

SGS

AXYS

2045 Mills Road West

TEL: (250) 655-5800

Sidney, BC, Canada V8L5X2

TOLL-FREE: 1-888-373-0881

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:	WG67276	Date:	09-Apr-2019
Analysis Type:	Dioxin/Furan	Matrix Type:	XAD
BATCH MAKEUP			
Contract: 4972 Samples: L30772-1 PDI-RB-XD-190127 L30772-2 PDI-WS-T04-1902 L30772-3 PDI-WS-T05-1902 L30772-4 PDI-WS-T06-1901 L30772-5 PDI-WS-T07-1901 L30772-6 PDI-WS-T01-1902 L30772-7 PDI-WS-T02-1902 L30772-8 PDI-WS-T03-1902		Blank: WG67276-101 Reference or Spike: WG67276-102 WG67276-103 Duplicate:	
Comments: 1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.			

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February 2017

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

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
PDI-RB-XD-190127
Sample Collection:
27-Jan-2019 15:50

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.:	L30772-1 i2
Sample Receipt Date:	22-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	03-Apr-2019 Time: 18:00:38	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 57
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	DX9M_037B S: 47

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	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDD	U		0.840 (Q)		
1,2,3,7,8-PECDD ⁴	U		0.840 (Q)		
1,2,3,4,7,8-HXCDD	U		0.840 (Q)		
1,2,3,6,7,8-HXCDD	U		0.840 (Q)		
1,2,3,7,8,9-HXCDD	U		0.840 (Q)		
1,2,3,4,6,7,8-HPCDD	K J	1.11	0.840 (Q)	1.32	1.000
OCDD	J	2.49	0.840 (Q)	0.85	1.000
2,3,7,8-TCDF	U		0.840 (Q)		
1,2,3,7,8-PECDF	U		0.840 (Q)		
2,3,4,7,8-PECDF	U		0.840 (Q)		
1,2,3,4,7,8-HXCDF	U		0.840 (Q)		
1,2,3,6,7,8-HXCDF	U		0.840 (Q)		
1,2,3,7,8,9-HXCDF	U		0.840 (Q)		
2,3,4,6,7,8-HXCDF	U		0.840 (Q)		
1,2,3,4,6,7,8-HPCDF	U		0.840 (Q)		
1,2,3,4,7,8,9-HPCDF	U		0.840 (Q)		
OCDF	J	1.52	0.840 (Q)	0.92	1.002

(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.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axy Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-1_Form1A_DX9M_037BS57_SJ2540707.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 2
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-RB-XD-190127
Sample Collection:
27-Jan-2019 15:50

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.:	L30772-1 i2
Sample Receipt Date:	22-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	03-Apr-2019 Time: 18:00:38	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 57
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg absolute	Cal. Ver. Data Filename:	DX9M_037B S: 47

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.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	ION ABUND. RATIO ³	RRT ³
13C-2,3,7,8-TCDD		4000	3370	84.2	0.79	1.013
13C-1,2,3,7,8-PECDD ⁴		4000	3370	84.3	0.62	1.382
13C-1,2,3,4,7,8-HXCDD		4000	3290	82.2	1.23	0.988
13C-1,2,3,6,7,8-HXCDD		4000	4560	114	1.29	0.990
13C-1,2,3,4,6,7,8-HPCDD		4000	2880	72.0	1.04	1.094
13C-OCDD		8000	4360	54.6	0.87	1.178
13C-2,3,7,8-TCDF		4000	3200	80.0	0.75	0.966
13C-1,2,3,7,8-PECDF		4000	3200	79.9	1.51	1.283
13C-2,3,4,7,8-PECDF		4000	3160	79.0	1.51	1.350
13C-1,2,3,4,7,8-HXCDF		4000	3140	78.6	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		4000	3350	83.7	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		4000	3240	81.0	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		4000	3170	79.2	0.52	0.983
13C-1,2,3,4,6,7,8-HPCDF		4000	2820	70.4	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		4000	2910	72.8	0.43	1.104

CLEANUP STANDARD

37CL-2,3,7,8-TCDD		200	111	55.5		1.001
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axs Internal Use Only [XSL Template: Form2.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-1_Form2_DX9M_037BS57_SJ2540707.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1B

PCDD/PCDF CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-RB-XD-190127

Sample Collection:

27-Jan-2019 15:50

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-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 03-Apr-2019 Time: 18:00:38

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

L30772-1 i2

1 sample

03-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 57

DX9M_037B S: 56

N/A

CLIENT STANDARD	SPIKE CONC.	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	R(%)	ION ABUND. RATIO ³	RRT ³
13C6-1,2,3,4-TCDD	500		462	1.50 (S)	92.4	0.77	0.988

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

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form1B.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DXCS_L30772-1_Form1B_SJ2540987.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
PDI-WS-T04-1902
Sample Collection:
17-Feb-2019 19:35

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.:	L30772-2 i
Sample Receipt Date:	22-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	03-Apr-2019 Time: 18:55:46	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 58
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	DX9M_037B S: 47

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

COMPOUND	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDD	U		0.840 (Q)		
1,2,3,7,8-PECDD ⁴	U		0.840 (Q)		
1,2,3,4,7,8-HXCDD	U		0.840 (Q)		
1,2,3,6,7,8-HXCDD	U		0.840 (Q)		
1,2,3,7,8,9-HXCDD	U		0.840 (Q)		
1,2,3,4,6,7,8-HPCDD	J	10.5	1.56 (S)	1.06	1.000
OCDD		85.4	1.18 (S)	0.85	1.000
2,3,7,8-TCDF	J	0.994	0.840 (Q)	0.70	1.001
1,2,3,7,8-PCDF	J	0.984	0.840 (Q)	1.41	1.001
2,3,4,7,8-PCDF	U		0.840 (Q)		
1,2,3,4,7,8-HXCDF	K J	1.00	0.840 (Q)	1.83	1.001
1,2,3,6,7,8-HXCDF	U		0.840 (Q)		
1,2,3,7,8,9-HXCDF	U		0.840 (Q)		
2,3,4,6,7,8-HXCDF	U		0.840 (Q)		
1,2,3,4,6,7,8-HPCDF	K J	1.66	0.840 (Q)	1.48	1.000
1,2,3,4,7,8,9-HPCDF	U		0.840 (Q)		
OCDF	K J	4.32	0.840 (Q)	1.14	1.002

(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.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ **Henry Huang** _____

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-2_Form1A_DX9M_037BS58_SJ2540708.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
PDI-WS-T04-1902
Sample Collection:
17-Feb-2019 19:35

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.:	L30772-2 i
Sample Receipt Date:	22-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	03-Apr-2019 Time: 18:55:46	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 58
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg absolute	Cal. Ver. Data Filename:	DX9M_037B S: 47

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.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	ION ABUND. RATIO ³	RRT ³
13C-2,3,7,8-TCDD		4000	2930	73.2	0.75	1.013
13C-1,2,3,7,8-PECDD ⁴		4000	3190	79.8	0.63	1.382
13C-1,2,3,4,7,8-HXCDD		4000	3390	84.8	1.26	0.989
13C-1,2,3,6,7,8-HXCDD		4000	4040	101	1.25	0.991
13C-1,2,3,4,6,7,8-HPCDD		4000	2760	69.0	1.04	1.094
13C-OCDD		8000	4030	50.3	0.88	1.178
13C-2,3,7,8-TCDF		4000	2840	70.9	0.77	0.966
13C-1,2,3,7,8-PECDF		4000	2910	72.7	1.49	1.284
13C-2,3,4,7,8-PECDF		4000	2890	72.3	1.49	1.351
13C-1,2,3,4,7,8-HXCDF		4000	3110	77.8	0.51	0.955
13C-1,2,3,6,7,8-HXCDF		4000	3210	80.4	0.51	0.959
13C-1,2,3,7,8,9-HXCDF		4000	2980	74.4	0.51	1.005
13C-2,3,4,6,7,8-HXCDF		4000	3000	75.0	0.52	0.985
13C-1,2,3,4,6,7,8-HPCDF		4000	2800	70.1	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		4000	2520	63.1	0.45	1.104

CLEANUP STANDARD

37CL-2,3,7,8-TCDD		200	102	51.0		1.001
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axs Internal Use Only [XSL Template: Form2.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-2_Form2_DX9M_037BS58_SJ2540708.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T04-1902
Sample Collection:
17-Feb-2019 19:35

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-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 05-Apr-2019 Time: 13:50:17

Extract Volume (uL): 20

Injection Volume (uL): 2.0

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
L30772-2

1 sample

04-Apr-2019

HR GC/MS

DB225

DB93_065 S: 8

DX9M_037B S: 56

DB93_065 S: 2

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	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDF	K J	1.18	0.840 (Q)	0.92	1.001

(1) Where applicable, custom lab flags have been used on this report; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axs Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB225_L30772-2_Form1A_DB93_065S8_SJ2541502.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1B

PCDD/PCDF CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T04-1902

Sample Collection:

17-Feb-2019 19:35

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-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 03-Apr-2019 Time: 18:55:46

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

L30772-2 i

1 sample

03-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 58

DX9M_037B S: 56

N/A

CLIENT STANDARD	SPIKE CONC.	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	R(%)	ION ABUND. RATIO ³	RRT ³
13C6-1,2,3,4-TCDD	500		485	0.388 (S)	97.0	0.77	0.987

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

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form1B.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DXCS_L30772-2_Form1B_SJ2540988.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T05-1902
Sample Collection:
17-Feb-2019 19:17

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.:	L30772-3 i
Sample Receipt Date:	22-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	04-Apr-2019 Time: 01:31:08	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 65
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	DX9M_037B S: 59

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	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDD	U		0.839 (Q)		
1,2,3,7,8-PECDD ⁴	U		0.839 (Q)		
1,2,3,4,7,8-HXCDD	U		0.839 (Q)		
1,2,3,6,7,8-HXCDD	K J	0.995	0.839 (Q)	2.12	1.000
1,2,3,7,8,9-HXCDD	U		0.839 (Q)		
1,2,3,4,6,7,8-HPCDD	J	15.6	0.839 (Q)	1.14	1.000
OCDD		157	0.875 (S)	0.82	1.000
2,3,7,8-TCDF	J	0.916	0.839 (Q)	0.85	1.003
1,2,3,7,8-PECDF	K J	0.903	0.839 (Q)	0.76	1.000
2,3,4,7,8-PECDF	U		0.839 (Q)		
1,2,3,4,7,8-HXCDF	U		0.839 (Q)		
1,2,3,6,7,8-HXCDF	U		0.839 (Q)		
1,2,3,7,8,9-HXCDF	U		0.839 (Q)		
2,3,4,6,7,8-HXCDF	U		0.839 (Q)		
1,2,3,4,6,7,8-HPCDF	J	2.93	0.839 (Q)	0.97	1.001
1,2,3,4,7,8,9-HPCDF	U		0.839 (Q)		
OCDF	K J	7.21	0.863 (S)	1.10	1.002

(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.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axy Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-3_Form1A_DX9M_037BS65_SJ2540775.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 2
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T05-1902
Sample Collection:
17-Feb-2019 19:17

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-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 04-Apr-2019 Time: 01:31:08

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg absolute

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
L30772-3 i

1 sample

01-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 65

DX9M_037B S: 56

DX9M_037B S: 59

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	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	ION ABUND. RATIO ³	RRT ³
13C-2,3,7,8-TCDD		4000	2720	68.0	0.76	1.013
13C-1,2,3,7,8-PECDD ⁴		4000	2890	72.2	0.63	1.382
13C-1,2,3,4,7,8-HXCDD		4000	3150	78.7	1.29	0.987
13C-1,2,3,6,7,8-HXCDD		4000	3630	90.6	1.27	0.990
13C-1,2,3,4,6,7,8-HPCDD		4000	2600	65.0	1.03	1.094
13C-OCDD		8000	3590	44.9	0.92	1.178
13C-2,3,7,8-TCDF		4000	2600	65.1	0.76	0.966
13C-1,2,3,7,8-PECDF		4000	2640	65.9	1.46	1.283
13C-2,3,4,7,8-PECDF		4000	2620	65.4	1.54	1.351
13C-1,2,3,4,7,8-HXCDF		4000	2880	71.9	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		4000	3160	78.9	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		4000	2880	71.9	0.50	1.005
13C-2,3,4,6,7,8-HXCDF		4000	3020	75.5	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		4000	2390	59.7	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		4000	2590	64.7	0.45	1.104

CLEANUP STANDARD

37CL-2,3,7,8-TCDD	200	96.4	48.2	1.001
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-3_Form2_DX9M_037BS65_SJ2540775.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T05-1902
Sample Collection:
17-Feb-2019 19:17

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-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 05-Apr-2019 Time: 14:35:10

Extract Volume (uL): 20

Injection Volume (uL): 2.0

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
L30772-3

1 sample

04-Apr-2019

HR GC/MS

DB225

DB93_065 S: 9

DX9M_037B S: 56

DB93_065 S: 2

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

COMPOUND	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDF	J	1.12	0.839 (Q)	0.74	1.000

(1) Where applicable, custom lab flags have been used on this report; J = concentration less than lowest calibration equivalent.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axy Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB225_L30772-3_Form1A_DB93_065S9_SJ2541503.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1B

PCDD/PCDF CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T05-1902

Sample Collection:

17-Feb-2019 19:17

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-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 04-Apr-2019 Time: 01:31:08

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

L30772-3 i

1 sample

03-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 65

DX9M_037B S: 56

N/A

CLIENT STANDARD	SPIKE CONC.	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	R(%)	ION ABUND. RATIO ³	RRT ³
13C6-1,2,3,4-TCDD	500		510	0.545 (S)	102	0.77	0.988

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

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form1B.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DXCS_L30772-3_Form1B_SJ2540995.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T06-1901
Sample Collection:
27-Jan-2019 10:40

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.:	L30772-4 i
Sample Receipt Date:	22-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	04-Apr-2019 Time: 02:26:11	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 66
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	DX9M_037B S: 59

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	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDD	U		0.837 (Q)		
1,2,3,7,8-PECDD ⁴	U		0.837 (Q)		
1,2,3,4,7,8-HXCDD	U		0.837 (Q)		
1,2,3,6,7,8-HXCDD	U		0.837 (Q)		
1,2,3,7,8,9-HXCDD	U		0.837 (Q)		
1,2,3,4,6,7,8-HPCDD	J	9.16	0.837 (Q)	1.04	1.001
OCDD		60.4	0.837 (Q)	0.91	1.000
2,3,7,8-TCDF	U		0.837 (Q)		
1,2,3,7,8-PECDF	U		0.837 (Q)		
2,3,4,7,8-PECDF	U		0.837 (Q)		
1,2,3,4,7,8-HXCDF	U		0.837 (Q)		
1,2,3,6,7,8-HXCDF	U		0.837 (Q)		
1,2,3,7,8,9-HXCDF	U		0.837 (Q)		
2,3,4,6,7,8-HXCDF	U		0.837 (Q)		
1,2,3,4,6,7,8-HPCDF	J	1.57	0.837 (Q)	1.19	1.001
1,2,3,4,7,8,9-HPCDF	U		0.837 (Q)		
OCDF	K J	1.84	0.837 (Q)	0.48	1.002

(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.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axy Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-4_Form1A_DX9M_037BS66_SJ2540776.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 2
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T06-1901
Sample Collection:
27-Jan-2019 10:40

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.:	L30772-4 i
Sample Receipt Date:	22-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	04-Apr-2019 Time: 02:26:11	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 66
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg absolute	Cal. Ver. Data Filename:	DX9M_037B S: 59

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	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	ION ABUND. RATIO ³	RRT ³
13C-2,3,7,8-TCDD		4000	3190	79.9	0.78	1.013
13C-1,2,3,7,8-PECDD ⁴		4000	3120	78.1	0.62	1.382
13C-1,2,3,4,7,8-HXCDD		4000	3210	80.2	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		4000	3760	93.9	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		4000	2720	68.0	1.03	1.094
13C-OCDD		8000	3530	44.1	0.87	1.178
13C-2,3,7,8-TCDF		4000	3110	77.8	0.77	0.966
13C-1,2,3,7,8-PECDF		4000	2930	73.2	1.49	1.283
13C-2,3,4,7,8-PECDF		4000	2870	71.8	1.49	1.351
13C-1,2,3,4,7,8-HXCDF		4000	3150	78.8	0.50	0.954
13C-1,2,3,6,7,8-HXCDF		4000	3390	84.7	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		4000	3000	75.0	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		4000	2980	74.6	0.53	0.980
13C-1,2,3,4,6,7,8-HPCDF		4000	2780	69.4	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		4000	2680	67.0	0.46	1.104

CLEANUP STANDARD

37CL-2,3,7,8-TCDD		200	114	56.9		1.001
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-4_Form2_DX9M_037BS66_SJ2540776.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1B

PCDD/PCDF CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T06-1901

Sample Collection:

27-Jan-2019 10:40

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-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 04-Apr-2019 Time: 02:26:11

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

L30772-4 i

1 sample

03-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 66

DX9M_037B S: 56

N/A

CLIENT STANDARD	SPIKE CONC.	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	R(%)	ION ABUND. RATIO ³	RRT ³
13C6-1,2,3,4-TCDD	500		452	0.841 (S)	90.3	0.77	0.988

