	
	1,2,3,6,7,8-HxCDD	EPA 1613	MLA-017									Y		Y						Y					Y		Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y	Y			Y	Y	Y	Y	Y	Y	Y		Y		Y	Y					Y	
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y	Y	Y	Y	Y		Y						Y	
	1,2,3,6,7,8-HxCDF	EPA 1613	MLA-017									Y		Y						Y					Y		Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y	Y			Y	Y	Y	Y	Y	Y	Y		Y		Y	Y					Y	
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y	Y	Y	Y	Y		Y						Y	
	1,2,3,7,8,9-HxCDD	EPA 1613	MLA-017									Y		Y						Y					Y		Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8290	MLA-017				Y		Y	Y	Y		Y	Y			Y	Y	Y	Y	Y	Y	Y		Y		Y	Y					Y	
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y	Y	Y	Y	Y		Y						Y	

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file ref.: ACC-101 Rev. 40

Accreditation Scope				Serum	Solids	Tissue	Urine	Water	Water, Non-Potable																									
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 40																																		
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **
1,2,3,7,8,9-HxCDF		EPA 1613	MLA-017								Y	Y					Y			Y	Y				Y	Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8290	MLA-017				Y			Y	Y						Y	Y		Y	Y				Y							Y		
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y		Y	Y		Y						Y		
1,2,3,7,8-PeCDD		EPA 1613	MLA-017								Y	Y								Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8290	MLA-017				Y			Y	Y			Y	Y			Y	Y	Y	Y				Y							Y		
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y		Y	Y		Y						Y		
1,2,3,7,8-PeCDF		EPA 1613	MLA-017								Y	Y								Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8290	MLA-017				Y			Y	Y			Y	Y			Y	Y	Y	Y				Y							Y		
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y		Y	Y		Y						Y		
2,3,4,6,7,8-HxCDF		EPA 1613	MLA-017								Y	Y								Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8290	MLA-017				Y			Y	Y			Y	Y			Y	Y	Y	Y				Y							Y		
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y		Y	Y		Y						Y		
2,3,4,7,8-PeCDF		EPA 1613	MLA-017								Y	Y					Y	Y		Y			Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8290	MLA-017				Y			Y	Y			Y	Y			Y	Y	Y	Y				Y							Y		
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y		Y	Y		Y						Y		
2,3,7,8-TCDD		EPA 1613	MLA-017								Y	Y								Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8290	MLA-017				Y			Y	Y			Y	Y			Y	Y	Y	Y				Y							Y		
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y		Y	Y		Y						Y		
2,3,7,8-TCDF		EPA 1613	MLA-017								Y	Y								Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8290	MLA-017				Y			Y	Y			Y	Y			Y	Y	Y	Y				Y							Y		
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y		Y	Y		Y						Y		
OCDD		EPA 1613	MLA-017								Y	Y								Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8290	MLA-017				Y			Y	Y			Y	Y			Y	Y	Y	Y				Y							Y		
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y		Y	Y		Y						Y		
OCDF		EPA 1613	MLA-017								Y	Y								Y					Y	Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8290	MLA-017				Y			Y	Y			Y	Y			Y	Y	Y	Y				Y							Y		
		SGS AXYS MLA-017	MLA-017	Y	Y	Y									Y		Y	Y		Y	Y		Y	Y		Y						Y		
Total HpCDD		EPA 1613	MLA-017											Y					Y				Y	Y		Y						Y	Y	
		EPA 8290	MLA-017				Y			Y		Y		Y	Y			Y	Y	Y	Y				Y							Y	Y	
		SGS AXYS MLA-017	MLA-017				Y								Y		Y			Y			Y	Y		Y							Y	Y
Total HpCDF		EPA 1613	MLA-017											Y					Y				Y	Y		Y						Y	Y	
		EPA 8290	MLA-017				Y			Y		Y		Y	Y			Y	Y	Y	Y				Y							Y	Y	
		SGS AXYS MLA-017	MLA-017				Y								Y		Y			Y			Y	Y		Y							Y	Y
Total HxCDD		EPA 1613	MLA-017											Y					Y						Y							Y	Y	
		EPA 8290	MLA-017				Y			Y		Y		Y	Y			Y	Y	Y	Y				Y							Y	Y	
		SGS AXYS MLA-017	MLA-017				Y								Y		Y			Y					Y							Y	Y	
Total HxCDF		EPA 1613	MLA-017											Y					Y						Y							Y	Y	
		EPA 8290	MLA-017				Y			Y		Y		Y	Y			Y	Y	Y	Y				Y							Y	Y	
		SGS AXYS MLA-017	MLA-017				Y								Y		Y			Y					Y							Y	Y	
Total PCDD		EPA 1613	MLA-017											Y					Y														Y	Y
		EPA 8290	MLA-017												Y				Y													Y	Y	
		SGS AXYS MLA-017	MLA-017												Y				Y														Y	Y
Total PCDD+PCDF		EPA 1613	MLA-017											Y					Y														Y	Y
		EPA 8290	MLA-017												Y				Y													Y	Y	
		SGS AXYS MLA-017	MLA-017												Y				Y														Y	Y
Total PCDF		EPA 1613	MLA-017											Y					Y														Y	Y
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		SGS AXYS MLA-017	MLA-017												Y				Y														Y	Y
Total PeCDD		EPA 1613	MLA-017											Y					Y													Y	Y	
		EPA 8290	MLA-017				Y			Y		Y		Y	Y			Y	Y	Y	Y				Y						Y	Y		