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

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form1B.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DXCS_L30772-4_Form1B_SJ2540996.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
PDI-WS-T07-1901
Sample Collection:
26-Jan-2019 09:46

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.:	L30772-5 i
Sample Receipt Date:	22-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	04-Apr-2019 Time: 03:21:19	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 67
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	DX9M_037B S: 59

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	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDD	U		0.838 (Q)		
1,2,3,7,8-PECDD ⁴	U		0.838 (Q)		
1,2,3,4,7,8-HXCDD	U		0.838 (Q)		
1,2,3,6,7,8-HXCDD	U		0.838 (Q)		
1,2,3,7,8,9-HXCDD	U		0.838 (Q)		
1,2,3,4,6,7,8-HPCDD	J	3.43	0.838 (Q)	1.08	1.000
OCDD		34.5	0.938 (S)	0.84	1.000
2,3,7,8-TCDF	U		0.838 (Q)		
1,2,3,7,8-PECDF	U		0.838 (Q)		
2,3,4,7,8-PECDF	U		0.838 (Q)		
1,2,3,4,7,8-HXCDF	U		0.838 (Q)		
1,2,3,6,7,8-HXCDF	U		0.838 (Q)		
1,2,3,7,8,9-HXCDF	U		0.838 (Q)		
2,3,4,6,7,8-HXCDF	U		0.838 (Q)		
1,2,3,4,6,7,8-HPCDF	J	1.46	0.838 (Q)	0.92	1.000
1,2,3,4,7,8,9-HPCDF	U		0.838 (Q)		
OCDF	K J	2.29	0.838 (Q)	0.62	1.002

(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.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axy Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-5_Form1A_DX9M_037BS67_SJ2540777.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 2
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T07-1901
Sample Collection:
26-Jan-2019 09:46

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.:	L30772-5 i
Sample Receipt Date:	22-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	04-Apr-2019 Time: 03:21:19	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 67
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg absolute	Cal. Ver. Data Filename:	DX9M_037B S: 59

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	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	ION ABUND. RATIO ³	RRT ³
13C-2,3,7,8-TCDD		4000	3270	81.9	0.77	1.013
13C-1,2,3,7,8-PECDD ⁴		4000	3420	85.6	0.63	1.382
13C-1,2,3,4,7,8-HXCDD		4000	3590	89.7	1.22	0.987
13C-1,2,3,6,7,8-HXCDD		4000	4260	106	1.23	0.990
13C-1,2,3,4,6,7,8-HPCDD		4000	2920	73.1	1.04	1.094
13C-OCDD		8000	4140	51.7	0.91	1.178
13C-2,3,7,8-TCDF		4000	3110	77.7	0.75	0.966
13C-1,2,3,7,8-PECDF		4000	3080	77.0	1.52	1.283
13C-2,3,4,7,8-PECDF		4000	3090	77.4	1.48	1.351
13C-1,2,3,4,7,8-HXCDF		4000	3200	79.9	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		4000	3420	85.4	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		4000	3180	79.4	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		4000	3300	82.4	0.51	0.982
13C-1,2,3,4,6,7,8-HPCDF		4000	2840	70.9	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		4000	2910	72.6	0.43	1.104

CLEANUP STANDARD

37CL-2,3,7,8-TCDD		200	112	55.9		1.001
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axs Internal Use Only [XSL Template: Form2.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-5_Form2_DX9M_037BS67_SJ2540777.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1B

PCDD/PCDF CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T07-1901

Sample Collection:

26-Jan-2019 09:46

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-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 04-Apr-2019 Time: 03:21:19

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

L30772-5 i

1 sample

03-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 67

DX9M_037B S: 56

N/A

CLIENT STANDARD	SPIKE CONC.	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	R(%)	ION ABUND. RATIO ³	RRT ³
13C6-1,2,3,4-TCDD	500		510	1.37 (S)	102	0.75	0.988

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

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form1B.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DXCS_L30772-5_Form1B_SJ2540997.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T01-1902
Sample Collection:
18-Feb-2019 20:15

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.:	L30772-6 i
Sample Receipt Date:	21-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	04-Apr-2019 Time: 04:16:27	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 68
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	DX9M_037B S: 59

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	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDD	U		0.835 (Q)		
1,2,3,7,8-PECDD ⁴	U		0.835 (Q)		
1,2,3,4,7,8-HXCDD	U		0.835 (Q)		
1,2,3,6,7,8-HXCDD	K J	0.936	0.835 (Q)	0.98	1.000
1,2,3,7,8,9-HXCDD	U		0.835 (Q)		
1,2,3,4,6,7,8-HPCDD	J	11.8	0.835 (Q)	1.02	1.000
OCDD		128	1.80 (S)	0.87	1.000
2,3,7,8-TCDF	K J	0.890	0.835 (Q)	0.58	1.001
1,2,3,7,8-PECDF	K J	1.24	0.835 (Q)	1.04	1.003
2,3,4,7,8-PECDF	U		0.835 (Q)		
1,2,3,4,7,8-HXCDF	U		0.835 (Q)		
1,2,3,6,7,8-HXCDF	U		0.835 (Q)		
1,2,3,7,8,9-HXCDF	U		0.835 (Q)		
2,3,4,6,7,8-HXCDF	U		0.835 (Q)		
1,2,3,4,6,7,8-HPCDF	J	2.37	0.835 (Q)	1.15	1.000
1,2,3,4,7,8,9-HPCDF	U		0.835 (Q)		
OCDF	K J	11.1	0.835 (Q)	0.75	1.002

(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.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axy Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-6_Form1A_DX9M_037BS68_SJ2540778.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 2
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T01-1902
Sample Collection:
18-Feb-2019 20:15

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: 21-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 04-Apr-2019 Time: 04:16:27

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg absolute

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
L30772-6 i

1 sample

01-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 68

DX9M_037B S: 56

DX9M_037B S: 59

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.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	ION ABUND. RATIO ³	RRT ³
13C-2,3,7,8-TCDD		8000	6110	76.4	0.78	1.013
13C-1,2,3,7,8-PECDD ⁴		8000	6980	87.2	0.62	1.383
13C-1,2,3,4,7,8-HXCDD		8000	6380	79.8	1.24	0.990
13C-1,2,3,6,7,8-HXCDD		8000	6770	84.6	1.26	0.992
13C-1,2,3,4,6,7,8-HPCDD		8000	4460	55.8	1.04	1.094
13C-OCDD		16000	5960	37.2	0.89	1.178
13C-2,3,7,8-TCDF		8000	5850	73.1	0.76	0.966
13C-1,2,3,7,8-PECDF		8000	6040	75.5	1.52	1.283
13C-2,3,4,7,8-PECDF		8000	6120	76.5	1.55	1.351
13C-1,2,3,4,7,8-HXCDF		8000	4860	60.7	0.52	0.956
13C-1,2,3,6,7,8-HXCDF		8000	5190	64.9	0.51	0.960
13C-1,2,3,7,8,9-HXCDF		8000	4860	60.8	0.51	1.005
13C-2,3,4,6,7,8-HXCDF		8000	4870	60.8	0.53	0.986
13C-1,2,3,4,6,7,8-HPCDF		8000	4240	53.1	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		8000	4450	55.6	0.44	1.104

CLEANUP STANDARD

37CL-2,3,7,8-TCDD		200	110	55.2		1.001
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-6_Form2_DX9M_037BS68_SJ2540778.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T01-1902
Sample Collection:
18-Feb-2019 20:15

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: 21-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 05-Apr-2019 Time: 15:20:04

Extract Volume (uL): 20

Injection Volume (uL): 2.0

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
L30772-6

1 sample

04-Apr-2019

HR GC/MS

DB225

DB93_065 S: 10

DX9M_037B S: 56

DB93_065 S: 2

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

COMPOUND	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDF	U		0.835 (Q)		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axs Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB225_L30772-6_Form1A_DB93_065S10_SJ2541504.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1B

PCDD/PCDF CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T01-1902

Sample Collection:

18-Feb-2019 20:15

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: 21-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 04-Apr-2019 Time: 04:16:27

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

L30772-6 i

1 sample

03-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 68

DX9M_037B S: 56

N/A

CLIENT STANDARD	SPIKE CONC.	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	R(%)	ION ABUND. RATIO ³	RRT ³
13C6-1,2,3,4-TCDD	1000		936	0.798 (S)	93.6	0.78	0.988

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

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form1B.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DXCS_L30772-6_Form1B_SJ2540998.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
PDI-WS-T02-1902
Sample Collection:
18-Feb-2019 21:36

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.:	L30772-7
Sample Receipt Date:	21-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	04-Apr-2019 Time: 05:11:34	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 69
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	DX9M_037B S: 59

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	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDD	U		0.839 (Q)		
1,2,3,7,8-PECDD ⁴	U		0.839 (Q)		
1,2,3,4,7,8-HXCDD	U		0.839 (Q)		
1,2,3,6,7,8-HXCDD	U		0.839 (Q)		
1,2,3,7,8,9-HXCDD	U		0.839 (Q)		
1,2,3,4,6,7,8-HPCDD	J	7.40	0.839 (Q)	0.93	1.000
OCDD		75.2	1.61 (S)	0.90	1.000
2,3,7,8-TCDF	U		0.839 (Q)		
1,2,3,7,8-PECDF	U		0.839 (Q)		
2,3,4,7,8-PECDF	U		0.839 (Q)		
1,2,3,4,7,8-HXCDF	U		0.839 (Q)		
1,2,3,6,7,8-HXCDF	U		0.839 (Q)		
1,2,3,7,8,9-HXCDF	U		0.839 (Q)		
2,3,4,6,7,8-HXCDF	U		0.839 (Q)		
1,2,3,4,6,7,8-HPCDF	K J	1.27	0.839 (Q)	1.93	1.000
1,2,3,4,7,8,9-HPCDF	U		0.839 (Q)		
OCDF	K J	2.81	0.839 (Q)	1.19	1.002

(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.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axy Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-7_Form1A_DX9M_037BS69_SJ2540779.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
PDI-WS-T02-1902
Sample Collection:
18-Feb-2019 21:36

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.:	L30772-7
Sample Receipt Date:	21-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	04-Apr-2019 Time: 05:11:34	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 69
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg absolute	Cal. Ver. Data Filename:	DX9M_037B S: 59

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	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	ION ABUND. RATIO ³	RRT ³
13C-2,3,7,8-TCDD		4000	3130	78.3	0.77	1.013
13C-1,2,3,7,8-PECDD ⁴		4000	3320	83.0	0.61	1.382
13C-1,2,3,4,7,8-HXCDD		4000	3090	77.3	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		4000	3710	92.8	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		4000	2770	69.4	1.02	1.094
13C-OCDD		8000	3980	49.7	0.92	1.178
13C-2,3,7,8-TCDF		4000	2920	73.1	0.75	0.966
13C-1,2,3,7,8-PECDF		4000	3010	75.1	1.51	1.283
13C-2,3,4,7,8-PECDF		4000	2940	73.6	1.48	1.351
13C-1,2,3,4,7,8-HXCDF		4000	2880	72.0	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		4000	3170	79.3	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		4000	2970	74.2	0.51	1.004
13C-2,3,4,6,7,8-HXCDF		4000	2840	71.1	0.55	0.980
13C-1,2,3,4,6,7,8-HPCDF		4000	2770	69.1	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		4000	2870	71.6	0.45	1.104

CLEANUP STANDARD

37CL-2,3,7,8-TCDD	200	105	52.5	1.001
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ **Henry Huang** _____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-7_Form2_DX9M_037BS69_SJ2540779.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1B

PCDD/PCDF CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T02-1902

Sample Collection:

18-Feb-2019 21:36

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: 21-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 04-Apr-2019 Time: 05:11:34

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

L30772-7

1 sample

03-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 69

DX9M_037B S: 56

N/A

CLIENT STANDARD	SPIKE CONC.	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	R(%)	ION ABUND. RATIO ³	RRT ³
13C6-1,2,3,4-TCDD	500		505	3.29 (S)	101	0.82	0.988

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

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form1B.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DXCS_L30772-7_Form1B_SJ2540999.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T03-1902
Sample Collection:
18-Feb-2019 11:31

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.:	L30772-8
Sample Receipt Date:	21-Feb-2019	Sample Size:	1 sample
Extraction Date:	07-Mar-2019	Initial Calibration Date:	01-Apr-2019
Analysis Date:	04-Apr-2019 Time: 06:06:43	Instrument ID:	HR GC/MS
Extract Volume (uL):	20	GC Column ID:	DB5
Injection Volume (uL):	1.0	Sample Data Filename:	DX9M_037B S: 70
Dilution Factor:	N/A	Blank Data Filename:	DX9M_037B S: 56
Concentration Units:	pg/sample	Cal. Ver. Data Filename:	DX9M_037B S: 59

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	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDD	U		0.839 (Q)		
1,2,3,7,8-PECDD ⁴	U		0.839 (Q)		
1,2,3,4,7,8-HXCDD	U		0.839 (Q)		
1,2,3,6,7,8-HXCDD	K J	0.938	0.839 (Q)	2.29	1.001
1,2,3,7,8,9-HXCDD	U		0.839 (Q)		
1,2,3,4,6,7,8-HPCDD	J	11.5	0.839 (Q)	1.20	1.000
OCDD		122	1.77 (S)	0.93	1.000
2,3,7,8-TCDF	U		0.839 (Q)		
1,2,3,7,8-PECDF	U		0.839 (Q)		
2,3,4,7,8-PECDF	U		0.839 (Q)		
1,2,3,4,7,8-HXCDF	U		0.839 (Q)		
1,2,3,6,7,8-HXCDF	U		0.839 (Q)		
1,2,3,7,8,9-HXCDF	U		0.839 (Q)		
2,3,4,6,7,8-HXCDF	U		0.839 (Q)		
1,2,3,4,6,7,8-HPCDF	K J	2.51	0.839 (Q)	0.79	1.000
1,2,3,4,7,8,9-HPCDF	U		0.839 (Q)		
OCDF	J	6.57	0.839 (Q)	0.90	1.002

(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.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axy Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-8_Form1A_DX9M_037BS70_SJ2540780.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 2
PCDD/PCDF ANALYSIS REPORTCLIENT SAMPLE NO.
PDI-WS-T03-1902
Sample Collection:
18-Feb-2019 11:31

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: 21-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 04-Apr-2019 Time: 06:06:43

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg absolute

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
L30772-8

1 sample

01-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 70

DX9M_037B S: 56

DX9M_037B S: 59

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	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	ION ABUND. RATIO ³	RRT ³
13C-2,3,7,8-TCDD		4000	2800	70.1	0.77	1.013
13C-1,2,3,7,8-PECDD ⁴		4000	2950	73.6	0.62	1.382
13C-1,2,3,4,7,8-HXCDD		4000	2830	70.9	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		4000	3480	86.9	1.18	0.990
13C-1,2,3,4,6,7,8-HPCDD		4000	2430	60.8	1.05	1.094
13C-OCDD		8000	3810	47.7	0.90	1.178
13C-2,3,7,8-TCDF		4000	2580	64.6	0.77	0.966
13C-1,2,3,7,8-PECDF		4000	2720	68.1	1.48	1.283
13C-2,3,4,7,8-PECDF		4000	2730	68.2	1.53	1.351
13C-1,2,3,4,7,8-HXCDF		4000	2590	64.8	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		4000	2930	73.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		4000	2590	64.6	0.51	1.004
13C-2,3,4,6,7,8-HXCDF		4000	2680	67.0	0.49	0.980
13C-1,2,3,4,6,7,8-HPCDF		4000	2430	60.8	0.43	1.062
13C-1,2,3,4,7,8,9-HPCDF		4000	2470	61.8	0.48	1.104

CLEANUP STANDARD

37CL-2,3,7,8-TCDD	200	97.7	48.8	1.001
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_L30772-8_Form2_DX9M_037BS70_SJ2540780.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1B

PCDD/PCDF CLIENT STANDARD ANALYSIS REPORT

CLIENT SAMPLE NO.

PDI-WS-T03-1902

Sample Collection:

18-Feb-2019 11:31

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: 21-Feb-2019

Extraction Date: 07-Mar-2019

Analysis Date: 04-Apr-2019 Time: 06:06:43

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

L30772-8

1 sample

03-Apr-2019

HR GC/MS

DB5

DX9M_037B S: 70

DX9M_037B S: 56

N/A

CLIENT STANDARD	SPIKE CONC.	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	R(%)	ION ABUND. RATIO ³	RRT ³
13C6-1,2,3,4-TCDD	500		498	8.86 (S)	99.6	0.76	0.988

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

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form1B.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DXCS_L30772-8_Form1B_SJ2541000.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1A
PCDD/PCDF 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: 07-Mar-2019

Analysis Date: 03-Apr-2019 Time: 17:05:29

Extract Volume (uL): 20

Injection Volume (uL): 1.0

Dilution Factor: N/A

Concentration Units: pg/sample

Project No.

N/A

Lab Sample I.D.:

WG67276-101 i2

Sample Size:

1 sample

Initial Calibration Date:

01-Apr-2019

Instrument ID:

HR GC/MS

GC Column ID:

DB5

Sample Data Filename:

DX9M_037B S: 56

Blank Data Filename:

DX9M_037B S: 56

Cal. Ver. Data Filename:

DX9M_037B S: 47

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

COMPOUND	LAB FLAG ¹	CONCENTRATION FOUND	REPORTING LIMIT (RL) ²	ION ABUND. RATIO ³	RRT ³
2,3,7,8-TCDD	U		0.841 (Q)		
1,2,3,7,8-PECDD ⁴	U		0.841 (Q)		
1,2,3,4,7,8-HXCDD	U		0.841 (Q)		
1,2,3,6,7,8-HXCDD	U		0.841 (Q)		
1,2,3,7,8,9-HXCDD	U		0.841 (Q)		
1,2,3,4,6,7,8-HPCDD	K J	1.33	0.841 (Q)	1.52	1.000
OCDD	K J	2.94	0.841 (Q)	0.41	1.000
2,3,7,8-TCDF	U		0.841 (Q)		
1,2,3,7,8-PECDF	U		0.841 (Q)		
2,3,4,7,8-PECDF	U		0.841 (Q)		
1,2,3,4,7,8-HXCDF	U		0.841 (Q)		
1,2,3,6,7,8-HXCDF	U		0.841 (Q)		
1,2,3,7,8,9-HXCDF	U		0.841 (Q)		
2,3,4,6,7,8-HXCDF	U		0.841 (Q)		
1,2,3,4,6,7,8-HPCDF	K J	1.43	0.841 (Q)	3.83	1.000
1,2,3,4,7,8,9-HPCDF	K J	1.36	0.841 (Q)	1.62	1.000
OCDF	K J	2.77	0.924 (S)	0.73	1.002

(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.

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axy Internal Use Only [XSL Template: Form1A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_WG67276-101_Form1A_DX9M_037BS56_SJ2540706.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 2
PCDD/PCDF 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.:

WG67276-101 i2

Matrix: XAD

Sample Size:

1 sample

Sample Receipt Date: N/A

Initial Calibration Date:

01-Apr-2019

Extraction Date: 07-Mar-2019

Instrument ID:

HR GC/MS

Analysis Date: 03-Apr-2019 Time: 17:05:29

GC Column ID:

DB5

Extract Volume (uL): 20

Sample Data Filename:

DX9M_037B S: 56

Injection Volume (uL): 1.0

Blank Data Filename:

DX9M_037B S: 56

Dilution Factor: N/A

Cal. Ver. Data Filename:

DX9M_037B S: 47

Concentration Units: pg absolute

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.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	ION ABUND. RATIO ³	RRT ³
13C-2,3,7,8-TCDD		4000	2960	73.9	0.80	1.013
13C-1,2,3,7,8-PECDD ⁴		4000	3340	83.4	0.63	1.381
13C-1,2,3,4,7,8-HXCDD		4000	2890	72.2	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		4000	3610	90.3	1.21	0.990
13C-1,2,3,4,6,7,8-HPCDD		4000	2660	66.6	1.03	1.094
13C-OCDD		8000	3600	45.0	0.88	1.178
13C-2,3,7,8-TCDF		4000	2850	71.2	0.76	0.966
13C-1,2,3,7,8-PECDF		4000	3110	77.6	1.51	1.282
13C-2,3,4,7,8-PECDF		4000	3080	77.1	1.51	1.350
13C-1,2,3,4,7,8-HXCDF		4000	2720	68.1	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		4000	2860	71.5	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		4000	2810	70.2	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		4000	2790	69.7	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		4000	2460	61.4	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		4000	2590	64.7	0.43	1.104

CLEANUP STANDARD

37CL-2,3,7,8-TCDD		200	96.2	48.1		1.001
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_WG67276-101_Form2_DX9M_037BS56_SJ2540706.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 1B

PCDD/PCDF 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.:

WG67276-101 i2

Matrix: XAD

Sample Size:

1 sample

Sample Receipt Date: N/A

Initial Calibration Date:

03-Apr-2019

Extraction Date: 07-Mar-2019

Instrument ID:

HR GC/MS

Analysis Date: 03-Apr-2019 Time: 17:05:29

GC Column ID:

DB5

Extract Volume (uL): 20

Sample Data Filename:

DX9M_037B S: 56

Injection Volume (uL): 1.0

Blank Data Filename:

DX9M_037B S: 56

Dilution Factor: N/A

Cal. Ver. Data Filename:

N/A

Concentration Units: pg/sample

CLIENT STANDARD	SPIKE CONC.	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	R(%)	ION ABUND. RATIO ³	RRT ³
13C6-1,2,3,4-TCDD	500		462	3.03 (S)	92.4	0.79	0.988

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

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

(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

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

Signed: _____ Henry Huang _____

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Report Filename: 1613_DIOXINS_DXCS_WG67276-101_Form1B_SJ2540986.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 8A

PCDD/PCDF 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

OPR Data Filename: DX9M_037B S: 48

Matrix: XAD

Lab Sample I.D.: WG67276-102 i (A)

Extraction Date: 07-Mar-2019

Analysis Date: 03-Apr-2019 Time: 09:40:15

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 µL EXTRACT VOLUME.

COMPOUND	LAB FLAG ¹	ION ABUND. RATIO ²	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS ³ (ng/mL)	% RECOVERY
2,3,7,8-TCDD		0.79	20.0	19.6	13.4 - 31.6	98.0
1,2,3,7,8-PECDD ⁴		0.62	100	102	70.0 - 142	102
1,2,3,4,7,8-HXCDD		1.22	100	106	70.0 - 164	106
1,2,3,6,7,8-HXCDD		1.20	100	101	76.0 - 134	101
1,2,3,7,8,9-HXCDD		1.16	100	81.3	64.0 - 162	81.3
1,2,3,4,6,7,8-HPCDD		1.04	100	99.5	70.0 - 140	99.5
OCDD		0.88	200	200	156 - 288	99.9
2,3,7,8-TCDF		0.74	20.0	19.2	15.0 - 31.6	95.9
1,2,3,7,8-PECDF		1.57	100	101	80.0 - 134	101
2,3,4,7,8-PECDF		1.54	100	98.3	68.0 - 160	98.3
1,2,3,4,7,8-HXCDF		1.23	100	93.7	72.0 - 134	93.7
1,2,3,6,7,8-HXCDF		1.22	100	98.4	84.0 - 130	98.4
1,2,3,7,8,9-HXCDF		1.19	100	96.7	78.0 - 130	96.7
2,3,4,6,7,8-HXCDF		1.18	100	98.6	70.0 - 156	98.6
1,2,3,4,6,7,8-HPCDF		0.98	100	110	82.0 - 122	110
1,2,3,4,7,8,9-HPCDF		1.03	100	99.8	78.0 - 138	99.8
OCDF		0.87	200	209	126 - 340	105

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

(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.

(3) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under OPR.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

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.

For Axy Internal Use Only [XSL Template: Form8A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_WG67276-102_Form8A_SJ2540698.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 8B

PCDD/PCDF 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

OPR Data Filename: DX9M_037B S: 48

Matrix: XAD

Lab Sample I.D.: WG67276-102 i (A)

Extraction Date: 07-Mar-2019

Analysis Date: 03-Apr-2019 Time: 09:40:15

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 µL EXTRACT VOLUME.

LABELLED COMPOUND	LAB FLAG ¹	ION ABUND. RATIO ²	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS ³ (ng/mL)	% RECOVERY
13C-2,3,7,8-TCDD		0.77	200	158	40.0-350	78.8
13C-1,2,3,7,8-PECDD ⁴		0.63	200	172	42.0-454	86.2
13C-1,2,3,4,7,8-HXCDD		1.26	200	167	42.0-386	83.4
13C-1,2,3,6,7,8-HXCDD		1.27	200	209	50.0-326	104
13C-1,2,3,4,6,7,8-HPCDD		1.04	200	139	52.0-332	69.7
13C-OCDD		0.88	400	192	52.0-794	48.1
13C-2,3,7,8-TCDF		0.76	200	155	44.0-304	77.5
13C-1,2,3,7,8-PECDF		1.51	200	163	42.0-384	81.4
13C-2,3,4,7,8-PECDF		1.51	200	169	26.0-656	84.6
13C-1,2,3,4,7,8-HXCDF		0.52	200	150	38.0-404	75.1
13C-1,2,3,6,7,8-HXCDF		0.52	200	154	42.0-318	76.9
13C-1,2,3,7,8,9-HXCDF		0.52	200	148	34.0-410	73.8
13C-2,3,4,6,7,8-HXCDF		0.52	200	144	44.0-352	72.0
13C-1,2,3,4,6,7,8-HPCDF		0.46	200	135	42.0-316	67.7
13C-1,2,3,4,7,8,9-HPCDF		0.45	200	136	40.0-372	68.0

CLEANUP STANDARD

37CL-2,3,7,8-TCDD			10.0	5.75	3.10-19.1	57.5
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.

(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. Labeled compound concentrations limits are based on required percent recovery (Section 15.5, Method 1613).

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

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.

For Axys Internal Use Only [XSL Template: Form8B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;

Report Filename: 1613_DIOXINS_1613DB5_WG67276-102_Form8B_SJ2540698.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 8A

PCDD/PCDF 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

OPR Data Filename:

DX9M_037B S: 49

Matrix: XAD

Lab Sample I.D.:

WG67276-103 i (DUP WG67276-102)

Extraction Date: 07-Mar-2019

Analysis Date:

03-Apr-2019 Time: 10:32:41

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 µL EXTRACT VOLUME.

COMPOUND	LAB FLAG ¹	ION ABUND. RATIO ²	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS ³ (ng/mL)	% RECOVERY
2,3,7,8-TCDD		0.78	20.0	19.2	13.4 - 31.6	95.8
1,2,3,7,8-PECDD ⁴		0.61	100	102	70.0 - 142	102
1,2,3,4,7,8-HXCDD		1.20	100	89.9	70.0 - 164	89.9
1,2,3,6,7,8-HXCDD		1.21	100	112	76.0 - 134	112
1,2,3,7,8,9-HXCDD		1.20	100	71.7	64.0 - 162	71.7
1,2,3,4,6,7,8-HPCDD		1.02	100	101	70.0 - 140	101
OCDD		0.88	200	198	156 - 288	98.9
2,3,7,8-TCDF		0.77	20.0	20.6	15.0 - 31.6	103
1,2,3,7,8-PECDF		1.56	100	98.3	80.0 - 134	98.3
2,3,4,7,8-PECDF		1.56	100	97.1	68.0 - 160	97.1
1,2,3,4,7,8-HXCDF		1.23	100	101	72.0 - 134	101
1,2,3,6,7,8-HXCDF		1.23	100	98.2	84.0 - 130	98.2
1,2,3,7,8,9-HXCDF		1.18	100	97.4	78.0 - 130	97.4
2,3,4,6,7,8-HXCDF		1.20	100	97.1	70.0 - 156	97.1
1,2,3,4,6,7,8-HPCDF		1.00	100	100	82.0 - 122	100
1,2,3,4,7,8,9-HPCDF		1.01	100	90.1	78.0 - 138	90.1
OCDF		0.88	200	210	126 - 340	105

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

(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.

(3) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under OPR.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

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.

For Axys Internal Use Only [XSL Template: Form8A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_1613DB5_WG67276-103_Form8A_SJ2540700.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 8B

PCDD/PCDF 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

OPR Data Filename:

DX9M_037B S: 49

Matrix: XAD

Lab Sample I.D.:

WG67276-103 i (DUP WG67276-102)

Extraction Date: 07-Mar-2019

Analysis Date:

03-Apr-2019 Time: 10:32:41

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

LABELLED COMPOUND	LAB FLAG ¹	ION ABUND. RATIO ²	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS ³ (ng/mL)	% RECOVERY
13C-2,3,7,8-TCDD		0.77	200	152	40.0-350	75.8
13C-1,2,3,7,8-PECDD ⁴		0.63	200	168	42.0-454	84.0
13C-1,2,3,4,7,8-HXCDD		1.25	200	190	42.0-386	94.9
13C-1,2,3,6,7,8-HXCDD		1.27	200	205	50.0-326	102
13C-1,2,3,4,6,7,8-HPCDD		1.04	200	134	52.0-332	67.0
13C-OCDD		0.92	400	185	52.0-794	46.2
13C-2,3,7,8-TCDF		0.77	200	144	44.0-304	72.2
13C-1,2,3,7,8-PECDF		1.50	200	153	42.0-384	76.7
13C-2,3,4,7,8-PECDF		1.51	200	152	26.0-656	76.2
13C-1,2,3,4,7,8-HXCDF		0.51	200	150	38.0-404	75.0
13C-1,2,3,6,7,8-HXCDF		0.52	200	152	42.0-318	75.8
13C-1,2,3,7,8,9-HXCDF		0.52	200	142	34.0-410	71.1
13C-2,3,4,6,7,8-HXCDF		0.51	200	152	44.0-352	76.2
13C-1,2,3,4,6,7,8-HPCDF		0.44	200	134	42.0-316	66.9
13C-1,2,3,4,7,8,9-HPCDF		0.45	200	136	40.0-372	68.0

CLEANUP STANDARD

37CL-2,3,7,8-TCDD			10.0	5.51	3.10-19.1	55.1
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(1) Where applicable, custom lab flags have been used on this report.

(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.

(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. Labeled compound concentrations limits are based on required percent recovery (Section 15.5, Method 1613).

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Henry Huang _____

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.

For Axy Internal Use Only [XSL Template: Form8B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;

Report Filename: 1613_DIOXINS_1613DB5_WG67276-103_Form8B_SJ2540700.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

PCDD/PCDF ANALYSIS REPORT
RELATIVE PERCENT DIFFERENCE

SGS AXYS ANALYTICAL SERVICES

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

Contract No.: 4972

Client ID: Spiked Matrix

Concentration Units: ng/mL

COMPOUND	WG67276-102 (A)		WG67276-103		MEAN	RELATIVE PERCENT DIFFERENCE
	LAB FLAG ¹	CONC. FOUND	LAB FLAG ¹	CONC. FOUND		
2,3,7,8-TCDD		19.6		19.2	19.4	2.27
1,2,3,7,8-PECDD		102		102	102	0.293
1,2,3,4,7,8-HXCDD		106		89.9	98.1	16.8
1,2,3,6,7,8-HXCDD		101		112	107	9.68
1,2,3,7,8,9-HXCDD		81.3		71.7	76.5	12.6
1,2,3,4,6,7,8-HPCDD		99.5		101	100	1.57
OCDD		200		198	199	1.07
2,3,7,8-TCDF		19.2		20.6	19.9	6.90
1,2,3,7,8-PECDF		101		98.3	99.4	2.24
2,3,4,7,8-PECDF		98.3		97.1	97.7	1.16
1,2,3,4,7,8-HXCDF		93.7		101	97.2	7.17
1,2,3,6,7,8-HXCDF		98.4		98.2	98.3	0.264
1,2,3,7,8,9-HXCDF		96.7		97.4	97.0	0.719
2,3,4,6,7,8-HXCDF		98.6		97.1	97.8	1.54
1,2,3,4,6,7,8-HPCDF		110		100	105	9.28
1,2,3,4,7,8,9-HPCDF		99.8		90.1	94.9	10.2
OCDF		209		210	210	0.450

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

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

Signed: _____ Henry Huang _____

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.

For Axys Internal Use Only [XSL Template: RPD.xml; Created: 09-Apr-2019 09:24:41; Application: XMLTransformer-1.17.7;
Report Filename: RPD_DIOXINS_1613-RPD_WG67276-103_WG67276-102_.html; Workgroup: WG67276; Design ID: 3359]

PCDD/PCDF 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: 01-Apr-2019

Instrument ID: HR GC/MS

GC Column ID: DB5

CS0 Data Filename: DX9M_037B S: 4

CS1 Data Filename: DX9M_037B S: 3

CS2 Data Filename: DX9M_037B S: 2

CS3 Data Filename: DX9M_037B S: 1

CS4 Data Filename: DX9M_037B S: 9

CS5 Data Filename: DX9M_037B S: 8

CS6 Data Filename: DX9M_037B S: 6

COMPOUND	LAB FLAG ¹	RELATIVE RESPONSE (RR)						MEAN RR	CV (%RSD) ²
		CS0	CS1	CS2	CS3	CS4	CS5		
2,3,7,8-TCDD		0.96	1.10	0.98	1.06	1.01	1.01	1.02	5.19
1,2,3,7,8-PECDD ³		1.01	1.02	0.98	1.03	0.97	1.00	1.00	2.22
1,2,3,4,7,8-HXCDD		0.93	0.97	0.93	1.03	0.93	0.98	0.96	4.32
1,2,3,6,7,8-HXCDD		0.84	0.91	0.87	0.97	0.88	0.89	0.89	4.66
1,2,3,7,8,9-HXCDD ⁴		1.00	0.98	0.93	1.03	0.91	0.93	0.96	4.89
1,2,3,4,6,7,8-HPCDD		0.99	0.93	0.89	0.98	0.90	0.91	0.89	4.73
OCDD		0.97	0.99	0.93	1.03	0.98	0.98	0.98	3.03
2,3,7,8-TCDF		0.89	0.88	0.84	0.90	0.87	0.87	0.87	2.35
1,2,3,7,8-PECDF		0.88	0.89	0.85	0.91	0.82	0.86	0.87	3.77
2,3,4,7,8-PECDF		0.88	0.88	0.88	0.90	0.85	0.88	0.88	2.08
1,2,3,4,7,8-HXCDF		1.00	1.11	0.98	1.16	1.04	1.07	1.06	6.28
1,2,3,6,7,8-HXCDF		0.91	0.99	1.01	1.10	0.98	0.99	1.00	5.94
1,2,3,7,8,9-HXCDF		1.00	0.96	0.91	1.06	0.90	0.95	0.96	6.07
2,3,4,6,7,8-HXCDF		1.08	1.08	1.04	1.18	1.14	1.11	1.11	4.57
1,2,3,4,6,7,8-HPCDF		1.16	1.19	1.12	1.16	1.19	1.17	1.27	3.90
1,2,3,4,7,8,9-HPCDF		1.10	1.17	1.14	1.23	1.21	1.21	1.22	3.98
OCDF ⁵		1.02	1.06	1.01	1.04	1.05	1.07	1.01	2.35

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

(2) For contract CV specifications, see Section 10.5.4, Method 1613.