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				Serum		Solids							Tissue					Urine		Water		Water, Non-Potable												
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID																															
	2-hydroxy-ibuprofen	SGS AXYS MLA-075	MLA-075		Y																	Y												
	4-Epianhydrochlortetracycline (EACTC)	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	4-Epianhydrotetracycline (EATC)	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	4-Epichlortetracycline (ECTC)	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	4-Epioxytetracycline (EOTC)	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	4-Epitetracycline (ETC)	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Acetaminophen	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Albuterol	EPA 1694	MLA-075										Y																		Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Alprazolam	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Amitriptyline	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Amlodipine	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Amphetamine	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Anhydrochlortetracycline (ACTC)	EPA 1694	MLA-075											Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Anhydrotetracycline (ATC)	EPA 1694	MLA-075											Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Atenolol	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Atorvastatin	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Azithromycin	EPA 1694	MLA-075											Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Benzoyllecgonine	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Benztropine	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Betamethasone	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Bisphenol A	EPA 1694	MLA-075											Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Caffeine	EPA 1694	MLA-075											Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Carbadox	EPA 1694	MLA-075											Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Carbamazepine	EPA 1694	MLA-075											Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Cefotaxime	EPA 1694	MLA-075											Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Chlortetracycline (CTC)	EPA 1694	MLA-075											Y																	Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Cimetidine	EPA 1694	MLA-075											Y																				

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Lomefloxacin	EPA 1694	MLA-075									Y																				Y		
		SGS AXYS MLA-075	MLA-075		Y																			Y										
	Meprobamate	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Metformin	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y																			Y										
	Methylprednisolone	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Metoprolol	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Miconazole	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y								Y											Y								Y		
	Minocycline	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y								Y											Y								Y		
	Naproxen	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y								Y											Y								Y		
	Norfloxacin	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y								Y											Y								Y		
	Norfluoxetine	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Norgestimate	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y								Y											Y								Y		
	Norverapamil	SGS AXYS MLA-075	MLA-075		Y																			Y										
	Ofloxacin	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y																			Y										
	Ormetoprim	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y								Y											Y								Y		
	Oxacillin	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y																			Y									Y	
	Oxolinic acid	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y																			Y									Y	
	Oxycodone	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y																			Y								Y		
	Oxytetracycline (OTC)	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y																			Y								Y		
	Paroxetine	EPA 1694	MLA-075									Y																			Y			
		SGS AXYS MLA-075	MLA-075		Y																			Y								Y		
Penicillin G	EPA 1694	MLA-075									Y																			Y				
	SGS AXYS MLA-075	MLA-075		Y																			Y											
Penicillin V	EPA 1694	MLA-075									Y																			Y				
	SGS AXYS MLA-075	MLA-075		Y																			Y											
Prednisolone	SGS AXYS MLA-075	MLA-075		Y																			Y											
Prednisone	SGS AXYS MLA-075	MLA-075		Y																			Y											
Promethazine	SGS AXYS MLA-075	MLA-075		Y																			Y											
Propoxyphene	SGS AXYS MLA-075	MLA-075		Y																			Y											
Propranolol	SGS AXYS MLA-075	MLA-075		Y																			Y											
Ranitidine	EPA 1694	MLA-075									Y																			Y				
	SGS AXYS MLA-075	MLA-075		Y																			Y								Y			
Roxithromycin	EPA 1694	MLA-075									Y																			Y				
	SGS AXYS MLA-075	MLA-075		Y																			Y									Y		
Sarafloxacin	EPA 1694	MLA-075									Y																			Y				
	SGS AXYS MLA-075	MLA-075		Y																			Y									Y		
Sertraline	SGS AXYS MLA-075	MLA-075		Y																			Y											
Simvastatin	SGS AXYS MLA-075	MLA-075		Y																			Y											
Sulfachloropyridazine	EPA 1694	MLA-075									Y																			Y				
	SGS AXYS MLA-075	MLA-075		Y																			Y											
Sulfadiazine	EPA 1694	MLA-075									Y																			Y				
	SGS AXYS MLA-075	MLA-075		Y																			Y									Y		
Sulfadimethoxine	EPA 1694	MLA-075									Y																			Y				
	SGS AXYS MLA-075	MLA-075		Y																			Y											