(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

(4) Response ratios are calculated relative to the labeled analogs of the other two HXCDDs (Section 17.1.2, Method 1613).

(5) Response ratios are calculated relative to the labeled analog of OCDD (Section 17.1.1, Method 1613).

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

Signed: _____ Robert Tones _____

Form 3B
PCDD/PCDF 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: 01-Apr-2019

Instrument ID: HR GC/MS

GC Column ID: DB5

CS0 Data Filename: DX9M_037B S: 4

CS1 Data Filename: DX9M_037B S: 3

CS2 Data Filename: DX9M_037B S: 2

CS3 Data Filename: DX9M_037B S: 1

CS4 Data Filename: DX9M_037B S: 9

CS5 Data Filename: DX9M_037B S: 8

CS6 Data Filename: DX9M_037B S: 6

LABELED COMPOUND	LAB FLAG ¹	RELATIVE RESPONSE (RR)						MEAN RR	CV (%RSD) ²
		CS0	CS1	CS2	CS3	CS4	CS5		
13C-2,3,7,8-TCDD		1.04	0.96	0.98	0.95	1.04	1.05	0.96	4.46
13C-1,2,3,7,8-PECDD ³		0.75	0.72	0.73	0.68	0.77	0.81	0.74	6.20
13C-1,2,3,4,7,8-HXCDD		0.97	0.94	0.95	0.95	0.99	0.97	0.96	1.79
13C-1,2,3,6,7,8-HXCDD		1.01	0.95	0.98	0.96	1.00	1.02	0.99	2.49
13C-1,2,3,4,6,7,8-HPCDD		0.84	0.79	0.85	0.87	0.84	0.86	0.87	9.73
13C-OCDD		0.74	0.69	0.74	0.78	0.73	0.82	0.81	20.0
13C-2,3,7,8-TCDF		1.54	1.45	1.47	1.45	1.48	1.52	1.45	2.62
13C-1,2,3,7,8-PECDF		1.25	1.15	1.18	1.15	1.25	1.33	1.13	6.07
13C-2,3,4,7,8-PECDF		1.21	1.11	1.14	1.11	1.20	1.27	1.11	5.46
13C-1,2,3,4,7,8-HXCDF		1.18	1.09	1.17	1.20	1.12	1.12	1.14	3.26
13C-1,2,3,6,7,8-HXCDF		1.21	1.18	1.20	1.23	1.19	1.21	1.20	1.42
13C-1,2,3,7,8,9-HXCDF		1.07	1.03	1.07	1.10	1.11	1.09	1.04	2.76
13C-2,3,4,6,7,8-HXCDF		1.13	1.06	1.10	1.12	1.06	1.05	1.12	2.89
13C-1,2,3,4,6,7,8-HPCDF		0.91	0.86	0.88	0.94	0.87	0.88	1.13	10.1
13C-1,2,3,4,7,8,9-HPCDF		0.74	0.71	0.77	0.75	0.67	0.74	0.91	9.79
CLEANUP STANDARD									
37CL-2,3,7,8-TCDD		1.03	1.20	1.06	1.02	1.07	1.10	1.08	6.12

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

(2) For contract CV specifications, see Section 10.5.4, Method 1613.

(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ **Robert Tones** _____

For Axs Internal Use Only [XSL Template: Form3B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
 Report Filename: 1613_DIOXINS_01-Apr-2019_DX9M_Form3B_GS81116.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 3C

PCDD/PCDF 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: 01-Apr-2019

Instrument ID: HR GC/MS

GC Column ID: DB5

CS0 Data Filename: DX9M_037B S: 4

CS1 Data Filename: DX9M_037B S: 3

CS2 Data Filename: DX9M_037B S: 2

CS3 Data Filename: DX9M_037B S: 1

CS4 Data Filename: DX9M_037B S: 9

CS5 Data Filename: DX9M_037B S: 8

CS6 Data Filename: DX9M_037B S: 6

COMPOUND	LAB FLAG ¹	M/Z's FORMING RATIO ²	ION ABUNDANCE RATIO						QC LIMITS ³	
			CS0	CS1	CS2	CS3	CS4	CS5		CS6
2,3,7,8-TCDD		M/M+2	0.82	0.71	0.73	0.78	0.76	0.77		0.65-0.89
1,2,3,7,8-PECDD ⁴		M/M+2	0.62	0.66	0.61	0.61	0.62	0.62		0.52-0.70
1,2,3,4,7,8-HXCDD		M+2/M+4	1.09	1.33	1.24	1.22	1.26	1.22		1.05-1.43
1,2,3,6,7,8-HXCDD		M+2/M+4	1.34	1.27	1.20	1.23	1.19	1.26		1.05-1.43
1,2,3,7,8,9-HXCDD		M+2/M+4	1.12	1.22	1.24	1.23	1.22	1.24		1.05-1.43
1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.05	1.06	1.01	1.04	1.02	1.00	1.02	0.88-1.20
OCDD		M+2/M+4	0.84	0.87	0.87	0.89	0.88	0.88	0.89	0.76-1.02
2,3,7,8-TCDF		M/M+2	0.78	0.84	0.80	0.77	0.77	0.75		0.65-0.89
1,2,3,7,8-PECDF		M+2/M+4	1.67	1.54	1.53	1.55	1.53	1.55		1.32-1.78
2,3,4,7,8-PECDF		M+2/M+4	1.46	1.54	1.53	1.56	1.56	1.57		1.32-1.78
1,2,3,4,7,8-HXCDF		M+2/M+4	1.19	1.25	1.24	1.24	1.15	1.23		1.05-1.43
1,2,3,6,7,8-HXCDF		M+2/M+4	1.15	1.12	1.25	1.23	1.19	1.20		1.05-1.43
1,2,3,7,8,9-HXCDF		M+2/M+4	1.22	1.22	1.24	1.24	1.22	1.28		1.05-1.43
2,3,4,6,7,8-HXCDF		M+2/M+4	1.20	1.21	1.24	1.21	1.24	1.22		1.05-1.43
1,2,3,4,6,7,8-HPCDF		M+2/M+4	1.01	1.05	1.04	0.99	1.03	1.03	1.04	0.88-1.20
1,2,3,4,7,8,9-HPCDF		M+2/M+4	0.98	1.05	1.02	0.99	1.05	1.07	1.04	0.88-1.20
OCDF		M+2/M+4	0.88	0.91	0.88	0.89	0.89	0.87	0.87	0.76-1.02

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits from Table 9, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ Robert Tones _____

For Axy Internal Use Only [XSL Template: Form3C.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_01-Apr-2019_DX9M__Form3C_GS81116.html; Workgroup: WG67276; Design ID: 3359]

Form 3D
PCDD/PCDF 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: 01-Apr-2019

Instrument ID: HR GC/MS

GC Column ID: DB5

CS0 Data Filename: DX9M_037B S: 4

CS1 Data Filename: DX9M_037B S: 3

CS2 Data Filename: DX9M_037B S: 2

CS3 Data Filename: DX9M_037B S: 1

CS4 Data Filename: DX9M_037B S: 9

CS5 Data Filename: DX9M_037B S: 8

CS6 Data Filename: DX9M_037B S: 6

LABELED COMPOUND	LAB FLAG ¹	M/Z's FORMING RATIO ²	ION ABUNDANCE RATIO							QC LIMITS ³
			CS0	CS1	CS2	CS3	CS4	CS5	CS6	
13C-2,3,7,8-TCDD		M/M+2	0.78	0.78	0.78	0.78	0.77	0.80	0.77	0.65-0.89
13C-1,2,3,7,8-PECDD ⁴		M/M+2	0.64	0.63	0.63	0.62	0.62	0.64	0.63	0.52-0.70
13C-1,2,3,4,7,8-HXCDD		M+2/M+4	1.27	1.25	1.26	1.28	1.27	1.26	1.29	1.05-1.43
13C-1,2,3,6,7,8-HXCDD		M+2/M+4	1.25	1.24	1.25	1.24	1.21	1.22	1.22	1.05-1.43
13C-1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.03	1.03	1.03	1.07	1.02	1.04	1.02	0.88-1.20
13C-OCDD		M+2/M+4	0.89	0.88	0.91	0.89	0.90	0.88	0.90	0.76-1.02
13C-2,3,7,8-TCDF		M/M+2	0.76	0.76	0.77	0.78	0.75	0.80	0.77	0.65-0.89
13C-1,2,3,7,8-PECDF		M+2/M+4	1.53	1.53	1.54	1.56	1.54	1.52	1.54	1.32-1.78
13C-2,3,4,7,8-PECDF		M+2/M+4	1.54	1.53	1.53	1.57	1.56	1.51	1.56	1.32-1.78
13C-1,2,3,4,7,8-HXCDF		M/M+2	0.50	0.51	0.51	0.51	0.52	0.51	0.51	0.43-0.59
13C-1,2,3,6,7,8-HXCDF		M/M+2	0.53	0.52	0.52	0.51	0.51	0.51	0.52	0.43-0.59
13C-1,2,3,7,8,9-HXCDF		M/M+2	0.52	0.52	0.51	0.52	0.51	0.52	0.52	0.43-0.59
13C-2,3,4,6,7,8-HXCDF		M/M+2	0.51	0.52	0.51	0.51	0.51	0.51	0.52	0.43-0.59
13C-1,2,3,4,6,7,8-HPCDF		M/M+2	0.44	0.43	0.45	0.45	0.44	0.44	0.44	0.37-0.51
13C-1,2,3,4,7,8,9-HPCDF		M/M+2	0.45	0.42	0.45	0.44	0.44	0.45	0.44	0.37-0.51

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits from Table 9, Method 1613.

(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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

Signed: _____ **Robert Tones** _____

For Axy Internal Use Only [XSL Template: Form3D.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
 Report Filename: 1613_DIOXINS_01-Apr-2019_DX9M_Form3D_GS81116.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 47

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 08:34:38

COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
2,3,7,8-TCDD		M/M+2	0.77	0.65-0.89	10.3	7.8 - 12.9
1,2,3,7,8-PECDD ⁵		M/M+2	0.61	0.52-0.70	50.3	39 - 65
1,2,3,4,7,8-HXCDD		M+2/M+4	1.22	1.05-1.43	51.7	39 - 64
1,2,3,6,7,8-HXCDD		M+2/M+4	1.27	1.05-1.43	49.5	39 - 64
1,2,3,7,8,9-HXCDD		M+2/M+4	1.26	1.05-1.43	49.6	41 - 61
1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.03	0.88-1.20	49.7	43 - 58
OCDD		M+2/M+4	0.88	0.76-1.02	101	79 - 126
2,3,7,8-TCDF		M/M+2	0.72	0.65-0.89	10.1	8.4 - 12
1,2,3,7,8-PECDF		M+2/M+4	1.51	1.32-1.78	48.9	41 - 60
2,3,4,7,8-PECDF		M+2/M+4	1.56	1.32-1.78	47.5	41 - 61
1,2,3,4,7,8-HXCDF		M+2/M+4	1.23	1.05-1.43	51.6	45 - 56
1,2,3,6,7,8-HXCDF		M+2/M+4	1.21	1.05-1.43	48.6	44 - 57
1,2,3,7,8,9-HXCDF		M+2/M+4	1.21	1.05-1.43	48.9	45 - 56
2,3,4,6,7,8-HXCDF		M+2/M+4	1.21	1.05-1.43	50.2	44 - 57
1,2,3,4,6,7,8-HPCDF		M+2/M+4	1.05	0.88-1.20	49.9	45 - 55
1,2,3,4,7,8,9-HPCDF		M+2/M+4	1.03	0.88-1.20	50.9	43 - 58
OCDF		M+2/M+4	0.87	0.76-1.02	102	63 - 159

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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: Form4A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS47__Form4A_SJ2540696.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4B
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 47

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 08:34:38

LABELLED COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
13C-2,3,7,8-TCDD		M/M+2	0.78	0.65-0.89	98.2	82 - 121
13C-1,2,3,7,8-PECDD ⁵		M/M+2	0.63	0.52-0.70	95.4	62 - 160
13C-1,2,3,4,7,8-HXCDD		M+2/M+4	1.26	1.05-1.43	95.4	85 - 117
13C-1,2,3,6,7,8-HXCDD		M+2/M+4	1.25	1.05-1.43	107	85 - 118
13C-1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.04	0.88-1.20	93.3	72 - 138
13C-OCDD		M+2/M+4	0.88	0.76-1.02	162	96 - 415
13C-2,3,7,8-TCDF		M/M+2	0.76	0.65-0.89	96.9	71 - 140
13C-1,2,3,7,8-PECDF		M+2/M+4	1.54	1.32-1.78	93.7	76 - 130
13C-2,3,4,7,8-PECDF		M+2/M+4	1.52	1.32-1.78	105	77 - 130
13C-1,2,3,4,7,8-HXCDF		M/M+2	0.52	0.43-0.59	98.7	76 - 131
13C-1,2,3,6,7,8-HXCDF		M/M+2	0.51	0.43-0.59	104	70 - 143
13C-1,2,3,7,8,9-HXCDF		M/M+2	0.51	0.43-0.59	94.5	74 - 135
13C-2,3,4,6,7,8-HXCDF		M/M+2	0.50	0.43-0.59	102	73 - 137
13C-1,2,3,4,6,7,8-HPCDF		M/M+2	0.44	0.37-0.51	95.5	78 - 129
13C-1,2,3,4,7,8,9-HPCDF		M/M+2	0.44	0.37-0.51	90.1	77 - 129
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD ⁶					10.9	7.9 - 12.7

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

(6) No ion abundance ratio for 37Cl4-2,3,7,8-TCDD; concentration reported.

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 Axys Internal Use Only [XSL Template: Form4B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS47__Form4B_SJ2540696.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 47

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 08:34:38

COMPOUND	LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
2,3,7,8-TCDD		13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PECDD ³		13C-1,2,3,7,8-PECDD	1.001	0.999-1.002
1,2,3,4,7,8-HXCDD		13C-1,2,3,4,7,8-HXCDD	1.000	0.999-1.001
1,2,3,6,7,8-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.000	0.998-1.004
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.010	1.000-1.019
1,2,3,4,6,7,8-HPCDD		13C-1,2,3,4,6,7,8-HPCDD	1.000	0.999-1.001
OCDD		13C-OCDD	1.000	0.999-1.001
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PECDF		13C-1,2,3,7,8-PECDF	1.000	0.999-1.002
2,3,4,7,8-PECDF		13C-2,3,4,7,8-PECDF	1.001	0.999-1.002
1,2,3,4,7,8-HXCDF		13C-1,2,3,4,7,8-HXCDF	1.000	0.999-1.001
1,2,3,6,7,8-HXCDF		13C-1,2,3,6,7,8-HXCDF	1.001	0.997-1.005
1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDF	1.001	0.999-1.001
2,3,4,6,7,8-HXCDF		13C-2,3,4,6,7,8-HXCDF	1.000	0.999-1.001
1,2,3,4,6,7,8-HPCDF		13C-1,2,3,4,6,7,8-HPCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HPCDF		13C-1,2,3,4,7,8,9-HPCDF	1.000	0.999-1.001
OCDF		13C-OCDD	1.002	0.999-1.008

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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 Axys Internal Use Only [XSL Template: Form6A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS47__Form6A_SJ2540696.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6B
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 47

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 08:34:38

LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
LABELED COMPOUND			
13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.012	0.976-1.043
13C-1,2,3,7,8-PECDD	13C-1,2,3,4-TCDD	1.379	1.000-1.567
13C-1,2,3,4,7,8-HXCDD	13C-1,2,3,7,8,9-HXCDD	0.987	0.977-1.000
13C-1,2,3,6,7,8-HXCDD	13C-1,2,3,7,8,9-HXCDD	0.990	0.981-1.003
13C-1,2,3,4,6,7,8-HPCDD	13C-1,2,3,7,8,9-HXCDD	1.094	1.086-1.110
13C-OCDD	13C-1,2,3,7,8,9-HXCDD	1.178	1.032-1.311
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.966	0.923-1.103
13C-1,2,3,7,8-PECDF	13C-1,2,3,4-TCDD	1.282	1.000-1.425
13C-2,3,4,7,8-PECDF	13C-1,2,3,4-TCDD	1.348	1.011-1.526
13C-1,2,3,4,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.954	0.944-0.970
13C-1,2,3,6,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.958	0.949-0.975
13C-1,2,3,7,8,9-HXCDF	13C-1,2,3,7,8,9-HXCDD	1.004	0.977-1.047
13C-2,3,4,6,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.980	0.959-1.021
13C-1,2,3,4,6,7,8-HPCDF	13C-1,2,3,7,8,9-HXCDD	1.061	1.043-1.085
13C-1,2,3,4,7,8,9-HPCDF	13C-1,2,3,7,8,9-HXCDD	1.104	1.057-1.151
CLEANUP STANDARD			
37CL-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.001	0.989-1.052

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

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 Axys Internal Use Only [XSL Template: Form6B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS47__Form6B_SJ2540696.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 3A

DIOXIN 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: 03-Apr-2019

CAL Data Filename: DX9M_037B S: 47

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 08:34:38

COMPOUND	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
13C6-1,2,3,4-TCDD ⁴		1.02	M/M+2	0.77	0.65-0.89	0.988	0.975 - 1.000

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) RRF's based on 13C12-1,2,3,4-TCDD and 1,2,3,4,6,7,8-HPCDF for 13C6-1,2,3,4-TCDD and 13C6-1,2,3,4,6,7,8-HPCDF, respectively.

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: Form346A.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS47__Form346A_SJ2540983_GS81130.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 59

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 19:50:52

COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
2,3,7,8-TCDD		M/M+2	0.78	0.65-0.89	10.5	7.8 - 12.9
1,2,3,7,8-PECDD ⁵		M/M+2	0.60	0.52-0.70	49.3	39 - 65
1,2,3,4,7,8-HXCDD		M+2/M+4	1.20	1.05-1.43	50.6	39 - 64
1,2,3,6,7,8-HXCDD		M+2/M+4	1.20	1.05-1.43	50.5	39 - 64
1,2,3,7,8,9-HXCDD		M+2/M+4	1.18	1.05-1.43	48.2	41 - 61
1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.01	0.88-1.20	51.3	43 - 58
OCDD		M+2/M+4	0.86	0.76-1.02	102	79 - 126
2,3,7,8-TCDF		M/M+2	0.78	0.65-0.89	9.88	8.4 - 12
1,2,3,7,8-PECDF		M+2/M+4	1.56	1.32-1.78	50.5	41 - 60
2,3,4,7,8-PECDF		M+2/M+4	1.58	1.32-1.78	50.2	41 - 61
1,2,3,4,7,8-HXCDF		M+2/M+4	1.23	1.05-1.43	48.4	45 - 56
1,2,3,6,7,8-HXCDF		M+2/M+4	1.23	1.05-1.43	51.8	44 - 57
1,2,3,7,8,9-HXCDF		M+2/M+4	1.27	1.05-1.43	50.6	45 - 56
2,3,4,6,7,8-HXCDF		M+2/M+4	1.26	1.05-1.43	49.0	44 - 57
1,2,3,4,6,7,8-HPCDF		M+2/M+4	1.03	0.88-1.20	50.0	45 - 55
1,2,3,4,7,8,9-HPCDF		M+2/M+4	1.02	0.88-1.20	50.0	43 - 58
OCDF		M+2/M+4	0.89	0.76-1.02	104	63 - 159

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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: Form4A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS59_Form4A_SJ2540709.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 59

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 19:50:52

COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
2,3,7,8-TCDD		M/M+2	0.78	0.65-0.89	10.5	7.8 - 12.9
1,2,3,7,8-PECDD ⁵		M/M+2	0.60	0.52-0.70	49.3	39 - 65
1,2,3,4,7,8-HXCDD		M+2/M+4	1.20	1.05-1.43	50.6	39 - 64
1,2,3,6,7,8-HXCDD		M+2/M+4	1.20	1.05-1.43	50.5	39 - 64
1,2,3,7,8,9-HXCDD		M+2/M+4	1.18	1.05-1.43	48.2	41 - 61
1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.01	0.88-1.20	51.3	43 - 58
OCDD		M+2/M+4	0.86	0.76-1.02	102	79 - 126
2,3,7,8-TCDF		M/M+2	0.80	0.65-0.89	9.70	8.4 - 12
1,2,3,7,8-PECDF		M+2/M+4	1.56	1.32-1.78	50.5	41 - 60
2,3,4,7,8-PECDF		M+2/M+4	1.58	1.32-1.78	50.2	41 - 61
1,2,3,4,7,8-HXCDF		M+2/M+4	1.23	1.05-1.43	48.4	45 - 56
1,2,3,6,7,8-HXCDF		M+2/M+4	1.23	1.05-1.43	51.8	44 - 57
1,2,3,7,8,9-HXCDF		M+2/M+4	1.27	1.05-1.43	50.6	45 - 56
2,3,4,6,7,8-HXCDF		M+2/M+4	1.26	1.05-1.43	49.0	44 - 57
1,2,3,4,6,7,8-HPCDF		M+2/M+4	1.03	0.88-1.20	50.0	45 - 55
1,2,3,4,7,8,9-HPCDF		M+2/M+4	1.02	0.88-1.20	50.0	43 - 58
OCDF		M+2/M+4	0.89	0.76-1.02	104	63 - 159

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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: Form4A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS59_Form4A_SJ2540772.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4B
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 59

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 19:50:52

LABELLED COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
13C-2,3,7,8-TCDD		M/M+2	0.77	0.65-0.89	101	82 - 121
13C-1,2,3,7,8-PECDD ⁵		M/M+2	0.62	0.52-0.70	107	62 - 160
13C-1,2,3,4,7,8-HXCDD		M+2/M+4	1.24	1.05-1.43	92.6	85 - 117
13C-1,2,3,6,7,8-HXCDD		M+2/M+4	1.25	1.05-1.43	104	85 - 118
13C-1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.07	0.88-1.20	87.1	72 - 138
13C-OCDD		M+2/M+4	0.89	0.76-1.02	169	96 - 415
13C-2,3,7,8-TCDF		M/M+2	0.79	0.65-0.89	103	71 - 140
13C-1,2,3,7,8-PECDF		M+2/M+4	1.54	1.32-1.78	103	76 - 130
13C-2,3,4,7,8-PECDF		M+2/M+4	1.53	1.32-1.78	103	77 - 130
13C-1,2,3,4,7,8-HXCDF		M/M+2	0.50	0.43-0.59	94.7	76 - 131
13C-1,2,3,6,7,8-HXCDF		M/M+2	0.51	0.43-0.59	99.1	70 - 143
13C-1,2,3,7,8,9-HXCDF		M/M+2	0.50	0.43-0.59	94.6	74 - 135
13C-2,3,4,6,7,8-HXCDF		M/M+2	0.53	0.43-0.59	98.8	73 - 137
13C-1,2,3,4,6,7,8-HPCDF		M/M+2	0.44	0.37-0.51	94.0	78 - 129
13C-1,2,3,4,7,8,9-HPCDF		M/M+2	0.44	0.37-0.51	86.1	77 - 129
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD ⁶					11.8	7.9 - 12.7

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

(6) No ion abundance ratio for 37Cl4-2,3,7,8-TCDD; concentration reported.

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 Axys Internal Use Only [XSL Template: Form4B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS59__Form4B_SJ2540709.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4B
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 59

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 19:50:52

LABELLED COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
13C-2,3,7,8-TCDD		M/M+2	0.77	0.65-0.89	101	82 - 121
13C-1,2,3,7,8-PECDD ⁵		M/M+2	0.62	0.52-0.70	107	62 - 160
13C-1,2,3,4,7,8-HXCDD		M+2/M+4	1.24	1.05-1.43	92.6	85 - 117
13C-1,2,3,6,7,8-HXCDD		M+2/M+4	1.25	1.05-1.43	104	85 - 118
13C-1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.07	0.88-1.20	87.1	72 - 138
13C-OCDD		M+2/M+4	0.89	0.76-1.02	169	96 - 415
13C-2,3,7,8-TCDF		M/M+2	0.79	0.65-0.89	103	71 - 140
13C-1,2,3,7,8-PECDF		M+2/M+4	1.54	1.32-1.78	103	76 - 130
13C-2,3,4,7,8-PECDF		M+2/M+4	1.53	1.32-1.78	103	77 - 130
13C-1,2,3,4,7,8-HXCDF		M/M+2	0.50	0.43-0.59	94.7	76 - 131
13C-1,2,3,6,7,8-HXCDF		M/M+2	0.51	0.43-0.59	99.1	70 - 143
13C-1,2,3,7,8,9-HXCDF		M/M+2	0.50	0.43-0.59	94.6	74 - 135
13C-2,3,4,6,7,8-HXCDF		M/M+2	0.53	0.43-0.59	98.8	73 - 137
13C-1,2,3,4,6,7,8-HPCDF		M/M+2	0.44	0.37-0.51	94.0	78 - 129
13C-1,2,3,4,7,8,9-HPCDF		M/M+2	0.44	0.37-0.51	86.1	77 - 129
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD ⁶					11.8	7.9 - 12.7

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

(6) No ion abundance ratio for 37Cl4-2,3,7,8-TCDD; concentration reported.

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 Axys Internal Use Only [XSL Template: Form4B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS59_Form4B_SJ2540772.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 59

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 19:50:52

COMPOUND	LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
2,3,7,8-TCDD		13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PECDD ³		13C-1,2,3,7,8-PECDD	1.000	0.999-1.002
1,2,3,4,7,8-HXCDD		13C-1,2,3,4,7,8-HXCDD	1.000	0.999-1.001
1,2,3,6,7,8-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.000	0.998-1.004
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.010	1.000-1.019
1,2,3,4,6,7,8-HPCDD		13C-1,2,3,4,6,7,8-HPCDD	1.000	0.999-1.001
OCDD		13C-OCDD	1.000	0.999-1.001
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PECDF		13C-1,2,3,7,8-PECDF	1.001	0.999-1.002
2,3,4,7,8-PECDF		13C-2,3,4,7,8-PECDF	1.001	0.999-1.002
1,2,3,4,7,8-HXCDF		13C-1,2,3,4,7,8-HXCDF	1.001	0.999-1.001
1,2,3,6,7,8-HXCDF		13C-1,2,3,6,7,8-HXCDF	1.000	0.997-1.005
1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDF	1.000	0.999-1.001
2,3,4,6,7,8-HXCDF		13C-2,3,4,6,7,8-HXCDF	1.001	0.999-1.001
1,2,3,4,6,7,8-HPCDF		13C-1,2,3,4,6,7,8-HPCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HPCDF		13C-1,2,3,4,7,8,9-HPCDF	1.000	0.999-1.001
OCDF		13C-OCDD	1.002	0.999-1.008

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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 Axys Internal Use Only [XSL Template: Form6A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS59__Form6A_SJ2540709.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 59

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 19:50:52

COMPOUND	LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
2,3,7,8-TCDD		13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PECDD ³		13C-1,2,3,7,8-PECDD	1.000	0.999-1.002
1,2,3,4,7,8-HXCDD		13C-1,2,3,4,7,8-HXCDD	1.000	0.999-1.001
1,2,3,6,7,8-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.000	0.998-1.004
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.010	1.000-1.019
1,2,3,4,6,7,8-HPCDD		13C-1,2,3,4,6,7,8-HPCDD	1.000	0.999-1.001
OCDD		13C-OCDD	1.000	0.999-1.001
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PECDF		13C-1,2,3,7,8-PECDF	1.001	0.999-1.002
2,3,4,7,8-PECDF		13C-2,3,4,7,8-PECDF	1.001	0.999-1.002
1,2,3,4,7,8-HXCDF		13C-1,2,3,4,7,8-HXCDF	1.001	0.999-1.001
1,2,3,6,7,8-HXCDF		13C-1,2,3,6,7,8-HXCDF	1.000	0.997-1.005
1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDF	1.000	0.999-1.001
2,3,4,6,7,8-HXCDF		13C-2,3,4,6,7,8-HXCDF	1.001	0.999-1.001
1,2,3,4,6,7,8-HPCDF		13C-1,2,3,4,6,7,8-HPCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HPCDF		13C-1,2,3,4,7,8,9-HPCDF	1.000	0.999-1.001
OCDF		13C-OCDD	1.002	0.999-1.008

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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 Axys Internal Use Only [XSL Template: Form6A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS59__Form6A_SJ2540772.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6B
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 59

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 19:50:52

LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
LABELED COMPOUND			
13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.013	0.976-1.043
13C-1,2,3,7,8-PECDD	13C-1,2,3,4-TCDD	1.382	1.000-1.567
13C-1,2,3,4,7,8-HXCDD	13C-1,2,3,7,8,9-HXCDD	0.987	0.977-1.000
13C-1,2,3,6,7,8-HXCDD	13C-1,2,3,7,8,9-HXCDD	0.990	0.981-1.003
13C-1,2,3,4,6,7,8-HPCDD	13C-1,2,3,7,8,9-HXCDD	1.095	1.086-1.110
13C-OCDD	13C-1,2,3,7,8,9-HXCDD	1.178	1.032-1.311
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.966	0.923-1.103
13C-1,2,3,7,8-PECDF	13C-1,2,3,4-TCDD	1.283	1.000-1.425
13C-2,3,4,7,8-PECDF	13C-1,2,3,4-TCDD	1.350	1.011-1.526
13C-1,2,3,4,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.954	0.944-0.970
13C-1,2,3,6,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.958	0.949-0.975
13C-1,2,3,7,8,9-HXCDF	13C-1,2,3,7,8,9-HXCDD	1.005	0.977-1.047
13C-2,3,4,6,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.980	0.959-1.021
13C-1,2,3,4,6,7,8-HPCDF	13C-1,2,3,7,8,9-HXCDD	1.062	1.043-1.085
13C-1,2,3,4,7,8,9-HPCDF	13C-1,2,3,7,8,9-HXCDD	1.104	1.057-1.151
CLEANUP STANDARD			
37CL-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.001	0.989-1.052

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

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 Axys Internal Use Only [XSL Template: Form6B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS59_Form6B_SJ2540709.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6B
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 59

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 19:50:52

LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
LABELED COMPOUND			
13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.013	0.976-1.043
13C-1,2,3,7,8-PECDD	13C-1,2,3,4-TCDD	1.382	1.000-1.567
13C-1,2,3,4,7,8-HXCDD	13C-1,2,3,7,8,9-HXCDD	0.987	0.977-1.000
13C-1,2,3,6,7,8-HXCDD	13C-1,2,3,7,8,9-HXCDD	0.990	0.981-1.003
13C-1,2,3,4,6,7,8-HPCDD	13C-1,2,3,7,8,9-HXCDD	1.095	1.086-1.110
13C-OCDD	13C-1,2,3,7,8,9-HXCDD	1.178	1.032-1.311
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.966	0.923-1.103
13C-1,2,3,7,8-PECDF	13C-1,2,3,4-TCDD	1.283	1.000-1.425
13C-2,3,4,7,8-PECDF	13C-1,2,3,4-TCDD	1.350	1.011-1.526
13C-1,2,3,4,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.954	0.944-0.970
13C-1,2,3,6,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.958	0.949-0.975
13C-1,2,3,7,8,9-HXCDF	13C-1,2,3,7,8,9-HXCDD	1.005	0.977-1.047
13C-2,3,4,6,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.980	0.959-1.021
13C-1,2,3,4,6,7,8-HPCDF	13C-1,2,3,7,8,9-HXCDD	1.062	1.043-1.085
13C-1,2,3,4,7,8,9-HPCDF	13C-1,2,3,7,8,9-HXCDD	1.104	1.057-1.151
CLEANUP STANDARD			
37CL-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.001	0.989-1.052

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

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 Axys Internal Use Only [XSL Template: Form6B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS59_Form6B_SJ2540772.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 3A

DIOXIN 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: 03-Apr-2019

CAL Data Filename: DX9M_037B S: 59

Instrument ID: HR GC/MS

Analysis Date: 03-Apr-2019

GC Column ID: DB5

Analysis Time: 19:50:52

COMPOUND	LAB FLAG ¹	RRF	MZ's FORMING RATIO ²	ION ABUND. RATIO	RATIO QC LIMITS ³	RRT	RRT QC LIMITS
13C6-1,2,3,4-TCDD ⁴		1.00	M/M+2	0.80	0.65-0.89	0.987	0.975 - 1.000

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) RRF's based on 13C12-1,2,3,4-TCDD and 1,2,3,4,6,7,8-HPCDF for 13C6-1,2,3,4-TCDD and 13C6-1,2,3,4,6,7,8-HPCDF, respectively.