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SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 40																																		
				Serum	Solids								Tissue				Urine	Water	Water, Non-Potable															
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **
	Sulfamerazine	EPA 1694	MLA-075										Y																	Y				
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfamethazine	EPA 1694	MLA-075										Y											Y						Y				
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfamethizole	EPA 1694	MLA-075										Y																	Y				
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfamethoxazole	EPA 1694	MLA-075										Y																	Y				
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfanilamide	EPA 1694	MLA-075										Y											Y							Y			
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Sulfathiazole	EPA 1694	MLA-075										Y																	Y				
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Tetracycline (TC)	EPA 1694	MLA-075										Y																	Y				
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Theophylline	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Thiabendazole	EPA 1694	MLA-075										Y																	Y				
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Trenbolone	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Trenbolone acetate	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Triamterene	SGS AXYS MLA-075	MLA-075		Y																		Y											
	Triclocarban	EPA 1694	MLA-075										Y																	Y				
		SGS AXYS MLA-075	MLA-075		Y																		Y											
	Triclosan	EPA 1694	MLA-075										Y																	Y				
		SGS AXYS MLA-075	MLA-075		Y																		Y											
Trimethoprim	EPA 1694	MLA-075										Y											Y						Y					
	SGS AXYS MLA-075	MLA-075		Y																		Y												
Tylosin	EPA 1694	MLA-075										Y																	Y					
	SGS AXYS MLA-075	MLA-075		Y																		Y												
Valsartan	SGS AXYS MLA-075	MLA-075		Y																		Y												
Verapamil	SGS AXYS MLA-075	MLA-075		Y																		Y												
Virginiamycin	EPA 1694	MLA-075										Y																	Y					
	SGS AXYS MLA-075	MLA-075		Y																		Y												
Warfarin	EPA 1694	MLA-075										Y																	Y					
	SGS AXYS MLA-075	MLA-075		Y																		Y												
Targeted Metabolites	11, 14, 17-eicosatrienoic acid (eicosatrienoic acid)	SGS AXYS MLM-001	MLM-001											Y																				
	11, 14-eicosadienoic acid	SGS AXYS MLM-001	MLM-001											Y																				
	3-hydroxytyrosine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Acetylcarnitine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Acetylmethionine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Alanine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	alpha-Aminoadipic acid	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Arginine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Asparagine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Aspartate	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Asymmetric dimethylarginine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Butenylcarnitine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Butyrylcarnitine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	C22:5 ISOMER 1 (tentatively all-cis-4, 8, 12, 15, 19-docosapentaenoic acid)	SGS AXYS MLM-001	MLM-001											Y																				
	C22:5 ISOMER 2 (all-cis-7,10,13,16,19-docosapentaenoic acid (DPA)	SGS AXYS MLM-001	MLM-001											Y																				
	C22:5 ISOMER 3 (tentatively all-cis-4, 7, 10, 13, 16-docosapentaenoic acid)	SGS AXYS MLM-001	MLM-001											Y																				
	Carnitine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Carnosine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	chenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	cholic acid	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Citrulline	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Creatinine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	Decadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y										Y								Y												
	decanoic acid (capric acid)	SGS AXYS MLM-001	MLM-001											Y																				

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Legend

Y	Accreditation scope
BFR	Brominated flame retardants (non-PBDPE)
BPA and mPE	Bisphenol A and mono-Phthalate Esters
HBCDD	Hexabromocyclododecane
OC Pesticides	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PBDPE	Polybrominated diphenylethers
PCB	Polychlorinated Biphenyls
PCDDF	Polychlorinated dibenzodioxins/furans
PFAS	Per- and Polyfluoroalkyl Substances
PPCP	Pharmaceutical and Personal Care Products
TBBPA	Tetrabromobisphenol A
TOP	Total Oxidizable Precursors
California DPH	California Department of Public Health, Lab ID 2911
Florida DOH	Florida Department of Health, Lab ID E871007, (NELAC Standard)
Pennsylvania DEP	Pennsylvania Department of Environmental Protection
Minnesota DOH	Minnesota Department of Health, Lab ID 232-999-430, (NELAC Standard)
New Jersey DEP	New Jersey Department of Environmental Protection, Lab ID CANA005, (NELAC Standard)
New York DOH	New York Department of Health, Lab ID 11674, (NELAC Standard)
Washington DE	Washington Department of Ecology, Lab ID C404
Virginia DGS	Virginia Department of General Services, Division of Consolidated Laboratory Services, Lab ID 460224, (NELAC Standard)
Maine DOH	Maine Center for Disease Control and Prevention, Department of Health and Human Services, Lab ID CN00003

ANAB DoD ANSI-ASQ National Accreditation Board, certificate ADE-1861, (US DoD QSM 5.1 Standard)



CALA Canadian Association for Laboratory Accreditation Inc., Lab ID A2637, (ISO/IEC 17025:2005 Standard)



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