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 Axys Internal Use Only [XSL Template: Form346A.xsl; Created: 09-Apr-2019 09:22:03; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS59__Form346A_SJ2540994_GS81131.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 71

Instrument ID: HR GC/MS

Analysis Date: 04-Apr-2019

GC Column ID: DB5

Analysis Time: 07:01:50

COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
2,3,7,8-TCDD		M/M+2	0.76	0.65-0.89	10.1	7.8 - 12.9
1,2,3,7,8-PECDD ⁵		M/M+2	0.62	0.52-0.70	48.0	39 - 65
1,2,3,4,7,8-HXCDD		M+2/M+4	1.22	1.05-1.43	50.4	39 - 64
1,2,3,6,7,8-HXCDD		M+2/M+4	1.22	1.05-1.43	48.1	39 - 64
1,2,3,7,8,9-HXCDD		M+2/M+4	1.21	1.05-1.43	49.6	41 - 61
1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.04	0.88-1.20	51.6	43 - 58
OCDD		M+2/M+4	0.88	0.76-1.02	99.8	79 - 126
2,3,7,8-TCDF		M/M+2	0.77	0.65-0.89	10.1	8.4 - 12
1,2,3,7,8-PECDF		M+2/M+4	1.55	1.32-1.78	48.8	41 - 60
2,3,4,7,8-PECDF		M+2/M+4	1.49	1.32-1.78	48.0	41 - 61
1,2,3,4,7,8-HXCDF		M+2/M+4	1.22	1.05-1.43	51.2	45 - 56
1,2,3,6,7,8-HXCDF		M+2/M+4	1.23	1.05-1.43	49.6	44 - 57
1,2,3,7,8,9-HXCDF		M+2/M+4	1.22	1.05-1.43	45.3	45 - 56
2,3,4,6,7,8-HXCDF		M+2/M+4	1.25	1.05-1.43	47.9	44 - 57
1,2,3,4,6,7,8-HPCDF		M+2/M+4	1.06	0.88-1.20	49.6	45 - 55
1,2,3,4,7,8,9-HPCDF		M+2/M+4	1.04	0.88-1.20	46.3	43 - 58
OCDF		M+2/M+4	0.88	0.76-1.02	103	63 - 159

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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: Form4A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS71_Form4A_SJ2540781.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4B
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 71

Instrument ID: HR GC/MS

Analysis Date: 04-Apr-2019

GC Column ID: DB5

Analysis Time: 07:01:50

LABELLED COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
13C-2,3,7,8-TCDD		M/M+2	0.76	0.65-0.89	103	82 - 121
13C-1,2,3,7,8-PECDD ⁵		M/M+2	0.62	0.52-0.70	109	62 - 160
13C-1,2,3,4,7,8-HXCDD		M+2/M+4	1.27	1.05-1.43	90.5	85 - 117
13C-1,2,3,6,7,8-HXCDD		M+2/M+4	1.25	1.05-1.43	106	85 - 118
13C-1,2,3,4,6,7,8-HPCDD		M+2/M+4	1.05	0.88-1.20	85.3	72 - 138
13C-OCDD		M+2/M+4	0.89	0.76-1.02	155	96 - 415
13C-2,3,7,8-TCDF		M/M+2	0.76	0.65-0.89	97.4	71 - 140
13C-1,2,3,7,8-PECDF		M+2/M+4	1.53	1.32-1.78	104	76 - 130
13C-2,3,4,7,8-PECDF		M+2/M+4	1.53	1.32-1.78	103	77 - 130
13C-1,2,3,4,7,8-HXCDF		M/M+2	0.50	0.43-0.59	88.8	76 - 131
13C-1,2,3,6,7,8-HXCDF		M/M+2	0.53	0.43-0.59	99.7	70 - 143
13C-1,2,3,7,8,9-HXCDF		M/M+2	0.50	0.43-0.59	89.2	74 - 135
13C-2,3,4,6,7,8-HXCDF		M/M+2	0.50	0.43-0.59	95.7	73 - 137
13C-1,2,3,4,6,7,8-HPCDF		M/M+2	0.45	0.37-0.51	87.7	78 - 129
13C-1,2,3,4,7,8,9-HPCDF		M/M+2	0.44	0.37-0.51	87.3	77 - 129
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD ⁶					11.7	7.9 - 12.7

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

(5) Alternate confirmation and quantitation ions used for native and labeled PECDD.

(6) No ion abundance ratio for 37Cl4-2,3,7,8-TCDD; concentration reported.

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 Axys Internal Use Only [XSL Template: Form4B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS71__Form4B_SJ2540781.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 71

Instrument ID: HR GC/MS

Analysis Date: 04-Apr-2019

GC Column ID: DB5

Analysis Time: 07:01:50

COMPOUND	LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
2,3,7,8-TCDD		13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PECDD ³		13C-1,2,3,7,8-PECDD	1.001	0.999-1.002
1,2,3,4,7,8-HXCDD		13C-1,2,3,4,7,8-HXCDD	1.000	0.999-1.001
1,2,3,6,7,8-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.000	0.998-1.004
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.010	1.000-1.019
1,2,3,4,6,7,8-HPCDD		13C-1,2,3,4,6,7,8-HPCDD	1.000	0.999-1.001
OCDD		13C-OCDD	1.000	0.999-1.001
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PECDF		13C-1,2,3,7,8-PECDF	1.001	0.999-1.002
2,3,4,7,8-PECDF		13C-2,3,4,7,8-PECDF	1.001	0.999-1.002
1,2,3,4,7,8-HXCDF		13C-1,2,3,4,7,8-HXCDF	1.000	0.999-1.001
1,2,3,6,7,8-HXCDF		13C-1,2,3,6,7,8-HXCDF	1.001	0.997-1.005
1,2,3,7,8,9-HXCDF		13C-1,2,3,7,8,9-HXCDF	1.000	0.999-1.001
2,3,4,6,7,8-HXCDF		13C-2,3,4,6,7,8-HXCDF	1.001	0.999-1.001
1,2,3,4,6,7,8-HPCDF		13C-1,2,3,4,6,7,8-HPCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HPCDF		13C-1,2,3,4,7,8,9-HPCDF	1.000	0.999-1.001
OCDF		13C-OCDD	1.002	0.999-1.008

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

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 Axys Internal Use Only [XSL Template: Form6A.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS71__Form6A_SJ2540781.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6B
PCDD/PCDF 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: 01-Apr-2019

VER Data Filename: DX9M_037B S: 71

Instrument ID: HR GC/MS

Analysis Date: 04-Apr-2019

GC Column ID: DB5

Analysis Time: 07:01:50

LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
LABELED COMPOUND			
13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.013	0.976-1.043
13C-1,2,3,7,8-PECDD	13C-1,2,3,4-TCDD	1.382	1.000-1.567
13C-1,2,3,4,7,8-HXCDD	13C-1,2,3,7,8,9-HXCDD	0.987	0.977-1.000
13C-1,2,3,6,7,8-HXCDD	13C-1,2,3,7,8,9-HXCDD	0.990	0.981-1.003
13C-1,2,3,4,6,7,8-HPCDD	13C-1,2,3,7,8,9-HXCDD	1.094	1.086-1.110
13C-OCDD	13C-1,2,3,7,8,9-HXCDD	1.178	1.032-1.311
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.966	0.923-1.103
13C-1,2,3,7,8-PECDF	13C-1,2,3,4-TCDD	1.283	1.000-1.425
13C-2,3,4,7,8-PECDF	13C-1,2,3,4-TCDD	1.351	1.011-1.526
13C-1,2,3,4,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.954	0.944-0.970
13C-1,2,3,6,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.958	0.949-0.975
13C-1,2,3,7,8,9-HXCDF	13C-1,2,3,7,8,9-HXCDD	1.005	0.977-1.047
13C-2,3,4,6,7,8-HXCDF	13C-1,2,3,7,8,9-HXCDD	0.980	0.959-1.021
13C-1,2,3,4,6,7,8-HPCDF	13C-1,2,3,7,8,9-HXCDD	1.062	1.043-1.085
13C-1,2,3,4,7,8,9-HPCDF	13C-1,2,3,7,8,9-HXCDD	1.104	1.057-1.151
CLEANUP STANDARD			
37CL-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.001	0.989-1.052

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

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 Axys Internal Use Only [XSL Template: Form6B.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DX9M_037BS71_Form6B_SJ2540781.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES

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

Instrument ID:	HR GC/MS	Initial Calibration Date:	04-Apr-2019
RT Window Data Filename:		Analysis Date:	Time:
DB-5 IS Data Filename:		Analysis Date:	Time:
DB-225 IS Data Filename:	DX9M_037B S: 1	Analysis Date:	01-Apr-2019
		Time:	08:58:27

DB225 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	N/A	1,3,6,8-TCDF (F)	N/A
1,2,8,9-TCDD (L)	N/A	1,2,8,9-TCDF (L)	N/A
1,2,4,7,9-PECDD (F)	N/A	1,3,4,6,8-PECDF (F)	N/A
1,2,3,8,9-PECDD (L)	N/A	1,2,3,8,9-PECDF (L)	N/A
1,2,4,6,7,9-HXCDD (F)	N/A	1,2,3,4,6,8-HXCDF (F)	N/A
1,2,3,4,6,7-HXCDD (L)	N/A	1,2,3,4,8,9-HXCDF (L)	N/A
1,2,3,4,6,7,9-HPCDD (F)	N/A	1,2,3,4,6,7,8-HPCDF (F)	N/A
1,2,3,4,6,7,8-HPCDD (L)	N/A	1,2,3,4,7,8,9-HPCDF (L)	N/A

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD 1,2,7,8-TCDD	N/A	1,2,3,8-TCDD 2,3,7,8-TCDD	11.9
1,2,7,8-TCDD 1,4,7,8-TCDD	N/A	2,3,4,7-TCDF 2,3,7,8-TCDF	N/A
1,4,7,8-TCDD 1,2,3,7-TCDD	N/A	2,3,7,8-TCDF 1,2,3,9-TCDF	N/A
1,2,3,7-TCDD 1,2,3,8-TCDD	N/A		

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

Signed: _____ Robert Tones _____

For Axy Internal Use Only [XSL Template: DXForm5.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS__DX9M_037BS1_Form5_SJ2539561.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES

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

Instrument ID:	HR GC/MS	Initial Calibration Date:	01-Apr-2019
RT Window Data Filename:	DX9M_037B S: 47	Analysis Date:	03-Apr-2019
DB-5 IS Data Filename:	DX9M_037B S: 47	Analysis Date:	03-Apr-2019
DB-225 IS Data Filename:		Analysis Date:	
		Time:	08:34:38
		Time:	08:34:38
		Time:	

DB5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	23:04	1,3,6,8-TCDF (F)	21:32
1,2,8,9-TCDD (L)	28:29	1,2,8,9-TCDF (L)	28:20
1,2,4,7,9-PECDD (F)	32:12	1,3,4,6,8-PECDF (F)	29:02
1,2,3,8,9-PECDD (L)	37:09	1,2,3,8,9-PECDF (L)	37:13
1,2,4,6,7,9-HXCDD (F)	40:06	1,2,3,4,6,8-HXCDF (F)	39:04
1,2,3,4,6,7-HXCDD (L)	42:45	1,2,3,4,8,9-HXCDF (L)	43:05
1,2,3,4,6,7,9-HPCDD (F)	45:50	1,2,3,4,6,7,8-HPCDF (F)	45:22
1,2,3,4,6,7,8-HPCDD (L)	46:45	1,2,3,4,7,8,9-HPCDF (L)	47:11

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD 1,2,7,8-TCDD	0	1,2,3,8-TCDD 2,3,7,8-TCDD	15
1,2,7,8-TCDD 1,4,7,8-TCDD	0	2,3,4,7-TCDF 2,3,7,8-TCDF	N/A
1,4,7,8-TCDD 1,2,3,7-TCDD	0	2,3,7,8-TCDF 1,2,3,9-TCDF	N/A
1,2,3,7-TCDD 1,2,3,8-TCDD	DB-5 column; co-elute as per Figure 6 in Method		

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 Axys Internal Use Only [XSL Template: DXForm5.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS__DX9M_037BS47_Form5_SJ2540790.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 3A

PCDD/PCDF 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: 04-Apr-2019

Instrument ID: HR GC/MS

GC Column ID: DB225

CS0 Data Filename: DB93_064H S: 2

CS1 Data Filename: DB93_064G S: 2

CS2 Data Filename: DB93_064H S: 3

CS3 Data Filename: DB93_064H S: 6

CS4 Data Filename: DB93_064H S: 5

CS5 Data Filename: DB93_064H S: 4

CS6 Data Filename: N/A

COMPOUND	LAB FLAG ¹	RELATIVE RESPONSE (RR)						MEAN RR	CV (%RSD) ²
		CS0	CS1	CS2	CS3	CS4	CS5		
1,2,3,7,8,9-HxCDD		0.77	0.83	0.80	0.86	0.83	0.85	0.82	4.05
2,3,7,8-TCDF		0.83	0.80	0.79	0.85	0.85	0.84	0.83	2.97

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

(2) For contract CV specifications, see Section 10.5.4, Method 1613.

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 Axs Internal Use Only [XSL Template: Form3A.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_04-Apr-2019_DB93__Form3A_GS81143.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 3C

PCDD/PCDF 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: 04-Apr-2019

Instrument ID: HR GC/MS

GC Column ID: DB225

CS0 Data Filename: DB93_064H S: 2

CS1 Data Filename: DB93_064G S: 2

CS2 Data Filename: DB93_064H S: 3

CS3 Data Filename: DB93_064H S: 6

CS4 Data Filename: DB93_064H S: 5

CS5 Data Filename: DB93_064H S: 4

CS6 Data Filename: N/A

COMPOUND	LAB FLAG ¹	M/Z's FORMING RATIO ²	ION ABUNDANCE RATIO						QC LIMITS ³
			CS0	CS1	CS2	CS3	CS4	CS5	
1,2,3,7,8,9-HxCDD		M+2/M+4	1.30	1.17	1.21	1.23	1.22	1.22	1.05-1.43
2,3,7,8-TCDF		M/M+2	0.88	0.76	0.81	0.74	0.76	0.76	0.65-0.89

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits from Table 9, Method 1613.

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: Form3C.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_04-Apr-2019_DB93__Form3C_GS81143.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES

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

Instrument ID:	HR GC/MS	Initial Calibration Date:	04-Apr-2019
RT Window Data Filename:		Analysis Date:	Time:
DB-5 IS Data Filename:		Analysis Date:	Time:
DB-225 IS Data Filename:	DB93_064G S: 1	Analysis Date:	04-Apr-2019
		Time:	19:30:13

DB225 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	N/A	1,3,6,8-TCDF (F)	N/A
1,2,8,9-TCDD (L)	N/A	1,2,8,9-TCDF (L)	N/A
1,2,4,7,9-PECDD (F)	N/A	1,3,4,6,8-PECDF (F)	N/A
1,2,3,8,9-PECDD (L)	N/A	1,2,3,8,9-PECDF (L)	N/A
1,2,4,6,7,9-HXCDD (F)	N/A	1,2,3,4,6,8-HXCDF (F)	N/A
1,2,3,4,6,7-HXCDD (L)	N/A	1,2,3,4,8,9-HXCDF (L)	N/A
1,2,3,4,6,7,9-HPCDD (F)	N/A	1,2,3,4,6,7,8-HPCDF (F)	N/A
1,2,3,4,6,7,8-HPCDD (L)	N/A	1,2,3,4,7,8,9-HPCDF (L)	N/A

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD 1,2,7,8-TCDD	N/A	1,2,3,8-TCDD 2,3,7,8-TCDD	N/A
1,2,7,8-TCDD 1,4,7,8-TCDD	N/A	2,3,4,7-TCDF 2,3,7,8-TCDF	6
1,4,7,8-TCDD 1,2,3,7-TCDD	N/A	2,3,7,8-TCDF 1,2,3,9-TCDF	7
1,2,3,7-TCDD 1,2,3,8-TCDD	N/A		

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

Signed: _____ **Thong Do** _____

For Axy Internal Use Only [XSL Template: DXForm5.xsl; Created: 10-Apr-2019 11:18:30; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS__DB93_064GS1_Form5_SJ2541235.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF 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: 04-Apr-2019

VER Data Filename: DB93_065 S: 2

Instrument ID: HR GC/MS

Analysis Date: 05-Apr-2019

GC Column ID: DB225

Analysis Time: 09:21:03

COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
1,2,3,7,8,9-HXCDD		M+2/M+4	1.21	1.05-1.43	51.6	41 - 61
2,3,7,8-TCDF		M/M+2	0.76	0.65-0.89	10.3	8.4 - 12

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

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 Axys Internal Use Only [XSL Template: Form4A.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
 Report Filename: 1613_DIOXINS_DB93_065S2__Form4A_SJ2541498.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF 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: 04-Apr-2019

VER Data Filename: DB93_065 S: 2

Instrument ID: HR GC/MS

Analysis Date: 05-Apr-2019

GC Column ID: DB225

Analysis Time: 09:21:03

COMPOUND	LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.061	1.052-1.075
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

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 Axs Internal Use Only [XSL Template: Form6A.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
 Report Filename: 1613_DIOXINS_DB93_065S2__Form6A_SJ2541498.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 4A
PCDD/PCDF 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: 04-Apr-2019

VER Data Filename: DB93_065 S: 11

Instrument ID: HR GC/MS

Analysis Date: 05-Apr-2019

GC Column ID: DB225

Analysis Time: 16:04:57

COMPOUND	LAB FLAG ¹	MZ's FORMING RATIO ²	ION ABUND. RATIO	QC LIMITS ³	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL) ⁴
1,2,3,7,8,9-HXCDD		M+2/M+4	1.21	1.05-1.43	49.6	41 - 61
2,3,7,8-TCDF		M/M+2	0.80	0.65-0.89	10.4	8.4 - 12

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

(2) See Table 8, Method 1613, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.

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 Axys Internal Use Only [XSL Template: Form4A.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
 Report Filename: 1613_DIOXINS_DB93_065S11__Form4A_SJ2541505.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 6A
PCDD/PCDF 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: 04-Apr-2019

VER Data Filename: DB93_065 S: 11

Instrument ID: HR GC/MS

Analysis Date: 05-Apr-2019

GC Column ID: DB225

Analysis Time: 16:04:57

COMPOUND	LAB FLAG ¹	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS ²
1,2,3,7,8,9-HXCDD		13C-1,2,3,6,7,8-HXCDD	1.061	1.052-1.075
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999-1.003

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

(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

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 Axs Internal Use Only [XSL Template: Form6A.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS_DB93_065S11__Form6A_SJ2541505.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES

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

Instrument ID:	HR GC/MS	Initial Calibration Date:	04-Apr-2019
RT Window Data Filename:		Analysis Date:	Time:
DB-5 IS Data Filename:		Analysis Date:	Time:
DB-225 IS Data Filename:	DB93_065 S: 1	Analysis Date:	05-Apr-2019
		Time:	08:34:08

DB225 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	N/A	1,3,6,8-TCDF (F)	N/A
1,2,8,9-TCDD (L)	N/A	1,2,8,9-TCDF (L)	N/A
1,2,4,7,9-PECDD (F)	N/A	1,3,4,6,8-PECDF (F)	N/A
1,2,3,8,9-PECDD (L)	N/A	1,2,3,8,9-PECDF (L)	N/A
1,2,4,6,7,9-HXCDD (F)	N/A	1,2,3,4,6,8-HXCDF (F)	N/A
1,2,3,4,6,7-HXCDD (L)	N/A	1,2,3,4,8,9-HXCDF (L)	N/A
1,2,3,4,6,7,9-HPCDD (F)	N/A	1,2,3,4,6,7,8-HPCDF (F)	N/A
1,2,3,4,6,7,8-HPCDD (L)	N/A	1,2,3,4,7,8,9-HPCDF (L)	N/A

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD 1,2,7,8-TCDD	N/A	1,2,3,8-TCDD 2,3,7,8-TCDD	N/A
1,2,7,8-TCDD 1,4,7,8-TCDD	N/A	2,3,4,7-TCDF 2,3,7,8-TCDF	8
1,4,7,8-TCDD 1,2,3,7-TCDD	N/A	2,3,7,8-TCDF 1,2,3,9-TCDF	10
1,2,3,7-TCDD 1,2,3,8-TCDD	N/A		

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: DXForm5.xsl; Created: 09-Apr-2019 09:24:00; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS__DB93_065S1_Form5_SJ2541515.html; Workgroup: WG67276; Design ID: 3359]

SGS AXYS METHOD MLA-017 Rev 20

Form 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

SGS AXYS ANALYTICAL SERVICES

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

Instrument ID:	HR GC/MS	Initial Calibration Date:	01-Apr-2019
RT Window Data Filename:	DX9M_037B S: 59	Analysis Date:	03-Apr-2019
DB-5 IS Data Filename:	DX9M_037B S: 59	Analysis Date:	03-Apr-2019
DB-225 IS Data Filename:		Analysis Date:	
		Time:	19:50:52
		Time:	19:50:52
		Time:	

DB5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:58	1,3,6,8-TCDF (F)	21:26
1,2,8,9-TCDD (L)	28:20	1,2,8,9-TCDF (L)	28:12
1,2,4,7,9-PECDD (F)	32:02	1,3,4,6,8-PECDF (F)	28:53
1,2,3,8,9-PECDD (L)	37:03	1,2,3,8,9-PECDF (L)	37:06
1,2,4,6,7,9-HXCDD (F)	40:00	1,2,3,4,6,8-HXCDF (F)	38:57
1,2,3,4,6,7-HXCDD (L)	42:39	1,2,3,4,8,9-HXCDF (L)	42:59
1,2,3,4,6,7,9-HPCDD (F)	45:45	1,2,3,4,6,7,8-HPCDF (F)	45:18
1,2,3,4,6,7,8-HPCDD (L)	46:40	1,2,3,4,7,8,9-HPCDF (L)	47:05

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULT

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD 1,2,7,8-TCDD	0	1,2,3,8-TCDD 2,3,7,8-TCDD	20
1,2,7,8-TCDD 1,4,7,8-TCDD	0	2,3,4,7-TCDF 2,3,7,8-TCDF	N/A
1,4,7,8-TCDD 1,2,3,7-TCDD	0	2,3,7,8-TCDF 1,2,3,9-TCDF	N/A
1,2,3,7-TCDD 1,2,3,8-TCDD	DB-5 column; co-elute as per Figure 6 in Method		

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: DXForm5.xsl; Created: 09-Apr-2019 09:22:54; Application: XMLTransformer-1.17.7;
Report Filename: 1613_DIOXINS__DX9M_037BS59_Form5_SJ2540782.html; Workgroup: WG67276; Design ID: 3359]

Accreditation ScopeSGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum							Tissue					Urine		Water												
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP
	4,4'-DDT	EPA 1699	MLA-028			Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
	Aldrin	EPA 625	MLA-007																							Y	Y		Y	
		EPA 8270	MLA-007			Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028			Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 625	MLA-007																				Y		Y	Y		Y		
	Alpha-HCH	EPA 8270	MLA-007			Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028			Y																	Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 625	MLA-007																				Y		Y	Y		Y		
		EPA 8270	MLA-007			Y			Y	Y	Y	Y																		
	Beta-HCH	EPA 1699	MLA-028			Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 625	MLA-007																				Y		Y	Y		Y		
		EPA 8270	MLA-007			Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028			Y																Y								
	Chlordane, technical	SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 625	MLA-007																				Y		Y	Y		Y		
		EPA 8270	MLA-007			Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028			Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
	cis-Chlordane (alpha-Chlordane)	SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 625	MLA-007																				Y		Y	Y		Y		
		EPA 8270	MLA-007			Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028			Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
	cis-Nonachlor	EPA 625	MLA-007																				Y							
		EPA 8270	MLA-007			Y					Y												Y							
		EPA 1699	MLA-028			Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 625	MLA-007																				Y							
	Delta-HCH	EPA 8270	MLA-007			Y					Y																			
		EPA 1699	MLA-028			Y																	Y							
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 608	MLA-007																				Y							
		EPA 8081	MLA-007			Y			Y	Y	Y	Y																		
	Dieldrin	EPA 1699	MLA-028			Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 608	MLA-007																				Y							
		EPA 8081	MLA-007			Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028			Y																Y								
	Endosulphan I	SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
		SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 608	MLA-007																				Y							
		EPA 8081	MLA-007			Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028			Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y	Y					Y				Y						Y	Y						Y		
	Endosulphan II	SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y	Y								
		EPA 608	MLA-007																				Y							
		EPA 8081	MLA-007			Y			Y	Y	Y	Y																		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

Accreditation Scope																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Accreditation Scope SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42														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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	
	Oxychlordane	SGS AXYS MLA-007	MLA-007	Y	Y	Y									Y						Y		Y									
		EPA 8270	MLA-007			Y						Y												Y								
		EPA 1699	MLA-028			Y																	Y									
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y				Y						Y	Y					Y				
		SGS AXYS MLA-007	MLA-007	Y	Y	Y										Y						Y	Y									
	Toxaphene	EPA 8270	MLA-007										Y																			
		SGS AXYS MLA-007	MLA-007		Y											Y						Y										
		EPA 8270	MLA-007			Y				Y		Y	Y											Y			Y			Y		
	trans-Chlordane (gamma-Chlordane)	EPA 1699	MLA-028			Y																	Y									
		SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y				Y						Y	Y					Y				
		SGS AXYS MLA-007	MLA-007	Y	Y	Y										Y						Y	Y									
		EPA 8270	MLA-007			Y						Y											Y									
		EPA 1699	MLA-028			Y																	Y									
	trans-Nonachlor	SGS AXYS MLA-028	MLA-028	Y	Y	Y						Y				Y						Y	Y					Y				
		SGS AXYS MLA-007	MLA-007	Y	Y	Y										Y							Y									
EPA 8270		MLA-007			Y						Y											Y										
EPA 1699		MLA-028			Y																	Y										
SGS AXYS MLA-028		MLA-028	Y	Y	Y						Y				Y						Y	Y					Y					
PAH	1,2,6-Trimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																Y											
	1,2-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	1,4,6,7-Tetramethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	1,7-Dimethylfluorene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	1,7-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	1,8-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	1-Methylchrysene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	1-Methylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	1-Methylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	2,3,5-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	2,3,6-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	2,4-Dimethyldibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	2,6-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	2,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	2-Methylantracene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	2-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	2-Methylfluorene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	2-Methylnaphthalene	EPA 8270	MLA-021			Y				Y														Y								
		SGS AXYS MLA-021	MLA-021		Y	Y																Y										
	2-Methylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	3,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	3-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	3-Methylfluoranthene/ Benzo(a)fluorene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	3-Methylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	5,9-Dimethylchrysene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	5/6-Methylchrysenes	SGS AXYS MLA-021	MLA-021		Y																	Y										
	7-Methylbenzo(a)pyrene	SGS AXYS MLA-021	MLA-021		Y																	Y										
	9/4-Methylphenanthrenes	SGS AXYS MLA-021	MLA-021		Y																	Y										
	Acenaphthene	EPA 1625	MLA-021																					Y			Y	Y				
		EPA 8270	MLA-021			Y				Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y	Y										Y						Y		Y								
	Acenaphthylene	EPA 1625	MLA-021																					Y			Y	Y				
		EPA 8270	MLA-021			Y				Y	Y		Y																			
		SGS AXYS MLA-021	MLA-021		Y	Y										Y						Y		Y								
	Anthracene	EPA 1625	MLA-021																				Y			Y	Y					

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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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **				
		EPA 8270	MLA-021				Y				Y	Y		Y		CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS		CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **		
		SGS AXYS MLA-021	MLA-021		Y	Y					Y	Y			Y	Y	Y					Y		Y											
	Benz[a]anthracene	EPA 1625	MLA-021																						Y		Y	Y							
		EPA 8270	MLA-021			Y				Y	Y		Y																						
		SGS AXYS MLA-021	MLA-021		Y	Y										Y						Y		Y											
	Benzo[a]pyrene	EPA 1625	MLA-021																						Y			Y	Y						
		EPA 8270	MLA-021			Y				Y	Y		Y															Y	Y						
		SGS AXYS MLA-021	MLA-021		Y	Y										Y						Y		Y											
	Benzo[b]fluoranthene	EPA 1625	MLA-021																						Y				Y	Y		Y			
		EPA 8270	MLA-021			Y				Y	Y		Y															Y	Y						
		SGS AXYS MLA-021	MLA-021		Y	Y										Y						Y		Y											
	Benzo[e]pyrene	SGS AXYS MLA-021	MLA-021		Y											Y						Y		Y											
	Benzo[ghi]perylene	EPA 1625	MLA-021																						Y			Y	Y						
		EPA 8270	MLA-021			Y				Y	Y		Y																Y	Y					
		SGS AXYS MLA-021	MLA-021		Y	Y										Y						Y		Y											
	Benzo[j/k]fluoranthenes	SGS AXYS MLA-021	MLA-021		Y											Y						Y		Y											
	Benzo[k]fluoranthene	EPA 1625	MLA-021																						Y			Y	Y		Y				
		EPA 8270	MLA-021			Y				Y			Y																Y	Y					
		SGS AXYS MLA-021	MLA-021			Y																		Y											
	Biphenyl	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C1-Acenaphthenes	SGS AXYS MLA-021	MLA-021		Y																		Y		Y										
	C1-Benz(a)anthracenes/chrysenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C1-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C1-Biphenyls	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C1-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C1-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C1-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C1-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C1-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C2-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C2-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C2-Biphenyls	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C2-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C2-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C2-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C2-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C2-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C3-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C3-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C3-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C3-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C3-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C3-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C4-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C4-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C4-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C4-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	C4-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																		Y												
	Chrysene	EPA 1625	MLA-021																						Y			Y	Y						
		EPA 8270	MLA-021			Y				Y	Y		Y																						

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				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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-033	MLA-033	Y	Y							Y			Y						Y										
	BDE 155 2,2',4,4',6,6'-hexabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 166 2,3,4,4',5,6-hexabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 17 2,2',4-tribromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 181 2,2',3,4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 183 2,2',3,4,4',5',6-heptabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 190 2,3,3',4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 206 2,2',3,3',4,4',5,5',6-nonabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 207 2,2',3,3',4,4',5,6,6'-nonabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 208 2,2',3,3',4,5,5',6,6'-nonabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 209 Decabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 25 2,3',4-tribromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 28 2,4,4'-tribromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 30 2,4,6-tribromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 33 2',3,4-tribromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 35 3,3',4-tribromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 37 3,4,4'-tribromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 47 2,2',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 49 2,2',4,5'-tetrabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 66 2,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 7 2,4-dibromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 75 2,4,4',6-tetrabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 77 3,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 8 2,4'-dibromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 85 2,2',3,4,4'-pentabromodiphenylether	EPA 1614	MLA-033									Y															Y				
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 99 2,2',4,4',5-pentabromodiphenylether	EPA 1614	MLA-033									Y															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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	
PCB Aroclors	"PCBs" category (CA only)	EPA 625	MLA-007	Y	Y										Y							Y										
		EPA 8270	MLA-007			Y																										
	PCB Aroclor 1016	EPA 1668	MLA-010				Y						Y											Y						Y		
		EPA 625	MLA-007																					Y			Y	Y		Y		
		EPA 8270	MLA-007				Y				Y	Y																				
		SGS AXYS MLA-010	MLA-010				Y																	Y								
		SGS AXYS MLA-007	MLA-007		Y	Y										Y							Y	Y								
	PCB Aroclor 1016/1242	EPA 8270	MLA-007										Y																			
		PCB Aroclor 1221	EPA 1668	MLA-010				Y						Y										Y						Y		
		EPA 625	MLA-007																					Y				Y	Y		Y	
		EPA 8270	MLA-007				Y				Y	Y	Y																			
		SGS AXYS MLA-010	MLA-010				Y																	Y								
		SGS AXYS MLA-007	MLA-007		Y	Y										Y							Y	Y								
	PCB Aroclor 1232	EPA 1668	MLA-010					Y						Y									Y	Y							Y	
		EPA 625	MLA-007																					Y				Y	Y		Y	
		EPA 8270	MLA-007				Y				Y	Y	Y																			
		SGS AXYS MLA-010	MLA-010				Y																	Y								
		SGS AXYS MLA-007	MLA-007		Y	Y										Y							Y	Y								
	PCB Aroclor 1242	EPA 1668	MLA-010					Y						Y										Y						Y		
		EPA 625	MLA-007																					Y				Y	Y		Y	
		EPA 8270	MLA-007					Y				Y	Y																			
		SGS AXYS MLA-010	MLA-010				Y																	Y								
		SGS AXYS MLA-007	MLA-007		Y	Y										Y							Y	Y								
	PCB Aroclor 1248	EPA 1668	MLA-010					Y						Y										Y							Y	
		EPA 625	MLA-007																					Y				Y	Y		Y	
		EPA 8270	MLA-007					Y				Y	Y	Y																		
		SGS AXYS MLA-010	MLA-010				Y																	Y								
		SGS AXYS MLA-007	MLA-007		Y	Y										Y							Y	Y								
	PCB Aroclor 1254	EPA 1668	MLA-010					Y						Y										Y						Y		
		EPA 625	MLA-007																					Y				Y	Y		Y	
		EPA 8270	MLA-007					Y				Y	Y	Y																		
		SGS AXYS MLA-010	MLA-010				Y																	Y								
		SGS AXYS MLA-007	MLA-007		Y	Y										Y							Y	Y								
	PCB Aroclor 1260	EPA 1668	MLA-010					Y						Y										Y					Y			
		EPA 625	MLA-007																					Y				Y	Y		Y	
		EPA 8270	MLA-007					Y				Y	Y	Y																		
		SGS AXYS MLA-010	MLA-010				Y																	Y								
		SGS AXYS MLA-007	MLA-007		Y	Y										Y							Y	Y								
	PCB Aroclor 1268	SGS AXYS MLA-007	MLA-007		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	
		EPA 8270	MLA-007										Y																			
		SGS AXYS MLA-010	MLA-010		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
		SGS AXYS MLA-010	MLA-010		Y	Y	Y									Y						Y	Y									
	PCB 100 2,2',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				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									
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	
	SGS AXYS MLA-010	MLA-010		Y	Y	Y									Y						Y	Y										

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SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42															Solids																			
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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA		CALA	Florida DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **	
		SGS AXYS MLA-010	MLA-010	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													
	PCB 119 2,3',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010			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									
	PCB 12 3,4-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									
	PCB 12/13	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	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y					Y	Y				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	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y					Y	Y				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	
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	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	
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	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	
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	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	
		EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-010	MLA-010	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	
		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				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	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y					Y	Y				Y									
	PCB 128 2,2',3,3',4,4'-Hexachlorobiphenyl	EPA 1668	MLA-010			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									
		SGS AXYS MLA-007	MLA-007		Y										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	
		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				Y									
	PCB 13 3,4'-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									
	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	
		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				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	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y					Y	Y				Y									
	PCB 131/142	EPA 8270	MLA-007									Y																						
		SGS AXYS MLA-007	MLA-007		Y										Y					Y	Y				Y									

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SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42				Solids																											
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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 147 2,2',3,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007								Y																				
	PCB 148 2,2',3,4',5,6'-Hexachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
	PCB 149 2,2',3,4',5',6-Hexachlorobiphenyl	EPA 8270	MLA-007								Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
	PCB 149 2,2',3,4',5',6-Hexachlorobiphenyl	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									
	PCB 149/139	EPA 8270	MLA-007								Y																				
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 15 4,4'-Dichlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007								Y																				
	PCB 150 2,2',3,4',6-Hexachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 150 2,2',3,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007								Y																				
	PCB 151 2,2',3,5,5',6-Hexachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
	PCB 151 2,2',3,5,5',6-Hexachlorobiphenyl	EPA 8270	MLA-007								Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
	PCB 152 2,2',3,5,6,6'-Hexachlorobiphenyl	SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
	PCB 152 2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 8270	MLA-007								Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
	PCB 153 2,2',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007								Y																				
	PCB 153 2,2',4,4',5,5'-Hexachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 153 2,2',4,4',5,5'-Hexachlorobiphenyl	SGS AXYS MLA-901	MLA-901	Y																											
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
	PCB 154 2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 8270	MLA-007								Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
	PCB 155 2,2',4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007								Y																				
	PCB 156 2,3,3',4,4',5-Hexachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
	PCB 156 2,3,3',4,4',5-Hexachlorobiphenyl	EPA 8270	MLA-007								Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
	PCB 157 2,3,3',4,4',5'-Hexachlorobiphenyl	SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
	PCB 158 2,3,3',4,4',6-Hexachlorobiphenyl	EPA 8270	MLA-007								Y																				
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y	Y									
	PCB 158/160	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y									Y		Y	Y	Y	Y		Y		
		EPA 8270	MLA-007								Y																				
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										

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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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y		Y		Y	Y	Y	Y		Y	
	PCB 185 2,2',3,4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				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									
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 186 2,2',3,4,5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				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									
	PCB 187 2,2',3,4',5,5',6-Heptachlorobiphenyl	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									
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 187/182	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 188 2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				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									
	PCB 189 2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010				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									
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 19 2,2',6-Trichlorobiphenyl	EPA 1668	MLA-010				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									
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 190 2,3,3',4,4',5,6-Heptachlorobiphenyl	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									
	PCB 191 2,3,3',4,4',5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				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									
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 192 2,3,3',4,5,5',6-Heptachlorobiphenyl	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									
	PCB 193 2,3,3',4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				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									
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	EPA 1668	MLA-010				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									
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 195 2,2',3,3',4,4',5,6-Octachlorobiphenyl	EPA 1668	MLA-010				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									
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 196 2,2',3,3',4,4',5,6'-Octachlorobiphenyl	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									
	PCB 196/203	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 197 2,2',3,3',4,4',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	

Accreditation Scope				Serum		Solids		Tissue		Urine		Water		Water, Non-Potable	
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	
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 DoD **	
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
		SGS AXYS MLA-007	MLA-007		Y										
	PCB 198 2,2',3,3',4,5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 199 2,2',3,3',4,5,5',6'-Octachlorobiphenyl	SGS AXYS MLA-007	MLA-007		Y										
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
		SGS AXYS MLA-007	MLA-007		Y										
	PCB 2 3-Chlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 20 2,3,3'-Trichlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 200 2,2',3,3',4,5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 201 2,2',3,3',4,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 202 2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 203 2,2',3,4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 204 2,2',3,4,4',5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 205 2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 206 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	SGS AXYS MLA-007	MLA-007		Y										
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007												
	PCB 207 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y									
		SGS AXYS MLA-007	MLA-007		Y										
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
	PCB 208 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
		SGS AXYS MLA-007	MLA-007		Y										
	PCB 209 Decachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									

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Accreditation Scope				Serum										Tissue					Urine		Water		Water, Non-Potable									
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42				Solids																												
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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y							Y		Y								
	PCB 36 3,3',5-Trichlorobiphenyl	EPA 1668	MLA-010			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								
	PCB 37 3,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010			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								
	PCB 38 3,4,5-Trichlorobiphenyl	EPA 1668	MLA-010			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								
	PCB 39 3,4',5-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								
	PCB 4 2,2'-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								
	PCB 4/10	EPA 8270	MLA-007									Y																				
	PCB 40 2,2',3,3'-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								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y									
	PCB 41 2,2',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								
	PCB 41/71/64/68	EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y									
	PCB 42 2,2',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								
	PCB 42/59	EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y									
	PCB 43 2,2',3,5-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								
	PCB 44 2,2',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								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y									
	PCB 45 2,2',3,6-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								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y									
	PCB 46 2,2',3,6'-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								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y									
	PCB 47 2,2',4,4'-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								
	PCB 47/48/75	EPA 8270	MLA-007									Y																				
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y									
	PCB 48 2,2',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								
	PCB 49 2,2',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									

Accreditation Scope				Serum		Solids		Tissue		Urine		Water		Water, Non-Potable	
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID												
	PCB 49/43	EPA 8270	MLA-007												
		SGS AXYS MLA-007	MLA-007		Y							Y			Y
	PCB 5 2,3-Dichlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 50 2,2',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
		SGS AXYS MLA-007	MLA-007		Y										Y
	PCB 51 2,2',4,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 52 2,2',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
		SGS AXYS MLA-007	MLA-007		Y										
	PCB 53 2,2',5,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 54 2,2',6,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 55 2,3,3',4-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									
	PCB 56 2,3,3',4'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 56/60	EPA 8270	MLA-007									Y			
		SGS AXYS MLA-007	MLA-007		Y										Y
	PCB 57 2,3,3',5-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 58 2,3,3',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 59 2,3,3',6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 6 2,3'-Dichlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 60 2,3,4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 61 2,3,4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 62 2,3,4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 62/65	EPA 8270	MLA-007									Y			
	PCB 63 2,3,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 64 2,3,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y

Accreditation Scope																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</
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Accreditation Scope				Serum		Solids		Tissue		Urine		Water		Water, Non-Potable	
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID												
	PCB 8/5	EPA 8270	MLA-007												
		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
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 81 3,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 82 2,2',3,3',4-Pentachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
	PCB 83 2,2',3,3',5-Pentachlorobiphenyl	EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
	PCB 84 2,2',3,3',6-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
		EPA 8270	MLA-007		Y							Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
	PCB 85 2,2',3,4,4'-Pentachlorobiphenyl	EPA 8270	MLA-007												
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y
	PCB 86 2,2',3,4,5-Pentachlorobiphenyl	EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
	PCB 87 2,2',3,4,5'-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 8270	MLA-007												
		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
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 8270	MLA-007									Y			
	PCB 89 2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 8270	MLA-007												
	PCB 9 2,5-Dichlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y				Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 8270	MLA-010			Y		Y	Y	Y	Y	Y			Y
	PCB 90 2,2',3,4',5-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
	PCB 91 2,2',3,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	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
		EPA 8270	MLA-007									Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		SGS AXYS MLA-007	MLA-007		Y							Y			Y
	PCB 93 2,2',3,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 8270	MLA-007			Y		Y	Y	Y	Y	Y			Y
	PCB 94 2,2',3,5,6'-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y
		EPA 8270	MLA-007									Y			
	PCB 95 2,2',3,5',6-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y						Y			Y
		EPA 1668	MLA-010			Y		Y	Y	Y	Y	Y			Y

Accreditation Scope														Serum							Tissue							Urine	Water	Water, Non-Potable						
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42															Solids																					
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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **				
		SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y					Y		Y														
	PCB 95/93	EPA 8270	MLA-007									Y																								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y															
	PCB 96 2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010			Y			Y	Y	Y	Y	Y									Y			Y		Y	Y	Y		Y					
		EPA 8270	MLA-007										Y																							
	PCB 97 2,2',3,4',5'-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y		Y													
		EPA 1668	MLA-010			Y			Y	Y	Y	Y	Y	Y									Y		Y		Y	Y	Y		Y					
	PCB 97/86	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y		Y													
		EPA 8270	MLA-007										Y																							
	PCB 98 2,2',3,4',6'-Pentachlorobiphenyl	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					
	PCB 98/102	SGS AXYS MLA-010	MLA-010	Y	Y	Y									Y						Y		Y													
		EPA 8270	MLA-007										Y																							
	PCB 99 2,2',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010			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													
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y													
	PCB congeners, total	EPA 1668	MLA-010								Y																	Y								
		EPA 8270	MLA-007										Y																							
	Total Dichlorobiphenyls	SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y		Y													
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y													
	Total Heptachlorobiphenyls	EPA 8270	MLA-007										Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y		Y													
	Total Hexachlorobiphenyls	SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y													
		EPA 8270	MLA-007										Y																							
	Total Monochlorobiphenyls	SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y		Y													
		EPA 8270	MLA-007										Y																							
	Total Nonachlorobiphenyls	SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y		Y													
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y													
	Total Octachlorobiphenyls	EPA 8270	MLA-007										Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y		Y													
	Total Pentachlorobiphenyls	SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y													
		EPA 8270	MLA-007										Y																							
	Total Polychlorinated biphenyls	SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y		Y													
		SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y													
	Total Tetrachlorobiphenyls	EPA 8270	MLA-007										Y																							
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y		Y													
	Total Trichlorobiphenyls	SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y													
		EPA 8270	MLA-007										Y																							
	PCDDF	"Dioxins and Dibenzofurans" category (CA only)	SGS AXYS MLA-010	MLA-010	Y	Y									Y						Y		Y													
			SGS AXYS MLA-007	MLA-007		Y										Y						Y		Y												
			EPA 1613	MLA-017																				Y												
		1,2,3,4,6,7,8-HpCDD	EPA 8290	MLA-017			Y																													
			EPA 1613	MLA-017										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								

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																			CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **		
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID																																													
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		SGS AXYS MLA-075	MLA-075																	Y																												
	Clarithromycin	EPA 1694	MLA-075																											Y													Y					
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	Clinafloxacin	EPA 1694	MLA-075																											Y													Y					
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	Clonidine	SGS AXYS MLA-075	MLA-075																	Y																												
	Cloxacillin	EPA 1694	MLA-075																											Y													Y					
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	Cocaine	SGS AXYS MLA-075	MLA-075																	Y																												
	Codeine	EPA 1694	MLA-075																											Y													Y					
		SGS AXYS MLA-075	MLA-075																	Y																												
	Cotinine	EPA 1694	MLA-075																											Y													Y					
		SGS AXYS MLA-075	MLA-075																	Y																												
	DEET (N,N-diethyl-m-toluamide)	SGS AXYS MLA-075	MLA-075																	Y																												
	Dehydronifedipine	EPA 1694	MLA-075																											Y													Y					
		SGS AXYS MLA-075	MLA-075																	Y																												
	Demeclocycline	EPA 1694	MLA-075																											Y													Y					
		SGS AXYS MLA-075	MLA-075																	Y																												
	Desmethyldiltiazem	SGS AXYS MLA-075	MLA-075																	Y																												
	Diazepam	SGS AXYS MLA-075	MLA-075																	Y																												
	Digoxigenin	EPA 1694	MLA-075																											Y													Y					
		SGS AXYS MLA-075	MLA-075																	Y																												
	Digoxin	EPA 1694	MLA-075																											Y													Y					
		SGS AXYS MLA-075	MLA-075																	Y																												
	Diltiazem	EPA 1694	MLA-075																											Y													Y					
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	Diphenhydramine	EPA 1694	MLA-075																											Y													Y					
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	Doxycycline	EPA 1694	MLA-075																											Y													Y					
		SGS AXYS MLA-075	MLA-075																	Y																												
	Enalapril	EPA 1694	MLA-075																											Y													Y					
		SGS AXYS MLA-075	MLA-075																	Y																												
	Enrofloxacin	EPA 1694	MLA-075																											Y													Y					
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	Fluocinonide	SGS AXYS MLA-075	MLA-075																	Y																												
	Fluoxetine	EPA 1694	MLA-075																											Y													Y					
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	Fluticasone propionate	SGS AXYS MLA-075	MLA-075																	Y																												
	Furosemide	SGS AXYS MLA-075	MLA-075																	Y																												
	Gemfibrozil	EPA 1694	MLA-075																											Y													Y					
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	Glyburide	SGS AXYS MLA-075	MLA-075																	Y																												
	Hydrochlorothiazide	SGS AXYS MLA-075	MLA-075																	Y																												
	Hydrocodone	SGS AXYS MLA-075	MLA-075																	Y																												

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file ref.: ACC-101 Rev. 42

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SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42																						
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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP
	Acetylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	Acetylmornithine	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									
	Decanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	Decenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	deoxycholic acid	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	docosahexaenoic acid (DHA)	SGS AXYS MLM-001	MLM-001										Y									
	docosatetraenoic acid (adrenic acid)	SGS AXYS MLM-001	MLM-001										Y									
	Dodecanedioylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	Dodecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	Dodecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	Dopamine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	eicosapentaenoic acid (EPA)	SGS AXYS MLM-001	MLM-001										Y									
	Eicosatetraenoic acid (arachidonic acid)	SGS AXYS MLM-001	MLM-001										Y									
	eicosatrienoic acid (dihomo-γ-linolenic acid)	SGS AXYS MLM-001	MLM-001										Y									
	Glutaconylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	Glutamate	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	Glutamine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	Glutaryl carnitine (Hydroxyhexanoylcarnitine)	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	Glycine	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	glycochenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
	glycocholic acid	SGS AXYS MLM-001	MLM-001	Y									Y				Y					
glycodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hexadecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
hexadecanoic acid (palmitic acid)	SGS AXYS MLM-001	MLM-001										Y										
Hexadecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
hexadecenoic acid (palmitoleic acid)	SGS AXYS MLM-001	MLM-001										Y										
Hexadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hexanoylcarnitine (Fumaryl carnitine)	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hexenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hexose (sum isomers)	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Histamine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Histidine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hydroxyhexadecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hydroxyhexadecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hydroxyhexadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hydroxylbutyrylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hydroxyoctadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y				Y						
Hydroxyproline	SGS AXYS MLM-001	MLM-001	Y									Y				Y						

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Accreditation Scope				SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42																										
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 DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP
	Phosphatidylcholine diacyl C42:6	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Pimelylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Proline	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Propenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Propionylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Putrescine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sarcosine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Serine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
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	Spermidine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Spermine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C16:0	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C16:1	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C18:0	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C18:1	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C20:2	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C22:3	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C24:0	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C24:1	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C26:0	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Sphingomyeline C26:1	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Symmetric dimethylarginine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Taurine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	taurochenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	taurocholic acid	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	taurodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	tauroolithocholic acid	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	tauroursodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Tetradecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	tetradecanoic acid (myristic acid)	SGS AXYS MLM-001	MLM-001										Y																	
	Tetradecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Tetradecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Threonine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Tiglylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Total dimethylarginine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Tryptophan	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Tyrosine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	ursodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Valerylcarnitine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
	Valine	SGS AXYS MLM-001	MLM-001	Y									Y					Y												
TBBPA	Tetrabromobisphenol A	SGS AXYS MLA-079	MLA-079	Y																										
TOP	Perfluorobutanesulfonate (PFBS)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorobutanoate (PFBA)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorodecanoate (PFDA)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorononanoate (PFNA)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorooctanoate (PFOA)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-111	MLA-111		Y																									
	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-111	MLA-111		Y																									

Accreditation Scope				Serum		Solids		Tissue		Urine	Water	Water, Non-Potable	
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 42				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH
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
	Perfluorotridecanoate (PFTTrDA)	SGS AXYS MLA-111	MLA-111		Y								
	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-111	MLA-111		Y								
Note *													
Analysis of pesticides and PCBs in non-potable water samples by SGS AXYS method MLA-007, with the exception of NPDES or State permitted discharges and Stormwater applications, may fall within the scope of Washington State Department of Ecology solids matrix accreditation, subject to approval of the Ecology Project Manager.													
Note **													
PFAS by LC-MS/MS compliant with US DoD QSM 5.1.1 table B-15													

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 5.1.1 Standard)
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CALA	Canadian Association for Laboratory Accreditation Inc., Lab ID A2637, (ISO/IEC 17025:2005 Standard)
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CALA
Testing
Accreditation No. A 2637

